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2022

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Related Data and Services

Our engineers recommend the following products and services to complement *Building Construction Costs with RSMeans data*:

Annual Cost Data Books

2022 Assemblies Costs with RSMeans data
2022 Square Foot Costs with RSMeans data

Reference Books

Estimating Building Costs
RSMeans Estimating Handbook
Green Building: Project Planning & Estimating
How to Estimate with RSMeans data
Plan Reading & Material Takeoff
Project Scheduling & Management for Construction

Virtual, Instructor-led & On-site Training Offerings

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Building owners, facility managers, building product manufacturers, and attorneys across the public and private sectors engage with RSMeans data Enterprise to solve unique challenges where trusted construction cost data is critical.

To learn more visit: **RSMeans.com/Enterprise**

Custom Built Data Sets

Building and Space Models: Quickly plan construction costs across multiple locations based on geography, project size, building system component, product options, and other variables for precise budgeting and cost control.

Predictive Analytics: Accurately plan future builds with custom graphical interactive dashboards, negotiate future costs of tenant build-outs, and identify and compare national account pricing.

Consulting

Building Product Manufacturing Analytics: Validate your claims and assist with new product launches.

Third-Party Legal Resources: Used in cases of construction cost or estimate disputes, construction product failure vs. installation failure, eminent domain, class action construction product liability, and more.

API

For resellers or internal application integration, RSMeans data is offered via API. Deliver Unit, Assembly, and Square Foot Model data within your interface. To learn more about how you can provide your customers with the latest in localized construction cost data visit:
RSMeans.com/API

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Foreword

The Value of RSMeans data from Gordian

Since 1942, RSMeans data has been the industry-standard materials, labor, and equipment cost information database for contractors, facility owners and managers, architects, engineers, and anyone else that requires the latest localized construction cost information. More than 75 years later, the objective remains the same: to provide facility and construction professionals with the most current and comprehensive construction cost database possible.

With the constant influx of new construction methods and materials, in addition to ever-changing labor and material costs, last year's cost data is not reliable for today's designs, estimates, or budgets. Gordian's cost engineers apply real-world construction experience to identify and quantify new building products and methodologies, adjust productivity rates, and adjust costs to local market conditions across the nation. This adds up to more than 22,000 hours in cost research annually. This unparalleled construction cost expertise is why so many facility and construction professionals rely on RSMeans data year over year.

About Gordian

Gordian is the leading provider of facility and construction cost data, software, and services for all phases of the building lifecycle. From planning to design, procurement, construction, and operations, Gordian delivers groundbreaking solutions to contractors, architects, engineers, business and financial officers, and facility owners in local, state, and federal governments, education, healthcare, and other industries. A pioneer of Job Order Contracting (JOC), Gordian's offerings also include our proprietary RSMeans data and Facility Intelligence solutions. We develop and maintain the largest collection of labor, material, and equipment data and associated costs for all areas of construction. Gordian's solutions are accessed through our innovative software platforms and supported by a team of industry experts proven to help clients maximize efficiency, optimize cost savings, and increase building quality.

Our Commitment

At Gordian, we do more than talk about the quality of our data and the usefulness of its application. We stand behind all of our RSMeans data—from historical cost indexes to construction materials and techniques—to craft current costs and predict future trends. If you have any questions about our products or services, please call us toll-free at 800.448.8182 or visit our website at gordian.com.

How the Cost Data Is Built: An Overview

Unit Prices*

All cost data have been divided into 50 divisions according to the MasterFormat® system of classification and numbering.

Assemblies*

The cost data in this section have been organized in an "Assemblies" format. These assemblies are the functional elements of a building and are arranged according to the 7 elements of the UNIFORMAT II classification system. For a complete explanation of a typical "Assembly", see "RSMeans data: Assemblies—How They Work."

*Residential Models**

Model buildings for four classes of construction—economy, average, custom, and luxury—are developed and shown with complete costs per square foot.

*Commercial/Industrial/ Institutional Models**

This section contains complete costs for 77 typical model buildings expressed as costs per square foot.

*Green Commercial/Industrial/ Institutional Models**

This section contains complete costs for 25 green model buildings expressed as costs per square foot.

*References**

This section includes information on Equipment Rental Costs, Crew Listings, Historical Cost Indexes, City Cost Indexes, Location Factors, Reference Tables, and Change Orders, as well as a listing of abbreviations.

- **Equipment Rental Costs:** Included are the average costs to rent and operate hundreds of pieces of construction equipment.
- **Crew Listings**: This section lists all the crews referenced in the cost data. A crew is composed of more than one trade classification and/or the addition of power equipment to any trade classification. Power equipment is included in the cost of the crew. Costs are shown both with bare labor rates and with the installing contractor's overhead and profit added. For each, the total crew cost per eight-hour day and the composite cost per labor-hour are listed.

- **Historical Cost Indexes**: These indexes provide you with data to adjust construction costs over time.
- **City Cost Indexes**: All costs in this data set are U.S. national averages. Costs vary by region. You can adjust for this by CSI Division to over 730 cities in 900+ 3-digit zip codes throughout the U.S. and Canada by using this data.
- **Location Factors**: You can adjust total project costs to over 730 cities in 900+ 3-digit zip codes throughout the U.S. and Canada by using the weighted number, which applies across all divisions.
- **Reference Tables**: At the beginning of selected major classifications in the Unit Prices are reference numbers indicators. These numbers refer you to related information in the Reference Section. In this section, you'll find reference tables, explanations, and estimating information that support how we develop the unit price data, technical data, and estimating procedures.
- **Change Orders**: This section includes information on the factors that influence the pricing of change orders.
- **Abbreviations**: A listing of abbreviations used throughout this information, along with the terms they represent, is included.

Index (printed versions only)

A comprehensive listing of all terms and subjects will help you quickly find what you need when you are not sure where it occurs in MasterFormat®.

Conclusion

This information is designed to be as comprehensive and easy to use as possible.

The Construction Specifications Institute (CSI) and Construction Specifications Canada (CSC) have produced the 2018 edition of MasterFormat®, a system of titles and numbers used extensively to organize construction information.

All unit prices in the RSMeans cost data are now arranged in the 50-division MasterFormat® 2018 system.

* Not all information is available in all data sets

Note: The material prices in RSMeans cost data are "contractor's prices." They are the prices that contractors can expect to pay at the lumberyards, suppliers'/distributors' warehouses, etc. Small orders of specialty items would be higher than the costs shown, while very large orders, such as truckload lots, would be less. The variation would depend on the size, timing, and negotiating power of the contractor. The labor costs are primarily for new construction or major renovation rather than repairs or minor alterations. With reasonable exercise of judgment, the figures can be used for any building work.

Estimating with RSMeans data: Unit Prices

Following these steps will allow you to complete an accurate estimate using RSMeans data: Unit Prices.

1. Scope Out the Project

- Think through the project and identify the CSI divisions needed in your estimate.
- Identify the individual work tasks that will need to be covered in your estimate.
- The Unit Price data have been divided into 50 divisions according to CSI MasterFormat® 2018.
- In printed versions, the Unit Price Section Table of Contents on page 1 may also be helpful when scoping out your project.
- Experienced estimators find it helpful to begin with Division 2 and continue through completion. Division 1 can be estimated after the full project scope is known.

2. Quantify

- Determine the number of units required for each work task that you identified.
- Experienced estimators include an allowance for waste in their quantities. (Waste is not included in our Unit Price line items unless otherwise stated.)

3. Price the Quantities

- Use the search tools available to locate individual Unit Price line items for your estimate.
- Reference Numbers indicated within a Unit Price section refer to additional information that you may find useful.
- The crew indicates who is performing the work for that task. Crew codes are expanded in the Crew Listings in the Reference Section to include all trades and equipment that comprise the crew.
- The Daily Output is the amount of work the crew is expected to complete in one day.
- The Labor-Hours value is the amount of time it will take for the crew to install one unit of work.
- The abbreviated Unit designation indicates the unit of measure upon which the crew, productivity, and prices are based.
- Bare Costs are shown for materials, labor, and equipment needed to complete the Unit Price line item. Bare costs do not include waste, project overhead, payroll insurance, payroll taxes, main office overhead, or profit.
- The Total Incl O&P cost is the billing rate or invoice amount of the installing contractor or subcontractor who performs the work for the Unit Price line item.

4. Multiply

- Multiply the total number of units needed for your project by the Total Incl O&P cost for each Unit Price line item.
- Be careful that your take off unit of measure matches the unit of measure in the Unit column.
- The price you calculate is an estimate for a completed item of work.
- Keep scoping individual tasks, determining the number of units required for those tasks, matching each task with individual Unit Price line items, and multiplying quantities by Total Incl O&P costs.
- An estimate completed in this manner is priced as if a subcontractor, or set of subcontractors, is performing the work. The estimate does not yet include Project Overhead or Estimate Summary components such as general contractor markups on subcontracted work, general contractor office overhead and profit, contingency, and location factors.

5. Project Overhead

- Include project overhead items from Division 1-General Requirements.
- These items are needed to make the job run. They are typically, but not always, provided by the general contractor. Items include, but are not limited to, field personnel, insurance, performance bond, permits, testing, temporary utilities, field office and storage facilities, temporary scaffolding and platforms, equipment mobilization and demobilization, temporary roads and sidewalks, winter protection, temporary barricades and fencing, temporary security, temporary signs, field engineering and layout, final cleaning, and commissioning.
- Each item should be quantified and matched to individual Unit Price line items in Division 1, then priced and added to your estimate.
- An alternate method of estimating project overhead costs is to apply a percentage of the total project cost—usually 5% to 15% with an average of 10% (see General Conditions).
- Include other project related expenses in your estimate such as:
  - Rented equipment not itemized in the Crew Listings
  - Rubbish handling throughout the project (see section 02 41 19.19)

6. Estimate Summary

- Include sales tax as required by laws of your state or county.
- Include the general contractor's markup on self-performed work, usually 5% to 15% with an average of 10%.
- Include the general contractor's markup on subcontracted work, usually 5% to 15% with an average of 10%.
- Include the general contractor's main office overhead and profit:
  - RSMeans data provides general guidelines on the general contractor's main office overhead (see section 01 31 13.60 and Reference Number R013113-50).
  - Markups will depend on the size of the general contractor's operations, projected annual revenue, the level of risk, and the level of competition in the local area and for this project in particular.
- Include a contingency, usually 3% to 5%, if appropriate.
- Adjust your estimate to the project's location by using the City Cost Indexes or the Location Factors in the Reference Section:
  - Look at the rules in "How to Use the City Cost Indexes" to see how to apply the Indexes for your location.
  - When the proper Index or Factor has been identified for the project's location, convert it to a multiplier by dividing it by 100, then multiply that multiplier by your estimated total cost. The original estimated total cost will now be adjusted up or down from the national average to a total that is appropriate for your location.

Editors' Note:
We urge you to spend time reading and understanding the supporting material. An accurate estimate requires experience, knowledge, and careful calculation. The more you know about how we at RSMeans developed the data, the more accurate your estimate will be. In addition, it is important to take into consideration the reference material such as Equipment Listings, Crew Listings, City Cost Indexes, Location Factors, and Reference Tables.

How to Use the Cost Data: The Details

What's Behind the Numbers? The Development of Cost Data

RSMeans data engineers continually monitor developments in the construction industry to ensure reliable, thorough, and up-to-date cost information. While overall construction costs may vary relative to general economic conditions, price fluctuations within the industry are dependent upon many factors. Individual price variations may, in fact, be opposite to overall economic trends. Therefore, costs are constantly tracked and complete updates are performed yearly. Also, new items are frequently added in response to changes in materials and methods.

Costs in U.S. Dollars

All costs represent U.S. national averages and are given in U.S. dollars. The City Cost Index (CCI) with RSMeans data can be used to adjust costs to a particular location. The CCI for Canada can be used to adjust U.S. national averages to local costs in Canadian dollars. No exchange rate conversion is necessary because it has already been factored in.

G The processes or products identified by the green symbol in our publications have been determined to be environmentally responsible and/or resource-efficient solely by RSMeans data engineering staff. The inclusion of the green symbol does not represent compliance with any specific industry association or standard.

Material Costs

RSMeans data engineers contact manufacturers, dealers, distributors, and contractors all across the U.S. and Canada to determine national average material costs. If you have access to current material costs for your specific location, you may wish to make adjustments to reflect differences from the national average. Included within material costs are fasteners for a normal installation. RSMeans data engineers use manufacturers' recommendations, written specifications, and/or standard construction practices for the sizing and spacing of fasteners. Adjustments to material costs may be required for your specific application or location. The manufacturer's warranty is assumed. Extended warranties are not included in the material costs. **Material costs do not include sales tax.**

Labor Costs

Labor costs are based upon a mathematical average of trade-specific wages in 30 major U.S. cities. The type of wage (union, open shop, or residential) is identified on the inside back cover of printed publications or selected by the estimator when using the electronic products. Markups for the wages can also be found on the inside back cover of printed publications and/or under the labor references found in the electronic products.

- If wage rates in your area vary from those used, or if rate increases are expected within a given year, labor costs should be adjusted accordingly.

Labor costs reflect productivity based on actual working conditions. In addition to actual installation, these figures include time spent during a normal weekday on tasks, such as material receiving and handling, mobilization at the site, site movement, breaks, and cleanup.

Productivity data is developed over an extended period so as not to be influenced by abnormal variations and reflects a typical average.

Equipment Costs

Equipment costs include not only rental but also operating costs for equipment under normal use. The operating costs include parts and labor for routine servicing, such as the repair and replacement of pumps, filters, and worn lines. Normal operating expendables, such as fuel, lubricants, tires, and electricity (where applicable), are also included. Extraordinary operating expendables with highly variable wear patterns, such as diamond bits and blades, are excluded. These costs are included under materials. Equipment rental rates are obtained from industry sources throughout North America—contractors, suppliers, dealers, manufacturers, and distributors.

Rental rates can also be treated as reimbursement costs for contractor-owned equipment. Owned equipment costs include depreciation, loan payments, interest, taxes, insurance, storage, and major repairs.

Equipment costs do not include operators' wages.

Equipment Cost/Day—The cost of equipment required for each crew is included in the Crew Listings in the Reference Section (small tools that are considered essential everyday tools are not listed out separately). The Crew Listings itemize specialized tools and heavy equipment along with labor trades. The daily cost of itemized equipment included in a crew is based on dividing the weekly bare rental rate by 5 (number of working days per week), then adding the hourly operating cost times 8 (the number of hours per day). This Equipment Cost/Day is shown in the last column of the Equipment Rental Costs in the Reference Section.

Mobilization, Demobilization—The cost to move construction equipment from an equipment yard or rental company to the job site and back again is not included in equipment costs. Mobilization (to the site) and demobilization (from the site) costs can be found in the Unit Price Section. If a piece of equipment is already at the job site, it is not appropriate to utilize mobilization or demobilization costs again in an estimate.

Overhead and Profit

Total Cost including O&P for the installing contractor is shown in the last column of the Unit Price and/or Assemblies. This figure is the sum of the bare material cost plus 10% for profit, the bare labor cost plus total overhead and profit, and the bare equipment cost plus 10% for profit. Details for the calculation of overhead and profit on labor are shown on the inside back cover of the printed product and in the Reference Section of the electronic product.

General Conditions

Cost data in this data set are presented in two ways: Bare Costs and Total Cost including O&P (Overhead and Profit). General Conditions, or General Requirements, of the contract should also be added to the Total Cost including O&P when applicable. Costs for General Conditions are listed in Division 1 of the Unit Price Section and in the Reference Section.

General Conditions for the installing contractor may range from 0% to 10% of the Total Cost including O&P. For the general or prime contractor, costs for General Conditions may range from 5% to 15% of the Total Cost including O&P, with a figure of 10% as the most typical allowance. If applicable, the Assemblies and Models sections use costs that include the installing contractor's overhead and profit (O&P).

Factors Affecting Costs

Costs can vary depending upon a number of variables. Here's a listing of some factors that affect costs and points to consider.

Quality—The prices for materials and the workmanship upon which productivity is based represent sound construction work. They are also in line with industry standard and manufacturer specifications and are frequently used by federal, state, and local governments.

Overtime—We have made no allowance for overtime. If you anticipate premium time or work beyond normal working hours, be sure to make an appropriate adjustment to your labor costs.

Productivity—The productivity, daily output, and labor-hour figures for each line item are based on an eight-hour work day in daylight hours in moderate temperatures and up to a 14' working height unless otherwise indicated. For work that extends beyond normal work hours or is performed under adverse conditions, productivity may decrease.

Size of Project—The size, scope of work, and type of construction project will have a significant impact on cost. Economies of scale can reduce costs for large projects. Unit costs can often run higher for small projects.

Location—Material prices are for metropolitan areas. However, in dense urban areas, traffic and site storage limitations may increase costs. Beyond a 20-mile radius of metropolitan areas, extra trucking or transportation charges may also increase the material costs slightly. On the other hand, lower wage rates may be in effect. Be sure to consider both of these factors when preparing an estimate, particularly if the job site is located in a central city or remote rural location. In addition, highly specialized subcontract items may require travel and per-diem expenses for mechanics.

Other Factors—

- season of year
- contractor management
- weather conditions
- local union restrictions
- building code requirements
- availability of:
  - adequate energy
  - skilled labor
  - building materials
- owner's special requirements/restrictions
- safety requirements
- environmental considerations
- access

Unpredictable Factors—General business conditions influence "in-place" costs of all items. Substitute materials and construction methods may have to be employed. These may affect the installed cost and/or life cycle costs. Such factors may be difficult to evaluate and cannot necessarily be predicted on the basis of the job's location in a particular section of the country. Thus, where these factors apply, you may find significant but unavoidable cost variations for which you will have to apply a measure of judgment to your estimate.

Rounding of Costs

In printed publications only, all unit prices in excess of $5.00 have been rounded to make them easier to use and still maintain adequate precision of the results.

How Subcontracted Items Affect Costs

A considerable portion of all large construction jobs is usually subcontracted. In fact, the percentage done by subcontractors is constantly increasing and may run over 90%. Since the workers employed by these companies do nothing else but install their particular products, they soon become experts in that line. As a result, installation by these firms is accomplished so efficiently that the total in-place cost, even with the general contractor's overhead and profit, is no more, and often less, than if the principal contractor had handled the installation. Companies that deal with construction specialties are anxious to have their products perform well and, consequently, the installation will be the best possible.

Contingencies

The allowance for contingencies generally provides for unforeseen construction difficulties. On alterations or repair jobs, 20% is not too much. If drawings are final and only field contingencies are being considered, 2% or 3% is probably sufficient and often nothing needs to be added. Contractually, changes in plans will be covered by extras. The contractor should consider inflationary price trends and possible material shortages during the course of the job. These escalation factors are dependent upon both economic conditions and the anticipated time between the estimate and actual construction. If drawings are not complete or approved, or a budget cost is wanted, it is wise to add 5% to 10%. Contingencies, then, are a matter of judgment.

Important Estimating Considerations

The productivity, or daily output, of each craftsman or crew assumes a well-managed job where tradesmen with the proper tools and equipment, along with the appropriate construction materials, are present. Included are daily set-up and cleanup time, break time, and plan layout time. Unless otherwise indicated, time for material movement on site (for items

that can be transported by hand) of up to 200' into the building and to the first or second floor is also included. If material has to be transported by other means, over greater distances, or to higher floors, an additional allowance should be considered by the estimator.

While horizontal movement is typically a sole function of distances, vertical transport introduces other variables that can significantly impact productivity. In an occupied building, the use of elevators (assuming access, size, and required protective measures are acceptable) must be understood at the time of the estimate. For new construction, hoist wait and cycle times can easily be 15 minutes and may result in scheduled access extending beyond the normal work day. Finally, all vertical transport will impose strict weight limits likely to preclude the use of any motorized material handling.

The productivity, or daily output, also assumes installation that meets manufacturer/designer/standard specifications. A time allowance for quality control checks, minor adjustments, and any task required to ensure proper function or operation is also included. For items that require connections to services, time is included for positioning, leveling, securing the unit, and making all the necessary connections (and start up where applicable) to ensure a complete installation. Estimating of the services themselves (electrical, plumbing, water, steam, hydraulics, dust collection, etc.) is separate.

In some cases, the estimator must consider the use of a crane and an appropriate crew for the installation of large or heavy items. For those situations where a crane is not included in the assigned crew and as part of the line item cost, then equipment rental costs, mobilization and demobilization costs, and operator and support personnel costs must be considered.

Labor-Hours

The labor-hours expressed in this publication are derived by dividing the total daily labor-hours for the crew by the daily output. Based on average installation time and the assumptions listed above, the labor-hours include: direct labor, indirect labor, and nonproductive time. A typical day for a craftsman might include but is not limited to:

- Direct Work
  - Measuring and layout
  - Preparing materials
  - Actual installation
  - Quality assurance/quality control
- Indirect Work
  - Reading plans or specifications
  - Preparing space
  - Receiving materials
  - Material movement
  - Giving or receiving instruction
  - Miscellaneous
- Non-Work
  - Chatting
  - Personal issues
  - Breaks
  - Interruptions (i.e., sickness, weather, material or equipment shortages, etc.)

If any of the items for a typical day do not apply to the particular work or project situation, the estimator should make any necessary adjustments.

Final Checklist

Estimating can be a straightforward process provided you remember the basics. Here's a checklist of some of the steps you should remember to complete before finalizing your estimate.

Did you remember to:

- factor in the City Cost Index for your locale?
- take into consideration which items have been marked up and by how much?
- mark up the entire estimate sufficiently for your purposes?
- read the background information on techniques and technical matters that could impact your project time span and cost?
- include all components of your project in the final estimate?
- double check your figures for accuracy?
- call RSMeans data engineers if you have any questions about your estimate or the data you've used? Remember, Gordian stands behind all of our products, including our extensive RSMeans data solutions. If you have any questions about your estimate, about the costs you've used from our data, or even about the technical aspects of the job that may affect your estimate, feel free to call the Gordian RSMeans editors at 1.800.448.8182.

Save Time. Go Online.

For access to the latest cost data, an intuitive search, and pre-calculated location costs, take advantage of the time savings available from our online application.

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RSMeans data: Unit Prices—How They Work

All RSMeans data: Unit Prices are organized in the same way.

03 30 Cast-In-Place Concrete

03 30 53 – Miscellaneous Cast-In-Place Concrete

03 30 53.40 Concrete In Place			Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	CONCRETE IN PLACE	R033105-10									
0020	Including forms (4 uses), Grade 60 rebar, concrete (Portland cement	R033105-20									
0050	Type I), placement and finishing unless otherwise indicated	R033105-50									
0300	Beams (3500 psi), 5 kip/L.F., 10′ span	R033105-65	C-14A	15.62	12.804	C.Y.	485	720	50	1,255	1,675
0350	25′ span	R033105-70	"	18.55	10.782		510	605	42	1,157	1,500
0500	Chimney foundations (5000 psi), over 5 C.Y.	R033105-85	C-14C	32.22	3.476		193	187	.87	380.87	490
0510	(3500 psi), under 5 C.Y.	R033053-50	"	23.71	4.724		230	254	1.18	485.18	635
0700	Columns, square (4000 psi), 12″ x 12″, up to 1% reinforcing by area		C-14A	11.96	16.722		535	940	65.50	1,540.50	2,050
3540	Equipment pad (3000 psi), 3′ x 3′ x 6″ thick		C-14H	45	1.067	Ea.	66.50	58.50	.62	125.62	161
3550	4′ x 4′ x 6″ thick			30	1.600		101	88	.93	189.93	243
3560	5′ x 5′ x 8″ thick			18	2.667		180	147	1.55	328.55	420
3570	6′ x 6′ x 8″ thick			14	3.429		245	189	1.99	435.99	550
3580	8′ x 8′ x 10″ thick			8	6		510	330	3.48	843.48	1,050
3590	10′ x 10′ x 12″ thick			5	9.600		895	530	5.55	1,430.55	1,775

It is important to understand the structure of RSMeans data: Unit Prices so that you can find information easily and use it correctly.

1 Line Numbers

Line Numbers consist of 12 characters, which identify a unique location in the database for each task. The first 6 or 8 digits conform to the Construction Specifications Institute MasterFormat® 2018. The remainder of the digits are a further breakdown in order to arrange items in understandable groups of similar tasks. Line numbers are consistent across all of our publications, so a line number in any of our products will always refer to the same item of work.

2 Descriptions

Descriptions are shown in a hierarchical structure to make them readable. In order to read a complete description, read up through the indents to the top of the section. Include everything that is above and to the left that is not contradicted by information below. For instance, the complete description for line 03 30 53.40 3550 is "Concrete in place, including forms (4 uses), Grade 60 rebar, concrete (Portland cement Type 1), placement and finishing unless otherwise indicated; Equipment pad (3,000 psi), 4' × 4' × 6" thick."

3 RSMeans data

When using **RSMeans data**, it is important to read through an entire section to ensure that you use the data that most closely matches your work. Note that sometimes there is additional information shown in the section that may improve your price. There are frequently lines that further describe, add to, or adjust data for specific situations.

4 Reference Information

Gordian's RSMeans engineers have created **reference** information to assist you in your estimate. **If** there is information that applies to a section, it will be indicated at the start of the section. The Reference Section is located in the back of the data set.

5 Crews

Crews include labor and/or equipment necessary to accomplish each task. In this case, Crew C-14H is used. Gordian's RSMeans staff selects a crew to represent the workers and equipment that are

typically used for that task. In this case, Crew C-14H consists of one carpenter foreman (outside), two carpenters, one rodman, one laborer, one cement finisher, and one gas engine vibrator. Details of all crews can be found in the Reference Section.

Crews - Standard

Crew No.	Bare Costs		Incl. Subs O & P		Cost Per Labor-Hour	
Crew C-14H	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Carpenter Foreman (outside)	$58.30	$466.40	$86.80	$694.40	$55.06	$81.78
2 Carpenters	56.30	900.80	83.80	1340.80		
1 Rodman (reinf.)	60.70	485.60	90.65	725.20		
1 Laborer	45.60	364.80	67.90	543.20		
1 Cement Finisher	53.15	425.20	77.75	622.00		
1 Gas Engine Vibrator		27.87		30.65	.58	.64
48 L.H., Daily Totals		$2670.67		$3956.25	$55.64	$82 42

6 Daily Output

The **Daily Output** is the amount of work that the crew can do in a normal 8-hour workday, including mobilization, layout, movement of materials, and cleanup. In this case, crew C-14H can install thirty 4' × 4' × 6" thick concrete pads in a day. Daily output is variable and based on many factors, including the size of the job, location, and environmental conditions. RSMeans data represents work done in daylight (or adequate lighting) and temperate conditions.

7 Labor-Hours

The figure in the **Labor-Hours** column is the amount of labor required to perform one unit of work–in this case the amount of labor required to construct one 4' × 4' equipment pad. This figure is calculated by dividing the number of hours of labor in the crew by the daily output (48 labor-hours divided by 30 pads = 1.6 hours of labor per pad). Multiply 1.6 times 60 to see the value in minutes: 60 × 1.6 = 96 minutes. Note: the labor-hour figure is not dependent on the crew size. A change in crew size will result in a corresponding change in daily output, but the labor-hours per unit of work will not change.

8 Unit of Measure

All RSMeans data: Unit Prices include the typical **Unit of Measure** used for estimating that item. For concrete-in-place the typical unit is cubic yards (C.Y.) or each (Ea.). For installing broadloom carpet it is square yard and for gypsum board it is square foot. The estimator needs to take special care that the unit in the data matches the unit in the take-off. Unit conversions may be found in the Reference Section.

9 Bare Costs

Bare Costs are the costs of materials, labor, and equipment that the installing contractor pays. They represent the cost, in U.S. dollars, for one unit of work. They do not include any markups for profit or labor burden.

10 Bare Total

The **Total column** represents the total bare cost for the installing contractor in U.S. dollars. In this case, the sum of $101 for material + $88 for labor + $.93 for equipment is $189.93.

11 Total Incl O&P

The **Total Incl O&P column** is the total cost, including overhead and profit, that the installing contractor will charge the customer. This represents the cost of materials plus 10% profit, the cost of labor plus labor burden and 10% profit, and the cost of equipment plus 10% profit. It does not include the general contractor's overhead and profit. Note: See the inside back cover of the printed product or the Reference Section of the electronic product for details on how the labor burden is calculated.

National Average

The RSMeans data in our print publications represent a "national average" cost. This data should be modified to the project location using the ***City Cost Indexes*** *or* ***Location Factors*** *tables found in the Reference Section. Use the Location Factors to adjust estimate totals if the project covers multiple trades. Use the City Cost Indexes (CCI) for single trade projects or projects where a more detailed analysis is required. All figures in the two tables are derived from the same research. The last row of data in the CCI—the weighted average—is the same as the numbers reported for each location in the location factor table.*

RSMeans data: Unit Prices— How They Work (Continued)

Project Name: Pre-Engineered Steel Building		Architect: As Shown						
Location:	Anywhere, USA						01/01/22	STD
1 Line Number	Description	Qty	Unit	Material	Labor	Equipment	SubContract	Estimate Total
03 30 53.40 3940	Strip footing, 12" x 24", reinforced	15	C.Y.	$3,255.00	$1,890.00	$8.70	$0.00	
03 30 53.40 3950	Strip footing, 12" x 36", reinforced	34	C.Y.	$7,072.00	$3,400.00	$15.98	$0.00	
03 11 13.65 3000	Concrete slab edge forms	500	L.F.	$230.00	$1,430.00	$0.00	$0.00	
03 22 11.10 0200	Welded wire fabric reinforcing	150	C.S.F.	$4,800.00	$4,725.00	$0.00	$0.00	
03 31 13.35 0300	Ready mix concrete, 4000 psi for slab on grade	278	C.Y.	$45,592.00	$0.00	$0.00	$0.00	
03 31 13.70 4300	Place, strike off & consolidate concrete slab	278	C.Y.	$0.00	$5,699.00	$141.78	$0.00	
03 35 13.30 0250	Machine float & trowel concrete slab	15,000	S.F.	$0.00	$10,650.00	$750.00	$0.00	
03 15 16.20 0140	Cut control joints in concrete slab	950	L.F.	$38.00	$446.50	$85.50	$0.00	
03 39 23.13 0300	Sprayed concrete curing membrane	150	C.S.F.	$2,032.50	$1,155.00	$0.00	$0.00	
Division 03	**Subtotal**			**$63,019.50**	**$29,395.50**	**$1,001.96**	**$0.00**	**$93,416.96**
08 36 13.10 2650	Manual 10' x 10' steel sectional overhead door	8	Ea.	$12,400.00	$4,000.00	$0.00	$0.00	
08 36 13.10 2860	Insulation and steel back panel for OH door	800	S.F.	$4,720.00	$0.00	$0.00	$0.00	
Division 08	**Subtotal**			**$17,120.00**	**$4,000.00**	**$0.00**	**$0.00**	**$21,120.00**
13 34 19.50 1100	Pre-Engineered Steel Building, 100' x 150' x 24'	15,000	SF Flr.	$0.00	$0.00	$0.00	$405,000.00	
13 34 19.50 6050	Framing for PESB door opening, 3' x 7'	4	Opng.	$0.00	$0.00	$0.00	$2,520.00	
13 34 19.50 6100	Framing for PESB door opening, 10' x 10'	8	Opng.	$0.00	$0.00	$0.00	$10,600.00	
13 34 19.50 6200	Framing for PESB window opening, 4' x 3'	6	Opng.	$0.00	$0.00	$0.00	$3,780.00	
13 34 19.50 5750	PESB door, 3' x 7', single leaf	4	Opng.	$2,940.00	$792.00	$0.00	$0.00	
13 34 19.50 7750	PESB sliding window, 4' x 3' with screen	6	Opng.	$2,910.00	$678.00	$68.10	$0.00	
13 34 19.50 6550	PESB gutter, eave type, 26 ga., painted	300	L.F.	$2,580.00	$927.00	$0.00	$0.00	
13 34 19.50 8650	PESB roof vent, 12" wide x 10' long	15	Ea.	$750.00	$3,705.00	$0.00	$0.00	
13 34 19.50 6900	PESB insulation, vinyl faced, 4" thick	27,400	S.F.	$14,522.00	$10,686.00	$0.00	$0.00	
Division 13	**Subtotal**			**$23,702.00**	**$16,788.00**	**$68.10**	**$421,900.00**	**$462,458.10**
		Subtotal		**$103,841.50**	**$50,183.50**	**$1,070.06**	**$421,900.00**	**$576,995.06**
Division 01	2 **General Requirements @ 7%**			**7,268.91**	**3,512.85**	**74.90**	**29,533.00**	
		Estimate Subtotal		**$111,110.41**	**$53,696.35**	**$1,144.96**	**$451,433.00**	**$576,995.06**
	3	**Sales Tax @ 5%**		**5,555.52**		**57.25**	**11,285.83**	
		Subtotal A		**116,665.93**	**53,696.35**	**1,202.21**	**462,718.83**	
	4	**GC O & P**		**11,666.59**	**26,955.57**	**120.22**	**46,271.88**	
		Subtotal B		**128,332.52**	**80,651.91**	**1,322.43**	**508,990.71**	**$719,297.57**
	5	**Contingency @ 5%**						**35,964.88**
		Subtotal C						**$755,262.45**
	6	**Bond @ $12/1000 +10% O&P**						**9,969.46**
		Subtotal D						**$765,231.91**
	7	**Location Adjustment Factor**			**113.10**			**100,245.38**
		Grand Total						**$865,477.29**

This estimate is based on an interactive spreadsheet. You are free to download it and adjust it to your methodology. A copy of this spreadsheet is available at **RSMeans.com/2022books.**

Sample Estimate

This sample demonstrates the elements of an estimate, including a tally of the RSMeans data lines and a summary of the markups on a contractor's work to arrive at a total cost to the owner. The Location Factor with RSMeans data is added at the bottom of the estimate to adjust the cost of the work to a specific location.

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1 Work Performed

The body of the estimate shows the RSMeans data selected, including the line number, a brief description of each item, its take-off unit and quantity, and the bare costs of materials, labor, and equipment. This estimate also includes a column titled "SubContract." This data is taken from the column "Total Incl O&P" and represents the total that a subcontractor would charge a general contractor for the work, including the sub's markup for overhead and profit.

2 Division 1, General Requirements

This is the first division numerically but the last division estimated. Division 1 includes project-wide needs provided by the general contractor. These requirements vary by project but may include temporary facilities and utilities, security, testing, project cleanup, etc. For small projects a percentage can be used—typically between 5% and 15% of project cost. For large projects the costs may be itemized and priced individually.

3 Sales Tax

If the work is subject to state or local sales taxes, the amount must be added to the estimate. Sales tax may be added to material costs, equipment costs, and subcontracted work. In this case, sales tax was added in all three categories. It was assumed that approximately half the subcontracted work would be material cost, so the tax was applied to 50% of the subcontract total.

4 GC O&P

This entry represents the general contractor's markup on material, labor, equipment, and subcontractor costs. Our standard markup on materials, equipment, and subcontracted work is 10%. In this estimate, the markup on the labor performed by the GC's workers uses "Skilled Workers Average" shown in Column F on the table "Installing Contractor's Overhead & Profit," which can be found on the inside back cover of the printed product or in the Reference Section of the electronic product.

5 Contingency

A factor for contingency may be added to any estimate to represent the cost of unknowns that may occur between the time that the estimate is performed and the time the project is constructed. The amount of the allowance will depend on the stage of design at which the estimate is done and the contractor's assessment of the risk involved. Refer to section 01 21 16.50 for contingency allowances.

6 Bonds

Bond costs should be added to the estimate. The figures here represent a typical performance bond, ensuring the owner that if the general contractor does not complete the obligations in the construction contract the bonding company will pay the cost for completion of the work.

7 Location Adjustment

Published prices are based on national average costs. If necessary, adjust the total cost of the project using a location factor from the "Location Factor" table or the "City Cost Index" table. Use location factors if the work is general, covering multiple trades. If the work is by a single trade (e.g., masonry) use the more specific data found in the "City Cost Indexes."

Estimating Tips

01 20 00 Price and Payment Procedures

- Allowances that should be added to estimates to cover contingencies and job conditions that are not included in the national average material and labor costs are shown in Section 01 21.
- When estimating historic preservation projects (depending on the condition of the existing structure and the owner's requirements), a 15–20% contingency or allowance is recommended, regardless of the stage of the drawings.

01 30 00 Administrative Requirements

- Before determining a final cost estimate, it is good practice to review all the items listed in Subdivisions 01 31 and 01 32 to make final adjustments for items that may need customizing to specific job conditions.
- Requirements for initial and periodic submittals can represent a significant cost to the General Requirements of a job. Thoroughly check the submittal specifications when estimating a project to determine any costs that should be included.

01 40 00 Quality Requirements

- All projects will require some degree of quality control. This cost is not included in the unit cost of construction listed in each division. Depending upon the terms of the contract, the various costs of inspection and testing can be the responsibility of either the owner or the contractor. Be sure to include the required costs in your estimate.

01 50 00 Temporary Facilities and Controls

- Barricades, access roads, safety nets, scaffolding, security, and many more requirements for the execution of a safe project are elements of direct cost. These costs can easily be overlooked when preparing an estimate. When looking through the major classifications of this subdivision, determine which items apply to each division in your estimate.
- Construction equipment rental costs can be found in the Reference Section in Section 01 54 33. Operators' wages are not included in equipment rental costs.
- Equipment mobilization and demobilization costs are not included in equipment rental costs and must be considered separately.
- The cost of small tools provided by the installing contractor for his workers is covered in the "Overhead" column on the "Installing Contractor's Overhead and Profit" table that lists labor trades, base rates, and markups. Therefore, it is included in the "Total Incl. O&P" cost of any unit price line item.

01 70 00 Execution and Closeout Requirements

- When preparing an estimate, thoroughly read the specifications to determine the requirements for Contract Closeout. Final cleaning, record documentation, operation and maintenance data, warranties and bonds, and spare parts and maintenance materials can all be elements of cost for the completion of a contract. Do not overlook these in your estimate.

Reference Numbers

Reference numbers are shown at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear. ■

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01 11 31 – Professional Consultants

	01 11 31.10 Architectural Fees		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**ARCHITECTURAL FEES**	R011110-10									
0020	For new construction										
0060	Minimum					Project				4.90%	4.90%
0090	Maximum									16%	16%
0100	For alteration work, to $500,000, minimum									7.35%	7.35%
0125	Maximum									24%	24%
0150	For alteration work, over $500,000, minumum									6.13%	6.13%
0175	Maximum									20%	20%
2000	For "Greening" of building	G								3%	3%
	01 11 31.20 Construction Management Fees										
0010	**CONSTRUCTION MANAGEMENT FEES**										
0020	$1,000,000 job, minimum					Project				4.50%	4.50%
0050	Maximum									7.50%	7.50%
0060	For work to $100,000									10%	10%
0070	To $250,000									9%	9%
0090	To $1,000,000									6%	6%
0100	To $5,000,000									5%	5%
0110	To $10,000,000									4%	4%
0300	$50,000,000 job, minimum									2.50%	2.50%
0350	Maximum									4%	4%
	01 11 31.30 Engineering Fees										
0010	**ENGINEERING FEES**	R011110-30									
0020	Educational planning consultant, minimum					Project				.50%	.50%
0100	Maximum					"				2.50%	2.50%
0200	Electrical, minimum					Contrct				4.10%	4.10%
0300	Maximum									10.10%	10.10%
0400	Elevator & conveying systems, minimum									2.50%	2.50%
0500	Maximum									5%	5%
0600	Food service & kitchen equipment, minimum									8%	8%
0700	Maximum									12%	12%
0800	Landscaping & site development, minimum									2.50%	2.50%
0900	Maximum									6%	6%
1000	Mechanical (plumbing & HVAC), minimum									4.10%	4.10%
1100	Maximum									10.10%	10.10%
1200	Structural, minimum					Project				1%	1%
1300	Maximum					"				2.50%	2.50%
	01 11 31.50 Models										
0010	**MODELS**										
0500	2 story building, scaled 100′ x 200′, simple materials and details					Ea.	5,000			5,000	5,500
0510	Elaborate materials and details					"	32,900			32,900	36,200
	01 11 31.75 Renderings										
0010	**RENDERINGS** Color, matted, 20″ x 30″, eye level,										
0020	1 building, minimum					Ea.	2,400			2,400	2,650
0050	Average						3,475			3,475	3,825
0100	Maximum						5,675			5,675	6,250
1000	5 buildings, minimum						4,200			4,200	4,600
1100	Maximum						8,375			8,375	9,225
2000	Aerial perspective, color, 1 building, minimum						3,150			3,150	3,475
2100	Maximum						8,675			8,675	9,550
3000	5 buildings, minimum						6,750			6,750	7,425
3100	Maximum						12,600			12,600	13,800

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01 21 16 – Contingency Allowances

	01 21 16.50 Contingencies	Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	**CONTINGENCIES**, Add to estimate									
0020	Conceptual stage				Project				20%	20%
0050	Schematic stage								15%	15%
0100	Preliminary working drawing stage (Design Dev.)								10%	10%
0150	Final working drawing stage								3%	3%

01 21 53 – Factors Allowance

01 21 53.60 Security Factors

0010	**SECURITY FACTORS** R012153-60									
0100	Additional costs due to security requirements									
0110	Daily search of personnel, supplies, equipment and vehicles									
0120	Physical search, inventory and doc of assets, at entry				Costs		30%			
0130	At entry and exit						50%			
0140	Physical search, at entry						6.25%			
0150	At entry and exit						12.50%			
0160	Electronic scan search, at entry						2%			
0170	At entry and exit						4%			
0180	Visual inspection only, at entry						.25%			
0190	At entry and exit						.50%			
0200	ID card or display sticker only, at entry						.12%			
0210	At entry and exit						.25%			
0220	Day 1 as described below, then visual only for up to 5 day job duration									
0230	Physical search, inventory and doc of assets, at entry				Costs		5%			
0240	At entry and exit				"		10%			
0250	Physical search, at entry				Costs		1.25%			
0260	At entry and exit						2.50%			
0270	Electronic scan search, at entry						.42%			
0280	At entry and exit						.83%			
0290	Day 1 as described below, then visual only for 6-10 day job duration									
0300	Physical search, inventory and doc of assets, at entry				Costs		2.50%			
0310	At entry and exit						5%			
0320	Physical search, at entry						.63%			
0330	At entry and exit						1.25%			
0340	Electronic scan search, at entry						.21%			
0350	At entry and exit						.42%			
0360	Day 1 as described below, then visual only for 11-20 day job duration									
0370	Physical search, inventory and doc of assets, at entry				Costs		1.25%			
0380	At entry and exit						2.50%			
0390	Physical search, at entry						.31%			
0400	At entry and exit						.63%			
0410	Electronic scan search, at entry						.10%			
0420	At entry and exit						.21%			
0430	Beyond 20 days, costs are negligible									
0440	Escort required to be with tradesperson during work effort				Costs		6.25%			

01 21 53.65 Infectious Disease Precautions

0010	**INFECTIOUS DISEASE PRECAUTIONS** R012153-65									
0100	Additional costs due to infectious disease precautions									
0120	Daily temperature checks				Costs		1%			
0130	Donning & doffing masks and gloves						1%			
0140	Washing hands						1%			
0150	Informational meetings						2%			
0160	Maintaining social distance						1%			
0170	Disinfecting tools or equipment						3%			

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01 21 Allowances

01 21 53 – Factors Allowance

	01 21 53.65 Infectious Disease Precautions	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0200	N95 rated masks				Ea.	1.71			1.71	1.88
0210	Surgical masks				"	.30			.30	.33
0220	Black nitrile disposable gloves				Pr.	.36			.36	.39
0250	Hand washing station & 2 x weekly service				Week				158	174

01 21 55 – Job Conditions Allowance

01 21 55.50 Job Conditions

0010	**JOB CONDITIONS** Modifications to applicable	R012157-20								
0020	cost summaries									
0100	Economic conditions, favorable, deduct				Project				2%	2%
0200	Unfavorable, add				Project				5%	5%
0300	Hoisting conditions, favorable, deduct								2%	2%
0400	Unfavorable, add								5%	5%
0500	General contractor management, experienced, deduct								2%	2%
0600	Inexperienced, add								10%	10%
0700	Labor availability, surplus, deduct								1%	1%
0800	Shortage, add								10%	10%
0900	Material storage area, available, deduct								1%	1%
1000	Not available, add								2%	2%
1100	Subcontractor availability, surplus, deduct								5%	5%
1200	Shortage, add								12%	12%
1300	Work space, available, deduct								2%	2%
1400	Not available, add								5%	5%

01 21 57 – Overtime Allowance

01 21 57.50 Overtime

0010	**OVERTIME** for early completion of projects or where	R012909-90								
0020	labor shortages exist, add to usual labor, up to				Costs		100%			

01 21 63 – Taxes

01 21 63.10 Taxes

0010	**TAXES**	R012909-80								
0020	Sales tax, State, average				%	5.08%				
0050	Maximum	R012909-85				7.50%				
0200	Social Security, on first $118,500 of wages						7.65%			
0300	Unemployment, combined Federal and State, minimum	R012909-86					.60%			
0350	Average						9.60%			
0400	Maximum						12%			

01 31 Project Management and Coordination

01 31 13 – Project Coordination

01 31 13.20 Field Personnel

0010	**FIELD PERSONNEL**									
0020	Clerk, average				Week		495		495	750
0100	Field engineer, junior engineer						1,241		1,241	1,877
0120	Engineer						1,825		1,825	2,775
0140	Senior engineer						2,400		2,400	3,625
0160	General purpose laborer, average	1 Clab	.20	40			1,825		1,825	2,725
0180	Project manager, minimum						2,175		2,175	3,300
0200	Average						2,500		2,500	3,800
0220	Maximum						2,850		2,850	4,325
0240	Superintendent, minimum						2,125		2,125	3,225

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		Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&P
01 31 13.20 Field Personnel										
0260	Average				Week		2,325		2,325	3,525
0280	Maximum				Week		2,650		2,650	4,025
0290	Timekeeper, average				"		1,350		1,350	2,050
01 31 13.30 Insurance										
0010	**INSURANCE** R013113-40									
0020	Builders risk, standard, minimum				Job				.24%	.24%
0050	Maximum R013113-50								.80%	.80%
0200	All-risk type, minimum								.25%	.25%
0250	Maximum R013113-60								.62%	.62%
0400	Contractor's equipment floater, minimum				Value				.50%	.50%
0450	Maximum				"				1.50%	1.50%
0600	Public liability, average				Job				2.02%	2.02%
0800	Workers' compensation & employer's liability, average									
0850	by trade, carpentry, general				Payroll		11.97%			
0900	Clerical						.38%			
0950	Concrete						10.84%			
1000	Electrical						4.91%			
1050	Excavation						7.81%			
1100	Glazing						11.29%			
1150	Insulation						10.07%			
1200	Lathing						7.58%			
1250	Masonry						13.40%			
1300	Painting & decorating						10.44%			
1350	Pile driving						12.06%			
1400	Plastering						10.24%			
1450	Plumbing						5.77%			
1500	Roofing						27.34%			
1550	Sheet metal work (HVAC)						7.56%			
1600	Steel erection, structural						17.21%			
1650	Tile work, interior ceramic						8.10%			
1700	Waterproofing, brush or hand caulking						6.05%			
1800	Wrecking						15.48%			
2000	Range of 35 trades in 50 states, excl. wrecking & clerical, min.						1.37%			
2100	Average						10.60%			
2200	Maximum						120.29%			
01 31 13.40 Main Office Expense										
0010	**MAIN OFFICE EXPENSE** Average for General Contractors R013113-50									
0020	As a percentage of their annual volume									
0125	Annual volume under $1,000,000				% Vol.				17.50%	
0145	Up to $2,500,000				"				8%	
0150	Up to $4,000,000				% Vol.				6.80%	
0200	Up to $7,000,000								5.60%	
0250	Up to $10,000,000								5.10%	
0300	Over $10,000,000								3.90%	
01 31 13.50 General Contractor's Mark-Up										
0010	**GENERAL CONTRACTOR'S MARK-UP** on Change Orders									
0200	Extra work, by subcontractors, add				%				10%	10%
0250	By General Contractor, add								15%	15%
0400	Omitted work, by subcontractors, deduct all but								5%	5%
0450	By General Contractor, deduct all but								7.50%	7.50%
0600	Overtime work, by subcontractors, add								15%	15%
0650	By General Contractor, add								10%	10%

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01 31 Project Management and Coordination

01 31 13 – Project Coordination

	01 31 13.80 Overhead and Profit		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**OVERHEAD & PROFIT** Allowance to add to items in this										
0020	book that do not include Subs O&P, average					%				25%	
0100	Allowance to add to items in this book that	R013113-55									
0110	do include Subs O&P, minimum					%				5%	5%
0150	Average									10%	10%
0200	Maximum									15%	15%
0300	Typical, by size of project, under $100,000									30%	
0350	$500,000 project									25%	
0400	$2,000,000 project									20%	
0450	Over $10,000,000 project									15%	

01 31 13.90 Performance Bond

0010	**PERFORMANCE BOND**	R013113-80									
0020	For buildings, minimum					Job				.60%	.60%
0100	Maximum					"				2.50%	2.50%

01 31 14 – Facilities Services Coordination

01 31 14.20 Lock Out/Tag Out

0010	**LOCK OUT/TAG OUT**									
0020	Miniature circuit breaker lock out device	1 Elec	220	.036	Ea.	27.50	2.41		29.91	33.50
0030	Miniature pin circuit breaker lock out device		220	.036		23	2.41		25.41	28.50
0040	Single circuit breaker lock out device		220	.036		24	2.41		26.41	29.50
0050	Multi-pole circuit breaker lock out device (15 to 225 Amp)		210	.038		22	2.52		24.52	28
0060	Large 3 pole circuit breaker lock out device (over 225 Amp)		210	.038		24.50	2.52		27.02	30.50
0080	Square D I-Line circuit breaker lock out device		210	.038		37	2.52		39.52	45
0090	Lock out disconnect switch, 30 to 100 Amp		330	.024		13.15	1.60		14.75	16.85
0100	100 to 400 Amp		330	.024		13.15	1.60		14.75	16.85
0110	Over 400 Amp		330	.024		13.15	1.60		14.75	16.85
0120	Lock out hasp for multiple lockout tags	1 Elec	200	.040	Ea.	6.15	2.65		8.80	10.75
0130	Electrical cord plug lock out device		220	.036		11.55	2.41		13.96	16.30
0140	Electrical plug prong lock out device (3-wire grounding plug)		220	.036		7.65	2.41		10.06	12
0150	Wall switch lock out		200	.040		29	2.65		31.65	35.50
0160	Fire alarm pull station lock out	1 Stpi	200	.040		21.50	2.81		24.31	28
0170	Sprinkler valve tamper and flow switch lock out device	1 Skwk	220	.036		19.30	2.14		21.44	24
0180	Lock out sign		330	.024		20.50	1.43		21.93	25
0190	Lock out tag		440	.018		5.50	1.07		6.57	7.65

01 32 Construction Progress Documentation

01 32 13 – Scheduling of Work

01 32 13.50 Scheduling of Work

0010	**SCHEDULING**									
0025	Scheduling, critical path, $50 million project, initial schedule					Ea.			25,750	28,325
0030	Monthly updates					"			3,348	3,682

01 32 33 – Photographic Documentation

01 32 33.50 Photographs

0010	**PHOTOGRAPHS**									
0020	8" x 10", 4 shots, 2 prints ea., std. mounting					Set	550		550	605
0100	Hinged linen mounts						560		560	615
0200	8" x 10", 4 shots, 2 prints each, in color						580		580	640
0300	For I.D. slugs, add to all above						5.15		5.15	5.70
0500	Aerial photos, initial fly-over, 5 shots, digital images						355		355	390

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01 32 Construction Progress Documentation

01 32 33 – Photographic Documentation

01 32 33.50 Photographs	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0550 10 shots, digital images, 1 print				Set	600			600	660
0600 For each additional print from fly-over					315			315	345
0700 For full color prints, add					40%				
0750 Add for traffic control area				Ea.	365			365	400
0900 For over 30 miles from airport, add per				Mile	7.30			7.30	8.05
1500 Time lapse equipment, camera and projector, buy				Ea.	2,625			2,625	2,900
1550 Rent per month				"	1,350			1,350	1,475
1700 Cameraman and processing, black & white				Day	1,300			1,300	1,450
1720 Color				"	1,550			1,550	1,700

01 41 Regulatory Requirements

01 41 26 – Permit Requirements

01 41 26.50 Permits

0010 **PERMITS**									
0020 Rule of thumb, most cities, minimum				Job				.50%	.50%
0100 Maximum				"				2%	2%

01 45 Quality Control

01 45 23 – Testing and Inspecting Services

01 45 23.50 Testing

0010 **TESTING** and Inspecting Services									
0012 Testing, for concrete or steel building, minimum				Week				4,585	5,045
0025 Maximum				"				6,005	6,605
0200 Asphalt testing, compressive strength Marshall stability, set of 3				Ea.				545	600
0250 Extraction, individual tests on sample								236	260
0300 Penetration								91	100
0350 Mix design, 5 specimens								182	200
0360 Additional specimen								36	40
0400 Specific gravity								53	58
0420 Swell test								64	70
0450 Water effect and cohesion, set of 6								182	200
0470 Water effect and plastic flow								64	70
0600 Concrete testing, aggregates, abrasion, ASTM C 131								205	225
0650 Absorption, ASTM C 127								77	85
0800 Petrographic analysis, ASTM C 295								910	1,000
0900 Specific gravity, ASTM C 127								77	85
1000 Sieve analysis, washed, ASTM C 136								130	140
1050 Unwashed								130	140
1200 Sulfate soundness								182	200
1300 Weight per cubic foot								80	88
1500 Cement, physical tests, ASTM C 150								320	350
1600 Chemical tests, ASTM C 150								245	270
1800 Compressive test, cylinder, delivered to lab, ASTM C 39								36	40
1900 Picked up by lab, 30 minute round trip, add to above	1 Skwk	16	.500			29.50		29.50	44
1950 1 hour round trip, add to above		8	1			59		59	88.50
2000 2 hour round trip, add to above		4	2			118		118	177
2200 Compressive strength, cores (not incl. drilling), ASTM C 42								95	105
2250 Core drilling, 4" diameter (plus technician), up to 6" thick	B-89A	14	1.143		.89	59.50	8.50	68.89	100
2260 Technician for core drilling				Hr.				50	55

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01 45 23 – Testing and Inspecting Services

01 45 23.50 Testing	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2300 Patching core holes, to 12" diameter	1 Cefi	22	.364	Ea.	36	19.35		55.35	68.50
2400 Drying shrinkage at 28 days								236	260
2500 Flexural test beams, ASTM C 78								136	150
2600 Mix design, one batch mix								259	285
2650 Added trial batches								120	132
2800 Modulus of elasticity, ASTM C 469				Ea.				195	215
2900 Tensile test, cylinders, ASTM C 496								52	58
3000 Water-Cement ratio curve, 3 batches								141	155
3100 4 batches								186	205
3300 Masonry testing, absorption, per 5 brick, ASTM C 67								72	80
3350 Chemical resistance, per 2 brick								50	55
3400 Compressive strength, per 5 brick, ASTM C 67								95	105
3420 Efflorescence, per 5 brick, ASTM C 67								101	112
3440 Imperviousness, per 5 brick								87	96
3470 Modulus of rupture, per 5 brick								86	95
3500 Moisture, block only								68	75
3550 Mortar, compressive strength, set of 3								32	35
4100 Reinforcing steel, bend test								68	75
4200 Tensile test, up to #8 bar								68	75
4220 #9 to #11 bar								114	125
4240 #14 bar and larger								182	200
4400 Soil testing, Atterberg limits, liquid and plastic limits								91	100
4510 Hydrometer analysis								155	170
4600 Sieve analysis, washed, ASTM D 422								136	150
4710 Consolidation test (ASTM D 2435), minimum								455	500
4750 Moisture content, ASTM D 2216								18	20
4780 Permeability test, double ring infiltrometer								500	550
4800 Permeability, var. or constant head, undist., ASTM D 2434								264	290
4850 Recompacted								250	275
4900 Proctor compaction, 4" standard mold, ASTM D 698								230	253
4950 6" modified mold								110	120
5100 Shear tests, triaxial, minimum								410	450
5150 Maximum								545	600
5300 Direct shear, minimum, ASTM D 3080								320	350
5350 Maximum								410	450
5550 Technician for inspection, per day, earthwork								556	612
5650 Bolting								556	612
5750 Roofing								556	612
5790 Welding								556	612
5820 Non-destructive metal testing, dye penetrant				Day				556	612
5840 Magnetic particle				Day				556	612
5860 Radiography								556	612
5880 Ultrasonic								556	612
6000 Welding certification, minimum				Ea.				91	100
6100 Maximum				"				364	400
7000 Underground storage tank									
7520 Volumetric tightness, °= 12,000 gal.				Ea.	475			475	525
7530 12,000 – 29,999 gal.					595			595	655
7540 = 30,000 gal.					675			675	740
7600 Vadose zone (soil gas) sampling, 10-40 samples, min.				Day				1,375	1,500
7610 Maximum				"				2,275	2,500
7700 Ground water monitoring incl. drilling 3 wells, min.				Total				4,550	5,000
7710 Maximum				"				6,375	7,000

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01 45 Quality Control

01 45 23 – Testing and Inspecting Services

01 45 23.50 Testing	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
8000 X-ray concrete slabs				Ea.				182	200
9000 Thermographic testing, for bldg envelope heat loss, average 2,000 S.F. G				"				500	500

01 51 Temporary Utilities

01 51 13 – Temporary Electricity

01 51 13.80 Temporary Utilities

0010 **TEMPORARY UTILITIES** R015113-65									
0350 Lighting, lamps, wiring, outlets, 40,000 S.F. building, 8 strings	1 Elec	34	.235	CSF Flr	3.21	15.60		18.81	26.50
0360 16 strings	"	17	.471		6.40	31		37.40	53.50
0400 Power for temp lighting only, 6.6 KWH, per month								.92	1.01
0430 11.8 KWH, per month								1.65	1.82
0450 23.6 KWH, per month								3.30	3.63
0600 Power for job duration incl. elevator, etc., minimum								53	58
0650 Maximum								110	121
0675 Temporary cooling				Ea.	1,075			1,075	1,175

01 52 Construction Facilities

01 52 13 – Field Offices and Sheds

01 52 13.20 Office and Storage Space

0010 **OFFICE AND STORAGE SPACE**									
0020 Office trailer, furnished, no hookups, 20′ x 8′, buy	2 Skwk	1	16	Ea.	10,200	940		11,140	12,600
0250 Rent per month					194			194	214
0300 32′ x 8′, buy	2 Skwk	.70	22.857		15,200	1,350		16,550	18,800
0350 Rent per month					247			247	271
0400 50′ x 10′, buy	2 Skwk	.60	26.667		30,900	1,575		32,475	36,400
0450 Rent per month					360			360	395
0500 50′ x 12′, buy	2 Skwk	.50	32		26,200	1,875		28,075	31,600
0550 Rent per month				Ea.	460			460	505
0700 For air conditioning, rent per month, add				"	53.50			53.50	59
0800 For delivery, add per mile				Mile	12.15			12.15	13.35
0900 Bunk house trailer, 8′ x 40′ duplex dorm with kitchen, no hookups, buy	2 Carp	1	16	Ea.	90,500	900		91,400	101,000
0910 9 man with kitchen and bath, no hookups, buy		1	16		92,500	900		93,400	103,500
0920 18 man sleeper with bath, no hookups, buy		1	16		100,000	900		100,900	111,500
1000 Portable buildings, prefab, on skids, economy, 8′ x 8′		265	.060	S.F.	30	3.40		33.40	38
1100 Deluxe, 8′ x 12′		150	.107	"	34	6		40	46.50
1200 Storage boxes, 20′ x 8′, buy	2 Skwk	1.80	8.889	Ea.	5,300	525		5,825	6,600
1250 Rent per month					119			119	131
1300 40′ x 8′, buy	2 Skwk	1.40	11.429		7,500	675		8,175	9,250
1350 Rent per month					139			139	153
5000 Air supported structures, see Section 13 31 13.13									

01 52 13.40 Field Office Expense

0010 **FIELD OFFICE EXPENSE**									
0100 Office equipment rental average				Month	231			231	255
0120 Office supplies, average				"	91.50			91.50	101
0125 Office trailer rental, see Section 01 52 13.20									
0140 Telephone bill; avg. bill/month incl. long dist.				Month	88.50			88.50	97
0160 Lights & HVAC				"	165			165	182

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01 54 09 – Protection Equipment

	01 54 09.50 Personnel Protective Equipment	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**PERSONNEL PROTECTIVE EQUIPMENT**									
0015	Hazardous waste protection									
0020	Respirator mask only, full face, silicone				Ea.	205			205	225
0030	Half face, silicone					36			36	39.50
0040	Respirator cartridges, 2 req'd/mask, dust or asbestos					4.45			4.45	4.90
0050	Chemical vapor					5.30			5.30	5.80
0060	Combination vapor and dust					13.40			13.40	14.75
0100	Emergency escape breathing apparatus, 5 minutes					685			685	750
0110	10 minutes					845			845	930
0150	Self contained breathing apparatus with full face piece, 30 minutes					2,175			2,175	2,375
0160	60 minutes					3,475			3,475	3,825
0200	Encapsulating suits, limited use, level A					1,150			1,150	1,275
0210	Level B					490			490	540
0300	Over boots, latex				Pr.	7.40			7.40	8.15
0310	PVC				"	19.65			19.65	21.50
0320	Neoprene				Pr.	38			38	41.50
0400	Gloves, nitrile/PVC					119			119	130
0410	Neoprene coated					57			57	63

01 54 09.60 Safety Nets

0010	**SAFETY NETS**									
0020	No supports, stock sizes, nylon, 3-1/2" mesh				S.F.	3.85			3.85	4.24
0100	Polypropylene, 6" mesh					1.99			1.99	2.19
0200	Small mesh debris nets, 1/4" mesh, stock sizes					.69			.69	.76
0220	Combined 3-1/2" mesh and 1/4" mesh, stock sizes					6			6	6.60
0300	Rental, 4" mesh, stock sizes, 3 months					1.07			1.07	1.18
0320	6 month rental					1.25			1.25	1.38
0340	12 months					1.73			1.73	1.90

01 54 16 – Temporary Hoists

01 54 16.50 Weekly Forklift Crew

0010	**WEEKLY FORKLIFT CREW**									
0100	All-terrain forklift, 45' lift, 35' reach, 9000 lb. capacity	A-3P	.20	40	Week		2,275	3,150	5,425	6,850

01 54 19 – Temporary Cranes

01 54 19.50 Daily Crane Crews

0010	**DAILY CRANE CREWS** for small jobs, portal to portal R015433-15									
0100	12-ton truck-mounted hydraulic crane	A-3H	1	8	Day		505	1,575	2,080	2,475
0200	25-ton	A-3I	1	8			505	1,700	2,205	2,600
0300	40-ton	A-3J	1	8			505	1,825	2,330	2,750
0400	55-ton	A-3K	1	16			940	2,025	2,965	3,625
0500	80-ton	A-3L	1	16			940	2,175	3,115	3,800
0900	If crane is needed on a Saturday, Sunday or Holiday									
0910	At time-and-a-half, add				Day		50%			
0920	At double time, add				"		100%			

01 54 19.60 Monthly Tower Crane Crew

0010	**MONTHLY TOWER CRANE CREW**, excludes concrete footing									
0100	Static tower crane, 130' high, 106' jib, 6200 lb. capacity	A-3N	.05	176	Month		11,200	39,300	50,500	60,000

01 54 23 – Temporary Scaffolding and Platforms

01 54 23.60 Pump Staging

0010	**PUMP STAGING**, Aluminum R015423-20									
0200	24' long pole section, buy				Ea.	395			395	435
0300	18' long pole section, buy					315			315	345

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01 54 23 – Temporary Scaffolding and Platforms

	01 54 23.60 Pump Staging	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0400	12′ long pole section, buy				Ea.	200			200	220
0500	6′ long pole section, buy					132			132	146
0600	6′ long splice joint section, buy					78.50			78.50	86
0700	Pump jack, buy					179			179	196
0900	Foldable brace, buy					65.50			65.50	72
1000	Workbench/back safety rail support, buy					75.50			75.50	83
1100	Scaffolding planks/workbench, 14″ wide x 24′ long, buy				Ea.	625			625	685
1200	Plank end safety rail, buy					99.50			99.50	109
1250	Safety net, 22′ long, buy					435			435	480
1300	System in place, 50′ working height, per use based on 50 uses	2 Carp	84.80	.189	C.S.F.	5.95	10.60		16.55	22.50
1400	100 uses		84.80	.189		2.98	10.60		13.58	19.10
1500	150 uses		84.80	.189		2	10.60		12.60	18

01 54 23.70 Scaffolding

0010	**SCAFFOLDING** R015423-10									
0015	Steel tube, regular, no plank, labor only to erect & dismantle									
0090	Building exterior, wall face, 1 to 5 stories, 6′-4″ x 5′ frames	3 Carp	8	3	C.S.F.		169		169	251
0200	6 to 12 stories	4 Carp	8	4			225		225	335
0301	13 to 20 stories	5 Clab	8	5			228		228	340
0460	Building interior, wall face area, up to 16′ high	3 Carp	12	2			113		113	168
0560	16′ to 40′ high		10	2.400			135		135	201
0800	Building interior floor area, up to 30′ high		150	.160	C.C.F.		9		9	13.40
0900	Over 30′ high	4 Carp	160	.200	″		11.25		11.25	16.75
0906	Complete system for face of walls, no plank, material only rent/mo				C.S.F.	83			83	91.50
0908	Interior spaces, no plank, material only rent/mo				C.C.F.	5.50			5.50	6.05
0910	Steel tubular, heavy duty shoring, buy									
0920	Frames 5′ high 2′ wide				Ea.	60			60	66.50
0925	5′ high 4′ wide					71.50			71.50	78.50
0930	6′ high 2′ wide					72			72	79.50
0935	6′ high 4′ wide					86.50			86.50	95
0940	Accessories									
0945	Cross braces				Ea.	21.50			21.50	24
0950	U-head, 8″ x 8″					13.75			13.75	15.15
0955	J-head, 4″ x 8″					16.90			16.90	18.60
0960	Base plate, 8″ x 8″					18.30			18.30	20
0965	Leveling jack					25.50			25.50	28
1000	Steel tubular, regular, buy									
1100	Frames 3′ high 5′ wide				Ea.	66.50			66.50	73
1150	5′ high 5′ wide					79			79	87
1200	6′-4″ high 5′ wide					88			88	97
1350	7′-6″ high 6′ wide					158			158	174
1500	Accessories, cross braces					21			21	23
1550	Guardrail post					24.50			24.50	27
1600	Guardrail 7′ section					10.55			10.55	11.60
1650	Screw jacks & plates				Ea.	26			26	29
1700	Sidearm brackets					35			35	38.50
1750	8″ casters					45			45	49.50
1800	Plank 2″ x 10″ x 16′-0″					67.50			67.50	74.50
1900	Stairway section					290			290	320
1910	Stairway starter bar					33			33	36
1920	Stairway inside handrail					56			56	61.50
1930	Stairway outside handrail					93			93	102
1940	Walk-thru frame guardrail					42.50			42.50	47

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01 54 23 – Temporary Scaffolding and Platforms

	01 54 23.70 Scaffolding	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2000	Steel tubular, regular, rent/mo.									
2100	Frames 3′ high 5′ wide				Ea.	10.05			10.05	11.05
2150	5′ high 5′ wide					13.90			13.90	15.30
2200	6′-4″ high 5′ wide					5.85			5.85	6.40
2250	7′-6″ high 6′ wide					10.05			10.05	11.05
2500	Accessories, cross braces					3.35			3.35	3.69
2550	Guardrail post					3.30			3.30	3.63
2600	Guardrail 7′ section					11.25			11.25	12.40
2650	Screw jacks & plates					4.35			4.35	4.79
2700	Sidearm brackets					8.70			8.70	9.55
2750	8″ casters					7.85			7.85	8.65
2800	Outrigger for rolling tower					11.10			11.10	12.20
2850	Plank 2″ x 10″ x 16′-0″					10.05			10.05	11.05
2900	Stairway section					32.50			32.50	36
2940	Walk-thru frame guardrail					8.35			8.35	9.20
3000	Steel tubular, heavy duty shoring, rent/mo.									
3250	5′ high 2′ & 4′ wide				Ea.	8.55			8.55	9.40
3300	6′ high 2′ & 4′ wide					8.55			8.55	9.40
3500	Accessories, cross braces					.92			.92	1.01
3600	U-head, 8″ x 8″					2.52			2.52	2.77
3650	J-head, 4″ x 8″					2.52			2.52	2.77
3700	Base plate, 8″ x 8″					.92			.92	1.01
3750	Leveling jack					2.50			2.50	2.75
5700	Planks, 2″ x 10″ x 16′-0″, labor only to erect & remove to 50′ H	3 Carp	72	.333			18.75		18.75	28
5800	Over 50′ high	4 Carp	80	.400			22.50		22.50	33.50
6000	Heavy duty shoring for elevated slab forms to 8′-2″ high, floor area									
6100	Labor only to erect & dismantle	4 Carp	16	2	C.S.F.		113		113	168
6110	Materials only, rent/mo.				″	44			44	48.50
6500	To 14′-8″ high									
6600	Labor only to erect & dismantle	4 Carp	10	3.200	C.S.F.		180		180	268
6610	Materials only, rent/mo				″	64.50			64.50	71

01 54 23.75 Scaffolding Specialties

0010	**SCAFFOLDING SPECIALTIES**									
1200	Sidewalk bridge, heavy duty steel posts & beams, including									
1210	parapet protection & waterproofing (material cost is rent/month)									
1220	8′ to 10′ wide, 2 posts	3 Carp	15	1.600	L.F.	49.50	90		139.50	189
1230	3 posts	″	10	2.400	″	72.50	135		207.50	281
1500	Sidewalk bridge using tubular steel scaffold frames including									
1510	planking (material cost is rent/month)	3 Carp	45	.533	L.F.	9.90	30		39.90	55.50
1600	For 2 uses per month, deduct from all above					50%				
1700	For 1 use every 2 months, add to all above					100%				
1900	Catwalks, 20″ wide, no guardrails, 7′ span, buy				Ea.	140			140	154
2000	10′ span, buy					201			201	221
3720	Putlog, standard, 8′ span, with hangers, buy					68.50			68.50	75.50
3730	Rent per month					14.25			14.25	15.70
3750	12′ span, buy					88			88	96.50
3755	Rent per month					17.80			17.80	19.55
3760	Trussed type, 16′ span, buy					268			268	295
3770	Rent per month					21.50			21.50	23.50
3790	22′ span, buy					320			320	350
3795	Rent per month					28.50			28.50	31
3800	Rolling ladders with handrails, 30″ wide, buy, 2 step					221			221	243

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01 54 23 – Temporary Scaffolding and Platforms

	01 54 23.75 Scaffolding Specialties	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4000	7 step				Ea.	670			670	740
4050	10 step					945			945	1,050
4100	Rolling towers, buy, 5′ wide, 7′ long, 10′ high					1,275			1,275	1,425
4200	For additional 5′ high sections, to buy					201			201	221
4300	Complete incl. wheels, railings, outriggers,									
4350	21′ high, to buy				Ea.	2,175			2,175	2,375
4400	Rent/month = 5% of purchase cost				"	109			109	119
5000	Motorized work platform, mast climber									
5050	Base unit, 50′ W, less than 100′ tall, rent/mo				Ea.	3,250			3,250	3,575
5100	Less than 200′ tall, rent/mo					3,275			3,275	3,600
5150	Less than 300′ tall, rent/mo					4,000			4,000	4,400
5200	Less than 400′ tall, rent/mo					4,575			4,575	5,050
5250	Set up and demob, per unit, less than 100′ tall	B-68F	16.60	1.446	C.S.F.		86	24.50	110.50	156
5300	Less than 200′ tall		25	.960			57	16.15	73.15	104
5350	Less than 300′ tall		30	.800			47.50	13.45	60.95	86.50
5400	Less than 400′ tall		33	.727			43.50	12.25	55.75	78.50
5500	Mobilization (price includes freight in and out) per unit	B-34N	1	16	Ea.		910	705	1,615	2,125

01 54 23.80 Staging Aids

0010	**STAGING AIDS** and fall protection equipment									
0100	Sidewall staging bracket, tubular, buy				Ea.	74.50			74.50	82
0110	Cost each per day, based on 250 days use				Day	.30			.30	.33
0200	Guard post, buy				Ea.	56.50			56.50	62
0210	Cost each per day, based on 250 days use				Day	.23			.23	.25
0300	End guard chains, buy per pair				Pr.	45			45	49.50
0310	Cost per set per day, based on 250 days use				Day	.30			.30	.33
1000	Roof shingling bracket, steel, buy				Ea.	12.85			12.85	14.15
1010	Cost each per day, based on 250 days use				Day	.05			.05	.06
1100	Wood bracket, buy				Ea.	37			37	40.50
1110	Cost each per day, based on 250 days use				Day	.15			.15	.16
2000	Ladder jack, aluminum, buy per pair				Pr.	159			159	175
2010	Cost per pair per day, based on 250 days use				Day	.64			.64	.70
3000	Laminated wood plank, 2″ x 10″ x 16′, buy				Ea.	57.50			57.50	63
3010	Cost each per day, based on 250 days use				Day	.23			.23	.25
3100	Aluminum scaffolding plank, 20″ wide x 24′ long, buy				Ea.	885			885	975
3110	Cost each per day, based on 250 days use				Day	3.54			3.54	3.90
4000	Nylon full body harness, lanyard and rope grab				Ea.	182			182	200
4010	Cost each per day, based on 250 days use				Day	.73			.73	.80
4100	Rope for safety line, 5/8″ x 100′ nylon, buy				Ea.	56			56	61.50
4110	Cost each per day, based on 250 days use				Day	.22			.22	.25
4200	Permanent U-Bolt roof anchor, buy				Ea.	87			87	95.50
4300	Temporary (one use) roof ridge anchor, buy				"	7.30			7.30	8.05
5000	Installation (setup and removal) of staging aids									
5010	Sidewall staging bracket	2 Carp	64	.250	Ea.		14.10		14.10	21
5020	Guard post with 2 wood rails	"	64	.250			14.10		14.10	21
5030	End guard chains, set	1 Carp	64	.125			7.05		7.05	10.50
5100	Roof shingling bracket		96	.083			4.69		4.69	7
5200	Ladder jack		64	.125			7.05		7.05	10.50
5300	Wood plank, 2″ x 10″ x 16′	2 Carp	80	.200			11.25		11.25	16.75
5310	Aluminum scaffold plank, 20″ x 24′	2 Carp	40	.400	Ea.		22.50		22.50	33.50
5410	Safety rope	1 Carp	40	.200			11.25		11.25	16.75
5420	Permanent U-Bolt roof anchor (install only)	2 Carp	40	.400			22.50		22.50	33.50
5430	Temporary roof ridge anchor (install only)	1 Carp	64	.125			7.05		7.05	10.50

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01 54 Construction Aids

01 54 26 – Temporary Swing Staging

01 54 26.50 Swing Staging	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **SWING STAGING**, 500 lb. cap., 2′ wide to 24′ long, hand operated									
0020 Steel cable type, with 60′ cables, buy				Ea.	6,750			6,750	7,400
0030 Rent per month				″	675			675	740
0600 Lightweight (not for masons) 24′ long for 150′ height,									
0610 manual type, buy				Ea.	13,900			13,900	15,200
0620 Rent per month					1,375			1,375	1,525
0700 Powered, electric or air, to 150′ high, buy					35,800			35,800	39,400
0710 Rent per month					2,500			2,500	2,750
0780 To 300′ high, buy					36,400			36,400	40,100
0800 Rent per month					2,550			2,550	2,800
1000 Bosun's chair or work basket 3′ x 3′6″, to 300′ high, electric, buy					14,300			14,300	15,700
1010 Rent per month					1,000			1,000	1,100
2200 Move swing staging (setup and remove)	E-4	2	16	Move		1,000	74	1,074	1,600

01 54 36 – Equipment Mobilization

01 54 36.50 Mobilization

0010 **MOBILIZATION** (Use line item again for demobilization) R015436-50									
0015 Up to 25 mi. haul dist. (50 mi. RT for mob/demob crew)									
1200 Small equipment, placed in rear of, or towed by pickup truck	A-3A	4	2	Ea.		114	45	159	220
1300 Equipment hauled on 3-ton capacity towed trailer	A-3Q	2.67	3			171	95	266	360
1400 20-ton capacity	B-34U	2	8			440	230	670	910
1500 40-ton capacity	B-34N	2	8			455	355	810	1,075
1600 50-ton capacity	B-34V	1	24			1,400	1,125	2,525	3,325
1700 Crane, truck-mounted, up to 75 ton (driver only)	1 Eqhv	4	2			127		127	189
1800 Over 75 ton (with chase vehicle)	A-3E	2.50	6.400			375	72	447	635
2400 Crane, large lattice boom, requiring assembly	B-34W	.50	144			8,025	7,950	15,975	20,800
2500 For each additional 5 miles haul distance, add						10%	10%		
3000 For large pieces of equipment, allow for assembly/knockdown									
3001 For mob/demob of vibroflotation equip, see Section 31 45 13.10									
3100 For mob/demob of micro-tunneling equip, see Section 33 05 07.36									
3200 For mob/demob of pile driving equip, see Section 31 62 19.10									
3300 For mob/demob of caisson drilling equip, see Section 31 63 26.13									

01 55 Vehicular Access and Parking

01 55 23 – Temporary Roads

01 55 23.50 Roads and Sidewalks

0010 **ROADS AND SIDEWALKS** Temporary									
0050 Roads, gravel fill, no surfacing, 4″ gravel depth	B-14	715	.067	S.Y.	4.96	3.21	.46	8.63	10.75
0100 8″ gravel depth	″	615	.078	″	9.90	3.73	.53	14.16	17.05
1000 Ramp, 3/4″ plywood on 2″ x 6″ joists, 16″ OC	2 Carp	300	.053	S.F.	1.90	3		4.90	6.55
1100 On 2″ x 10″ joists, 16″ OC	″	275	.058	″	2.89	3.28		6.17	8.05

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01 56 13 – Temporary Air Barriers

01 56 13.60 Tarpaulins	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **TARPAULINS**									
0020 Cotton duck, 10-13.13 oz./S.Y., 6′ x 8′				S.F.	.73			.73	.80
0050 30′ x 30′					.34			.34	.37
0100 Polyvinyl coated nylon, 14-18 oz., minimum					1.12			1.12	1.23
0150 Maximum					1.18			1.18	1.30
0200 Reinforced polyethylene 3 mils thick, white					.05			.05	.06
0300 4 mils thick, white, clear or black					.08			.08	.09
0400 5.5 mils thick, clear					.08			.08	.09
0500 White, fire retardant					.48			.48	.53
0600 12 mils, oil resistant, fire retardant					.39			.39	.43
0700 8.5 mils, black					.31			.31	.34
0710 Woven polyethylene, 6 mils thick					.07			.07	.08
0730 Polyester reinforced w/integral fastening system, 11 mils thick					.16			.16	.18
0740 Polyethylene, reflective, 23 mils thick					1.03			1.03	1.13
01 56 13.90 Winter Protection									
0010 **WINTER PROTECTION**									
0100 Framing to close openings	2 Clab	500	.032	S.F.	.71	1.46		2.17	2.95
0200 Tarpaulins hung over scaffolding, 8 uses, not incl. scaffolding		1500	.011		.19	.49		.68	.93
0250 Tarpaulin polyester reinf. w/integral fastening system, 11 mils thick		1600	.010		.19	.46		.65	.89
0300 Prefab fiberglass panels, steel frame, 8 uses		1200	.013		3.14	.61		3.75	4.36

01 56 16 – Temporary Dust Barriers

01 56 16.10 Dust Barriers, Temporary	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **DUST BARRIERS, TEMPORARY**, erect and dismantle									
0020 Spring loaded telescoping pole & head, to 12′, erect and dismantle	1 Clab	240	.033	Ea.		1.52		1.52	2.26
0025 Cost per day (based upon 250 days)				Day	.32			.32	.35
0030 To 21′, erect and dismantle	1 Clab	240	.033	Ea.		1.52		1.52	2.26
0035 Cost per day (based upon 250 days)				Day	.75			.75	.82
0040 Accessories, caution tape reel, erect and dismantle	1 Clab	480	.017	Ea.		.76		.76	1.13
0045 Cost per day (based upon 250 days)				Day	.35			.35	.38
0060 Foam rail and connector, erect and dismantle	1 Clab	240	.033	Ea.		1.52		1.52	2.26
0065 Cost per day (based upon 250 days)				Day	.10			.10	.11
0070 Caution tape	1 Clab	384	.021	C.L.F.	2.61	.95		3.56	4.28
0080 Zipper, standard duty		60	.133	Ea.	11	6.10		17.10	21
0090 Heavy duty		48	.167	″	11.10	7.60		18.70	23.50
0100 Polyethylene sheet, 4 mil		37	.216	Sq.	4.40	9.85		14.25	19.55
0110 6 mil		37	.216	″	6	9.85		15.85	21.50
1000 Dust partition, 6 mil polyethylene, 1″ x 3″ frame	2 Carp	2000	.008	S.F.	.37	.45		.82	1.07
1080 2″ x 4″ frame	″	2000	.008	″	.55	.45		1	1.27
1085 Negative air machine, 1800 CFM				Ea.	900			900	990
1090 Adhesive strip application, 2″ width	1 Clab	192	.042	C.L.F.	10.95	1.90		12.85	14.90
4000 Dust & infectious control partition, adj. to 10′ high, obscured, 4′ panel	2 Carp	90	.178	Ea.	580	10		590	655
4010 3′ panel		90	.178		550	10		560	620
4020 2′ panel		90	.178		430	10		440	490
4030 1′ panel	1 Carp	90	.089		285	5		290	320
4040 6″ panel	″	90	.089		265	5		270	299
4050 2′ panel with HEPA filtered discharge port	2 Carp	90	.178		500	10		510	565
4060 3′ panel with 32″ door		90	.178		895	10		905	1,000
4070 4′ panel with 36″ door		90	.178		995	10		1,005	1,125
4080 4′-6″ panel with 44″ door		90	.178		1,200	10		1,210	1,350
4090 Hinged corner		80	.200		185	11.25		196.25	221
4100 Outside corner		80	.200		150	11.25		161.25	182
4110 T post		80	.200		150	11.25		161.25	182

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01 56 Temporary Barriers and Enclosures

01 56 16 – Temporary Dust Barriers

01 56 16.10 Dust Barriers, Temporary	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4120 Accessories, ceiling grid clip	2 Carp	360	.044	Ea.	7.45	2.50		9.95	11.90
4130 Panel locking clip		360	.044		5.15	2.50		7.65	9.35
4140 Panel joint closure strip		360	.044		8	2.50		10.50	12.50
4150 Screw jack		360	.044		6.65	2.50		9.15	11
4160 Digital pressure difference gauge					275			275	305
4180 Combination lockset	1 Carp	13	.615		205	34.50		239.50	277
4185 Sealant tape, 2" wide	1 Clab	192	.042	C.L.F.	10.95	1.90		12.85	14.90
4190 System in place, including door and accessories									
4200 Based upon 25 uses	2 Carp	51	.314	L.F.	9.85	17.65		27.50	37.50
4210 Based upon 50 uses		51	.314		4.94	17.65		22.59	32
4230 Based upon 100 uses		51	.314		2.47	17.65		20.12	29

01 56 23 – Temporary Barricades

01 56 23.10 Barricades

0010 **BARRICADES**									
0020 5' high, 3 rail @ 2" x 8", fixed	2 Carp	20	.800	L.F.	8.75	45		53.75	76.50
0150 Movable	"	30	.533	"	7.45	30		37.45	52.50
0300 Stock units, 58' high, 8' wide, reflective, buy				Ea.	199			199	218
0350 With reflective tape, buy				"	242			242	266
0400 Break-a-way 3" PVC pipe barricade									
0410 with 3 ea. 1' x 4' reflectorized panels, buy				Ea.	175			175	192
0500 Barricades, plastic, 8" x 24" wide, foldable					95			95	104
0800 Traffic cones, PVC, 18" high					7.75			7.75	8.55
0850 28" high					13.75			13.75	15.15
1000 Guardrail, wooden, 3' high, 1" x 6" on 2" x 4" posts	2 Carp	200	.080	L.F.	1.82	4.50		6.32	8.70
1100 2" x 6" on 4" x 4" posts	"	165	.097		3.37	5.45		8.82	11.85
1200 Portable metal with base pads, buy					13.50			13.50	14.85
1250 Typical installation, assume 10 reuses	2 Carp	600	.027		2.25	1.50		3.75	4.71
1300 Barricade tape, polyethylene, 7 mil, 3" wide x 300' long roll	1 Clab	128	.063	Ea.	7.80	2.85		10.65	12.85
3000 Detour signs, set up and remove									
3010 Reflective aluminum, MUTCD, 24" x 24", post mounted	1 Clab	20	.400	Ea.	3.37	18.25		21.62	30.50
4000 Roof edge portable barrier stands and warning flags, 50 uses	1 Rohe	9100	.001	L.F.	.08	.03		.11	.13
4010 100 uses	"	9100	.001	"	.04	.03		.07	.09

01 56 26 – Temporary Fencing

01 56 26.50 Temporary Fencing

0010 **TEMPORARY FENCING**									
0020 Chain link, 11 ga., 4' high	2 Clab	400	.040	L.F.	2.40	1.82		4.22	5.35
0100 6' high		300	.053		3.79	2.43		6.22	7.80
0200 Rented chain link, 6' high, to 1000' (up to 12 mo.)		400	.040		2.65	1.82		4.47	5.65
0250 Over 1000' (up to 12 mo.)		300	.053		3.13	2.43		5.56	7.05
0350 Plywood, painted, 2" x 4" frame, 4' high	A-4	135	.178		7.90	9.50		17.40	23
0400 4" x 4" frame, 8' high	"	110	.218		15.15	11.65		26.80	34
0500 Wire mesh on 4" x 4" posts, 4' high	2 Carp	100	.160		12.80	9		21.80	27.50
0550 8' high	"	80	.200		19.20	11.25		30.45	38

01 56 29 – Temporary Protective Walkways

01 56 29.50 Protection

0010 **PROTECTION**									
0020 Stair tread, 2" x 12" planks, 1 use	1 Carp	75	.107	Tread	8.25	6		14.25	18
0100 Exterior plywood, 1/2" thick, 1 use		65	.123		2.28	6.95		9.23	12.80
0200 3/4" thick, 1 use		60	.133		2.83	7.50		10.33	14.25
2200 Sidewalks, 2" x 12" planks, 2 uses		350	.023	S.F.	1.37	1.29		2.66	3.43
2300 Exterior plywood, 2 uses, 1/2" thick	1 Carp	750	.011	S.F.	.38	.60		.98	1.31

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01 56 Temporary Barriers and Enclosures

01 56 29 – Temporary Protective Walkways

01 56 29.50 Protection		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2400	5/8" thick	1 Carp	650	.012	S.F.	.41	.69		1.10	1.48
2500	3/4" thick	↓	600	.013	↓	.47	.75		1.22	1.64

01 57 Temporary Controls

01 57 33 – Temporary Security

01 57 33.50 Watchman										
0010	**WATCHMAN**									
0020	Service, monthly basis, uniformed person, minimum				Hr.				27.65	30.40
0100	Maximum								56	61.62
0200	Person and command dog, minimum								31	34
0300	Maximum				↓				60	65

01 58 Project Identification

01 58 13 – Temporary Project Signage

01 58 13.50 Signs										
0010	**SIGNS**									
0020	High intensity reflectorized, no posts, buy				Ea.	13.30			13.30	14.65

01 66 Product Storage and Handling Requirements

01 66 19 – Material Handling

01 66 19.10 Material Handling										
0010	**MATERIAL HANDLING**									
0020	Above 2nd story, via stairs, per C.Y. of material per floor	2 Clab	145	.110	C.Y.		5.05		5.05	7.50
0030	Via elevator, per C.Y. of material		240	.067			3.04		3.04	4.53
0050	Distances greater than 200', per C.Y. of material per each addl 200'	↓	300	.053	↓		2.43		2.43	3.62

01 71 Examination and Preparation

01 71 23 – Field Engineering

01 71 23.13 Construction Layout										
0010	**CONSTRUCTION LAYOUT**									
1100	Crew for layout of building, trenching or pipe laying, 2 person crew	A-6	1	16	Day		905	36.50	941.50	1,400
1200	3 person crew	A-7	1	24			1,475	36.50	1,511.50	2,250
1400	Crew for roadway layout, 4 person crew	A-8	1	32	↓		1,900	36.50	1,936.50	2,875

01 71 23.19 Surveyor Stakes										
0010	**SURVEYOR STAKES**									
0020	Hardwood, 1" x 1" x 48" long				C	90			90	99
0100	2" x 2" x 18" long					75			75	82.50
0150	2" x 2" x 24" long				↓	94.50			94.50	104

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

01 74 Cleaning and Waste Management

01 74 13 – Progress Cleaning

01 74 13.20 Cleaning Up	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **CLEANING UP**									
0020 After job completion, allow, minimum				Job				.30%	.30%
0040 Maximum				"				1%	1%
0050 Cleanup of floor area, continuous, per day, during const.	A-5	24	.750	M.S.F.	3.30	34.50	3.54	41.34	59
0100 Final by GC at end of job	A-5	11.50	1.565	M.S.F.	3.49	72	7.40	82.89	120
0200 Rubbish removal, see Section 02 41 19.19									

01 76 Protecting Installed Construction

01 76 13 – Temporary Protection of Installed Construction

01 76 13.20 Temporary Protection									
0010 **TEMPORARY PROTECTION**									
0020 Flooring, 1/8" tempered hardboard, taped seams	2 Carp	1500	.011	S.F.	.32	.60		.92	1.24
0030 Peel away carpet protection	1 Clab	3200	.003	"	.11	.11		.22	.29

01 91 Commissioning

01 91 13 – General Commissioning Requirements

01 91 13.50 Building Commissioning									
0010 **BUILDING COMMISSIONING**									
0100 Systems operation and verification during turnover				%				.25%	.25%
0150 Including all systems subcontractors								.50%	.50%
0200 Systems design assistance, operation, verification and training								.50%	.50%
0250 Including all systems subcontractors								1%	1%

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Estimating Tips

02 30 00 Subsurface Investigation

In preparing estimates on structures involving earthwork or foundations, all information concerning soil characteristics should be obtained. Look particularly for hazardous waste, evidence of prior dumping of debris, and previous stream beds.

02 40 00 Demolition and Structure Moving

The costs shown for selective demolition do not include rubbish handling or disposal. These items should be estimated separately using RSMeans data or other sources.

- Historic preservation often requires that the contractor remove materials from the existing structure, rehab them, and replace them. The estimator must be aware of any related measures and precautions that must be taken when doing selective demolition and cutting and patching. Requirements may include special handling and storage, as well as security.
- In addition to Subdivision 02 41 00, you can find selective demolition items in each division. Example: Roofing demolition is in Division 7.
- Absent of any other specific reference, an approximate demolish-in-place cost can be obtained by halving the new-install labor cost. To remove for reuse, allow the entire new-install labor figure.

02 40 00 Building Deconstruction

This section provides costs for the careful dismantling and recycling of most low-rise building materials.

02 50 00 Containment of Hazardous Waste

This section addresses on-site hazardous waste disposal costs.

02 80 00 Hazardous Material Disposal/Remediation

This subdivision includes information on hazardous waste handling, asbestos remediation, lead remediation, and mold remediation. See reference numbers R028213-20 and R028319-60 for further guidance in using these unit price lines.

02 90 00 Monitoring Chemical Sampling, Testing Analysis

This section provides costs for on-site sampling and testing hazardous waste.

Reference Numbers

Reference numbers are shown at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear. ■

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02 21 Surveys

02 21 13 – Site Surveys

	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
02 21 13.09 Topographical Surveys									
0010 **TOPOGRAPHICAL SURVEYS**									
0020 Topographical surveying, conventional, minimum	A-7	3.30	7.273	Acre	45	445	11.05	501.05	725
0050 Average	"	1.95	12.308		67.50	750	18.70	836.20	1,225
0100 Maximum	A-8	.60	53.333		90	3,175	61	3,326	4,900
02 21 13.13 Boundary and Survey Markers									
0010 **BOUNDARY AND SURVEY MARKERS**									
0300 Lot location and lines, large quantities, minimum	A-7	2	12	Acre	33	735	18.25	786.25	1,150
0320 Average	"	1.25	19.200		66	1,175	29	1,270	1,850
0400 Small quantities, maximum	A-8	1	32		66	1,900	36.50	2,002.50	2,950
0600 Monuments, 3' long	A-7	10	2.400	Ea.	36	147	3.65	186.65	263
0800 Property lines, perimeter, cleared land	"	1000	.024	L.F.	.09	1.47	.04	1.60	2.33
0900 Wooded land	A-8	875	.037	"	.12	2.17	.04	2.33	3.42
02 21 13.16 Aerial Surveys									
0010 **AERIAL SURVEYS**									
1500 Aerial surveying, including ground control, minimum fee, 10 acres				Total				4,700	4,700
1510 100 acres								9,400	9,400
1550 From existing photography, deduct								1,625	1,625
1600 2' contours, 10 acres				Acre				470	470
1850 100 acres								94	94
2000 1000 acres								90	90
2050 10,000 acres								85	85

02 31 Geophysical Investigations

02 31 23 – Electromagnetic Investigations

02 31 23.10 Ground Penetrating Radar									
0010 **GROUND PENETRATING RADAR**									
0100 Ground Penetrating Radar				Hr.		210		210	235

02 32 Geotechnical Investigations

02 32 13 – Subsurface Drilling and Sampling

02 32 13.10 Boring and Exploratory Drilling									
0010 **BORING AND EXPLORATORY DRILLING**									
0020 Borings, initial field stake out & determination of elevations	A-6	1	16	Day		905	36.50	941.50	1,400
0100 Drawings showing boring details				Total		335		335	425
0200 Report and recommendations from P.E.						775		775	970
0300 Mobilization and demobilization	B-55	4	6			283	191	474	630
0350 For over 100 miles, per added mile		450	.053	Mile		2.52	1.70	4.22	5.60
0600 Auger holes in earth, no samples, 2-1/2" diameter		78.60	.305	L.F.		14.40	9.75	24.15	32
0650 4" diameter		67.50	.356			16.80	11.35	28.15	37.50
0800 Cased borings in earth, with samples, 2-1/2" diameter		55.50	.432		14.75	20.50	13.80	49.05	62
0850 4" diameter		32.60	.736		14.45	35	23.50	72.95	94
1000 Drilling in rock, "BX" core, no sampling	B-56	34.90	.458			23.50	45.50	69	85
1050 With casing & sampling		31.70	.505		14.75	26	50	90.75	110
1200 "NX" core, no sampling		25.92	.617			31.50	61.50	93	115
1250 With casing and sampling		25	.640		10.90	33	63.50	107.40	131
1400 Borings, earth, drill rig and crew with truck mounted auger	B-55	1	24	Day		1,125	765	1,890	2,550
1450 Rock using crawler type drill	B-56	1	16	"		820	1,600	2,420	2,975
1500 For inner city borings, add, minimum								10%	10%
1510 Maximum								20%	20%

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02 32 Geotechnical Investigations

02 32 19 – Exploratory Excavations

02 32 19.10 Test Pits

		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**TEST PITS**									
0020	Hand digging, light soil	1 Clab	4.50	1.778	C.Y.		81		81	121
0100	Heavy soil	"	2.50	3.200			146		146	217
0120	Loader-backhoe, light soil	B-11M	28	.571			30.50	14.35	44.85	61
0130	Heavy soil	"	20	.800			42.50	20	62.50	85
1000	Subsurface exploration, mobilization				Mile				6.75	8.40
1010	Difficult access for rig, add				Hr.				260	320
1020	Auger borings, drill rig, incl. samples				L.F.				26.50	33
1030	Hand auger								31.50	40
1050	Drill and sample every 5', split spoon								31.50	40
1060	Extra samples				Ea.				36	45.50

02 41 Demolition

02 41 13 – Selective Site Demolition

02 41 13.15 Hydrodemolition

0010	**HYDRODEMOLITION**									
0015	Hydrodemolition, concrete pavement									
0120	Includes removal but excludes disposal of concrete									
0130	2" depth	B-5E	1000	.064	S.F.		3.23	3	6.23	8.10
0410	4" depth		800	.080			4.04	3.75	7.79	10.15
0420	6" depth		600	.107			5.40	5	10.40	13.50
0520	8" depth		300	.213			10.75	10	20.75	27

02 41 13.16 Hydroexcavation

0010	**HYDROEXCAVATION**									
0015	Hydroexcavation									
0105	Assumes onsite disposal									
0110	Mobilization or Demobilization	B-6D	8	2.500	Ea.		130	165	295	375
0130	Normal Conditions		48	.417	B.C.Y.		21.50	27.50	49	62
0140	Adverse Conditions		30	.667	"		34.50	44	78.50	100
0160	Minimum labor/equipment charge		4	5	Ea.		260	330	590	750

02 41 13.17 Demolish, Remove Pavement and Curb

0010	**DEMOLISH, REMOVE PAVEMENT AND CURB** R024119-10									
5010	Pavement removal, bituminous roads, up to 3" thick	B-38	690	.058	S.Y.		2.97	1.94	4.91	6.55
5050	4"-6" thick		420	.095			4.88	3.20	8.08	10.75
5100	Bituminous driveways		640	.063			3.20	2.10	5.30	7.10
5200	Concrete to 6" thick, hydraulic hammer, mesh reinforced		255	.157			8.05	5.25	13.30	17.75
5300	Rod reinforced		200	.200			10.25	6.70	16.95	22.50
5400	Concrete, 7"-24" thick, plain		33	1.212	C.Y.		62	40.50	102.50	137
5500	Reinforced		24	1.667	"		85.50	56	141.50	189
5600	With hand held air equipment, bituminous, to 6" thick	B-39	1900	.025	S.F.		1.21	.17	1.38	1.99
5700	Concrete to 6" thick, no reinforcing		1600	.030			1.43	.21	1.64	2.37
5800	Mesh reinforced		1400	.034			1.64	.24	1.88	2.70
5900	Rod reinforced		765	.063			3	.43	3.43	4.95
6000	Curbs, concrete, plain	B-6	360	.067	L.F.		3.29	.91	4.20	5.90
6100	Reinforced		275	.087			4.31	1.20	5.51	7.70
6200	Granite		360	.067			3.29	.91	4.20	5.90
6300	Bituminous		528	.045			2.25	.62	2.87	4.03

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02 41 13.23 Utility Line Removal	Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010 **UTILITY LINE REMOVAL**									
0015 No hauling, abandon catch basin or manhole	B-6	7	3.429	Ea.		169	47	216	305
0020 Remove existing catch basin or manhole, masonry		4	6			296	82	378	530
0030 Catch basin or manhole frames and covers, stored		13	1.846			91	25.50	116.50	164
0040 Remove and reset	B-6	7	3.429	Ea.		169	47	216	305
0900 Hydrants, fire, remove only	B-21A	5	8			450	114	564	800
0950 Remove and reset	"	2	20			1,125	286	1,411	2,000
2900 Pipe removal, sewer/water, no excavation, 12" diameter	B-6	175	.137	L.F.		6.75	1.88	8.63	12.15
2930 15"-18" diameter	B-12Z	150	.160			8.25	8.95	17.20	22
2960 21"-24" diameter		120	.200			10.30	11.15	21.45	27.50
3000 27"-36" diameter		90	.267			13.75	14.90	28.65	37
3200 Steel, welded connections, 4" diameter	B-6	160	.150			7.40	2.06	9.46	13.30
3300 10" diameter	"	80	.300			14.80	4.11	18.91	26.50
02 41 13.30 Minor Site Demolition									
0010 **MINOR SITE DEMOLITION** R024119-10									
0100 Roadside delineators, remove only	B-80	175	.183	Ea.		9.15	3.10	12.25	17.05
0110 Remove and reset	"	100	.320	"		16.05	5.40	21.45	30
0800 Guiderail, corrugated steel, remove only	B-80A	100	.240	L.F.		10.95	3.77	14.72	20.50
0850 Remove and reset	"	40	.600	"		27.50	9.45	36.95	51
0860 Guide posts, remove only	B-80B	120	.267	Ea.		12.90	4.75	17.65	24.50
0870 Remove and reset	B-55	50	.480	"		22.50	15.30	37.80	51
1000 Masonry walls, block, solid	B-5	1800	.031	C.F.		1.56	.84	2.40	3.24
1200 Brick, solid		900	.062			3.12	1.68	4.80	6.50
1400 Stone, with mortar		900	.062			3.12	1.68	4.80	6.50
1500 Dry set		1500	.037			1.87	1.01	2.88	3.89
1600 Median barrier, precast concrete, remove and store	B-3	430	.112	L.F.		5.70	6.30	12	15.40
1610 Remove and reset	"	390	.123	"		6.25	6.95	13.20	17
4000 Sidewalk removal, bituminous, 2" thick	B-6	350	.069	S.Y.		3.39	.94	4.33	6.10
4010 2-1/2" thick		325	.074			3.65	1.01	4.66	6.55
4050 Brick, set in mortar		185	.130			6.40	1.78	8.18	11.50
4100 Concrete, plain, 4"		160	.150			7.40	2.06	9.46	13.30
4110 Plain, 5"		140	.171			8.45	2.35	10.80	15.20
4120 Plain, 6"		120	.200			9.90	2.74	12.64	17.70
4200 Mesh reinforced, concrete, 4"		150	.160			7.90	2.19	10.09	14.15
4210 5" thick		131	.183			9.05	2.51	11.56	16.20
4220 6" thick		112	.214			10.60	2.94	13.54	19
4300 Slab on grade removal, plain	B-5	45	1.244	C.Y.		62.50	33.50	96	130
4310 Mesh reinforced		33	1.697			85	46	131	178
4320 Rod reinforced		25	2.240			112	60.50	172.50	234
4400 For congested sites or small quantities, add up to								200%	200%
4450 For disposal on site, add	B-11A	232	.069			3.66	5.80	9.46	11.85
4500 To 5 miles, add	B-34D	76	.105	C.Y.		5.60	8.85	14.45	18.05
02 41 13.33 Railtrack Removal									
0010 **RAILTRACK REMOVAL**									
3500 Railroad track removal, ties and track	B-13	330	.170	L.F.		8.40	6.35	14.75	19.50
3600 Ballast	B-14	500	.096	C.Y.		4.59	.66	5.25	7.55
3700 Remove and re-install, ties & track using new bolts & spikes		50	.960	L.F.		46	6.60	52.60	76
3800 Turnouts using new bolts and spikes		1	48	Ea.		2,300	330	2,630	3,775

02 41 13 – Selective Site Demolition

02 41 13.60 Selective Demolition Fencing	Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010 **SELECTIVE DEMOLITION FENCING** R024119-10									
1600 Fencing, barbed wire, 3 strand	2 Clab	430	.037	L.F.		1.70		1.70	2.53
1650 5 strand	"	280	.057			2.61		2.61	3.88
1700 Chain link, posts & fabric, 8'-10' high, remove only	B-6	445	.054			2.66	.74	3.40	4.78

02 41 16 – Structure Demolition

02 41 16.13 Building Demolition

0010 **BUILDING DEMOLITION** Large urban projects, incl. 20 mi. haul R024119-10									
0011 No foundation or dump fees, C.F. is vol. of building standing									
0020 Steel	B-8	21500	.003	C.F.		.16	.22	.38	.48
0050 Concrete		15300	.004			.22	.31	.53	.68
0080 Masonry		20100	.003			.17	.24	.41	.51
0100 Mixture of types		20100	.003			.17	.24	.41	.51
0500 Small bldgs, or single bldgs, no salvage included, steel	B-3	14800	.003			.17	.18	.35	.45
0600 Concrete		11300	.004			.22	.24	.46	.58
0650 Masonry		14800	.003			.17	.18	.35	.45
0700 Wood		14800	.003			.17	.18	.35	.45
0750 For buildings with no interior walls, deduct								30%	30%
1000 Demolition single family house, one story, wood 1600 S.F.	B-3	1	48	Ea.		2,450	2,725	5,175	6,650
1020 3200 S.F.		.50	96			4,875	5,425	10,300	13,300
1200 Demolition two family house, two story, wood 2400 S.F.		.67	71.964			3,650	4,075	7,725	9,925
1220 4200 S.F.		.38	128			6,525	7,250	13,775	17,700
1300 Demolition three family house, three story, wood 3200 S.F.		.50	96			4,875	5,425	10,300	13,300
1320 5400 S.F.		.30	160			8,150	9,050	17,200	22,100
5000 For buildings with no interior walls, deduct								30%	30%

02 41 16.15 Explosive/Implosive Demolition

0010 **EXPLOSIVE/IMPLOSIVE DEMOLITION** R024119-10									
0011 Large projects,									
0020 No disposal fee based on building volume, steel building	B-5B	16900	.003	C.F.		.16	.20	.36	.45
0100 Concrete building		16900	.003			.16	.20	.36	.45
0200 Masonry building		16900	.003			.16	.20	.36	.45
0400 Disposal of material, minimum	B-3	445	.108	C.Y.		5.50	6.10	11.60	14.90
0500 Maximum	"	365	.132	"		6.70	7.45	14.15	18.15

02 41 16.17 Building Demolition Footings and Foundations

0010 **BUILDING DEMOLITION FOOTINGS AND FOUNDATIONS** R024119-10									
0200 Floors, concrete slab on grade,									
0240 4" thick, plain concrete	B-13L	5000	.003	S.F.		.20	.52	.72	.87
0280 Reinforced, wire mesh		4000	.004			.25	.65	.90	1.09
0300 Rods		4500	.004			.23	.58	.81	.97
0400 6" thick, plain concrete		4000	.004			.25	.65	.90	1.09
0420 Reinforced, wire mesh		3200	.005			.32	.81	1.13	1.36
0440 Rods		3600	.004			.28	.72	1	1.21
1000 Footings, concrete, 1' thick, 2' wide		300	.053	L.F.		3.38	8.65	12.03	14.55
1080 1'-6" thick, 2' wide		250	.064			4.06	10.35	14.41	17.45
1120 3' wide		200	.080			5.05	12.95	18	22
1140 2' thick, 3' wide		175	.091			5.80	14.80	20.60	25
1200 Average reinforcing, add								10%	10%
1220 Heavy reinforcing, add								20%	20%
2000 Walls, block, 4" thick	B-13L	8000	.002	S.F.		.13	.32	.45	.55
2040 6" thick		6000	.003			.17	.43	.60	.73
2080 8" thick		4000	.004			.25	.65	.90	1.09
2100 12" thick		3000	.005			.34	.86	1.20	1.45

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02 41 16 – Structure Demolition

02 41 16.17 Building Demolition Footings and Foundations	Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&P
2200 For horizontal reinforcing, add				S.F.				10%	10%
2220 For vertical reinforcing, add								20%	20%
2400 Concrete, plain concrete, 6" thick	B-13L	4000	.004			.25	.65	.90	1.09
2420 8" thick		3500	.005			.29	.74	1.03	1.24
2440 10" thick		3000	.005			.34	.86	1.20	1.45
2500 12" thick		2500	.006			.41	1.04	1.45	1.74
2600 For average reinforcing, add								10%	10%
2620 For heavy reinforcing, add								20%	20%
4000 For congested sites or small quantities, add up to								200%	200%
4200 Add for disposal, on site	B-11A	232	.069	C.Y.		3.66	5.80	9.46	11.85
4250 To five miles	B-30	220	.109	"		6.05	11.45	17.50	21.50

02 41 19 – Selective Demolition

02 41 19.13 Selective Building Demolition

0010 **SELECTIVE BUILDING DEMOLITION**
0020 Costs related to selective demolition of specific building components
0025 are included under Common Work Results (XX 05)
0030 in the component's appropriate division.

02 41 19.16 Selective Demolition, Cutout

0010 SELECTIVE DEMOLITION, CUTOUT R024119-10									
0020 Concrete, elev. slab, light reinforcement, under 6 C.F.	B-9	65	.615	C.F.		28.50	5.10	33.60	47.50
0050 Light reinforcing, over 6 C.F.	B-9	75	.533	C.F.		24.50	4.43	28.93	41.50
0200 Slab on grade to 6" thick, not reinforced, under 8 S.F.		85	.471	S.F.		21.50	3.91	25.41	36.50
0250 8-16 S.F.		175	.229	"		10.50	1.90	12.40	17.75
0255 For over 16 S.F. see Line 02 41 16.17 0400									
0600 Walls, not reinforced, under 6 C.F.	B-9	60	.667	C.F.		30.50	5.55	36.05	51.50
0650 6-12 C.F.	"	80	.500	"		23	4.15	27.15	39
0655 For over 12 C.F. see Line 02 41 16.17 2500									
1000 Concrete, elevated slab, bar reinforced, under 6 C.F.	B-9	45	.889	C.F.		41	7.40	48.40	69
1050 Bar reinforced, over 6 C.F.		50	.800	"		37	6.65	43.65	62.50
1200 Slab on grade to 6" thick, bar reinforced, under 8 S.F.		75	.533	S.F.		24.50	4.43	28.93	41.50
1250 8-16 S.F.		150	.267	"		12.25	2.21	14.46	20.50
1255 For over 16 S.F. see Line 02 41 16.17 0440									
1400 Walls, bar reinforced, under 6 C.F.	B-9	50	.800	C.F.		37	6.65	43.65	62.50
1450 6-12 C.F.	"	70	.571	"		26.50	4.74	31.24	44
1455 For over 12 C.F. see Lines 02 41 16.17 2500 and 2600									
2000 Brick, to 4 S.F. opening, not including toothing									
2040 4" thick	B-9	30	1.333	Ea.		61.50	11.05	72.55	104
2060 8" thick		18	2.222			102	18.45	120.45	173
2080 12" thick		10	4			184	33	217	310
2400 Concrete block, to 4 S.F. opening, 2" thick		35	1.143			52.50	9.50	62	89
2420 4" thick		30	1.333			61.50	11.05	72.55	104
2440 8" thick		27	1.481			68	12.30	80.30	115
2460 12" thick		24	1.667			76.50	13.85	90.35	129
2600 Gypsum block, to 4 S.F. opening, 2" thick		80	.500			23	4.15	27.15	39
2620 4" thick		70	.571			26.50	4.74	31.24	44
2640 8" thick		55	.727			33.50	6.05	39.55	56.50
2800 Terra cotta, to 4 S.F. opening, 4" thick		70	.571			26.50	4.74	31.24	44
2840 8" thick		65	.615			28.50	5.10	33.60	47.50
2880 12" thick		50	.800			37	6.65	43.65	62.50
3000 Toothing masonry cutouts, brick, soft old mortar	1 Brhe	40	.200	V.L.F.		9		9	13.50
3100 Hard mortar		30	.267			12		12	18.05
3200 Block, soft old mortar		70	.114			5.15		5.15	7.75

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	02 41 19.16 Selective Demolition, Cutout	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
3400	Hard mortar	1 Brhe	50	.160	V.L.F.		7.20		7.20	10.80
6000	Walls, interior, not including re-framing,									
6010	openings to 5 S.F.									
6100	Drywall to 5/8" thick	1 Clab	24	.333	Ea.		15.20		15.20	22.50
6200	Paneling to 3/4" thick	1 Clab	20	.400	Ea.		18.25		18.25	27
6300	Plaster, on gypsum lath		20	.400			18.25		18.25	27
6340	On wire lath		14	.571			26		26	39
7000	Wood frame, not including re-framing, openings to 5 S.F.									
7200	Floors, sheathing and flooring to 2" thick	1 Clab	5	1.600	Ea.		73		73	109
7310	Roofs, sheathing to 1" thick, not including roofing		6	1.333			61		61	90.50
7410	Walls, sheathing to 1" thick, not including siding		7	1.143			52		52	77.50

	02 41 19.18 Selective Demolition, Disposal Only										
0010	**SELECTIVE DEMOLITION, DISPOSAL ONLY**	R024119-10									
0015	Urban bldg w/salvage value allowed										
0020	Including loading and 5 mile haul to dump										
0200	Steel frame		B-3	430	.112	C.Y.		5.70	6.30	12	15.40
0300	Concrete frame			365	.132			6.70	7.45	14.15	18.15
0400	Masonry construction			445	.108			5.50	6.10	11.60	14.90
0500	Wood frame			247	.194			9.90	11	20.90	27

	02 41 19.19 Selective Demolition										
0010	**SELECTIVE DEMOLITION**, Rubbish Handling	R024119-10									
0020	The following are to be added to the demolition prices										
0050	The following are components for a complete chute system										
0100	Top chute circular steel, 4' long, 18" diameter	R024119-30	B-1C	15	1.600	Ea.	279	74	24.50	377.50	440
0102	23" diameter			15	1.600		305	74	24.50	403.50	470
0104	27" diameter			15	1.600		325	74	24.50	423.50	495
0106	30" diameter			15	1.600		350	74	24.50	448.50	520
0108	33" diameter			15	1.600		370	74	24.50	468.50	545
0110	36" diameter			15	1.600		395	74	24.50	493.50	570
0112	Regular chute, 18" diameter			15	1.600		210	74	24.50	308.50	370
0114	23" diameter			15	1.600		233	74	24.50	331.50	395
0116	27" diameter			15	1.600		256	74	24.50	354.50	420
0118	30" diameter			15	1.600		268	74	24.50	366.50	430
0120	33" diameter			15	1.600		305	74	24.50	403.50	470
0122	36" diameter			15	1.600		325	74	24.50	423.50	495
0124	Control door chute, 18" diameter			15	1.600		395	74	24.50	493.50	570
0126	23" diameter			15	1.600		420	74	24.50	518.50	595
0128	27" diameter			15	1.600		440	74	24.50	538.50	620
0130	30" diameter			15	1.600		465	74	24.50	563.50	645
0132	33" diameter			15	1.600		490	74	24.50	588.50	670
0134	36" diameter			15	1.600		510	74	24.50	608.50	700
0136	Chute liners, 14 ga., 18"-30" diameter			15	1.600		214	74	24.50	312.50	375
0138	33"-36" diameter		B-1C	15	1.600	Ea.	268	74	24.50	366.50	430
0140	17% thinner chute, 30" diameter			15	1.600		233	74	24.50	331.50	395
0142	33% thinner chute, 30" diameter			15	1.600		174	74	24.50	272.50	330
0144	Top chute cover		1 Clab	24	.333		247	15.20		262.20	295
0146	Door chute cover		"	24	.333		146	15.20		161.20	184
0148	Top chute trough		2 Clab	12	1.333		495	61		556	635
0150	Bolt down frame & counter weights, 250 lb.		B-1	4	6		4,300	278		4,578	5,150
0152	500 lb.			4	6		6,350	278		6,628	7,400
0154	750 lb.			4	6		10,800	278		11,078	12,300
0156	1000 lb.			2.67	8.989		10,600	415		11,015	12,200

	02 41 19.19 Selective Demolition	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0158	1500 lb.	B-1	2.67	8.989	Ea.	13,300	415		13,715	15,300
0160	Chute warning light system, 5 stories	B-1C	4	6		8,175	278	92	8,545	9,525
0162	10 stories	"	2	12		15,200	555	184	15,939	17,700
0164	Dust control device for dumpsters	1 Clab	8	1		93	45.50		138.50	170
0166	Install or replace breakaway cord		8	1		27.50	45.50		73	98.50
0168	Install or replace warning sign		16	.500		10	23		33	45
0600	Dumpster, weekly rental, 1 dump/week, 6 C.Y. capacity (2 tons)				Week	415			415	455
0700	10 C.Y. capacity (3 tons)					480			480	530
0725	20 C.Y. capacity (5 tons) R024119-20					565			565	625
0800	30 C.Y. capacity (7 tons)					730			730	800
0840	40 C.Y. capacity (10 tons)					775			775	850
2000	Load, haul, dump and return, 0'-50' haul, hand carried	2 Clab	24	.667	C.Y.		30.50		30.50	45.50
2005	Wheeled		37	.432			19.70		19.70	29.50
2040	0'-100' haul, hand carried		16.50	.970			44		44	66
2045	Wheeled		25	.640			29		29	43.50
2050	Forklift	A-3R	25	.320			18.25	11.35	29.60	39.50
2080	Haul and return, add per each extra 100' haul, hand carried	2 Clab	35.50	.451			20.50		20.50	30.50
2085	Wheeled		54	.296			13.50		13.50	20
2120	For travel in elevators, up to 10 floors, add		140	.114			5.20		5.20	7.75
2130	0'-50' haul, incl. up to 5 riser stairs, hand carried		23	.696			31.50		31.50	47
2135	Wheeled		35	.457			21		21	31
2140	6-10 riser stairs, hand carried		22	.727			33		33	49.50
2145	Wheeled		34	.471			21.50		21.50	32
2150	11-20 riser stairs, hand carried		20	.800			36.50		36.50	54.50
2155	Wheeled		31	.516			23.50		23.50	35
2160	21-40 riser stairs, hand carried		16	1			45.50		45.50	68
2165	Wheeled		24	.667			30.50		30.50	45.50
2170	0'-100' haul, incl. 5 riser stairs, hand carried	2 Clab	15	1.067	C.Y.		48.50		48.50	72.50
2175	Wheeled		23	.696			31.50		31.50	47
2180	6-10 riser stairs, hand carried		14	1.143			52		52	77.50
2185	Wheeled		21	.762			34.50		34.50	51.50
2190	11-20 riser stairs, hand carried		12	1.333			61		61	90.50
2195	Wheeled		18	.889			40.50		40.50	60.50
2200	21-40 riser stairs, hand carried		8	2			91		91	136
2205	Wheeled		12	1.333			61		61	90.50
2210	Haul and return, add per each extra 100' haul, hand carried		35.50	.451			20.50		20.50	30.50
2215	Wheeled		54	.296			13.50		13.50	20
2220	For each additional flight of stairs, up to 5 risers, add		550	.029	Flight		1.33		1.33	1.98
2225	6-10 risers, add		275	.058			2.65		2.65	3.95
2230	11-20 risers, add		138	.116			5.30		5.30	7.85
2235	21-40 risers, add		69	.232			10.55		10.55	15.75
3000	Loading & trucking, including 2 mile haul, chute loaded	B-16	45	.711	C.Y.		34	17.05	51.05	70
3040	Hand loading truck, 50' haul	"	48	.667			32	16	48	65
3080	Machine loading truck	B-17	120	.267			13.40	6	19.40	26.50
5000	Haul, per mile, up to 8 C.Y. truck	B-34B	1165	.007			.36	.66	1.02	1.26
5100	Over 8 C.Y. truck	"	1550	.005			.27	.50	.77	.95

02 41 19.20 Selective Demolition, Dump Charges

0010	**SELECTIVE DEMOLITION, DUMP CHARGES** R024119-10									
0020	Dump charges, typical urban city, tipping fees only									
0100	Building construction materials				Ton	74			74	81
0200	Trees, brush, lumber					63			63	69.50
0300	Rubbish only					63			63	69.50

02 41 Demolition

02 41 19 – Selective Demolition

		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
02 41 19.20	**Selective Demolition, Dump Charges**									
0500	Reclamation station, usual charge				Ton	74			74	81
02 41 19.21	**Selective Demolition, Gutting**									
0010	**SELECTIVE DEMOLITION, GUTTING** R024119-10									
0020	Building interior, including disposal, dumpster fees not included									
0500	Residential building									
0560	Minimum	B-16	400	.080	SF Flr.		3.84	1.92	5.76	7.80
0580	Maximum	"	360	.089	"		4.26	2.13	6.39	8.70
0900	Commercial building									
1000	Minimum	B-16	350	.091	SF Flr.		4.38	2.19	6.57	8.95
1020	Maximum	"	250	.128	"		6.15	3.07	9.22	12.55
02 41 19.25	**Selective Demolition, Saw Cutting**									
0010	**SELECTIVE DEMOLITION, SAW CUTTING** R024119-10									
0012	For concrete saw cutting, see Section 03 81									
0015	Asphalt, up to 3" deep	B-89	1050	.015	L.F.	.10	.82	.60	1.52	1.99
0020	Each additional inch of depth	B-89	1800	.009	L.F.	.03	.48	.35	.86	1.13
1200	Masonry walls, hydraulic saw, brick, per inch of depth	B-89B	300	.053		.03	2.86	3.58	6.47	8.25
1220	Block walls, solid, per inch of depth	"	250	.064		.03	3.44	4.30	7.77	9.85
2000	Brick or masonry w/hand held saw, per inch of depth	A-1	125	.064		.05	2.92	.88	3.85	5.40
5000	Wood sheathing to 1" thick, on walls	1 Carp	200	.040			2.25		2.25	3.35
5020	On roof	"	250	.032			1.80		1.80	2.68
02 41 19.27	**Selective Demolition, Torch Cutting**									
0010	**SELECTIVE DEMOLITION, TORCH CUTTING** R024119-10									
0020	Steel, 1" thick plate	E-25	333	.024	L.F.	2.22	1.54	.04	3.80	4.86
0040	1" diameter bar	"	600	.013	Ea.	.37	.85	.02	1.24	1.74
1000	Oxygen lance cutting, reinforced concrete walls									
1040	12"-16" thick walls	1 Clab	10	.800	L.F.		36.50		36.50	54.50
1080	24" thick walls	"	6	1.333	"		61		61	90.50

02 42 Removal and Diversion of Construction Materials

02 42 10 – Building Deconstruction

02 42 10.10	**Estimated Salvage Value or Savings**									
0010	**ESTIMATED SALVAGE VALUE OR SAVINGS**									
0015	Excludes material handling, packaging, container costs and									
0020	transportation for salvage or disposal									
0050	All items in Section 02 42 10.10 are credit deducts and not costs									
0100	Copper wire salvage value G				Lb.	1.63			1.63	1.79
0200	Brass salvage value G					1.20			1.20	1.32
0250	Bronze					1.39			1.39	1.53
0300	Steel G					.05			.05	.06
0304	304 Stainless Steel					.29			.29	.32
0316	316 Stainless Steel					.43			.43	.47
0400	Cast Iron G					.06			.06	.07
0600	Aluminum siding G					.32			.32	.35
0610	Aluminum wire					.45			.45	.50

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02 42 10 – Building Deconstruction

02 42 10.20 Deconstruction of Building Components		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **DECONSTRUCTION OF BUILDING COMPONENTS**										
0012 Buildings one or two stories only										
0015 Excludes material handling, packaging, container costs and										
0020 transportation for salvage or disposal										
0050 Deconstruction of plumbing fixtures										
0100 Wall hung or countertop lavatory	G	2 Clab	16	1	Ea.		45.50		45.50	68
0110 Single or double compartment kitchen sink	G		14	1.143			52		52	77.50
0120 Wall hung urinal	G		14	1.143			52		52	77.50
0130 Floor mounted	G	2 Clab	8	2	Ea.		91		91	136
0140 Floor mounted water closet	G		16	1			45.50		45.50	68
0150 Wall hung	G		14	1.143			52		52	77.50
0160 Water fountain, free standing	G		16	1			45.50		45.50	68
0170 Wall hung or deck mounted	G		12	1.333			61		61	90.50
0180 Bathtub, steel or fiberglass	G		10	1.600			73		73	109
0190 Cast iron	G		8	2			91		91	136
0200 Shower, single	G		6	2.667			122		122	181
0210 Group	G		7	2.286			104		104	155
0300 Deconstruction of electrical fixtures										
0310 Surface mounted incandescent fixtures	G	2 Clab	48	.333	Ea.		15.20		15.20	22.50
0320 Fluorescent, 2 lamp	G		32	.500			23		23	34
0330 4 lamp	G		24	.667			30.50		30.50	45.50
0340 Strip fluorescent, 1 lamp	G		40	.400			18.25		18.25	27
0350 2 lamp	G		32	.500			23		23	34
0400 Recessed drop-in fluorescent fixture, 2 lamp	G		27	.593			27		27	40
0410 4 lamp	G		18	.889			40.50		40.50	60.50
0500 Deconstruction of appliances										
0510 Cooking stoves	G	2 Clab	26	.615	Ea.		28		28	42
0520 Dishwashers	G	"	26	.615	"		28		28	42
0600 Deconstruction of millwork and trim										
0610 Cabinets, wood	G	2 Carp	40	.400	L.F.		22.50		22.50	33.50
0620 Countertops	G		100	.160	"		9		9	13.40
0630 Wall paneling, 1" thick	G		500	.032	S.F.		1.80		1.80	2.68
0640 Ceiling trim	G		500	.032	L.F.		1.80		1.80	2.68
0650 Wainscoting	G		500	.032	S.F.		1.80		1.80	2.68
0660 Base, 3/4"-1" thick	G		600	.027	L.F.		1.50		1.50	2.23
0700 Deconstruction of doors and windows										
0710 Doors, wrap, interior, wood, single, no closers	G	2 Carp	21	.762	Ea.	2	43		45	66
0720 Double	G		13	1.231		4	69.50		73.50	107
0730 Solid core, single, exterior or interior	G		10	1.600		2	90		92	136
0740 Double	G		8	2		4	113		117	172
0810 Windows, wrap, wood, single										
0812 with no casement or cladding	G	2 Carp	21	.762	Ea.	2	43		45	66
0820 with casement and/or cladding	G	"	18	.889	"	2	50		52	76.50
0900 Deconstruction of interior finishes										
0910 Drywall for recycling	G	2 Clab	1775	.009	S.F.		.41		.41	.61
0920 Plaster wall, first floor	G	"	1775	.009	"		.41		.41	.61
0930 Second floor	G	2 Clab	1330	.012	S.F.		.55		.55	.82
1000 Deconstruction of roofing and accessories										
1010 Built-up roofs	G	2 Clab	570	.028	S.F.		1.28		1.28	1.91
1020 Gutters, fascia and rakes	G	"	1140	.014	L.F.		.64		.64	.95
2000 Deconstruction of wood components										
2010 Roof sheeting	G	2 Clab	570	.028	S.F.		1.28		1.28	1.91

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02 42 10.20 Deconstruction of Building Components

			Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&P
2020	Main roof framing	G	2 Clab	760	.021	L.F.		.96		.96	1.43
2030	Porch roof framing	G		445	.036			1.64		1.64	2.44
2040	Beams 4" x 8"	G	B-1	375	.064			2.96		2.96	4.41
2050	4" x 10"	G		300	.080			3.70		3.70	5.50
2055	4" x 12"	G		250	.096			4.44		4.44	6.60
2060	6" x 8"	G		250	.096			4.44		4.44	6.60
2065	6" x 10"	G		200	.120			5.55		5.55	8.25
2070	6" x 12"	G		170	.141			6.55		6.55	9.70
2075	8" x 12"	G		126	.190			8.80		8.80	13.10
2080	10" x 12"	G		100	.240			11.10		11.10	16.55
2100	Ceiling joists	G	2 Clab	800	.020			.91		.91	1.36
2150	Wall framing, interior	G		1230	.013			.59		.59	.88
2160	Sub-floor	G		2000	.008	S.F.		.36		.36	.54
2170	Floor joists	G		2000	.008	L.F.		.36		.36	.54
2200	Wood siding (no lead or asbestos)	G		1300	.012	S.F.		.56		.56	.84
2300	Wall framing, exterior	G		1600	.010	L.F.		.46		.46	.68
2400	Stair risers	G		53	.302	Ea.		13.75		13.75	20.50
2500	Posts	G		800	.020	L.F.		.91		.91	1.36
3000	Deconstruction of exterior brick walls										
3010	Exterior brick walls, first floor	G	2 Clab	200	.080	S.F.		3.65		3.65	5.45
3020	Second floor	G		64	.250	"		11.40		11.40	17
3030	Brick chimney	G		100	.160	C.F.		7.30		7.30	10.85
4000	Deconstruction of concrete										
4010	Slab on grade, 4" thick, plain concrete	G	B-9	500	.080	S.F.		3.68	.66	4.34	6.25
4020	Wire mesh reinforced	G		470	.085			3.91	.71	4.62	6.65
4030	Rod reinforced	G		400	.100			4.60	.83	5.43	7.75
4110	Foundation wall, 6" thick, plain concrete	G		160	.250			11.50	2.08	13.58	19.40
4120	8" thick	G		140	.286			13.15	2.37	15.52	22
4130	10" thick	G		120	.333			15.35	2.77	18.12	26
9000	Deconstruction process, support equipment as needed										
9010	Daily use, portal to portal, 12-ton truck-mounted hydraulic crane crew	G	A-3H	1	8	Day		505	1,575	2,080	2,475
9020	Daily use, skid steer and operator	G	A-3C	1	8	"		455	420	875	1,150
9030	Daily use, backhoe 48 HP, operator and labor	G	A-3C	1	8	Day		455	420	875	1,150

02 42 10.30 Deconstruction Material Handling

0010	**DECONSTRUCTION MATERIAL HANDLING**										
0012	Buildings one or two stories only										
0100	Clean and stack brick on pallet	G	2 Clab	1200	.013	Ea.		.61		.61	.91
0200	Haul 50' and load rough lumber up to 2" x 8" size	G		2000	.008	"		.36		.36	.54
0210	Lumber larger than 2" x 8"	G		3200	.005	B.F.		.23		.23	.34
0300	Finish wood for recycling stack and wrap per pallet	G		8	2	Ea.	16	91		107	154
0350	Light fixtures			6	2.667		29	122		151	213
0375	Windows			6	2.667		27	122		149	211
0400	Miscellaneous materials			8	2		8	91		99	145
1000	See Section 02 41 19.19 for bulk material handling										

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02 43 Structure Moving

02 43 13 – Structure Relocation

02 43 13.13 Building Relocation		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **BUILDING RELOCATION**										
0011 One day move, up to 24′ wide										
0020 Reset on existing foundation					Total				11,500	11,500
0040 Wood or steel frame bldg., based on ground floor area	G	B-4	185	.259	S.F.		12.25	2.78	15.03	21.50
0060 Masonry bldg., based on ground floor area	G	″	137	.350			16.55	3.75	20.30	28.50
0200 For 24′-42′ wide, add					↓				15%	15%

02 56 Site Containment

02 56 13 – Waste Containment

02 56 13.10 Containment of Hazardous Waste										
0010 **CONTAINMENT OF HAZARDOUS WASTE**										
0020 OSHA Hazard level C										
0030 OSHA Hazard level D decrease labor and equipment, deduct							45%	45%		
0035 OSHA Hazard level B increase labor and equipment, add							22%	22%		
0040 OSHA Hazard level A increase labor and equipment, add							71%	71%		
0100 Excavation of contaminated soil & waste										
0105 Includes one respirator filter and two disposable suits per work day										
0110 3/4 C.Y. excavator to 10′ deep		B-12F	51	.314	B.C.Y.	1.81	17.10	17.15	36.06	46.50
0120 Labor crew to 6′ deep		B-2	19	2.105		12.20	97		109.20	157
0130 6′-12′ deep		″	12	3.333	↓	19.30	153		172.30	249
0200 Move contaminated soil/waste up to 150′ on-site with 2.5 C.Y. loader		B-10T	300	.040	L.C.Y.	.31	2.22	2.14	4.67	6
0210 300′		″	186	.065	″	.50	3.58	3.46	7.54	9.65
0300 Secure burial cell construction										
0310 Various liner and cover materials										
0400 Very low density polyethylene (VLDPE)										
0410 50 mil top cover		B-47H	4000	.008	S.F.	.69	.48	.09	1.26	1.56
0420 80 mil liner		″	4000	.008	″	1.58	.48	.09	2.15	2.55
0500 Chlorosulfonated polyethylene										
0510 36 mil hypalon top cover		B-47H	4000	.008	S.F.	3.30	.48	.09	3.87	4.44
0520 45 mil hypalon liner		″	4000	.008	″	3.16	.48	.09	3.73	4.29
0600 Polyvinyl chloride (PVC)										
0610 60 mil top cover		B-47H	4000	.008	S.F.	1.10	.48	.09	1.67	2.02
0620 80 mil liner		″	4000	.008	″	1.57	.48	.09	2.14	2.54
0700 Rough textured H.D. polyethylene (HDPE)										
0710 40 mil top cover		B-47H	4000	.008	S.F.	1.15	.48	.09	1.72	2.07
0720 60 mil top cover			4000	.008		1.36	.48	.09	1.93	2.30
0722 60 mil liner			4000	.008		1.31	.48	.09	1.88	2.25
0730 80 mil liner		↓	3800	.008	↓	1.83	.50	.10	2.43	2.87
1000 3/4″ crushed stone, 6″ deep ballast around liner		B-6	30	.800	L.C.Y.	20.50	39.50	10.95	70.95	93.50
1100 Hazardous waste, ballast cover with common borrow material		B-63	56	.714		12.55	34	4.70	51.25	70
1110 Mixture of common borrow & topsoil			56	.714		16.40	34	4.70	55.10	74
1120 Bank sand			56	.714		21.50	34	4.70	60.20	79.50
1130 Medium priced clay			44	.909		35	43.50	6	84.50	110
1140 Mixture of common borrow & medium priced clay		↓	56	.714	↓	24	34	4.70	62.70	82

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02 58 Snow Control

02 58 13 – Snow Fencing

02 58 13.10 Snow Fencing System		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **SNOW FENCING SYSTEM**										
7001 Snow fence on steel posts 10′ OC, 4′ high		B-1	500	.048	L.F.	3.67	2.22		5.89	7.35

02 65 Underground Storage Tank Removal

02 65 10 – Underground Tank and Contaminated Soil Removal

02 65 10.30 Removal of Underground Storage Tanks

0010	**REMOVAL OF UNDERGROUND STORAGE TANKS** R026510-20										
0011	Petroleum storage tanks, non-leaking										
0100	Excavate & load onto trailer										
0110	3,000 gal. to 5,000 gal. tank	G	B-14	4	12	Ea.		575	82	657	945
0120	6,000 gal. to 8,000 gal. tank	G	B-3A	3	13.333			645	330	975	1,325
0130	9,000 gal. to 12,000 gal. tank	G	″	2	20			970	495	1,465	2,000
0190	Known leaking tank, add					%				100%	100%
0200	Remove sludge, water and remaining product from bottom										
0201	of tank with vacuum truck										
0300	3,000 gal. to 5,000 gal. tank	G	A-13	5	1.600	Ea.		91	154	245	305
0310	6,000 gal. to 8,000 gal. tank	G	A-13	4	2	Ea.		114	192	306	380
0320	9,000 gal. to 12,000 gal. tank	G	″	3	2.667	″		152	257	409	510
0390	Dispose of sludge off-site, average					Gal.				6.25	6.80
0400	Insert inert solid CO_2 "dry ice" into tank										
0401	For cleaning/transporting tanks (1.5 lb./100 gal. cap)	G	1 Clab	500	.016	Lb.	1.26	.73		1.99	2.48
0503	Disconnect and remove piping	G	1 Plum	160	.050	L.F.		3.49		3.49	5.20
0603	Transfer liquids, 10% of volume	G	″	1600	.005	Gal.		.35		.35	.52
0703	Cut accessway into underground storage tank	G	1 Clab	5.33	1.501	Ea.		68.50		68.50	102
0813	Remove sludge, wash and wipe tank, 500 gal.	G	1 Plum	8	1			70		70	104
0823	3,000 gal.	G		6.67	1.199			83.50		83.50	125
0833	5,000 gal.	G		6.15	1.301			91		91	135
0843	8,000 gal.	G		5.33	1.501			105		105	156
0853	10,000 gal.	G		4.57	1.751			122		122	182
0863	12,000 gal.	G		4.21	1.900			133		133	198
1020	Haul tank to certified salvage dump, 100 miles round trip										
1023	3,000 gal. to 5,000 gal. tank					Ea.				760	830
1026	6,000 gal. to 8,000 gal. tank									880	960
1029	9,000 gal. to 12,000 gal. tank									1,050	1,150
1100	Disposal of contaminated soil to landfill										
1110	Minimum					C.Y.				145	160
1111	Maximum					″				400	440
1120	Disposal of contaminated soil to										
1121	bituminous concrete batch plant										
1130	Minimum					C.Y.				80	88
1131	Maximum					″				115	125
1203	Excavate, pull & load tank, backfill hole, 8,000 gal. +	G	B-12C	.50	32	Ea.		1,750	1,950	3,700	4,725
1213	Haul tank to certified dump, 100 miles rt, 8,000 gal. +	G	B-34K	1	8			425	890	1,315	1,625
1223	Excavate, pull & load tank, backfill hole, 500 gal.	G	B-11C	1	16			850	330	1,180	1,600
1233	Excavate, pull & load tank, backfill hole, 3,000-5,000 gal.	G	B-11M	.50	32			1,700	805	2,505	3,400
1243	Haul tank to certified dump, 100 miles rt, 500 gal.	G	B-34L	1	8			455	340	795	1,050
1253	Haul tank to certified dump, 100 miles rt, 3,000-5,000 gal.	G	B-34M	1	8			455	375	830	1,100
2010	Decontamination of soil on site incl poly tarp on top/bottom										
2011	Soil containment berm and chemical treatment										
2020	Minimum	G	B-11C	100	.160	C.Y.	7.90	8.50	3.29	19.69	25
2021	Maximum	G	″	100	.160		10.20	8.50	3.29	21.99	27.50

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02 65 Underground Storage Tank Removal

02 65 10 – Underground Tank and Contaminated Soil Removal

02 65 10.30 Removal of Underground Storage Tanks	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2050 Disposal of decontaminated soil, minimum				C.Y.				135	150
2055 Maximum				C.Y.				400	440

02 81 Transportation and Disposal of Hazardous Materials

02 81 20 – Hazardous Waste Handling

02 81 20.10 Hazardous Waste Cleanup/Pickup/Disposal									
0010 **HAZARDOUS WASTE CLEANUP/PICKUP/DISPOSAL**									
0100 For contractor rental equipment, i.e., dozer,									
0110 Front end loader, dump truck, etc., see 01 54 33 Reference Section									
1000 Solid pickup									
1100 55 gal. drums				Ea.				240	265
1120 Bulk material, minimum				Ton				190	210
1130 Maximum				"				595	655
1200 Transportation to disposal site									
1220 Truckload = 80 drums or 25 C.Y. or 18 tons									
1260 Minimum				Mile				3.95	4.45
1270 Maximum				"				7.25	7.98
3000 Liquid pickup, vacuum truck, stainless steel tank									
3100 Minimum charge, 4 hours									
3110 1 compartment, 2200 gallon				Hr.				140	155
3120 2 compartment, 5000 gallon				"				200	225
3400 Transportation in 6900 gallon bulk truck				Mile				7.95	8.75
3410 In teflon lined truck				"				10.20	11.25
5000 Heavy sludge or dry vacuumable material				Hr.				140	155
6000 Dumpsite disposal charge, minimum				Ton				140	155
6020 Maximum				"				415	455

02 82 Asbestos Remediation

02 82 13 – Asbestos Abatement

02 82 13.39 Asbestos Remediation Plans and Methods									
0010 **ASBESTOS REMEDIATION PLANS AND METHODS**									
0100 Building Survey-Commercial Building				Ea.				2,200	2,400
0200 Asbestos Abatement Remediation Plan				"				1,350	1,475

02 82 13.41 Asbestos Abatement Equipment									
0010 **ASBESTOS ABATEMENT EQUIPMENT** R028213-20									
0011 Equipment and supplies, buy									
0200 Air filtration device, 2000 CFM				Ea.	1,100			1,100	1,200
0250 Large volume air sampling pump, minimum					435			435	480
0260 Maximum					460			460	505
0300 Airless sprayer unit, 2 gun					2,600			2,600	2,850
0350 Light stand, 500 watt					48			48	52.50
0400 Personal respirators									
0410 Negative pressure, 1/2 face, dual operation, minimum				Ea.	28			28	31
0420 Maximum					22			22	24.50
0450 P.A.P.R., full face, minimum					710			710	780
0460 Maximum					1,275			1,275	1,400
0470 Supplied air, full face, including air line, minimum					211			211	233
0480 Maximum					845			845	930
0500 Personnel sampling pump					215			215	236

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02 82 13 – Asbestos Abatement

	02 82 13.41 Asbestos Abatement Equipment	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1500	Power panel, 20 unit, including GFI				Ea.	565			565	620
1600	Shower unit, including pump and filters					960			960	1,050
1700	Supplied air system (type C)					3,525			3,525	3,875
1750	Vacuum cleaner, HEPA, 16 gal., stainless steel, wet/dry					1,450			1,450	1,600
1760	55 gallon					1,550			1,550	1,700
1800	Vacuum loader, 9-18 ton/hr.					113,000			113,000	124,000
1900	Water atomizer unit, including 55 gal. drum					325			325	355
2000	Worker protection, whole body, foot, head cover & gloves, plastic					10.50			10.50	11.55
2500	Respirator, single use					28			28	30.50
2550	Cartridge for respirator					4.24			4.24	4.66
2570	Glove bag, 7 mil, 50" x 64"					11.90			11.90	13.05
2580	10 mil, 44" x 60"					9.15			9.15	10.10
2590	6 mil, 44" x 60"					5.60			5.60	6.20
6000	Disposable polyethylene bags, 6 mil, 3 C.F.					1.20			1.20	1.32
6300	Disposable fiber drums, 3 C.F.					20			20	22
6400	Pressure sensitive caution labels, 3" x 5"					3.57			3.57	3.93
6450	11" x 17"					13.10			13.10	14.40
6500	Negative air machine, 1800 CFM					900			900	990

02 82 13.42 Preparation of Asbestos Containment Area

0010	**PREPARATION OF ASBESTOS CONTAINMENT AREA**									
0100	Pre-cleaning, HEPA vacuum and wet wipe, flat surfaces	A-9	12000	.005	S.F.	.02	.34		.36	.53
0200	Protect carpeted area, 2 layers 6 mil poly on 3/4" plywood	"	1000	.064		2.67	4.04		6.71	9.15
0300	Separation barrier, 2" x 4" @ 16", 1/2" plywood ea. side, 8' high	2 Carp	400	.040		3.48	2.25		5.73	7.15
0310	12' high		320	.050		3.39	2.82		6.21	7.90
0320	16' high		200	.080		3.35	4.50		7.85	10.40
0400	Personnel decontam. chamber, 2" x 4" @ 16", 3/4" ply ea. side		280	.057		3.76	3.22		6.98	8.95
0450	Waste decontam. chamber, 2" x 4" studs @ 16", 3/4" ply ea. side		360	.044		3.76	2.50		6.26	7.85
0500	Cover surfaces with polyethylene sheeting									
0501	Including glue and tape									
0550	Floors, each layer, 6 mil	A-9	8000	.008	S.F.	.06	.50		.56	.84
0551	4 mil		9000	.007		.05	.45		.50	.74
0560	Walls, each layer, 6 mil		6000	.011		.06	.67		.73	1.10
0561	4 mil		7000	.009		.05	.58		.63	.93
0570	For heights above 14', add						20%			
0575	For heights above 20', add						30%			
0580	For fire retardant poly, add					100%				
0590	For large open areas, deduct					10%	20%			
0600	Seal floor penetrations with foam firestop to 36 sq. in.	2 Carp	200	.080	Ea.	16.05	4.50		20.55	24.50
0610	36 sq. in. to 72 sq. in.		125	.128		32	7.20		39.20	46.50
0615	72 sq. in. to 144 sq. in.		80	.200		64	11.25		75.25	87.50
0620	Wall penetrations, to 36 sq. in.		180	.089		16.05	5		21.05	25
0630	36 sq. in. to 72 sq. in.		100	.160		32	9		41	49
0640	72 sq. in. to 144 sq. in.		60	.267		64	15		79	93
0800	Caulk seams with latex	1 Carp	230	.035	L.F.	.18	1.96		2.14	3.11
0900	Set up neg. air machine, 1-2k CFM/25 M.C.F. volume	1 Asbe	4.30	1.860	Ea.		117		117	179
0950	Set up and remove portable shower unit	2 Asbe	4	4	"		252		252	385

02 82 13.43 Bulk Asbestos Removal

0010	**BULK ASBESTOS REMOVAL**									
0020	Includes disposable tools and 2 suits and 1 respirator filter/day/worker									
0100	Beams, W 10 x 19	A-9	235	.272	L.F.	.86	17.20		18.06	27.50
0110	W 12 x 22		210	.305		.96	19.25		20.21	30.50
0120	W 14 x 26		180	.356		1.12	22.50		23.62	35.50

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02 82 13 – Asbestos Abatement

	02 82 13.43 Bulk Asbestos Removal	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0130	W 16 x 31	A-9	160	.400	L.F.	1.26	25		26.26	40
0140	W 18 x 40		140	.457		1.44	29		30.44	45.50
0150	W 24 x 55		110	.582		1.84	36.50		38.34	58
0160	W 30 x 108		85	.753		2.38	47.50		49.88	75
0170	W 36 x 150		72	.889		2.81	56		58.81	89
0200	Boiler insulation		480	.133	S.F.	.56	8.40		8.96	13.45
0210	With metal lath, add				%				50%	50%
0300	Boiler breeching or flue insulation	A-9	520	.123	S.F.	.39	7.75		8.14	12.35
0310	For active boiler, add				%				100%	100%
0400	Duct or AHU insulation	A-10B	440	.073	S.F.	.23	4.59		4.82	7.30
0500	Duct vibration isolation joints, up to 24 sq. in. duct	A-9	56	1.143	Ea.	3.61	72		75.61	114
0520	25 sq. in. to 48 sq. in. duct		48	1.333		4.21	84		88.21	134
0530	49 sq. in. to 76 sq. in. duct		40	1.600		5.05	101		106.05	160
0600	Pipe insulation, air cell type, up to 4" diameter pipe		900	.071	L.F.	.22	4.49		4.71	7.10
0610	4" to 8" diameter pipe		800	.080	"	.25	5.05		5.30	8
0620	10" to 12" diameter pipe	A-9	700	.091	L.F.	.29	5.75		6.04	9.15
0630	14" to 16" diameter pipe		550	.116	"	.37	7.35		7.72	11.65
0650	Over 16" diameter pipe		650	.098	S.F.	.31	6.20		6.51	9.85
0700	With glove bag up to 3" diameter pipe		200	.320	L.F.	3.20	20		23.20	34.50
1000	Pipe fitting insulation up to 4" diameter pipe		320	.200	Ea.	.63	12.60		13.23	20
1100	6" to 8" diameter pipe		304	.211		.66	13.30		13.96	21
1110	10" to 12" diameter pipe		192	.333		1.05	21		22.05	33
1120	14" to 16" diameter pipe		128	.500		1.58	31.50		33.08	50
1130	Over 16" diameter pipe		176	.364	S.F.	1.15	23		24.15	36.50
1200	With glove bag, up to 8" diameter pipe		75	.853	L.F.	8.05	54		62.05	91.50
2000	Scrape foam fireproofing from flat surface		2400	.027	S.F.	.08	1.68		1.76	2.66
2100	Irregular surfaces		1200	.053		.17	3.37		3.54	5.35
3000	Remove cementitious material from flat surface		1800	.036		.11	2.24		2.35	3.55
3100	Irregular surface		1000	.064		.14	4.04		4.18	6.35
4000	Scrape acoustical coating/fireproofing, from ceiling		3200	.020		.06	1.26		1.32	2
5000	Remove VAT and mastic from floor by hand		2400	.027		.08	1.68		1.76	2.66
5100	By machine	A-11	4800	.013		.04	.84	.01	.89	1.35
5150	For 2 layers, add				%				50%	50%
6000	Remove contaminated soil from crawl space by hand	A-9	400	.160	C.F.	.51	10.10		10.61	16
6100	With large production vacuum loader	A-12	700	.091	"	.29	5.75	1.10	7.14	10.40
7000	Radiator backing, not including radiator removal	A-9	1200	.053	S.F.	.17	3.37		3.54	5.35
8000	Cement-asbestos transite board and cement wall board	2 Asbe	1000	.016		.21	1.01		1.22	1.77
8100	Transite shingle siding	A-10B	750	.043		.29	2.70		2.99	4.44
8200	Shingle roofing	"	2000	.016		.10	1.01		1.11	1.66
8250	Built-up, no gravel, non-friable	B-2	1400	.029		.10	1.31		1.41	2.07
8260	Bituminous flashing	1 Rofc	300	.027		.10	1.32		1.42	2.25
8300	Asbestos millboard, flat board and VAT contaminated plywood	2 Asbe	1000	.016		.09	1.01		1.10	1.64
9000	For type B (supplied air) respirator equipment, add				%				10%	10%

02 82 13.44 Demolition In Asbestos Contaminated Area

0010	**DEMOLITION IN ASBESTOS CONTAMINATED AREA**									
0200	Ceiling, including suspension system, plaster and lath	A-9	2100	.030	S.F.	.10	1.92		2.02	3.05
0210	Finished plaster, leaving wire lath		585	.109		.35	6.90		7.25	10.95
0220	Suspended acoustical tile		3500	.018		.06	1.15		1.21	1.83
0230	Concealed tile grid system		3000	.021		.07	1.35		1.42	2.13
0240	Metal pan grid system		1500	.043		.13	2.69		2.82	4.27
0250	Gypsum board		2500	.026		.08	1.62		1.70	2.56
0260	Lighting fixtures up to 2' x 4'	A-9	72	.889	Ea.	2.81	56		58.81	89

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02 82 13 – Asbestos Abatement

	02 82 13.44 Demolition In Asbestos Contaminated Area	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0400	Partitions, non load bearing									
0410	Plaster, lath, and studs	A-9	690	.093	S.F.	.73	5.85		6.58	9.75
0450	Gypsum board and studs	"	1390	.046	"	.15	2.91		3.06	4.61
9000	For type B (supplied air) respirator equipment, add				%				10%	10%

02 82 13.45 OSHA Testing

0010	**OSHA TESTING**									
0100	Certified technician, minimum				Day		340		340	340
0110	Maximum						670		670	670
0121	Industrial hygienist, minimum						385		385	385
0130	Maximum						755		755	755
0200	Asbestos sampling and PCM analysis, NIOSH 7400, minimum	1 Asbe	8	1	Ea.	18	63		81	116
0210	Maximum		4	2		24	126		150	220
1000	Cleaned area samples		8	1		18	63		81	116
1100	PCM air sample analysis, NIOSH 7400, minimum		8	1		18	63		81	116
1110	Maximum		4	2		24	126		150	220
1200	TEM air sample analysis, NIOSH 7402, minimum								80	106
1210	Maximum								360	450

02 82 13.46 Decontamination of Asbestos Containment Area

0010	**DECONTAMINATION OF ASBESTOS CONTAINMENT AREA**									
0100	Spray exposed substrate with surfactant (bridging)									
0200	Flat surfaces	A-9	6000	.011	S.F.	.44	.67		1.11	1.51
0250	Irregular surfaces		4000	.016	"	.47	1.01		1.48	2.06
0300	Pipes, beams, and columns		2000	.032	L.F.	.63	2.02		2.65	3.78
1000	Spray encapsulate polyethylene sheeting		8000	.008	S.F.	.46	.50		.96	1.28
1100	Roll down polyethylene sheeting		8000	.008	"		.50		.50	.77
1500	Bag polyethylene sheeting		400	.160	Ea.	1.05	10.10		11.15	16.60
2000	Fine clean exposed substrate, with nylon brush		2400	.027	S.F.		1.68		1.68	2.57
2500	Wet wipe substrate		4800	.013			.84		.84	1.29
2600	Vacuum surfaces, fine brush		6400	.010			.63		.63	.97
3000	Structural demolition									
3100	Wood stud walls	A-9	2800	.023	S.F.		1.44		1.44	2.21
3500	Window manifolds, not incl. window replacement		4200	.015			.96		.96	1.47
3600	Plywood carpet protection		2000	.032			2.02		2.02	3.09
4000	Remove custom decontamination facility	A-10A	8	3	Ea.	16.35	190		206.35	310
4100	Remove portable decontamination facility	3 Asbe	12	2	"	15	126		141	210
5000	HEPA vacuum, shampoo carpeting	A-9	4800	.013	S.F.	.12	.84		.96	1.42
9000	Final cleaning of protected surfaces	A-10A	8000	.003	"		.19		.19	.29

02 82 13.47 Asbestos Waste Pkg., Handling, and Disp.

0010	**ASBESTOS WASTE PACKAGING, HANDLING, AND DISPOSAL**									
0100	Collect and bag bulk material, 3 C.F. bags, by hand	A-9	400	.160	Ea.	1.20	10.10		11.30	16.75
0200	Large production vacuum loader	A-12	880	.073		1.01	4.59	.87	6.47	9.05
1000	Double bag and decontaminate	A-9	960	.067		1.20	4.21		5.41	7.75
2000	Containerize bagged material in drums, per 3 C.F. drum	"	800	.080		20	5.05		25.05	29.50
3000	Cart bags 50' to dumpster	2 Asbe	400	.040			2.52		2.52	3.86
5000	Disposal charges, not including haul, minimum				C.Y.				61	67
5020	Maximum				"				355	395
9000	For type B (supplied air) respirator equipment, add				%				10%	10%

02 82 13.48 Asbestos Encapsulation With Sealants

0010	**ASBESTOS ENCAPSULATION WITH SEALANTS**									
0100	Ceilings and walls, minimum	A-9	21000	.003	S.F.	.54	.19		.73	.88
0110	Maximum		10600	.006		.58	.38		.96	1.22
0200	Columns and beams, minimum		13300	.005		.54	.30		.84	1.05

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02 82 Asbestos Remediation

02 82 13 – Asbestos Abatement

02 82 13.48 Asbestos Encapsulation With Sealants	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0210 Maximum	A-9	5325	.012	S.F.	.65	.76		1.41	1.88
0300 Pipes to 12" diameter including minor repairs, minimum		800	.080	L.F.	.65	5.05		5.70	8.40
0310 Maximum		400	.160	"	1.27	10.10		11.37	16.85

02 83 Lead Remediation

02 83 19 – Lead-Based Paint Remediation

02 83 19.21 Lead Paint Remediation Plans and Methods

0010	**LEAD PAINT REMEDIATION PLANS AND METHODS**								
0100	Building Survey-Commercial Building			Ea.				2,050	2,250
0200	Lead Abatement Remediation Plan							1,225	1,350
0300	Lead Paint Testing, AAS Analysis							51	56
0400	Lead Paint Testing, X-Ray Fluorescence							51	56

02 83 19.23 Encapsulation of Lead-Based Paint

0010	**ENCAPSULATION OF LEAD-BASED PAINT**								
0020	Interior, brushwork, trim, under 6"	1 Pord	240	.033	L.F.	2.34	1.59	3.93	4.93
0030	6"-12" wide		180	.044		3.16	2.12	5.28	6.65
0040	Balustrades		300	.027		2.14	1.27	3.41	4.24
0050	Pipe to 4" diameter		500	.016		1.31	.76	2.07	2.57
0060	To 8" diameter		375	.021		1.55	1.02	2.57	3.22
0070	To 12" diameter		250	.032		2.33	1.53	3.86	4.83
0080	To 16" diameter		170	.047		3.46	2.25	5.71	7.15
0090	Cabinets, ornate design		200	.040	S.F.	3.29	1.91	5.20	6.45
0100	Simple design		250	.032	"	2.54	1.53	4.07	5.05
0110	Doors, 3' x 7', both sides, incl. frame & trim								
0120	Flush	1 Pord	6	1.333	Ea.	29.50	63.50	93	127
0130	French, 10-15 lite	"	3	2.667	"	6.65	127	133.65	196
0140	Panel	1 Pord	4	2	Ea.	33.50	95.50	129	179
0150	Louvered	"	2.75	2.909	"	31.50	139	170.50	241
0160	Windows, per interior side, per 15 S.F.								
0170	1-6 lite	1 Pord	14	.571	Ea.	23	27.50	50.50	65.50
0180	7-10 lite		7.50	1.067		23	51	74	101
0190	12 lite		5.75	1.391		34	66.50	100.50	136
0200	Radiators		8	1		72.50	48	120.50	151
0210	Grilles, vents		275	.029	S.F.	2.10	1.39	3.49	4.37
0220	Walls, roller, drywall or plaster		1000	.008		.67	.38	1.05	1.31
0230	With spunbonded reinforcing fabric		720	.011		.82	.53	1.35	1.69
0240	Wood		800	.010		.71	.48	1.19	1.49
0250	Ceilings, roller, drywall or plaster		900	.009		.82	.42	1.24	1.53
0260	Wood		700	.011		.93	.55	1.48	1.83
0270	Exterior, brushwork, gutters and downspouts		300	.027	L.F.	2.09	1.27	3.36	4.19
0280	Columns		400	.020	S.F.	1.41	.96	2.37	2.97
0290	Spray, siding		600	.013	"	1.08	.64	1.72	2.13
0300	Miscellaneous								
0310	Electrical conduit, brushwork, to 2" diameter	1 Pord	500	.016	L.F.	1.31	.76	2.07	2.57
0320	Brick, block or concrete, spray		500	.016	S.F.	1.35	.76	2.11	2.62
0330	Steel, flat surfaces and tanks to 12"		500	.016		1.54	.76	2.30	2.82
0340	Beams, brushwork		400	.020		1.41	.96	2.37	2.97
0350	Trusses		400	.020		1.41	.96	2.37	2.97

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02 83 Lead Remediation

02 83 19 – Lead-Based Paint Remediation

02 83 19.26 Removal of Lead-Based Paint	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **REMOVAL OF LEAD-BASED PAINT** R028319-60									
0011 By chemicals, per application									
0050 Baseboard, to 6" wide	1 Pord	64	.125	L.F.	.85	6		6.85	9.80
0070 To 12" wide		32	.250	"	1.53	11.95		13.48	19.40
0200 Balustrades, one side		28	.286	S.F.	1.49	13.65		15.14	21.50
1400 Cabinets, simple design		32	.250		1.41	11.95		13.36	19.25
1420 Ornate design		25	.320		1.70	15.30		17	24.50
1600 Cornice, simple design		60	.133		1.57	6.35		7.92	11.20
1620 Ornate design		20	.400		5.50	19.10		24.60	34.50
2800 Doors, one side, flush		84	.095		1.58	4.55		6.13	8.50
2820 Two panel		80	.100		1.37	4.78		6.15	8.60
2840 Four panel		45	.178		1.40	8.50		9.90	14.15
2880 For trim, one side, add		64	.125	L.F.	.81	6		6.81	9.75
3000 Fence, picket, one side		30	.267	S.F.	1.37	12.75		14.12	20.50
3200 Grilles, one side, simple design		30	.267		1.37	12.75		14.12	20.50
3220 Ornate design		25	.320		1.46	15.30		16.76	24
3240 Handrails	1 Pord	90	.089	L.F.	1.37	4.25		5.62	7.80
4400 Pipes, to 4" diameter		90	.089		1.58	4.25		5.83	8.05
4420 To 8" diameter		50	.160		3.16	7.65		10.81	14.85
4440 To 12" diameter		36	.222		4.74	10.60		15.34	21
4460 To 16" diameter		20	.400		6.30	19.10		25.40	35.50
4500 For hangers, add		40	.200	Ea.	2.52	9.55		12.07	16.90
4800 Siding		90	.089	S.F.	1.37	4.25		5.62	7.80
5000 Trusses, open		55	.145	SF Face	2.11	6.95		9.06	12.60
6200 Windows, one side only, double-hung, 1/1 light, 24" x 48" high		4	2	Ea.	27.50	95.50		123	173
6220 30" x 60" high		3	2.667		34.50	127		161.50	227
6240 36" x 72" high		2.50	3.200		39.50	153		192.50	270
6280 40" x 80" high		2	4		52	191		243	340
6400 Colonial window, 6/6 light, 24" x 48" high		2	4		55	191		246	345
6420 30" x 60" high		1.50	5.333		69	255		324	455
6440 36" x 72" high		1	8		96.50	380		476.50	670
6480 40" x 80" high		1	8		96.50	380		476.50	670
6600 8/8 light, 24" x 48" high		2	4		50	191		241	340
6620 40" x 80" high		1	8		96.50	380		476.50	670
6800 12/12 light, 24" x 48" high		1	8		96.50	380		476.50	670
6820 40" x 80" high		.75	10.667		138	510		648	905
6840 Window frame & trim items, included in pricing above									
7000 Hand scraping and HEPA vacuum, less than 4 S.F.	1 Pord	8	1	Ea.	1.20	48		49.20	72.50
8000 Collect and bag bulk material, 3 C.F. bags, by hand	"	30	.267	"	1.20	12.75		13.95	20

02 87 Biohazard Remediation

02 87 13 – Mold Remediation

02 87 13.16 Mold Remediation Preparation and Containment

0010 **MOLD REMEDIATION PREPARATION AND CONTAINMENT**									
0015 Mold remediation plans and methods									
0020 Initial inspection, areas to 2,500 S.F.				Total				268	295
0030 Areas to 5,000 S.F.								440	485
0032 Areas to 10,000 S.F.								440	485
0040 Testing, air sample each								126	139
0050 Swab sample								115	127

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02 87 13 – Mold Remediation

	02 87 13.16 Mold Remediation Preparation and Containment	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0060	Tape sample				Total				125	140
0070	Post remediation air test								126	139
0080	Mold abatement plan, area to 2,500 S.F.								1,225	1,325
0090	Areas to 5,000 S.F.								1,625	1,775
0095	Areas to 10,000 S.F.								2,550	2,800
0100	Packup & removal of contents, average 3 bedroom home, excl. storage				Total				8,150	8,975
0110	Average 5 bedroom home, excl. storage				"				15,300	16,800
0600	For demolition in mold contaminated areas, see Section 02 87 13.33									
0610	For personal protection equipment, see Section 02 82 13.41									
6010	Preparation of mold containment area									
6100	Pre-cleaning, HEPA vacuum and wet wipe, flat surfaces	A-9	12000	.005	S.F.	.02	.34		.36	.53
6300	Separation barrier, 2" x 4" @ 16", 1/2" plywood ea. side, 8' high	2 Carp	400	.040		5.20	2.25		7.45	9.05
6310	12' high		320	.050		6.15	2.82		8.97	11
6320	16' high		200	.080		2.54	4.50		7.04	9.50
6400	Personnel decontam. chamber, 2" x 4" @ 16", 3/4" ply ea. side		280	.057		5.15	3.22		8.37	10.50
6450	Waste decontam. chamber, 2" x 4" studs @ 16", 3/4" ply each side		360	.044		20.50	2.50		23	26.50
6500	Cover surfaces with polyethylene sheeting									
6501	Including glue and tape									
6550	Floors, each layer, 6 mil	A-9	8000	.008	S.F.	.06	.50		.56	.84
6551	4 mil		9000	.007		.05	.45		.50	.74
6560	Walls, each layer, 6 mil		6000	.011		.06	.67		.73	1.10
6561	4 mil		7000	.009		.05	.58		.63	.93
6570	For heights above 14', add						20%			
6575	For heights above 20', add						30%			
6580	For fire retardant poly, add					100%				
6590	For large open areas, deduct					10%	20%			
6600	Seal floor penetrations with foam firestop to 36 sq. in.	2 Carp	200	.080	Ea.	16.05	4.50		20.55	24.50
6610	36 sq. in. to 72 sq. in.		125	.128		32	7.20		39.20	46.50
6615	72 sq. in. to 144 sq. in.		80	.200		64	11.25		75.25	87.50
6620	Wall penetrations, to 36 sq. in.		180	.089		16.05	5		21.05	25
6630	36 sq. in. to 72 sq. in.		100	.160		32	9		41	49
6640	72 sq. in. to 144 sq. in.		60	.267		64	15		79	93
6800	Caulk seams with latex caulk	1 Carp	230	.035	L.F.	.18	1.96		2.14	3.11
6900	Set up neg. air machine, 1-2k CFM/25 M.C.F. volume	1 Asbe	4.30	1.860	Ea.		117		117	179

02 87 13.33 Removal and Disposal of Materials With Mold

0010	**REMOVAL AND DISPOSAL OF MATERIALS WITH MOLD**									
0015	Demolition in mold contaminated area									
0200	Ceiling, including suspension system, plaster and lath	A-9	2100	.030	S.F.	.10	1.92		2.02	3.05
0210	Finished plaster, leaving wire lath		585	.109		.35	6.90		7.25	10.95
0220	Suspended acoustical tile		3500	.018		.06	1.15		1.21	1.83
0230	Concealed tile grid system		3000	.021		.07	1.35		1.42	2.13
0240	Metal pan grid system	A-9	1500	.043	S.F.	.13	2.69		2.82	4.27
0250	Gypsum board		2500	.026		.08	1.62		1.70	2.56
0255	Plywood		2500	.026		.08	1.62		1.70	2.56
0260	Lighting fixtures up to 2' x 4'		72	.889	Ea.	2.81	56		58.81	89
0400	Partitions, non load bearing									
0410	Plaster, lath, and studs	A-9	690	.093	S.F.	.73	5.85		6.58	9.75
0450	Gypsum board and studs		1390	.046		.15	2.91		3.06	4.61
0465	Carpet & pad		1390	.046		.15	2.91		3.06	4.61
0600	Pipe insulation, air cell type, up to 4" diameter pipe		900	.071	L.F.	.22	4.49		4.71	7.10
0610	4" to 8" diameter pipe		800	.080		.25	5.05		5.30	8
0620	10" to 12" diameter pipe		700	.091		.29	5.75		6.04	9.15

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02 87 13 – Mold Remediation

	02 87 13.33 Removal and Disposal of Materials With Mold	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0630	14" to 16" diameter pipe	A-9	550	.116	L.F.	.37	7.35		7.72	11.65
0650	Over 16" diameter pipe		650	.098	S.F.	.31	6.20		6.51	9.85
9000	For type B (supplied air) respirator equipment, add				%				10%	10%

02 87 19 – Bio-Hazard and Infectious Disease Control Remediation

02 87 19.10 Temporary Barriers, Including Ppe

0010	**TEMPORARY BARRIERS, including PPE**									
0100	Infectious control partition, adjustable to 10' high, obscured, 4' panel	2 Carp	75	.213	Ea.	580	12		592	660
0110	3' panel		75	.213		550	12		562	625
0120	2' panel		75	.213		430	12		442	495
0130	1' panel	1 Carp	75	.107		285	6		291	325
0140	6" panel	"	75	.107		265	6		271	300
0150	2' panel with HEPA filtered discharge port	2 Carp	75	.213		500	12		512	570
0160	3' panel with 32" door		75	.213		895	12		907	1,000
0170	4' panel with 36" door		75	.213		995	12		1,007	1,125
0180	4'-6" panel with 44" door		75	.213		1,200	12		1,212	1,350
0190	Hinged corner		68	.235		186	13.25		199.25	224
0200	Outside corner		68	.235		151	13.25		164.25	186
0210	T post		68	.235		151	13.25		164.25	186
0220	Accessories, ceiling grid clip		300	.053		7.65	3		10.65	12.85
0230	Panel locking clip		300	.053		5.35	3		8.35	10.35
0240	Panel joint closure strip		300	.053		8.20	3		11.20	13.45
0250	Screw jack		300	.053		6.85	3		9.85	12
0260	Digital pressure difference guage					275			275	305
0280	Combination lockset	1 Carp	11	.727		207	41		248	289
0285	Sealant tape, 2" wide	1 Clab	165	.048	C.L.F.	11.10	2.21		13.31	15.55
0290	System in place, including door and accessories									
0300	Based upon 25 uses	2 Carp	43	.372	L.F.	11.25	21		32.25	43.50
0310	Based upon 50 uses	2 Carp	43	.372	L.F.	6.30	21		27.30	38
0330	Based upon 100 uses		43	.372	"	3.84	21		24.84	35
0400	Separation barrier, 2" x 4" @ 16" O.C., 1/2" plywood each side, 8' high		340	.047	S.F.	3.65	2.65		6.30	7.95
0410	12' high		275	.058		3.61	3.28		6.89	8.85
0420	16' high		170	.094		3.70	5.30		9	11.95
0430	5/8" FR GWB each side, 8' high		290	.055		2.57	3.11		5.68	7.45
0440	12' high		235	.068		2.49	3.83		6.32	8.45
0450	16' high		144	.111		2.45	6.25		8.70	12

02 87 19.20 Temporary Protection, Including Ppe

0010	**TEMPORARY PROTECTION, including PPE**									
0100	Infectious control protection, 6 mil plastic sheeting, applied to floors	1 Skwk	1900	.004	S.F.	.06	.25		.31	.44
0110	Applied to walls		1400	.006		.06	.34		.40	.58
0120	Applied to ceilings		1000	.008		.06	.47		.53	.78
0130	Sealant tape, 2" wide	1 Clab	165	.048	C.L.F.	11.10	2.21		13.31	15.55
0140	Floor covering, 1/8" tempered hardboard	2 Carp	878	.018	S.F.	.51	1.03		1.54	2.10
0150	1/2" CDX		878	.018		.95	1.03		1.98	2.58
0160	3/4" CDX		755	.021		1.14	1.19		2.33	3.03

02 87 19.30 Infectious Control Equipment and Supplies

0010	**INFECTIOUS CONTROL EQUIPMENT AND SUPPLIES**									
0100	Entry/exit decontamination chamber, portable, 10 uses	A-10C	12	2	Ea.	228	126	28.50	382.50	475
0105	Negative air machine, 1800 CFM					900			900	990
0110	Disposable polyethylene bags, 6 mil, 3 C.F.					1.20			1.20	1.32
0130	Paper towels, carton of 12, 350' rolls					77.50			77.50	85
0140	Heavy duty wipes, 160 per box					28			28	30.50
0200	Tent, including frame, weights, roof, walls, 5' x 5'	2 Skwk	32	.500		2,150	29.50		2,179.50	2,425

02 87 Biohazard Remediation

02 87 19 – Bio-Hazard and Infectious Disease Control Remediation

	02 87 19.30 Infectious Control Equipment and Supplies	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0205	5′ x 10′	2 Skwk	24	.667	Ea.	2,500	39.50		2,539.50	2,800
0210	10′ x 10′		24	.667		3,125	39.50		3,164.50	3,475
0220	13′ x 26′		12	1.333		9,350	78.50		9,428.50	10,400
0230	13′ x 26′, flat roof infirmary		12	1.333		7,600	78.50		7,678.50	8,475
0240	13′ x 26′, drive through screening		12	1.333		8,800	78.50		8,878.50	9,800
0242	LED light kit for tents, 15 watt	1 Elec	48	.167		199	11.05		210.05	235
0244	Halogen heating kit, 1500 watt	"	48	.167		500	11.05		511.05	565
0250	Medical partition system, including frame, drapes, 5′ x 5′	2 Skwk	48	.333		1,300	19.65		1,319.65	1,450
	02 87 19.40 Infectious Control Cleaning, Includes Ppe									
0010	**INFECTIOUS CONTROL CLEANING, Includes PPE**									
0100	Infectious control cleaning, including PPE and antimicrobial spray, floors	1 Skwk	3600	.002	S.F.	.03	.13		.16	.23
0110	Walls		3000	.003		.03	.16		.19	.27
0120	Ceilings		2700	.003		.03	.17		.20	.29
0130	Countertops		3300	.002		.03	.14		.17	.24
0140	Other surfaces	1 Skwk	2600	.003	S.F.	.03	.18		.21	.30
0150	Plumbing fixtures		14	.571	Ea.	2.31	33.50		35.81	53
0160	Bathroom accessories		30	.267		1.06	15.70		16.76	24.50
0170	Kitchen appliance		9	.889		3.88	52.50		56.38	83
0180	Electrical switches and receptacles		140	.057		.23	3.37		3.60	5.30
0190	Work station		9	.889		4.08	52.50		56.58	83
0200	Door and window hardware		88	.091		.36	5.35		5.71	8.45
0250	Supply / return ductwork, up to 2 S.F. cross section		240	.033	L.F.	.24	1.96		2.20	3.22
0260	2 to 4 S.F. cross section		192	.042		.35	2.45		2.80	4.08
0270	4 to 8 S.F. cross section		144	.056		.44	3.27		3.71	5.40
0280	8 SF cross section		102	.078		.67	4.62		5.29	7.70
0300	Duct coil		5	1.600	Ea.	6.70	94		100.70	149
0310	Duct damper and vane set		77	.104		.78	6.10		6.88	10.05
0320	Fan coil unit or VAV box		8	1		4.09	59		63.09	93
0330	Air handling unit and coil		2	4		16.35	236		252.35	375
0340	Grill / diffuser or register		32	.250		1.16	14.75		15.91	23.50

02 91 Chemical Sampling, Testing and Analysis

02 91 10 – Monitoring, Sampling, Testing and Analysis

	02 91 10.10 Monitoring, Chem. Sampling, Testing & Analysis									
0010	**MONITORING, CHEMICAL SAMPLING, TESTING AND ANALYSIS**									
0015	Field sampling of waste									
0100	Field samples, sample collection, sludge	1 Skwk	32	.250	Ea.		14.75		14.75	22
0110	Contaminated soils	"	32	.250	"		14.75		14.75	22
0200	Vials and bottles									
0210	32 oz. clear wide mouth jar (case of 12)				Ea.	16.80			16.80	18.50
0220	32 oz. Boston round bottle (case of 12)					37.50			37.50	41
0230	32 oz. HDPE bottle (case of 12)					28.50			28.50	31.50
0300	Laboratory analytical services									
0310	Laboratory testing 13 metals				Ea.	207			207	228
0312	13 metals + mercury					210			210	231
0314	8 metals					154			154	169
0316	Mercury only					56.50			56.50	62.50
0318	Single metal (only Cs, Li, Sr, Ta)					44.50			44.50	49
0320	Single metal (excludes Hg, Cs, Li, Sr, Ta)					44.50			44.50	49
0400	Hydrocarbons standard					177			177	195
0410	Hydrocarbons fingerprint					248			248	273

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02 91 10.10 Monitoring, Chem. Sampling, Testing & Analysis	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0500 Radioactivity gross alpha				Ea.	149			149	164
0510 Gross alpha & beta				Ea.	149			149	164
0520 Radium 226					100			100	110
0530 Radium 228					118			118	130
0540 Radon					144			144	159
0550 Uranium					130			130	143
0600 Volatile organics without GC/MS					151			151	166
0610 Volatile organics including GC/MS					315			315	345
0630 Synthetic organic compounds					1,025			1,025	1,125
0640 Herbicides					204			204	224
0650 Pesticides					145			145	160
0660 PCB's					156			156	172

Division Notes

	CREW	DAILY OUTPUT	LABOR-HOURS	UNIT	BARE COSTS MAT.	LABOR	EQUIP.	TOTAL	TOTAL INCL O&P

Estimating Tips

General

- Carefully check all the plans and specifications. Concrete often appears on drawings other than structural drawings, including mechanical and electrical drawings for equipment pads. The cost of cutting and patching is often difficult to estimate. See Subdivision 03 81 for Concrete Cutting, Subdivision 02 41 19.16 for Cutout Demolition, Subdivision 03 05 05.10 for Concrete Demolition, and Subdivision 02 41 19.19 for Rubbish Handling (handling, loading, and hauling of debris).
- Always obtain concrete prices from suppliers near the job site. A volume discount can often be negotiated, depending upon competition in the area. Remember to add for waste, particularly for slabs and footings on grade.

03 10 00 Concrete Forming and Accessories

- A primary cost for concrete construction is forming. Most jobs today are constructed with prefabricated forms. The selection of the forms best suited for the job and the total square feet of forms required for efficient concrete forming and placing are key elements in estimating concrete construction. Enough forms must be available for erection to make efficient use of the concrete placing equipment and crew.
- Concrete accessories for forming and placing depend upon the systems used. Study the plans and specifications to ensure that all special accessory requirements have been included in the cost estimate, such as anchor bolts, inserts, and hangers.
- Included within costs for forms-in-place are all necessary bracing and shoring.

03 20 00 Concrete Reinforcing

- Ascertain that the reinforcing steel supplier has included all accessories, cutting, bending, and an allowance for lapping, splicing, and waste. A good rule of thumb is 10% for lapping, splicing, and waste. Also, 10% waste should be allowed for welded wire fabric.
- The unit price items in the subdivisions for Reinforcing In Place, Glass Fiber Reinforcing, and Welded Wire Fabric include the labor to install accessories such as beam and slab bolsters, high chairs, and bar ties and tie wire. The material cost for these accessories is not included; they may be obtained from the Accessories Subdivisions.

03 30 00 Cast-In-Place Concrete

- When estimating structural concrete, pay particular attention to requirements for concrete additives, curing methods, and surface treatments. Special consideration for climate, hot or cold, must be included in your estimate. Be sure to include requirements for concrete placing equipment and concrete finishing.
- For accurate concrete estimating, the estimator must consider each of the following major components individually: forms, reinforcing steel, ready-mix concrete, placement of the concrete, and finishing of the top surface. For faster estimating, Subdivision 03 30 53.40 for Concrete-In-Place can be used; here, various items of concrete work are presented that include the costs of all five major components (unless specifically stated otherwise).

03 40 00 Precast Concrete
03 50 00 Cast Decks and Underlayment

- The cost of hauling precast concrete structural members is often an important factor. For this reason, it is important to get a quote from the nearest supplier. It may become economically feasible to set up precasting beds on the site if the hauling costs are prohibitive.

Reference Numbers

Reference numbers are shown at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear. ■

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03 01 Maintenance of Concrete

03 01 30 – Maintenance of Cast-In-Place Concrete

03 01 30.62 Concrete Patching	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **CONCRETE PATCHING**									
0100 Floors, 1/4" thick, small areas, regular grout	1 Cefi	170	.047	S.F.	1.34	2.50		3.84	5.15
0150 Epoxy grout	"	100	.080	"	11.60	4.25		15.85	18.95
2000 Walls, including chipping, cleaning and epoxy grout									
2100 1/4" deep	1 Cefi	65	.123	S.F.	4.55	6.55		11.10	14.55
2150 1/2" deep		50	.160		9.10	8.50		17.60	22.50
2200 3/4" deep		40	.200		13.65	10.65		24.30	30.50

03 05 Common Work Results for Concrete

03 05 05 – Selective Demolition for Concrete

03 05 05.10 Selective Demolition, Concrete

0010 **SELECTIVE DEMOLITION, CONCRETE** R024119-10									
0012 Excludes saw cutting, torch cutting, loading or hauling									
0050 Break into small pieces, reinf. less than 1% of cross-sectional area	B-9	24	1.667	C.Y.		76.50	13.85	90.35	129
0060 Reinforcing 1% to 2% of cross-sectional area		16	2.500			115	21	136	194
0070 Reinforcing more than 2% of cross-sectional area		8	5			230	41.50	271.50	385
0150 Remove whole pieces, up to 2 tons per piece	E-18	36	1.111	Ea.		69	22.50	91.50	130
0160 2-5 tons per piece		30	1.333			82.50	27	109.50	156
0170 5-10 tons per piece		24	1.667			103	34	137	196
0180 10-15 tons per piece		18	2.222			138	45.50	183.50	261
0250 Precast unit embedded in masonry, up to 1 C.F.	D-1	16	1			50		50	75.50
0260 1-2 C.F.		12	1.333			67		67	100
0270 2-5 C.F.		10	1.600			80		80	120
0280 5-10 C.F.		8	2			100		100	151
0990 For hydrodemolition see Section 02 41 13.15									

03 05 13 – Basic Concrete Materials

03 05 13.20 Concrete Admixtures and Surface Treatments

0010 **CONCRETE ADMIXTURES AND SURFACE TREATMENTS**									
0040 Abrasives, aluminum oxide, over 20 tons				Lb.	1.47			1.47	1.62
0050 1 to 20 tons					1.53			1.53	1.68
0070 Under 1 ton					1.59			1.59	1.75
0100 Silicon carbide, black, over 20 tons					2.27			2.27	2.50
0110 1 to 20 tons					2.36			2.36	2.60
0120 Under 1 ton					2.45			2.45	2.70
0200 Air entraining agent, .7 to 1.5 oz. per bag, 55 gallon drum				Gal.	17.70			17.70	19.45
0220 5 gallon pail					32			32	35.50
0300 Bonding agent, acrylic latex, 250 S.F./gallon, 5 gallon pail					27			27	29.50
0320 Epoxy resin, 80 S.F./gallon, 4 gallon case					66			66	72.50
0400 Calcium chloride, 50 lb. bags, T.L. lots				Ton	950			950	1,050
0420 Less than truckload lots				Bag	19.95			19.95	22
0500 Carbon black, liquid, 2 to 8 lb. per bag of cement				Lb.	11.50			11.50	12.65
0600 Concrete admixture, integral colors, dry pigment, 5 lb. bag				Ea.	29.50			29.50	32.50
0610 10 lb. bag					51.50			51.50	57
0620 25 lb. bag					80			80	88
0920 Dustproofing compound, 250 S.F./gal., 5 gallon pail				Gal.	11.40			11.40	12.55
1010 Epoxy based, 125 S.F./gal., 5 gallon pail				"	30.50			30.50	33.50
1100 Hardeners, metallic, 55 lb. bags, natural (grey)				Lb.	1.66			1.66	1.82
1200 Colors					1.42			1.42	1.57
1300 Non-metallic, 55 lb. bags, natural grey					.37			.37	.41
1320 Colors					1.06			1.06	1.16

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03 05 13.20 Concrete Admixtures and Surface Treatments	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1550 Release agent, for tilt slabs, 5 gallon pail				Gal.	17.15			17.15	18.85
1570 For forms, 5 gallon pail					13.95			13.95	15.35
1590 Concrete release agent for forms, 100% biodegradable, zero VOC, 5 gal. pail G					20.50			20.50	22.50
1595 55 gallon drum G					15.50			15.50	17.05
1600 Sealer, hardener and dustproofer, epoxy-based, 125 S.F./gal., 5 gallon unit					30.50			30.50	33.50
1620 3 gallon unit					33.50			33.50	36.50
1630 Sealer, solvent-based, 250 S.F./gal., 55 gallon drum					22			22	24.50
1640 5 gallon pail					30			30	33
1650 Sealer, water based, 350 S.F., 55 gallon drum					27			27	30
1660 5 gallon pail					25			25	27.50
1900 Set retarder, 100 S.F./gal., 1 gallon pail					6.15			6.15	6.80
2000 Waterproofing, integral 1 lb. per bag of cement				Lb.	1.36			1.36	1.50
2100 Powdered metallic, 40 lbs. per 100 S.F., standard colors					4.19			4.19	4.61
2120 Premium colors					5.90			5.90	6.50
3000 For colored ready-mix concrete, add to prices in section 03 31 13.35									
3100 Subtle shades, 5 lb. dry pigment per C.Y., add				C.Y.	29.50			29.50	32.50
3400 Medium shades, 10 lb. dry pigment per C.Y., add					51.50			51.50	57
3700 Deep shades, 25 lb. dry pigment per C.Y., add					80			80	88
6000 Concrete ready mix additives, recycled coal fly ash, mixed at plant G				Ton	59			59	65
6010 Recycled blast furnace slag, mixed at plant G				"	89			89	98
03 05 13.25 Aggregate									
0010 **AGGREGATE** R033105-20									
0100 Lightweight vermiculite or perlite, 4 C.F. bag, C.L. lots G				Bag	29.50			29.50	32.50
0150 L.C.L. lots G				"	33			33	36.50
0250 Sand & stone, loaded at pit, crushed bank gravel				Ton	15.65			15.65	17.20
0350 Sand, washed, for concrete R033105-50					33.50			33.50	37
0400 For plaster or brick					33.50			33.50	37
0450 Stone, 3/4" to 1-1/2"					13.90			13.90	15.30
0470 Round, river stone					20			20	22
0500 3/8" roofing stone & 1/2" pea stone					24			24	26.50
0550 For trucking 10-mile round trip, add to the above	B-34B	117	.068			3.63	6.55	10.18	12.60
0600 For trucking 30-mile round trip, add to the above	"	72	.111			5.90	10.65	16.55	20.50
0850 Sand & stone, loaded at pit, crushed bank gravel				C.Y.	22			22	24
0950 Sand, washed, for concrete					47			47	51.50
1000 For plaster or brick					47			47	51.50
1050 Stone, 3/4" to 1-1/2"					26.50			26.50	29.50
1055 Round, river stone					33.50			33.50	37
1100 3/8" roofing stone & 1/2" pea stone					21			21	23
1150 For trucking 10-mile round trip, add to the above	B-34B	78	.103			5.45	9.85	15.30	18.95
1200 For trucking 30-mile round trip, add to the above	"	48	.167			8.85	16	24.85	31
1310 Onyx chips, 50 lb. bags				Cwt.	88.50			88.50	97.50
1330 Quartz chips, 50 lb. bags					38			38	42
1410 White marble, 3/8" to 1/2", 50 lb. bags					9.15			9.15	10.10
1430 3/4", bulk				Ton	172			172	189
03 05 13.30 Cement									
0010 **CEMENT** R033105-20									
0240 Portland, Type I/II, T.L. lots, 94 lb. bags				Bag	14.40			14.40	15.85
0250 L.T.L./L.C.L. lots R033105-30				"	16.90			16.90	18.60
0300 Trucked in bulk, per cwt.				Cwt.	9.40			9.40	10.35
0400 Type III, high early strength, T.L. lots, 94 lb. bags R033105-40				Bag	15.80			15.80	17.35
0420 L.T.L. or L.C.L. lots					24			24	26.50
0500 White, type III, high early strength, T.L. or C.L. lots, bags R033105-50					31.50			31.50	34.50

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03 05 Common Work Results for Concrete

03 05 13 – Basic Concrete Materials

		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
03 05 13.30	**Cement**									
0520	L.T.L. or L.C.L. lots				Bag	48			48	53
0600	White, type I, T.L. or C.L. lots, bags					31			31	34.50
0620	L.T.L. or L.C.L. lots					33			33	36
03 05 13.80	**Waterproofing and Dampproofing**									
0010	**WATERPROOFING AND DAMPPROOFING**									
0050	Integral waterproofing, add to cost of regular concrete				C.Y.	8.15			8.15	9
03 05 13.85	**Winter Protection**									
0010	**WINTER PROTECTION**									
0012	For heated ready mix, add				C.Y.	8.50			8.50	9.35
0100	Temporary heat to protect concrete, 24 hours	2 Clab	50	.320	M.S.F.	184	14.60		198.60	224
0200	Temporary shelter for slab on grade, wood frame/polyethylene sheeting									
0201	Build or remove, light framing for short spans	2 Carp	10	1.600	M.S.F.	485	90		575	665
0210	Large framing for long spans	"	3	5.333	"	585	300		885	1,100
0500	Electrically heated pads, 110 volts, 15 watts/S.F., buy				S.F.	12.90			12.90	14.20
0600	20 watts/S.F., buy					17.15			17.15	18.85
0710	Electrically heated pads, 15 watts/S.F., 20 uses					.64			.64	.71

03 11 Concrete Forming

03 11 13 – Structural Cast-In-Place Concrete Forming

			Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
03 11 13.20	**Forms In Place, Beams and Girders**										
0010	**FORMS IN PLACE, BEAMS AND GIRDERS**	R031113-40									
0500	Exterior spandrel, job-built plywood, 12" wide, 1 use		C-2	225	.213	SFCA	4.82	11.70		16.52	22.50
0550	2 use	R031113-60		275	.175		2.53	9.55		12.08	17.05
0600	3 use			295	.163		1.93	8.90		10.83	15.40
0650	4 use			310	.155		1.57	8.50		10.07	14.35
1000	18" wide, 1 use			250	.192		4.38	10.55		14.93	20.50
1050	2 use			275	.175		2.41	9.55		11.96	16.90
1100	3 use			305	.157		1.75	8.65		10.40	14.80
1150	4 use			315	.152		1.44	8.35		9.79	14.05
1500	24" wide, 1 use			265	.181		4.02	9.95		13.97	19.25
1550	2 use			290	.166		2.28	9.10		11.38	16
1600	3 use			315	.152		1.61	8.35		9.96	14.20
1650	4 use			325	.148		1.31	8.10		9.41	13.50
2000	Interior beam, job-built plywood, 12" wide, 1 use			300	.160		5.55	8.80		14.35	19.20
2050	2 use			340	.141		2.68	7.75		10.43	14.50
2100	3 use			364	.132		2.23	7.25		9.48	13.20
2150	4 use		C-2	377	.127	SFCA	1.81	7		8.81	12.40
2500	24" wide, 1 use			320	.150		4.11	8.25		12.36	16.75
2550	2 use			365	.132		2.32	7.20		9.52	13.30
2600	3 use			385	.125		1.63	6.85		8.48	12
2650	4 use			395	.122		1.33	6.65		7.98	11.35
3000	Encasing steel beam, hung, job-built plywood, 1 use			325	.148		4.60	8.10		12.70	17.10
3050	2 use			390	.123		2.53	6.75		9.28	12.85
3100	3 use			415	.116		1.84	6.35		8.19	11.50
3150	4 use			430	.112		1.50	6.10		7.60	10.75
3500	Bottoms only, to 30" wide, job-built plywood, 1 use			230	.209		6.55	11.45		18	24.50
3550	2 use			265	.181		3.67	9.95		13.62	18.85
3600	3 use			280	.171		2.62	9.40		12.02	16.90
3650	4 use			290	.166		2.13	9.10		11.23	15.85
4000	Sides only, vertical, 36" high, job-built plywood, 1 use			335	.143		6.90	7.85		14.75	19.25

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03 11 13.20 Forms In Place, Beams and Girders		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4050	2 use	C-2	405	.119	SFCA	3.78	6.50		10.28	13.85
4100	3 use		430	.112		2.75	6.10		8.85	12.15
4150	4 use		445	.108		2.24	5.90		8.14	11.25
4500	Sloped sides, 36" high, 1 use		305	.157		6.85	8.65		15.50	20.50
4550	2 use		370	.130		3.83	7.10		10.93	14.80
4600	3 use		405	.119		2.74	6.50		9.24	12.70
4650	4 use		425	.113		2.23	6.20		8.43	11.65
5000	Upstanding beams, 36" high, 1 use		225	.213		8	11.70		19.70	26
5050	2 use		255	.188		4.48	10.30		14.78	20.50
5100	3 use		275	.175		3.23	9.55		12.78	17.80
5150	4 use		280	.171		2.62	9.40		12.02	16.90

03 11 13.25 Forms In Place, Columns										
0010	**FORMS IN PLACE, COLUMNS** R031113-40									
0500	Round fiberglass, 4 use per mo., rent, 12" diameter	C-1	160	.200	L.F.	23	10.75		33.75	41.50
0550	16" diameter R031113-60		150	.213		27	11.45		38.45	46.50
0600	18" diameter		140	.229		29.50	12.25		41.75	51
0650	24" diameter		135	.237		37	12.70		49.70	59.50
0700	28" diameter		130	.246		41.50	13.20		54.70	65
0800	30" diameter		125	.256		43.50	13.75		57.25	68.50
0850	36" diameter		120	.267		57.50	14.30		71.80	84.50
1500	Round fiber tube, recycled paper, 1 use, 8" diameter G		155	.206		2.48	11.05		13.53	19.25
1550	10" diameter G		155	.206		4.03	11.05		15.08	21
1600	12" diameter G		150	.213		5	11.45		16.45	22.50
1650	14" diameter G		145	.221		7.15	11.85		19	25.50
1700	16" diameter G		140	.229		8.35	12.25		20.60	27.50
1720	18" diameter G	C-1	140	.229	L.F.	9.75	12.25		22	29
1750	20" diameter G		135	.237		11.65	12.70		24.35	32
1800	24" diameter G		130	.246		13.45	13.20		26.65	34.50
1850	30" diameter G		125	.256		19.60	13.75		33.35	42
1900	36" diameter G		115	.278		28.50	14.90		43.40	53
1950	42" diameter G		100	.320		52.50	17.15		69.65	83
2000	48" diameter G		85	.376		55.50	20		75.50	91.50
2200	For seamless type, add					15%				
3000	Round, steel, 4 use per mo., rent, regular duty, 14" diameter G	C-1	145	.221	L.F.	18.45	11.85		30.30	38
3050	16" diameter G		125	.256		18.80	13.75		32.55	41
3100	Heavy duty, 20" diameter G		105	.305		21	16.35		37.35	47.50
3150	24" diameter G		85	.376		22.50	20		42.50	55
3200	30" diameter G		70	.457		26	24.50		50.50	65
3250	36" diameter G		60	.533		28	28.50		56.50	73
3300	48" diameter G		50	.640		41.50	34.50		76	96.50
3350	60" diameter G		45	.711		51	38		89	113
4500	For second and succeeding months, deduct					50%				
5000	Job-built plywood, 8" x 8" columns, 1 use	C-1	165	.194	SFCA	3.76	10.40		14.16	19.65
5050	2 use		195	.164		2.16	8.80		10.96	15.45
5100	3 use		210	.152		1.50	8.15		9.65	13.80
5150	4 use		215	.149		1.23	8		9.23	13.25
5500	12" x 12" columns, 1 use		180	.178		3.76	9.55		13.31	18.35
5550	2 use		210	.152		2.07	8.15		10.22	14.40
5600	3 use		220	.145		1.50	7.80		9.30	13.25
5650	4 use		225	.142		1.22	7.65		8.87	12.70
6000	16" x 16" columns, 1 use		185	.173		3.83	9.30		13.13	18
6050	2 use		215	.149		2.03	8		10.03	14.15

		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
03 11 13.25	**Forms In Place, Columns**									
6100	3 use	C-1	230	.139	SFCA	1.54	7.45		8.99	12.80
6150	4 use		235	.136		1.25	7.30		8.55	12.25
6500	24″ x 24″ columns, 1 use		190	.168		4.39	9.05		13.44	18.25
6550	2 use		216	.148		2.41	7.95		10.36	14.50
6600	3 use		230	.139		1.75	7.45		9.20	13.05
6650	4 use		238	.134		1.43	7.20		8.63	12.30
7000	36″ x 36″ columns, 1 use		200	.160		3.71	8.60		12.31	16.85
7050	2 use		230	.139		2.08	7.45		9.53	13.40
7100	3 use		245	.131		1.48	7		8.48	12.10
7150	4 use		250	.128		1.20	6.85		8.05	11.55
7400	Steel framed plywood, based on 50 uses of purchased									
7420	forms, and 4 uses of bracing lumber									
7500	8″ x 8″ column	C-1	340	.094	SFCA	2.39	5.05		7.44	10.15
7550	10″ x 10″		350	.091		2.12	4.90		7.02	9.65
7600	12″ x 12″		370	.086		1.80	4.64		6.44	8.90
7650	16″ x 16″		400	.080		1.40	4.29		5.69	7.95
7700	20″ x 20″		420	.076		1.24	4.09		5.33	7.45
7750	24″ x 24″		440	.073		.87	3.90		4.77	6.75
7755	30″ x 30″		440	.073		1.11	3.90		5.01	7
7760	36″ x 36″		460	.070		.98	3.73		4.71	6.65
03 11 13.30	**Forms In Place, Culvert**									
0010	**FORMS IN PLACE, CULVERT** R031113-40									
0015	5′ to 8′ square or rectangular, 1 use	C-1	170	.188	SFCA	6.15	10.10		16.25	22
0050	2 use R031113-60		180	.178		3.61	9.55		13.16	18.15
0100	3 use		190	.168		2.76	9.05		11.81	16.50
0150	4 use		200	.160		2.33	8.60		10.93	15.30
03 11 13.35	**Forms In Place, Elevated Slabs**									
0010	**FORMS IN PLACE, ELEVATED SLABS** R031113-40									
1000	Flat plate, job-built plywood, to 15′ high, 1 use R031113-60	C-2	470	.102	S.F.	5.75	5.60		11.35	14.70
1050	2 use		520	.092		3.17	5.05		8.22	11.05
1100	3 use		545	.088		2.31	4.83		7.14	9.75
1150	4 use		560	.086		1.87	4.70		6.57	9.05
1500	15′ to 20′ high ceilings, 4 use		495	.097		2.01	5.30		7.31	10.10
1600	21′ to 35′ high ceilings, 4 use		450	.107		2.44	5.85		8.29	11.40
2000	Flat slab, drop panels, job-built plywood, to 15′ high, 1 use		449	.107		6.75	5.85		12.60	16.20
2050	2 use		509	.094		3.73	5.15		8.88	11.80
2100	3 use		532	.090		2.71	4.95		7.66	10.35
2150	4 use		544	.088		2.20	4.84		7.04	9.60
2250	15′ to 20′ high ceilings, 4 use		480	.100		3.64	5.50		9.14	12.15
2350	20′ to 35′ high ceilings, 4 use		435	.110		4.05	6.05		10.10	13.45
3000	Floor slab hung from steel beams, 1 use		485	.099		3.89	5.45		9.34	12.40
3050	2 use		535	.090		2.85	4.92		7.77	10.50
3100	3 use		550	.087		2.50	4.79		7.29	9.90
3150	4 use		565	.085		2.33	4.66		6.99	9.50
3500	Floor slab, with 1-way joist pans, 1 use		415	.116		10.55	6.35		16.90	21
3550	2 use		445	.108		7.50	5.90		13.40	17.05
3600	3 use		475	.101		6.45	5.55		12	15.35
3650	4 use		500	.096		5.95	5.25		11.20	14.40
4500	With 2-way waffle domes, 1 use		405	.119		11.15	6.50		17.65	22
4520	2 use		450	.107		8.05	5.85		13.90	17.60
4530	3 use		460	.104		7.05	5.70		12.75	16.25
4550	4 use	C-2	470	.102	S.F.	6.55	5.60		12.15	15.55

03 11 13 – Structural Cast-In-Place Concrete Forming

	03 11 13.35 Forms In Place, Elevated Slabs		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
5000	Box out for slab openings, over 16" deep, 1 use		C-2	190	.253	SFCA	5.25	13.85		19.10	26.50
5050	2 use			240	.200	"	2.89	10.95		13.84	19.55
5500	Shallow slab box outs, to 10 S.F.			42	1.143	Ea.	17.70	62.50		80.20	113
5550	Over 10 S.F. (use perimeter)			600	.080	L.F.	2.37	4.39		6.76	9.15
6000	Bulkhead forms for slab, with keyway, 1 use, 2 piece			500	.096		2.39	5.25		7.64	10.50
6100	3 piece (see also edge forms)			460	.104		2.73	5.70		8.43	11.50
6200	Slab bulkhead form, 4-1/2" high, exp metal, w/keyway & stakes	G	C-1	1200	.027		1.18	1.43		2.61	3.43
6210	5-1/2" high	G		1100	.029		1.36	1.56		2.92	3.82
6215	7-1/2" high	G		960	.033		1.68	1.79		3.47	4.51
6220	9-1/2" high	G		840	.038		1.83	2.04		3.87	5.05
6500	Curb forms, wood, 6" to 12" high, on elevated slabs, 1 use			180	.178	SFCA	2.67	9.55		12.22	17.15
6550	2 use			205	.156		1.47	8.35		9.82	14.05
6600	3 use			220	.145		1.07	7.80		8.87	12.75
6650	4 use			225	.142		.87	7.65		8.52	12.30
7000	Edge forms to 6" high, on elevated slab, 4 use			500	.064	L.F.	.31	3.43		3.74	5.45
7070	7" to 12" high, 1 use			162	.198	SFCA	2.02	10.60		12.62	17.95
7080	2 use			198	.162		1.11	8.65		9.76	14.10
7090	3 use			222	.144		.81	7.75		8.56	12.40
7101	4 use			350	.091		.66	4.90		5.56	8
7500	Depressed area forms to 12" high, 4 use			300	.107	L.F.	1.17	5.70		6.87	9.80
7550	12" to 24" high, 4 use			175	.183		1.59	9.80		11.39	16.35
8000	Perimeter deck and rail for elevated slabs, straight			90	.356		19.60	19.05		38.65	50
8050	Curved			65	.492		27	26.50		53.50	69
8500	Void forms, round plastic, 8" high x 3" diameter	G		450	.071	Ea.	1.45	3.81		5.26	7.30
8550	4" diameter	G		425	.075		2.16	4.04		6.20	8.40
8600	6" diameter	G		400	.080		3.55	4.29		7.84	10.30
8650	8" diameter	G		375	.085		6.35	4.58		10.93	13.80

03 11 13.40 Forms In Place, Equipment Foundations

0010	**FORMS IN PLACE, EQUIPMENT FOUNDATIONS**	R031113-40									
0020	1 use		C-2	160	.300	SFCA	4.14	16.45		20.59	29
0050	2 use	R031113-60		190	.253		2.28	13.85		16.13	23
0100	3 use			200	.240		1.66	13.15		14.81	21.50
0150	4 use			205	.234		1.35	12.85		14.20	20.50

03 11 13.45 Forms In Place, Footings

0010	**FORMS IN PLACE, FOOTINGS**	R031113-40									
0020	Continuous wall, plywood, 1 use		C-1	375	.085	SFCA	7.85	4.58		12.43	15.45
0050	2 use	R031113-60		440	.073		4.33	3.90		8.23	10.55
0100	3 use			470	.068		3.15	3.65		6.80	8.90
0150	4 use		C-1	485	.066	SFCA	2.57	3.54		6.11	8.05
0500	Dowel supports for footings or beams, 1 use			500	.064	L.F.	1.46	3.43		4.89	6.70
1000	Integral starter wall, to 4" high, 1 use			400	.080		1.43	4.29		5.72	8
1500	Keyway, 4 use, tapered wood, 2" x 4"		1 Carp	530	.015		.35	.85		1.20	1.64
1550	2" x 6"			500	.016		.48	.90		1.38	1.87
2000	Tapered plastic			530	.015		.61	.85		1.46	1.93
2250	For keyway hung from supports, add			150	.053		1.46	3		4.46	6.05
3000	Pile cap, square or rectangular, job-built plywood, 1 use		C-1	290	.110	SFCA	4.40	5.90		10.30	13.65
3050	2 use			346	.092		2.42	4.96		7.38	10.05
3100	3 use			371	.086		1.76	4.63		6.39	8.85
3150	4 use			383	.084		1.43	4.48		5.91	8.20
4000	Triangular or hexagonal, 1 use			225	.142		5.15	7.65		12.80	17.05
4050	2 use			280	.114		2.84	6.15		8.99	12.20
4100	3 use			305	.105		2.06	5.65		7.71	10.65

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			Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
03 11 13.45	**Forms In Place, Footings**										
4150	4 use		C-1	315	.102	SFCA	1.68	5.45		7.13	9.95
5000	Spread footings, job-built lumber, 1 use			305	.105		3.13	5.65		8.78	11.85
5050	2 use			371	.086		1.74	4.63		6.37	8.80
5100	3 use			401	.080		1.25	4.28		5.53	7.75
5150	4 use			414	.077		1.02	4.15		5.17	7.25
6000	Supports for dowels, plinths or templates, 2′ x 2′ footing			25	1.280	Ea.	9.35	68.50		77.85	112
6050	4′ x 4′ footing			22	1.455		18.75	78		96.75	137
6100	8′ x 8′ footing			20	1.600		37.50	86		123.50	169
6150	12′ x 12′ footing			17	1.882		55.50	101		156.50	211
7000	Plinths, job-built plywood, 1 use			250	.128	SFCA	5.80	6.85		12.65	16.55
7100	4 use			270	.119	"	1.90	6.35		8.25	11.55
03 11 13.47	**Forms In Place, Gas Station Forms**										
0010	**FORMS IN PLACE, GAS STATION FORMS**										
0050	Curb fascia, with template, 12 ga. steel, left in place, 9″ high	G	1 Carp	50	.160	L.F.	17.15	9		26.15	32.50
1000	Sign or light bases, 18″ diameter, 9″ high	G		9	.889	Ea.	108	50		158	194
1050	30″ diameter, 13″ high	G		8	1		172	56.50		228.50	273
2000	Island forms, 10′ long, 9″ high, 3′-6″ wide	G	C-1	10	3.200		480	172		652	785
2050	4′ wide	G		9	3.556		495	191		686	830
2500	20′ long, 9″ high, 4′ wide	G		6	5.333		795	286		1,081	1,300
2550	5′ wide	G		5	6.400		830	345		1,175	1,425
03 11 13.50	**Forms In Place, Grade Beam**										
0010	**FORMS IN PLACE, GRADE BEAM**	R031113-40									
0020	Job-built plywood, 1 use		C-2	530	.091	SFCA	3.90	4.97		8.87	11.70
0050	2 use	R031113-60		580	.083		2.15	4.54		6.69	9.10
0100	3 use			600	.080		1.56	4.39		5.95	8.25
0150	4 use			605	.079		1.27	4.35		5.62	7.90
03 11 13.55	**Forms In Place, Mat Foundation**										
0010	**FORMS IN PLACE, MAT FOUNDATION**	R031113-40									
0020	Job-built plywood, 1 use		C-2	290	.166	SFCA	4.42	9.10		13.52	18.35
0050	2 use	R031113-60		310	.155		1.72	8.50		10.22	14.55
0100	3 use			330	.145		1.14	8		9.14	13.15
0120	4 use			350	.137		1.02	7.50		8.52	12.30
03 11 13.65	**Forms In Place, Slab On Grade**										
0010	**FORMS IN PLACE, SLAB ON GRADE**	R031113-40									
1000	Bulkhead forms w/keyway, wood, 6″ high, 1 use		C-1	510	.063	L.F.	1.41	3.37		4.78	6.55
1050	2 uses	R031113-60		400	.080		.77	4.29		5.06	7.25
1100	4 uses			350	.091		.46	4.90		5.36	7.80
1400	Bulkhead form for slab, 4-1/2″ high, exp metal, incl. keyway & stakes	G		1200	.027		1.18	1.43		2.61	3.43
1410	5-1/2″ high	G		1100	.029		1.36	1.56		2.92	3.82
1420	7-1/2″ high	G		960	.033		1.68	1.79		3.47	4.51
1430	9-1/2″ high	G		840	.038		1.83	2.04		3.87	5.05
2000	Curb forms, wood, 6″ to 12″ high, on grade, 1 use			215	.149	SFCA	3.56	8		11.56	15.80
2050	2 use			250	.128		1.97	6.85		8.82	12.35
2100	3 use			265	.121		1.43	6.50		7.93	11.20
2150	4 use			275	.116		1.16	6.25		7.41	10.55
3000	Edge forms, wood, 4 use, on grade, to 6″ high			600	.053	L.F.	.46	2.86		3.32	4.77
3050	7″ to 12″ high			435	.074	SFCA	1.22	3.95		5.17	7.20
3060	Over 12″			350	.091	"	1.45	4.90		6.35	8.90
3500	For depressed slabs, 4 use, to 12″ high			300	.107	L.F.	1.19	5.70		6.89	9.80
3550	To 24″ high			175	.183		1.57	9.80		11.37	16.35
4000	For slab blockouts, to 12″ high, 1 use			200	.160		1.27	8.60		9.87	14.15
4050	To 24″ high, 1 use			120	.267		1.62	14.30		15.92	23.50

			Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
03 11 13.65	**Forms In Place, Slab On Grade**										
4100	Plastic (extruded), to 6" high, multiple use, on grade		C-1	800	.040	L.F.	11.80	2.15		13.95	16.15
5000	Screed, 24 ga. metal key joint, see Section 03 15 16.30										
5020	Wood, incl. wood stakes, 1" x 3"		C-1	900	.036	L.F.	.92	1.91		2.83	3.85
5050	2" x 4"			900	.036	"	1.11	1.91		3.02	4.06
6000	Trench forms in floor, wood, 1 use			160	.200	SFCA	2.88	10.75		13.63	19.10
6050	2 use			175	.183		1.59	9.80		11.39	16.35
6100	3 use			180	.178		1.15	9.55		10.70	15.45
6150	4 use			185	.173		.94	9.30		10.24	14.85
8760	Void form, corrugated fiberboard, 4" x 12", 4' long	G		3000	.011	S.F.	4.65	.57		5.22	5.95
8770	6" x 12", 4' long			3000	.011		5.05	.57		5.62	6.40
8780	1/4" thick hardboard protective cover for void form		2 Carp	1500	.011		.87	.60		1.47	1.85
03 11 13.85	**Forms In Place, Walls**										
0010	**FORMS IN PLACE, WALLS**	R031113-10									
0100	Box out for wall openings, to 16" thick, to 10 S.F.		C-2	24	2	Ea.	34	110		144	200
0150	Over 10 S.F. (use perimeter)	R031113-40	"	280	.171	L.F.	3.07	9.40		12.47	17.35
0250	Brick shelf, 4" W, add to wall forms, use wall area above shelf										
0260	1 use	R031113-60	C-2	240	.200	SFCA	3.49	10.95		14.44	20
0300	2 use			275	.175		1.92	9.55		11.47	16.35
0350	4 use			300	.160		1.40	8.80		10.20	14.60
0500	Bulkhead, wood with keyway, 1 use, 2 piece			265	.181	L.F.	3.40	9.95		13.35	18.55
0600	Bulkhead forms with keyway, 1 piece expanded metal, 8" wall	G	C-1	1000	.032		1.68	1.72		3.40	4.40
0610	10" wall	G		800	.040		1.83	2.15		3.98	5.20
0620	12" wall	G		525	.061		2.20	3.27		5.47	7.30
0700	Buttress, to 8' high, 1 use		C-2	350	.137	SFCA	5.80	7.50		13.30	17.60
0750	2 use			430	.112		3.19	6.10		9.29	12.60
0800	3 use			460	.104		2.33	5.70		8.03	11.05
0850	4 use			480	.100		1.91	5.50		7.41	10.25
1000	Corbel or haunch, to 12" wide, add to wall forms, 1 use			150	.320	L.F.	3.68	17.55		21.23	30
1050	2 use			170	.282		2.02	15.50		17.52	25
1100	3 use			175	.274		1.47	15.05		16.52	24
1150	4 use			180	.267		1.20	14.65		15.85	23.50
2000	Wall, job-built plywood, to 8' high, 1 use			370	.130	SFCA	4.16	7.10		11.26	15.15
2050	2 use			435	.110		2.66	6.05		8.71	11.95
2100	3 use			495	.097		1.93	5.30		7.23	10.05
2150	4 use			505	.095		1.57	5.20		6.77	9.50
2400	Over 8' to 16' high, 1 use			280	.171		4.58	9.40		13.98	19.05
2450	2 use			345	.139		1.70	7.65		9.35	13.20
2500	3 use			375	.128		1.22	7		8.22	11.80
2550	4 use			395	.122		.99	6.65		7.64	11
2700	Over 16' high, 1 use			235	.204		3.52	11.20		14.72	20.50
2750	2 use			290	.166		1.94	9.10		11.04	15.65
2800	3 use			315	.152		1.41	8.35		9.76	14
2850	4 use			330	.145		1.15	8		9.15	13.15
4000	Radial, smooth curved, job-built plywood, 1 use			245	.196		2.78	10.75		13.53	19.05
4050	2 use			300	.160		1.53	8.80		10.33	14.75
4100	3 use			325	.148		1.11	8.10		9.21	13.25
4150	4 use			335	.143		.90	7.85		8.75	12.70
4200	Below grade, job-built plywood, 1 use			225	.213		3.55	11.70		15.25	21.50
4210	2 use			225	.213		1.96	11.70		13.66	19.55
4220	3 use			225	.213		1.66	11.70		13.36	19.20
4230	4 use		C-2	225	.213	SFCA	1.16	11.70		12.86	18.65
4300	Curved, 2' chords, job-built plywood, to 8' high, 1 use			290	.166		2.72	9.10		11.82	16.50

03 11 13 – Structural Cast-In-Place Concrete Forming

03 11 13.85 Forms In Place, Walls	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4350 2 use	C-2	355	.135	SFCA	1.49	7.40		8.89	12.70
4400 3 use		385	.125		1.09	6.85		7.94	11.40
4450 4 use		400	.120		.88	6.60		7.48	10.75
4500 Over 8′ to 16′ high, 1 use		290	.166		.94	9.10		10.04	14.55
4525 2 use		355	.135		.52	7.40		7.92	11.60
4550 3 use		385	.125		.38	6.85		7.23	10.60
4575 4 use		400	.120		.31	6.60		6.91	10.15
4600 Retaining wall, battered, job-built plyw'd, to 8′ high, 1 use		300	.160		2.52	8.80		11.32	15.80
4650 2 use		355	.135		1.39	7.40		8.79	12.60
4700 3 use		375	.128		1.01	7		8.01	11.55
4750 4 use		390	.123		.82	6.75		7.57	10.95
4900 Over 8′ to 16′ high, 1 use		240	.200		2.81	10.95		13.76	19.45
4950 2 use		295	.163		1.55	8.90		10.45	15
5000 3 use		305	.157		1.12	8.65		9.77	14.10
5050 4 use		320	.150		.91	8.25		9.16	13.25
5500 For gang wall forming, 192 S.F. sections, deduct					10%	10%			
5550 384 S.F. sections, deduct					20%	20%			
7500 Lintel or sill forms, 1 use	1 Carp	30	.267		4.99	15		19.99	28
7520 2 use		34	.235		2.74	13.25		15.99	22.50
7540 3 use		36	.222		2	12.50		14.50	21
7560 4 use		37	.216		1.62	12.15		13.77	19.90
7800 Modular prefabricated plywood, based on 20 uses of purchased									
7820 forms, and 4 uses of bracing lumber									
7860 To 8′ high	C-2	800	.060	SFCA	1.40	3.29		4.69	6.45
8060 Over 8′ to 16′ high		600	.080		1.48	4.39		5.87	8.20
8600 Pilasters, 1 use		270	.178		4.82	9.75		14.57	19.80
8620 2 use		330	.145		2.65	8		10.65	14.80
8640 3 use		370	.130		1.93	7.10		9.03	12.70
8660 4 use		385	.125		1.57	6.85		8.42	11.90
9010 Steel framed plywood, based on 50 uses of purchased									
9020 forms, and 4 uses of bracing lumber									
9060 To 8′ high	C-2	600	.080	SFCA	.66	4.39		5.05	7.30
9260 Over 8′ to 16′ high		450	.107		.66	5.85		6.51	9.45
9460 Over 16′ to 20′ high		400	.120		.66	6.60		7.26	10.55
9475 For elevated walls, add						10%			
9480 For battered walls, 1 side battered, add					10%	10%			
9485 For battered walls, 2 sides battered, add					15%	15%			

03 11 16 – Architectural Cast-in-Place Concrete Forming

03 11 16.13 Concrete Form Liners

0010	**CONCRETE FORM LINERS**								
5750	Liners for forms (add to wall forms), ABS plastic								
5800	Aged wood, 4" wide, 1 use	1 Carp	256	.031	SFCA	4.54	1.76		6.30	7.60
5820	2 use		256	.031		2.50	1.76		4.26	5.35
5830	3 use		256	.031		1.82	1.76		3.58	4.62
5840	4 use		256	.031		1.48	1.76		3.24	4.24
5900	Fractured rope rib, 1 use		192	.042		6.60	2.35		8.95	10.75
5925	2 use		192	.042		3.62	2.35		5.97	7.50
5950	3 use		192	.042		2.64	2.35		4.99	6.40
6000	4 use		192	.042		2.14	2.35		4.49	5.85
6100	Ribbed, 3/4" deep x 1-1/2" OC, 1 use		224	.036		6.60	2.01		8.61	10.25
6125	2 use		224	.036		3.62	2.01		5.63	7
6150	3 use		224	.036		2.64	2.01		4.65	5.90

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03 11 16 – Architectural Cast-in-Place Concrete Forming

03 11 16.13 Concrete Form Liners	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
6200 4 use	1 Carp	224	.036	SFCA	2.14	2.01		4.15	5.35
6300 Rustic brick pattern, 1 use		224	.036		4.54	2.01		6.55	8
6325 2 use		224	.036		2.50	2.01		4.51	5.75
6350 3 use		224	.036		1.82	2.01		3.83	4.99
6400 4 use		224	.036		1.48	2.01		3.49	4.61
6500 3/8" striated, random, 1 use		224	.036		4.54	2.01		6.55	8
6525 2 use		224	.036		2.50	2.01		4.51	5.75
6550 3 use		224	.036		1.82	2.01		3.83	4.99
6600 4 use		224	.036		1.48	2.01		3.49	4.61
6850 Random vertical rustication, 1 use		384	.021		8.65	1.17		9.82	11.25
6900 2 use		384	.021		4.75	1.17		5.92	7
6925 3 use		384	.021		3.46	1.17		4.63	5.55
6950 4 use		384	.021		2.81	1.17		3.98	4.84
7050 Wood, beveled edge, 3/4" deep, 1 use		384	.021	L.F.	.14	1.17		1.31	1.90
7100 1" deep, 1 use		384	.021	"	.24	1.17		1.41	2.01
7200 4" wide aged cedar, 1 use		256	.031	SFCA	4.54	1.76		6.30	7.60
7300 4" variable depth rough cedar		224	.036	"	6.60	2.01		8.61	10.25

03 11 19 – Insulating Concrete Forming

03 11 19.10 Insulating Forms, Left In Place

0010	**INSULATING FORMS, LEFT IN PLACE**								
0020	Forms include layout, exclude rebar, embedments, bucks for openings,								
0030	scaffolding, wall bracing, concrete, and concrete placing.								
0040	S.F. is for exterior face but includes forms for both faces of wall								
0100	Straight blocks or panels, molded, walls up to 4' high								
0110	4" core wall	4 Carp	1984	.016	S.F.	5.25	.91	6.16	7.10
0120	6" core wall		1808	.018		5.25	1	6.25	7.25
0130	8" core wall		1536	.021		5.45	1.17	6.62	7.70
0140	10" core wall		1152	.028		6.70	1.56	8.26	9.75
0150	12" core wall		992	.032		6.80	1.82	8.62	10.20
0200	90 degree corner blocks or panels, molded, walls up to 4' high								
0210	4" core wall	4 Carp	1880	.017	S.F.	4.88	.96	5.84	6.80
0220	6" core wall		1708	.019		4.88	1.05	5.93	6.90
0230	8" core wall		1324	.024		6	1.36	7.36	8.65
0240	10" core wall		987	.032		6.80	1.83	8.63	10.20
0250	12" core wall		884	.036		6.70	2.04	8.74	10.45
0300	45 degree corner blocks or panels, molded, walls up to 4' high								
0310	4" core wall	4 Carp	1880	.017	S.F.	6.05	.96	7.01	8.15
0320	6" core wall		1712	.019		6.55	1.05	7.60	8.75
0330	8" core wall		1324	.024		6.55	1.36	7.91	9.25
0400	T blocks or panels, molded, walls up to 4' high								
0420	6" core wall	4 Carp	1540	.021	S.F.	6.35	1.17	7.52	8.75
0430	8" core wall		1325	.024		6.45	1.36	7.81	9.10
0440	Non-standard corners or Ts requiring trimming & strapping		192	.167		6.80	9.40	16.20	21.50
0500	Radius blocks or panels, molded, walls up to 4' high, 6" core wall								
0520	5' to 10' diameter, molded blocks or panels	4 Carp	2400	.013	S.F.	7.85	.75	8.60	9.75
0530	10' to 15' diameter, requiring trimming and strapping, add		500	.064		6.40	3.60	10	12.35
0540	15'-1" to 30' diameter, requiring trimming and strapping, add		1200	.027		6.40	1.50	7.90	9.25
0550	30'-1" to 60' diameter, requiring trimming and strapping, add		1600	.020		6.40	1.13	7.53	8.70
0560	60'-1" to 100' diameter, requiring trimming and strapping, add		2800	.011		6.40	.64	7.04	7.95
0600	Additional labor for blocks/panels in higher walls (excludes scaffolding)								
0610	4'-1" to 9'-4" high, add						10%		
0620	9'-5" to 12'-0" high, add						20%		

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03 11 19 – Insulating Concrete Forming

	03 11 19.10 Insulating Forms, Left In Place	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0630	12'-1" to 20'-0" high, add						35%			
0640	Over 20'-0" high, add						55%			
0700	Taper block or panels, molded, single course									
0720	6" core wall	4 Carp	1600	.020	S.F.	5.20	1.13		6.33	7.45
0730	8" core wall	"	1392	.023	"	5.25	1.29		6.54	7.75
0800	ICF brick ledge (corbel) block or panels, molded, single course									
0820	6" core wall	4 Carp	1200	.027	S.F.	5.75	1.50		7.25	8.55
0830	8" core wall	"	1152	.028	"	5.85	1.56		7.41	8.80
0900	ICF curb (shelf) block or panels, molded, single course									
0930	8" core wall	4 Carp	688	.047	S.F.	4.95	2.62		7.57	9.35
0940	10" core wall	"	544	.059	"	5.65	3.31		8.96	11.20
0950	Wood form to hold back concrete to form shelf, 8" high	2 Carp	400	.040	L.F.	1.54	2.25		3.79	5.05
1000	ICF half height block or panels, molded, single course									
1010	4" core wall	4 Carp	1248	.026	S.F.	6.30	1.44		7.74	9.05
1020	6" core wall		1152	.028		6.30	1.56		7.86	9.30
1030	8" core wall		942	.034		6.35	1.91		8.26	9.85
1040	10" core wall		752	.043		7	2.40		9.40	11.25
1050	12" core wall		648	.049		6.95	2.78		9.73	11.80
1100	ICF half height block/panels, made by field sawing full height block/panels									
1110	4" core wall	4 Carp	800	.040	S.F.	2.62	2.25		4.87	6.25
1120	6" core wall		752	.043		2.62	2.40		5.02	6.45
1130	8" core wall		600	.053		2.72	3		5.72	7.45
1140	10" core wall		496	.065		3.36	3.63		6.99	9.10
1150	12" core wall		400	.080		3.41	4.50		7.91	10.45
1200	Additional insulation inserted into forms between ties									
1210	1 layer (2" thick)	4 Carp	14000	.002	S.F.	1.56	.13		1.69	1.91
1220	2 layers (4" thick)		7000	.005		3.12	.26		3.38	3.81
1230	3 layers (6" thick)		4622	.007		4.68	.39		5.07	5.75
1300	EPS window/door bucks, molded, permanent									
1310	4" core wall (9" wide)	2 Carp	200	.080	L.F.	3.98	4.50		8.48	11.10
1320	6" core wall (11" wide)		200	.080		3.92	4.50		8.42	11
1330	8" core wall (13" wide)		176	.091		4.37	5.10		9.47	12.40
1340	10" core wall (15" wide)		152	.105		4.85	5.95		10.80	14.15
1350	12" core wall (17" wide)		152	.105		5.55	5.95		11.50	14.90
1360	2" x 6" temporary buck bracing (includes installing and removing)		400	.040		.96	2.25		3.21	4.40
1400	Wood window/door bucks (instead of EPS bucks), permanent									
1410	4" core wall (9" wide)	2 Carp	400	.040	L.F.	1.96	2.25		4.21	5.50
1420	6" core wall (11" wide)		400	.040		2.75	2.25		5	6.35
1430	8" core wall (13" wide)		350	.046		8.50	2.57		11.07	13.20
1440	10" core wall (15" wide)		300	.053		11.75	3		14.75	17.35
1450	12" core wall (17" wide)		300	.053		11.75	3		14.75	17.35
1460	2" x 6" temporary buck bracing (includes installing and removing)		800	.020		.96	1.13		2.09	2.73
1500	ICF alignment brace (incl. stiff-back, diagonal kick-back, work platform									
1501	bracket & guard rail post), fastened to one face of wall forms @ 6' O.C.									
1510	1st tier up to 10' tall									
1520	Rental of ICF alignment brace set, per set				Week	13.35			13.35	14.70
1530	Labor (includes installing & removing)	2 Carp	30	.533	Ea.		30		30	44.50
1560	2nd tier from 10' to 20' tall (excludes mason's scaffolding up to 10' high)									
1570	Rental of ICF alignment brace set, per set				Week	13.35			13.35	14.70
1580	Labor (includes installing & removing)	4 Carp	30	1.067	Ea.		60		60	89.50
1600	2" x 10" wood plank for work platform, 16' long									
1610	Plank material cost pro-rated over 20 uses				Ea.	1.57			1.57	1.73
1620	Labor (includes installing & removing)	2 Carp	48	.333	"		18.75		18.75	28

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03 11 Concrete Forming

03 11 19 – Insulating Concrete Forming

	03 11 19.10 Insulating Forms, Left In Place	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1700	2" x 4" lumber for top & middle rails for work platform									
1710	Railing material cost pro-rated over 20 uses				Ea.	.03			.03	.04
1720	Labor (includes installing & removing)	2 Carp	2400	.007	L.F.		.38		.38	.56
1800	ICF accessories									
1810	Wire clip to secure forms in place	2 Carp	2100	.008	Ea.	.60	.43		1.03	1.30
1820	Masonry anchor embedment (excludes ties by mason)		1600	.010		1.66	.56		2.22	2.67
1830	Ledger anchor embedment (excludes timber hanger & screws)		128	.125		10.10	7.05		17.15	21.50
1900	See section 01 54 23.70 for mason's scaffolding components									
1910	See section 03 15 19.05 for anchor bolt sleeves									
1920	See section 03 15 19.10 for anchor bolts									
1930	See section 03 15 19.20 for dovetail anchor components									
1940	See section 03 15 19.30 for embedded inserts									
1950	See section 03 21 05.10 for rebar accessories									
1960	See section 03 21 11.60 for reinforcing bars in place									
1970	See section 03 31 13.35 for ready-mix concrete material									
1980	See section 03 31 13.70 for placement and consolidation of concrete									
1990	See section 06 05 23.60 for timber connectors									

03 11 19.60 Roof Deck Form Boards

0010	**ROOF DECK FORM BOARDS** R051223-50									
0050	Includes bulb tee sub-purlins @ 32-5/8" OC									
0070	Non-asbestos fiber cement, 5/16" thick	C-13	2950	.008	S.F.	3.15	.49	.05	3.69	4.25
0100	Fiberglass, 1" thick		2700	.009		3.72	.53	.05	4.30	4.96
0500	Wood fiber, 1" thick G		2700	.009		2.45	.53	.05	3.03	3.56

03 11 23 – Permanent Stair Forming

03 11 23.75 Forms In Place, Stairs

0010	**FORMS IN PLACE, STAIRS** R031113-40									
0015	(Slant length x width), 1 use	C-2	165	.291	S.F.	9.20	15.95		25.15	34
0050	2 use R031113-60		170	.282		5.20	15.50		20.70	29
0100	3 use		180	.267		3.88	14.65		18.53	26.50
0150	4 use		190	.253		3.21	13.85		17.06	24
1000	Alternate pricing method (1.0 L.F./S.F.), 1 use		100	.480	LF Riser	9.20	26.50		35.70	49
1050	2 use		105	.457		5.20	25		30.20	43.50
1100	3 use		110	.436		3.88	24		27.88	40
1150	4 use		115	.417		3.21	23		26.21	37.50
2000	Stairs, cast on sloping ground (length x width), 1 use		220	.218	S.F.	3.69	11.95		15.64	22
2025	2 use		232	.207		2.03	11.35		13.38	19.15
2050	3 use		244	.197		1.48	10.80		12.28	17.65
2100	4 use		256	.188		1.20	10.30		11.50	16.60

03 15 Concrete Accessories

03 15 05 – Concrete Forming Accessories

03 15 05.12 Chamfer Strips

0010	**CHAMFER STRIPS**									
2000	Polyvinyl chloride, 1/2" wide with leg	1 Carp	535	.015	L.F.	.80	.84		1.64	2.13
2200	3/4" wide with leg		525	.015		.89	.86		1.75	2.26
2400	1" radius with leg		515	.016		1.10	.87		1.97	2.51
2800	2" radius with leg		500	.016		1.88	.90		2.78	3.41
5000	Wood, 1/2" wide		535	.015		.11	.84		.95	1.37
5200	3/4" wide		525	.015		.14	.86		1	1.43
5400	1" wide		515	.016		.24	.87		1.11	1.56

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03 15 05.15 Column Form Accessories		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **COLUMN FORM ACCESSORIES**										
1000 Column clamps, adjustable to 24" x 24", buy	G				Set	192			192	212
1100 Rent per month	G					14.50			14.50	15.95
1300 For sizes to 30" x 30", buy	G					257			257	283
1400 Rent per month	G					16.70			16.70	18.35
1600 For sizes to 36" x 36", buy	G					291			291	320
1700 Rent per month	G					18.90			18.90	21
2000 Bar type with wedges, 36" x 36", buy	G					183			183	202
2100 Rent per month	G					15.60			15.60	17.15
2300 48" x 48", buy	G					253			253	278
2400 Rent per month	G					20.50			20.50	22.50
3000 Scissor type with wedges, 36" x 36", buy	G					174			174	191
3100 Rent per month	G					16.45			16.45	18.10
3300 60" x 60", buy	G					247			247	272
3400 Rent per month	G					23			23	25
4000 Friction collars 2'-6" diam., buy	G				Set	4,450			4,450	4,900
4100 Rent per month	G					184			184	202
4300 4'-0" diam., buy	G					5,450			5,450	6,000
4400 Rent per month	G					227			227	249
03 15 05.30 Hangers										
0010 **HANGERS**										
0020 Slab and beam form										
0500 Banding iron										
0550 3/4" x 22 ga., 14 L.F./lb. or 1/2" x 14 ga., 7 L.F./lb.	G				Lb.	1.83			1.83	2.01
1000 Fascia ties, coil type, to 24" long	G				C	520			520	570
1500 Frame ties to 8-1/8"	G					600			600	660
1550 8-1/8" to 10-1/8"	G					630			630	695
5000 Snap tie hanger, to 30" overall length, 3000#	G					520			520	570
5050 To 36" overall length	G					575			575	635
5100 To 48" overall length	G					740			740	815
5500 Steel beam hanger										
5600 Flange to 8-1/8"	G				C	600			600	660
5650 8-1/8" to 10-1/8"	G				"	630			630	695
5900 Coil threaded rods, continuous, 1/2" diameter	G				L.F.	1.63			1.63	1.79
6000 Tie hangers to 30" overall length, 4000#	G				C	590			590	645
6100 To 36" overall length	G					645			645	710
6500 Tie back hanger, up to 12-1/8" flange	G					1,600			1,600	1,775
8500 Wire, black annealed, 15 gauge	G				Cwt.	159			159	175
8600 16 gauge					"	167			167	183
03 15 05.70 Shores										
0010 **SHORES**										
0020 Erect and strip, by hand, horizontal members										
0500 Aluminum joists and stringers	G	2 Carp	60	.267	Ea.		15		15	22.50
0600 Steel, adjustable beams	G		45	.356			20		20	30
0700 Wood joists			50	.320			18		18	27
0800 Wood stringers			30	.533			30		30	44.50
1000 Vertical members to 10' high	G		55	.291			16.40		16.40	24.50
1050 To 13' high	G		50	.320			18		18	27
1100 To 16' high	G		45	.356			20		20	30
1500 Reshoring	G		1400	.011	S.F.	.82	.64		1.46	1.86
1600 Flying truss system	G	C-17D	9600	.009	SFCA		.52	.13	.65	.92
1760 Horizontal, aluminum joists, 6-1/4" high x 5' to 21' span, buy	G				L.F.	21.50			21.50	23.50

			Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
03 15 05.70 Shores											
1770	Beams, 7-1/4" high x 4' to 30' span	G				L.F.	25.50			25.50	28
1810	Horizontal, steel beam, W8x10, 7' span, buy	G				Ea.	81.50			81.50	89.50
1830	10' span	G					110			110	121
1920	15' span	G					158			158	173
1940	20' span	G					190			190	209
1970	Steel stringer, W8x10, 4' to 16' span, buy	G				L.F.	10.85			10.85	11.95
3000	Rent for job duration, aluminum joist @ 2' OC, per mo.	G				SF Flr.	.53			.53	.59
3050	Steel W8x10	G					.27			.27	.30
3060	Steel adjustable	G					.28			.28	.30
3500	#1 post shore, steel, 5'-7" to 9'-6" high, 10,000# cap., buy	G				Ea.	209			209	230
3550	#2 post shore, 7'-3" to 12'-10" high, 7800# capacity	G					242			242	266
3600	#3 post shore, 8'-10" to 16'-1" high, 3800# capacity	G					265			265	291
5010	Frame shoring systems, steel, 12,000#/leg, buy										
5040	Frame, 2' wide x 6' high	G				Ea.	72			72	79.50
5250	X-brace	G					21.50			21.50	24
5550	Base plate	G					18.30			18.30	20
5600	Screw jack	G					25.50			25.50	28
5650	U-head, 8" x 8"	G					13.75			13.75	15.15
03 15 05.75 Sleeves and Chases											
0010	**SLEEVES AND CHASES**										
0100	Plastic, 1 use, 12" long, 2" diameter		1 Carp	100	.080	Ea.	7.15	4.50		11.65	14.60
0150	4" diameter			90	.089		3.72	5		8.72	11.55
0200	6" diameter			75	.107		16	6		22	26.50
0250	12" diameter			60	.133		42.50	7.50		50	58
03 15 05.80 Snap Ties											
0010	**SNAP TIES**, 8-1/4" L&W (Lumber and wedge)										
0100	2250 lb., w/flat washer, 8" wall	G				C	77			77	84.50
0150	10" wall	G					80			80	88
0200	12" wall	G					85.50			85.50	94
0250	16" wall	G					93.50			93.50	103
0300	18" wall	G					127			127	140
0500	With plastic cone, 8" wall	G					77			77	84.50
0550	10" wall	G					80			80	88
0600	12" wall	G					85.50			85.50	94
0650	16" wall	G					93.50			93.50	103
0700	18" wall	G					96.50			96.50	106
1000	3350 lb., w/flat washer, 8" wall	G					171			171	188
1100	10" wall	G					187			187	205
1150	12" wall	G					199			199	219
1200	16" wall	G					219			219	241
1250	18" wall	G				C	229			229	252
1500	With plastic cone, 8" wall	G					167			167	184
1550	10" wall	G					183			183	201
1600	12" wall	G					187			187	206
1650	16" wall	G					215			215	237
1700	18" wall	G					221			221	243
03 15 05.85 Stair Tread Inserts											
0010	**STAIR TREAD INSERTS**										
0105	Cast nosing insert, abrasive surface, pre-drilled, includes screws										
0110	Aluminum, 3" wide x 3' long		1 Cefi	32	.250	Ea.	43.50	13.30		56.80	67
0120	4' long			31	.258		67	13.70		80.70	93.50
0130	5' long			30	.267		85.50	14.15		99.65	115

03 15 Concrete Accessories

03 15 05 – Concrete Forming Accessories

	03 15 05.85 Stair Tread Inserts	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0135	Extruded nosing insert, black abrasive strips, continuous anchor									
0140	Aluminum, 3" wide x 3' long	1 Cefi	64	.125	Ea.	34.50	6.65		41.15	47
0150	4' long		60	.133		45	7.10		52.10	60
0160	5' long		56	.143		53.50	7.60		61.10	70
0165	Extruded nosing insert, black abrasive strips, pre-drilled, incl. screws									
0170	Aluminum, 3" wide x 3' long	1 Cefi	32	.250	Ea.	43.50	13.30		56.80	67
0180	4' long		31	.258		55	13.70		68.70	80.
0190	5' long		30	.267		67	14.15		81.15	94

03 15 05.95 Wall and Foundation Form Accessories

0010	**WALL AND FOUNDATION FORM ACCESSORIES**									
2000	Footings, turnbuckle form aligner G				Ea.	23			23	25
2050	Spreaders for footer, adjustable G				"	27			27	29.5
3000	Form oil, up to 1200 S.F./gallon coverage				Gal.	13.60			13.60	15
3050	Up to 800 S.F./gallon				"	22			22	24
3500	Form patches, 1-3/4" diameter				C	34			34	37.5
3550	2-3/4" diameter				"	59			59	65
4000	Nail stakes, 3/4" diameter, 18" long G				Ea.	3.79			3.79	4.1
4050	24" long G					4.35			4.35	4.7
4200	30" long G					4.73			4.73	5.2
4250	36" long G					5.95			5.95	6.5

03 15 13 – Waterstops

03 15 13.50 Waterstops

0010	**WATERSTOPS**, PVC and Rubber									
0020	PVC, ribbed 3/16" thick, 4" wide	1 Carp	155	.052	L.F.	1.75	2.91		4.66	6.2
0050	6" wide		145	.055		2.76	3.11		5.87	7.6
0500	With center bulb, 6" wide, 3/16" thick		135	.059		2.87	3.34		6.21	8.1
0550	3/8" thick		130	.062		3.32	3.46		6.78	8.8
0600	9" wide x 3/8" thick		125	.064		4.39	3.60		7.99	10.2
0800	Dumbbell type, 6" wide, 3/16" thick	1 Carp	150	.053	L.F.	5.10	3		8.10	10.1
0850	3/8" thick		145	.055		4.52	3.11		7.63	9.6
1000	9" wide, 3/8" thick, plain		130	.062		6.95	3.46		10.41	12.80
1050	Center bulb		130	.062		10.45	3.46		13.91	16.65
1250	Ribbed type, split, 3/16" thick, 6" wide		145	.055		2.87	3.11		5.98	7.80
1300	3/8" thick		130	.062		5.65	3.46		9.11	11.35
2000	Rubber, flat dumbbell, 3/8" thick, 6" wide		145	.055		5.90	3.11		9.01	11.10
2050	9" wide		135	.059		11.95	3.34		15.29	18.10
2500	Flat dumbbell split, 3/8" thick, 6" wide		145	.055		2.87	3.11		5.98	7.80
2550	9" wide		135	.059		5.65	3.34		8.99	11.15
3000	Center bulb, 1/4" thick, 6" wide		145	.055		7.30	3.11		10.41	12.65
3050	9" wide		135	.059		15.25	3.34		18.59	21.50
3500	Center bulb split, 3/8" thick, 6" wide		145	.055		5.65	3.11		8.76	10.85
3550	9" wide		135	.059		9.45	3.34		12.79	15.35
5000	Waterstop fittings, rubber, flat									
5010	Dumbbell or center bulb, 3/8" thick,									
5200	Field union, 6" wide	1 Carp	50	.160	Ea.	30.50	9		39.50	47
5250	9" wide		50	.160		34	9		43	51
5500	Flat cross, 6" wide		30	.267		45.50	15		60.50	72.50
5550	9" wide		30	.267		68	15		83	97
6000	Flat tee, 6" wide		30	.267		49.50	15		64.50	77
6050	9" wide		30	.267		65.50	15		80.50	94.50
6500	Flat ell, 6" wide		40	.200		49	11.25		60.25	71
6550	9" wide		40	.200		60.50	11.25		71.75	83.50

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03 15 Concrete Accessories

03 15 13 – Waterstops

	03 15 13.50 Waterstops	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
7000	Vertical tee, 6" wide	1 Carp	25	.320	Ea.	19.20	18		37.20	48
7050	9" wide		25	.320		32.50	18		50.50	62.50
7500	Vertical ell, 6" wide		35	.229		23.50	12.85		36.35	44.50
7550	9" wide		35	.229		44.50	12.85		57.35	68

03 15 16 – Concrete Construction Joints

03 15 16.20 Control Joints, Saw Cut

0010	**CONTROL JOINTS, SAW CUT**									
0100	Sawcut control joints in green concrete									
0120	1" depth	C-27	2000	.008	L.F.	.03	.43	.08	.54	.74
0140	1-1/2" depth		1800	.009		.04	.47	.09	.60	.84
0160	2" depth		1600	.010		.05	.53	.10	.68	.95
0180	Sawcut joint reservoir in cured concrete									
0182	3/8" wide x 3/4" deep, with single saw blade	C-27	1000	.016	L.F.	.04	.85	.16	1.05	1.46
0184	1/2" wide x 1" deep, with double saw blades	"	900	.018	"	.08	.94	.18	1.20	1.66
0186	3/4" wide x 1-1/2" deep, with double saw blades	C-27	800	.020	L.F.	.16	1.06	.20	1.42	1.96
0190	Water blast joint to wash away laitance, 2 passes	C-29	2500	.003			.15	.04	.19	.26
0200	Air blast joint to blow out debris and air dry, 2 passes	C-28	2000	.004			.21	.02	.23	.33
0300	For backer rod, see Section 07 91 23.10									
0340	For joint sealant, see Section 03 15 16.30 or 07 92 13.20									
0900	For replacement of joint sealant, see Section 07 01 90.81									

03 15 16.30 Expansion Joints

0010	**EXPANSION JOINTS**									
0020	Keyed, cold, 24 ga., incl. stakes, 3-1/2" high G	1 Carp	200	.040	L.F.	1.05	2.25		3.30	4.51
0050	4-1/2" high G		200	.040		1.18	2.25		3.43	4.65
0100	5-1/2" high G		195	.041		1.36	2.31		3.67	4.94
0150	7-1/2" high G		190	.042		1.68	2.37		4.05	5.40
0160	9-1/2" high G		185	.043		1.83	2.43		4.26	5.65
0300	Poured asphalt, plain, 1/2" x 1"	1 Clab	450	.018		.94	.81		1.75	2.24
0350	1" x 2"		400	.020		3.74	.91		4.65	5.45
0500	Neoprene, liquid, cold applied, 1/2" x 1"		450	.018		2.13	.81		2.94	3.55
0550	1" x 2"		400	.020		8.50	.91		9.41	10.70
0700	Polyurethane, poured, 2 part, 1/2" x 1"		400	.020		1.45	.91		2.36	2.96
0750	1" x 2"		350	.023		5.80	1.04		6.84	7.95
0900	Rubberized asphalt, hot or cold applied, 1/2" x 1"		450	.018		.55	.81		1.36	1.82
0950	1" x 2"		400	.020		2.28	.91		3.19	3.87
1100	Hot applied, fuel resistant, 1/2" x 1"		450	.018		.83	.81		1.64	2.12
1150	1" x 2"		400	.020		3.42	.91		4.33	5.10
2000	Premolded, bituminous fiber, 1/2" x 6"	1 Carp	375	.021		.41	1.20		1.61	2.24
2050	1" x 12"		300	.027		2.04	1.50		3.54	4.47
2140	Concrete expansion joint, recycled paper and fiber, 1/2" x 6" G		390	.021		.47	1.15		1.62	2.24
2150	1/2" x 12" G		360	.022		.94	1.25		2.19	2.90
2250	Cork with resin binder, 1/2" x 6"		375	.021		1.26	1.20		2.46	3.18
2300	1" x 12"		300	.027		3.53	1.50		5.03	6.10
2500	Neoprene sponge, closed cell, 1/2" x 6"		375	.021		3.15	1.20		4.35	5.25
2550	1" x 12"		300	.027		9.55	1.50		11.05	12.75
2750	Polyethylene foam, 1/2" x 6"		375	.021		.74	1.20		1.94	2.60
2800	1" x 12"		300	.027		3.93	1.50		5.43	6.55
3000	Polyethylene backer rod, 3/8" diameter		460	.017		.13	.98		1.11	1.60
3050	3/4" diameter		460	.017		.17	.98		1.15	1.65
3100	1" diameter		460	.017		.30	.98		1.28	1.79
3500	Polyurethane foam, with polybutylene, 1/2" x 1/2"		475	.017		1.43	.95		2.38	2.98
3550	1" x 1"	1 Carp	450	.018	L.F.	3.64	1		4.64	5.50

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03 15 16 – Concrete Construction Joints

	03 15 16.30 Expansion Joints	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
3750	Polyurethane foam, regular, closed cell, 1/2" x 6"	1 Carp	375	.021	L.F.	1.06	1.20		2.26	2.96
3800	1" x 12"		300	.027		3.79	1.50		5.29	6.40
4000	Polyvinyl chloride foam, closed cell, 1/2" x 6"		375	.021		2.88	1.20		4.08	4.96
4050	1" x 12"		300	.027		9.95	1.50		11.45	13.15
4250	Rubber, gray sponge, 1/2" x 6"		375	.021		2.42	1.20		3.62	4.45
4300	1" x 12"		300	.027		8.70	1.50		10.20	11.85
4400	Redwood heartwood, 1" x 4"		400	.020		3.28	1.13		4.41	5.30
4450	1" x 6"		375	.021		4.80	1.20		6	7.10
5000	For installation in walls, add						75%			
5250	For installation in boxouts, add						25%			

03 15 19 – Cast-In Concrete Anchors

03 15 19.05 Anchor Bolt Accessories

0010	**ANCHOR BOLT ACCESSORIES**									
0015	For anchor bolts set in fresh concrete, see Section 03 15 19.10									
8150	Anchor bolt sleeve, plastic, 1" diameter bolts	1 Carp	60	.133	Ea.	9.20	7.50		16.70	21.50
8500	1-1/2" diameter		28	.286		14.40	16.10		30.50	40
8600	2" diameter		24	.333		16.55	18.75		35.30	46
8650	3" diameter		20	.400		42	22.50		64.50	79.50

03 15 19.10 Anchor Bolts

0010	**ANCHOR BOLTS**									
0015	Made from recycled materials									
0025	Single bolts installed in fresh concrete, no templates									
0030	Hooked w/nut and washer, 1/2" diameter, 8" long G	1 Carp	132	.061	Ea.	2.23	3.41		5.64	7.55
0040	12" long G		131	.061		2.48	3.44		5.92	7.85
0050	5/8" diameter, 8" long G		129	.062		3.06	3.49		6.55	8.55
0060	12" long G		127	.063		3.76	3.55		7.31	9.45
0070	3/4" diameter, 8" long G		127	.063		3.76	3.55		7.31	9.45
0080	12" long G		125	.064		4.70	3.60		8.30	10.50
0090	2-bolt pattern, including job-built 2-hole template, per set									
0100	J-type, incl. hex nut & washer, 1/2" diameter x 6" long G	1 Carp	21	.381	Set	8.80	21.50		30.30	41.50
0110	12" long G		21	.381		9.80	21.50		31.30	43
0120	18" long G		21	.381		11.30	21.50		32.80	44.50
0130	3/4" diameter x 8" long G		20	.400		12.40	22.50		34.90	47
0140	12" long G		20	.400		14.25	22.50		36.75	49
0150	18" long G		20	.400		17.10	22.50		39.60	52.50
0160	1" diameter x 12" long G		19	.421		33	23.50		56.50	71.50
0170	18" long G		19	.421		38.50	23.50		62	78
0180	24" long G		19	.421		46	23.50		69.50	86
0190	36" long G	1 Carp	18	.444	Set	61	25		86	105
0200	1-1/2" diameter x 18" long G		17	.471		52.50	26.50		79	97.50
0210	24" long G		16	.500		62	28		90	110
0300	L-type, incl. hex nut & washer, 3/4" diameter x 12" long G		20	.400		19.75	22.50		42.25	55
0310	18" long G		20	.400		24	22.50		46.50	60
0320	24" long G		20	.400		28	22.50		50.50	64.50
0330	30" long G		20	.400		34.50	22.50		57	71.50
0340	36" long G		20	.400		38.50	22.50		61	76
0350	1" diameter x 12" long G		19	.421		30	23.50		53.50	68.50
0360	18" long G		19	.421		36	23.50		59.50	75.50
0370	24" long G		19	.421		43.50	23.50		67	83.50
0380	30" long G		19	.421		50.50	23.50		74	91
0390	36" long G		18	.444		57	25		82	99.50
0400	42" long G		18	.444		68	25		93	112

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03 15 19 – Cast-In Concrete Anchors

03 15 19.10 Anchor Bolts			Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0410	48" long	G	1 Carp	18	.444	Set	76	25		101	121
0420	1-1/4" diameter x 18" long	G		18	.444		50.50	25		75.50	92.50
0430	24" long	G		18	.444		59	25		84	102
0440	30" long	G		17	.471		68	26.50		94.50	114
0450	36" long	G		17	.471		76.50	26.50		103	124
0460	42" long	G	2 Carp	32	.500		85.50	28		113.50	136
0470	48" long	G		32	.500		97	28		125	149
0480	54" long	G		31	.516		114	29		143	169
0490	60" long	G		31	.516		124	29		153	181
0500	1-1/2" diameter x 18" long	G		33	.485		78.50	27.50		106	127
0510	24" long	G		32	.500		91	28		119	142
0520	30" long	G		31	.516		102	29		131	156
0530	36" long	G		30	.533		117	30		147	173
0540	42" long	G		30	.533		132	30		162	191
0550	48" long	G		29	.552		148	31		179	209
0560	54" long	G		28	.571		179	32		211	245
0570	60" long	G		28	.571		196	32		228	264
0580	1-3/4" diameter x 18" long	G		31	.516		114	29		143	170
0590	24" long	G		30	.533		133	30		163	192
0600	30" long	G		29	.552		154	31		185	216
0610	36" long	G		28	.571		175	32		207	241
0620	42" long	G		27	.593		196	33.50		229.50	266
0630	48" long	G		26	.615		215	34.50		249.50	289
0640	54" long	G		26	.615		266	34.50		300.50	345
0650	60" long	G		25	.640		287	36		323	370
0660	2" diameter x 24" long	G	2 Carp	27	.593	Set	167	33.50		200.50	233
0670	30" long	G		27	.593		187	33.50		220.50	256
0680	36" long	G		26	.615		205	34.50		239.50	278
0690	42" long	G		25	.640		228	36		264	305
0700	48" long	G		24	.667		262	37.50		299.50	345
0710	54" long	G		23	.696		310	39		349	400
0720	60" long	G		23	.696		335	39		374	425
0730	66" long	G		22	.727		355	41		396	455
0740	72" long	G		21	.762		390	43		433	495
1000	4-bolt pattern, including job-built 4-hole template, per set										
1100	J-type, incl. hex nut & washer, 1/2" diameter x 6" long	G	1 Carp	19	.421	Set	12.80	23.50		36.30	49.50
1110	12" long	G		19	.421		14.80	23.50		38.30	52
1120	18" long	G		18	.444		17.75	25		42.75	56.50
1130	3/4" diameter x 8" long	G		17	.471		19.90	26.50		46.40	61.50
1140	12" long	G		17	.471		23.50	26.50		50	65.50
1150	18" long	G		17	.471		29.50	26.50		56	71.50
1160	1" diameter x 12" long	G		16	.500		61	28		89	109
1170	18" long	G		15	.533		72.50	30		102.50	124
1180	24" long	G		15	.533		87	30		117	141
1190	36" long	G		15	.533		118	30		148	174
1200	1-1/2" diameter x 18" long	G		13	.615		100	34.50		134.50	162
1210	24" long	G		12	.667		119	37.50		156.50	187
1300	L-type, incl. hex nut & washer, 3/4" diameter x 12" long	G		17	.471		34.50	26.50		61	77.50
1310	18" long	G		17	.471		43	26.50		69.50	87
1320	24" long	G		17	.471		51.50	26.50		78	96
1330	30" long	G		16	.500		64	28		92	113
1340	36" long	G		16	.500		72.50	28		100.50	122
1350	1" diameter x 12" long	G		16	.500		55	28		83	103

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			Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
03 15 19.10 Anchor Bolts											
1360	18" long	G	1 Carp	15	.533	Set	67.50	30		97.50	119
1370	24" long	G		15	.533		82	30		112	135
1380	30" long	G		15	.533		96	30		126	151
1390	36" long	G		15	.533		109	30		139	165
1400	42" long	G		14	.571		132	32		164	193
1410	48" long	G		14	.571		147	32		179	210
1420	1-1/4" diameter x 18" long	G		14	.571		96.50	32		128.50	154
1430	24" long	G		14	.571		114	32		146	173
1440	30" long	G		13	.615		131	34.50		165.50	196
1450	36" long	G		13	.615		148	34.50		182.50	215
1460	42" long	G	2 Carp	25	.640		166	36		202	237
1470	48" long	G	2 Carp	24	.667	Set	189	37.50		226.50	264
1480	54" long	G		23	.696		222	39		261	305
1490	60" long	G		23	.696		244	39		283	325
1500	1-1/2" diameter x 18" long	G		25	.640		153	36		189	222
1510	24" long	G		24	.667		177	37.50		214.50	251
1520	30" long	G		23	.696		200	39		239	279
1530	36" long	G		22	.727		229	41		270	315
1540	42" long	G		22	.727		260	41		301	345
1550	48" long	G		21	.762		291	43		334	385
1560	54" long	G		20	.800		355	45		400	455
1570	60" long	G		20	.800		390	45		435	490
1580	1-3/4" diameter x 18" long	G		22	.727		224	41		265	305
1590	24" long	G		21	.762		262	43		305	350
1600	30" long	G		21	.762		305	43		348	400
1610	36" long	G		20	.800		345	45		390	445
1620	42" long	G		19	.842		390	47.50		437.50	495
1630	48" long	G		18	.889		425	50		475	545
1640	54" long	G		18	.889		525	50		575	655
1650	60" long	G		17	.941		570	53		623	705
1660	2" diameter x 24" long	G		19	.842		330	47.50		377.50	430
1670	30" long	G		18	.889		370	50		420	480
1680	36" long	G		18	.889		405	50		455	520
1690	42" long	G		17	.941		450	53		503	575
1700	48" long	G		16	1		520	56.50		576.50	655
1710	54" long	G		15	1.067		615	60		675	770
1720	60" long	G		15	1.067		665	60		725	820
1730	66" long	G		14	1.143		710	64.50		774.50	875
1740	72" long	G		14	1.143		775	64.50		839.50	950
1990	For galvanized, add					Ea.	75%				
03 15 19.20 Dovetail Anchor System											
0010	**DOVETAIL ANCHOR SYSTEM**										
0500	Dovetail anchor slot, galvanized, foam-filled, 26 ga.	G	1 Carp	425	.019	L.F.	.69	1.06		1.75	2.34
0600	24 ga.	G		400	.020		.83	1.13		1.96	2.59
0625	22 ga.	G		400	.020		.47	1.13		1.60	2.20
0900	Stainless steel, foam-filled, 26 ga.	G		375	.021		1.10	1.20		2.30	3
1200	Dovetail brick anchor, corrugated, galvanized, 3-1/2" long, 16 ga.	G	1 Bric	10.50	.762	C	20	42		62	85
1300	12 ga.	G		10.50	.762		24	42		66	89.50
1500	Seismic, galvanized, 3-1/2" long, 16 ga.	G		10.50	.762		77.50	42		119.50	148
1600	12 ga.	G		10.50	.762		105	42		147	178
2000	Dovetail cavity wall, corrugated, galvanized, 5-1/2" long, 16 ga.	G		10.50	.762		24	42		66	89.50
2100	12 ga.	G	1 Bric	10.50	.762	C	31	42		73	97

03 15 Concrete Accessories

03 15 19 – Cast-In Concrete Anchors

			Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
03 15 19.20 Dovetail Anchor System											
3000	Dovetail furring anchors, corrugated, galvanized, 1-1/2" long, 16 ga.	G	1 Brlc	10.50	.762	C	29	42		71	95
3100	12 ga.	G		10.50	.762		33.50	42		75.50	99.50
6000	Dovetail stone panel anchors, galvanized, 1/8" x 1" wide, 3-1/2" long	G		10.50	.762		94	42		136	167
6100	1/4" x 1" wide	G		10.50	.762		184	42		226	265
03 15 19.30 Inserts											
0010	**INSERTS**										
1000	Inserts, slotted nut type for 3/4" bolts, 4" long	G	1 Carp	84	.095	Ea.	24.50	5.35		29.85	34.50
2100	6" long	G		84	.095		24.50	5.35		29.85	35
2150	8" long	G		84	.095		55.50	5.35		60.85	69.50
2200	Slotted, strap type, 4" long	G		84	.095		21	5.35		26.35	31
2250	6" long	G		84	.095		15.55	5.35		20.90	25
2300	8" long	G		84	.095		46	5.35		51.35	58.50
2350	Strap for slotted insert, 4" long	G		84	.095		12.65	5.35		18	22
4100	6" long	G		84	.095		13.75	5.35		19.10	23
4150	8" long	G		84	.095		19.40	5.35		24.75	29.50
4200	10" long	G		84	.095		20.50	5.35		25.85	30.50
7000	Loop ferrule type										
7100	1/4" diameter bolt	G	1 Carp	84	.095	Ea.	1.96	5.35		7.31	10.15
7350	7/8" diameter bolt	G	"	84	.095	"	10.90	5.35		16.25	19.95
9000	Wedge type										
9100	For 3/4" diameter bolt	G	1 Carp	60	.133	Ea.	9.35	7.50		16.85	21.50
9800	Cut washers, black										
9900	3/4" bolt	G				Ea.	.30			.30	.33
9950	For galvanized inserts, add						30%				
03 15 19.45 Machinery Anchors											
0010	**MACHINERY ANCHORS**, heavy duty, incl. sleeve, floating base nut,										
0020	lower stud & coupling nut, fiber plug, connecting stud, washer & nut.										
0030	For flush mounted embedment in poured concrete heavy equip. pads.										
0200	Stud & bolt, 1/2" diameter	G	E-16	40	.400	Ea.	70	25	3.68	98.68	120
0300	5/8" diameter	G		35	.457		82	29	4.21	115.21	139
0500	3/4" diameter	G		30	.533		99	33.50	4.91	137.41	166
0600	7/8" diameter	G		25	.640		111	40.50	5.90	157.40	191
0800	1" diameter	G		20	.800		121	50.50	7.35	178.85	219
0900	1-1/4" diameter	G		15	1.067		161	67	9.80	237.80	291

03 21 Reinforcement Bars

03 21 05 – Reinforcing Steel Accessories

03 21 05.10 Rebar Accessories											
0010	**REBAR ACCESSORIES**										
0030	Steel & plastic made from recycled materials										
0100	Beam bolsters (BB), lower, 1-1/2" high, plain steel	G				C.L.F.	22			22	24
0102	Galvanized	G					58			58	64
0104	Stainless tipped legs	G					480			480	530
0106	Plastic tipped legs	G					38			38	42
0108	Epoxy dipped	G					82			82	90
0110	2" high, plain	G					40.50			40.50	44.50
0120	Galvanized	G					74			74	81.50
0140	Stainless tipped legs	G					590			590	645
0160	Plastic tipped legs	G					58.50			58.50	64.50
0162	Epoxy dipped	G					93			93	102

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03 21 05.10 Rebar Accessories			Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0200	Upper (BBU), 1-1/2" high, plain steel	G				C.L.F.	105			105	116
0210	3" high	G					118			118	130
0500	Slab bolsters, continuous (SB), 1" high, plain steel	G					27.50			27.50	30.50
0502	Galvanized	G					46			46	50.50
0504	Stainless tipped legs	G					475			475	520
0506	Plastic tipped legs	G					44			44	48.50
0510	2" high, plain steel	G					35.50			35.50	39
0515	Galvanized	G					58			58	64
0520	Stainless tipped legs	G					560			560	615
0525	Plastic tipped legs	G					51.50			51.50	56.50
0530	For bolsters with wire runners (SBR), add	G					38.50			38.50	42.50
0540	For bolsters with plates (SBP), add	G					99.50			99.50	109
0700	Bag ties, 16 ga., plain, 4" long	G				C	.71			.71	.78
0710	5" long	G					.82			.82	.90
0720	6" long	G					.93			.93	1.02
0730	7" long	G					1.02			1.02	1.12
1200	High chairs, individual (HC), 3" high, plain steel	G					63			63	69.50
1202	Galvanized	G					131			131	144
1204	Stainless tipped legs	G					540			540	595
1206	Plastic tipped legs	G					74			74	81.50
1210	5" high, plain	G					85			85	93.50
1212	Galvanized	G					169			169	186
1214	Stainless tipped legs	G					675			675	745
1216	Plastic tipped legs	G					98.50			98.50	108
1220	8" high, plain	G					123			123	135
1222	Galvanized	G					206			206	227
1224	Stainless tipped legs	G					725			725	800
1226	Plastic tipped legs	G				C	139			139	153
1230	12" high, plain	G					263			263	289
1232	Galvanized	G					410			410	455
1234	Stainless tipped legs	G					790			790	870
1236	Plastic tipped legs	G					289			289	315
1400	Individual high chairs, with plate (HCP), 5" high	G					139			139	153
1410	8" high	G					162			162	178
1500	Bar chair (BC), 1-1/2" high, plain steel	G					49			49	54
1520	Galvanized	G					56			56	61.50
1530	Stainless tipped legs	G					485			485	530
1540	Plastic tipped legs	G					52			52	57
1700	Continuous high chairs (CHC), legs 8" OC, 4" high, plain steel	G				C.L.F.	63.50			63.50	70
1705	Galvanized	G					72			72	79
1710	Stainless tipped legs	G					640			640	705
1715	Plastic tipped legs	G					83			83	91.50
1718	Epoxy dipped	G					103			103	113
1720	6" high, plain	G					87.50			87.50	96.50
1725	Galvanized	G					115			115	127
1730	Stainless tipped legs	G					665			665	735
1735	Plastic tipped legs	G					111			111	122
1738	Epoxy dipped	G					137			137	150
1740	8" high, plain	G					126			126	138
1745	Galvanized	G					177			177	194
1750	Stainless tipped legs	G					715			715	785
1755	Plastic tipped legs	G					138			138	152
1758	Epoxy dipped	G					153			153	168

03 21 05.10 Rebar Accessories			Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1900	For continuous bottom wire runners, add	G				C.L.F.	49.50			49.50	54.50
1940	For continuous bottom plate, add	G					264			264	290
2200	Screed chair base, 1/2" coil thread diam., 2-1/2" high, plain steel	G				C	410			410	455
2210	Galvanized	G					495			495	540
2220	5-1/2" high, plain	G					495			495	545
2250	Galvanized	G					585			585	645
2300	3/4" coil thread diam., 2-1/2" high, plain steel	G					535			535	590
2310	Galvanized	G					615			615	675
2320	5-1/2" high, plain steel	G					675			675	740
2350	Galvanized	G					835			835	915
2400	Screed holder, 1/2" coil thread diam. for pipe screed, plain steel, 6" long	G					500			500	550
2420	12" long	G				C	760			760	840
2500	3/4" coil thread diam. for pipe screed, plain steel, 6" long	G					665			665	735
2520	12" long	G					1,075			1,075	1,175
2700	Screw anchor for bolts, plain steel, 3/4" diameter x 4" long	G					610			610	670
2720	1" diameter x 6" long	G					1,125			1,125	1,250
2740	1-1/2" diameter x 8" long	G					1,550			1,550	1,700
2800	Screw anchor eye bolts, 3/4" x 3" long	G					3,600			3,600	3,950
2820	1" x 3-1/2" long	G					4,650			4,650	5,100
2840	1-1/2" x 6" long	G					14,200			14,200	15,600
2900	Screw anchor bolts, 3/4" x 9" long	G					2,275			2,275	2,500
2920	1" x 12" long	G					4,375			4,375	4,825
3001	Slab lifting inserts, single pickup, galv, 3/4" diam., 5" high	G					2,400			2,400	2,650
3010	6" high	G					2,375			2,375	2,600
3030	7" high	G					2,425			2,425	2,650
3100	1" diameter, 5-1/2" high	G					2,450			2,450	2,700
3120	7" high	G					2,425			2,425	2,675
3200	Double pickup lifting inserts, 1" diameter, 5-1/2" high	G					4,750			4,750	5,225
3220	7" high	G					5,275			5,275	5,800
3330	1-1/2" diameter, 8" high	G					6,550			6,550	7,200
3800	Subgrade chairs, #4 bar head, 3-1/2" high	G					46			46	50.50
3850	12" high	G					54			54	59.50
3900	#6 bar head, 3-1/2" high	G					46			46	50.50
3950	12" high	G					54			54	59.50
4200	Subgrade stakes, no nail holes, 3/4" diameter, 12" long	G					298			298	330
4250	24" long	G					445			445	485
4300	7/8" diameter, 12" long	G					475			475	525
4350	24" long	G					505			505	555
4500	Tie wire, 16 ga. annealed steel	G				Cwt.	167			167	183

03 21 05.75 Splicing Reinforcing Bars

0010	**SPLICING REINFORCING BARS** R032110-70										
0020	Including holding bars in place while splicing										
0100	Standard, self-aligning type, taper threaded, #4 bars	G	C-25	190	.168	Ea.	12.80	8.25		21.05	27
0105	#5 bars	G		170	.188		15	9.20		24.20	30.50
0110	#6 bars	G		150	.213		17.70	10.45		28.15	35.50
0120	#7 bars	G		130	.246		21	12.05		33.05	41.50
0300	#8 bars	G		115	.278		24.50	13.65		38.15	48
0305	#9 bars	G	C-5	105	.533		27.50	32	19.95	79.45	100
0310	#10 bars	G	"	95	.589		34.50	35.50	22	92	115
0320	#11 bars	G	C-5	85	.659	Ea.	32.50	40	24.50	97	123
0330	#14 bars	G		65	.862		51.50	52	32	135.50	170
0340	#18 bars	G		45	1.244		78.50	75	46.50	200	250

03 21 05.75 Splicing Reinforcing Bars			Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0500	Transition self-aligning, taper threaded, #18-14	G	C-5	45	1.244	Ea.	87	75	46.50	208.50	259
0510	#18-11	G		45	1.244		88.50	75	46.50	210	261
0520	#14-11	G		65	.862		58.50	52	32	142.50	178
0540	#11-10	G		85	.659		40.50	40	24.50	105	131
0550	#10-9	G		95	.589		38.50	35.50	22	96	119
0560	#9-8	G	C-25	105	.305		35	14.95		49.95	61.50
0580	#8-7	G		115	.278		32.50	13.65		46.15	56.50
0590	#7-6	G		130	.246		24.50	12.05		36.55	45.50
0600	Position coupler for curved bars, taper threaded, #4 bars	G		160	.200		42	9.80		51.80	61
0610	#5 bars	G		145	.221		43.50	10.80		54.30	64.50
0620	#6 bars	G		130	.246		61	12.05		73.05	85.50
0630	#7 bars	G		110	.291		65	14.25		79.25	93.50
0640	#8 bars	G		100	.320		67.50	15.65		83.15	98
0650	#9 bars	G	C-5	90	.622		73.50	37.50	23.50	134.50	162
0660	#10 bars	G		80	.700		79.50	42.50	26	148	179
0670	#11 bars	G		70	.800		82.50	48.50	30	161	196
0680	#14 bars	G		55	1.018		111	61.50	38	210.50	256
0690	#18 bars	G		40	1.400		171	84.50	52.50	308	370
0700	Transition position coupler for curved bars, taper threaded, #18-14	G		40	1.400		169	84.50	52.50	306	370
0710	#18-11	G		40	1.400		159	84.50	52.50	296	360
0720	#14-11	G		55	1.018		111	61.50	38	210.50	256
0730	#11-10	G		70	.800		89	48.50	30	167.50	203
0740	#10-9	G		80	.700		86	42.50	26	154.50	187
0750	#9-8	G	C-25	90	.356		80	17.40		97.40	115
0760	#8-7	G		100	.320		73.50	15.65		89.15	105
0770	#7-6	G		110	.291		71	14.25		85.25	100
0800	Sleeve type w/grout filler, for precast concrete, #6 bars	G		72	.444		34.50	22		56.50	71.50
0802	#7 bars	G		64	.500		41.50	24.50		66	83.50
0805	#8 bars	G		56	.571		49	28		77	97
0807	#9 bars	G		48	.667		57	32.50		89.50	113
0810	#10 bars	G	C-5	40	1.400		69	84.50	52.50	206	260
0900	#11 bars	G		32	1.750		76.50	106	65.50	248	315
0920	#14 bars	G		24	2.333		119	141	87	347	435
1000	Sleeve type w/ferrous filler, for critical structures, #6 bars	G	C-25	72	.444		113	22		135	159
1210	#7 bars	G		64	.500		115	24.50		139.50	164
1220	#8 bars	G		56	.571		121	28		149	176
1230	#9 bars	G	C-5	48	1.167	Ea.	124	70.50	43.50	238	290
1240	#10 bars	G		40	1.400		132	84.50	52.50	269	330
1250	#11 bars	G		32	1.750		160	106	65.50	331.50	405
1260	#14 bars	G		24	2.333		201	141	87	429	525
1270	#18 bars	G		16	3.500		290	211	131	632	780
2000	Weldable half coupler, taper threaded, #4 bars	G	E-16	120	.133		13.65	8.40	1.23	23.28	29.50
2100	#5 bars	G		112	.143		16.05	9	1.32	26.37	33
2200	#6 bars	G		104	.154		25.50	9.70	1.42	36.62	44.50
2300	#7 bars	G		96	.167		29.50	10.50	1.54	41.54	50.50
2400	#8 bars	G		88	.182		31	11.45	1.67	44.12	53.50
2500	#9 bars	G		80	.200		34	12.60	1.84	48.44	59
2600	#10 bars	G		72	.222		35	14	2.05	51.05	62.50
2700	#11 bars	G		64	.250		37	15.75	2.30	55.05	67.50
2800	#14 bars	G		56	.286		43	18	2.63	63.63	78
2900	#18 bars	G		48	.333		70	21	3.07	94.07	113

03 21 11.60 Reinforcing In Place		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **REINFORCING IN PLACE**, 50-60 ton lots, A615 Grade 60 R032110-10										
0020 Includes labor, but not material cost, to install accessories										
0030 Made from recycled materials										
0100 Beams & Girders, #3 to #7	G	4 Rodm	1.60	20	Ton	1,450	1,225		2,675	3,425
0150 #8 to #18 R032110-20	G		2.70	11.852		1,450	720		2,170	2,675
0200 Columns, #3 to #7	G		1.50	21.333		1,450	1,300		2,750	3,525
0250 #8 to #18	G		2.30	13.913		1,450	845		2,295	2,850
0300 Spirals, hot rolled, 8" to 15" diameter	G		2.20	14.545		1,850	885		2,735	3,375
0320 15" to 24" diameter R032110-40	G		2.20	14.545		1,775	885		2,660	3,275
0330 24" to 36" diameter	G		2.30	13.913		1,700	845		2,545	3,100
0340 36" to 48" diameter R032110-50	G		2.40	13.333		1,600	810		2,410	2,975
0360 48" to 64" diameter	G		2.50	12.800		1,775	775		2,550	3,100
0380 64" to 84" diameter R032110-70	G		2.60	12.308		1,850	745		2,595	3,175
0390 84" to 96" diameter	G		2.70	11.852		1,950	720		2,670	3,200
0400 Elevated slabs, #4 to #7 R032110-80	G		2.90	11.034		1,450	670		2,120	2,600
0500 Footings, #4 to #7	G		2.10	15.238		1,450	925		2,375	2,975
0550 #8 to #18	G		3.60	8.889		1,450	540		1,990	2,400
0600 Slab on grade, #3 to #7	G		2.30	13.913		1,450	845		2,295	2,850
0700 Walls, #3 to #7	G		3	10.667		1,450	645		2,095	2,575
0750 #8 to #18	G		4	8		1,450	485		1,935	2,325
0900 For other than 50-60 ton lots										
1000 Under 10 ton job, #3 to #7, add						25%	10%			
1010 #8 to #18, add						20%	10%			
1050 10-50 ton job, #3 to #7, add						10%				
1060 #8 to #18, add						5%				
1100 60-100 ton job, #3 to #7, deduct						5%				
1110 #8 to #18, deduct						10%				
1150 Over 100 ton job, #3 to #7, deduct						10%				
1160 #8 to #18, deduct						15%				
1200 Reinforcing in place, A615 Grade 75, add	G				Ton	151			151	166
1220 Grade 90, add						170			170	187
2000 Unloading & sorting, add to above		C-5	100	.560			34	21	55	73.50
2200 Crane cost for handling, 90 picks/day, up to 1.5 tons/bundle, add to above			135	.415			25	15.50	40.50	54.50
2210 1.0 ton/bundle			92	.609			37	23	60	80
2220 0.5 ton/bundle			35	1.600			96.50	60	156.50	210
2400 Dowels, 2 feet long, deformed, #3	G	2 Rodm	520	.031	Ea.	.60	1.87		2.47	3.45
2410 #4	G		480	.033		1.07	2.02		3.09	4.19
2420 #5	G		435	.037		1.67	2.23		3.90	5.15
2430 #6	G		360	.044		2.40	2.70		5.10	6.65
2450 Longer and heavier dowels, add	G		725	.022	Lb.	.80	1.34		2.14	2.88
2500 Smooth dowels, 12" long, 1/4" or 3/8" diameter	G		140	.114	Ea.	1.02	6.95		7.97	11.50
2520 5/8" diameter	G		125	.128		1.79	7.75		9.54	13.55
2530 3/4" diameter	G		110	.145		2.22	8.85		11.07	15.65
2600 Dowel sleeves for CIP concrete, 2-part system										
2610 Sleeve base, plastic, for 5/8" smooth dowel sleeve, fasten to edge form		1 Rodm	200	.040	Ea.	.57	2.43		3	4.26
2615 Sleeve, plastic, 12" long, for 5/8" smooth dowel, snap onto base			400	.020		1.41	1.21		2.62	3.36
2620 Sleeve base, for 3/4" smooth dowel sleeve			175	.046		.57	2.77		3.34	4.77
2625 Sleeve, 12" long, for 3/4" smooth dowel			350	.023		1.41	1.39		2.80	3.62
2630 Sleeve base, for 1" smooth dowel sleeve			150	.053		.96	3.24		4.20	5.90
2635 Sleeve, 12" long, for 1" smooth dowel			300	.027		1.48	1.62		3.10	4.05
2700 Dowel caps, visual warning only, plastic, #3 to #8		2 Rodm	800	.020		.64	1.21		1.85	2.51
2720 #8 to #18			750	.021		1.11	1.29		2.40	3.15

03 21 Reinforcement Bars

03 21 11 – Plain Steel Reinforcement Bars

		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
03 21 11.60	**Reinforcing In Place**									
2750	Impalement protective, plastic, #4 to #9	2 Rodm	800	.020	Ea.	1.60	1.21		2.81	3.57

03 21 13 – Galvanized Reinforcement Steel Bars

03 21 13.10 Galvanized Reinforcing

0010	**GALVANIZED REINFORCING**									
0150	Add to plain steel rebar pricing for galvanized rebar				Ton	570			570	625

03 21 16 – Epoxy-Coated Reinforcement Steel Bars

03 21 16.10 Epoxy-Coated Reinforcing

0010	**EPOXY-COATED REINFORCING**									
0100	Add to plain steel rebar pricing for epoxy-coated rebar				Ton	1,125			1,125	1,250

03 21 21 – Composite Reinforcement Bars

03 21 21.11 Glass Fiber-Reinforced Polymer Reinf. Bars

0010	**GLASS FIBER-REINFORCED POLYMER REINFORCEMENT BARS**									
0020	Includes labor, but not material cost, to install accessories									
0050	#2 bar, .043 lb./L.F.	4 Rodm	9500	.003	L.F.	.43	.20		.63	.78
0100	#3 bar, .092 lb./L.F.		9300	.003		.70	.21		.91	1.08
0150	#4 bar, .160 lb./L.F.		9100	.004		1	.21		1.21	1.42
0200	#5 bar, .258 lb./L.F.		8700	.004		1.23	.22		1.45	1.68
0250	#6 bar, .372 lb./L.F.		8300	.004		2.15	.23		2.38	2.72
0300	#7 bar, .497 lb./L.F.		7900	.004		2.65	.25		2.90	3.29
0350	#8 bar, .620 lb./L.F.		7400	.004		2.41	.26		2.67	3.04
0400	#9 bar, .800 lb./L.F.		6800	.005		4.37	.29		4.66	5.25
0450	#10 bar, 1.08 lb./L.F.		5800	.006		3.97	.33		4.30	4.87
0500	For bends, add per bend				Ea.	1.67			1.67	1.84

03 22 Fabric and Grid Reinforcing

03 22 11 – Plain Welded Wire Fabric Reinforcing

03 22 11.10 Plain Welded Wire Fabric

0010	**PLAIN WELDED WIRE FABRIC** ASTM A185 R032205-30									
0020	Includes labor, but not material cost, to install accessories									
0030	Made from recycled materials									
0050	Sheets									
0100	6 x 6 - W1.4 x W1.4 (10 x 10) 21 lb./C.S.F. G	2 Rodm	35	.457	C.S.F.	22	28		50	66
0200	6 x 6 - W2.1 x W2.1 (8 x 8) 30 lb./C.S.F. G		31	.516		32	31.50		63.50	82
0300	6 x 6 - W2.9 x W2.9 (6 x 6) 42 lb./C.S.F. G		29	.552		43	33.50		76.50	97.50
0400	6 x 6 - W4 x W4 (4 x 4) 58 lb./C.S.F. G		27	.593		52	36		88	111
0500	4 x 4 - W1.4 x W1.4 (10 x 10) 31 lb./C.S.F. G		31	.516		35.50	31.50		67	86
0600	4 x 4 - W2.1 x W2.1 (8 x 8) 44 lb./C.S.F. G		29	.552		44.50	33.50		78	99
0650	4 x 4 - W2.9 x W2.9 (6 x 6) 61 lb./C.S.F. G		27	.593		71	36		107	132
0700	4 x 4 - W4 x W4 (4 x 4) 85 lb./C.S.F. G		25	.640		88.50	39		127.50	156
0750	Rolls									
0800	2 x 2 - #14 galv., 21 lb./C.S.F., beam & column wrap G	2 Rodm	6.50	2.462	C.S.F.	64	149		213	294
0900	2 x 2 - #12 galv. for gunite reinforcing G	"	6.50	2.462	"	89	149		238	320

03 22 13 – Galvanized Welded Wire Fabric Reinforcing

03 22 13.10 Galvanized Welded Wire Fabric

0010	**GALVANIZED WELDED WIRE FABRIC**									
0100	Add to plain welded wire pricing for galvanized welded wire				Lb.	.29			.29	.31

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

03 22 Fabric and Grid Reinforcing

03 22 16 – Epoxy-Coated Welded Wire Fabric Reinforcing

03 22 16.10 Epoxy-Coated Welded Wire Fabric	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **EPOXY-COATED WELDED WIRE FABRIC**									
0100 Add to plain welded wire pricing for epoxy-coated welded wire				Lb.	.57			.57	.62

03 23 Stressed Tendon Reinforcing

03 23 05 – Prestressing Tendons

03 23 05.50 Prestressing Steel

0010	**PRESTRESSING STEEL** R034136-90										
0100	Grouted strand, in beams, post-tensioned in field, 50′ span, 100 kip	G	C-3	1200	.053	Lb.	2.94	3.02	.12	6.08	7.85
0150	300 kip	G		2700	.024		1.24	1.34	.05	2.63	3.43
0300	100′ span, 100 kip	G		1700	.038		2.94	2.13	.08	5.15	6.50
0350	300 kip	G		3200	.020		2.52	1.13	.04	3.69	4.51
0500	200′ span, 100 kip	G		2700	.024		2.93	1.34	.05	4.32	5.30
0550	300 kip	G		3500	.018		2.51	1.04	.04	3.59	4.36
0800	Grouted bars, in beams, 50′ span, 42 kip	G		2600	.025		1.36	1.40	.05	2.81	3.64
0850	143 kip	G		3200	.020		1.31	1.13	.04	2.48	3.18
1000	75′ span, 42 kip	G		3200	.020		1.38	1.13	.04	2.55	3.26
1050	143 kip	G		4200	.015		1.18	.86	.03	2.07	2.63
1200	Ungrouted strand, in beams, 50′ span, 100 kip	G	C-4	1275	.025		.66	1.54	.04	2.24	3.06
1250	300 kip	G		1475	.022		.66	1.33	.03	2.02	2.75
1400	100′ span, 100 kip	G		1500	.021		.66	1.31	.03	2	2.72
1450	300 kip	G		1650	.019		.66	1.19	.03	1.88	2.53
1600	200′ span, 100 kip	G		1500	.021		.66	1.31	.03	2	2.72
1650	300 kip	G		1700	.019		.66	1.15	.03	1.84	2.48
1800	Ungrouted bars, in beams, 50′ span, 42 kip	G		1400	.023		.73	1.40	.03	2.16	2.93
1850	143 kip	G		1700	.019		.73	1.15	.03	1.91	2.55
2000	75′ span, 42 kip	G		1800	.018		.73	1.09	.03	1.85	2.45
2050	143 kip	G		2200	.015		.73	.89	.02	1.64	2.15
2220	Ungrouted single strand, 100′ elevated slab, 25 kip	G		1200	.027		.66	1.63	.04	2.33	3.21
2250	35 kip	G		1475	.022		.66	1.33	.03	2.02	2.75
3000	Slabs on grade, 0.5-inch diam. non-bonded strands, HDPE sheathed,										
3050	attached dead-end anchors, loose stressing-end anchors										
3100	25′ x 30′ slab, strands @ 36″ OC, placing		2 Rodm	2940	.005	S.F.	.70	.33		1.03	1.26
3105	Stressing		C-4A	3750	.004			.26	.02	.28	.41
3110	42″ OC, placing		2 Rodm	3200	.005		.62	.30		.92	1.13
3115	Stressing		C-4A	4040	.004			.24	.02	.26	.38
3120	48″ OC, placing		2 Rodm	3510	.005		.54	.28		.82	1
3125	Stressing		C-4A	4390	.004			.22	.01	.23	.35
3150	25′ x 40′ slab, strands @ 36″ OC, placing		2 Rodm	3370	.005		.67	.29		.96	1.17
3155	Stressing		C-4A	4360	.004	S.F.		.22	.01	.23	.35
3160	42″ OC, placing		2 Rodm	3760	.004		.58	.26		.84	1.03
3165	Stressing		C-4A	4820	.003			.20	.01	.21	.31
3170	48″ OC, placing		2 Rodm	4090	.004		.52	.24		.76	.92
3175	Stressing		C-4A	5190	.003			.19	.01	.20	.29
3200	30′ x 30′ slab, strands @ 36″ OC, placing		2 Rodm	3260	.005		.67	.30		.97	1.18
3205	Stressing		C-4A	4190	.004			.23	.02	.25	.37
3210	42″ OC, placing		2 Rodm	3530	.005		.60	.28		.88	1.07
3215	Stressing		C-4A	4500	.004			.22	.01	.23	.34
3220	48″ OC, placing		2 Rodm	3840	.004		.54	.25		.79	.97
3225	Stressing		C-4A	4850	.003			.20	.01	.21	.31
3230	30′ x 40′ slab, strands @ 36″ OC, placing		2 Rodm	3780	.004		.65	.26		.91	1.09

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

03 23 Stressed Tendon Reinforcing

03 23 05 – Prestressing Tendons

	03 23 05.50 Prestressing Steel	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
3235	Stressing	C-4A	4920	.003	S.F.		.20	.01	.21	.3
3240	42" OC, placing	2 Rodm	4190	.004		.57	.23		.80	.9
3245	Stressing	C-4A	5410	.003			.18	.01	.19	.2
3250	48" OC, placing	2 Rodm	4520	.004		.51	.21		.72	.8
3255	Stressing	C-4A	5790	.003			.17	.01	.18	.2
3260	30' x 50' slab, strands @ 36" OC, placing	2 Rodm	4300	.004		.61	.23		.84	1.0
3265	Stressing	C-4A	5650	.003			.17	.01	.18	.2
3270	42" OC, placing	2 Rodm	4720	.003		.54	.21		.75	.9
3275	Stressing	C-4A	6150	.003			.16	.01	.17	.2
3280	48" OC, placing	2 Rodm	5240	.003		.48	.19		.67	.8
3285	Stressing	C-4A	6760	.002			.14	.01	.15	.2

03 24 Fibrous Reinforcing

03 24 05 – Reinforcing Fibers

03 24 05.30 Synthetic Fibers

0010	**SYNTHETIC FIBERS**									
0100	Synthetic fibers, add to concrete				Lb.	6.25			6.25	6.85
0110	1-1/2 lb./C.Y.				C.Y.	9.65			9.65	10.60

03 24 05.70 Steel Fibers

0010	**STEEL FIBERS**									
0140	ASTM A850, Type V, continuously deformed, 1-1/2" long x 0.045" diam.									
0150	Add to price of ready mix concrete	G			Lb.	1.22			1.22	1.34
0205	Alternate pricing, dosing at 5 lb./C.Y., add to price of RMC	G			C.Y.	6.10			6.10	6.70
0210	10 lb./C.Y.	G				12.20			12.20	13.40
0215	15 lb./C.Y.	G				18.30			18.30	20
0220	20 lb./C.Y.	G				24.50			24.50	27
0225	25 lb./C.Y.	G				30.50			30.50	33.50
0230	30 lb./C.Y.	G				36.50			36.50	40.50
0235	35 lb./C.Y.	G				42.50			42.50	47
0240	40 lb./C.Y.	G			C.Y.	49			49	53.50
0250	50 lb./C.Y.	G				61			61	67
0275	75 lb./C.Y.	G				91.50			91.50	101
0300	100 lb./C.Y.	G				122			122	134

03 30 Cast-In-Place Concrete

03 30 53 – Miscellaneous Cast-In-Place Concrete

03 30 53.40 Concrete In Place

0010	**CONCRETE IN PLACE**	R033105-10								
0020	Including forms (4 uses), Grade 60 rebar, concrete (Portland cement	R033105-20								
0050	Type I), placement and finishing unless otherwise indicated	R033105-50								
0300	Beams (3500 psi), 5 kip/L.F., 10' span	R033105-65	C-14A	15.62	12.804	C.Y.	485	720	50	1,255	1,675
0350	25' span	R033105-70	"	18.55	10.782		510	605	42	1,157	1,500
0500	Chimney foundations (5000 psi), over 5 C.Y.	R033105-85	C-14C	32.22	3.476		193	187	.87	380.87	490
0510	(3500 psi), under 5 C.Y.	R033053-50	"	23.71	4.724		230	254	1.18	485.18	635
0700	Columns, square (4000 psi), 12" x 12", up to 1% reinforcing by area		C-14A	11.96	16.722		535	940	65.50	1,540.50	2,050
0720	Up to 2% reinforcing by area			10.13	19.743		835	1,100	77	2,012	2,650
0740	Up to 3% reinforcing by area			9.03	22.148		1,250	1,250	86.50	2,586.50	3,325
0800	16" x 16", up to 1% reinforcing by area			16.22	12.330		425	695	48	1,168	1,550
0820	Up to 2% reinforcing by area			12.57	15.911		715	895	62	1,672	2,175

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03 30 53.40 Concrete In Place	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0840 Up to 3% reinforcing by area	C-14A	10.25	19.512	C.Y.	1,100	1,100	76.50	2,276.50	2,900
0900 24" x 24", up to 1% reinforcing by area		23.66	8.453		360	475	33	868	1,150
0920 Up to 2% reinforcing by area		17.71	11.293		635	635	44	1,314	1,700
0940 Up to 3% reinforcing by area		14.15	14.134		1,000	795	55.50	1,850.50	2,325
1000 36" x 36", up to 1% reinforcing by area		33.69	5.936		320	335	23	678	870
1020 Up to 2% reinforcing by area		23.32	8.576		560	485	33.50	1,078.50	1,375
1040 Up to 3% reinforcing by area		17.82	11.223		940	630	44	1,614	2,025
1100 Columns, round (4000 psi), tied, 12" diameter, up to 1% reinforcing by area		20.97	9.537		505	535	37.50	1,077.50	1,400
1120 Up to 2% reinforcing by area		15.27	13.098		805	735	51	1,591	2,050
1140 Up to 3% reinforcing by area		12.11	16.515		1,200	930	64.50	2,194.50	2,775
1200 16" diameter, up to 1% reinforcing by area		31.49	6.351		455	355	25	835	1,050
1220 Up to 2% reinforcing by area		19.12	10.460		760	590	41	1,391	1,750
1240 Up to 3% reinforcing by area		13.77	14.524		1,125	815	57	1,997	2,525
1300 20" diameter, up to 1% reinforcing by area		41.04	4.873		440	274	19.05	733.05	915
1320 Up to 2% reinforcing by area		24.05	8.316		715	470	32.50	1,217.50	1,525
1340 Up to 3% reinforcing by area		17.01	11.758		1,100	660	46	1,806	2,250
1400 24" diameter, up to 1% reinforcing by area		51.85	3.857		400	217	15.10	632.10	780
1420 Up to 2% reinforcing by area	C-14A	27.06	7.391	C.Y.	700	415	29	1,144	1,425
1440 Up to 3% reinforcing by area		18.29	10.935		1,075	615	43	1,733	2,125
1500 36" diameter, up to 1% reinforcing by area		75.04	2.665		410	150	10.40	570.40	690
1520 Up to 2% reinforcing by area		37.49	5.335		680	300	21	1,001	1,225
1540 Up to 3% reinforcing by area		22.84	8.757		1,050	495	34	1,579	1,925
1900 Elevated slab (4000 psi), flat slab with drops, 125 psf Sup. Load, 20' span	C-14B	38.45	5.410		395	305	20.50	720.50	910
1950 30' span		50.99	4.079		420	229	15.35	664.35	815
2100 Flat plate, 125 psf Sup. Load, 15' span		30.24	6.878		360	385	26	771	1,000
2150 25' span		49.60	4.194		375	235	15.75	625.75	775
2300 Waffle const., 30" domes, 125 psf Sup. Load, 20' span		37.07	5.611		405	315	21	741	940
2350 30' span		44.07	4.720		375	265	17.75	657.75	830
2500 One way joists, 30" pans, 125 psf Sup. Load, 15' span		27.38	7.597		510	425	28.50	963.50	1,225
2550 25' span		31.15	6.677		470	375	25	870	1,100
2700 One way beam & slab, 125 psf Sup. Load, 15' span		20.59	10.102		390	565	38	993	1,325
2750 25' span		28.36	7.334		370	410	27.50	807.50	1,050
2900 Two way beam & slab, 125 psf Sup. Load, 15' span		24.04	8.652		375	485	32.50	892.50	1,175
2950 25' span		35.87	5.799		325	325	22	672	870
3100 Elevated slabs, flat plate, including finish, not									
3110 including forms or reinforcing									
3150 Regular concrete (4000 psi), 4" slab	C-8	2613	.021	S.F.	2.15	1.07	.29	3.51	4.28
3200 6" slab		2585	.022		3.16	1.09	.29	4.54	5.40
3250 2-1/2" thick floor fill		2685	.021		1.40	1.05	.28	2.73	3.40
3300 Lightweight, 110 #/C.F., 2-1/2" thick floor fill		2585	.022		1.34	1.09	.29	2.72	3.40
3400 Cellular concrete, 1-5/8" fill, under 5000 S.F.		2000	.028		.92	1.40	.38	2.70	3.50
3450 Over 10,000 S.F.		2200	.025		.88	1.28	.34	2.50	3.24
3500 Add per floor for 3 to 6 stories high		31800	.002			.09	.02	.11	.16
3520 For 7 to 20 stories high		21200	.003			.13	.04	.17	.24
3540 Equipment pad (3000 psi), 3' x 3' x 6" thick	C-14H	45	1.067	Ea.	66.50	58.50	.62	125.62	161
3550 4' x 4' x 6" thick		30	1.600		101	88	.93	189.93	243
3560 5' x 5' x 8" thick		18	2.667		180	147	1.55	328.55	420
3570 6' x 6' x 8" thick		14	3.429		245	189	1.99	435.99	550
3580 8' x 8' x 10" thick		8	6		510	330	3.48	843.48	1,050
3590 10' x 10' x 12" thick		5	9.600		895	530	5.55	1,430.55	1,775
3800 Footings (3000 psi), spread under 1 C.Y.	C-14C	28	4	C.Y.	256	215	1	472	600
3813 Install new concrete (3000 psi) light pole base, 24" diam. x 8'	C-1	2.66	12.030		405	645		1,050	1,400
3825 1 C.Y. to 5 C.Y.	C-14C	43	2.605		315	140	.65	455.65	555

03 30 53 – Miscellaneous Cast-In-Place Concrete

	03 30 53.40 Concrete In Place	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
3850	Over 5 C.Y.	C-14C	75	1.493	C.Y.	287	80.50	.37	367.87	435
3900	Footings, strip (3000 psi), 18" x 9", unreinforced	C-14L	40	2.400		195	126	.70	321.70	405
3920	18" x 9", reinforced	C-14C	35	3.200		230	172	.80	402.80	510
3925	20" x 10", unreinforced	C-14L	45	2.133		189	112	.62	301.62	375
3930	20" x 10", reinforced	C-14C	40	2.800		218	151	.70	369.70	465
3935	24" x 12", unreinforced	C-14L	55	1.745		188	92	.51	280.51	345
3940	24" x 12", reinforced	C-14C	48	2.333		217	126	.58	343.58	425
3945	36" x 12", unreinforced	C-14L	70	1.371		181	72	.40	253.40	305
3950	36" x 12", reinforced	C-14C	60	1.867		208	100	.47	308.47	380
4000	Foundation mat (3000 psi), under 10 C.Y.	"	38.67	2.896		315	156	.72	471.72	580
4200	Wall, free-standing (3000 psi), 8" thick, 8' high	C-14D	45.83	4.364		244	244	17.05	505.05	650
4250	14' high		27.26	7.337		289	410	28.50	727.50	960
4260	12" thick, 8' high		64.32	3.109		221	174	12.15	407.15	515
4270	14' high		40.01	4.999		236	279	19.55	534.55	695
4300	15" thick, 8' high		80.02	2.499		214	140	9.75	363.75	455
4350	12' high		51.26	3.902		214	218	15.25	447.25	580
4500	18' high		48.85	4.094		241	229	16	486	625
4520	Handicap access ramp (4000 psi), railing both sides, 3' wide	C-14H	14.58	3.292	L.F.	435	181	1.91	617.91	750
4525	5' wide		12.22	3.928		450	216	2.28	668.28	820
4530	With 6" curb and rails both sides, 3' wide		8.55	5.614		450	310	3.26	763.26	960
4535	5' wide		7.31	6.566		455	360	3.81	818.81	1,050
4650	Slab on grade (3500 psi), not including finish, 4" thick	C-14E	60.75	1.449	C.Y.	191	79.50	.46	270.96	330
4700	6" thick	"	92	.957	"	183	52.50	.31	235.81	280
4701	Thickened slab edge (3500 psi), for slab on grade poured									
4702	monolithically with slab; depth is in addition to slab thickness;									
4703	formed vertical outside edge, earthen bottom and inside slope									
4705	8" deep x 8" wide bottom, unreinforced	C-14L	2190	.044	L.F.	5.35	2.31	.01	7.67	9.35
4710	8" x 8", reinforced	C-14C	1670	.067		8.80	3.61	.02	12.43	15
4715	12" deep x 12" wide bottom, unreinforced	C-14L	1800	.053		10.85	2.81	.02	13.68	16.15
4720	12" x 12", reinforced	C-14C	1310	.086		17.10	4.60	.02	21.72	25.50
4725	16" deep x 16" wide bottom, unreinforced	C-14L	1440	.067		18.25	3.51	.02	21.78	25
4730	16" x 16", reinforced	C-14C	1120	.100		25.50	5.40	.03	30.93	36.50
4735	20" deep x 20" wide bottom, unreinforced	C-14L	1150	.083		27.50	4.39	.02	31.91	37
4740	20" x 20", reinforced	C-14C	920	.122		37	6.55	.03	43.58	51
4745	24" deep x 24" wide bottom, unreinforced	C-14L	930	.103	L.F.	39	5.45	.03	44.48	51
4750	24" x 24", reinforced	C-14C	740	.151	"	51	8.15	.04	59.19	68.50
4751	Slab on grade (3500 psi), incl. troweled finish, not incl. forms									
4760	or reinforcing, over 10,000 S.F., 4" thick	C-14F	3425	.021	S.F.	2.09	1.07	.01	3.17	3.88
4820	6" thick		3350	.021		3.05	1.09	.01	4.15	4.97
4840	8" thick		3184	.023		4.17	1.15	.01	5.33	6.30
4900	12" thick		2734	.026		6.25	1.34	.01	7.60	8.90
4950	15" thick		2505	.029		7.85	1.46	.01	9.32	10.80
5000	Slab on grade (3000 psi), incl. broom finish, not incl. forms									
5001	or reinforcing, 4" thick	C-14G	2873	.019	S.F.	2.07	.98	.01	3.06	3.73
5010	6" thick		2590	.022		3.24	1.09	.01	4.34	5.20
5020	8" thick		2320	.024		4.23	1.21	.01	5.45	6.45
5200	Lift slab in place above the foundation, incl. forms, reinforcing,									
5210	concrete (4000 psi) and columns, over 20,000 S.F./floor	C-14B	2113	.098	S.F.	9.25	5.55	.37	15.17	18.75
5250	10,000 S.F. to 20,000 S.F./floor		1650	.126		10.05	7.10	.47	17.62	22
5300	Under 10,000 S.F./floor		1500	.139		10.80	7.80	.52	19.12	24
5500	Lightweight, ready mix, including screed finish only,									
5510	not including forms or reinforcing									
5550	1:4 (2500 psi) for structural roof decks	C-14B	260	.800	C.Y.	127	45	3.01	175.01	210

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03 30 Cast-In-Place Concrete

03 30 53 – Miscellaneous Cast-In-Place Concrete

	03 30 53.40 Concrete In Place	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
5600	1:6 (3000 psi) for ground slab with radiant heat	C-14F	92	.783	C.Y.	119	40	.31	159.31	190
5650	1:3:2 (2000 psi) with sand aggregate, roof deck	C-14B	260	.800		113	45	3.01	161.01	194
5700	Ground slab (2000 psi)	C-14F	107	.673		113	34	.26	147.26	175
5900	Pile caps (3000 psi), incl. forms and reinf., sq. or rect., under 10 C.Y.	C-14C	54.14	2.069		265	111	.52	376.52	460
5950	Over 10 C.Y.		75	1.493		246	80.50	.37	326.87	390
6000	Triangular or hexagonal, under 10 C.Y.		53	2.113		193	114	.53	307.53	380
6050	Over 10 C.Y.		85	1.318		216	71	.33	287.33	340
6200	Retaining walls (3000 psi), gravity, 4′ high see Section 32 32	C-14D	66.20	3.021		214	169	11.80	394.80	500
6250	10′ high		125	1.600		206	89.50	6.25	301.75	365
6300	Cantilever, level backfill loading, 8′ high		70	2.857		228	160	11.15	399.15	500
6350	16′ high		91	2.198		222	123	8.60	353.60	435
6800	Stairs (3500 psi), not including safety treads, free standing, 3′-6″ wide	C-14H	83	.578	LF Nose	8.65	32	.34	40.99	57.50
6850	Cast on ground		125	.384	″	7.10	21	.22	28.32	39.50
7000	Stair landings, free standing		200	.240	S.F.	6.95	13.20	.14	20.29	27.50
7050	Cast on ground		475	.101	″	5.40	5.55	.06	11.01	14.25

03 31 Structural Concrete

03 31 13 – Heavyweight Structural Concrete

03 31 13.25 Concrete, Hand Mix

0010	**CONCRETE, HAND MIX** for small quantities or remote areas									
0050	Includes bulk local aggregate, bulk sand, bagged Portland									
0060	cement (Type I) and water, using gas powered cement mixer									
0125	2500 psi	C-30	135	.059	C.F.	4.21	2.70	1.04	7.95	9.80
0130	3000 psi		135	.059		4.54	2.70	1.04	8.28	10.15
0135	3500 psi		135	.059		4.78	2.70	1.04	8.52	10.40
0140	4000 psi		135	.059		5.05	2.70	1.04	8.79	10.70
0145	4500 psi		135	.059		5.40	2.70	1.04	9.14	11.10
0150	5000 psi		135	.059		5.70	2.70	1.04	9.44	11.40
0300	Using pre-bagged dry mix and wheelbarrow (80-lb. bag = 0.6 C.F.)									
0340	4000 psi	1 Clab	48	.167	C.F.	11.75	7.60		19.35	24

03 31 13.30 Concrete, Volumetric Site-Mixed

0010	**CONCRETE, VOLUMETRIC SITE-MIXED**									
0015	Mixed on-site in volumetric truck									
0020	Includes local aggregate, sand, Portland cement (Type I) and water									
0025	Excludes all additives and treatments									
0100	3000 psi, 1 C.Y. mixed and discharged				C.Y.	220			220	242
0110	2 C.Y.					162			162	178
0120	3 C.Y.					147			147	161
0130	4 C.Y.					129			129	142
0140	5 C.Y.					126			126	139
0200	For truck holding/waiting time past first 2 on-site hours, add				Hr.	94			94	103
0210	For trip charge beyond first 20 miles, each way, add				Mile	3.72			3.72	4.09
0220	For each additional increase of 500 psi, add				Ea.	4.78			4.78	5.25

03 31 13.35 Heavyweight Concrete, Ready Mix

0010	**HEAVYWEIGHT CONCRETE, READY MIX**, delivered	R033105-10								
0012	Includes local aggregate, sand, Portland cement (Type I) and water									
0015	Excludes all additives and treatments	R033105-20								
0020	2000 psi				C.Y.	152			152	167
0100	2500 psi	R033105-30				155			155	170
0150	3000 psi					159			159	175

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03 31 13.35 Heavyweight Concrete, Ready Mix		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0200 3500 psi	R033105-40				C.Y.	161			161	177
0300 4000 psi						164			164	180
0350 4500 psi	R033105-50					135			135	148
0400 5000 psi						139			139	153
0411 6000 psi						143			143	157
0412 8000 psi						150			150	165
0413 10,000 psi					C.Y.	158			158	174
0414 12,000 psi						166			166	182
1000 For high early strength (Portland cement Type III), add						10%				
1010 For structural lightweight with regular sand, add						25%				
1300 For winter concrete (hot water), add						8.50			8.50	9.35
1410 For mid-range water reducer, add						4.27			4.27	4.70
1420 For high-range water reducer/superplasticizer, add						9			9	9.90
1430 For retarder, add						5.10			5.10	5.60
1440 For non-Chloride accelerator, add						8.80			8.80	9.70
1450 For Chloride accelerator, per 1%, add						4			4	4.40
1460 For fiber reinforcing, synthetic (1 lb./C.Y.), add						8.40			8.40	9.25
1500 For Saturday delivery, add						10			10	11
1510 For truck holding/waiting time past 1st hour per load, add					Hr.	115			115	127
1520 For short load (less than 4 C.Y.), add per load					Ea.	125			125	138
2000 For all lightweight aggregate, add					C.Y.	45%				

03 31 13.70 Placing Concrete										
0010 **PLACING CONCRETE**	R033105-70									
0020 Includes labor and equipment to place, level (strike off) and consolidate										
0050 Beams, elevated, small beams, pumped		C-20	60	1.067	C.Y.		52	13.50	65.50	92
0100 With crane and bucket		C-7	45	1.600			79	52.50	131.50	175
0200 Large beams, pumped		C-20	90	.711			34.50	9	43.50	61.50
0250 With crane and bucket		C-7	65	1.108			54.50	36.50	91	121
0400 Columns, square or round, 12" thick, pumped		C-20	60	1.067			52	13.50	65.50	92
0450 With crane and bucket		C-7	40	1.800			88.50	59	147.50	197
0600 18" thick, pumped		C-20	90	.711			34.50	9	43.50	61.50
0650 With crane and bucket		C-7	55	1.309			64.50	43	107.50	144
0800 24" thick, pumped		C-20	92	.696			34	8.80	42.80	60
0850 With crane and bucket		C-7	70	1.029			50.50	34	84.50	112
1000 36" thick, pumped		C-20	140	.457			22	5.80	27.80	39.50
1050 With crane and bucket		C-7	100	.720			35.50	23.50	59	78.50
1200 Duct bank, direct chute		C-6	155	.310			14.60	.36	14.96	22
1400 Elevated slabs, less than 6" thick, pumped		C-20	140	.457			22	5.80	27.80	39.50
1450 With crane and bucket		C-7	95	.758			37.50	25	62.50	83
1500 6" to 10" thick, pumped		C-20	160	.400			19.45	5.05	24.50	34.50
1550 With crane and bucket		C-7	110	.655			32	21.50	53.50	71.50
1600 Slabs over 10" thick, pumped		C-20	180	.356			17.30	4.50	21.80	30.50
1650 With crane and bucket		C-7	130	.554	C.Y.		27.50	18.25	45.75	60.50
1900 Footings, continuous, shallow, direct chute		C-6	120	.400			18.90	.46	19.36	28.50
1950 Pumped		C-20	150	.427			21	5.40	26.40	37
2000 With crane and bucket		C-7	90	.800			39.50	26.50	66	87.50
2100 Footings, continuous, deep, direct chute		C-6	140	.343			16.20	.40	16.60	24.50
2150 Pumped		C-20	160	.400			19.45	5.05	24.50	34.50
2200 With crane and bucket		C-7	110	.655			32	21.50	53.50	71.50
2400 Footings, spread, under 1 C.Y., direct chute		C-6	55	.873			41	1.01	42.01	62
2450 Pumped		C-20	65	.985			48	12.45	60.45	84.50
2500 With crane and bucket		C-7	45	1.600			79	52.50	131.50	175

03 31 13 – Heavyweight Structural Concrete

	03 31 13.70 Placing Concrete	Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&P
2600	Over 5 C.Y., direct chute	C-6	120	.400	C.Y.		18.90	.46	19.36	28.50
2650	Pumped	C-20	150	.427			21	5.40	26.40	37
2700	With crane and bucket	C-7	100	.720			35.50	23.50	59	78.50
2900	Foundation mats, over 20 C.Y., direct chute	C-6	350	.137			6.45	.16	6.61	9.80
2950	Pumped	C-20	400	.160			7.80	2.03	9.83	13.80
3000	With crane and bucket	C-7	300	.240			11.80	7.90	19.70	26.50
3200	Grade beams, direct chute	C-6	150	.320			15.10	.37	15.47	23
3250	Pumped	C-20	180	.356			17.30	4.50	21.80	30.50
3300	With crane and bucket	C-7	120	.600			29.50	19.75	49.25	65.50
3500	High rise, for more than 5 stories, pumped, add per story	C-20	2100	.030			1.48	.39	1.87	2.62
3510	With crane and bucket, add per story	C-7	2100	.034			1.69	1.13	2.82	3.75
3700	Pile caps, under 5 C.Y., direct chute	C-6	90	.533			25	.62	25.62	38
3750	Pumped	C-20	110	.582			28.50	7.35	35.85	50
3800	With crane and bucket	C-7	80	.900			44.50	29.50	74	98.50
3850	Pile cap, 5 C.Y. to 10 C.Y., direct chute	C-6	175	.274			12.95	.32	13.27	19.55
3900	Pumped	C-20	200	.320			15.55	4.05	19.60	27.50
3950	With crane and bucket	C-7	150	.480			23.50	15.80	39.30	52.50
4000	Over 10 C.Y., direct chute	C-6	215	.223			10.55	.26	10.81	15.95
4050	Pumped	C-20	240	.267			12.95	3.38	16.33	23
4100	With crane and bucket	C-7	185	.389			19.15	12.80	31.95	42.50
4300	Slab on grade, up to 6" thick, direct chute	C-6	110	.436			20.50	.51	21.01	31
4350	Pumped	C-20	130	.492			24	6.25	30.25	42.50
4400	With crane and bucket	C-7	110	.655			32	21.50	53.50	71.50
4600	Over 6" thick, direct chute	C-6	165	.291			13.75	.34	14.09	21
4650	Pumped	C-20	185	.346			16.85	4.38	21.23	30
4700	With crane and bucket	C-7	145	.497			24.50	16.35	40.85	54.50
4900	Walls, 8" thick, direct chute	C-6	90	.533	C.Y.		25	.62	25.62	38
4950	Pumped	C-20	100	.640			31	8.10	39.10	55
5000	With crane and bucket	C-7	80	.900			44.50	29.50	74	98.50
5050	12" thick, direct chute	C-6	100	.480			22.50	.56	23.06	34
5100	Pumped	C-20	110	.582			28.50	7.35	35.85	50
5200	With crane and bucket	C-7	90	.800			39.50	26.50	66	87.50
5300	15" thick, direct chute	C-6	105	.457			21.50	.53	22.03	32.50
5350	Pumped	C-20	120	.533			26	6.75	32.75	46
5400	With crane and bucket	C-7	95	.758			37.50	25	62.50	83
5600	Wheeled concrete dumping, add to placing costs above									
5610	Walking cart, 50' haul, add	C-18	32	.281	C.Y.		12.90	3.72	16.62	23.50
5620	150' haul, add		24	.375			17.20	4.95	22.15	31
5700	250' haul, add		18	.500			23	6.60	29.60	41.50
5800	Riding cart, 50' haul, add	C-19	80	.113			5.15	1.75	6.90	9.60
5810	150' haul, add		60	.150			6.85	2.33	9.18	12.80
5900	250' haul, add		45	.200			9.15	3.10	12.25	17.05
6000	Concrete in-fill for pan-type metal stairs and landings. Manual placement									
6010	includes up to 50' horizontal haul from point of concrete discharge.									
6100	Stair pan treads, 2" deep									
6110	Flights in 1st floor level up/down from discharge point	C-8A	3200	.015	S.F.		.73		.73	1.08
6120	2nd floor level		2500	.019			.93		.93	1.38
6130	3rd floor level		2000	.024			1.16		1.16	1.72
6140	4th floor level		1800	.027			1.29		1.29	1.91
6200	Intermediate stair landings, pan-type 4" deep									
6210	Flights in 1st floor level up/down from discharge point	C-8A	2000	.024	S.F.		1.16		1.16	1.72
6220	2nd floor level		1500	.032			1.55		1.55	2.29
6230	3rd floor level		1200	.040			1.94		1.94	2.87

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03 31 Structural Concrete

03 31 13 – Heavyweight Structural Concrete

	03 31 13.70 Placing Concrete	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
6240	4th floor level	C-8A	1000	.048	S.F.		2.33		2.33	3.4

03 35 Concrete Finishing

03 35 13 – High-Tolerance Concrete Floor Finishing

03 35 13.30 Finishing Floors, High Tolerance

0010	**FINISHING FLOORS, HIGH TOLERANCE**									
0012	Finishing of fresh concrete flatwork requires that concrete									
0013	first be placed, struck off & consolidated									
0015	Basic finishing for various unspecified flatwork									
0100	Bull float only	C-10	4000	.006	S.F.		.30		.30	.45
0125	Bull float & manual float	"	2000	.012	"		.61		.61	.89
0150	Bull float, manual float & broom finish, w/edging & joints	C-10	1850	.013	S.F.		.66		.66	.97
0200	Bull float, manual float & manual steel trowel	"	1265	.019	"		.96		.96	1.41
0210	For specified Random Access Floors in ACI Classes 1, 2, 3 and 4 to achieve									
0215	Composite Overall Floor Flatness and Levelness values up to FF35/FL25									
0250	Bull float, machine float & machine trowel (walk-behind)	C-10C	1715	.014	S.F.		.71	.05	.76	1.10
0300	Power screed, bull float, machine float & trowel (walk-behind)	C-10D	2400	.010			.51	.07	.58	.82
0350	Power screed, bull float, machine float & trowel (ride-on)	C-10E	4000	.006	↓		.30	.08	.38	.54
0352	For specified Random Access Floors in ACI Classes 5, 6, 7 and 8 to achieve									
0354	Composite Overall Floor Flatness and Levelness values up to FF50/FL50									
0356	Add for two-dimensional restraightening after power float	C-10	6000	.004	S.F.		.20		.20	.30
0358	For specified Random or Defined Access Floors in ACI Class 9 to achieve									
0360	Composite Overall Floor Flatness and Levelness values up to FF100/FL100									
0362	Add for two-dimensional restraightening after bull float & power float	C-10	3000	.008	S.F.		.41		.41	.60
0364	For specified Superflat Defined Access Floors in ACI Class 9 to achieve									
0366	Minimum Floor Flatness and Levelness values of FF100/FL100									
0368	Add for 2-dim'l restraightening after bull float, power float, power trowel	C-10	2000	.012	S.F.		.61		.61	.89

03 35 16 – Heavy-Duty Concrete Floor Finishing

03 35 16.30 Finishing Floors, Heavy-Duty

0010	**FINISHING FLOORS, HEAVY-DUTY**									
1800	Floor abrasives, dry shake on fresh concrete, .25 psf, aluminum oxide	1 Cefi	850	.009	S.F.	.41	.50		.91	1.18
1850	Silicon carbide		850	.009		.62	.50		1.12	1.41
2000	Floor hardeners, dry shake, metallic, light service, .50 psf		850	.009		.83	.50		1.33	1.64
2050	Medium service, .75 psf		750	.011		1.24	.57		1.81	2.20
2100	Heavy service, 1.0 psf		650	.012		1.66	.65		2.31	2.78
2150	Extra heavy, 1.5 psf		575	.014		2.48	.74		3.22	3.81
2300	Non-metallic, light service, .50 psf		850	.009		.18	.50		.68	.93
2350	Medium service, .75 psf		750	.011		.28	.57		.85	1.13
2400	Heavy service, 1.0 psf		650	.012		.37	.65		1.02	1.37
2450	Extra heavy, 1.5 psf	↓	575	.014	↓	.55	.74		1.29	1.69
2800	Trap rock wearing surface, dry shake, for monolithic floors									
2810	2.0 psf	C-10B	1250	.032	S.F.	.02	1.56	.25	1.83	2.60
3800	Dustproofing, liquid, for cured concrete, solvent-based, 1 coat	1 Cefi	1900	.004		.25	.22		.47	.61
3850	2 coats	"	1300	.006	↓	.91	.33		1.24	1.48
4000	Epoxy-based, 1 coat	1 Cefi	1500	.005	S.F.	.14	.28		.42	.56
4050	2 coats	"	1500	.005	"	.27	.28		.55	.71

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03 35 Concrete Finishing

03 35 19 – Colored Concrete Finishing

03 35 19.30 Finishing Floors, Colored	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **FINISHING FLOORS, COLORED**									
3000 Floor coloring, dry shake on fresh concrete (0.6 psf)	1 Cefi	1300	.006	S.F.	.63	.33		.96	1.18
3050 (1.0 psf)	"	625	.013	"	1.06	.68		1.74	2.16
3100 Colored dry shake powder only				Lb.	1.06			1.06	1.16
3600 1/2" topping using 0.6 psf dry shake powdered color	C-10B	590	.068	S.F.	5	3.30	.53	8.83	10.95
3650 1.0 psf dry shake powdered color	"	590	.068	"	5.45	3.30	.53	9.28	11.40

03 35 23 – Exposed Aggregate Concrete Finishing

03 35 23.30 Finishing Floors, Exposed Aggregate

0010 **FINISHING FLOORS, EXPOSED AGGREGATE**									
1600 Exposed local aggregate finish, seeded on fresh concrete, 3 lb./S.F.	1 Cefi	625	.013	S.F.	.21	.68		.89	1.23
1650 4 lb./S.F.	"	465	.017	"	.34	.91		1.25	1.72

03 35 29 – Tooled Concrete Finishing

03 35 29.30 Finishing Floors, Tooled

0010 **FINISHING FLOORS, TOOLED**									
4400 Stair finish, fresh concrete, float finish	1 Cefi	275	.029	S.F.		1.55		1.55	2.26
4500 Steel trowel finish		200	.040			2.13		2.13	3.11
4600 Silicon carbide finish, dry shake on fresh concrete, .25 psf		150	.053		.41	2.83		3.24	4.60

03 35 29.60 Finishing Walls

0010 **FINISHING WALLS**									
0020 Break ties and patch voids	1 Cefi	540	.015	S.F.	.04	.79		.83	1.19
0050 Burlap rub with grout		450	.018		.04	.94		.98	1.42
0100 Carborundum rub, dry		270	.030			1.57		1.57	2.30
0150 Wet rub		175	.046			2.43		2.43	3.55
0300 Bush hammer, green concrete	B-39	1000	.048			2.30	.33	2.63	3.78
0350 Cured concrete	"	650	.074			3.53	.51	4.04	5.80
0500 Acid etch	1 Cefi	575	.014		.11	.74		.85	1.21
0600 Float finish, 1/16" thick	"	300	.027		.33	1.42		1.75	2.44
0700 Sandblast, light penetration	E-11	1100	.029		.57	1.46	.28	2.31	3.19
0750 Heavy penetration	"	375	.085		1.14	4.28	.83	6.25	8.75
0850 Grind form fins flush	1 Clab	700	.011	L.F.		.52		.52	.78

03 35 33 – Stamped Concrete Finishing

03 35 33.50 Slab Texture Stamping

0010 **SLAB TEXTURE STAMPING**									
0050 Stamping requires that concrete first be placed, struck off, consolidated,									
0060 bull floated and free of bleed water. Decorative stamping tasks include:									
0100 Step 1 - first application of dry shake colored hardener	1 Cefi	6400	.001	S.F.	.57	.07		.64	.72
0110 Step 2 - bull float	1 Cefi	6400	.001	S.F.		.07		.07	.10
0130 Step 3 - second application of dry shake colored hardener	"	6400	.001		.28	.07		.35	.41
0140 Step 4 - bull float, manual float & steel trowel	3 Cefi	1280	.019			1		1	1.46
0150 Step 5 - application of dry shake colored release agent	1 Cefi	6400	.001		.10	.07		.17	.21
0160 Step 6 - place, tamp & remove mats	3 Cefi	2400	.010		1.14	.53		1.67	2.04
0170 Step 7 - touch up edges, mat joints & simulated grout lines	1 Cefi	1280	.006			.33		.33	.49
0300 Alternate stamping estimating method includes all tasks above	4 Cefi	800	.040		2.09	2.13		4.22	5.40
0400 Step 8 - pressure wash @ 3000 psi after 24 hours	1 Cefi	1600	.005			.27		.27	.39
0500 Step 9 - roll 2 coats cure/seal compound when dry	"	800	.010		.64	.53		1.17	1.49

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03 35 Concrete Finishing

03 35 43 – Polished Concrete Finishing

03 35 43.10 Polished Concrete Floors	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **POLISHED CONCRETE FLOORS** R033543-10									
0015 Processing of cured concrete to include grinding, honing,									
0020 and polishing of interior floors with 22" segmented diamond									
0025 planetary floor grinder (2 passes in different directions per grit)									
0100 Removal of pre-existing coatings, dry, with carbide discs using									
0105 dry vacuum pick-up system, final hand sweeping									
0110 Glue, adhesive or tar	J-4	1.60	15	M.S.F.	22	760	144	926	1,300
0120 Paint, epoxy, 1 coat		3.60	6.667		22	340	64	426	590
0130 2 coats		1.80	13.333		22	675	128	825	1,150
0200 Grinding and edging, wet, including wet vac pick-up and auto									
0205 scrubbing between grit changes									
0210 40-grit diamond/metal matrix	J-4A	1.60	20	M.S.F.	37.50	990	263	1,290.50	1,775
0220 80-grit diamond/metal matrix		2	16		37.50	790	210	1,037.50	1,450
0230 120-grit diamond/metal matrix		2.40	13.333		37.50	660	175	872.50	1,200
0240 200-grit diamond/metal matrix		2.80	11.429		37.50	565	150	752.50	1,025
0300 Spray on dye or stain (1 coat)	1 Cefi	16	.500		202	26.50		228.50	261
0400 Spray on densifier/hardener (2 coats)	"	8	1		330	53		383	445
0410 Auto scrubbing after 2nd coat, when dry	J-4B	16	.500			23	11.90	34.90	47
0500 Honing and edging, wet, including wet vac pick-up and auto									
0505 scrubbing between grit changes									
0510 100-grit diamond/resin matrix	J-4A	2.80	11.429	M.S.F.	37.50	565	150	752.50	1,025
0520 200-grit diamond/resin matrix	"	2.80	11.429	"	37.50	565	150	752.50	1,025
0530 Dry, including dry vacuum pick-up system, final hand sweeping									
0540 400-grit diamond/resin matrix	J-4A	2.80	11.429	M.S.F.	37.50	565	150	752.50	1,025
0600 Polishing and edging, dry, including dry vac pick-up and hand									
0605 sweeping between grit changes									
0610 800-grit diamond/resin matrix	J-4A	2.80	11.429	M.S.F.	37.50	565	150	752.50	1,025
0620 1500-grit diamond/resin matrix		2.80	11.429		37.50	565	150	752.50	1,025
0630 3000-grit diamond/resin matrix		2.80	11.429		37.50	565	150	752.50	1,025
0700 Auto scrubbing after final polishing step	J-4B	16	.500			23	11.90	34.90	47

03 37 Specialty Placed Concrete

03 37 13 – Shotcrete

03 37 13.30 Gunite (Dry-Mix)

0010 **GUNITE (DRY-MIX)**									
0020 Typical in place, 1" layers, no mesh included	C-16	2000	.028	S.F.	.52	1.40	.21	2.13	2.89
0100 Mesh for gunite 2 x 2, #12	2 Rodm	800	.020		.89	1.21		2.10	2.79
0150 #4 reinforcing bars @ 6" each way	"	500	.032		2.43	1.94		4.37	5.55
0300 Typical in place, including mesh, 2" thick, flat surfaces	C-16	1000	.056		1.94	2.81	.41	5.16	6.75
0350 Curved surfaces		500	.112		1.94	5.60	.83	8.37	11.35
0500 4" thick, flat surfaces		750	.075		2.98	3.75	.55	7.28	9.45
0550 Curved surfaces		350	.160		2.98	8.05	1.18	12.21	16.50
0900 Prepare old walls, no scaffolding, good condition	C-10	1000	.024			1.22		1.22	1.79
0950 Poor condition	"	275	.087			4.42		4.42	6.50
1100 For high finish requirement or close tolerance, add						50%			
1150 Very high						110%			

03 37 13.60 Shotcrete (Wet-Mix)

0010 **SHOTCRETE (WET-MIX)**									
0020 Wet mix, placed @ up to 12 C.Y./hour, 3000 psi	C-8C	80	.600	C.Y.	169	30	12.70	211.70	244
0100 Up to 35 C.Y./hour	C-8E	240	.200	"	152	9.80	4.87	166.67	188

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03 37 Specialty Placed Concrete

03 37 13 – Shotcrete

03 37 13.60 Shotcrete (Wet-Mix)	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1010 Fiber reinforced, 1" thick	C-8C	1740	.028	S.F.	1.24	1.37	.58	3.19	4.04
1020 2" thick		900	.053		2.48	2.65	1.13	6.26	7.90
1030 3" thick		825	.058		3.72	2.89	1.23	7.84	9.75
1040 4" thick		750	.064		4.97	3.18	1.35	9.50	11.65

03 39 Concrete Curing

03 39 13 – Water Concrete Curing

03 39 13.50 Water Curing

0010 **WATER CURING**									
0015 With burlap, 4 uses assumed, 7.5 oz.	2 Clab	55	.291	C.S.F.	14.90	13.25		28.15	36
0100 10 oz.	"	55	.291	"	27	13.25		40.25	49.50
0400 Curing blankets, 1" to 2" thick, buy				S.F.	.64			.64	.70

03 39 23 – Membrane Concrete Curing

03 39 23.13 Chemical Compound Membrane Concrete Curing

0010 **CHEMICAL COMPOUND MEMBRANE CONCRETE CURING**									
0300 Sprayed membrane curing compound	2 Clab	95	.168	C.S.F.	13.55	7.70		21.25	26.50
0700 Curing compound, solvent based, 400 S.F./gal., 55 gallon lots				Gal.	22			22	24.50
0720 5 gallon lots					30			30	33
0800 Curing compound, water based, 250 S.F./gal., 55 gallon lots					27			27	30
0820 5 gallon lots					25			25	27.50

03 39 23.23 Sheet Membrane Concrete Curing

0010 **SHEET MEMBRANE CONCRETE CURING**									
0200 Curing blanket, burlap/poly, 2-ply	2 Clab	70	.229	C.S.F.	24.50	10.40		34.90	42.50

03 41 Precast Structural Concrete

03 41 13 – Precast Concrete Hollow Core Planks

03 41 13.50 Precast Slab Planks

0010 **PRECAST SLAB PLANKS** R034105-30									
0020 Prestressed roof/floor members, grouted, solid, 4" thick	C-11	2400	.030	S.F.	8.20	1.84	.99	11.03	12.95
0050 6" thick		2800	.026		8.35	1.58	.85	10.78	12.50
0100 Hollow, 8" thick		3200	.023		10.65	1.38	.75	12.78	14.70
0150 10" thick		3600	.020		9.70	1.23	.66	11.59	13.25
0200 12" thick		4000	.018		11.40	1.10	.60	13.10	14.90

03 41 16 – Precast Concrete Slabs

03 41 16.20 Precast Concrete Channel Slabs

0010 **PRECAST CONCRETE CHANNEL SLABS**									
0335 Lightweight concrete channel slab, long runs, 2-3/4" thick	C-12	1575	.030	S.F.	12.45	1.71	1.26	15.42	17.60
0375 3-3/4" thick		1550	.031		13.65	1.74	1.28	16.67	19.05
0475 4-3/4" thick		1525	.031		12.50	1.76	1.30	15.56	17.80
1275 Short pieces, 2-3/4" thick		785	.061		18.70	3.43	2.53	24.66	28.50
1375 3-3/4" thick		770	.062		20.50	3.49	2.58	26.57	30.50
1475 4-3/4" thick		762	.063		18.75	3.53	2.60	24.88	28.50

03 41 16.50 Precast Lightweight Concrete Plank

0010 **PRECAST LIGHTWEIGHT CONCRETE PLANK**									
0015 Lightweight plank, nailable, T&G, 2" thick	C-12	1800	.027	S.F.	9.70	1.49	1.10	12.29	14.15
0150 For premium ceiling finish, add				"	10%				
0200 For sloping roofs, slope over 4 in 12, add						25%			
0250 Slope over 6 in 12, add						150%			

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

03 41 23 – Precast Concrete Stairs

03 41 23.50 Precast Stairs	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **PRECAST STAIRS**									
0020 Precast concrete treads on steel stringers, 3′ wide	C-12	75	.640	Riser	173	36	26.50	235.50	273
0300 Front entrance, 5′ wide with 48″ platform, 2 risers		16	3	Flight	675	168	124	967	1,125
0350 5 risers		12	4		1,250	224	165	1,639	1,900
0500 6′ wide, 2 risers		15	3.200		720	179	132	1,031	1,200
0550 5 risers		11	4.364		1,375	244	180	1,799	2,100
0700 7′ wide, 2 risers		14	3.429		1,050	192	142	1,384	1,600
0750 5 risers		10	4.800		1,650	269	198	2,117	2,450
1200 Basement entrance stairwell, 6 steps, incl. steel bulkhead door	B-51	22	2.182	Flight	1,850	102	15.45	1,967.45	2,225
1250 14 steps	″	11	4.364	″	3,350	204	31	3,585	4,025

03 41 33 – Precast Structural Pretensioned Concrete

03 41 33.10 Precast Beams

0010 **PRECAST BEAMS** R034105-30									
0011 L-shaped, 20′ span, 12″ x 20″	C-11	32	2.250	Ea.	4,675	138	74.50	4,887.50	5,450
0060 18″ x 36″		24	3		6,450	184	99.50	6,733.50	7,500
0100 24″ x 44″		22	3.273		7,750	201	108	8,059	8,925
0150 30′ span, 12″ x 36″		24	3		9,125	184	99.50	9,408.50	10,500
0200 18″ x 44″		20	3.600		10,900	221	119	11,240	12,500
0250 24″ x 52″		16	4.500		13,100	276	149	13,525	15,000
0400 40′ span, 12″ x 52″		20	3.600		13,800	221	119	14,140	15,700
0450 18″ x 52″		16	4.500		15,400	276	149	15,825	17,600
0500 24″ x 52″		12	6		17,500	370	199	18,069	20,000
1200 Rectangular, 20′ span, 12″ x 20″		32	2.250		4,050	138	74.50	4,262.50	4,775
1250 18″ x 36″		24	3		5,900	184	99.50	6,183.50	6,900
1300 24″ x 44″		22	3.273		6,875	201	108	7,184	8,000
1400 30′ span, 12″ x 36″		24	3		6,725	184	99.50	7,008.50	7,775
1450 18″ x 44″		20	3.600		9,350	221	119	9,690	10,800
1500 24″ x 52″		16	4.500		11,400	276	149	11,825	13,100
1600 40′ span, 12″ x 52″		20	3.600		11,200	221	119	11,540	12,800
1650 18″ x 52″		16	4.500		13,200	276	149	13,625	15,100
1700 24″ x 52″		12	6		15,200	370	199	15,769	17,500
2000 "T" shaped, 20′ span, 12″ x 20″		32	2.250		5,650	138	74.50	5,862.50	6,525
2050 18″ x 36″		24	3		7,425	184	99.50	7,708.50	8,575
2100 24″ x 44″		22	3.273		7,625	201	108	7,934	8,825
2200 30′ span, 12″ x 36″		24	3		10,100	184	99.50	10,383.50	11,500
2250 18″ x 44″		20	3.600		12,800	221	119	13,140	14,600
2300 24″ x 52″		16	4.500		12,500	276	149	12,925	14,300
2500 40′ span, 12″ x 52″		20	3.600		16,500	221	119	16,840	18,600
2550 18″ x 52″		16	4.500		15,500	276	149	15,925	17,700
2600 24″ x 52″		12	6		16,600	370	199	17,169	19,100

03 41 33.15 Precast Columns

0010 **PRECAST COLUMNS** R034105-30									
0020 Rectangular to 12′ high, 16″ x 16″	C-11	120	.600	L.F.	266	37	19.90	322.90	370
0050 24″ x 24″		96	.750		365	46	25	436	500
0300 24′ high, 28″ x 28″		192	.375		410	23	12.45	445.45	505
0350 36″ x 36″		144	.500		550	30.50	16.60	597.10	670

03 41 33.25 Precast Joists

0010 **PRECAST JOISTS** R034105-30									
0015 40 psf L.L., 6″ deep for 12′ spans	C-12	600	.080	L.F.	37.50	4.48	3.30	45.28	51.50
0050 8″ deep for 16′ spans		575	.083		62	4.68	3.45	70.13	79
0100 10″ deep for 20′ spans		550	.087		109	4.89	3.61	117.50	131

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03 41 Precast Structural Concrete

03 41 33 – Precast Structural Pretensioned Concrete

03 41 33.25 Precast Joists	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0150 12" deep for 24' spans	C-12	525	.091	L.F.	149	5.10	3.78	157.88	176
03 41 33.60 Precast Tees									
0010 **PRECAST TEES** R034105-30									
0020 Quad tee, short spans, roof	C-11	7200	.010	S.F.	10.40	.61	.33	11.34	12.75
0050 Floor		7200	.010		10.40	.61	.33	11.34	12.75
0200 Double tee, floor members, 60' span		8400	.009		11.60	.53	.28	12.41	13.85
0250 80' span		8000	.009		16.60	.55	.30	17.45	19.40
0300 Roof members, 30' span		4800	.015		14.25	.92	.50	15.67	17.60
0350 50' span		6400	.011		11.95	.69	.37	13.01	14.60
0400 Wall members, up to 55' high		3600	.020		16.25	1.23	.66	18.14	20.50
0500 Single tee roof members, 40' span		3200	.023		17.15	1.38	.75	19.28	22
0550 80' span		5120	.014		19.30	.86	.47	20.63	23.50
0600 100' span		6000	.012		29.50	.74	.40	30.64	34
0650 120' span		6000	.012		30.50	.74	.40	31.64	35
1000 Double tees, floor members									
1100 Lightweight, 20" x 8' wide, 45' span	C-11	20	3.600	Ea.	4,125	221	119	4,465	5,000
1150 24" x 8' wide, 50' span		18	4		4,575	245	133	4,953	5,575
1200 32" x 10' wide, 60' span		16	4.500		6,875	276	149	7,300	8,125
1250 Standard weight, 12" x 8' wide, 20' span		22	3.273		1,675	201	108	1,984	2,250
1300 16" x 8' wide, 25' span		20	3.600		2,075	221	119	2,415	2,775
1350 18" x 8' wide, 30' span		20	3.600		2,500	221	119	2,840	3,225
1400 20" x 8' wide, 45' span		18	4		3,750	245	133	4,128	4,650
1450 24" x 8' wide, 50' span		16	4.500		4,175	276	149	4,600	5,150
1500 32" x 10' wide, 60' span		14	5.143		6,250	315	170	6,735	7,550
2000 Roof members									
2050 Lightweight, 20" x 8' wide, 40' span	C-11	20	3.600	Ea.	3,675	221	119	4,015	4,500
2100 24" x 8' wide, 50' span		18	4		4,575	245	133	4,953	5,575
2150 32" x 10' wide, 60' span		16	4.500		6,875	276	149	7,300	8,125
2200 Standard weight, 12" x 8' wide, 30' span		22	3.273		2,500	201	108	2,809	3,175
2250 16" x 8' wide, 30' span		20	3.600		2,625	221	119	2,965	3,350
2300 18" x 8' wide, 30' span		20	3.600		2,750	221	119	3,090	3,500
2350 20" x 8' wide, 40' span		18	4		3,325	245	133	3,703	4,200
2400 24" x 8' wide, 50' span		16	4.500		4,175	276	149	4,600	5,150
2450 32" x 10' wide, 60' span		14	5.143		6,250	315	170	6,735	7,550

03 45 Precast Architectural Concrete

03 45 13 – Faced Architectural Precast Concrete

03 45 13.50 Precast Wall Panels	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **PRECAST WALL PANELS** R034513-10									
0050 Uninsulated, smooth gray									
0150 Low rise, 4' x 8' x 4" thick	C-11	320	.225	S.F.	33.50	13.80	7.45	54.75	65.50
0210 8' x 8', 4" thick		576	.125		33	7.65	4.14	44.79	53
0250 8' x 16' x 4" thick		1024	.070		32.50	4.32	2.33	39.15	45
0600 High rise, 4' x 8' x 4" thick		288	.250		33.50	15.35	8.30	57.15	69
0650 8' x 8' x 4" thick		512	.141		33	8.65	4.66	46.31	55
0700 8' x 16' x 4" thick		768	.094		32.50	5.75	3.11	41.36	48
0750 10' x 20', 6" thick		1400	.051		55.50	3.16	1.70	60.36	67.50
0800 Insulated panel, 2" polystyrene, add					1.45			1.45	1.60
0850 2" urethane, add					1.11			1.11	1.22
1200 Finishes, white, add					3.64			3.64	4.01
1250 Exposed aggregate, add					.65			.65	.72

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03 45 Precast Architectural Concrete

03 45 13 – Faced Architectural Precast Concrete

03 45 13.50 Precast Wall Panels	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1300 Granite faced, domestic, add				S.F.	27.50			27.50	30.50
1350 Brick faced, modular, red, add				↓	9.15			9.15	10.05
2200 Fiberglass reinforced cement with urethane core									
2210 R20, 8′ x 8′, 5″ plain finish	E-2	750	.075	S.F.	30.50	4.57	3.31	38.38	44
2220 Exposed aggregate or brick finish	″	600	.093	″	50.50	5.70	4.13	60.33	69

03 47 Site-Cast Concrete

03 47 13 – Tilt-Up Concrete

03 47 13.50 Tilt-Up Wall Panels

0010 **TILT-UP WALL PANELS** R034713-20									
0015 Wall panel construction, walls only, 5-1/2″ thick	C-14	1600	.090	S.F.	8.10	4.94	1.52	14.56	17.95
0100 7-1/2″ thick		1550	.093		10.15	5.10	1.57	16.82	20.50
0500 Walls and columns, 5-1/2″ thick walls, 12″ x 12″ columns		1565	.092		12.15	5.05	1.56	18.76	22.50
0550 7-1/2″ thick wall, 12″ x 12″ columns		1370	.105	↓	14.95	5.75	1.78	22.48	27
0800 Columns only, site precast, 12″ x 12″		200	.720	L.F.	30	39.50	12.20	81.70	105
0850 16″ x 16″	↓	105	1.371	″	43.50	75.50	23	142	186

03 48 Precast Concrete Specialties

03 48 43 – Precast Concrete Trim

03 48 43.40 Precast Lintels

0010 **PRECAST LINTELS**, smooth gray, prestressed, stock units only									
0800 4″ wide x 8″ high x 4′ long	D-10	28	1.143	Ea.	39.50	63	20.50	123	161
0850 8′ long		24	1.333		90	73.50	24	187.50	235
1000 6″ wide x 8″ high x 4′ long		26	1.231		66.50	68	22	156.50	200
1050 10′ long		22	1.455		174	80.50	26	280.50	340
1200 8″ wide x 8″ high x 4′ long		24	1.333		64.50	73.50	24	162	207
1250 12′ long	↓	20	1.600	↓	223	88.50	28.50	340	410
1275 For custom sizes, types, colors, or finishes of precast lintels, add				Ea.	150%				

03 48 43.90 Precast Window Sills

0010 **PRECAST WINDOW SILLS**									
0600 Precast concrete, 4″ tapers to 3″, 9″ wide	D-1	70	.229	L.F.	5.80	11.45		17.25	23.50
0650 11″ wide	″	60	.267	″	6.45	13.35		19.80	27

03 51 Cast Roof Decks

03 51 13 – Cementitious Wood Fiber Decks

03 51 13.50 Cementitious/Wood Fiber Planks

0010 **CEMENTITIOUS/WOOD FIBER PLANKS** R051223-50									
0050 Plank, beveled edge, 1″ thick	2 Carp	1000	.016	S.F.	3.68	.90		4.58	5.40
0100 1-1/2″ thick		975	.016		5.55	.92		6.47	7.50
0150 T&G, 2″ thick		950	.017		3.85	.95		4.80	5.65
0200 2-1/2″ thick		925	.017		4.36	.97		5.33	6.25
0250 3″ thick	↓	900	.018		4.88	1		5.88	6.85
1000 Bulb tee, sub-purlin and grout, 6′ span, add	E-1	5000	.005		2.01	.29	.03	2.33	2.69
1100 8′ span	″	4200	.006	↓	2.01	.35	.04	2.40	2.78

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

03 51 Cast Roof Decks

03 51 16 – Gypsum Concrete Roof Decks

03 51 16.50 Gypsum Roof Deck	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **GYPSUM ROOF DECK**									
1000 Poured gypsum, 2" thick	C-8	6000	.009	S.F.	.75	.47	.13	1.35	1.66
1100 3" thick	"	4800	.012	"	1.13	.59	.16	1.88	2.28

03 52 Lightweight Concrete Roof Insulation

03 52 16 – Lightweight Insulating Concrete

03 52 16.13 Lightweight Cellular Insulating Concrete

0010 **LIGHTWEIGHT CELLULAR INSULATING CONCRETE** R035216-10										
0020 Portland cement and foaming agent G	C-8	50	1.120	C.Y.	136	56	15.10	207.10	249

03 52 16.16 Lightweight Aggregate Insulating Concrete

0010 **LIGHTWEIGHT AGGREGATE INSULATING CONCRETE** R035216-10										
0100 Poured vermiculite or perlite, field mix,										
0110 1:6 field mix G	C-8	50	1.120	C.Y.	330	56	15.10	401.10	465
0200 Ready mix, 1:6 mix, roof fill, 2" thick G		10000	.006	S.F.	1.84	.28	.08	2.20	2.53
0250 3" thick G		7700	.007		2.77	.36	.10	3.23	3.69
0400 Expanded volcanic glass rock, 1" thick G	2 Carp	1500	.011		.62	.60		1.22	1.57
0450 3" thick G	"	1200	.013		1.85	.75		2.60	3.15

03 53 Concrete Topping

03 53 16 – Iron-Aggregate Concrete Topping

03 53 16.50 Floor Topping

0010 **FLOOR TOPPING**									
0400 Integral topping/finish, on fresh concrete, using 1:1:2 mix, 3/16" thick	C-10B	1000	.040	S.F.	.13	1.94	.31	2.38	3.36
0450 1/2" thick		950	.042		.34	2.05	.33	2.72	3.76
0500 3/4" thick		850	.047		.51	2.29	.37	3.17	4.35
0600 1" thick		750	.053		.68	2.59	.42	3.69	5.05
0800 Granolithic topping, on fresh or cured concrete, 1:1:1-1/2 mix, 1/2" thick	C-10B	590	.068	S.F.	.38	3.30	.53	4.21	5.90
0820 3/4" thick		580	.069		.57	3.35	.54	4.46	6.20
0850 1" thick		575	.070		.77	3.38	.55	4.70	6.45
0950 2" thick		500	.080		1.53	3.89	.63	6.05	8.10
1200 Heavy duty, 1:1:2, 3/4" thick, preshrunk, gray, 20 M.S.F.		320	.125		.91	6.10	.98	7.99	11.10
1300 100 M.S.F.		380	.105		.51	5.10	.83	6.44	9

03 54 Cast Underlayment

03 54 13 – Gypsum Cement Underlayment

03 54 13.50 Poured Gypsum Underlayment

0010 **POURED GYPSUM UNDERLAYMENT**									
0400 Underlayment, gypsum based, self-leveling 2500 psi, pumped, 1/2" thick	C-8	24000	.002	S.F.	.19	.12	.03	.34	.41
0500 3/4" thick		20000	.003		.28	.14	.04	.46	.56
0600 1" thick		16000	.004		.38	.18	.05	.61	.72
1400 Hand placed, 1/2" thick	C-18	450	.020		.19	.92	.26	1.37	1.86
1500 3/4" thick	"	300	.030		.28	1.37	.40	2.05	2.80

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

03 54 Cast Underlayment

03 54 16 – Hydraulic Cement Underlayment

03 54 16.50 Cement Underlayment	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **CEMENT UNDERLAYMENT**									
2510 Underlayment, P.C. based, self-leveling, 4100 psi, pumped, 1/4" thick	C-8	20000	.003	S.F.	2.06	.14	.04	2.24	2.52
2520 1/2" thick		19000	.003		4.12	.15	.04	4.31	4.79
2530 3/4" thick		18000	.003		6.20	.16	.04	6.40	7.10
2540 1" thick		17000	.003		8.25	.17	.04	8.46	9.35
2550 1-1/2" thick		15000	.004		12.35	.19	.05	12.59	13.95
2560 Hand placed, 1/2" thick	C-18	450	.020		4.12	.92	.26	5.30	6.20
2610 Topping, P.C. based, self-leveling, 6100 psi, pumped, 1/4" thick	C-8	20000	.003		2.19	.14	.04	2.37	2.65
2620 1/2" thick		19000	.003		4.37	.15	.04	4.56	5.05
2630 3/4" thick		18000	.003		6.55	.16	.04	6.75	7.50
2660 1" thick		17000	.003		8.75	.17	.04	8.96	9.90
2670 1-1/2" thick		15000	.004		13.10	.19	.05	13.34	14.80
2680 Hand placed, 1/2" thick	C-18	450	.020		4.37	.92	.26	5.55	6.45

03 62 Non-Shrink Grouting

03 62 13 – Non-Metallic Non-Shrink Grouting

03 62 13.50 Grout, Non-Metallic Non-Shrink

0010 **GROUT, NON-METALLIC NON-SHRINK**									
0300 Non-shrink, non-metallic, 1" deep	1 Cefi	35	.229	S.F.	7.95	12.15		20.10	26.50
0350 2" deep	"	25	.320	"	15.95	17		32.95	42.50

03 62 16 – Metallic Non-Shrink Grouting

03 62 16.50 Grout, Metallic Non-Shrink

0010 **GROUT, METALLIC NON-SHRINK**									
0020 Column & machine bases, non-shrink, metallic, 1" deep	1 Cefi	35	.229	S.F.	9.25	12.15		21.40	28
0050 2" deep	1 Cefi	25	.320	S.F.	18.45	17		35.45	45.50

03 63 Epoxy Grouting

03 63 05 – Grouting of Dowels and Fasteners

03 63 05.10 Epoxy Only

0010 **EPOXY ONLY**									
1500 Chemical anchoring, epoxy cartridge, excludes layout, drilling, fastener									
1530 For fastener 3/4" diam. x 6" embedment	2 Skwk	72	.222	Ea.	4.23	13.10		17.33	24.50
1535 1" diam. x 8" embedment		66	.242		6.35	14.30		20.65	28.50
1540 1-1/4" diam. x 10" embedment		60	.267		12.70	15.70		28.40	37.50
1545 1-3/4" diam. x 12" embedment		54	.296		21	17.45		38.45	49.50
1550 14" embedment		48	.333		25.50	19.65		45.15	57.50
1555 2" diam. x 12" embedment		42	.381		34	22.50		56.50	70.50
1560 18" embedment		32	.500		42.50	29.50		72	90.50

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03 81 Concrete Cutting

03 81 13 – Flat Concrete Sawing

	03 81 13.50 Concrete Floor/Slab Cutting	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**CONCRETE FLOOR/SLAB CUTTING**									
0050	Includes blade cost, layout and set-up time									
0300	Saw cut concrete slabs, plain, up to 3" deep	B-89	1060	.015	L.F.	.10	.81	.59	1.50	1.97
0320	Each additional inch of depth		3180	.005		.03	.27	.20	.50	.66
0400	Mesh reinforced, up to 3" deep		980	.016		.11	.88	.64	1.63	2.13
0420	Each additional inch of depth		2940	.005		.04	.29	.21	.54	.71
0500	Rod reinforced, up to 3" deep		800	.020		.14	1.07	.78	1.99	2.61
0520	Each additional inch of depth		2400	.007		.05	.36	.26	.67	.87

03 81 13.75 Concrete Saw Blades

0010	**CONCRETE SAW BLADES**									
3000	Blades for saw cutting, included in cutting line items									
3020	Diamond, 12" diameter				Ea.	207			207	228
3040	18" diameter					325			325	360
3080	24" diameter					460			460	510
3120	30" diameter					820			820	900
3160	36" diameter					1,150			1,150	1,275
3200	42" diameter					1,750			1,750	1,925

03 81 16 – Track Mounted Concrete Wall Sawing

03 81 16.50 Concrete Wall Cutting

0010	**CONCRETE WALL CUTTING**									
0750	Includes blade cost, layout and set-up time									
0800	Concrete walls, hydraulic saw, plain, per inch of depth	B-89B	250	.064	L.F.	.03	3.44	4.30	7.77	9.85
0820	Rod reinforcing, per inch of depth	"	150	.107	"	.05	5.75	7.15	12.95	16.50

03 82 Concrete Boring

03 82 13 – Concrete Core Drilling

03 82 13.10 Core Drilling

0010	**CORE DRILLING**									
0015	Includes bit cost, layout and set-up time									
0020	Reinforced concrete slab, up to 6" thick									
0100	1" diameter core	B-89A	17	.941	Ea.	.22	49	7	56.22	81.50
0150	For each additional inch of slab thickness in same hole, add		1440	.011		.04	.58	.08	.70	1
0200	2" diameter core		16.50	.970		.30	50.50	7.20	58	84.50
0250	For each additional inch of slab thickness in same hole, add		1080	.015		.05	.77	.11	.93	1.33
0300	3" diameter core		16	1		.42	52.50	7.45	60.37	86.50
0350	For each additional inch of slab thickness in same hole, add		720	.022		.07	1.16	.17	1.40	2
0500	4" diameter core		15	1.067		.56	55.50	7.95	64.01	93
0550	For each additional inch of slab thickness in same hole, add		480	.033		.09	1.74	.25	2.08	2.98
0700	6" diameter core		14	1.143		.89	59.50	8.50	68.89	100
0750	For each additional inch of slab thickness in same hole, add		360	.044		.15	2.32	.33	2.80	3.99
0900	8" diameter core		13	1.231		1.30	64.50	9.15	74.95	108
0950	For each additional inch of slab thickness in same hole, add		288	.056		.22	2.90	.41	3.53	5.05
1100	10" diameter core		12	1.333		1.60	69.50	9.95	81.05	117
1150	For each additional inch of slab thickness in same hole, add		240	.067		.27	3.48	.50	4.25	6.05
1300	12" diameter core		11	1.455		1.83	76	10.85	88.68	128
1350	For each additional inch of slab thickness in same hole, add		206	.078		.30	4.06	.58	4.94	7.05
1500	14" diameter core		10	1.600		2.26	83.50	11.90	97.66	141
1550	For each additional inch of slab thickness in same hole, add		180	.089		.38	4.64	.66	5.68	8.10
1700	18" diameter core		9	1.778		2.94	93	13.25	109.19	157
1750	For each additional inch of slab thickness in same hole, add		144	.111		.49	5.80	.83	7.12	10.15

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03 82 Concrete Boring

03 82 13 – Concrete Core Drilling

	03 82 13.10 Core Drilling	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1754	24" diameter core	B-89A	8	2	Ea.	4.67	105	14.90	124.57	178
1756	For each additional inch of slab thickness in same hole, add		120	.133		.78	6.95	.99	8.72	12.35
1760	For horizontal holes, add to above						20%	20%		
1770	Prestressed hollow core plank, 8" thick									
1780	1" diameter core	B-89A	17.50	.914	Ea.	.29	48	6.80	55.09	79.50
1790	For each additional inch of plank thickness in same hole, add		3840	.004		.04	.22	.03	.29	.40
1794	2" diameter core		17.25	.928		.40	48.50	6.90	55.80	80.50
1796	For each additional inch of plank thickness in same hole, add		2880	.006		.05	.29	.04	.38	.53
1800	3" diameter core		17	.941		.57	49	7	56.57	82
1810	For each additional inch of plank thickness in same hole, add		1920	.008		.07	.44	.06	.57	.80
1820	4" diameter core		16.50	.970		.75	50.50	7.20	58.45	85
1830	For each additional inch of plank thickness in same hole, add	B-89A	1280	.013	Ea.	.09	.65	.09	.83	1.18
1840	6" diameter core		15.50	1.032		1.19	54	7.70	62.89	90.50
1850	For each additional inch of plank thickness in same hole, add		960	.017		.15	.87	.12	1.14	1.60
1860	8" diameter core		15	1.067		1.73	55.50	7.95	65.18	94
1870	For each additional inch of plank thickness in same hole, add		768	.021		.22	1.09	.16	1.47	2.04
1880	10" diameter core		14	1.143		2.13	59.50	8.50	70.13	101
1890	For each additional inch of plank thickness in same hole, add		640	.025		.27	1.31	.19	1.77	2.44
1900	12" diameter core		13.50	1.185		2.44	62	8.85	73.29	105
1910	For each additional inch of plank thickness in same hole, add		548	.029		.30	1.53	.22	2.05	2.86
3000	Bits for core drilling, included in drilling line items									
3010	Diamond, premium, 1" diameter				Ea.	87.50			87.50	96
3020	2" diameter					120			120	132
3030	3" diameter					170			170	186
3040	4" diameter					226			226	249
3060	6" diameter					355			355	395
3080	8" diameter					520			520	570
3110	10" diameter					640			640	705
3120	12" diameter					730			730	805
3140	14" diameter					905			905	995
3180	18" diameter					1,175			1,175	1,300
3240	24" diameter					1,875			1,875	2,050

03 82 16 – Concrete Drilling

03 82 16.10 Concrete Impact Drilling

0010	**CONCRETE IMPACT DRILLING**									
0020	Includes bit cost, layout and set-up time, no anchors									
0050	Up to 4" deep in concrete/brick floors/walls									
0100	Holes, 1/4" diameter	1 Carp	75	.107	Ea.	.05	6		6.05	9
0150	For each additional inch of depth in same hole, add		430	.019		.01	1.05		1.06	1.57
0200	3/8" diameter		63	.127		.05	7.15		7.20	10.70
0250	For each additional inch of depth in same hole, add		340	.024		.01	1.32		1.33	1.98
0300	1/2" diameter		50	.160		.04	9		9.04	13.45
0350	For each additional inch of depth in same hole, add		250	.032		.01	1.80		1.81	2.69
0400	5/8" diameter		48	.167		.07	9.40		9.47	14.05
0450	For each additional inch of depth in same hole, add		240	.033		.02	1.88		1.90	2.81
0500	3/4" diameter		45	.178		.10	10		10.10	15
0550	For each additional inch of depth in same hole, add		220	.036		.03	2.05		2.08	3.08
0600	7/8" diameter		43	.186		.13	10.45		10.58	15.75
0650	For each additional inch of depth in same hole, add	1 Carp	210	.038	Ea.	.03	2.14		2.17	3.22
0700	1" diameter		40	.200		.19	11.25		11.44	16.95
0750	For each additional inch of depth in same hole, add		190	.042		.05	2.37		2.42	3.58
0800	1-1/4" diameter		38	.211		.21	11.85		12.06	17.90

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03 82 16.10 Concrete Impact Drilling	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0850 For each additional inch of depth in same hole, add	1 Carp	180	.044	Ea.	.05	2.50		2.55	3.78
0900 1-1/2" diameter		35	.229		.32	12.85		13.17	19.50
0950 For each additional inch of depth in same hole, add	↓	165	.048	↓	.08	2.73		2.81	4.15
1000 For ceiling installations, add						40%			

Division Notes

	CREW	DAILY OUTPUT	LABOR-HOURS	UNIT	BARE COSTS MAT.	LABOR	EQUIP.	TOTAL	TOTAL INCL O&P

Estimating Tips

04 05 00 Common Work Results for Masonry

- The terms mortar and grout are often used interchangeably—and incorrectly. Mortar is used to bed masonry units, seal the entry of air and moisture, provide architectural appearance, and allow for size variations in the units. Grout is used primarily in reinforced masonry construction and to bond the masonry to the reinforcing steel. Common mortar types are M (2500 psi), S (1800 psi), N (750 psi), and O (350 psi), and they conform to ASTM C270. Grout is either fine or coarse and conforms to ASTM C476, and in-place strengths generally exceed 2500 psi. Mortar and grout are different components of masonry construction and are placed by entirely different methods. An estimator should be aware of their unique uses and costs.
- Mortar is included in all assembled masonry line items. The mortar cost, part of the assembled masonry material cost, includes all ingredients, all labor, and all equipment required. Please see reference number R040513-10.
- Waste, specifically the loss/droppings of mortar and the breakage of brick and block, is included in all unit cost lines that include mortar and masonry units in this division. A factor of 25% is added for mortar and 3% for brick and concrete masonry units.
- Scaffolding or staging is not included in any of the Division 4 costs. Refer to Subdivision 01 54 23 for scaffolding and staging costs.

04 20 00 Unit Masonry

- The most common types of unit masonry are brick and concrete masonry. The major classifications of brick are building brick (ASTM C62), facing brick (ASTM C216), glazed brick, fire brick, and pavers. Many varieties of texture and appearance can exist within these classifications, and the estimator would be wise to check local custom and availability within the project area. For repair and remodeling jobs, matching the existing brick may be the most important criteria.
- Brick and concrete block are priced by the piece and then converted into a price per square foot of wall. Openings less than two square feet are generally ignored by the estimator because any savings in units used are offset by the cutting and trimming required.
- It is often difficult and expensive to find and purchase small lots of historic brick. Costs can vary widely. Many design issues affect costs, selection of mortar mix, and repairs or replacement of masonry materials. Cleaning techniques must be reflected in the estimate.
- All masonry walls, whether interior or exterior, require bracing. The cost of bracing walls during construction should be included by the estimator, and this bracing must remain in place until permanent bracing is complete. Permanent bracing of masonry walls is accomplished by masonry itself, in the form of pilasters or abutting wall corners, or by anchoring the walls to the structural frame. Accessories in the form of anchors, anchor slots, and ties are used, but their supply and installation can be by different trades. For instance, anchor slots on spandrel beams and columns are supplied and welded in place by the steel fabricator, but the ties from the slots into the masonry are installed by the bricklayer. Regardless of the installation method, the estimator must be certain that these accessories are accounted for in pricing.

Reference Numbers

Reference numbers are shown at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear. ■

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		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
04 01 20.20	**Pointing Masonry**									
0010	**POINTING MASONRY**									
0300	Cut and repoint brick, hard mortar, running bond	1 Bric	80	.100	S.F.	.83	5.55		6.38	9.20
0320	Common bond		77	.104		.83	5.75		6.58	9.50
0360	Flemish bond		70	.114		.87	6.30		7.17	10.45
0400	English bond		65	.123		.87	6.80		7.67	11.15
0600	Soft old mortar, running bond		100	.080		.83	4.42		5.25	7.55
0620	Common bond		96	.083		.83	4.60		5.43	7.80
0640	Flemish bond		90	.089		.87	4.91		5.78	8.30
0680	English bond		82	.098		.87	5.40		6.27	9.05
0700	Stonework, hard mortar		140	.057	L.F.	1.10	3.16		4.26	5.95
0720	Soft old mortar		160	.050	"	1.10	2.76		3.86	5.35
1000	Repoint, mask and grout method, running bond		95	.084	S.F.	1.10	4.65		5.75	8.20
1020	Common bond		90	.089		1.10	4.91		6.01	8.55
1040	Flemish bond		86	.093		1.16	5.15		6.31	9
1060	English bond		77	.104		1.16	5.75		6.91	9.90
2000	Scrub coat, sand grout on walls, thin mix, brushed		120	.067		4.96	3.68		8.64	11
2020	Troweled		98	.082		6.95	4.51		11.46	14.35
04 01 20.30	**Pointing CMU**									
0010	**POINTING CMU**									
0300	Cut and repoint block, hard mortar, running bond	1 Bric	190	.042	S.F.	.34	2.33		2.67	3.86
0310	Stacked bond		200	.040		.34	2.21		2.55	3.69
0600	Soft old mortar, running bond		230	.035		.34	1.92		2.26	3.26
0610	Stacked bond		245	.033		.34	1.80		2.14	3.08
04 01 20.40	**Sawing Masonry**									
0010	**SAWING MASONRY**									
0050	Brick or block by hand, per inch depth	A-1	125	.064	L.F.	.05	2.92	.88	3.85	5.40
04 01 20.41	**Unit Masonry Stabilization**									
0010	**UNIT MASONRY STABILIZATION**									
0100	Structural repointing method									
0110	Cut/grind mortar joint	1 Bric	240	.033	L.F.		1.84		1.84	2.77
0120	Clean and mask joint	1 Bric	2500	.003	L.F.	.13	.18		.31	.42
0130	Epoxy paste and 1/4" FRP rod		240	.033		2.28	1.84		4.12	5.30
0132	3/8" FRP rod		160	.050		3.40	2.76		6.16	7.90
0140	Remove masking		14400	.001			.03		.03	.05
0300	Structural fabric method									
0310	Primer	1 Bric	600	.013	S.F.	1.33	.74		2.07	2.57
0320	Apply filling/leveling paste		720	.011		1.01	.61		1.62	2.03
0330	Epoxy, glass fiber fabric		720	.011		11.60	.61		12.21	13.65
0340	Carbon fiber fabric		720	.011		22	.61		22.61	25
04 01 20.52	**Cleaning Masonry**									
0010	**CLEANING MASONRY**									
0200	By chemical, brush and rinse, new work, light construction dust	D-1	1000	.016	S.F.	.06	.80		.86	1.27
0220	Medium construction dust		800	.020		.09	1		1.09	1.61
0240	Heavy construction dust, drips or stains		600	.027		.12	1.34		1.46	2.14
0260	Low pressure wash and rinse, light restoration, light soil		800	.020		.13	1		1.13	1.65
0270	Average soil, biological staining		400	.040		.19	2.01		2.20	3.22
0280	Heavy soil, biological and mineral staining, paint		330	.048		.26	2.43		2.69	3.93
0300	High pressure wash and rinse, heavy restoration, light soil		600	.027		.10	1.34		1.44	2.12
0310	Average soil, biological staining		400	.040		.15	2.01		2.16	3.17
0320	Heavy soil, biological and mineral staining, paint		250	.064		.20	3.21		3.41	5.05
0400	High pressure wash, water only, light soil	C-29	500	.016			.73	.20	.93	1.31
0420	Average soil, biological staining		375	.021			.97	.27	1.24	1.75

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04 01 Maintenance of Masonry

04 01 20 – Maintenance of Unit Masonry

04 01 20.52 Cleaning Masonry	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0440 Heavy soil, biological and mineral staining, paint	C-29	250	.032	S.F.		1.46	.40	1.86	2.61
0800 High pressure water and chemical, light soil		450	.018		.15	.81	.22	1.18	1.63
0820 Average soil, biological staining		300	.027		.23	1.22	.34	1.79	2.43
0840 Heavy soil, biological and mineral staining, paint		200	.040		.31	1.82	.50	2.63	3.62
1200 Sandblast, wet system, light soil	J-6	1750	.018		.38	.91	.18	1.47	1.96
1220 Average soil, biological staining		1100	.029		.57	1.44	.28	2.29	3.08
1240 Heavy soil, biological and mineral staining, paint		700	.046		.76	2.27	.44	3.47	4.68
1400 Dry system, light soil		2500	.013		.38	.63	.12	1.13	1.50
1420 Average soil, biological staining		1750	.018		.57	.91	.18	1.66	2.17
1440 Heavy soil, biological and mineral staining, paint		1000	.032		.76	1.59	.31	2.66	3.53
1800 For walnut shells, add					1.36			1.36	1.50
1820 For corn chips, add					.29			.29	.32
2000 Steam cleaning, light soil	A-1H	750	.011			.49	.11	.60	.84
2020 Average soil, biological staining	"	625	.013			.58	.13	.71	1.01
2040 Heavy soil, biological and mineral staining	A-1H	375	.021	S.F.		.97	.21	1.18	1.68
4000 Add for masking doors and windows	1 Clab	800	.010	"	.07	.46		.53	.76
4200 Add for pedestrian protection				Job				10%	10%

04 01 20.70 Brick Washing

0010 **BRICK WASHING** R040130-10									
0012 Acid cleanser, smooth brick surface	1 Bric	560	.014	S.F.	.07	.79		.86	1.26
0050 Rough brick		400	.020		.09	1.11		1.20	1.76
0060 Stone, acid wash		600	.013		.11	.74		.85	1.23
1000 Muriatic acid, price per gallon in 5 gallon lots				Gal.	13.25			13.25	14.55

04 05 Common Work Results for Masonry

04 05 05 – Selective Demolition for Masonry

04 05 05.10 Selective Demolition

0010 **SELECTIVE DEMOLITION** R024119-10									
0200 Bond beams, 8" block with #4 bar	2 Clab	32	.500	L.F.		23		23	34
0300 Concrete block walls, unreinforced, 2" thick		1200	.013	S.F.		.61		.61	.91
0310 4" thick		1150	.014			.63		.63	.94
0320 6" thick		1100	.015			.66		.66	.99
0330 8" thick		1050	.015			.69		.69	1.03
0340 10" thick		1000	.016			.73		.73	1.09
0360 12" thick		950	.017			.77		.77	1.14
0380 Reinforced alternate courses, 2" thick		1130	.014			.65		.65	.96
0390 4" thick		1080	.015			.68		.68	1.01
0400 6" thick		1035	.015			.70		.70	1.05
0410 8" thick		990	.016			.74		.74	1.10
0420 10" thick		940	.017			.78		.78	1.16
0430 12" thick		890	.018			.82		.82	1.22
0440 Reinforced alternate courses & vertically 48" OC, 4" thick		900	.018			.81		.81	1.21
0450 6" thick		850	.019			.86		.86	1.28
0460 8" thick		800	.020			.91		.91	1.36
0480 10" thick		750	.021			.97		.97	1.45
0490 12" thick		700	.023			1.04		1.04	1.55
1000 Chimney, 16" x 16", soft old mortar	1 Clab	55	.145	C.F.		6.65		6.65	9.90
1020 Hard mortar		40	.200			9.10		9.10	13.60
1030 16" x 20", soft old mortar		55	.145			6.65		6.65	9.90
1040 Hard mortar		40	.200			9.10		9.10	13.60
1050 16" x 24", soft old mortar		55	.145			6.65		6.65	9.90

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04 05 05 – Selective Demolition for Masonry

	04 05 05.10 Selective Demolition	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1060	Hard mortar	1 Clab	40	.200	C.F.		9.10		9.10	13.6
1080	20" x 20", soft old mortar		55	.145			6.65		6.65	9.9
1100	Hard mortar		40	.200			9.10		9.10	13.6
1110	20" x 24", soft old mortar	1 Clab	55	.145	C.F.		6.65		6.65	9.9
1120	Hard mortar		40	.200			9.10		9.10	13.6
1140	20" x 32", soft old mortar		55	.145			6.65		6.65	9.9
1160	Hard mortar		40	.200			9.10		9.10	13.6
1200	48" x 48", soft old mortar		55	.145			6.65		6.65	9.9
1220	Hard mortar		40	.200			9.10		9.10	13.6
1250	Metal, high temp steel jacket, 24" diameter	E-2	130	.431	V.L.F.		26.50	19.10	45.60	61.5
1260	60" diameter	"	60	.933			57	41.50	98.50	133
1280	Flue lining, up to 12" x 12"	1 Clab	200	.040			1.82		1.82	2.7
1282	Up to 24" x 24"		150	.053			2.43		2.43	3.6
2000	Columns, 8" x 8", soft old mortar		48	.167			7.60		7.60	11.3
2020	Hard mortar		40	.200			9.10		9.10	13.6
2060	16" x 16", soft old mortar		16	.500			23		23	34
2100	Hard mortar		14	.571			26		26	39
2140	24" x 24", soft old mortar		8	1			45.50		45.50	68
2160	Hard mortar		6	1.333			61		61	90.5
2200	36" x 36", soft old mortar		4	2			91		91	136
2220	Hard mortar		3	2.667			122		122	181
2230	Alternate pricing method, soft old mortar		30	.267	C.F.		12.15		12.15	18.1
2240	Hard mortar		23	.348	"		15.85		15.85	23.5
3000	Copings, precast or masonry, to 8" wide									
3020	Soft old mortar	1 Clab	180	.044	L.F.		2.03		2.03	3.0
3040	Hard mortar	"	160	.050	"		2.28		2.28	3.4
3100	To 12" wide									
3120	Soft old mortar	1 Clab	160	.050	L.F.		2.28		2.28	3.4
3140	Hard mortar	"	140	.057	"		2.61		2.61	3.8
4000	Fireplace, brick, 30" x 24" opening									
4020	Soft old mortar	1 Clab	2	4	Ea.		182		182	272
4040	Hard mortar		1.25	6.400			292		292	435
4100	Stone, soft old mortar		1.50	5.333			243		243	360
4120	Hard mortar		1	8			365		365	545
5000	Veneers, brick, soft old mortar		140	.057	S.F.		2.61		2.61	3.8
5020	Hard mortar		125	.064			2.92		2.92	4.3
5050	Glass block, up to 4" thick		500	.016			.73		.73	1.0
5100	Granite and marble, 2" thick		180	.044			2.03		2.03	3.0
5120	4" thick		170	.047			2.15		2.15	3.2
5140	Stone, 4" thick		180	.044			2.03		2.03	3.0
5160	8" thick	1 Clab	175	.046	S.F.		2.08		2.08	3.1
5400	Alternate pricing method, stone, 4" thick		60	.133	C.F.		6.10		6.10	9.0
5420	8" thick		85	.094	"		4.29		4.29	6.4

04 05 13 – Masonry Mortaring

04 05 13.10 Cement

0010	**CEMENT**									
0100	Masonry, 70 lb. bag, T.L. lots				Bag	11			11	12.1
0150	L.T.L. lots					11.65			11.65	12.8
0200	White, 70 lb. bag, T.L. lots					17.10			17.10	18.8
0250	L.T.L. lots					12.50			12.50	13.7

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04 05 13 – Masonry Mortaring

04 05 13.20 Lime	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **LIME**									
0020 Masons, hydrated, 50 lb. bag, T.L. lots				Bag	13.55			13.55	14.90
0050 L.T.L. lots					14.90			14.90	16.40
0200 Finish, double hydrated, 50 lb. bag, T.L. lots					14.75			14.75	16.25
0250 L.T.L. lots					16.25			16.25	17.85
04 05 13.23 Surface Bonding Masonry Mortaring									
0010 **SURFACE BONDING MASONRY MORTARING**									
0020 Gray or white colors, not incl. block work	1 Bric	540	.015	S.F.	.14	.82		.96	1.39
04 05 13.30 Mortar									
0010 **MORTAR** R040513-10									
0020 With masonry cement									
0100 Type M, 1:1:6 mix	1 Brhe	143	.056	C.F.	7	2.52		9.52	11.50
0200 Type N, 1:3 mix		143	.056		6	2.52		8.52	10.40
0300 Type O, 1:3 mix		143	.056		10	2.52		12.52	14.80
0400 Type PM, 1:1:6 mix, 2500 psi		143	.056		7.95	2.52		10.47	12.55
0500 Type S, 1/2:1:4 mix		143	.056		10.30	2.52		12.82	15.10
2000 With Portland cement and lime									
2100 Type M, 1:1/4:3 mix	1 Brhe	143	.056	C.F.	14.35	2.52		16.87	19.60
2200 Type N, 1:1:6 mix, 750 psi		143	.056		10.60	2.52		13.12	15.50
2300 Type O, 1:2:9 mix (Pointing Mortar)		143	.056		10	2.52		12.52	14.80
2400 Type PL, 1:1/2:4 mix, 2500 psi		143	.056		9.60	2.52		12.12	14.35
2600 Type S, 1:1/2:4 mix, 1800 psi		143	.056		10.70	2.52		13.22	15.55
2650 Pre-mixed, type S or N					8.55			8.55	9.40
2700 Mortar for glass block	1 Brhe	143	.056		13.70	2.52		16.22	18.85
2900 Mortar for fire brick, dry mix, 10 lb. pail				Ea.	30			30	33
04 05 13.91 Masonry Restoration Mortaring									
0010 **MASONRY RESTORATION MORTARING**									
0020 Masonry restoration mix				Lb.	.52			.52	.57
0050 White				"	.45			.45	.50
04 05 13.93 Mortar Pigments									
0010 **MORTAR PIGMENTS**, 50 lb. bags (2 bags per M bricks) R040513-10									
0020 Color admixture, range 2 to 10 lb. per bag of cement, light colors				Lb.	8.10			8.10	8.95
0050 Medium colors					14.60			14.60	16.10
0100 Dark colors					28.50			28.50	31.50
04 05 13.95 Sand									
0010 **SAND**, screened and washed at pit									
0020 For mortar, per ton				Ton	33.50			33.50	37
0050 With 10 mile haul					33.50			33.50	37
0100 With 30 mile haul					27.50			27.50	30.50
0200 Screened and washed, at the pit				C.Y.	47			47	51.50
0250 With 10 mile haul					47			47	51.50
0300 With 30 mile haul					38.50			38.50	42.50
04 05 13.98 Mortar Admixtures									
0010 **MORTAR ADMIXTURES**									
0020 Waterproofing admixture, per quart (1 qt. to 2 bags of masonry cement)				Qt.	7.50			7.50	8.25

04 05 16 – Masonry Grouting

04 05 16.30 Grouting	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **GROUTING**									
0011 Bond beams & lintels, 8" deep, 6" thick, 0.15 C.F./L.F.	D-4	1480	.022	L.F.	.80	1.09	.09	1.98	2.62
0020 8" thick, 0.2 C.F./L.F.		1400	.023		1.23	1.16	.10	2.49	3.20

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04 05 16 – Masonry Grouting

	04 05 16.30 Grouting	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0050	10" thick, 0.25 C.F./L.F.	D-4	1200	.027	L.F.	1.33	1.35	.12	2.80	3.61
0060	12" thick, 0.3 C.F./L.F.	↓	1040	.031	↓	1.59	1.56	.13	3.28	4.23
0200	Concrete block cores, solid, 4" thk., by hand, 0.067 C.F./S.F. of wall	D-8	1100	.036	S.F.	.36	1.86		2.22	3.18
0210	6" thick, pumped, 0.175 C.F./S.F.	D-4	720	.044		.93	2.25	.19	3.37	4.60
0250	8" thick, pumped, 0.258 C.F./S.F.		680	.047		1.37	2.38	.20	3.95	5.30
0300	10" thick, pumped, 0.340 C.F./S.F.		660	.048		1.80	2.45	.21	4.46	5.90
0350	12" thick, pumped, 0.422 C.F./S.F.		640	.050		2.24	2.53	.22	4.99	6.50
0500	Cavity walls, 2" space, pumped, 0.167 C.F./S.F. of wall		1700	.019		.89	.95	.08	1.92	2.50
0550	3" space, 0.250 C.F./S.F.		1200	.027		1.33	1.35	.12	2.80	3.61
0600	4" space, 0.333 C.F./S.F.		1150	.028		1.77	1.41	.12	3.30	4.18
0700	6" space, 0.500 C.F./S.F.		800	.040	↓	2.65	2.02	.17	4.84	6.15
0800	Door frames, 3' x 7' opening, 2.5 C.F. per opening		60	.533	Opng.	13.25	27	2.31	42.56	57.50
0850	6' x 7' opening, 3.5 C.F. per opening		45	.711	"	18.60	36	3.08	57.68	78
2000	Grout, C476, for bond beams, lintels and CMU cores	↓	350	.091	C.F.	5.30	4.62	.40	10.32	13.20

04 05 19 – Masonry Anchorage and Reinforcing

04 05 19.05 Anchor Bolts

0010	**ANCHOR BOLTS**									
0015	Installed in fresh grout in CMU bond beams or filled cores, no templates									
0020	Hooked, with nut and washer, 1/2" diameter, 8" long	1 Bric	132	.061	Ea.	2.23	3.35		5.58	7.50
0030	12" long	"	131	.061	"	2.48	3.37		5.85	7.80
0040	5/8" diameter, 8" long	1 Bric	129	.062	Ea.	3.06	3.43		6.49	8.50
0050	12" long		127	.063		3.76	3.48		7.24	9.40
0060	3/4" diameter, 8" long		127	.063		3.76	3.48		7.24	9.40
0070	12" long	↓	125	.064	↓	4.70	3.54		8.24	10.45

04 05 19.16 Masonry Anchors

0010	**MASONRY ANCHORS**									
0020	For brick veneer, galv., corrugated, 7/8" x 7", 22 ga.	1 Bric	10.50	.762	C	13.15	42		55.15	77.50
0100	24 ga.		10.50	.762		12.10	42		54.10	76.50
0150	16 ga.		10.50	.762		20.50	42		62.50	85.50
0200	Buck anchors, galv., corrugated, 16 ga., 2" bend, 8" x 2"		10.50	.762		50.50	42		92.50	119
0250	8" x 3"		10.50	.762		60.50	42		102.50	130
0660	Cavity wall, Z-type, galvanized, 6" long, 1/8" diam.		10.50	.762		23.50	42		65.50	89
0670	3/16" diameter		10.50	.762		29.50	42		71.50	95
0680	1/4" diameter		10.50	.762		38.50	42		80.50	105
0850	8" long, 3/16" diameter		10.50	.762		26.50	42		68.50	92.50
0855	1/4" diameter		10.50	.762		48.50	42		90.50	117
1000	Rectangular type, galvanized, 1/4" diameter, 2" x 6"		10.50	.762		76.50	42		118.50	147
1050	4" x 6"		10.50	.762		87.50	42		129.50	159
1100	3/16" diameter, 2" x 6"		10.50	.762		52	42		94	120
1150	4" x 6"		10.50	.762		53	42		95	122
1500	Rigid partition anchors, plain, 8" long, 1" x 1/8"		10.50	.762		183	42		225	265
1550	1" x 1/4"		10.50	.762		315	42		357	410
1580	1-1/2" x 1/8"		10.50	.762		217	42		259	300
1600	1-1/2" x 1/4"		10.50	.762		345	42		387	445
1650	2" x 1/8"		10.50	.762		320	42		362	415
1700	2" x 1/4"	↓	10.50	.762	↓	380	42		422	485

04 05 19.26 Masonry Reinforcing Bars

0010	**MASONRY REINFORCING BARS** R040519-50									
0015	Steel bars A615, placed horiz., #3 & #4 bars	1 Bric	450	.018	Lb.	.73	.98		1.71	2.27
0020	#5 & #6 bars		800	.010		.73	.55		1.28	1.63
0050	Placed vertical, #3 & #4 bars		350	.023		.73	1.26		1.99	2.70
0060	#5 & #6 bars	↓	650	.012	↓	.73	.68		1.41	1.82

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04 05 Common Work Results for Masonry

04 05 19 – Masonry Anchorage and Reinforcing

04 05 19.26 Masonry Reinforcing Bars	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0200 Joint reinforcing, regular truss, to 6" wide, mill std galvanized	1 Bric	30	.267	C.L.F.	26.50	14.75		41.25	51.50
0250 12" wide		20	.400		30	22		52	66
0400 Cavity truss with drip section, to 6" wide		30	.267		26.50	14.75		41.25	51.50
0450 12" wide		20	.400		31.50	22		53.50	68

04 05 23 – Masonry Accessories

04 05 23.13 Masonry Control and Expansion Joints

0010 **MASONRY CONTROL AND EXPANSION JOINTS**									
0020 Rubber, for double wythe 8" minimum wall (Brick/CMU)	1 Bric	400	.020	L.F.	5.15	1.11		6.26	7.35
0025 "T" shaped		320	.025		1.12	1.38		2.50	3.30
0030 Cross-shaped for CMU units		280	.029		1.35	1.58		2.93	3.86
0050 PVC, for double wythe 8" minimum wall (Brick/CMU)		400	.020		1.50	1.11		2.61	3.31
0120 "T" shaped		320	.025		.72	1.38		2.10	2.86
0160 Cross-shaped for CMU units		280	.029		.73	1.58		2.31	3.17

04 05 23.19 Masonry Cavity Drainage, Weepholes, and Vents

0010 **MASONRY CAVITY DRAINAGE, WEEPHOLES, AND VENTS**									
0020 Extruded aluminum, 4" deep, 2-3/8" x 8-1/8"	1 Bric	30	.267	Ea.	15.15	14.75		29.90	38.50
0050 5" x 8-1/8"		25	.320		21.50	17.70		39.20	50
0100 2-1/4" x 25"		25	.320		62.50	17.70		80.20	95.50
0150 5" x 16-1/2"		22	.364		87	20		107	126
0175 5" x 24"		22	.364		69.50	20		89.50	107
0200 6" x 16-1/2"		22	.364		75	20		95	113
0250 7-3/4" x 16-1/2"		20	.400		7.65	22		29.65	41.50
0400 For baked enamel finish, add					35%				
0500 For cast aluminum, painted, add					60%				
1000 Stainless steel ventilators, 6" x 6"	1 Bric	25	.320		168	17.70		185.70	212
1050 8" x 8"		24	.333		108	18.40		126.40	147
1100 12" x 12"		23	.348		111	19.20		130.20	151
1150 12" x 6"		24	.333		77.50	18.40		95.90	113
1200 Foundation block vent, galv., 1-1/4" thk, 8" high, 16" long, no damper		30	.267		19.95	14.75		34.70	44
1250 For damper, add					3.14			3.14	3.45
1450 Drainage and ventilation fabric	2 Bric	1450	.011	S.F.	.84	.61		1.45	1.84

04 05 23.95 Wall Plugs

0010 **WALL PLUGS** (for nailing to brickwork)									
0020 25 ga., galvanized, plain	1 Bric	10.50	.762	C	60	42		102	129
0050 Wood filled	"	10.50	.762	"	125	42		167	200

04 21 Clay Unit Masonry

04 21 13 – Brick Masonry

04 21 13.13 Brick Veneer Masonry

0010 **BRICK VENEER MASONRY**, T.L. lots, excl. scaff., grout & reinforcing R042110-20									
0015 Material costs incl. 3% brick and 25% mortar waste									
0020 Standard, select common, 4" x 2-2/3" x 8" (6.75/S.F.)	D-8	1.50	26.667	M	1,150	1,375		2,525	3,325
0050 Red, 4" x 2-2/3" x 8", running bond		1.50	26.667		750	1,375		2,125	2,875
0100 Full header every 6th course (7.88/S.F.) R042110-50		1.45	27.586		750	1,400		2,150	2,950
0150 English, full header every 2nd course (10.13/S.F.)		1.40	28.571		750	1,450		2,200	3,025
0200 Flemish, alternate header every course (9.00/S.F.)		1.40	28.571		750	1,450		2,200	3,025
0250 Flemish, alt. header every 6th course (7.13/S.F.)	D-8	1.45	27.586	M	750	1,400		2,150	2,950
0300 Full headers throughout (13.50/S.F.)		1.40	28.571		745	1,450		2,195	3,025
0350 Rowlock course (13.50/S.F.)		1.35	29.630		745	1,525		2,270	3,100
0400 Rowlock stretcher (4.50/S.F.)		1.40	28.571		755	1,450		2,205	3,025

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04 21 13.13 Brick Veneer Masonry	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0450 Soldier course (6.75/S.F.)	D-8	1.40	28.571	M	750	1,450		2,200	3,025
0500 Sailor course (4.50/S.F.)		1.30	30.769		755	1,575		2,330	3,200
0601 Buff or gray face, running bond (6.75/S.F.)		1.50	26.667		750	1,375		2,125	2,875
0700 Glazed face, 4" x 2-2/3" x 8", running bond		1.40	28.571		2,450	1,450		3,900	4,900
0750 Full header every 6th course (7.88/S.F.)		1.35	29.630		2,400	1,525		3,925	4,900
1000 Jumbo, 6" x 4" x 12" (3.00/S.F.)		1.30	30.769		1,975	1,575		3,550	4,550
1051 Norman, 4" x 2-2/3" x 12" (4.50/S.F.)		1.45	27.586		1,225	1,400		2,625	3,475
1100 Norwegian, 4" x 3-1/5" x 12" (3.75/S.F.)		1.40	28.571		2,100	1,450		3,550	4,500
1150 Economy, 4" x 4" x 8" (4.50/S.F.)		1.40	28.571		1,050	1,450		2,500	3,375
1201 Engineer, 4" x 3-1/5" x 8" (5.63/S.F.)		1.45	27.586		710	1,400		2,110	2,900
1251 Roman, 4" x 2" x 12" (6.00/S.F.)		1.50	26.667		1,375	1,375		2,750	3,575
1300 S.C.R., 6" x 2-2/3" x 12" (4.50/S.F.)		1.40	28.571		1,375	1,450		2,825	3,725
1350 Utility, 4" x 4" x 12" (3.00/S.F.)		1.08	37.037		1,900	1,900		3,800	4,950
1360 For less than truck load lots, add					15%				
1400 For battered walls, add						30%			
1450 For corbels, add						75%			
1500 For curved walls, add						30%			
1550 For pits and trenches, deduct						20%			
1999 Alternate method of figuring by square foot									
2000 Standard, sel. common, 4" x 2-2/3" x 8" (6.75/S.F.)	D-8	230	.174	S.F.	7.75	8.90		16.65	22
2020 Red, 4" x 2-2/3" x 8", running bond		220	.182		5.05	9.30		14.35	19.55
2050 Full header every 6th course (7.88/S.F.)		185	.216		5.90	11.05		16.95	23
2100 English, full header every 2nd course (10.13/S.F.)		140	.286		7.60	14.60		22.20	30.50
2150 Flemish, alternate header every course (9.00/S.F.)		150	.267		6.75	13.65		20.40	28
2200 Flemish, alt. header every 6th course (7.13/S.F.)		205	.195		5.35	10		15.35	21
2250 Full headers throughout (13.50/S.F.)		105	.381		10.10	19.50		29.60	40.50
2300 Rowlock course (13.50/S.F.)		100	.400		10.10	20.50		30.60	41.50
2350 Rowlock stretcher (4.50/S.F.)		310	.129		3.40	6.60		10	13.65
2400 Soldier course (6.75/S.F.)		200	.200		5.05	10.25		15.30	21
2450 Sailor course (4.50/S.F.)		290	.138		3.40	7.05		10.45	14.35
2600 Buff or gray face, running bond (6.75/S.F.)		220	.182		5.35	9.30		14.65	19.85
2700 Glazed face brick, running bond	D-8	210	.190	S.F.	16.10	9.75		25.85	32.50
2750 Full header every 6th course (7.88/S.F.)		170	.235		18.80	12.05		30.85	38.50
3000 Jumbo, 6" x 4" x 12" running bond (3.00/S.F.)		435	.092		5.40	4.70		10.10	13
3050 Norman, 4" x 2-2/3" x 12" running bond (4.5/S.F.)		320	.125		6.75	6.40		13.15	17
3100 Norwegian, 4" x 3-1/5" x 12" (3.75/S.F.)		375	.107		7.70	5.45		13.15	16.70
3150 Economy, 4" x 4" x 8" (4.50/S.F.)		310	.129		4.72	6.60		11.32	15.10
3200 Engineer, 4" x 3-1/5" x 8" (5.63/S.F.)		260	.154		3.98	7.85		11.83	16.15
3250 Roman, 4" x 2" x 12" (6.00/S.F.)		250	.160		8.15	8.20		16.35	21.50
3300 S.C.R., 6" x 2-2/3" x 12" (4.50/S.F.)		310	.129		6.15	6.60		12.75	16.65
3350 Utility, 4" x 4" x 12" (3.00/S.F.)		360	.111		5.55	5.70		11.25	14.65
3360 For less than truck load lots, add					.10%				
3370 For battered walls, add						30%			
3380 For corbels, add						75%			
3400 For cavity wall construction, add						15%			
3450 For stacked bond, add						10%			
3500 For interior veneer construction, add						15%			
3510 For pits and trenches, deduct						20%			
3550 For curved walls, add						30%			

04 21 13 – Brick Masonry

04 21 13.14 Thin Brick Veneer	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **THIN BRICK VENEER**									
0015 Material costs incl. 3% brick and 25% mortar waste									
0020 On & incl. metal panel support sys, modular, 2-2/3" x 5/8" x 8", red	D-7	92	.174	S.F.	14.05	8.35		22.40	27.50
0100 Closure, 4" x 5/8" x 8"		110	.145		9.60	7		16.60	21
0110 Norman, 2-2/3" x 5/8" x 12"		110	.145		9.95	7		16.95	21
0120 Utility, 4" x 5/8" x 12"		125	.128		9.30	6.15		15.45	19.15
0130 Emperor, 4" x 3/4" x 16"		175	.091		10.50	4.39		14.89	17.95
0140 Super emperor, 8" x 3/4" x 16"		195	.082		11.55	3.94		15.49	18.45
0150 For L shaped corners with 4" return, add				L.F.	9.25			9.25	10.20
0200 On masonry/plaster back-up, modular, 2-2/3" x 5/8" x 8", red	D-7	137	.117	S.F.	8.90	5.60		14.50	18
0210 Closure, 4" x 5/8" x 8"		165	.097		4.45	4.65		9.10	11.70
0220 Norman, 2-2/3" x 5/8" x 12"		165	.097		4.82	4.65		9.47	12.10
0230 Utility, 4" x 5/8" x 12"		185	.086		4.16	4.15		8.31	10.65
0240 Emperor, 4" x 3/4" x 16"		260	.062		5.40	2.95		8.35	10.20
0250 Super emperor, 8" x 3/4" x 16"		285	.056		6.40	2.69		9.09	11
0260 For L shaped corners with 4" return, add				L.F.	10.10			10.10	11.10
0270 For embedment into pre-cast concrete panels, add				S.F.	14.40			14.40	15.85

04 21 13.15 Chimney

0010 **CHIMNEY**, excludes foundation, scaffolding, grout and reinforcing									
0100 Brick, 16" x 16", 8" flue	D-1	18.20	.879	V.L.F.	43.50	44		87.50	114
0150 16" x 20" with one 8" x 12" flue		16	1		61.50	50		111.50	143
0200 16" x 24" with two 8" x 8" flues		14	1.143		84	57.50		141.50	179
0250 20" x 20" with one 12" x 12" flue		13.70	1.168		75.50	58.50		134	171
0300 20" x 24" with two 8" x 12" flues		12	1.333		97	67		164	207
0350 20" x 32" with two 12" x 12" flues		10	1.600		129	80		209	262

04 21 13.18 Columns

0010 **COLUMNS**, solid, excludes scaffolding, grout and reinforcing R042110-10									
0050 Brick, 8" x 8", 9 brick/V.L.F.	D-1	56	.286	V.L.F.	7.05	14.30		21.35	29.50
0100 12" x 8", 13.5 brick/V.L.F.		37	.432		10.55	21.50		32.05	44
0200 12" x 12", 20 brick/V.L.F.		25	.640		15.60	32		47.60	65
0300 16" x 12", 27 brick/V.L.F.		19	.842		21	42		63	86.50
0400 16" x 16", 36 brick/V.L.F.		14	1.143		28	57.50		85.50	117
0500 20" x 16", 45 brick/V.L.F.		11	1.455		35	73		108	149
0600 20" x 20", 56 brick/V.L.F.		9	1.778		43.50	89		132.50	182
0700 24" x 20", 68 brick/V.L.F.		7	2.286		53	115		168	231
0800 24" x 24", 81 brick/V.L.F.		6	2.667		63.50	134		197.50	271
1000 36" x 36", 182 brick/V.L.F.		3	5.333		142	267		409	555

04 21 13.30 Oversized Brick

0010 **OVERSIZED BRICK**, excludes scaffolding, grout and reinforcing									
0100 Veneer, 4" x 2.25" x 16"	D-8	387	.103	S.F.	4.89	5.30		10.19	13.35
0102 8" x 2.25" x 16", multicell		265	.151		17.90	7.70		25.60	31.50
0105 4" x 2.75" x 16"		412	.097		5.90	4.97		10.87	13.90
0107 8" x 2.75" x 16", multicell		295	.136		17.85	6.95		24.80	30
0110 4" x 4" x 16"		460	.087		3.90	4.45		8.35	11
0120 4" x 8" x 16"		533	.075		5.60	3.84		9.44	11.95
0122 4" x 8" x 16" multicell		327	.122		16	6.25		22.25	27
0125 Loadbearing, 6" x 4" x 16", grouted and reinforced		387	.103		12.05	5.30		17.35	21
0130 8" x 4" x 16", grouted and reinforced		327	.122		12.05	6.25		18.30	22.50
0132 10" x 4" x 16", grouted and reinforced		327	.122		28.50	6.25		34.75	40.50
0135 6" x 8" x 16", grouted and reinforced		440	.091		15.55	4.65		20.20	24
0140 8" x 8" x 16", grouted and reinforced		400	.100		16.35	5.10		21.45	25.50

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04 21 13 – Brick Masonry

	04 21 13.30 Oversized Brick	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0145	Curtainwall/reinforced veneer, 6" x 4" x 16"	D-8	387	.103	S.F.	17.05	5.30		22.35	26.50
0150	8" x 4" x 16"		327	.122		19.85	6.25		26.10	31.50
0152	10" x 4" x 16"		327	.122		31.50	6.25		37.75	44
0155	6" x 8" x 16"		440	.091		21.50	4.65		26.15	30.50
0160	8" x 8" x 16"		400	.100		28.50	5.10		33.60	39
0200	For 1 to 3 slots in face, add					15%				
0210	For 4 to 7 slots in face, add					25%				
0220	For bond beams, add					20%				
0230	For bullnose shapes, add					20%				
0240	For open end knockout, add					10%				
0250	For white or gray color group, add					10%				
0260	For 135 degree corner, add					250%				

04 21 13.35 Common Building Brick

0010	**COMMON BUILDING BRICK**, C62, T.L. lots, material only R042110-20									
0020	Standard				M	970			970	1,075
0050	Select				"	1,025			1,025	1,125

04 21 13.40 Structural Brick

0010	**STRUCTURAL BRICK** C652, Grade SW, incl. mortar, scaffolding not incl.									
0100	Standard unit, 4-5/8" x 2-3/4" x 9-5/8"	D-8	245	.163	S.F.	4.57	8.35		12.92	17.60
0120	Bond beam		225	.178		4.69	9.10		13.79	18.80
0140	V cut bond beam		225	.178		4.58	9.10		13.68	18.70
0160	Stretcher quoin, 5-5/8" x 2-3/4" x 9-5/8"		245	.163		7.65	8.35		16	21
0180	Corner quoin		245	.163		8.35	8.35		16.70	21.50
0200	Corner, 45 degree, 4-5/8" x 2-3/4" x 10-7/16"		235	.170		9.35	8.70		18.05	23.50

04 21 13.45 Face Brick

0010	**FACE BRICK** Material Only, C216, T.L. lots R042110-20									
0300	Standard modular, 4" x 2-2/3" x 8"				M	635			635	695
0450	Economy, 4" x 4" x 8"					920			920	1,000
0510	Economy, 4" x 4" x 12"					1,450			1,450	1,600
0550	Jumbo, 6" x 4" x 12"					1,650			1,650	1,825
0610	Jumbo, 8" x 4" x 12"					1,650			1,650	1,825
0650	Norwegian, 4" x 3-1/5" x 12"					1,900			1,900	2,075
0710	Norwegian, 6" x 3-1/5" x 12"					1,600			1,600	1,750
0850	Standard glazed, plain colors, 4" x 2-2/3" x 8"					2,225			2,225	2,450
1000	Deep trim shades, 4" x 2-2/3" x 8"					2,400			2,400	2,650
1080	Jumbo utility, 4" x 4" x 12"					1,700			1,700	1,875
1120	4" x 8" x 8"					1,975			1,975	2,175
1140	4" x 8" x 16"					6,950			6,950	7,650
1260	Engineer, 4" x 3-1/5" x 8"					590			590	645
1350	King, 4" x 2-3/4" x 10"					580			580	640
1770	Standard modular, double glazed, 4" x 2-2/3" x 8"					3,025			3,025	3,325
1850	Jumbo, colored glazed ceramic, 6" x 4" x 12"					2,825			2,825	3,125
2050	Jumbo utility, glazed, 4" x 4" x 12"					5,825			5,825	6,400
2100	4" x 8" x 8"					6,850			6,850	7,525
2150	4" x 16" x 8"				M	7,300			7,300	8,050

04 21 26 – Glazed Structural Clay Tile Masonry

04 21 26.10 Structural Facing Tile

0010	**STRUCTURAL FACING TILE**, std. colors, excl. scaffolding, grout, reinforcing									
0020	6T series, 5-1/3" x 12", 2.3 pieces per S.F., glazed 1 side, 2" thick	D-8	225	.178	S.F.	10	9.10		19.10	24.50
0100	4" thick		220	.182		13.25	9.30		22.55	28.50
0150	Glazed 2 sides		195	.205		17.60	10.50		28.10	35

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04 21 26 – Glazed Structural Clay Tile Masonry

04 21 26.10 Structural Facing Tile	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0250 6" thick	D-8	210	.190	S.F.	18.90	9.75		28.65	35.50
0300 Glazed 2 sides		185	.216		22.50	11.05		33.55	41.50
0400 8" thick		180	.222		23	11.35		34.35	42.50
0500 Special shapes, group 1		400	.100	Ea.	7.65	5.10		12.75	16.10
0550 Group 2		375	.107		13.70	5.45		19.15	23.50
0600 Group 3		350	.114		17.20	5.85		23.05	28
0650 Group 4		325	.123		35.50	6.30		41.80	48.50
0700 Group 5		300	.133		42.50	6.80		49.30	57.50
0750 Group 6		275	.145		63.50	7.45		70.95	80.50
1000 Fire rated, 4" thick, 1 hr. rating		210	.190	S.F.	18.70	9.75		28.45	35
1300 Acoustic, 4" thick		210	.190	"	40	9.75		49.75	58.50
2000 8W series, 8" x 16", 1.125 pieces per S.F.									
2050 2" thick, glazed 1 side	D-8	360	.111	S.F.	9.65	5.70		15.35	19.15
2100 4" thick, glazed 1 side		345	.116		13.65	5.95		19.60	24
2150 Glazed 2 sides		325	.123		14.55	6.30		20.85	25.50
2200 6" thick, glazed 1 side		330	.121		31.50	6.20		37.70	44
2250 8" thick, glazed 1 side		310	.129		29.50	6.60		36.10	42.50
2500 Special shapes, group 1		300	.133	Ea.	16.05	6.80		22.85	28
2550 Group 2		280	.143		21.50	7.30		28.80	34.50
2600 Group 3		260	.154		23	7.85		30.85	37
2650 Group 4		250	.160		54.50	8.20		62.70	72.50
2700 Group 5		240	.167		47.50	8.55		56.05	65
2750 Group 6		230	.174		104	8.90		112.90	128
3000 4" thick, glazed 1 side		345	.116	S.F.	16	5.95		21.95	26.50
3100 Acoustic, 4" thick		345	.116	"	22.50	5.95		28.45	34
3120 4W series, 8" x 8", 2.25 pieces per S.F.									
3125 2" thick, glazed 1 side	D-8	360	.111	S.F.	9.30	5.70		15	18.75
3130 4" thick, glazed 1 side		345	.116		12.80	5.95		18.75	23
3135 Glazed 2 sides		325	.123		15.95	6.30		22.25	27
3140 6" thick, glazed 1 side		330	.121		16.35	6.20		22.55	27.50
3150 8" thick, glazed 1 side		310	.129		24.50	6.60		31.10	37
3155 Special shapes, group 1	D-8	300	.133	Ea.	7.70	6.80		14.50	18.70
3160 Group 2	"	280	.143	"	8.95	7.30		16.25	21
3200 For designer colors, add					25%				
3300 For epoxy mortar joints, add				S.F.	1.90			1.90	2.09

04 21 29 – Terra Cotta Masonry

04 21 29.10 Terra Cotta Masonry Components

0010 **TERRA COTTA MASONRY COMPONENTS**									
0020 Coping, split type, not glazed, 9" wide	D-1	90	.178	L.F.	11.75	8.90		20.65	26.50
0100 13" wide		80	.200		16.85	10.05		26.90	33.50
0200 Coping, split type, glazed, 9" wide		90	.178		20.50	8.90		29.40	36
0250 13" wide		80	.200		25	10.05		35.05	42.50
0500 Partition or back-up blocks, scored, in C.L. lots									
0700 Non-load bearing 12" x 12", 3" thick, special order	D-8	550	.073	S.F.	21	3.72		24.72	28.50
0750 4" thick, standard		500	.080		7	4.09		11.09	13.85
0800 6" thick		450	.089		8.50	4.55		13.05	16.20
0850 8" thick		400	.100		10.45	5.10		15.55	19.20
1000 Load bearing, 12" x 12", 4" thick, in walls		500	.080		6.50	4.09		10.59	13.30
1050 In floors		750	.053		6.50	2.73		9.23	11.25
1200 6" thick, in walls		450	.089		9.90	4.55		14.45	17.75
1250 In floors		675	.059		9.90	3.03		12.93	15.45
1400 8" thick, in walls		400	.100		11	5.10		16.10	19.80

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04 21 Clay Unit Masonry

04 21 29 – Terra Cotta Masonry

	04 21 29.10 Terra Cotta Masonry Components	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1450	In floors	D-8	575	.070	S.F.	11	3.56		14.56	17.45
1600	10" thick, in walls, special order		350	.114		28.50	5.85		34.35	40.50
1650	In floors, special order		500	.080		28.50	4.09		32.59	37.50
1800	12" thick, in walls, special order		300	.133		26.50	6.80		33.30	40
1850	In floors, special order		450	.089		26.50	4.55		31.05	36.50
2000	For reinforcing with steel rods, add to above					15%	5%			
2100	For smooth tile instead of scored, add					2.97			2.97	3.27
2200	For L.C.L. quantities, add					10%	10%			
	04 21 29.20 Terra Cotta Tile									
0010	**TERRA COTTA TILE**, on walls, dry set, 1/2" thick									
0100	Square, hexagonal or lattice shapes, unglazed	1 Tilf	135	.059	S.F.	5.25	3.15		8.40	10.40
0300	Glazed, plain colors		130	.062		8.20	3.27		11.47	13.80
0400	Intense colors		125	.064		9.55	3.40		12.95	15.50

04 22 Concrete Unit Masonry

04 22 10 – Concrete Masonry Units

	04 22 10.11 Autoclave Aerated Concrete Block									
0010	**AUTOCLAVE AERATED CONCRETE BLOCK**, excl. scaffolding, grout & reinforcing									
0050	Solid, 4" x 8" x 24", incl. mortar G	D-8	600	.067	S.F.	3.09	3.41		6.50	8.50
0060	6" x 8" x 24" G	D-8	600	.067	S.F.	5.15	3.41		8.56	10.75
0070	8" x 8" x 24" G		575	.070		3.54	3.56		7.10	9.25
0080	10" x 8" x 24" G		575	.070		4.25	3.56		7.81	10
0090	12" x 8" x 24" G		550	.073		5.10	3.72		8.82	11.20
	04 22 10.12 Chimney Block									
0010	**CHIMNEY BLOCK**, excludes scaffolding, grout and reinforcing									
0220	1 piece, with 8" x 8" flue, 16" x 16"	D-1	28	.571	V.L.F.	22.50	28.50		51	67.50
0230	2 piece, 16" x 16"		26	.615		23	31		54	71.50
0240	2 piece, with 8" x 12" flue, 16" x 20"		24	.667		37	33.50		70.50	90.50
	04 22 10.14 Concrete Block, Back-Up									
0010	**CONCRETE BLOCK, BACK-UP**, C90, 2000 psi R042210-20									
0020	Normal weight, 8" x 16" units, tooled joint 1 side									
0050	Not-reinforced, 2000 psi, 2" thick	D-8	475	.084	S.F.	1.58	4.31		5.89	8.20
0200	4" thick		460	.087		1.89	4.45		6.34	8.80
0300	6" thick		440	.091		4.01	4.65		8.66	11.40
0350	8" thick		400	.100		2.60	5.10		7.70	10.55
0400	10" thick		330	.121		3.84	6.20		10.04	13.50
0450	12" thick	D-9	310	.155		4.48	7.75		12.23	16.55
1000	Reinforced, alternate courses, 4" thick	D-8	450	.089		2.05	4.55		6.60	9.10
1100	6" thick		430	.093		4.17	4.76		8.93	11.75
1150	8" thick		395	.101		2.77	5.20		7.97	10.85
1200	10" thick		320	.125		4.01	6.40		10.41	14
1250	12" thick	D-9	300	.160		4.66	8		12.66	17.15
	04 22 10.16 Concrete Block, Bond Beam									
0010	**CONCRETE BLOCK, BOND BEAM**, C90, 2000 psi									
0020	Not including grout or reinforcing									
0125	Regular block, 6" thick	D-8	584	.068	L.F.	3.37	3.50		6.87	8.95
0130	8" high, 8" thick	"	565	.071		4.72	3.62		8.34	10.65
0150	12" thick	D-9	510	.094		6.10	4.72		10.82	13.80
0525	Lightweight, 6" thick	D-8	592	.068		3.22	3.46		6.68	8.75
0530	8" high, 8" thick	"	575	.070		3.79	3.56		7.35	9.50

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04 22 10 – Concrete Masonry Units

	04 22 10.16 Concrete Block, Bond Beam	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0550	12" thick	D-9	520	.092	L.F.	5.10	4.63		9.73	12.55
2000	Including grout and 2 #5 bars									
2100	Regular block, 8" high, 8" thick	D-8	300	.133	L.F.	7.50	6.80		14.30	18.50
2150	12" thick	D-9	250	.192		9.55	9.60		19.15	25
2500	Lightweight, 8" high, 8" thick	D-8	305	.131		6.60	6.70		13.30	17.30
2550	12" thick	D-9	255	.188	↓	8.55	9.45		18	23.50
	04 22 10.18 Concrete Block, Column									
0010	**CONCRETE BLOCK, COLUMN** or pilaster									
0050	Including vertical reinforcing (4-#4 bars) and grout									
0160	1 piece unit, 16" x 16"	D-1	26	.615	V.L.F.	13.70	31		44.70	61.50
0170	2 piece units, 16" x 20"		24	.667		21.50	33.50		55	73.50
0180	20" x 20"		22	.727		33	36.50		69.50	91.50
0190	22" x 24"		18	.889		48.50	44.50		93	121
0200	20" x 32"	↓	14	1.143	↓	57.50	57.50		115	149
	04 22 10.19 Concrete Block, Insulation Inserts									
0010	**CONCRETE BLOCK, INSULATION INSERTS**									
0100	Styrofoam, plant installed, add to block prices									
0200	8" x 16" units, 6" thick				S.F.	1.63			1.63	1.79
0250	8" thick					2.10			2.10	2.31
0300	10" thick					1.71			1.71	1.88
0350	12" thick					2.18			2.18	2.40
0500	8" x 8" units, 8" thick					2.08			2.08	2.29
0550	12" thick				↓	2.06			2.06	2.27
	04 22 10.23 Concrete Block, Decorative									
0010	**CONCRETE BLOCK, DECORATIVE**, C90, 2000 psi									
0020	Embossed, simulated brick face									
0100	8" x 16" units, 4" thick	D-8	400	.100	S.F.	3.23	5.10		8.33	11.25
0200	8" thick		340	.118		3.39	6		9.39	12.75
0250	12" thick	↓	300	.133	↓	4.92	6.80		11.72	15.65
0400	Embossed both sides									
0500	8" thick	D-8	300	.133	S.F.	5.75	6.80		12.55	16.55
0550	12" thick	"	275	.145	"	6.95	7.45		14.40	18.80
1000	Fluted high strength									
1100	8" x 16" x 4" thick, flutes 1 side,	D-8	345	.116	S.F.	4.28	5.95		10.23	13.60
1150	Flutes 2 sides		335	.119		4.85	6.10		10.95	14.50
1200	8" thick	↓	300	.133		5.45	6.80		12.25	16.25
1250	For special colors, add				↓	.69			.69	.76
1400	Deep grooved, smooth face									
1450	8" x 16" x 4" thick	D-8	345	.116	S.F.	2.68	5.95		8.63	11.85
1500	8" thick	"	300	.133	"	4.68	6.80		11.48	15.40
2000	Formblock, incl. inserts & reinforcing									
2100	8" x 16" x 8" thick	D-8	345	.116	S.F.	4.64	5.95		10.59	14
2150	12" thick	"	310	.129	"	6	6.60		12.60	16.50
2500	Ground face									
2600	8" x 16" x 4" thick	D-8	345	.116	S.F.	2.84	5.95		8.79	12.05
2650	6" thick		325	.123		5.10	6.30		11.40	15.05
2700	8" thick	↓	300	.133		4.11	6.80		10.91	14.75
2750	12" thick	D-9	265	.181	↓	4.82	9.10		13.92	18.95
2900	For special colors, add, minimum					15%				
2950	For special colors, add, maximum					45%				
4000	Slump block									
4100	4" face height x 16" x 4" thick	D-1	165	.097	S.F.	5.50	4.86		10.36	13.35

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04 22 10 – Concrete Masonry Units

04 22 10.23 Concrete Block, Decorative	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4150 6" thick	D-1	160	.100	S.F.	6.90	5		11.90	15.15
4200 8" thick		155	.103		9.85	5.15		15	18.60
4250 10" thick		140	.114		12.70	5.75		18.45	22.50
4300 12" thick		130	.123		13.90	6.15		20.05	24.50
4400 6" face height x 16" x 6" thick		155	.103		5.25	5.15		10.40	13.55
4450 8" thick		150	.107		7.95	5.35		13.30	16.80
4500 10" thick		130	.123		15.20	6.15		21.35	26
4550 12" thick		120	.133		15.10	6.70		21.80	26.50
5000 Split rib profile units, 1" deep ribs, 8 ribs									
5100 8" x 16" x 4" thick	D-8	345	.116	S.F.	5.05	5.95		11	14.45
5150 6" thick		325	.123		5.85	6.30		12.15	15.90
5200 8" thick		300	.133		7.10	6.80		13.90	18.05
5250 12" thick	D-9	275	.175		8.10	8.75		16.85	22
5400 For special deeper colors, 4" thick, add					1.49			1.49	1.64
5450 12" thick, add					1.44			1.44	1.58
5600 For white, 4" thick, add					1.49			1.49	1.64
5650 6" thick, add					1.44			1.44	1.58
5700 8" thick, add					1.55			1.55	1.70
5750 12" thick, add					1.49			1.49	1.64
6000 Split face									
6100 8" x 16" x 4" thick	D-8	350	.114	S.F.	3.96	5.85		9.81	13.15
6150 6" thick		325	.123		4.54	6.30		10.84	14.45
6200 8" thick		300	.133		5.80	6.80		12.60	16.60
6250 12" thick	D-9	270	.178		6.45	8.90		15.35	20.50
6300 For scored, add					.41			.41	.45
6400 For special deeper colors, 4" thick, add					.69			.69	.76
6450 6" thick, add					.87			.87	.96
6500 8" thick, add					.75			.75	.82
6550 12" thick, add					.87			.87	.96
6650 For white, 4" thick, add					1.49			1.49	1.64
6700 6" thick, add					1.34			1.34	1.48
6750 8" thick, add					1.47			1.47	1.62
6800 12" thick, add					1.44			1.44	1.58
7000 Scored ground face, 2 to 5 scores									
7100 8" x 16" x 4" thick	D-8	340	.118	S.F.	2.80	6		8.80	12.15
7150 6" thick		310	.129		10.55	6.60		17.15	21.50
7200 8" thick		290	.138		4.03	7.05		11.08	15.05
7250 12" thick	D-9	265	.181		4.72	9.10		13.82	18.85
8000 Hexagonal face profile units, 8" x 16" units									
8100 4" thick, hollow	D-8	340	.118	S.F.	4.29	6		10.29	13.75
8200 Solid		340	.118		5.45	6		11.45	15.05
8300 6" thick, hollow		310	.129		4.35	6.60		10.95	14.70
8350 8" thick, hollow		290	.138		4.31	7.05		11.36	15.35
8500 For stacked bond, add						26%			
8550 For high rise construction, add per story	D-8	67.80	.590	M.S.F.		30		30	45.50
8600 For scored block, add					10%				
8650 For honed or ground face, per face, add				Ea.	1.24			1.24	1.37
8700 For honed or ground end, per end, add				"	1.60			1.60	1.77
8750 For bullnose block, add					10%				
8800 For special color, add					13%				

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04 22 10 – Concrete Masonry Units

04 22 10.24 Concrete Block, Exterior	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **CONCRETE BLOCK, EXTERIOR**, C90, 2000 psi									
0020 Reinforced alt courses, tooled joints 2 sides									
0100 Normal weight, 8" x 16" x 6" thick	D-8	395	.101	S.F.	2.43	5.20		7.63	10.45
0200 8" thick		360	.111		4.58	5.70		10.28	13.60
0250 10" thick		290	.138		4.36	7.05		11.41	15.40
0300 12" thick	D-9	250	.192		5	9.60		14.60	20
0500 Lightweight, 8" x 16" x 6" thick	D-8	450	.089		3.28	4.55		7.83	10.45
0600 8" thick		430	.093		5.30	4.76		10.06	12.95
0650 10" thick		395	.101		4.38	5.20		9.58	12.60
0700 12" thick	D-9	350	.137		4.74	6.85		11.59	15.50

04 22 10.26 Concrete Block Foundation Wall

0010 **CONCRETE BLOCK FOUNDATION WALL**, C90/C145									
0050 Normal-weight, cut joints, horiz joint reinf, no vert reinf.									
0200 Hollow, 8" x 16" x 6" thick	D-8	455	.088	S.F.	4.52	4.50		9.02	11.75
0250 8" thick		425	.094		3.13	4.81		7.94	10.70
0300 10" thick		350	.114		4.38	5.85		10.23	13.60
0350 12" thick	D-9	300	.160		5.05	8		13.05	17.60
0500 Solid, 8" x 16" block, 6" thick	D-8	440	.091		3.95	4.65		8.60	11.35
0550 8" thick	"	415	.096		4.21	4.93		9.14	12.05
0600 12" thick	D-9	350	.137		4.20	6.85		11.05	14.90

04 22 10.28 Concrete Block, High Strength

0010 **CONCRETE BLOCK, HIGH STRENGTH**									
0050 Hollow, reinforced alternate courses, 8" x 16" units									
0200 3500 psi, 4" thick	D-8	440	.091	S.F.	2.50	4.65		7.15	9.75
0250 6" thick		395	.101		2.34	5.20		7.54	10.35
0300 8" thick		360	.111		4.49	5.70		10.19	13.50
0350 12" thick	D-9	250	.192		4.90	9.60		14.50	19.85
0500 5000 psi, 4" thick	D-8	440	.091		2.23	4.65		6.88	9.45
0550 6" thick		395	.101		3.06	5.20		8.26	11.15
0600 8" thick		360	.111		4.13	5.70		9.83	13.10
0650 12" thick	D-9	300	.160		4.88	8		12.88	17.40
1000 For 75% solid block, add					30%				
1050 For 100% solid block, add					50%				

04 22 10.30 Concrete Block, Interlocking

0010 **CONCRETE BLOCK, INTERLOCKING**									
0100 Not including grout or reinforcing									
0200 8" x 16" units, 2,000 psi, 8" thick	D-1	245	.065	S.F.	2.95	3.27		6.22	8.15
0300 12" thick		220	.073		3.90	3.65		7.55	9.75
0350 16" thick		185	.086		6.05	4.34		10.39	13.15
0400 Including grout & reinforcing, 8" thick	D-4	245	.131		8.85	6.60	.57	16.02	20.50
0450 12" thick		220	.145		10.10	7.35	.63	18.08	23
0500 16" thick		185	.173		12.55	8.75	.75	22.05	27.50

04 22 10.32 Concrete Block, Lintels

0010 **CONCRETE BLOCK, LINTELS**, C90, normal weight									
0100 Including grout and horizontal reinforcing									
0200 8" x 8" x 8", 1 #4 bar	D-4	300	.107	L.F.	5.10	5.40	.46	10.96	14.20
0250 2 #4 bars		295	.108		5.40	5.50	.47	11.37	14.65
0400 8" x 16" x 8", 1 #4 bar		275	.116		4.39	5.90	.50	10.79	14.20
0450 2 #4 bars		270	.119		4.72	6	.51	11.23	14.75
1000 12" x 8" x 8", 1 #4 bar		275	.116		6.65	5.90	.50	13.05	16.70
1100 2 #4 bars		270	.119		7	6	.51	13.51	17.25

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	04 22 10.32 Concrete Block, Lintels	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1150	2 #5 bars	D-4	270	.119	L.F.	7.35	6	.51	13.86	17.65
1200	2 #6 bars		265	.121		7.80	6.10	.52	14.42	18.25
1500	12" x 16" x 8", 1 #4 bar		250	.128		7.75	6.45	.55	14.75	18.80
1600	2 #3 bars		245	.131		7.80	6.60	.57	14.97	19.05
1650	2 #4 bars		245	.131		8.05	6.60	.57	15.22	19.40
1700	2 #5 bars		240	.133		8.45	6.75	.58	15.78	20
	04 22 10.33 Lintel Block									
0010	**LINTEL BLOCK**									
3481	Lintel block 6" x 8" x 8"	D-1	300	.053	Ea.	1.51	2.67		4.18	5.65
3501	6" x 16" x 8"		275	.058		2.11	2.92		5.03	6.70
3521	8" x 8" x 8"		275	.058		1.46	2.92		4.38	6
3561	8" x 16" x 8"	D-1	250	.064	Ea.	1.62	3.21		4.83	6.60
	04 22 10.34 Concrete Block, Partitions									
0010	**CONCRETE BLOCK, PARTITIONS**, excludes scaffolding R042210-20									
0100	Acoustical slotted block									
0200	4" thick, type A-1	D-8	315	.127	S.F.	6.90	6.50		13.40	17.35
0210	8" thick		275	.145		7.85	7.45		15.30	19.80
0250	8" thick, type Q		275	.145		15.35	7.45		22.80	28
0260	4" thick, type RSC		315	.127		11.65	6.50		18.15	22.50
0270	6" thick		295	.136		12.20	6.95		19.15	24
0280	8" thick		275	.145		12.75	7.45		20.20	25
0290	12" thick		250	.160		13.30	8.20		21.50	27
0300	8" thick, type RSR		275	.145		12.75	7.45		20.20	25
0400	8" thick, type RSC/RF		275	.145		10.10	7.45		17.55	22.50
0410	10" thick		260	.154		12.50	7.85		20.35	25.50
0420	12" thick		250	.160		11.70	8.20		19.90	25
0430	12" thick, type RSC/RF-4		250	.160		16.95	8.20		25.15	31
0500	NRC .60 type R, 8" thick		265	.151		13.60	7.70		21.30	26.50
0600	NRC .65 type RR, 8" thick		265	.151		9.10	7.70		16.80	21.50
0700	NRC .65 type 4R-RF, 8" thick		265	.151		14.10	7.70		21.80	27
0710	NRC .70 type R, 12" thick		245	.163		14.55	8.35		22.90	28.50
1000	Lightweight block, tooled joints, 2 sides, hollow									
1100	Not reinforced, 8" x 16" x 4" thick	D-8	440	.091	S.F.	1.94	4.65		6.59	9.15
1150	6" thick		410	.098		1.75	4.99		6.74	9.40
1200	8" thick		385	.104		3.15	5.30		8.45	11.45
1250	10" thick		370	.108		3.14	5.55		8.69	11.75
1300	12" thick	D-9	350	.137		3.80	6.85		10.65	14.50
2000	Not reinforced, 8" x 24" x 4" thick, hollow		460	.104		1.42	5.25		6.67	9.40
2100	6" thick		440	.109		1.31	5.45		6.76	9.65
2150	8" thick		415	.116		2.32	5.80		8.12	11.25
2200	10" thick		385	.125		2.36	6.25		8.61	12
2250	12" thick		365	.132		2.85	6.60		9.45	13.05
2800	Solid, not reinforced, 8" x 16" x 2" thick	D-8	440	.091		2.04	4.65		6.69	9.25
2900	4" thick		420	.095		2.43	4.87		7.30	9.95
2950	6" thick		390	.103		3.10	5.25		8.35	11.30
3000	8" thick		365	.110		5.10	5.60		10.70	14
3050	10" thick		350	.114		4.15	5.85		10	13.35
3100	12" thick	D-9	330	.145		4.58	7.30		11.88	16
4000	Regular block, tooled joints, 2 sides, hollow									
4100	Not reinforced, 8" x 16" x 4" thick	D-8	430	.093	S.F.	1.79	4.76		6.55	9.10
4150	6" thick		400	.100		3.91	5.10		9.01	12
4200	8" thick		375	.107		2.50	5.45		7.95	10.95

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	04 22 10.34 Concrete Block, Partitions	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4250	10" thick	D-8	360	.111	S.F.	3.74	5.70		9.44	12.65
4300	12" thick	D-9	340	.141		4.38	7.10		11.48	15.45
4500	Reinforced alternate courses, 8" x 16" x 4" thick	D-8	425	.094		1.95	4.81		6.76	9.40
4550	6" thick		395	.101		4.07	5.20		9.27	12.30
4600	8" thick		370	.108		2.67	5.55		8.22	11.25
4650	10" thick		355	.113		4.41	5.75		10.16	13.50
4700	12" thick	D-9	335	.143		4.56	7.20		11.76	15.80
4900	Solid, not reinforced, 2" thick	D-8	435	.092		1.52	4.70		6.22	8.75
5000	3" thick		430	.093		1.34	4.76		6.10	8.60
5050	4" thick		415	.096		1.99	4.93		6.92	9.60
5100	6" thick		385	.104		3.33	5.30		8.63	11.65
5150	8" thick		360	.111		3.58	5.70		9.28	12.50
5200	12" thick	D-9	325	.148		3.55	7.40		10.95	15
5500	Solid, reinforced alternate courses, 4" thick	D-8	420	.095		2.11	4.87		6.98	9.60
5550	6" thick		380	.105		3.50	5.40		8.90	11.95
5600	8" thick		355	.113		3.78	5.75		9.53	12.80
5650	12" thick	D-9	320	.150		4.44	7.50		11.94	16.20
	04 22 10.38 Concrete Brick									
0010	**CONCRETE BRICK**, C55, grade N, type 1									
0100	Regular, 4" x 2-1/4" x 8"	D-8	660	.061	Ea.	.71	3.10		3.81	5.45
0125	Rusticated, 4" x 2-1/4" x 8"		660	.061		.80	3.10		3.90	5.55
0150	Frog, 4" x 2-1/4" x 8"		660	.061		.77	3.10		3.87	5.50
0200	Double, 4" x 4-7/8" x 8"		535	.075		1.24	3.82		5.06	7.10
	04 22 10.42 Concrete Block, Screen Block									
0010	**CONCRETE BLOCK, SCREEN BLOCK**									
0200	8" x 16", 4" thick	D-8	330	.121	S.F.	12.05	6.20		18.25	22.50
0300	8" thick		270	.148		13.95	7.60		21.55	26.50
0350	12" x 12", 4" thick		290	.138		7.85	7.05		14.90	19.20
0500	8" thick		250	.160		7.60	8.20		15.80	20.50
	04 22 10.44 Glazed Concrete Block									
0010	**GLAZED CONCRETE BLOCK** C744									
0100	Single face, 8" x 16" units, 2" thick	D-8	360	.111	S.F.	12.80	5.70		18.50	22.50
0200	4" thick		345	.116		13.15	5.95		19.10	23.50
0250	6" thick		330	.121		15.50	6.20		21.70	26.50
0300	8" thick		310	.129		17.20	6.60		23.80	29
0350	10" thick		295	.136		17.65	6.95		24.60	30
0400	12" thick	D-9	280	.171		18.95	8.60		27.55	34
0700	Double face, 8" x 16" units, 4" thick	D-8	340	.118		17.80	6		23.80	28.50
0750	6" thick	D-8	320	.125	S.F.	22.50	6.40		28.90	34.50
0800	8" thick		300	.133	"	24	6.80		30.80	37
1000	Jambs, bullnose or square, single face, 8" x 16", 2" thick		315	.127	Ea.	21.50	6.50		28	33.50
1050	4" thick		285	.140	"	22	7.20		29.20	35.50
1200	Caps, bullnose or square, 8" x 16", 2" thick		420	.095	L.F.	21	4.87		25.87	31
1250	4" thick		380	.105	"	24.50	5.40		29.90	35
1256	Corner, bullnose or square, 2" thick		280	.143	Ea.	25	7.30		32.30	38
1258	4" thick		270	.148		28.50	7.60		36.10	42.50
1260	6" thick		260	.154		31.50	7.85		39.35	46.50
1270	8" thick		250	.160		41	8.20		49.20	58
1280	10" thick		240	.167		33.50	8.55		42.05	50
1290	12" thick		230	.174		33	8.90		41.90	49.50
1500	Cove base, 8" x 16", 2" thick		315	.127	L.F.	11.25	6.50		17.75	22
1550	4" thick		285	.140		11.35	7.20		18.55	23.50

04 22 Concrete Unit Masonry

04 22 10 – Concrete Masonry Units

04 22 10.44 Glazed Concrete Block		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1600	6" thick	D-8	265	.151	L.F.	12.10	7.70		19.80	25
1650	8" thick	↓	245	.163	↓	12.65	8.35		21	26.50

04 23 Glass Unit Masonry

04 23 13 – Vertical Glass Unit Masonry

04 23 13.10 Glass Block

0010	**GLASS BLOCK**									
0100	Plain, 4" thick, under 1,000 S.F., 6" x 6"	D-8	115	.348	S.F.	26.50	17.80		44.30	56
0150	8" x 8"		160	.250		24.50	12.80		37.30	45.50
0160	end block		160	.250		52	12.80		64.80	76
0170	90 degree corner		160	.250		60.50	12.80		73.30	85.50
0180	45 degree corner		160	.250		56	12.80		68.80	80.50
0200	12" x 12"		175	.229		29	11.70		40.70	49
0210	4" x 8"		160	.250		26.50	12.80		39.30	48.50
0220	6" x 8"		160	.250		18.50	12.80		31.30	39.50
0300	1,000 to 5,000 S.F., 6" x 6"		135	.296		26	15.15		41.15	51.50
0350	8" x 8"		190	.211		24	10.75		34.75	42
0400	12" x 12"		215	.186		28	9.50		37.50	45.50
0410	4" x 8"		215	.186		26	9.50		35.50	43
0420	6" x 8"		215	.186		18.10	9.50		27.60	34
0500	Over 5,000 S.F., 6" x 6"		145	.276		25.50	14.10		39.60	49
0550	8" x 8"		215	.186		23	9.50		32.50	40
0600	12" x 12"		240	.167		27.50	8.55		36.05	43
0610	4" x 8"		240	.167		25.50	8.55		34.05	41
0620	6" x 8"	↓	240	.167	↓	17.55	8.55		26.10	32
0700	For solar reflective blocks, add					100%				
1000	Thinline, plain, 3-1/8" thick, under 1,000 S.F., 6" x 6"	D-8	115	.348	S.F.	23.50	17.80		41.30	52.50
1050	8" x 8"		160	.250		13.65	12.80		26.45	34
1200	Over 5,000 S.F., 6" x 6"		145	.276		37	14.10		51.10	61.50
1250	8" x 8"		215	.186		20.50	9.50		30	37
1400	For cleaning block after installation (both sides), add	↓	1000	.040	↓	.21	2.05		2.26	3.30
4000	Accessories									
4100	Anchors, 20 ga. galv., 1-3/4" wide x 24" long				Ea.	5.30			5.30	5.80
4200	Emulsion asphalt				Gal.	66.50			66.50	73
4300	Expansion joint, fiberglass				L.F.	.71			.71	.78
4400	Steel mesh, double galvanized				"	.74			.74	.81

04 24 Adobe Unit Masonry

04 24 16 – Manufactured Adobe Unit Masonry

04 24 16.06 Adobe Brick

0010	**ADOBE BRICK**, Semi-stabilized, with cement mortar									
0060	Brick, 10" x 4" x 14", 2.6/S.F. G	D-8	560	.071	S.F.	6.55	3.65		10.20	12.70
0080	12" x 4" x 16", 2.3/S.F. G		580	.069		7.80	3.53		11.33	13.85
0100	10" x 4" x 16", 2.3/S.F. G		590	.068		7.10	3.47		10.57	13
0120	8" x 4" x 16", 2.3/S.F. G		560	.071		5.50	3.65		9.15	11.55
0140	4" x 4" x 16", 2.3/S.F. G		540	.074		4.21	3.79		8	10.35
0160	6" x 4" x 16", 2.3/S.F. G		540	.074		3.93	3.79		7.72	10.05
0180	4" x 4" x 12", 3.0/S.F. G		520	.077		5.45	3.93		9.38	11.90
0200	8" x 4" x 12", 3.0/S.F. G	↓	520	.077	↓	4.41	3.93		8.34	10.75

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04 25 Unit Masonry Panels

04 25 20 – Pre-Fabricated Masonry Panels

04 25 20.10 Brick and Epoxy Mortar Panels	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **BRICK AND EPOXY MORTAR PANELS**									
0020 Prefabricated brick & epoxy mortar, 4" thick, minimum	C-11	775	.093	S.F.	8.45	5.70	3.08	17.23	21.50
0100 Maximum	"	500	.144		9.95	8.85	4.77	23.57	29.50
0200 For 2" concrete back-up, add					50%				
0300 For 1" urethane & 3" concrete back-up, add					70%				

04 27 Multiple-Wythe Unit Masonry

04 27 10 – Multiple-Wythe Masonry

04 27 10.20 Cavity Walls

0010 **CAVITY WALLS**, brick and CMU, includes joint reinforcing and ties									
0200 4" face brick, 4" block	D-8	165	.242	S.F.	7	12.40		19.40	26.50
0400 6" block		145	.276		9.05	14.10		23.15	31
0600 8" block		125	.320		7.45	16.35		23.80	32.50

04 27 10.30 Brick Walls

0010 **BRICK WALLS**, including mortar, excludes scaffolding R042110-20									
0020 Estimating by number of brick									
0140 Face brick, 4" thick wall, 6.75 brick/S.F.	D-8	1.45	27.586	M	745	1,400		2,145	2,950
0150 Common brick, 4" thick wall, 6.75 brick/S.F.		1.60	25		1,100	1,275		2,375	3,125
0204 8" thick, 13.50 brick/S.F.		1.80	22.222		1,100	1,125		2,225	2,925
0250 12" thick, 20.25 brick/S.F.		1.90	21.053		1,125	1,075		2,200	2,850
0304 16" thick, 27.00 brick/S.F.		2	20		1,125	1,025		2,150	2,750
0500 Reinforced, face brick, 4" thick wall, 6.75 brick/S.F.		1.40	28.571		765	1,450		2,215	3,050
0520 Common brick, 4" thick wall, 6.75 brick/S.F.		1.55	25.806		1,125	1,325		2,450	3,200
0550 8" thick, 13.50 brick/S.F.		1.75	22.857		1,125	1,175		2,300	3,000
0600 12" thick, 20.25 brick/S.F.		1.85	21.622		1,150	1,100		2,250	2,900
0650 16" thick, 27.00 brick/S.F.		1.95	20.513		1,150	1,050		2,200	2,825
0790 Alternate method of figuring by square foot									
0800 Face brick, 4" thick wall, 6.75 brick/S.F.	D-8	215	.186	S.F.	5	9.50		14.50	19.80
0850 Common brick, 4" thick wall, 6.75 brick/S.F.		240	.167		7.35	8.55		15.90	21
0900 8" thick, 13.50 brick/S.F.		135	.296		15	15.15		30.15	39.50
1000 12" thick, 20.25 brick/S.F.		95	.421		22.50	21.50		44	57.50
1050 16" thick, 27.00 brick/S.F.		75	.533		30.50	27.50		58	74.50
1200 Reinforced, face brick, 4" thick wall, 6.75 brick/S.F.		210	.190		5.20	9.75		14.95	20.50
1220 Common brick, 4" thick wall, 6.75 brick/S.F.		235	.170		7.50	8.70		16.20	21.50
1250 8" thick, 13.50 brick/S.F.		130	.308		15.30	15.75		31.05	40.50
1260 8" thick, 2.25 brick/S.F.		130	.308		1.85	15.75		17.60	25.50
1300 12" thick, 20.25 brick/S.F.		90	.444		23	22.50		45.50	59.50
1350 16" thick, 27.00 brick/S.F.		70	.571		31	29		60	78

04 27 10.40 Steps

0010 **STEPS**									
0012 Entry steps, select common brick	D-1	.30	53.333	M	1,025	2,675		3,700	5,150

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04 41 Dry-Placed Stone

04 41 10 – Dry Placed Stone

04 41 10.10 Rough Stone Wall		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0011 **ROUGH STONE WALL**, Dry										
0012 Dry laid (no mortar), under 18" thick	G	D-1	60	.267	C.F.	14.15	13.35		27.50	35.50
0100 Random fieldstone, under 18" thick	G	D-12	60	.533		14.15	27		41.15	56
0150 Over 18" thick	G	"	63	.508		17	25.50		42.50	57
0500 Field stone veneer	G	D-8	120	.333	S.F.	13.10	17.05		30.15	40
0510 Valley stone veneer	G		120	.333		13.10	17.05		30.15	40
0520 River stone veneer	G		120	.333		13.10	17.05		30.15	40
0600 Rubble stone walls, in mortar bed, up to 18" thick	G	D-11	75	.320	C.F.	17.15	16.80		33.95	44

04 43 Stone Masonry

04 43 10 – Masonry with Natural and Processed Stone

04 43 10.05 Ashlar Veneer										
0011 **ASHLAR VENEER** +/- 4" thk, random or random rectangular										
0150 Sawn face, split joints, low priced stone		D-8	140	.286	S.F.	12.50	14.60		27.10	36
0200 Medium priced stone			130	.308		15	15.75		30.75	40
0300 High priced stone			120	.333		18.10	17.05		35.15	45.50
0600 Seam face, split joints, medium price stone			125	.320		17.85	16.35		34.20	44
0700 High price stone			120	.333		17.30	17.05		34.35	44.50
1000 Split or rock face, split joints, medium price stone			125	.320		10.10	16.35		26.45	35.50
1100 High price stone			120	.333		17.65	17.05		34.70	45
04 43 10.10 Bluestone										
0010 **BLUESTONE**, cut to size										
0500 Sills, natural cleft, 10" wide to 6' long, 1-1/2" thick		D-11	70	.343	L.F.	13	18		31	41.50
0550 2" thick		"	63	.381		14.25	20		34.25	45.50
1000 Stair treads, natural cleft, 12" wide, 6' long, 1-1/2" thick		D-10	115	.278		15.05	15.35	4.97	35.37	45
1050 2" thick			105	.305		16.40	16.85	5.45	38.70	49
1100 Smooth finish, 1-1/2" thick			115	.278		14.10	15.35	4.97	34.42	44
1150 2" thick			105	.305		14.90	16.85	5.45	37.20	47.50
1300 Thermal finish, 1-1/2" thick			115	.278		14.50	15.35	4.97	34.82	44.50
1350 2" thick			105	.305		13.80	16.85	5.45	36.10	46
04 43 10.45 Granite										
0010 **GRANITE**, cut to size										
0050 Veneer, polished face, 3/4" to 1-1/2" thick										
0150 Low price, gray, light gray, etc.		D-10	130	.246	S.F.	24	13.60	4.40	42	52
0180 Medium price, pink, brown, etc.			130	.246		27.50	13.60	4.40	45.50	56
0220 High price, red, black, etc.			130	.246		41.50	13.60	4.40	59.50	71
0300 1-1/2" to 2-1/2" thick, veneer										
0350 Low price, gray, light gray, etc.		D-10	130	.246	S.F.	28	13.60	4.40	46	56.50
0500 Medium price, pink, brown, etc.			130	.246		32.50	13.60	4.40	50.50	61.50
0550 High price, red, black, etc.			130	.246		51	13.60	4.40	69	81.50
0700 2-1/2" to 4" thick, veneer										
0750 Low price, gray, light gray, etc.		D-10	110	.291	S.F.	37.50	16.05	5.20	58.75	71
0850 Medium price, pink, brown, etc.			110	.291		43	16.05	5.20	64.25	77
0950 High price, red, black, etc.			110	.291		56.50	16.05	5.20	77.75	91.50
1000 For bush hammered finish, deduct						5%				
1050 Coarse rubbed finish, deduct						10%				
1100 Honed finish, deduct						5%				
1150 Thermal finish, deduct						18%				
2450 For radius under 5', add					L.F.	100%				
2500 Steps, copings, etc., finished on more than one surface										

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04 43 10 – Masonry with Natural and Processed Stone

		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
04 43 10.45	**Granite**									
2550	Low price, gray, light gray, etc.	D-10	50	.640	C.F.	89	35.50	11.45	135.95	163
2575	Medium price, pink, brown, etc.		50	.640		115	35.50	11.45	161.95	193
2600	High price, red, black, etc.		50	.640		142	35.50	11.45	188.95	222
2800	Pavers, 4" x 4" x 4" blocks, split face and joints									
2850	Low price, gray, light gray, etc.	D-11	80	.300	S.F.	11.70	15.75		27.45	36.50
2875	Medium price, pink, brown, etc.		80	.300		18.80	15.75		34.55	44
2900	High price, red, black, etc.		80	.300		26	15.75		41.75	52
4000	Soffits, 2" thick, low price, gray, light gray	D-13	35	1.371		36.50	73.50	16.35	126.35	168
4050	Medium price, pink, brown, etc.		35	1.371		59	73.50	16.35	148.85	193
4100	High price, red, black, etc.		35	1.371		81	73.50	16.35	170.85	217
4200	Low price, gray, light gray, etc.		35	1.371		61.50	73.50	16.35	151.35	195
4250	Medium price, pink, brown, etc.		35	1.371		83.50	73.50	16.35	173.35	220
4300	High price, red, black, etc.		35	1.371		106	73.50	16.35	195.85	244
5000	Reclaimed or antique									
5010	Treads, up to 12" wide	D-10	100	.320	L.F.	23	17.65	5.70	46.35	58.50
5020	Up to 18" wide		100	.320		44	17.65	5.70	67.35	81.50
5030	Capstone, size varies		50	.640		25.50	35.50	11.45	72.45	93.50
5040	Posts		30	1.067	V.L.F.	30.50	59	19.05	108.55	143
04 43 10.50	**Lightweight Natural Stone**									
0011	**LIGHTWEIGHT NATURAL STONE** Lava type									
0100	Veneer, rubble face, sawed back, irregular shapes G	D-10	130	.246	S.F.	8.80	13.60	4.40	26.80	35
0200	Sawed face and back, irregular shapes G		130	.246	"	8.80	13.60	4.40	26.80	35
1000	Reclaimed or antique, barn or foundation stone		1	32	Ton	174	1,775	570	2,519	3,475
04 43 10.55	**Limestone**									
0010	**LIMESTONE**, cut to size									
0020	Veneer facing panels									
0500	Texture finish, light stick, 4-1/2" thick, 5' x 12'	D-4	300	.107	S.F.	25.50	5.40	.46	31.36	36.50
0750	5" thick, 5' x 14' panels	D-10	275	.116		27	6.45	2.08	35.53	41.50
1000	Sugarcube finish, 2" thick, 3' x 5' panels		275	.116		30	6.45	2.08	38.53	45
1050	3" thick, 4' x 9' panels		275	.116		31	6.45	2.08	39.53	46
1200	4" thick, 5' x 11' panels		275	.116		33.50	6.45	2.08	42.03	49
1400	Sugarcube, textured finish, 4-1/2" thick, 5' x 12'		275	.116		37	6.45	2.08	45.53	52.50
1450	5" thick, 5' x 14' panels		275	.116		37.50	6.45	2.08	46.03	53.50
2000	Coping, sugarcube finish, top & 2 sides		30	1.067	C.F.	64.50	59	19.05	142.55	180
2100	Sills, lintels, jambs, trim, stops, sugarcube finish, simple		20	1.600		64.50	88.50	28.50	181.50	234
2150	Detailed		20	1.600		64.50	88.50	28.50	181.50	234
2300	Steps, extra hard, 14" wide, 6" rise		50	.640	L.F.	28	35.50	11.45	74.95	96
3000	Quoins, plain finish, 6" x 12" x 12"	D-12	25	1.280	Ea.	53	65		118	156
3050	6" x 16" x 24"	"	25	1.280	"	70.50	65		135.50	175
04 43 10.60	**Marble**									
0011	**MARBLE**, ashlar, split face, +/- 4" thick, random									
0040	Lengths 1' to 4' & heights 2" to 7-1/2", average	D-8	175	.229	S.F.	16.25	11.70		27.95	35.50
0100	Base, polished, 3/4" or 7/8" thick, polished, 6" high	D-10	65	.492	L.F.	10.85	27	8.80	46.65	62
0300	Carvings or bas-relief, from templates, simple design		80	.400	S.F.	151	22	7.15	180.15	207
0350	Intricate design		80	.400	"	335	22	7.15	364.15	410
0600	Columns, cornices, mouldings, etc.									
0650	Hand or special machine cut, simple design	D-10	35	.914	C.F.	68.50	50.50	16.35	135.35	169
0700	Intricate design	"	35	.914	"	315	50.50	16.35	381.85	445
1000	Facing, polished finish, cut to size, 3/4" to 7/8" thick									
1050	Carrara or equal	D-10	130	.246	S.F.	34	13.60	4.40	52	63
1100	Arabescato or equal		130	.246		35.50	13.60	4.40	53.50	65
1300	1-1/4" thick, Botticino Classico or equal		125	.256		22	14.15	4.57	40.72	50

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04 43 10 – Masonry with Natural and Processed Stone

	04 43 10.60 Marble	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1350	Statuarietto or equal	D-10	125	.256	S.F.	36.50	14.15	4.57	55.22	66
1500	2" thick, Crema Marfil or equal		120	.267		46.50	14.75	4.76	66.01	78.50
1550	Cafe Pinta or equal		120	.267		64	14.75	4.76	83.51	98
1700	Rubbed finish, cut to size, 4" thick									
1740	Average	D-10	100	.320	S.F.	40	17.65	5.70	63.35	77
1780	Maximum	"	100	.320	"	75	17.65	5.70	98.35	115
2200	Window sills, 6" x 3/4" thick	D-1	85	.188	L.F.	12.65	9.45		22.10	28
2500	Flooring, polished tiles, 12" x 12" x 3/8" thick									
2510	Thin set, Giallo Solare or equal	D-11	90	.267	S.F.	14.25	14		28.25	36.50
2600	Sky Blue or equal		90	.267		10.95	14		24.95	33
2700	Mortar bed, Giallo Solare or equal		65	.369		14.35	19.40		33.75	45
2740	Sky Blue or equal		65	.369		10.95	19.40		30.35	41
2780	Travertine, 3/8" thick, Sierra or equal	D-10	130	.246		11.10	13.60	4.40	29.10	37.50
2790	Silver or equal	"	130	.246		29.50	13.60	4.40	47.50	58
2800	Patio tile, non-slip, 1/2" thick, flame finish	D-11	75	.320		12.95	16.80		29.75	39.50
2900	Shower or toilet partitions, 7/8" thick partitions									
3050	3/4" or 1-1/4" thick stiles, polished 2 sides, average	D-11	75	.320	S.F.	46.50	16.80		63.30	76.50
3201	Soffits, add to above prices				"	20%	100%			
3210	Stairs, risers, 7/8" thick x 6" high	D-10	115	.278	L.F.	14.40	15.35	4.97	34.72	44.50
3360	Treads, 12" wide x 1-1/4" thick	"	115	.278	"	44.50	15.35	4.97	64.82	77.50
3500	Thresholds, 3' long, 7/8" thick, 4" to 5" wide, plain	D-12	24	1.333	Ea.	33.50	67.50		101	138
3550	Beveled	D-12	24	1.333	Ea.	73.50	67.50		141	182
3700	Window stools, polished, 7/8" thick, 5" wide	"	85	.376	L.F.	18.95	19.05		38	49.50
	04 43 10.75 Sandstone or Brownstone									
0011	**SANDSTONE OR BROWNSTONE**									
0100	Sawed face veneer, 2-1/2" thick, to 2' x 4' panels	D-10	130	.246	S.F.	21	13.60	4.40	39	48.50
0150	4" thick, to 3'-6" x 8' panels		100	.320		21	17.65	5.70	44.35	56
0300	Split face, random sizes		100	.320		14.50	17.65	5.70	37.85	49
0350	Cut stone trim (limestone)									
0360	Ribbon stone, 4" thick, 5' pieces	D-8	120	.333	Ea.	154	17.05		171.05	195
0370	Cove stone, 4" thick, 5' pieces		105	.381		154	19.50		173.50	200
0380	Cornice stone, 10" to 12" wide		90	.444		191	22.50		213.50	244
0390	Band stone, 4" thick, 5' pieces		145	.276		103	14.10		117.10	135
0410	Window and door trim, 3" to 4" wide		160	.250		87.50	12.80		100.30	116
0420	Key stone, 18" long		60	.667		88	34		122	148
	04 43 10.80 Slate									
0010	**SLATE**									
0040	Pennsylvania - blue gray to black									
0050	Vermont - unfading green, mottled green & purple, gray & purple									
0100	Virginia - blue black									
0200	Exterior paving, natural cleft, 1" thick									
0250	6" x 6" Pennsylvania	D-12	100	.320	S.F.	6.80	16.20		23	32
0300	Vermont		100	.320		11	16.20		27.20	36.50
0350	Virginia		100	.320		14.20	16.20		30.40	40
0500	24" x 24", Pennsylvania		120	.267		13.05	13.50		26.55	35
0550	Vermont		120	.267		27.50	13.50		41	50.50
0600	Virginia		120	.267		20.50	13.50		34	43
0700	18" x 30" Pennsylvania		120	.267		14.85	13.50		28.35	37
0750	Vermont		120	.267		27.50	13.50		41	50.50
0800	Virginia		120	.267		18.35	13.50		31.85	40.50
1000	Interior flooring, natural cleft, 1/2" thick									
1100	6" x 6" Pennsylvania	D-12	100	.320	S.F.	4.02	16.20		20.22	29

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04 43 10 – Masonry with Natural and Processed Stone

	04 43 10.80 Slate	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1150	Vermont	D-12	100	.320	S.F.	9.70	16.20		25.90	35
1200	Virginia		100	.320		11.20	16.20		27.40	37
1300	24" x 24" Pennsylvania		120	.267		7.80	13.50		21.30	29
1350	Vermont		120	.267		22	13.50		35.50	44.50
1400	Virginia		120	.267		14.80	13.50		28.30	37
1500	18" x 24" Pennsylvania		120	.267		7.80	13.50		21.30	29
1550	Vermont		120	.267		16.30	13.50		29.80	38.50
1600	Virginia		120	.267		15.05	13.50		28.55	37
2000	Facing panels, 1-1/4" thick, to 4' x 4' panels									
2100	Natural cleft finish, Pennsylvania	D-10	180	.178	S.F.	34	9.80	3.18	46.98	55.50
2110	Vermont		180	.178		27.50	9.80	3.18	40.48	48
2120	Virginia		180	.178		33.50	9.80	3.18	46.48	55
2150	Sand rubbed finish, surface, add					10.25			10.25	11.25
2200	Honed finish, add					7.40			7.40	8.15
2500	Ribbon, natural cleft finish, 1" thick, to 9 S.F.	D-10	80	.400		13.20	22	7.15	42.35	55.50
2550	Sand rubbed finish		80	.400		17.85	22	7.15	47	60.50
2600	Honed finish		80	.400		16.60	22	7.15	45.75	59
2700	1-1/2" thick		78	.410		17.15	22.50	7.35	47	61
2750	Sand rubbed finish		78	.410		22.50	22.50	7.35	52.35	67
2800	Honed finish		78	.410		21.50	22.50	7.35	51.35	65.50
2850	2" thick		76	.421		20.50	23.50	7.50	51.50	66
2900	Sand rubbed finish		76	.421		28.50	23.50	7.50	59.50	75
2950	Honed finish		76	.421		26	23.50	7.50	57	72.50
3100	Stair landings, 1" thick, black, clear	D-1	65	.246		20	12.35		32.35	40.50
3200	Ribbon	"	65	.246		22	12.35		34.35	43
3500	Stair treads, sand finish, 1" thick x 12" wide									
3550	Under 3 L.F.	D-10	85	.376	L.F.	22	21	6.70	49.70	63
3600	3 L.F. to 6 L.F.	"	120	.267	"	24	14.75	4.76	43.51	54
3700	Ribbon, sand finish, 1" thick x 12" wide									
3750	To 6 L.F.	D-10	120	.267	L.F.	20	14.75	4.76	39.51	49.50
4000	Stools or sills, sand finish, 1" thick, 6" wide	D-12	160	.200		11.55	10.15		21.70	28
4100	Honed finish		160	.200		11.05	10.15		21.20	27.50
4200	10" wide		90	.356		17.85	18		35.85	46.50
4250	Honed finish		90	.356		16.60	18		34.60	45.50
4400	2" thick, 6" wide		140	.229		18.60	11.55		30.15	38
4450	Honed finish		140	.229		17.75	11.55		29.30	37
4600	10" wide		90	.356		29	18		47	59
4650	Honed finish		90	.356		27.50	18		45.50	57.50
4800	For lengths over 3', add					25%				

	04 43 10.85 Window Sill									
0010	**WINDOW SILL**									
0020	Bluestone, thermal top, 10" wide, 1-1/2" thick	D-1	85	.188	S.F.	11.70	9.45		21.15	27
0050	2" thick		75	.213	"	18.10	10.70		28.80	36
0100	Cut stone, 5" x 8" plain		48	.333	L.F.	12.35	16.70		29.05	38.50
0200	Face brick on edge, brick, 8" wide		80	.200		3.57	10.05		13.62	19
0400	Marble, 9" wide, 1" thick		85	.188		8.80	9.45		18.25	24
0900	Slate, colored, unfading, honed, 12" wide, 1" thick	D-1	85	.188	L.F.	9	9.45		18.45	24
0950	2" thick	"	70	.229	"	10.90	11.45		22.35	29

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04 51 Flue Liner Masonry

04 51 10 – Clay Flue Lining

04 51 10.10 Flue Lining	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **FLUE LINING**, including mortar									
0020 Clay, 8" x 8"	D-1	125	.128	V.L.F.	7.55	6.40		13.95	17.95
0100 8" x 12"		103	.155		10.05	7.80		17.85	23
0200 12" x 12"		93	.172		14.55	8.60		23.15	29
0300 12" x 18"		84	.190		31.50	9.55		41.05	49.50
0400 18" x 18"		75	.213		35.50	10.70		46.20	55
0500 20" x 20"		66	.242		56	12.15		68.15	80
0600 24" x 24"		56	.286		82.50	14.30		96.80	112
1000 Round, 18" diameter		66	.242		52.50	12.15		64.65	76
1100 24" diameter		47	.340		108	17.05		125.05	145

04 54 Refractory Brick Masonry

04 54 10 – Refractory Brick Work

04 54 10.10 Fire Brick									
0010 **FIRE BRICK**									
0012 Low duty, 2000°F, 9" x 2-1/2" x 4-1/2"	D-1	.60	26.667	M	2,525	1,325		3,850	4,775
0050 High duty, 3000°F	"	.60	26.667	"	2,975	1,325		4,300	5,275
04 54 10.20 Fire Clay									
0010 **FIRE CLAY**									
0020 Gray, high duty, 100 lb. bag				Bag	28.50			28.50	31.50
0050 100 lb. drum, premixed (400 brick per drum)				Drum	44.50			44.50	49

04 57 Masonry Fireplaces

04 57 10 – Brick or Stone Fireplaces

04 57 10.10 Fireplace									
0010 **FIREPLACE**									
0100 Brick fireplace, not incl. foundations or chimneys									
0110 30" x 29" opening, incl. chamber, plain brickwork	D-1	.40	40	Ea.	605	2,000		2,605	3,675
0200 Fireplace box only (110 brick)	"	2	8	"	156	400		556	770
0300 For elaborate brickwork and details, add					35%	35%			
0400 For hearth, brick & stone, add	D-1	2	8	Ea.	206	400		606	825
0410 For steel, damper, cleanouts, add		4	4		17.40	201		218.40	320
0600 Plain brickwork, incl. metal circulator		.50	32		1,025	1,600		2,625	3,550
0800 Face brick only, standard size, 8" x 2-2/3" x 4"		.30	53.333	M	590	2,675		3,265	4,675

04 71 Manufactured Brick Masonry

04 71 10 – Simulated or Manufactured Brick

04 71 10.10 Simulated Brick									
0010 **SIMULATED BRICK**									
0020 Aluminum, baked on colors	1 Carp	200	.040	S.F.	4.57	2.25		6.82	8.40
0050 Fiberglass panels		200	.040		10	2.25		12.25	14.35
0100 Urethane pieces cemented in mastic		150	.053		8.35	3		11.35	13.65
0150 Vinyl siding panels		200	.040		11.20	2.25		13.45	15.65
0160 Cement base, brick, incl. mastic	D-1	100	.160		9.05	8		17.05	22
0170 Corner		50	.320	V.L.F.	11.15	16.05		27.20	36.50
0180 Stone face, incl. mastic		100	.160	S.F.	10.15	8		18.15	23
0190 Corner		50	.320	V.L.F.	10	16.05		26.05	35

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04 72 Cast Stone Masonry

04 72 10 – Cast Stone Masonry Features

04 72 10.10 Coping	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **COPING**, stock units									
0050 Precast concrete, 10" wide, 4" tapers to 3-1/2", 8" wall	D-1	75	.213	L.F.	7.20	10.70		17.90	24
0100 12" wide, 3-1/2" tapers to 3", 10" wall		70	.229		7.80	11.45		19.25	26
0110 14" wide, 4" tapers to 3-1/2", 12" wall		65	.246		10.50	12.35		22.85	30
0150 16" wide, 4" tapers to 3-1/2", 14" wall		60	.267		11.35	13.35		24.70	32.50
0250 Precast concrete corners		40	.400	Ea.	14.75	20		34.75	46
0300 Limestone for 12" wall, 4" thick		90	.178	L.F.	16.30	8.90		25.20	31.50
0350 6" thick		80	.200		23	10.05		33.05	40
0500 Marble, to 4" thick, no wash, 9" wide		90	.178		10.05	8.90		18.95	24.50
0550 12" wide		80	.200		17.85	10.05		27.90	34.50
0700 Terra cotta, 9" wide		90	.178		7.85	8.90		16.75	22
0750 12" wide		80	.200		7.90	10.05		17.95	24
0800 Aluminum, for 12" wall		80	.200		2.31	10.05		12.36	17.60

04 72 20 – Cultured Stone Veneer

04 72 20.10 Cultured Stone Veneer Components

0010 **CULTURED STONE VENEER COMPONENTS**									
0110 On wood frame and sheathing substrate, random sized cobbles, corner stones	D-8	70	.571	V.L.F.	13.75	29		42.75	59
0120 Field stones		140	.286	S.F.	9.15	14.60		23.75	32
0130 Random sized flats, corner stones		70	.571	V.L.F.	8.95	29		37.95	54
0140 Field stones		140	.286	S.F.	9.50	14.60		24.10	32.50
0150 Horizontal lined ledgestones, corner stones		75	.533	V.L.F.	13.75	27.50		41.25	56
0160 Field stones		150	.267	S.F.	10.35	13.65		24	32
0170 Random shaped flats, corner stones		65	.615	V.L.F.	13.75	31.50		45.25	62.50
0180 Field stones		150	.267	S.F.	10.35	13.65		24	32
0190 Random shaped/textured face, corner stones		65	.615	V.L.F.	13.75	31.50		45.25	62.50
0200 Field stones		130	.308	S.F.	10.35	15.75		26.10	35
0210 Random shaped river rock, corner stones		65	.615	V.L.F.	13.75	31.50		45.25	62.50
0220 Field stones	D-8	130	.308	S.F.	10.35	15.75		26.10	35
0240 On concrete or CMU substrate, random sized cobbles, corner stones		70	.571	V.L.F.	12.65	29		41.65	58
0250 Field stones		140	.286	S.F.	8.55	14.60		23.15	31.50
0260 Random sized flats, corner stones		70	.571	V.L.F.	7.85	29		36.85	52.50
0270 Field stones		140	.286	S.F.	8.95	14.60		23.55	32
0280 Horizontal lined ledgestones, corner stones		75	.533	V.L.F.	12.65	27.50		40.15	55
0290 Field stones		150	.267	S.F.	9.80	13.65		23.45	31.50
0300 Random shaped flats, corner stones		70	.571	V.L.F.	12.65	29		41.65	58
0310 Field stones		140	.286	S.F.	9.80	14.60		24.40	33
0320 Random shaped/textured face, corner stones		65	.615	V.L.F.	12.65	31.50		44.15	61.50
0330 Field stones		130	.308	S.F.	9.80	15.75		25.55	34.50
0340 Random shaped river rock, corner stones		65	.615	V.L.F.	12.65	31.50		44.15	61.50
0350 Field stones		130	.308	S.F.	9.80	15.75		25.55	34.50
0360 Cultured stone veneer, #15 felt weather resistant barrier	1 Clab	3700	.002	Sq.	4.43	.10		4.53	5
0370 Expanded metal lath, diamond, 2.5 lb./S.Y., galvanized	1 Lath	85	.094	S.Y.	5.05	5.25		10.30	13.25
0390 Water table or window sill, 18" long	1 Bric	80	.100	Ea.	15.30	5.55		20.85	25

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04 73 20 – Simulated or Manufactured Stone

04 73 20.10 Simulated Stone	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **SIMULATED STONE**									
0100 Insulated fiberglass panels, 5/8" ply backer	L-4	200	.120	S.F.	10.10	6.45		16.55	21

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Estimating Tips

05 05 00 Common Work Results for Metals

- Nuts, bolts, washers, connection angles, and plates can add a significant amount to both the tonnage of a structural steel job and the estimated cost. As a rule of thumb, add 10% to the total weight to account for these accessories.
- Type 2 steel construction, commonly referred to as "simple construction," consists generally of field-bolted connections with lateral bracing supplied by other elements of the building, such as masonry walls or x-bracing. The estimator should be aware, however, that shop connections may be accomplished by welding or bolting. The method may be particular to the fabrication shop and may have an impact on the estimated cost.

05 10 00 Structural Steel

- Steel items can be obtained from two sources: a fabrication shop or a metals service center. Fabrication shops can fabricate items under more controlled conditions than crews in the field can. They are also more efficient and can produce items more economically. Metal service centers serve as a source of long mill shapes to both fabrication shops and contractors.
- Most line items in this structural steel subdivision, and most items in 05 50 00 Metal Fabrications, are indicated as being shop fabricated. The bare material cost for these shop fabricated items is the "Invoice Cost" from the shop and includes the mill base price of steel plus mill extras, transportation to the shop, shop drawings and detailing where warranted, shop fabrication and handling, sandblasting and a shop coat of primer paint, all necessary structural bolts, and delivery to the job site. The bare labor cost and bare equipment cost for these shop fabricated items are for field installation or erection.
- Line items in Subdivision 05 12 23.40 Lightweight Framing, and other items scattered in Division 5, are indicated as being field fabricated. The bare material cost for these field fabricated items is the "Invoice Cost" from the metals service center and includes the mill base price of steel plus mill extras, transportation to the metals service center, material handling, and delivery of long lengths of mill shapes to the job site. Material costs for structural bolts and welding rods should be added to the estimate. The bare labor cost and bare equipment cost for these items are for both field fabrication and field installation or erection, and include time for cutting, welding, and drilling in the fabricated metal items. Drilling into concrete and fasteners to fasten field fabricated items to other work is not included and should be added to the estimate.

05 20 00 Steel Joist Framing

- In any given project the total weight of open web steel joists is determined by the loads to be supported and the design. However, economies can be realized in minimizing the amount of labor used to place the joists. This is done by maximizing the joist spacing and therefore minimizing the number of joists required to be installed on the job. Certain spacings and locations may be required by the design, but in other cases maximizing the spacing and keeping it as uniform as possible will keep the costs down.

05 30 00 Steel Decking

- The takeoff and estimating of a metal deck involve more than the area of the floor or roof and the type of deck specified or shown on the drawings. Many different sizes and types of openings may exist. Small openings for individual pipes or conduits may be drilled after the floor/roof is installed, but larger openings may require special deck lengths as well as reinforcing or structural support. The estimator should determine who will be supplying this reinforcing. Additionally, some deck terminations are part of the deck package, such as screed angles and pour stops, and others will be part of the steel contract, such as angles attached to structural members and cast-in-place angles and plates. The estimator must ensure that all pieces are accounted for in the complete estimate.

05 50 00 Metal Fabrications

- The most economical steel stairs are those that use common materials, standard details, and most importantly, a uniform and relatively simple method of field assembly. Commonly available A36/A992 channels and plates are very good choices for the main stringers of the stairs, as are angles and tees for the carrier members. Risers and treads are usually made by specialty shops, and it is most economical to use a typical detail in as many places as possible. The stairs should be pre-assembled and shipped directly to the site. The field connections should be simple and straightforward enough to be accomplished efficiently, and with minimum equipment and labor.

Reference Numbers

Reference numbers are shown at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear. ■

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05 01 Maintenance of Metals

05 01 10 – Maintenance of Structural Metal Framing

05 01 10.51 Cleaning of Structural Metal Framing	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **CLEANING OF STRUCTURAL METAL FRAMING**									
6125 Steel surface treatments, PDCA guidelines									
6170 Wire brush, hand (SSPC-SP2)	1 Psst	400	.020	S.F.	.03	.98		1.01	1.60
6180 Power tool (SSPC-SP3)	"	700	.011		.08	.56		.64	.98
6215 Pressure washing, up to 5,000 psi, 5,000-15,000 S.F./day	1 Pord	10000	.001			.04		.04	.06
6220 Steam cleaning, 600 psi @ 300 °F, 1,250-2,500 S.F./day		2000	.004			.19		.19	.28
6225 Water blasting, up to 25,000 psi, 1,750-3,500 S.F./day	↓	2500	.003			.15		.15	.23
6230 Brush-off blast (SSPC-SP7)	E-11	1750	.018		.19	.92	.18	1.29	1.81
6235 Com'l blast (SSPC-SP6), loose scale, fine pwder rust, 2.0#/S.F. sand		1200	.027		.38	1.34	.26	1.98	2.76
6240 Tight mill scale, little/no rust, 3.0#/S.F. sand		1000	.032		.57	1.60	.31	2.48	3.44
6245 Exist coat blistered/pitted, 4.0#/S.F. sand		875	.037		.76	1.83	.35	2.94	4.04
6250 Exist coat badly pitted/nodules, 6.7#/S.F. sand		825	.039		1.27	1.94	.38	3.59	4.80
6255 Near white blast (SSPC-SP10), loose scale, fine rust, 5.6#/S.F. sand	↓	450	.071	↓	1.06	3.56	.69	5.31	7.45
6260 Tight mill scale, little/no rust, 6.9#/S.F. sand	E-11	325	.098	S.F.	1.31	4.93	.95	7.19	10.10
6265 Exist coat blistered/pitted, 9.0#/S.F. sand		225	.142		1.71	7.15	1.38	10.24	14.40
6270 Exist coat badly pitted/nodules, 11.3#/S.F. sand	↓	150	.213	↓	2.14	10.70	2.07	14.91	21

05 05 Common Work Results for Metals

05 05 05 – Selective Demolition for Metals

05 05 05.10 Selective Demolition, Metals

0010 **SELECTIVE DEMOLITION, METALS** R024119-10									
0015 Excludes shores, bracing, cutting, loading, hauling, dumping									
0020 Remove nuts only up to 3/4" diameter	1 Sswk	480	.017	Ea.		1.03		1.03	1.59
0030 7/8" to 1-1/4" diameter		240	.033			2.06		2.06	3.18
0040 1-3/8" to 2" diameter		160	.050			3.09		3.09	4.76
0060 Unbolt and remove structural bolts up to 3/4" diameter		240	.033			2.06		2.06	3.18
0070 7/8" to 2" diameter		160	.050			3.09		3.09	4.76
0140 Light weight framing members, remove whole or cut up, up to 20 lb.	↓	240	.033			2.06		2.06	3.18
0150 21-40 lb.	2 Sswk	210	.076			4.71		4.71	7.25
0160 41-80 lb.	3 Sswk	180	.133			8.25		8.25	12.70
0170 81-120 lb.	4 Sswk	150	.213			13.20		13.20	20.50
0230 Structural members, remove whole or cut up, up to 500 lb.	E-19	48	.500			30.50	17	47.50	65
0240 1/4-2 tons	E-18	36	1.111			69	22.50	91.50	130
0250 2-5 tons	E-24	30	1.067			65.50	70	135.50	177
0260 5-10 tons	E-20	24	2.667			163	91	254	350
0270 10-15 tons	E-2	18	3.111			191	138	329	445
0340 Fabricated item, remove whole or cut up, up to 20 lb.	1 Sswk	96	.083			5.15		5.15	7.95
0350 21-40 lb.	2 Sswk	84	.190			11.80		11.80	18.15
0360 41-80 lb.	3 Sswk	72	.333			20.50		20.50	32
0370 81-120 lb.	4 Sswk	60	.533			33		33	51
0380 121-500 lb.	E-19	48	.500			30.50	17	47.50	65
0390 501-1000 lb.	"	36	.667	↓		40.50	22.50	63	87
0500 Steel roof decking, uncovered, bare	B-2	5000	.008	S.F.		.37		.37	.55

05 05 13 – Shop-Applied Coatings for Metal

05 05 13.50 Paints and Protective Coatings

0010 **PAINTS AND PROTECTIVE COATINGS**									
5900 Galvanizing structural steel in shop, under 1 ton R050516-30				Ton	695			695	760
5950 1 ton to 20 tons					660			660	725
6000 Over 20 tons					640			640	700

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05 05 19 – Post-Installed Concrete Anchors

05 05 19.10 Chemical Anchors		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **CHEMICAL ANCHORS**										
0020 Includes layout & drilling										
1430 Chemical anchor, w/rod & epoxy cartridge, 3/4" diameter x 9-1/2" long		B-89A	27	.593	Ea.	7.70	31	4.41	43.11	60
1435 1" diameter x 11-3/4" long			24	.667		15.10	35	4.97	55.07	74
1440 1-1/4" diameter x 14" long			21	.762		29.50	40	5.70	75.20	98.50
1445 1-3/4" diameter x 15" long			20	.800		70	42	5.95	117.95	146
1450 18" long			17	.941		84	49	7	140	174
1455 2" diameter x 18" long			16	1		123	52.50	7.45	182.95	222
1460 24" long			15	1.067		162	55.50	7.95	225.45	270

05 05 19.20 Expansion Anchors

0010 **EXPANSION ANCHORS**										
0100 Anchors for concrete, brick or stone, no layout and drilling										
0200 Expansion shields, zinc, 1/4" diameter, 1-5/16" long, single	G	1 Carp	90	.089	Ea.	.35	5		5.35	7.85
0300 1-3/8" long, double	G		85	.094		.67	5.30		5.97	8.65
0400 3/8" diameter, 1-1/2" long, single	G		85	.094		.70	5.30		6	8.65
0500 2" long, double	G		80	.100		1.47	5.65		7.12	10
0600 1/2" diameter, 2-1/16" long, single	G		80	.100		1.22	5.65		6.87	9.75
0700 2-1/2" long, double	G		75	.107		2.51	6		8.51	11.70
0800 5/8" diameter, 2-5/8" long, single	G		75	.107		2.77	6		8.77	12
0900 2-3/4" long, double	G		70	.114		3.54	6.45		9.99	13.50
1000 3/4" diameter, 2-3/4" long, single	G		70	.114		4.39	6.45		10.84	14.45
1100 3-15/16" long, double	G		65	.123		6.45	6.95		13.40	17.35
2100 Hollow wall anchors for gypsum wall board, plaster or tile										
2300 1/8" diameter, short	G	1 Carp	160	.050	Ea.	.27	2.82		3.09	4.49
2400 Long	G		150	.053		.31	3		3.31	4.81
2500 3/16" diameter, short	G		150	.053		.52	3		3.52	5.05
2600 Long	G		140	.057		.60	3.22		3.82	5.45
2700 1/4" diameter, short	G		140	.057		.65	3.22		3.87	5.50
2800 Long	G		130	.062		.79	3.46		4.25	6
3000 Toggle bolts, bright steel, 1/8" diameter, 2" long	G		85	.094		.25	5.30		5.55	8.20
3100 4" long	G		80	.100		.29	5.65		5.94	8.70
3200 3/16" diameter, 3" long	G		80	.100		.33	5.65		5.98	8.75
3300 6" long	G		75	.107		.46	6		6.46	9.45
3400 1/4" diameter, 3" long	G		75	.107		.38	6		6.38	9.35
3500 6" long	G		70	.114		.57	6.45		7.02	10.25
3600 3/8" diameter, 3" long	G		70	.114		1.01	6.45		7.46	10.70
3700 6" long	G		60	.133		1.56	7.50		9.06	12.85
3800 1/2" diameter, 4" long	G		60	.133		2.26	7.50		9.76	13.65
3900 6" long	G		50	.160		2.57	9		11.57	16.25
4000 Nailing anchors										
4100 Nylon nailing anchor, 1/4" diameter, 1" long		1 Carp	3.20	2.500	C	17.70	141		158.70	230
4200 1-1/2" long			2.80	2.857		20	161		181	261
4300 2" long			2.40	3.333		25	188		213	305
4400 Metal nailing anchor, 1/4" diameter, 1" long	G		3.20	2.500		15.80	141		156.80	227
4500 1-1/2" long	G		2.80	2.857		20	161		181	261
4600 2" long	G		2.40	3.333		24	188		212	305
5000 Screw anchors for concrete, masonry,										
5100 stone & tile, no layout or drilling included										
5700 Lag screw shields, 1/4" diameter, short	G	1 Carp	90	.089	Ea.	.26	5		5.26	7.75
5800 Long	G		85	.094		.34	5.30		5.64	8.25
5900 3/8" diameter, short	G		85	.094		.57	5.30		5.87	8.55
6000 Long	G		80	.100		.69	5.65		6.34	9.15

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05 05 19 – Post-Installed Concrete Anchors

	05 05 19.20 Expansion Anchors		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
6100	1/2" diameter, short	G	1 Carp	80	.100	Ea.	.71	5.65		6.36	9.20
6200	Long	G		75	.107		1.09	6		7.09	10.15
6300	5/8" diameter, short	G		70	.114		1.06	6.45		7.51	10.75
6400	Long	G		65	.123		1.63	6.95		8.58	12.10
6600	Lead, #6 & #8, 3/4" long	G		260	.031		.22	1.73		1.95	2.82
6700	#10 - #14, 1-1/2" long	G		200	.040		.51	2.25		2.76	3.91
6800	#16 & #18, 1-1/2" long	G		160	.050		.69	2.82		3.51	4.95
6900	Plastic, #6 & #8, 3/4" long			260	.031		.05	1.73		1.78	2.64
7000	#8 & #10, 7/8" long			240	.033		.04	1.88		1.92	2.83
7100	#10 & #12, 1" long			220	.036		.07	2.05		2.12	3.13
7200	#14 & #16, 1-1/2" long			160	.050		.04	2.82		2.86	4.23
8000	Wedge anchors, not including layout or drilling										
8050	Carbon steel, 1/4" diameter, 1-3/4" long	G	1 Carp	150	.053	Ea.	.75	3		3.75	5.30
8100	3-1/4" long	G		140	.057		.98	3.22		4.20	5.85
8150	3/8" diameter, 2-1/4" long	G		145	.055		.43	3.11		3.54	5.10
8200	5" long	G		140	.057		.75	3.22		3.97	5.60
8250	1/2" diameter, 2-3/4" long	G		140	.057		1.13	3.22		4.35	6.05
8300	7" long	G		125	.064		1.93	3.60		5.53	7.45
8350	5/8" diameter, 3-1/2" long	G		130	.062		2.11	3.46		5.57	7.45
8400	8-1/2" long	G		115	.070		4.49	3.92		8.41	10.80
8450	3/4" diameter, 4-1/4" long	G		115	.070		3.41	3.92		7.33	9.60
8500	10" long	G		95	.084		7.75	4.74		12.49	15.60
8550	1" diameter, 6" long	G		100	.080		5.60	4.50		10.10	12.85
8575	9" long	G		85	.094		7.25	5.30		12.55	15.90
8600	12" long	G		75	.107		7.85	6		13.85	17.55
8650	1-1/4" diameter, 9" long	G	1 Carp	70	.114	Ea.	33	6.45		39.45	46
8700	12" long	G	"	60	.133	"	42.50	7.50		50	57.50
8750	For type 303 stainless steel, add						350%				
8800	For type 316 stainless steel, add						450%				
8950	Self-drilling concrete screw, hex washer head, 3/16" diam. x 1-3/4" long	G	1 Carp	300	.027	Ea.	.21	1.50		1.71	2.46
8960	2-1/4" long	G		250	.032		.29	1.80		2.09	3
8970	Phillips flat head, 3/16" diam. x 1-3/4" long	G		300	.027		.20	1.50		1.70	2.45
8980	2-1/4" long	G		250	.032		.31	1.80		2.11	3.02

05 05 21 – Fastening Methods for Metal

05 05 21.10 Cutting Steel

0010	**CUTTING STEEL**										
0020	Hand burning, incl. preparation, torch cutting & grinding, no staging										
0050	Steel to 1/4" thick		E-25	400	.020	L.F.	.64	1.28	.03	1.95	2.72
0100	1/2" thick			320	.025		1.04	1.60	.04	2.68	3.65
0150	3/4" thick			260	.031		1.61	1.97	.05	3.63	4.86
0200	1" thick			200	.040		2.22	2.56	.07	4.85	6.45

05 05 21.15 Drilling Steel

0010	**DRILLING STEEL**										
1910	Drilling & layout for steel, up to 1/4" deep, no anchor										
1920	Holes, 1/4" diameter		1 Sswk	112	.071	Ea.	.06	4.42		4.48	6.85
1925	For each additional 1/4" depth, add			336	.024		.06	1.47		1.53	2.34
1930	3/8" diameter			104	.077		.07	4.76		4.83	7.45
1935	For each additional 1/4" depth, add			312	.026		.07	1.59		1.66	2.52
1940	1/2" diameter			96	.083		.08	5.15		5.23	8.05
1945	For each additional 1/4" depth, add			288	.028		.08	1.72		1.80	2.74
1950	5/8" diameter			88	.091		.12	5.60		5.72	8.80
1955	For each additional 1/4" depth, add			264	.030		.12	1.87		1.99	3.02

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05 05 21 – Fastening Methods for Metal

	05 05 21.15 Drilling Steel	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1960	3/4" diameter	1 Sswk	80	.100	Ea.	.16	6.20		6.36	9.70
1965	For each additional 1/4" depth, add		240	.033		.16	2.06		2.22	3.35
1970	7/8" diameter		72	.111		.19	6.85		7.04	10.80
1975	For each additional 1/4" depth, add		216	.037		.19	2.29		2.48	3.73
1980	1" diameter		64	.125		.28	7.75		8.03	12.20
1985	For each additional 1/4" depth, add		192	.042		.28	2.58		2.86	4.27
1990	For drilling up, add						40%			

05 05 21.90 Welding Steel

0010	**WELDING STEEL**, Structural R050521-20									
0020	Field welding, 1/8" E6011, cost per welder, no operating engineer	E-14	8	1	Hr.	6.40	64	18.40	88.80	126
0200	With 1/2 operating engineer	E-13	8	1.500		6.40	92.50	18.40	117.30	169
0300	With 1 operating engineer	E-12	8	2		6.40	121	18.40	145.80	211
0500	With no operating engineer, 2# weld rod per ton	E-14	8	1	Ton	6.40	64	18.40	88.80	126
0600	8# E6011 per ton	"	2	4		25.50	256	73.50	355	505
0800	With one operating engineer per welder, 2# E6011 per ton	E-12	8	2		6.40	121	18.40	145.80	211
0900	8# E6011 per ton	"	2	8		25.50	485	73.50	584	845
1200	Continuous fillet, down welding									
1300	Single pass, 1/8" thick, 0.1#/L.F.	E-14	150	.053	L.F.	.32	3.41	.98	4.71	6.70
1400	3/16" thick, 0.2#/L.F.		75	.107		.64	6.80	1.96	9.40	13.35
1500	1/4" thick, 0.3#/L.F.		50	.160		.96	10.25	2.95	14.16	20
1610	5/16" thick, 0.4#/L.F.		38	.211		1.28	13.45	3.88	18.61	26
1800	3 passes, 3/8" thick, 0.5#/L.F.		30	.267		1.60	17.05	4.91	23.56	33.50
2010	4 passes, 1/2" thick, 0.7#/L.F.		22	.364		2.24	23.50	6.70	32.44	46
2200	5 to 6 passes, 3/4" thick, 1.3#/L.F.		12	.667		4.16	42.50	12.30	58.96	83.50
2400	8 to 11 passes, 1" thick, 2.4#/L.F.		6	1.333		7.65	85.50	24.50	117.65	166
2600	For vertical joint welding, add						20%			
2700	Overhead joint welding, add						300%			
2900	For semi-automatic welding, obstructed joints, deduct						5%			
3000	Exposed joints, deduct						15%			
4000	Cleaning and welding plates, bars, or rods									
4010	to existing beams, columns, or trusses	E-14	12	.667	L.F.	1.60	42.50	12.30	56.40	81

05 05 23 – Metal Fastenings

05 05 23.10 Bolts and Hex Nuts

0010	**BOLTS & HEX NUTS**, Steel, A307									
0100	1/4" diameter, 1/2" long G	1 Sswk	140	.057	Ea.	.08	3.53		3.61	5.55
0200	1" long G		140	.057		.09	3.53		3.62	5.55
0300	2" long G		130	.062		.12	3.81		3.93	6
0400	3" long G		130	.062		.18	3.81		3.99	6.05
0500	4" long G		120	.067		.20	4.12		4.32	6.55
0600	3/8" diameter, 1" long G		130	.062		.16	3.81		3.97	6.05
0700	2" long G		130	.062		.21	3.81		4.02	6.10
0800	3" long G		120	.067		.28	4.12		4.40	6.65
0900	4" long G		120	.067		.36	4.12		4.48	6.75
1000	5" long G		115	.070		.45	4.30		4.75	7.15
1100	1/2" diameter, 1-1/2" long G		120	.067		.43	4.12		4.55	6.80
1200	2" long G		120	.067		.49	4.12		4.61	6.90
1300	4" long G		115	.070		.78	4.30		5.08	7.50
1400	6" long G		110	.073		1.08	4.50		5.58	8.15
1500	8" long G		105	.076		1.42	4.71		6.13	8.80
1600	5/8" diameter, 1-1/2" long G		120	.067		1.01	4.12		5.13	7.45
1700	2" long G	1 Sswk	120	.067	Ea.	1.11	4.12		5.23	7.60
1800	4" long G		115	.070		1.61	4.30		5.91	8.40

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05 05 23 – Metal Fastenings

	05 05 23.10 Bolts and Hex Nuts		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1900	6" long	G	1 Sswk	110	.073	Ea.	2.07	4.50		6.57	9.25
2000	8" long	G		105	.076		3.08	4.71		7.79	10.65
2100	10" long	G		100	.080		3.88	4.95		8.83	11.85
2200	3/4" diameter, 2" long	G		120	.067		1.35	4.12		5.47	7.85
2300	4" long	G		110	.073		1.96	4.50		6.46	9.10
2400	6" long	G		105	.076		2.53	4.71		7.24	10.05
2500	8" long	G		95	.084		3.84	5.20		9.04	12.20
2600	10" long	G		85	.094		5.05	5.80		10.85	14.50
2700	12" long	G		80	.100		5.90	6.20		12.10	16.05
2800	1" diameter, 3" long	G		105	.076		3.51	4.71		8.22	11.10
2900	6" long	G		90	.089		5.35	5.50		10.85	14.35
3000	12" long	G		75	.107		10	6.60		16.60	21
3100	For galvanized, add						75%				
3200	For stainless, add						350%				

05 05 23.25 High Strength Bolts

0010	**HIGH STRENGTH BOLTS** R050523-10										
0020	A325 Type 1, structural steel, bolt-nut-washer set										
0100	1/2" diameter x 1-1/2" long	G	1 Sswk	130	.062	Ea.	1.26	3.81		5.07	7.25
0120	2" long	G		125	.064		1.34	3.96		5.30	7.55
0150	3" long	G		120	.067		1.77	4.12		5.89	8.30
0170	5/8" diameter x 1-1/2" long	G		125	.064		2.20	3.96		6.16	8.50
0180	2" long	G		120	.067		2.30	4.12		6.42	8.90
0190	3" long	G		115	.070		2.65	4.30		6.95	9.55
0200	3/4" diameter x 2" long	G		120	.067		2.81	4.12		6.93	9.45
0220	3" long	G		115	.070		3.17	4.30		7.47	10.15
0250	4" long	G		110	.073		3.65	4.50		8.15	10.95
0300	6" long	G		105	.076		4.44	4.71		9.15	12.15
0350	8" long	G		95	.084		7.80	5.20		13	16.55
0360	7/8" diameter x 2" long	G		115	.070		4.33	4.30		8.63	11.40
0365	3" long	G		110	.073		4.85	4.50		9.35	12.30
0370	4" long	G		105	.076		5.55	4.71		10.26	13.35
0380	6" long	G		100	.080		6.65	4.95		11.60	14.90
0390	8" long	G		90	.089		9.70	5.50		15.20	19.10
0400	1" diameter x 2" long	G		105	.076		5.95	4.71		10.66	13.80
0420	3" long	G		100	.080		6.50	4.95		11.45	14.75
0450	4" long	G		95	.084		7.15	5.20		12.35	15.90
0500	6" long	G		90	.089		9	5.50		14.50	18.35
0550	8" long	G		85	.094		14.35	5.80		20.15	25
0600	1-1/4" diameter x 3" long	G	1 Sswk	85	.094	Ea.	11.75	5.80		17.55	22
0650	4" long	G		80	.100		12.55	6.20		18.75	23.50
0700	6" long	G		75	.107		15.40	6.60		22	27
0750	8" long	G		70	.114		18.85	7.05		25.90	31.50
1020	A490, bolt-nut-washer set										
1170	5/8" diameter x 1-1/2" long	G	1 Sswk	125	.064	Ea.	1.99	3.96		5.95	8.30
1180	2" long	G		120	.067		2.16	4.12		6.28	8.75
1190	3" long	G		115	.070		2.40	4.30		6.70	9.30
1200	3/4" diameter x 2" long	G		120	.067		2.95	4.12		7.07	9.60
1220	3" long	G		115	.070		3.29	4.30		7.59	10.25
1250	4" long	G		110	.073		3.65	4.50		8.15	10.95
1300	6" long	G		105	.076		4.84	4.71		9.55	12.60
1350	8" long	G		95	.084		7.45	5.20		12.65	16.20
1360	7/8" diameter x 2" long	G		115	.070		4.56	4.30		8.86	11.65

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05 05 23 – Metal Fastenings

			Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
05 05 23.25 High Strength Bolts											
1365	3" long	G	1 Sswk	110	.073	Ea.	5.05	4.50		9.55	12.50
1370	4" long	G		105	.076		5.85	4.71		10.56	13.70
1380	6" long	G		100	.080		7.50	4.95		12.45	15.85
1390	8" long	G		90	.089		10.10	5.50		15.60	19.60
1400	1" diameter x 2" long	G		105	.076		6.05	4.71		10.76	13.95
1420	3" long	G		100	.080		6.90	4.95		11.85	15.15
1450	4" long	G		95	.084		7.60	5.20		12.80	16.35
1500	6" long	G		90	.089		9.40	5.50		14.90	18.80
1550	8" long	G		85	.094		13.55	5.80		19.35	24
1600	1-1/4" diameter x 3" long	G		85	.094		11.60	5.80		17.40	22
1650	4" long	G		80	.100		12.80	6.20		19	23.50
1700	6" long	G		75	.107		16.25	6.60		22.85	28
1750	8" long	G		70	.114		20	7.05		27.05	33
05 05 23.30 Lag Screws											
0010	**LAG SCREWS**										
0020	Steel, 1/4" diameter, 2" long	G	1 Carp	200	.040	Ea.	.14	2.25		2.39	3.50
0100	3/8" diameter, 3" long	G		150	.053		.50	3		3.50	5
0200	1/2" diameter, 3" long	G		130	.062		1.22	3.46		4.68	6.50
0300	5/8" diameter, 3" long	G		120	.067		1.80	3.75		5.55	7.60
05 05 23.35 Machine Screws											
0010	**MACHINE SCREWS**										
0020	Steel, round head, #8 x 1" long	G	1 Carp	4.80	1.667	C	4.57	94		98.57	145
0110	#8 x 2" long	G		2.40	3.333		10	188		198	290
0200	#10 x 1" long	G		4	2		5.05	113		118.05	174
0300	#10 x 2" long	G		2	4		11.50	225		236.50	350
05 05 23.50 Powder Actuated Tools and Fasteners											
0010	**POWDER ACTUATED TOOLS & FASTENERS**										
0020	Stud driver, .22 caliber, single shot					Ea.	90			90	99
0100	.27 caliber, semi automatic, strip					Ea.	630			630	690
0300	Powder load, single shot, .22 cal, power level 2, brown					C	8.25			8.25	9.10
0400	Strip, .27 cal, power level 4, red						12.75			12.75	14.05
0600	Drive pin, .300 x 3/4" long	G	1 Carp	4.80	1.667		6.40	94		100.40	147
0700	.300 x 3" long with washer	G	"	4	2		17.95	113		130.95	188
05 05 23.55 Rivets											
0010	**RIVETS**										
0100	Aluminum rivet & mandrel, 1/2" grip length x 1/8" diameter	G	1 Carp	4.80	1.667	C	3.65	94		97.65	144
0200	3/16" diameter	G		4	2		6.05	113		119.05	175
0300	Aluminum rivet, steel mandrel, 1/8" diameter	G		4.80	1.667		2.15	94		96.15	142
0400	3/16" diameter	G		4	2		3.97	113		116.97	172
0500	Copper rivet, steel mandrel, 1/8" diameter	G		4.80	1.667		7.10	94		101.10	148
0800	Stainless rivet & mandrel, 1/8" diameter	G		4.80	1.667		13.70	94		107.70	155
0900	3/16" diameter	G		4	2		24	113		137	195
1000	Stainless rivet, steel mandrel, 1/8" diameter	G		4.80	1.667		5.75	94		99.75	146
1100	3/16" diameter	G		4	2		11.90	113		124.90	181
1200	Steel rivet and mandrel, 1/8" diameter	G		4.80	1.667		3.43	94		97.43	144
1300	3/16" diameter	G		4	2		5.70	113		118.70	174
1400	Hand riveting tool, standard					Ea.	25.50			25.50	28
1500	Deluxe						405			405	445
1600	Power riveting tool, standard						515			515	570
1700	Deluxe						1,500			1,500	1,650

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05 05 23 – Metal Fastenings

	05 05 23.70 Structural Blind Bolts		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**STRUCTURAL BLIND BOLTS**										
0100	1/4" diameter x 1/4" grip	G	1 Sswk	240	.033	Ea.	.88	2.06		2.94	4.1
0150	1/2" grip	G		216	.037		.93	2.29		3.22	4.5
0200	3/8" diameter x 1/2" grip	G		232	.034		1.71	2.13		3.84	5.1
0250	3/4" grip	G		208	.038		1.73	2.38		4.11	5.5
0300	1/2" diameter x 1/2" grip	G		224	.036		3.87	2.21		6.08	7.6
0350	3/4" grip	G		200	.040		3.87	2.47		6.34	8.0
0400	5/8" diameter x 3/4" grip	G		216	.037		6.05	2.29		8.34	10.2
0450	1" grip	G		192	.042		6.05	2.58		8.63	10.6
	05 05 23.80 Vibration and Bearing Pads										
0010	**VIBRATION & BEARING PADS**										
0300	Laminated synthetic rubber impregnated cotton duck, 1/2" thick		2 Sswk	24	.667	S.F.	82	41		123	154
0400	1" thick			20	.800		154	49.50		203.50	245
0600	Neoprene bearing pads, 1/2" thick			24	.667		15.30	41		56.30	80.5
0700	1" thick			20	.800		59.50	49.50		109	141
0900	Fabric reinforced neoprene, 5000 psi, 1/2" thick			24	.667		12.10	41		53.10	77
1000	1" thick		2 Sswk	20	.800	S.F.	24	49.50		73.50	103
1200	Felt surfaced vinyl pads, cork and sisal, 5/8" thick			24	.667		39.50	41		80.50	107
1300	1" thick			20	.800		11.20	49.50		60.70	88.5
1500	Teflon bonded to 10 ga. carbon steel, 1/32" layer			24	.667		58	41		99	128
1600	3/32" layer			24	.667		87	41		128	159
1800	Bonded to 10 ga. stainless steel, 1/32" layer			24	.667		103	41		144	177
1900	3/32" layer			24	.667		125	41		166	201
2100	Circular machine leveling pad & stud					Kip	7.10			7.10	7.8
	05 05 23.85 Weld Shear Connectors										
0010	**WELD SHEAR CONNECTORS**										
0020	3/4" diameter, 3-3/16" long	G	E-10	960	.017	Ea.	1.48	1.05	.55	3.08	3.8
0030	3-3/8" long	G		950	.017		1.55	1.06	.55	3.16	3.9
0200	3-7/8" long	G		945	.017		1.67	1.07	.56	3.30	4.0
0300	4-3/16" long	G		935	.017		1.75	1.08	.56	3.39	4.2
0500	4-7/8" long	G		930	.017		1.95	1.08	.56	3.59	4.4
0600	5-3/16" long	G		920	.017		2.03	1.09	.57	3.69	4.5
0800	5-3/8" long	G		910	.018		2.05	1.11	.58	3.74	4.5
0900	6-3/16" long	G		905	.018		2.24	1.11	.58	3.93	4.8
1000	7-3/16" long	G		895	.018		2.79	1.13	.59	4.51	5.4
1100	8-3/16" long	G		890	.018		3.06	1.13	.59	4.78	5.7
1500	7/8" diameter, 3-11/16" long	G		920	.017		2.08	1.09	.57	3.74	4.6
1600	4-3/16" long	G		910	.018		2.23	1.11	.58	3.92	4.7
1700	5-3/16" long	G		905	.018		2.53	1.11	.58	4.22	5.1
1800	6-3/16" long	G		895	.018		2.83	1.13	.59	4.55	5.5
1900	7-3/16" long	G		890	.018		3.14	1.13	.59	4.86	5.8
2000	8-3/16" long	G		880	.018		3.43	1.14	.60	5.17	6.2
	05 05 23.87 Weld Studs										
0010	**WELD STUDS**										
0020	1/4" diameter, 2-11/16" long	G	E-10	1120	.014	Ea.	.43	.90	.47	1.80	2.3
0100	4-1/8" long	G		1080	.015		.40	.93	.49	1.82	2.4
0200	3/8" diameter, 4-1/8" long	G		1080	.015		.79	.93	.49	2.21	2.8
0300	6-1/8" long	G		1040	.015		1.03	.97	.50	2.50	3.1
0400	1/2" diameter, 2-1/8" long	G		1040	.015		.68	.97	.50	2.15	2.7
0500	3-1/8" long	G		1025	.016		.83	.98	.51	2.32	2.9
0600	4-1/8" long	G		1010	.016		.96	1	.52	2.48	3.1

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05 05 23.87 Weld Studs		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0700 5-5/16" long	G	E-10	990	.016	Ea.	1.19	1.02	.53	2.74	3.46
0800 6-1/8" long	G		975	.016		1.29	1.03	.54	2.86	3.60
0900 8-1/8" long	G		960	.017		1.82	1.05	.55	3.42	4.22
1000 5/8" diameter, 2-11/16" long	G		1000	.016		1.21	1.01	.52	2.74	3.46
1010 4-3/16" long	G		990	.016		1.50	1.02	.53	3.05	3.80
1100 6-9/16" long	G	E-10	975	.016	Ea.	1.95	1.03	.54	3.52	4.33
1200 8-3/16" long	G	"	960	.017	"	2.61	1.05	.55	4.21	5.10
05 05 23.90 Welding Rod										
0010 **WELDING ROD**										
0020 Steel, type 6011, 1/8" diam., less than 500#					Lb.	3.20			3.20	3.52
0100 500# to 2,000#						2.88			2.88	3.17
0200 2,000# to 5,000#						2.71			2.71	2.98
0300 5/32" diam., less than 500#						3			3	3.30
0310 500# to 2,000#						2.70			2.70	2.97
0320 2,000# to 5,000#						2.54			2.54	2.79
0400 3/16" diam., less than 500#						3.06			3.06	3.37
0500 500# to 2,000#						2.76			2.76	3.04
0600 2,000# to 5,000#						2.59			2.59	2.85
0620 Steel, type 6010, 1/8" diam., less than 500#						3.16			3.16	3.48
0630 500# to 2,000#						2.85			2.85	3.14
0640 2,000# to 5,000#						2.68			2.68	2.95
0650 Steel, type 7018 Low Hydrogen, 1/8" diam., less than 500#						3.03			3.03	3.33
0660 500# to 2,000#						2.73			2.73	3
0670 2,000# to 5,000#						2.57			2.57	2.82
0700 Steel, type 7024 Jet Weld, 1/8" diam., less than 500#						3.06			3.06	3.37
0710 500# to 2,000#						2.76			2.76	3.04
0720 2,000# to 5,000#						2.59			2.59	2.85
1550 Aluminum, type 4043 TIG, 1/8" diam., less than 10#						7.25			7.25	7.95
1560 10# to 60#						6.50			6.50	7.15
1570 Over 60#						6.15			6.15	6.75
1600 Aluminum, type 5356 TIG, 1/8" diam., less than 10#						7.65			7.65	8.40
1610 10# to 60#						6.90			6.90	7.55
1620 Over 60#						6.45			6.45	7.10
1900 Cast iron, type 8 Nickel, 1/8" diam., less than 500#						32			32	35
1910 500# to 1,000#						28.50			28.50	31.50
1920 Over 1,000#						27			27	29.50
2000 Stainless steel, type 316/316L, 1/8" diam., less than 500#						11.25			11.25	12.40
2100 500# to 1,000#						10.15			10.15	11.15
2220 Over 1,000#						9.55			9.55	10.50

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05 12 23 – Structural Steel for Buildings

			Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
05 12 23.05 Canopy Framing											
0010	**CANOPY FRAMING**										
0020	6" and 8" members, shop fabricated	G	E-4	3000	.011	Lb.	1.96	.67	.05	2.68	3.2
05 12 23.10 Ceiling Supports											
0010	**CEILING SUPPORTS**										
1000	Entrance door/folding partition supports, shop fabricated	G	E-4	60	.533	L.F.	33	33.50	2.46	68.96	89.5
1100	Linear accelerator door supports	G		14	2.286		149	143	10.55	302.55	395
1200	Lintels or shelf angles, hung, exterior hot dipped galv.	G		267	.120		22.50	7.45	.55	30.50	36.5
1250	Two coats primer paint instead of galv.	G		267	.120		19.35	7.45	.55	27.35	33.5
1400	Monitor support, ceiling hung, expansion bolted	G		4	8	Ea.	520	500	37	1,057	1,375
1450	Hung from pre-set inserts	G		6	5.333		560	335	24.50	919.50	1,150
1600	Motor supports for overhead doors	G		4	8		264	500	37	801	1,100
1700	Partition support for heavy folding partitions, without pocket	G		24	1.333	L.F.	74.50	83	6.15	163.65	217
1750	Supports at pocket only	G		12	2.667		149	166	12.30	327.30	435
2000	Rolling grilles & fire door supports	G		34	.941		64	58.50	4.34	126.84	165
2100	Spider-leg light supports, expansion bolted to ceiling slab	G		8	4	Ea.	213	249	18.45	480.45	640
2150	Hung from pre-set inserts	G		12	2.667	"	229	166	12.30	407.30	520
2400	Toilet partition support	G		36	.889	L.F.	74.50	55.50	4.10	134.10	172
2500	X-ray travel gantry support	G		12	2.667	"	255	166	12.30	433.30	550
05 12 23.15 Columns, Lightweight											
0010	**COLUMNS, LIGHTWEIGHT**										
1000	Lightweight units (lally), 3-1/2" diameter		E-2	780	.072	L.F.	7	4.40	3.18	14.58	17.9
1050	4" diameter		"	900	.062	"	7.05	3.81	2.76	13.62	16.6
5800	Adjustable jack post, 8' maximum height, 2-3/4" diameter	G				Ea.	72.50			72.50	79.5
5850	4" diameter	G				"	116			116	127
05 12 23.17 Columns, Structural											
0010	**COLUMNS, STRUCTURAL** R051223-10										
0015	Made from recycled materials										
0020	Shop fab'd for 100-ton, 1-2 story project, bolted connections										
0800	Steel, concrete filled, extra strong pipe, 3-1/2" diameter		E-2	660	.085	L.F.	54	5.20	3.76	62.96	71.5
0830	4" diameter			780	.072		60	4.40	3.18	67.58	76
0890	5" diameter			1020	.055		71.50	3.36	2.43	77.29	87
0930	6" diameter			1200	.047		95	2.86	2.07	99.93	112
0940	8" diameter			1100	.051		95	3.12	2.25	100.37	112
1100	For galvanizing, add					Lb.	.33			.33	.3
1300	For web ties, angles, etc., add per added lb.		1 Sswk	945	.008		1.64	.52		2.16	2.6
1500	Steel pipe, extra strong, no concrete, 3" to 5" diameter	G	E-2	16000	.004		1.64	.21	.16	2.01	2.3
1600	6" to 12" diameter	G	E-2	14000	.004	Lb.	1.64	.24	.18	2.06	2.3
1700	Steel pipe, extra strong, no concrete, 3" diameter x 12'-0"	G		60	.933	Ea.	201	57	41.50	299.50	355
1750	4" diameter x 12'-0"	G		58	.966		294	59	43	396	460
1800	6" diameter x 12'-0"	G		54	1.037		560	63.50	46	669.50	765
1850	8" diameter x 14'-0"	G		50	1.120		995	68.50	49.50	1,113	1,250
1900	10" diameter x 16'-0"	G		48	1.167		1,425	71.50	51.50	1,548	1,750
1950	12" diameter x 18'-0"	G		45	1.244		1,925	76	55	2,056	2,300
3300	Structural tubing, square, A500GrB, 4" to 6" square, light section	G		11270	.005	Lb.	1.64	.30	.22	2.16	2.5
3600	Heavy section	G		32000	.002	"	1.64	.11	.08	1.83	2.0
4000	Concrete filled, add					L.F.	5.05			5.05	5.5
4500	Structural tubing, square, 4" x 4" x 1/4" x 12'-0"	G	E-2	58	.966	Ea.	270	59	43	372	435
4550	6" x 6" x 1/4" x 12'-0"	G		54	1.037		440	63.50	46	549.50	635
4600	8" x 8" x 3/8" x 14'-0"	G		50	1.120		960	68.50	49.50	1,078	1,200
4650	10" x 10" x 1/2" x 16'-0"	G		48	1.167		1,775	71.50	51.50	1,898	2,125
5100	Structural tubing, rect., 5" to 6" wide, light section	G		8000	.007	Lb.	1.64	.43	.31	2.38	2.79
5200	Heavy section	G		12000	.005		1.64	.29	.21	2.14	2.47

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05 12 23 – Structural Steel for Buildings

			Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
05 12 23.17 Columns, Structural											
5300	7" to 10" wide, light section	G	E-2	15000	.004	Lb.	1.64	.23	.17	2.04	2.33
5400	Heavy section	G		18000	.003		1.64	.19	.14	1.97	2.24
5500	Structural tubing, rect., 5" x 3" x 1/4" x 12'-0"	G		58	.966	Ea.	262	59	43	364	425
5550	6" x 4" x 5/16" x 12'-0"	G		54	1.037		410	63.50	46	519.50	600
5600	8" x 4" x 3/8" x 12'-0"	G		54	1.037		595	63.50	46	704.50	805
5650	10" x 6" x 3/8" x 14'-0"	G		50	1.120		960	68.50	49.50	1,078	1,200
5700	12" x 8" x 1/2" x 16'-0"	G		48	1.167		1,775	71.50	51.50	1,898	2,125
6800	W Shape, A992 steel, 2 tier, W8 x 24	G		1080	.052	L.F.	43	3.18	2.30	48.48	55
6850	W8 x 31	G		1080	.052		56	3.18	2.30	61.48	69
6900	W8 x 48	G		1032	.054		86.50	3.32	2.40	92.22	103
6950	W8 x 67	G		984	.057		121	3.49	2.52	127.01	141
7000	W10 x 45	G		1032	.054		81	3.32	2.40	86.72	96.50
7050	W10 x 68	G		984	.057		122	3.49	2.52	128.01	143
7100	W10 x 112	G		960	.058		202	3.57	2.58	208.15	230
7150	W12 x 50	G		1032	.054		90	3.32	2.40	95.72	107
7200	W12 x 87	G		984	.057		157	3.49	2.52	163.01	180
7250	W12 x 120	G		960	.058		216	3.57	2.58	222.15	246
7300	W12 x 190	G		912	.061		340	3.76	2.72	346.48	385
7350	W14 x 74	G		984	.057		133	3.49	2.52	139.01	155
7400	W14 x 120	G		960	.058		216	3.57	2.58	222.15	246
7450	W14 x 176	G		912	.061		315	3.76	2.72	321.48	360
8090	For projects 75 to 99 tons, add					%	10%				
8092	50 to 74 tons, add						20%				
8094	25 to 49 tons, add						30%	10%			
8096	10 to 24 tons, add						50%	25%			
8098	2 to 9 tons, add						75%	50%			
8099	Less than 2 tons, add						100%	100%			
05 12 23.18 Corner Guards											
0010	**CORNER GUARDS**										
0020	Steel angle w/anchors, 1" x 1" x 1/4", 1.5#/L.F.		2 Carp	160	.100	L.F.	8	5.65		13.65	17.20
0100	2" x 2" x 1/4" angles, 3.2#/L.F.			150	.107		20.50	6		26.50	31.50
0200	3" x 3" x 5/16" angles, 6.1#/L.F.			140	.114		14	6.45		20.45	25
0300	4" x 4" x 5/16" angles, 8.2#/L.F.			120	.133		17	7.50		24.50	30
0350	For angles drilled and anchored to masonry, add						15%	120%			
0370	Drilled and anchored to concrete, add						20%	170%			
0400	For galvanized angles, add						35%				
0450	For stainless steel angles, add						100%				
05 12 23.20 Curb Edging											
0010	**CURB EDGING**										
0020	Steel angle w/anchors, shop fabricated, on forms, 1" x 1", 0.8#/L.F.	G	E-4	350	.091	L.F.	1.99	5.70	.42	8.11	11.45
0100	2" x 2" angles, 3.92#/L.F.	G		330	.097		8.10	6.05	.45	14.60	18.75
0200	3" x 3" angles, 6.1#/L.F.	G		300	.107		13	6.65	.49	20.14	25
0300	4" x 4" angles, 8.2#/L.F.	G		275	.116		17.15	7.25	.54	24.94	30.50
1000	6" x 4" angles, 12.3#/L.F.	G		250	.128		25	8	.59	33.59	40.50
1050	Steel channels with anchors, on forms, 3" channel, 5#/L.F.	G		290	.110		10.25	6.90	.51	17.66	22.50
1100	4" channel, 5.4#/L.F.	G		270	.119		11.05	7.40	.55	19	24
1200	6" channel, 8.2#/L.F.	G		255	.125		17.15	7.80	.58	25.53	31.50
1300	8" channel, 11.5#/L.F.	G		225	.142		23.50	8.85	.66	33.01	40.50
1400	10" channel, 15.3#/L.F.	G		180	.178		31	11.10	.82	42.92	52
1500	12" channel, 20.7#/L.F.	G		140	.229		41.50	14.25	1.05	56.80	69
2000	For curved edging, add						35%	10%			

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05 12 23.40 Lightweight Framing		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **LIGHTWEIGHT FRAMING**	R051223-35									
0015 Made from recycled materials										
0200 For load-bearing steel studs see Section 05 41 13.30										
0400 Angle framing, field fabricated, 4" and larger	R051223-45	E-3	440	.055	Lb.	.95	3.41	.33	4.69	6.65
0450 Less than 4" angles	G		265	.091	"	.98	5.65	.56	7.19	10.40
0460 1/2" x 1/2" x 1/8"	G		200	.120	L.F.	.20	7.50	.74	8.44	12.60
0462 3/4" x 3/4" x 1/8"	G		160	.150		.55	9.40	.92	10.87	16.05
0464 1" x 1" x 1/8"	G		135	.178		.79	11.10	1.09	12.98	19.20
0466 1-1/4" x 1-1/4" x 3/16"	G	E-3	115	.209	L.F.	1.45	13.05	1.28	15.78	23
0468 1-1/2" x 1-1/2" x 3/16"	G		100	.240		1.77	15	1.47	18.24	26.50
0470 2" x 2" x 1/4"	G		90	.267		3.13	16.70	1.64	21.47	31
0472 2-1/2" x 2-1/2" x 1/4"	G		72	.333		4.03	21	2.05	27.08	38.50
0474 3" x 2" x 3/8"	G		65	.369		5.80	23	2.27	31.07	44.50
0476 3" x 3" x 3/8"	G		57	.421		7.05	26.50	2.59	36.14	51
0600 Channel framing, field fabricated, 8" and larger	G		500	.048	Lb.	.98	3	.29	4.27	6
0650 Less than 8" channels	G		335	.072	"	.98	4.48	.44	5.90	8.45
0660 C2 x 1.78	G		115	.209	L.F.	1.75	13.05	1.28	16.08	23.50
0662 C3 x 4.1	G		80	.300		4.03	18.75	1.84	24.62	35.50
0664 C4 x 5.4	G		66	.364		5.30	23	2.23	30.53	43.50
0666 C5 x 6.7	G		57	.421		6.60	26.50	2.59	35.69	50.50
0668 C6 x 8.2	G		55	.436		7.80	27.50	2.68	37.98	53.50
0670 C7 x 9.8	G		40	.600		9.65	37.50	3.68	50.83	72.50
0672 C8 x 11.5	G		36	.667		11.30	41.50	4.09	56.89	81
0710 Structural bar tee, field fabricated, 3/4" x 3/4" x 1/8"	G		160	.150		.55	9.40	.92	10.87	16.05
0712 1" x 1" x 1/8"	G		135	.178		.79	11.10	1.09	12.98	19.20
0714 1-1/2" x 1-1/2" x 1/4"	G		114	.211		2.30	13.15	1.29	16.74	24.50
0716 2" x 2" x 1/4"	G		89	.270		3.13	16.85	1.66	21.64	31.50
0718 2-1/2" x 2-1/2" x 3/8"	G		72	.333		5.80	21	2.05	28.85	40.50
0720 3" x 3" x 3/8"	G		57	.421		7.05	26.50	2.59	36.14	51
0730 Structural zee, field fabricated, 1-1/4" x 1-3/4" x 1-3/4"	G		114	.211		.75	13.15	1.29	15.19	22.50
0732 2-11/16" x 3" x 2-11/16"	G		114	.211		1.75	13.15	1.29	16.19	24
0734 3-1/16" x 4" x 3-1/16"	G		133	.180		2.64	11.30	1.11	15.05	21.50
0736 3-1/4" x 5" x 3-1/4"	G		133	.180		3.60	11.30	1.11	16.01	22.50
0738 3-1/2" x 6" x 3-1/2"	G		160	.150		5.45	9.40	.92	15.77	21.50
0740 Junior beam, field fabricated, 3"	G		80	.300		5.60	18.75	1.84	26.19	37
0742 4"	G		72	.333		7.55	21	2.05	30.60	42.50
0744 5"	G		67	.358		9.80	22.50	2.20	34.50	47.50
0746 6"	G		62	.387		12.30	24	2.38	38.68	53.50
0748 7"	G		57	.421		15.05	26.50	2.59	44.14	60
0750 8"	G		53	.453		18.05	28.50	2.78	49.33	66.50
1000 Continuous slotted channel framing system, shop fab, simple framing	G	2 Sswk	2400	.007	Lb.	5.05	.41		5.46	6.25
1200 Complex framing	G	"	1600	.010		5.75	.62		6.37	7.25
1300 Cross bracing, rods, shop fabricated, 3/4" diameter	G	E-3	700	.034		1.96	2.14	.21	4.31	5.70
1310 7/8" diameter	G		850	.028		1.96	1.77	.17	3.90	5.05
1320 1" diameter	G		1000	.024		1.96	1.50	.15	3.61	4.63
1330 Angle, 5" x 5" x 3/8"	G	E-3	2800	.009	Lb.	1.96	.54	.05	2.55	3.05
1350 Hanging lintels, shop fabricated	G	"	850	.028		1.96	1.77	.17	3.90	5.05
1380 Roof frames, shop fabricated, 3'-0" square, 5' span	G	E-2	4200	.013		1.96	.82	.59	3.37	4.06
1400 Tie rod, not upset, 1-1/2" to 4" diameter, with turnbuckle	G	2 Sswk	800	.020		2.13	1.24		3.37	4.25
1420 No turnbuckle	G		700	.023		2.05	1.41		3.46	4.43
1500 Upset, 1-3/4" to 4" diameter, with turnbuckle	G		800	.020		2.13	1.24		3.37	4.25
1520 No turnbuckle	G		700	.023		2.05	1.41		3.46	4.43

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05 12 23 – Structural Steel for Buildings

05 12 23.45 Lintels		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **LINTELS**										
0015 Made from recycled materials										
0020 Plain steel angles, shop fabricated, under 500 lb.	G	1 Bric	550	.015	Lb.	1.26	.80		2.06	2.60
0100 500 to 1,000 lb.	G		640	.013		1.23	.69		1.92	2.39
0200 1,000 to 2,000 lb.	G		640	.013		1.19	.69		1.88	2.35
0300 2,000 to 4,000 lb.	G		640	.013		1.16	.69		1.85	2.32
0500 For built-up angles and plates, add to above	G					1.64			1.64	1.80
0700 For engineering, add to above						.16			.16	.18
0900 For galvanizing, add to above, under 500 lb.						.38			.38	.42
0950 500 to 2,000 lb.						.35			.35	.38
1000 Over 2,000 lb.						.33			.33	.36
2000 Steel angles, 3-1/2" x 3", 1/4" thick, 2'-6" long	G	1 Bric	47	.170	Ea.	17.70	9.40		27.10	33.50
2100 4'-6" long	G		26	.308		32	17		49	60.50
2600 4" x 3-1/2", 1/4" thick, 5'-0" long	G		21	.381		40.50	21		61.50	76
2700 9'-0" long	G		12	.667		73	37		110	136

05 12 23.60 Pipe Support Framing

0010 **PIPE SUPPORT FRAMING**										
0020 Under 10#/L.F., shop fabricated	G	E-4	3900	.008	Lb.	2.19	.51	.04	2.74	3.24
0200 10.1 to 15#/L.F.	G		4300	.007		2.16	.46	.03	2.65	3.13
0400 15.1 to 20#/L.F.	G		4800	.007		2.13	.42	.03	2.58	3.01
0600 Over 20#/L.F.	G		5400	.006		2.10	.37	.03	2.50	2.90

05 12 23.65 Plates

0010 **PLATES** R051223-80										
0015 Made from recycled materials										
0020 For connections & stiffener plates, shop fabricated										
0050 1/8" thick (5.1 lb./S.F.)	G				S.F.	8.35			8.35	9.20
0100 1/4" thick (10.2 lb./S.F.)	G					16.70			16.70	18.35
0300 3/8" thick (15.3 lb./S.F.)	G					25			25	27.50
0400 1/2" thick (20.4 lb./S.F.)	G					33.50			33.50	36.50
0450 3/4" thick (30.6 lb./S.F.)	G					50			50	55
0500 1" thick (40.8 lb./S.F.)	G					67			67	73.50
2000 Steel plate, warehouse prices, no shop fabrication										
2100 1/4" thick (10.2 lb./S.F.)	G				S.F.	10.65			10.65	11.70
2210 1/4" steel plate, welded in place		E-18	528	.076		10.65	4.69	1.54	16.88	20.50
2220 1/2" steel plate, welded in place			480	.083		21.50	5.15	1.70	28.35	33.50
2230 3/4" steel plate, welded in place			384	.104		32	6.45	2.12	40.57	47
2240 1" steel plate, welded in place			320	.125		42.50	7.75	2.55	52.80	61.50
2250 1-1/2" steel plate, welded in place			256	.156		64	9.70	3.18	76.88	89
2260 2" steel plate, welded in place			192	.208		85.50	12.90	4.25	102.65	118

05 12 23.70 Stressed Skin Steel Roof and Ceiling System

0010 **STRESSED SKIN STEEL ROOF & CEILING SYSTEM**										
0020 Double panel flat roof, spans to 100'	G	E-2	1150	.049	S.F.	13.10	2.98	2.16	18.24	21.50
0100 Double panel convex roof, spans to 200'	G		960	.058		21.50	3.57	2.58	27.65	32
0200 Double panel arched roof, spans to 300'	G		760	.074		32.50	4.51	3.26	40.27	46.50

05 12 23.75 Structural Steel Members

0010 **STRUCTURAL STEEL MEMBERS** R051223-10										
0015 Made from recycled materials										
0020 Shop fab'd for 100-ton, 1-2 story project, bolted connections										
0100 Beam or girder, W 6 x 9	G	E-2	600	.093	L.F.	16.20	5.70	4.13	26.03	31
0120 x 15	G		600	.093		27	5.70	4.13	36.83	43
0140 x 20	G		600	.093		36	5.70	4.13	45.83	53

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

05 12 23.75 Structural Steel Members			Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0300	W 8 x 10	G	E-2	600	.093	L.F.	18	5.70	4.13	27.83	33
0320	x 15	G		600	.093		27	5.70	4.13	36.83	43
0350	x 21	G		600	.093		38	5.70	4.13	47.83	55
0360	x 24	G		550	.102		43	6.25	4.51	53.76	62
0370	x 28	G		550	.102		50.50	6.25	4.51	61.26	70
0500	x 31	G		550	.102		56	6.25	4.51	66.76	76
0520	x 35	G		550	.102		63	6.25	4.51	73.76	84
0540	x 48	G		550	.102		86.50	6.25	4.51	97.26	109
0600	W 10 x 12	G		600	.093		21.50	5.70	4.13	31.33	37.5
0620	x 15	G		600	.093		27	5.70	4.13	36.83	43
0700	x 22	G		600	.093		39.50	5.70	4.13	49.33	57
0720	x 26	G		600	.093		47	5.70	4.13	56.83	65
0740	x 33	G		550	.102		59.50	6.25	4.51	70.26	80
0900	x 49	G		550	.102		88	6.25	4.51	98.76	111
1100	W 12 x 16	G		880	.064		29	3.90	2.82	35.72	40.5
1300	x 22	G		880	.064		39.50	3.90	2.82	46.22	52.5
1500	x 26	G		880	.064		47	3.90	2.82	53.72	60.5
1520	x 35	G		810	.069		63	4.23	3.06	70.29	79.5
1560	x 50	G		750	.075		90	4.57	3.31	97.88	110
1580	x 58	G		750	.075		104	4.57	3.31	111.88	126
1700	x 72	G	E-2	640	.088	L.F.	130	5.35	3.88	139.23	155
1740	x 87	G		640	.088		157	5.35	3.88	166.23	184
1900	W 14 x 26	G		990	.057		47	3.46	2.51	52.97	59.5
2100	x 30	G		900	.062		54	3.81	2.76	60.57	68.5
2300	x 34	G		810	.069		61	4.23	3.06	68.29	77.5
2320	x 43	G		810	.069		77.50	4.23	3.06	84.79	95
2340	x 53	G		800	.070		95.50	4.29	3.10	102.89	115
2360	x 74	G		760	.074		133	4.51	3.26	140.77	157
2380	x 90	G		740	.076		162	4.63	3.35	169.98	189
2500	x 120	G		720	.078		216	4.76	3.44	224.20	249
2700	W 16 x 26	G		1000	.056		47	3.43	2.48	52.91	59.5
2900	x 31	G		900	.062		56	3.81	2.76	62.57	70.5
3100	x 40	G		800	.070		72	4.29	3.10	79.39	89
3120	x 50	G		800	.070		90	4.29	3.10	97.39	109
3140	x 67	G		760	.074		121	4.51	3.26	128.77	143
3300	W 18 x 35	G	E-5	960	.083		63	5.15	2.74	70.89	80.5
3500	x 40	G		960	.083		72	5.15	2.74	79.89	90
3520	x 46	G		960	.083		83	5.15	2.74	90.89	102
3700	x 50	G		912	.088		90	5.40	2.88	98.28	110
3900	x 55	G		912	.088		99	5.40	2.88	107.28	120
3920	x 65	G		900	.089		117	5.50	2.92	125.42	141
3940	x 76	G		900	.089		137	5.50	2.92	145.42	163
3960	x 86	G		900	.089		155	5.50	2.92	163.42	182
3980	x 106	G		900	.089		191	5.50	2.92	199.42	222
4100	W 21 x 44	G		1064	.075		79	4.63	2.47	86.10	97
4300	x 50	G		1064	.075		90	4.63	2.47	97.10	109
4500	x 62	G		1036	.077		112	4.76	2.54	119.30	133
4700	x 68	G		1036	.077		122	4.76	2.54	129.30	145
4720	x 83	G		1000	.080		149	4.93	2.63	156.56	174
4740	x 93	G		1000	.080		167	4.93	2.63	174.56	194
4760	x 101	G		1000	.080		182	4.93	2.63	189.56	210
4780	x 122	G		1000	.080		220	4.93	2.63	227.56	252
4900	W 24 x 55	G		1110	.072		99	4.44	2.37	105.81	118

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05 12 23 – Structural Steel for Buildings

05 12 23.75 Structural Steel Members			Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
5100	x 62	G	E-5	1110	.072	L.F.	112	4.44	2.37	118.81	132
5300	x 68	G		1110	.072		122	4.44	2.37	128.81	144
5500	x 76	G		1110	.072		137	4.44	2.37	143.81	160
5700	x 84	G		1080	.074		151	4.57	2.43	158	176
5720	x 94	G		1080	.074		169	4.57	2.43	176	196
5740	x 104	G		1050	.076		187	4.70	2.50	194.20	216
5760	x 117	G		1050	.076		211	4.70	2.50	218.20	242
5780	x 146	G		1050	.076		263	4.70	2.50	270.20	299
5800	W 27 x 84	G	E-5	1190	.067	L.F.	151	4.14	2.21	157.35	175
5900	x 94	G		1190	.067		169	4.14	2.21	175.35	195
5920	x 114	G		1150	.070		205	4.29	2.28	211.57	235
5940	x 146	G		1150	.070		263	4.29	2.28	269.57	298
5960	x 161	G		1150	.070		290	4.29	2.28	296.57	330
6100	W 30 x 99	G		1200	.067		178	4.11	2.19	184.30	205
6300	x 108	G		1200	.067		194	4.11	2.19	200.30	223
6500	x 116	G		1160	.069		209	4.25	2.26	215.51	239
6520	x 132	G		1160	.069		238	4.25	2.26	244.51	270
6540	x 148	G		1160	.069		267	4.25	2.26	273.51	300
6560	x 173	G		1120	.071		310	4.40	2.35	316.75	355
6580	x 191	G		1120	.071		345	4.40	2.35	351.75	390
6700	W 33 x 118	G		1176	.068		212	4.19	2.23	218.42	243
6900	x 130	G		1134	.071		234	4.35	2.32	240.67	266
7100	x 141	G		1134	.071		254	4.35	2.32	260.67	288
7120	x 169	G		1100	.073		305	4.48	2.39	311.87	345
7140	x 201	G		1100	.073		360	4.48	2.39	366.87	410
7300	W 36 x 135	G		1170	.068		243	4.21	2.25	249.46	276
7500	x 150	G		1170	.068		270	4.21	2.25	276.46	305
7600	x 170	G		1150	.070		305	4.29	2.28	311.57	345
7700	x 194	G		1125	.071		350	4.38	2.34	356.72	395
7900	x 231	G		1125	.071		415	4.38	2.34	421.72	470
7920	x 262	G		1035	.077		470	4.76	2.54	477.30	530
8100	x 302	G		1035	.077		545	4.76	2.54	552.30	610
8490	For projects 75 to 99 tons, add						10%				
8492	50 to 74 tons, add						20%				
8494	25 to 49 tons, add						30%	10%			
8496	10 to 24 tons, add						50%	25%			
8498	2 to 9 tons, add						75%	50%			
8499	Less than 2 tons, add						100%	100%			

05 12 23.77 Structural Steel Projects

0010	**STRUCTURAL STEEL PROJECTS** R050516-30										
0015	Made from recycled materials										
0020	Shop fab'd for 100-ton, 1-2 story project, bolted connections										
0200	Apartments, nursing homes, etc., 1 to 2 stories R050523-10	G	E-5	10.30	7.767	Ton	3,275	480	255	4,010	4,625
0300	3 to 6 stories	G	"	10.10	7.921		3,350	490	260	4,100	4,700
0400	7 to 15 stories R051223-10	G	E-6	14.20	9.014		3,400	555	207	4,162	4,825
0500	Over 15 stories	G	"	13.90	9.209		3,525	565	211	4,301	5,000
0700	Offices, hospitals, etc., steel bearing, 1 to 2 stories R051223-20	G	E-5	10.30	7.767		3,275	480	255	4,010	4,625
0800	3 to 6 stories	G	E-6	14.40	8.889		3,350	545	204	4,099	4,725
0900	7 to 15 stories R051223-25	G	E-6	14.20	9.014	Ton	3,400	555	207	4,162	4,825
1000	Over 15 stories	G	"	13.90	9.209		3,525	565	211	4,301	5,000
1100	For multi-story masonry wall bearing construction, add R051223-30	G						30%			
1300	Industrial bldgs., 1 story, beams & girders, steel bearing	G	E-5	12.90	6.202		3,275	380	204	3,859	4,400

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	05 12 23.77 Structural Steel Projects		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1400	Masonry bearing	G	E-5	10	8	Ton	3,275	495	263	4,033	4,650
1500	Industrial bldgs., 1 story, under 10 tons,										
1510	steel from warehouse, trucked	G	E-2	7.50	7.467	Ton	3,925	455	330	4,710	5,400
1600	1 story with roof trusses, steel bearing	G	E-5	10.60	7.547		3,875	465	248	4,588	5,225
1700	Masonry bearing	G	"	8.30	9.639		3,875	595	315	4,785	5,500
1900	Monumental structures, banks, stores, etc., simple connections	G	E-6	13	9.846		3,275	605	226	4,106	4,775
2000	Moment/composite connections	G	"	9	14.222		5,425	875	325	6,625	7,675
2200	Churches, simple connections	G	E-5	11.60	6.897		3,050	425	226	3,701	4,250
2300	Moment/composite connections	G	"	5.20	15.385		4,050	950	505	5,505	6,475
2800	Power stations, fossil fuels, simple connections	G	E-6	11	11.636		3,275	715	267	4,257	5,000
2900	Moment/composite connections	G		5.70	22.456		4,900	1,375	515	6,790	8,100
2950	Nuclear fuels, non-safety steel, simple connections	G		7	18.286		3,275	1,125	420	4,820	5,775
3000	Moment/composite connections	G		5.50	23.273		4,900	1,425	535	6,860	8,175
3040	Safety steel, simple connections	G		2.50	51.200		4,775	3,150	1,175	9,100	11,400
3070	Moment/composite connections	G		1.50	85.333		6,275	5,250	1,950	13,475	17,100
3100	Roof trusses, simple connections	G	E-5	13	6.154		4,575	380	202	5,157	5,850
3200	Moment/composite connections	G		8.30	9.639		5,575	595	315	6,485	7,375
3210	Schools, simple connections	G		14.50	5.517		3,275	340	181	3,796	4,325
3220	Moment/composite connections	G		8.30	9.639		4,775	595	315	5,685	6,500
3400	Welded construction, simple commercial bldgs., 1 to 2 stories	G	E-7	7.60	10.526		3,350	650	365	4,365	5,075
3500	7 to 15 stories	G	E-9	8.30	15.422		3,875	950	390	5,215	6,125
3700	Welded rigid frame, 1 story, simple connections	G	E-7	15.80	5.063		3,400	310	176	3,886	4,425
3800	Moment/composite connections	G	"	5.50	14.545		4,425	895	505	5,825	6,775
3900	High strength steel mill spec extras:										
3950	A529, A572 (50 ksi) and A36: same as A992 steel (no extra)										
4000	Add to A992 price for A572 (60, 65 ksi)	G				Ton	100			100	110
4300	Column base plates, light, up to 150 lb.	G	2 Sswk	2000	.008	Lb.	1.80	.49		2.29	2.7
4400	Heavy, over 150 lb.	G	E-2	7500	.007	"	1.88	.46	.33	2.67	3.1
4600	Castellated beams, light sections, to 50#/L.F., simple connections	G		10.70	5.234	Ton	3,450	320	232	4,002	4,525
4700	Moment/composite connections	G		7	8		3,775	490	355	4,620	5,300
4900	Heavy sections, over 50 plf, simple connections	G		11.70	4.786		3,600	293	212	4,105	4,625
5000	Moment/composite connections	G		7.80	7.179		3,925	440	320	4,685	5,350
5390	For projects 75 to 99 tons, add						10%				
5392	50 to 74 tons, add						20%				
5394	25 to 49 tons, add						30%	10%			
5396	10 to 24 tons, add						50%	25%			
5398	2 to 9 tons, add						75%	50%			
5399	Less than 2 tons, add						100%	100%			

	05 12 23.78 Structural Steel Secondary Members										
0010	**STRUCTURAL STEEL SECONDARY MEMBERS**										
0015	Made from recycled materials										
0020	Shop fabricated for 20-ton girt/purlin framing package, materials only										
0100	Girts/purlins, C/Z-shapes, includes clips and bolts										
0110	6" x 2-1/2" x 2-1/2", 16 ga., 3.0 lb./L.F.					L.F.	4.42			4.42	4.8
0115	14 ga., 3.5 lb./L.F.						5.15			5.15	5.6
0120	8" x 2-3/4" x 2-3/4", 16 ga., 3.4 lb./L.F.						5			5	5.5
0125	14 ga., 4.1 lb./L.F.						6.05			6.05	6.6
0130	12 ga., 5.6 lb./L.F.						8.25			8.25	9.1
0135	10" x 3-1/2" x 3-1/2", 14 ga., 4.7 lb./L.F.						6.90			6.90	7.6
0140	12 ga., 6.7 lb./L.F.						9.85			9.85	10.8
0145	12" x 3-1/2" x 3-1/2", 14 ga., 5.3 lb./L.F.						7.80			7.80	8.6
0150	12 ga., 7.4 lb./L.F.						10.90			10.90	12

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05 12 Structural Steel Framing

05 12 23 – Structural Steel for Buildings

05 12 23.78 Structural Steel Secondary Members	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0200 Eave struts, C-shape, includes clips and bolts									
0210 6" x 4" x 3", 16 ga., 3.1 lb./L.F.				L.F.	4.57			4.57	5
0215 14 ga., 3.9 lb./L.F.					5.75			5.75	6.30
0220 8" x 4" x 3", 16 ga., 3.5 lb./L.F.					5.15			5.15	5.65
0225 14 ga., 4.4 lb./L.F.					6.50			6.50	7.15
0230 12 ga., 6.2 lb./L.F.					9.15			9.15	10.05
0235 10" x 5" x 3", 14 ga., 5.2 lb./L.F.					7.65			7.65	8.45
0240 12 ga., 7.3 lb./L.F.					10.75			10.75	11.85
0245 12" x 5" x 4", 14 ga., 6.0 lb./L.F.					8.85			8.85	9.70
0250 12 ga., 8.4 lb./L.F.					12.40			12.40	13.60
0300 Rake/base angle, excludes concrete drilling and expansion anchors									
0310 2" x 2", 14 ga., 1.0 lb./L.F.	2 Sswk	640	.025	L.F.	1.47	1.55		3.02	4
0315 3" x 2", 14 ga., 1.3 lb./L.F.		535	.030		1.92	1.85		3.77	4.96
0320 3" x 3", 14 ga., 1.6 lb./L.F.		500	.032		2.36	1.98		4.34	5.65
0325 4" x 3", 14 ga., 1.8 lb./L.F.		480	.033		2.65	2.06		4.71	6.10
0600 Installation of secondary members, erection only									
0610 Girts, purlins, eave struts, 16 ga., 6" deep	E-18	100	.400	Ea.		25	8.15	33.15	47
0615 8" deep		80	.500			31	10.20	41.20	58.50
0620 14 ga., 6" deep		80	.500			31	10.20	41.20	58.50
0625 8" deep		65	.615			38	12.55	50.55	72.50
0630 10" deep		55	.727			45	14.80	59.80	85.50
0635 12" deep		50	.800			49.50	16.30	65.80	94
0640 12 ga., 8" deep		50	.800			49.50	16.30	65.80	94
0645 10" deep		45	.889			55	18.10	73.10	104
0650 12" deep		40	1			62	20.50	82.50	118
0900 For less than 20-ton job lots									
0905 For 15 to 19 tons, add				%	10%				
0910 For 10 to 14 tons, add					25%				
0915 For 5 to 9 tons, add					50%	50%	50%		
0920 For 1 to 4 tons, add					75%	75%	75%		
0925 For less than 1 ton, add					100%	100%	100%		

05 12 23.80 Subpurlins

0010 **SUBPURLINS** R051223-50										
0015 Made from recycled materials										
0020 Bulb tees, shop fabricated, painted, 32-5/8" OC, 40 psf L.L.										
0200 Type 218, max 10'-2" span, 3.19 plf, 2-1/8" high x 2-1/8" wide	G	E-1	3100	.008	S.F.	1.78	.47	.05	2.30	2.72
1420 For 24-5/8" spacing, add						33%	33%			
1430 For 48-5/8" spacing, deduct						33%	33%			

05 14 Structural Aluminum Framing

05 14 23 – Non-Exposed Structural Aluminum Framing

05 14 23.05 Aluminum Shapes

0010 **ALUMINUM SHAPES**										
0015 Made from recycled materials										
0020 Structural shapes, 1" to 10" members, under 1 ton	G	E-2	4000	.014	Lb.	3.83	.86	.62	5.31	6.20
0050 1 to 5 tons	G		4300	.013		3.38	.80	.58	4.76	5.55
0100 Over 5 tons	G		4600	.012		3.16	.75	.54	4.45	5.20
0300 Extrusions, over 5 tons, stock shapes	G		1330	.042		3.78	2.58	1.86	8.22	10.15
0400 Custom shapes	G		1330	.042		4.26	2.58	1.86	8.70	10.65

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05 15 16.05 Accessories for Steel Wire Rope		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **ACCESSORIES FOR STEEL WIRE ROPE**										
0015 Made from recycled materials										
1500 Thimbles, heavy duty, 1/4"	G	E-17	160	.100	Ea.	.48	6.30		6.78	10.25
1510 1/2"	G		160	.100		2.11	6.30		8.41	12
1520 3/4"	G		105	.152		4.80	9.60		14.40	20
1530 1"	G	E-17	52	.308	Ea.	9.60	19.35		28.95	40.50
1540 1-1/4"	G		38	.421		14.80	26.50		41.30	57.50
1550 1-1/2"	G		13	1.231		41.50	77.50		119	165
1560 1-3/4"	G		8	2		86	126		212	289
1570 2"	G		6	2.667		125	168		293	395
1580 2-1/4"	G		4	4		169	251		420	570
1600 Clips, 1/4" diameter	G		160	.100		1.84	6.30		8.14	11.70
1610 3/8" diameter	G		160	.100		2.01	6.30		8.31	11.90
1620 1/2" diameter	G		160	.100		3.24	6.30		9.54	13.2
1630 3/4" diameter	G		102	.157		5.25	9.85		15.10	21
1640 1" diameter	G		64	.250		8.75	15.70		24.45	33.5
1650 1-1/4" diameter	G		35	.457		14.35	28.50		42.85	60.5
1670 1-1/2" diameter	G		26	.615		19.35	38.50		57.85	81
1680 1-3/4" diameter	G		16	1		45	63		108	147
1690 2" diameter	G		12	1.333		50	84		134	184
1700 2-1/4" diameter	G		10	1.600		74	101		175	236
1800 Sockets, open swage, 1/4" diameter	G		160	.100		57	6.30		63.30	72
1810 1/2" diameter	G		77	.208		82	13.05		95.05	111
1820 3/4" diameter	G		19	.842		128	53		181	222
1830 1" diameter	G		9	1.778		228	112		340	425
1840 1-1/4" diameter	G		5	3.200		315	201		516	660
1850 1-1/2" diameter	G		3	5.333		695	335		1,030	1,275
1860 1-3/4" diameter	G		3	5.333		1,225	335		1,560	1,875
1870 2" diameter	G		1.50	10.667		1,875	670		2,545	3,075
1900 Closed swage, 1/4" diameter	G		160	.100		34	6.30		40.30	47
1910 1/2" diameter	G		104	.154		58.50	9.65		68.15	79.5
1920 3/4" diameter	G		32	.500		88	31.50		119.50	146
1930 1" diameter	G		15	1.067		154	67		221	273
1940 1-1/4" diameter	G		7	2.286		231	144		375	475
1950 1-1/2" diameter	G		4	4		420	251		671	845
1960 1-3/4" diameter	G		3	5.333		620	335		955	1,200
1970 2" diameter	G		2	8		1,200	505		1,705	2,100
2000 Open spelter, galv., 1/4" diameter	G		160	.100		77.50	6.30		83.80	94.5
2010 1/2" diameter	G		70	.229		80.50	14.35		94.85	111
2020 3/4" diameter	G		26	.615		121	38.50		159.50	193
2030 1" diameter	G		10	1.600		335	101		436	525
2040 1-1/4" diameter	G		5	3.200		480	201		681	840
2050 1-1/2" diameter	G		4	4		1,025	251		1,276	1,500
2060 1-3/4" diameter	G		2	8		1,775	505		2,280	2,725
2070 2" diameter	G		1.20	13.333		2,050	840		2,890	3,550
2080 2-1/2" diameter	G		1	16		3,775	1,000		4,775	5,700
2100 Closed spelter, galv., 1/4" diameter	G		160	.100		64.50	6.30		70.80	80.5
2110 1/2" diameter	G		88	.182		69	11.45		80.45	93
2120 3/4" diameter	G		30	.533		104	33.50		137.50	167
2130 1" diameter	G		13	1.231		222	77.50		299.50	365
2140 1-1/4" diameter	G		7	2.286		355	144		499	610
2150 1-1/2" diameter	G		6	2.667		765	168		933	1,100
2160 1-3/4" diameter	G		2.80	5.714		1,025	360		1,385	1,675

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05 15 16.05 Accessories for Steel Wire Rope			Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2170	2" diameter	G	E-17	2	8	Ea.	1,250	505		1,755	2,150
2200	Jaw & jaw turnbuckles, 1/4" x 4"	G		160	.100		8.50	6.30		14.80	19.05
2250	1/2" x 6"	G		96	.167		10.70	10.50		21.20	28
2260	1/2" x 9"	G		77	.208		14.30	13.05		27.35	35.50
2270	1/2" x 12"	G		66	.242		16.05	15.25		31.30	41
2300	3/4" x 6"	G		38	.421		21	26.50		47.50	64
2310	3/4" x 9"	G		30	.533		23	33.50		56.50	77
2320	3/4" x 12"	G		28	.571		30	36		66	88.50
2330	3/4" x 18"	G		23	.696		35.50	43.50		79	107
2350	1" x 6"	G		17	.941		40.50	59		99.50	136
2360	1" x 12"	G		13	1.231		44.50	77.50		122	168
2370	1" x 18"	G		10	1.600		67	101		168	229
2380	1" x 24"	G		9	1.778		73.50	112		185.50	253
2400	1-1/4" x 12"	G		7	2.286		75	144		219	305
2410	1-1/4" x 18"	G		6.50	2.462		93	155		248	340
2420	1-1/4" x 24"	G		5.60	2.857		125	180		305	415
2450	1-1/2" x 12"	G		5.20	3.077		445	193		638	790
2460	1-1/2" x 18"	G		4	4		475	251		726	905
2470	1-1/2" x 24"	G		3.20	5		635	315		950	1,175
2500	1-3/4" x 18"	G		3.20	5		960	315		1,275	1,525
2510	1-3/4" x 24"	G		2.80	5.714		1,100	360		1,460	1,750
2550	2" x 24"	G		1.60	10		1,475	630		2,105	2,600

05 15 16.50 Steel Wire Rope											
0010	**STEEL WIRE ROPE**										
0015	Made from recycled materials										
0020	6 x 19, bright, fiber core, 5000' rolls, 1/2" diameter	G				L.F.	.67			.67	.73
0050	Steel core	G					.88			.88	.97
0100	Fiber core, 1" diameter	G					2.25			2.25	2.47
0150	Steel core	G					2.56			2.56	2.82
0300	6 x 19, galvanized, fiber core, 1/2" diameter	G					.98			.98	1.08
0350	Steel core	G					1.12			1.12	1.24
0400	Fiber core, 1" diameter	G				L.F.	2.88			2.88	3.17
0450	Steel core	G					3.02			3.02	3.32
0500	6 x 7, bright, IPS, fiber core, <500 L.F. w/acc., 1/4" diameter	G	E-17	6400	.003		.46	.16		.62	.75
0510	1/2" diameter	G		2100	.008		1.12	.48		1.60	1.97
0520	3/4" diameter	G		960	.017		2.03	1.05		3.08	3.84
0550	6 x 19, bright, IPS, IWRC, <500 L.F. w/acc., 1/4" diameter	G		5760	.003		.74	.17		.91	1.08
0560	1/2" diameter	G		1730	.009		1.19	.58		1.77	2.21
0570	3/4" diameter	G		770	.021		2.07	1.31		3.38	4.29
0580	1" diameter	G		420	.038		3.51	2.39		5.90	7.55
0590	1-1/4" diameter	G		290	.055		5.85	3.47		9.32	11.75
0600	1-1/2" diameter	G		192	.083		7.15	5.25		12.40	15.95
0610	1-3/4" diameter	G	E-18	240	.167		11.40	10.35	3.40	25.15	32
0620	2" diameter	G		160	.250		14.65	15.50	5.10	35.25	45
0630	2-1/4" diameter	G		160	.250		19.60	15.50	5.10	40.20	50.50
0650	6 x 37, bright, IPS, IWRC, <500 L.F. w/acc., 1/4" diameter	G	E-17	6400	.003		.90	.16		1.06	1.23
0660	1/2" diameter	G		1730	.009		1.52	.58		2.10	2.57
0670	3/4" diameter	G		770	.021		2.46	1.31		3.77	4.71
0680	1" diameter	G		430	.037		3.90	2.34		6.24	7.90
0690	1-1/4" diameter	G		290	.055		5.90	3.47		9.37	11.85
0700	1-1/2" diameter	G		190	.084		8.40	5.30		13.70	17.40
0710	1-3/4" diameter	G	E-18	260	.154		13.40	9.55	3.14	26.09	33

05 15 Wire Rope Assemblies

05 15 16 – Steel Wire Rope Assemblies

	05 15 16.50 Steel Wire Rope		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0720	2" diameter	G	E-18	200	.200	L.F.	17.35	12.40	4.08	33.83	42.5
0730	2-1/4" diameter	G		160	.250		23	15.50	5.10	43.60	54
0800	6 x 19 & 6 x 37, swaged, 1/2" diameter	G	E-17	1220	.013		2.01	.82		2.83	3.4
0810	9/16" diameter	G		1120	.014		2.34	.90		3.24	3.9
0820	5/8" diameter	G		930	.017		2.77	1.08		3.85	4.7
0830	3/4" diameter	G		640	.025		3.54	1.57		5.11	6.3
0840	7/8" diameter	G		480	.033		4.46	2.10		6.56	8.1
0850	1" diameter	G		350	.046		5.45	2.87		8.32	10.4
0860	1-1/8" diameter	G		288	.056		6.70	3.49		10.19	12.7
0870	1-1/4" diameter	G		230	.070		8.10	4.37		12.47	15.6
0880	1-3/8" diameter	G		192	.083		9.35	5.25		14.60	18.3
0890	1-1/2" diameter	G	E-18	300	.133		11.35	8.25	2.72	22.32	28
	05 15 16.60 Galvanized Steel Wire Rope and Accessories										
0010	**GALVANIZED STEEL WIRE ROPE & ACCESSORIES**										
0015	Made from recycled materials										
3000	Aircraft cable, galvanized, 7 x 7 x 1/8"	G	E-17	5000	.003	L.F.	.21	.20		.41	.5
3100	Clamps, 1/8"	G	"	125	.128	Ea.	1.31	8.05		9.36	13.8
	05 15 16.70 Temporary Cable Safety Railing										
0010	**TEMPORARY CABLE SAFETY RAILING**, Each 100' strand incl.										
0020	2 eyebolts, 1 turnbuckle, 100' cable, 2 thimbles, 6 clips										
0025	Made from recycled materials										
0100	One strand using 1/4" cable & accessories	G	2 Sswk	4	4	C.L.F.	84	247		331	475
0200	1/2" cable & accessories	G	"	2	8	"	162	495		657	940

05 21 Steel Joist Framing

05 21 13 – Deep Longspan Steel Joist Framing

	05 21 13.50 Deep Longspan Joists										
0010	**DEEP LONGSPAN JOISTS**										
3010	DLH series, 40-ton job lots, bolted cross bridging, shop primer										
3015	Made from recycled materials										
3040	Spans to 144' (shipped in 2 pieces)	G	E-7	13	6.154	Ton	2,400	380	213	2,993	3,450
3200	52DLH11, 26 lb./L.F.	G		2000	.040	L.F.	30	2.47	1.39	33.86	38.5
3220	52DLH16, 45 lb./L.F.	G		2000	.040		54	2.47	1.39	57.86	64.5
3240	56DLH11, 26 lb./L.F.	G		2000	.040		31	2.47	1.39	34.86	39.5
3260	56DLH16, 46 lb./L.F.	G		2000	.040		55	2.47	1.39	58.86	66
3280	60DLH12, 29 lb./L.F.	G		2000	.040		34.50	2.47	1.39	38.36	43.5
3300	60DLH17, 52 lb./L.F.	G		2000	.040		62	2.47	1.39	65.86	74
3320	64DLH12, 31 lb./L.F.	G		2200	.036		37	2.24	1.26	40.50	45.5
3340	64DLH17, 52 lb./L.F.	G		2200	.036		62	2.24	1.26	65.50	73.5
3360	68DLH13, 37 lb./L.F.	G		2200	.036		44	2.24	1.26	47.50	53.5
3380	68DLH18, 61 lb./L.F.	G		2200	.036		73	2.24	1.26	76.50	85
3400	72DLH14, 41 lb./L.F.	G		2200	.036		49	2.24	1.26	52.50	59
3420	72DLH19, 70 lb./L.F.	G		2200	.036		83.50	2.24	1.26	87	97
3500	For less than 40-ton job lots										
3502	For 30 to 39 tons, add					%	10%				
3504	20 to 29 tons, add						20%				
3506	10 to 19 tons, add						30%				
3507	5 to 9 tons, add						50%	25%			
3508	1 to 4 tons, add						75%	50%			
3509	Less than 1 ton, add						100%	100%			

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05 21 Steel Joist Framing

05 21 13 – Deep Longspan Steel Joist Framing

	05 21 13.50 Deep Longspan Joists		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4010	SLH series, 40-ton job lots, bolted cross bridging, shop primer										
4040	Spans to 200′ (shipped in 3 pieces)	G	E-7	13	6.154	Ton	2,475	380	213	3,068	3,550
4200	80SLH15, 40 lb./L.F.	G		1500	.053	L.F.	49.50	3.29	1.85	54.64	61.50
4220	80SLH20, 75 lb./L.F.	G		1500	.053		92.50	3.29	1.85	97.64	109
4240	88SLH16, 46 lb./L.F.	G		1500	.053		57	3.29	1.85	62.14	69.50
4260	88SLH21, 89 lb./L.F.	G		1500	.053		110	3.29	1.85	115.14	128
4280	96SLH17, 52 lb./L.F.	G		1500	.053		64	3.29	1.85	69.14	77.50
4300	96SLH22, 102 lb./L.F.	G		1500	.053		126	3.29	1.85	131.14	146
4320	104SLH18, 59 lb./L.F.	G	E-7	1800	.044	L.F.	73	2.74	1.54	77.28	86
4340	104SLH23, 109 lb./L.F.	G		1800	.044		135	2.74	1.54	139.28	154
4360	112SLH19, 67 lb./L.F.	G		1800	.044		82.50	2.74	1.54	86.78	97
4380	112SLH24, 131 lb./L.F.	G		1800	.044		162	2.74	1.54	166.28	184
4400	120SLH20, 77 lb./L.F.	G		1800	.044		95	2.74	1.54	99.28	111
4420	120SLH25, 152 lb./L.F.	G		1800	.044		188	2.74	1.54	192.28	212
6100	For less than 40-ton job lots										
6102	For 30 to 39 tons, add					%	10%				
6104	20 to 29 tons, add						20%				
6106	10 to 19 tons, add						30%				
6107	5 to 9 tons, add						50%	25%			
6108	1 to 4 tons, add						75%	50%			
6109	Less than 1 ton, add						100%	100%			

05 21 16 – Longspan Steel Joist Framing

05 21 16.50 Longspan Joists

0010	**LONGSPAN JOISTS**										
2000	LH series, 40-ton job lots, bolted cross bridging, shop primer										
2015	Made from recycled materials										
2040	Longspan joists, LH series, up to 96′	G	E-7	13	6.154	Ton	2,100	380	213	2,693	3,125
2200	18LH04, 12 lb./L.F.	G		1400	.057	L.F.	12.55	3.52	1.98	18.05	21.50
2220	18LH08, 19 lb./L.F.	G		1400	.057		19.90	3.52	1.98	25.40	29.50
2240	20LH04, 12 lb./L.F.	G		1400	.057		12.55	3.52	1.98	18.05	21.50
2260	20LH08, 19 lb./L.F.	G		1400	.057		19.90	3.52	1.98	25.40	29.50
2280	24LH05, 13 lb./L.F.	G		1400	.057		13.60	3.52	1.98	19.10	22.50
2300	24LH10, 23 lb./L.F.	G		1400	.057		24	3.52	1.98	29.50	34
2320	28LH06, 16 lb./L.F.	G		1800	.044		16.75	2.74	1.54	21.03	24.50
2340	28LH11, 25 lb./L.F.	G		1800	.044		26	2.74	1.54	30.28	35
2360	32LH08, 17 lb./L.F.	G		1800	.044		17.80	2.74	1.54	22.08	25.50
2380	32LH13, 30 lb./L.F.	G		1800	.044		31.50	2.74	1.54	35.78	40.50
2400	36LH09, 21 lb./L.F.	G		1800	.044		22	2.74	1.54	26.28	30
2420	36LH14, 36 lb./L.F.	G		1800	.044		37.50	2.74	1.54	41.78	47.50
2440	40LH10, 21 lb./L.F.	G		2200	.036		22	2.24	1.26	25.50	29
2460	40LH15, 36 lb./L.F.	G		2200	.036		37.50	2.24	1.26	41	46.50
2480	44LH11, 22 lb./L.F.	G		2200	.036		23	2.24	1.26	26.50	30.50
2500	44LH16, 42 lb./L.F.	G		2200	.036		44	2.24	1.26	47.50	53.50
2520	48LH11, 22 lb./L.F.	G		2200	.036		23	2.24	1.26	26.50	30.50
2540	48LH16, 42 lb./L.F.	G		2200	.036		44	2.24	1.26	47.50	53.50
2600	For less than 40-ton job lots										
2602	For 30 to 39 tons, add					%	10%				
2604	20 to 29 tons, add						20%				
2606	10 to 19 tons, add						30%				
2607	5 to 9 tons, add						50%	25%			
2608	1 to 4 tons, add						75%	50%			
2609	Less than 1 ton, add						100%	100%			

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05 21 16 – Longspan Steel Joist Framing

	05 21 16.50 Longspan Joists		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
6000	For welded cross bridging, add							30%			

05 21 19 – Open Web Steel Joist Framing

05 21 19.10 Open Web Joists

0010	**OPEN WEB JOISTS**										
0015	Made from recycled materials										
0050	K series, 40-ton lots, horiz. bridging, spans to 30′, shop primer	G	E-7	12	6.667	Ton	1,850	410	231	2,491	2,900
0130	8K1, 5.1 lb./L.F.	G		1200	.067	L.F.	4.72	4.11	2.31	11.14	14.0
0140	10K1, 5.0 lb./L.F.	G		1200	.067		4.63	4.11	2.31	11.05	13.9
0160	12K3, 5.7 lb./L.F.	G		1500	.053		5.30	3.29	1.85	10.44	12.9
0180	14K3, 6.0 lb./L.F.	G		1500	.053		5.55	3.29	1.85	10.69	13.2
0200	16K3, 6.3 lb./L.F.	G		1800	.044		5.85	2.74	1.54	10.13	12.3
0220	16K6, 8.1 lb./L.F.	G		1800	.044		7.50	2.74	1.54	11.78	14.1
0240	18K5, 7.7 lb./L.F.	G		2000	.040		7.15	2.47	1.39	11.01	13.1
0260	18K9, 10.2 lb./L.F.	G		2000	.040		9.45	2.47	1.39	13.31	15.7
0440	K series, 30′ to 50′ spans	G		17	4.706	Ton	2,625	290	163	3,078	3,500
0500	20K5, 8.2 lb./L.F.	G		2000	.040	L.F.	10.75	2.47	1.39	14.61	17.1
0520	20K9, 10.8 lb./L.F.	G		2000	.040		14.15	2.47	1.39	18.01	21
0540	22K5, 8.8 lb./L.F.	G		2000	.040		11.55	2.47	1.39	15.41	18
0560	22K9, 11.3 lb./L.F.	G		2000	.040		14.80	2.47	1.39	18.66	21.5
0580	24K6, 9.7 lb./L.F.	G		2200	.036		12.70	2.24	1.26	16.20	18.8
0600	24K10, 13.1 lb./L.F.	G		2200	.036		17.20	2.24	1.26	20.70	23.5
0620	26K6, 10.6 lb./L.F.	G		2200	.036		13.90	2.24	1.26	17.40	20
0640	26K10, 13.8 lb./L.F.	G		2200	.036		18.10	2.24	1.26	21.60	24.5
0660	28K8, 12.7 lb./L.F.	G		2400	.033		16.65	2.06	1.16	19.87	22.5
0680	28K12, 17.1 lb./L.F.	G		2400	.033		22.50	2.06	1.16	25.72	29
0700	30K8, 13.2 lb./L.F.	G		2400	.033		17.30	2.06	1.16	20.52	23.5
0720	30K12, 17.6 lb./L.F.	G		2400	.033		23	2.06	1.16	26.22	30
0800	For less than 40-ton job lots										
0802	For 30 to 39 tons, add					%	10%				
0804	20 to 29 tons, add						20%				
0806	10 to 19 tons, add						30%				
0807	5 to 9 tons, add						50%	25%			
0808	1 to 4 tons, add						75%	50%			
0809	Less than 1 ton, add					%	100%	100%			
1010	CS series, 40-ton job lots, horizontal bridging, shop primer										
1040	Spans to 30′	G	E-7	12	6.667	Ton	1,925	410	231	2,566	2,975
1100	10CS2, 7.5 lb./L.F.	G		1200	.067	L.F.	7.20	4.11	2.31	13.62	16.7
1120	12CS2, 8.0 lb./L.F.	G		1500	.053		7.65	3.29	1.85	12.79	15.5
1140	14CS2, 8.0 lb./L.F.	G		1500	.053		7.65	3.29	1.85	12.79	15.5
1160	16CS2, 8.5 lb./L.F.	G		1800	.044		8.15	2.74	1.54	12.43	14.8
1180	16CS4, 14.5 lb./L.F.	G		1800	.044		13.85	2.74	1.54	18.13	21
1200	18CS2, 9.0 lb./L.F.	G		2000	.040		8.60	2.47	1.39	12.46	14.7
1220	18CS4, 15.0 lb./L.F.	G		2000	.040		14.35	2.47	1.39	18.21	21
1240	20CS2, 9.5 lb./L.F.	G		2000	.040		9.10	2.47	1.39	12.96	15.3
1260	20CS4, 16.5 lb./L.F.	G		2000	.040		15.80	2.47	1.39	19.66	22.5
1280	22CS2, 10.0 lb./L.F.	G		2000	.040		9.55	2.47	1.39	13.41	15.8
1300	22CS4, 16.5 lb./L.F.	G		2000	.040		15.80	2.47	1.39	19.66	22.5
1320	24CS2, 10.0 lb./L.F.	G		2200	.036		9.55	2.24	1.26	13.05	15.3
1340	24CS4, 16.5 lb./L.F.	G		2200	.036		15.80	2.24	1.26	19.30	22
1360	26CS2, 10.0 lb./L.F.	G		2200	.036		9.55	2.24	1.26	13.05	15.3
1380	26CS4, 16.5 lb./L.F.	G		2200	.036		15.80	2.24	1.26	19.30	22
1400	28CS2, 10.5 lb./L.F.	G		2400	.033		10.05	2.06	1.16	13.27	15.4

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05 21 Steel Joist Framing

05 21 19 – Open Web Steel Joist Framing

05 21 19.10 Open Web Joists		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1420 28CS4, 16.5 lb./L.F.	G	E-7	2400	.033	L.F.	15.80	2.06	1.16	19.02	22
1440 30CS2, 11.0 lb./L.F.	G		2400	.033		10.50	2.06	1.16	13.72	16
1460 30CS4, 16.5 lb./L.F.	G		2400	.033		15.80	2.06	1.16	19.02	22
1500 For less than 40-ton job lots										
1502 For 30 to 39 tons, add					%	10%				
1504 20 to 29 tons, add						20%				
1506 10 to 19 tons, add						30%				
1507 5 to 9 tons, add						50%	25%			
1508 1 to 4 tons, add						75%	50%			
1509 Less than 1 ton, add						100%	100%			
6200 For shop prime paint other than mfrs. standard, add						20%				
6300 For bottom chord extensions, add per chord	G				Ea.	41			41	45
6400 Individual steel bearing plate, 6" x 6" x 1/4" with J-hook	G	1 Bric	160	.050	"	9.80	2.76		12.56	14.95

05 21 23 – Steel Joist Girder Framing

05 21 23.50 Joist Girders

0010 **JOIST GIRDERS**										
0015 Made from recycled materials										
7020 Joist girders, 40-ton job lots, shop primer	G	E-5	13	6.154	Ton	1,850	380	202	2,432	2,850
7100 For less than 40-ton job lots										
7102 For 30 to 39 tons, add					Ton	10%				
7104 20 to 29 tons, add						20%				
7106 10 to 19 tons, add						30%				
7107 5 to 9 tons, add						50%	25%			
7108 1 to 4 tons, add						75%	50%			
7109 Less than 1 ton, add						100%	100%			
8000 Trusses, 40-ton job lots, shop fabricated WT chords, shop primer	G	E-5	11	7.273		6,100	450	239	6,789	7,675
8100 For less than 40-ton job lots										
8102 For 30 to 39 tons, add					Ton	10%				
8104 20 to 29 tons, add						20%				
8106 10 to 19 tons, add						30%				
8107 5 to 9 tons, add						50%	25%			
8108 1 to 4 tons, add						75%	50%			
8109 Less than 1 ton, add						100%	100%			

05 31 Steel Decking

05 31 13 – Steel Floor Decking

05 31 13.50 Floor Decking

0010 **FLOOR DECKING** R053100-10										
0015 Made from recycled materials										
5100 Non-cellular composite decking, galvanized, 1-1/2" deep, 16 ga.	G	E-4	3500	.009	S.F.	4.57	.57	.04	5.18	6
5120 18 ga.	G		3650	.009		2.82	.55	.04	3.41	3.98
5140 20 ga.	G		3800	.008		3.33	.53	.04	3.90	4.51
5200 2" deep, 22 ga.	G		3860	.008		2.25	.52	.04	2.81	3.32
5300 20 ga.	G		3600	.009		3.20	.55	.04	3.79	4.42
5400 18 ga.	G		3380	.009		2.94	.59	.04	3.57	4.19
5500 16 ga.	G		3200	.010		4.52	.62	.05	5.19	6
5700 3" deep, 22 ga.	G		3200	.010		2.45	.62	.05	3.12	3.71
5800 20 ga.	G		3000	.011		3.52	.67	.05	4.24	4.94
5900 18 ga.	G		2850	.011		2.94	.70	.05	3.69	4.37
6000 16 ga.	G		2700	.012		5.15	.74	.05	5.94	6.85

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05 31 23 – Steel Roof Decking

05 31 23.50 Roof Decking		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **ROOF DECKING**										
0015 Made from recycled materials										
2100 Open type, 1-1/2" deep, Type B, wide rib, galv., 22 ga., under 50 sq.	G	E-4	4500	.007	S.F.	2.54	.44	.03	3.01	3.5
2200 50-500 squares	G		4900	.007		1.97	.41	.03	2.41	2.8
2400 Over 500 squares	G		5100	.006		1.83	.39	.03	2.25	2.6
2600 20 ga., under 50 squares	G		3865	.008		2.82	.52	.04	3.38	3.9
2650 50-500 squares	G		4170	.008		2.26	.48	.04	2.78	3.2
2700 Over 500 squares	G		4300	.007		2.03	.46	.03	2.52	2.9
2900 18 ga., under 50 squares	G	E-4	3800	.008	S.F.	3.63	.53	.04	4.20	4.8
2950 50-500 squares	G		4100	.008		2.90	.49	.04	3.43	3.9
3000 Over 500 squares	G		4300	.007		2.61	.46	.03	3.10	3.6
3050 16 ga., under 50 squares	G		3700	.009		4.92	.54	.04	5.50	6.2
3060 50-500 squares	G		4000	.008		3.93	.50	.04	4.47	5.1
3100 Over 500 squares	G		4200	.008		3.54	.48	.04	4.06	4.6
3200 3" deep, Type N, 22 ga., under 50 squares	G		3600	.009		3.50	.55	.04	4.09	4.7
3250 50-500 squares	G		3800	.008		2.80	.53	.04	3.37	3.9
3260 over 500 squares	G		4000	.008		2.52	.50	.04	3.06	3.5
3300 20 ga., under 50 squares	G		3400	.009		3.82	.59	.04	4.45	5.1
3350 50-500 squares	G		3600	.009		3.06	.55	.04	3.65	4.2
3360 over 500 squares	G		3800	.008		2.75	.53	.04	3.32	3.8
3400 18 ga., under 50 squares	G		3200	.010		4.97	.62	.05	5.64	6.4
3450 50-500 squares	G		3400	.009		3.98	.59	.04	4.61	5.3
3460 over 500 squares	G		3600	.009		3.58	.55	.04	4.17	4.8
3500 16 ga., under 50 squares	G		3000	.011		6.55	.67	.05	7.27	8.2
3550 50-500 squares	G		3200	.010		5.25	.62	.05	5.92	6.8
3560 over 500 squares	G		3400	.009		4.73	.59	.04	5.36	6.1
3700 4-1/2" deep, Type J, 20 ga., over 50 squares	G		2700	.012		3.73	.74	.05	4.52	5.3
3800 18 ga.	G		2460	.013		4.90	.81	.06	5.77	6.7
3900 16 ga.	G		2350	.014		6.50	.85	.06	7.41	8.5
4100 6" deep, Type H, 18 ga., over 50 squares	G		2000	.016		5.95	1	.07	7.02	8.1
4200 16 ga.	G		1930	.017		8.50	1.03	.08	9.61	11
4300 14 ga.	G		1860	.017		10.90	1.07	.08	12.05	13.7
4500 7-1/2" deep, Type H, 18 ga., over 50 squares	G		1690	.019		7.10	1.18	.09	8.37	9.7
4600 16 ga.	G		1590	.020		8.85	1.25	.09	10.19	11.7
4700 14 ga.	G		1490	.021		11	1.34	.10	12.44	14.2
4800 For painted instead of galvanized, deduct						5%				
5000 For acoustical perforated with fiberglass insulation, add					S.F.	25%				
5100 For type F intermediate rib instead of type B wide rib, add	G					25%				
5150 For type A narrow rib instead of type B wide rib, add	G					25%				

05 31 33 – Steel Form Decking

05 31 33.50 Form Decking

0010 **FORM DECKING**										
0015 Made from recycled materials										
6100 Slab form, steel, 28 ga., 9/16" deep, Type UFS, uncoated	G	E-4	4000	.008	S.F.	1.79	.50	.04	2.33	2.7
6200 Galvanized	G		4000	.008		1.58	.50	.04	2.12	2.5
6220 24 ga., 1" deep, Type UF1X, uncoated	G		3900	.008		1.74	.51	.04	2.29	2.7
6240 Galvanized	G	E-4	3900	.008	S.F.	2.05	.51	.04	2.60	3.0
6300 24 ga., 1-5/16" deep, Type UFX, uncoated	G		3800	.008		1.86	.53	.04	2.43	2.9
6400 Galvanized	G		3800	.008		2.19	.53	.04	2.76	3.2
6500 22 ga., 1-5/16" deep, uncoated	G		3700	.009		2.35	.54	.04	2.93	3.4
6600 Galvanized	G		3700	.009		2.40	.54	.04	2.98	3.5
6700 22 ga., 2" deep, uncoated	G		3600	.009		3.06	.55	.04	3.65	4.2

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05 31 Steel Decking

05 31 33 – Steel Form Decking

05 31 33.50 Form Decking		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
6800 Galvanized	G	E-4	3600	.009	S.F.	3	.55	.04	3.59	4.20
7000 Sheet metal edge closure form, 12" wide with 2 bends, galvanized										
7100 18 ga.	G	E-14	360	.022	L.F.	4.96	1.42	.41	6.79	8.10
7200 16 ga.	G	"	360	.022	"	6.70	1.42	.41	8.53	10

05 35 Raceway Decking Assemblies

05 35 13 – Steel Cellular Decking

05 35 13.50 Cellular Decking

0010 **CELLULAR DECKING**										
0015 Made from recycled materials										
0200 Cellular units, galv, 1-1/2" deep, Type BC, 20-20 ga., over 15 squares	G	E-4	1460	.022	S.F.	11.20	1.37	.10	12.67	14.50
0250 18-20 ga.	G		1420	.023		8.75	1.41	.10	10.26	11.90
0300 18-18 ga.	G		1390	.023		9	1.44	.11	10.55	12.25
0320 16-18 ga.	G		1360	.024		15.55	1.47	.11	17.13	19.50
0340 16-16 ga.	G		1330	.024		17.30	1.50	.11	18.91	21.50
0400 3" deep, Type NC, galvanized, 20-20 ga.	G		1375	.023		12.30	1.45	.11	13.86	15.90
0500 18-20 ga.	G		1350	.024		10.25	1.48	.11	11.84	13.70
0600 18-18 ga.	G		1290	.025		10.25	1.55	.11	11.91	13.75
0700 16-18 ga.	G		1230	.026		16.70	1.62	.12	18.44	21
0800 16-16 ga.	G		1150	.028		18.20	1.73	.13	20.06	23
1000 4-1/2" deep, Type JC, galvanized, 18-20 ga.	G		1100	.029		11.85	1.81	.13	13.79	15.95
1100 18-18 ga.	G		1040	.031		11.75	1.92	.14	13.81	16.05
1200 16-18 ga.	G		980	.033		19.20	2.04	.15	21.39	24.50
1300 16-16 ga.	G		935	.034		21	2.13	.16	23.29	26.50
1500 For acoustical deck, add						15%				
1700 For cells used for ventilation, add						15%				
1900 For multi-story or congested site, add							50%			
8000 Metal deck and trench, 2" thick, 20 ga., combination										
8010 60% cellular, 40% non-cellular, inserts and trench	G	R-4	1100	.036	S.F.	22.50	2.30	.13	24.93	28

05 41 Structural Metal Stud Framing

05 41 13 – Load-Bearing Metal Stud Framing

05 41 13.05 Bracing

0010 **BRACING**, shear wall X-bracing, per 10' x 10' bay, one face										
0015 Made of recycled materials										
0120 Metal strap, 20 ga. x 4" wide	G	2 Carp	18	.889	Ea.	19.35	50		69.35	96
0130 6" wide	G		18	.889		31	50		81	109
0160 18 ga. x 4" wide	G		16	1		32	56.50		88.50	119
0170 6" wide	G		16	1		47	56.50		103.50	136
0410 Continuous strap bracing, per horizontal row on both faces										
0420 Metal strap, 20 ga. x 2" wide, studs 12" OC	G	1 Carp	7	1.143	C.L.F.	55	64.50		119.50	157
0430 16" OC	G		8	1		55	56.50		111.50	145
0440 24" OC	G		10	.800		55	45		100	128
0450 18 ga. x 2" wide, studs 12" OC	G		6	1.333		77	75		152	197
0460 16" OC	G		7	1.143		77	64.50		141.50	181
0470 24" OC	G		8	1		77	56.50		133.50	169

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05 41 13 – Load-Bearing Metal Stud Framing

05 41 13.10 Bridging		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **BRIDGING**, solid between studs w/1-1/4" leg track, per stud bay										
0015 Made from recycled materials										
0200 Studs 12" OC, 18 ga. x 2-1/2" wide	G	1 Carp	125	.064	Ea.	.93	3.60		4.53	6.3
0210 3-5/8" wide	G		120	.067		1.11	3.75		4.86	6.8
0220 4" wide	G		120	.067		1.04	3.75		4.79	6.7
0230 6" wide	G		115	.070		1.53	3.92		5.45	7.5
0240 8" wide	G		110	.073		1.88	4.09		5.97	8.1
0300 16 ga. x 2-1/2" wide	G		115	.070		1.15	3.92		5.07	7.1
0310 3-5/8" wide	G		110	.073		1.36	4.09		5.45	7.6
0320 4" wide	G		110	.073		1.52	4.09		5.61	7.7
0330 6" wide	G		105	.076		1.90	4.29		6.19	8.5
0340 8" wide	G		100	.080		2.34	4.50		6.84	9.3
1200 Studs 16" OC, 18 ga. x 2-1/2" wide	G		125	.064		1.19	3.60		4.79	6.6
1210 3-5/8" wide	G		120	.067		1.42	3.75		5.17	7.1
1220 4" wide	G		120	.067		1.34	3.75		5.09	7.0
1230 6" wide	G		115	.070		1.96	3.92		5.88	8
1240 8" wide	G		110	.073		2.41	4.09		6.50	8.7
1300 16 ga. x 2-1/2" wide	G		115	.070		1.47	3.92		5.39	7.4
1310 3-5/8" wide	G		110	.073		1.75	4.09		5.84	8
1320 4" wide	G		110	.073		1.95	4.09		6.04	8.2
1330 6" wide	G		105	.076		2.44	4.29		6.73	9.1
1340 8" wide	G		100	.080		3	4.50		7.50	10
2200 Studs 24" OC, 18 ga. x 2-1/2" wide	G		125	.064		1.72	3.60		5.32	7.2
2210 3-5/8" wide	G		120	.067		2.05	3.75		5.80	7.8
2220 4" wide	G		120	.067		1.93	3.75		5.68	7.7
2230 6" wide	G		115	.070		2.84	3.92		6.76	8.9
2240 8" wide	G	1 Carp	110	.073	Ea.	3.49	4.09		7.58	9.9
2300 16 ga. x 2-1/2" wide	G		115	.070		2.12	3.92		6.04	8.2
2310 3-5/8" wide	G		110	.073		2.53	4.09		6.62	8.9
2320 4" wide	G		110	.073		2.82	4.09		6.91	9.2
2330 6" wide	G		105	.076		3.53	4.29		7.82	10.3
2340 8" wide	G		100	.080		4.34	4.50		8.84	11.5
3000 Continuous bridging, per row										
3100 16 ga. x 1-1/2" channel thru studs 12" OC	G	1 Carp	6	1.333	C.L.F.	51.50	75		126.50	169
3110 16" OC	G		7	1.143		51.50	64.50		116	153
3120 24" OC	G		8.80	.909		51.50	51		102.50	133
4100 2" x 2" angle x 18 ga., studs 12" OC	G		7	1.143		78	64.50		142.50	182
4110 16" OC	G		9	.889		78	50		128	161
4120 24" OC	G		12	.667		78	37.50		115.50	142
4200 16 ga., studs 12" OC	G		5	1.600		98	90		188	242
4210 16" OC	G		7	1.143		98	64.50		162.50	204
4220 24" OC	G		10	.800		98	45		143	175

05 41 13.25 Framing, Boxed Headers/Beams

0010 **FRAMING, BOXED HEADERS/BEAMS**										
0015 Made from recycled materials										
0200 Double, 18 ga. x 6" deep	G	2 Carp	220	.073	L.F.	5.45	4.09		9.54	12.1
0210 8" deep	G		210	.076		5.65	4.29		9.94	12.6
0220 10" deep	G		200	.080		7.25	4.50		11.75	14.6
0230 12" deep	G		190	.084		7.90	4.74		12.64	15.7
0300 16 ga. x 8" deep	G		180	.089		6.55	5		11.55	14.6
0310 10" deep	G		170	.094		8.10	5.30		13.40	16.8
0320 12" deep	G		160	.100		8.80	5.65		14.45	18.0

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05 41 13 – Load-Bearing Metal Stud Framing

	05 41 13.25 Framing, Boxed Headers/Beams		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0400	14 ga. x 10" deep	G	2 Carp	140	.114	L.F.	9.55	6.45		16	20
0410	12" deep	G		130	.123		10.45	6.95		17.40	22
1210	Triple, 18 ga. x 8" deep	G		170	.094		8.55	5.30		13.85	17.30
1220	10" deep	G		165	.097		10.30	5.45		15.75	19.50
1230	12" deep	G		160	.100		11.30	5.65		16.95	21
1300	16 ga. x 8" deep	G		145	.110		9.90	6.20		16.10	20
1310	10" deep	G		140	.114		11.60	6.45		18.05	22.50
1320	12" deep	G		135	.119		12.65	6.65		19.30	24
1400	14 ga. x 10" deep	G		115	.139		13	7.85		20.85	26
1410	12" deep	G		110	.145		14.40	8.20		22.60	28

05 41 13.30 Framing, Stud Walls

0010	**FRAMING, STUD WALLS** w/top & bottom track, no openings,										
0020	Headers, beams, bridging or bracing										
0025	Made from recycled materials										
4100	8' high walls, 18 ga. x 2-1/2" wide, studs 12" OC	G	2 Carp	54	.296	L.F.	8	16.70		24.70	34
4110	16" OC	G		77	.208		6.45	11.70		18.15	24.50
4120	24" OC	G		107	.150		4.88	8.40		13.28	17.90
4130	3-5/8" wide, studs 12" OC	G		53	.302		9.55	17		26.55	36
4140	16" OC	G		76	.211		7.70	11.85		19.55	26
4150	24" OC	G		105	.152		5.85	8.60		14.45	19.15
4160	4" wide, studs 12" OC	G		52	.308		9.75	17.30		27.05	36.50
4170	16" OC	G		74	.216		7.80	12.15		19.95	26.50
4180	24" OC	G		103	.155		5.85	8.75		14.60	19.45
4190	6" wide, studs 12" OC	G		51	.314		12.70	17.65		30.35	40.50
4200	16" OC	G		73	.219		10.25	12.35		22.60	29.50
4210	24" OC	G		101	.158		7.80	8.90		16.70	22
4220	8" wide, studs 12" OC	G		50	.320		16.60	18		34.60	45.50
4230	16" OC	G		72	.222		13.35	12.50		25.85	33.50
4240	24" OC	G		100	.160		10.10	9		19.10	24.50
4300	16 ga. x 2-1/2" wide, studs 12" OC	G		47	.340		10.50	19.15		29.65	40
4310	16" OC	G		68	.235		8.30	13.25		21.55	29
4320	24" OC	G		94	.170		6.10	9.60		15.70	21
4330	3-5/8" wide, studs 12" OC	G		46	.348		12.05	19.60		31.65	42.50
4340	16" OC	G		66	.242		9.55	13.65		23.20	31
4350	24" OC	G		92	.174		7.05	9.80		16.85	22.50
4360	4" wide, studs 12" OC	G		45	.356		12.95	20		32.95	44.50
4370	16" OC	G		65	.246		10.20	13.85		24.05	31.50
4380	24" OC	G		90	.178		7.45	10		17.45	23
4390	6" wide, studs 12" OC	G		44	.364		16.45	20.50		36.95	48.50
4400	16" OC	G		64	.250		13.05	14.10		27.15	35.50
4410	24" OC	G		88	.182		9.70	10.25		19.95	26
4420	8" wide, studs 12" OC	G		43	.372		19.75	21		40.75	52.50
4430	16" OC	G		63	.254		15.70	14.30		30	39
4440	24" OC	G		86	.186		11.65	10.45		22.10	28.50
5100	10' high walls, 18 ga. x 2-1/2" wide, studs 12" OC	G		54	.296		9.55	16.70		26.25	35.50
5110	16" OC	G		77	.208		7.60	11.70		19.30	26
5120	24" OC	G		107	.150		5.65	8.40		14.05	18.80
5130	3-5/8" wide, studs 12" OC	G		53	.302		11.40	17		28.40	38
5140	16" OC	G		76	.211		9.10	11.85		20.95	27.50
5150	24" OC	G		105	.152		6.75	8.60		15.35	20
5160	4" wide, studs 12" OC	G		52	.308		11.70	17.30		29	39
5170	16" OC	G		74	.216		9.25	12.15		21.40	28.50

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

05 41 13 – Load-Bearing Metal Stud Framing

05 41 13.30 Framing, Stud Walls			Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
5180	24" OC	G	2 Carp	103	.155	L.F.	6.85	8.75		15.60	20.5
5190	6" wide, studs 12" OC	G	2 Carp	51	.314	L.F.	15.10	17.65		32.75	43
5200	16" OC	G		73	.219		12.05	12.35		24.40	31.5
5210	24" OC	G		101	.158		9	8.90		17.90	23
5220	8" wide, studs 12" OC	G		50	.320		19.90	18		37.90	49
5230	16" OC	G		72	.222		15.80	12.50		28.30	36
5240	24" OC	G		100	.160		11.75	9		20.75	26.5
5300	16 ga. x 2-1/2" wide, studs 12" OC	G		47	.340		12.65	19.15		31.80	42.5
5310	16" OC	G		68	.235		9.95	13.25		23.20	30.5
5320	24" OC	G		94	.170		7.20	9.60		16.80	22
5330	3-5/8" wide, studs 12" OC	G		46	.348		14.50	19.60		34.10	45
5340	16" OC	G		66	.242		11.40	13.65		25.05	33
5350	24" OC	G		92	.174		8.30	9.80		18.10	23.5
5360	4" wide, studs 12" OC	G		45	.356		15.70	20		35.70	47.5
5370	16" OC	G		65	.246		12.25	13.85		26.10	34
5380	24" OC	G		90	.178		8.85	10		18.85	24.5
5390	6" wide, studs 12" OC	G		44	.364		19.80	20.50		40.30	52.5
5400	16" OC	G		64	.250		15.60	14.10		29.70	38
5410	24" OC	G		88	.182		11.35	10.25		21.60	28
5420	8" wide, studs 12" OC	G		43	.372		24	21		45	57
5430	16" OC	G		63	.254		18.75	14.30		33.05	42
5440	24" OC	G		86	.186		13.70	10.45		24.15	30.5
6190	12' high walls, 18 ga. x 6" wide, studs 12" OC	G		41	.390		17.55	22		39.55	52
6200	16" OC	G		58	.276		13.90	15.55		29.45	38.5
6210	24" OC	G		81	.198		10.25	11.10		21.35	28
6220	8" wide, studs 12" OC	G		40	.400		23	22.50		45.50	59
6230	16" OC	G		57	.281		18.25	15.80		34.05	43.5
6240	24" OC	G		80	.200		13.35	11.25		24.60	31.5
6390	16 ga. x 6" wide, studs 12" OC	G		35	.457		23	25.50		48.50	64
6400	16" OC	G		51	.314		18.15	17.65		35.80	46.5
6410	24" OC	G		70	.229		13.05	12.85		25.90	33.5
6420	8" wide, studs 12" OC	G		34	.471		28	26.50		54.50	70
6430	16" OC	G		50	.320		22	18		40	51
6440	24" OC	G		69	.232		15.70	13.05		28.75	36.5
6530	14 ga. x 3-5/8" wide, studs 12" OC	G		34	.471		22.50	26.50		49	64
6540	16" OC	G		48	.333		17.35	18.75		36.10	47
6550	24" OC	G		65	.246		12.45	13.85		26.30	34
6560	4" wide, studs 12" OC	G		33	.485		23.50	27.50		51	66.5
6570	16" OC	G		47	.340		18.30	19.15		37.45	48.5
6580	24" OC	G		64	.250		13.15	14.10		27.25	35.5
6730	12 ga. x 3-5/8" wide, studs 12" OC	G	2 Carp	31	.516	L.F.	30.50	29		59.50	77
6740	16" OC	G		43	.372		23.50	21		44.50	57
6750	24" OC	G		59	.271		16.65	15.25		31.90	41
6760	4" wide, studs 12" OC	G		30	.533		32	30		62	80
6770	16" OC	G		42	.381		25	21.50		46.50	59.5
6780	24" OC	G		58	.276		17.55	15.55		33.10	42.5
7390	16' high walls, 16 ga. x 6" wide, studs 12" OC	G		33	.485		30	27.50		57.50	73.5
7400	16" OC	G		48	.333		23	18.75		41.75	53.5
7410	24" OC	G		67	.239		16.45	13.45		29.90	38
7420	8" wide, studs 12" OC	G		32	.500		36	28		64	81.5
7430	16" OC	G		47	.340		28	19.15		47.15	59
7440	24" OC	G		66	.242		19.75	13.65		33.40	42
7560	14 ga. x 4" wide, studs 12" OC	G		31	.516		30.50	29		59.50	77

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

05 41 Structural Metal Stud Framing

05 41 13 – Load-Bearing Metal Stud Framing

05 41 13.30 Framing, Stud Walls			Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
7570	16" OC	G	2 Carp	45	.356	L.F.	23.50	20		43.50	56
7580	24" OC	G		61	.262		16.55	14.75		31.30	40.50
7590	6" wide, studs 12" OC	G		30	.533		38.50	30		68.50	86.50
7600	16" OC	G		44	.364		29.50	20.50		50	63
7610	24" OC	G		60	.267		21	15		36	45.50
7760	12 ga. x 4" wide, studs 12" OC	G		29	.552		42	31		73	92
7770	16" OC	G		40	.400		32	22.50		54.50	69
7780	24" OC	G		55	.291		22.50	16.40		38.90	49
7790	6" wide, studs 12" OC	G		28	.571		54	32		86	108
7800	16" OC	G		39	.410		41.50	23		64.50	80
7810	24" OC	G		54	.296		29	16.70		45.70	57
8590	20' high walls, 14 ga. x 6" wide, studs 12" OC	G		29	.552		47	31		78	97.50
8600	16" OC	G		42	.381		36	21.50		57.50	72
8610	24" OC	G		57	.281		25.50	15.80		41.30	51.50
8620	8" wide, studs 12" OC	G		28	.571		52.50	32		84.50	106
8630	16" OC	G		41	.390		40.50	22		62.50	77
8640	24" OC	G		56	.286		28.50	16.10		44.60	55
8790	12 ga. x 6" wide, studs 12" OC	G		27	.593		67	33.50		100.50	123
8800	16" OC	G		37	.432		51	24.50		75.50	92
8810	24" OC	G		51	.314		35	17.65		52.65	65.50
8820	8" wide, studs 12" OC	G		26	.615		79	34.50		113.50	138
8830	16" OC	G		36	.444		60.50	25		85.50	104
8840	24" OC	G		50	.320		41.50	18		59.50	73

05 42 Cold-Formed Metal Joist Framing

05 42 13 – Cold-Formed Metal Floor Joist Framing

05 42 13.05 Bracing

0010	**BRACING**, continuous, per row, top & bottom										
0015	Made from recycled materials										
0120	Flat strap, 20 ga. x 2" wide, joists at 12" OC	G	1 Carp	4.67	1.713	C.L.F.	57.50	96.50		154	208
0130	16" OC	G		5.33	1.501		55.50	84.50		140	187
0140	24" OC	G		6.66	1.201		53.50	67.50		121	160
0150	18 ga. x 2" wide, joists at 12" OC	G		4	2		76.50	113		189.50	252
0160	16" OC	G		4.67	1.713		75	96.50		171.50	227
0170	24" OC	G		5.33	1.501		73.50	84.50		158	207

05 42 13.10 Bridging

0010	**BRIDGING**, solid between joists w/1-1/4" leg track, per joist bay										
0015	Made from recycled materials										
0230	Joists 12" OC, 18 ga. track x 6" wide	G	1 Carp	80	.100	Ea.	1.53	5.65		7.18	10.10
0240	8" wide	G		75	.107		1.88	6		7.88	11
0250	10" wide	G		70	.114		2.39	6.45		8.84	12.25
0260	12" wide	G		65	.123		2.66	6.95		9.61	13.25
0330	16 ga. track x 6" wide	G		70	.114		1.90	6.45		8.35	11.70
0340	8" wide	G		65	.123		2.34	6.95		9.29	12.90
0350	10" wide	G		60	.133		3.02	7.50		10.52	14.50
0360	12" wide	G		55	.145		3.47	8.20		11.67	16
0440	14 ga. track x 8" wide	G		60	.133		3.05	7.50		10.55	14.50
0450	10" wide	G		55	.145		3.71	8.20		11.91	16.30
0460	12" wide	G		50	.160		4.29	9		13.29	18.10
0550	12 ga. track x 10" wide	G		45	.178		5.45	10		15.45	21
0560	12" wide	G		40	.200		5.75	11.25		17	23

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05 42 13 – Cold-Formed Metal Floor Joist Framing

			Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
05 42 13.10 Bridging											
1230	16" OC, 18 ga. track x 6" wide	G	1 Carp	80	.100	Ea.	1.96	5.65		7.61	10.5
1240	8" wide	G		75	.107		2.41	6		8.41	11.6
1250	10" wide	G		70	.114		3.07	6.45		9.52	13
1260	12" wide	G		65	.123		3.42	6.95		10.37	14.0
1330	16 ga. track x 6" wide	G		70	.114		2.44	6.45		8.89	12.3
1340	8" wide	G		65	.123		3	6.95		9.95	13.6
1350	10" wide	G		60	.133		3.88	7.50		11.38	15.4
1360	12" wide	G		55	.145		4.46	8.20		12.66	17.1
1440	14 ga. track x 8" wide	G		60	.133		3.91	7.50		11.41	15.4
1450	10" wide	G		55	.145		4.75	8.20		12.95	17.4
1460	12" wide	G		50	.160		5.50	9		14.50	19.4
1550	12 ga. track x 10" wide	G		45	.178		6.95	10		16.95	22.5
1560	12" wide	G		40	.200		7.35	11.25		18.60	25
2230	24" OC, 18 ga. track x 6" wide	G		80	.100		2.84	5.65		8.49	11.5
2240	8" wide	G		75	.107		3.49	6		9.49	12.8
2250	10" wide	G		70	.114		4.44	6.45		10.89	14.5
2260	12" wide	G		65	.123		4.94	6.95		11.89	15.7
2330	16 ga. track x 6" wide	G	1 Carp	70	.114	Ea.	3.53	6.45		9.98	13.5
2340	8" wide	G		65	.123		4.34	6.95		11.29	15.1
2350	10" wide	G		60	.133		5.60	7.50		13.10	17.3
2360	12" wide	G		55	.145		6.45	8.20		14.65	19.3
2440	14 ga. track x 8" wide	G		60	.133		5.65	7.50		13.15	17.3
2450	10" wide	G		55	.145		6.85	8.20		15.05	19.7
2460	12" wide	G		50	.160		7.95	9		16.95	22
2550	12 ga. track x 10" wide	G		45	.178		10.05	10		20.05	26
2560	12" wide	G		40	.200		10.65	11.25		21.90	28.5
05 42 13.25 Framing, Band Joist											
0010	**FRAMING, BAND JOIST** (track) fastened to bearing wall										
0015	Made from recycled materials										
0220	18 ga. track x 6" deep	G	2 Carp	1000	.016	L.F.	1.25	.90		2.15	2.7
0230	8" deep	G		920	.017		1.53	.98		2.51	3.1
0240	10" deep	G		860	.019		1.95	1.05		3	3.7
0320	16 ga. track x 6" deep	G		900	.018		1.55	1		2.55	3.2
0330	8" deep	G		840	.019		1.91	1.07		2.98	3.7
0340	10" deep	G		780	.021		2.47	1.15		3.62	4.4
0350	12" deep	G		740	.022		2.84	1.22		4.06	4.9
0430	14 ga. track x 8" deep	G		750	.021		2.49	1.20		3.69	4.5
0440	10" deep	G		720	.022		3.02	1.25		4.27	5.2
0450	12" deep	G		700	.023		3.50	1.29		4.79	5.7
0540	12 ga. track x 10" deep	G		670	.024		4.43	1.34		5.77	6.8
0550	12" deep	G		650	.025		4.68	1.39		6.07	7.2
05 42 13.30 Framing, Boxed Headers/Beams											
0010	**FRAMING, BOXED HEADERS/BEAMS**										
0015	Made from recycled materials										
0200	Double, 18 ga. x 6" deep	G	2 Carp	220	.073	L.F.	5.45	4.09		9.54	12.1
0210	8" deep	G		210	.076		5.65	4.29		9.94	12.6
0220	10" deep	G		200	.080		7.25	4.50		11.75	14.6
0230	12" deep	G		190	.084		7.90	4.74		12.64	15.7
0300	16 ga. x 8" deep	G		180	.089		6.55	5		11.55	14.6
0310	10" deep	G		170	.094		8.10	5.30		13.40	16.8
0320	12" deep	G		160	.100		8.80	5.65		14.45	18.0
0400	14 ga. x 10" deep	G		140	.114		9.55	6.45		16	20

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05 42 13 – Cold-Formed Metal Floor Joist Framing

05 42 13.30 Framing, Boxed Headers/Beams			Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0410	12" deep	G	2 Carp	130	.123	L.F.	10.45	6.95		17.40	22
0500	12 ga. x 10" deep	G		110	.145		12.55	8.20		20.75	26
0510	12" deep	G		100	.160		13.90	9		22.90	28.50
1210	Triple, 18 ga. x 8" deep	G		170	.094		8.55	5.30		13.85	17.30
1220	10" deep	G		165	.097		10.30	5.45		15.75	19.50
1230	12" deep	G		160	.100		11.30	5.65		16.95	21
1300	16 ga. x 8" deep	G	2 Carp	145	.110	L.F.	9.90	6.20		16.10	20
1310	10" deep	G		140	.114		11.60	6.45		18.05	22.50
1320	12" deep	G		135	.119		12.65	6.65		19.30	24
1400	14 ga. x 10" deep	G		115	.139		13.75	7.85		21.60	27
1410	12" deep	G		110	.145		15.15	8.20		23.35	29
1500	12 ga. x 10" deep	G		90	.178		18.30	10		28.30	35
1510	12" deep	G		85	.188		20.50	10.60		31.10	38.50

05 42 13.40 Framing, Joists

0010 **FRAMING, JOISTS**, no band joists (track), web stiffeners, headers,
0020 Beams, bridging or bracing
0025 Made from recycled materials
0030 Joists (2" flange) and fasteners, materials only

0220	18 ga. x 6" deep	G				L.F.	1.84			1.84	2.02
0230	8" deep	G					1.94			1.94	2.14
0240	10" deep	G					2.31			2.31	2.54
0320	16 ga. x 6" deep	G					1.98			1.98	2.18
0330	8" deep	G					2.43			2.43	2.67
0340	10" deep	G					2.77			2.77	3.05
0350	12" deep	G					3.13			3.13	3.44
0430	14 ga. x 8" deep	G					3.06			3.06	3.36
0440	10" deep	G					3.52			3.52	3.87
0450	12" deep	G					4			4	4.40
0540	12 ga. x 10" deep	G					5.10			5.10	5.60
0550	12" deep	G					5.80			5.80	6.40
1010	Installation of joists to band joists, beams & headers, labor only										
1220	18 ga. x 6" deep		2 Carp	110	.145	Ea.		8.20		8.20	12.20
1230	8" deep			90	.178			10		10	14.90
1240	10" deep			80	.200			11.25		11.25	16.75
1320	16 ga. x 6" deep			95	.168			9.50		9.50	14.10
1330	8" deep			70	.229			12.85		12.85	19.15
1340	10" deep			60	.267			15		15	22.50
1350	12" deep			55	.291			16.40		16.40	24.50
1430	14 ga. x 8" deep			65	.246			13.85		13.85	20.50
1440	10" deep			45	.356			20		20	30
1450	12" deep			35	.457			25.50		25.50	38.50
1540	12 ga. x 10" deep			40	.400			22.50		22.50	33.50
1550	12" deep			30	.533			30		30	44.50

05 42 13.45 Framing, Web Stiffeners

0010 **FRAMING, WEB STIFFENERS** at joist bearing, fabricated from
0020 Stud piece (1-5/8" flange) to stiffen joist (2" flange)
0025 Made from recycled materials

2120	For 6" deep joist, with 18 ga. x 2-1/2" stud	G	1 Carp	120	.067	Ea.	.78	3.75		4.53	6.45
2130	3-5/8" stud	G		110	.073		.93	4.09		5.02	7.10
2140	4" stud	G		105	.076		.97	4.29		5.26	7.45
2150	6" stud	G		100	.080		1.22	4.50		5.72	8.05
2160	8" stud	G		95	.084		1.63	4.74		6.37	8.85

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05 42 13 – Cold-Formed Metal Floor Joist Framing

05 42 13.45 Framing, Web Stiffeners			Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2220	8" deep joist, with 2-1/2" stud	G	1 Carp	120	.067	Ea.	1.05	3.75		4.80	6.7
2230	3-5/8" stud	G		110	.073		1.25	4.09		5.34	7.4
2240	4" stud	G		105	.076		1.30	4.29		5.59	7.8
2250	6" stud	G		100	.080		1.63	4.50		6.13	8.5
2260	8" stud	G		95	.084		2.18	4.74		6.92	9.4
2320	10" deep joist, with 2-1/2" stud	G		110	.073		1.29	4.09		5.38	7.5
2330	3-5/8" stud	G		100	.080		1.54	4.50		6.04	8.4
2340	4" stud	G		95	.084		1.61	4.74		6.35	8.8
2350	6" stud	G		90	.089		2.03	5		7.03	9.7
2360	8" stud	G		85	.094		2.71	5.30		8.01	10.9
2420	12" deep joist, with 2-1/2" stud	G		110	.073		1.56	4.09		5.65	7.8
2430	3-5/8" stud	G		100	.080		1.86	4.50		6.36	8.7
2440	4" stud	G		95	.084		1.94	4.74		6.68	9.2
2450	6" stud	G		90	.089		2.44	5		7.44	10.1
2460	8" stud	G		85	.094		3.26	5.30		8.56	11.5
3130	For 6" deep joist, with 16 ga. x 3-5/8" stud	G		100	.080		1.24	4.50		5.74	8.0
3140	4" stud	G		95	.084		1.37	4.74		6.11	8.5
3150	6" stud	G		90	.089		1.69	5		6.69	9.3
3160	8" stud	G		85	.094		2.02	5.30		7.32	10.1
3230	8" deep joist, with 3-5/8" stud	G		100	.080		1.66	4.50		6.16	8.5
3240	4" stud	G		95	.084		1.84	4.74		6.58	9.0
3250	6" stud	G		90	.089		2.26	5		7.26	9.9
3260	8" stud	G		85	.094		2.71	5.30		8.01	10.9
3330	10" deep joist, with 3-5/8" stud	G		85	.094		2.06	5.30		7.36	10.1
3340	4" stud	G		80	.100		2.27	5.65		7.92	10.9
3350	6" stud	G		75	.107		2.81	6		8.81	12.0
3360	8" stud	G		70	.114		3.35	6.45		9.80	13.3
3430	12" deep joist, with 3-5/8" stud	G		85	.094		2.48	5.30		7.78	10.6
3440	4" stud	G		80	.100		2.74	5.65		8.39	11.4
3450	6" stud	G		75	.107		3.38	6		9.38	12.6
3460	8" stud	G		70	.114		4.04	6.45		10.49	14.0
4230	For 8" deep joist, with 14 ga. x 3-5/8" stud	G		90	.089		2.20	5		7.20	9.8
4240	4" stud	G		85	.094		2.29	5.30		7.59	10.4
4250	6" stud	G	1 Carp	80	.100	Ea.	2.91	5.65		8.56	11.6
4260	8" stud	G		75	.107		3.20	6		9.20	12.4
4330	10" deep joist, with 3-5/8" stud	G		75	.107		2.72	6		8.72	11.9
4340	4" stud	G		70	.114		2.84	6.45		9.29	12.7
4350	6" stud	G		65	.123		3.60	6.95		10.55	14.2
4360	8" stud	G		60	.133		3.97	7.50		11.47	15.5
4430	12" deep joist, with 3-5/8" stud	G		75	.107		3.28	6		9.28	12.5
4440	4" stud	G		70	.114		3.42	6.45		9.87	13.3
4450	6" stud	G		65	.123		4.34	6.95		11.29	15.0
4460	8" stud	G		60	.133		4.78	7.50		12.28	16.4
5330	For 10" deep joist, with 12 ga. x 3-5/8" stud	G		65	.123		3.88	6.95		10.83	14.5
5340	4" stud	G		60	.133		4.05	7.50		11.55	15.6
5350	6" stud	G		55	.145		5.25	8.20		13.45	17.9
5360	8" stud	G		50	.160		6.20	9		15.20	20
5430	12" deep joist, with 3-5/8" stud	G		65	.123		4.68	6.95		11.63	15.4
5440	4" stud	G		60	.133		4.88	7.50		12.38	16.5
5450	6" stud	G		55	.145		6.30	8.20		14.50	19.1
5460	8" stud	G		50	.160		7.45	9		16.45	21.5

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05 42 23 – Cold-Formed Metal Roof Joist Framing

05 42 23.05 Framing, Bracing		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **FRAMING, BRACING**										
0015 Made from recycled materials										
0020 Continuous bracing, per row										
0100 16 ga. x 1-1/2" channel thru rafters/trusses @ 16" OC	G	1 Carp	4.50	1.778	C.L.F.	51.50	100		151.50	206
0120 24" OC	G		6	1.333		51.50	75		126.50	169
0300 2" x 2" angle x 18 ga., rafters/trusses @ 16" OC	G		6	1.333		78	75		153	198
0320 24" OC	G		8	1		78	56.50		134.50	170
0400 16 ga., rafters/trusses @ 16" OC	G		4.50	1.778		98	100		198	257
0420 24" OC	G		6.50	1.231		98	69.50		167.50	211

05 42 23.10 Framing, Bridging		Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **FRAMING, BRIDGING**										
0015 Made from recycled materials										
0020 Solid, between rafters w/1-1/4" leg track, per rafter bay										
1200 Rafters 16" OC, 18 ga. x 4" deep	G	1 Carp	60	.133	Ea.	1.34	7.50		8.84	12.60
1210 6" deep	G		57	.140		1.96	7.90		9.86	13.90
1220 8" deep	G		55	.145		2.41	8.20		10.61	14.85
1230 10" deep	G		52	.154		3.07	8.65		11.72	16.30
1240 12" deep	G		50	.160		3.42	9		12.42	17.15
2200 24" OC, 18 ga. x 4" deep	G		60	.133		1.93	7.50		9.43	13.30
2210 6" deep	G		57	.140		2.84	7.90		10.74	14.85
2220 8" deep	G	1 Carp	55	.145	Ea.	3.49	8.20		11.69	16.05
2230 10" deep	G		52	.154		4.44	8.65		13.09	17.80
2240 12" deep	G		50	.160		4.94	9		13.94	18.85

05 42 23.50 Framing, Parapets		Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **FRAMING, PARAPETS**										
0015 Made from recycled materials										
0100 3' high installed on 1st story, 18 ga. x 4" wide studs, 12" OC	G	2 Carp	100	.160	L.F.	4.89	9		13.89	18.80
0110 16" OC	G		150	.107		4.17	6		10.17	13.55
0120 24" OC	G		200	.080		3.44	4.50		7.94	10.50
0200 6" wide studs, 12" OC	G		100	.160		6.60	9		15.60	20.50
0210 16" OC	G		150	.107		5.65	6		11.65	15.20
0220 24" OC	G		200	.080		4.75	4.50		9.25	11.90
1100 Installed on 2nd story, 18 ga. x 4" wide studs, 12" OC	G		95	.168		4.89	9.50		14.39	19.50
1110 16" OC	G		145	.110		4.17	6.20		10.37	13.85
1120 24" OC	G		190	.084		3.44	4.74		8.18	10.85
1200 6" wide studs, 12" OC	G		95	.168		6.60	9.50		16.10	21.50
1210 16" OC	G		145	.110		5.65	6.20		11.85	15.50
1220 24" OC	G		190	.084		4.75	4.74		9.49	12.25
2100 Installed on gable, 18 ga. x 4" wide studs, 12" OC	G		85	.188		4.89	10.60		15.49	21
2110 16" OC	G		130	.123		4.17	6.95		11.12	14.90
2120 24" OC	G		170	.094		3.44	5.30		8.74	11.70
2200 6" wide studs, 12" OC	G		85	.188		6.60	10.60		17.20	23
2210 16" OC	G		130	.123		5.65	6.95		12.60	16.55
2220 24" OC	G		170	.094		4.75	5.30		10.05	13.10

05 42 23.60 Framing, Roof Rafters		Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **FRAMING, ROOF RAFTERS**										
0015 Made from recycled materials										
0100 Boxed ridge beam, double, 18 ga. x 6" deep	G	2 Carp	160	.100	L.F.	5.45	5.65		11.10	14.40
0110 8" deep	G		150	.107		5.65	6		11.65	15.15
0120 10" deep	G		140	.114		7.25	6.45		13.70	17.55
0130 12" deep	G		130	.123		7.90	6.95		14.85	19

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05 42 23 – Cold-Formed Metal Roof Joist Framing

	05 42 23.60 Framing, Roof Rafters		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O
0200	16 ga. x 6" deep	G	2 Carp	150	.107	L.F.	5.70	6		11.70	1.
0210	8" deep	G		140	.114		6.55	6.45		13	1
0220	10" deep	G		130	.123		8.10	6.95		15.05	1
0230	12" deep	G		120	.133		8.80	7.50		16.30	2
1100	Rafters, 2" flange, material only, 18 ga. x 6" deep	G					1.84			1.84	
1110	8" deep	G					1.94			1.94	
1120	10" deep	G					2.31			2.31	
1130	12" deep	G					2.66			2.66	
1200	16 ga. x 6" deep	G					1.98			1.98	
1210	8" deep	G				L.F.	2.43			2.43	
1220	10" deep	G					2.77			2.77	
1230	12" deep	G					3.13			3.13	
2100	Installation only, ordinary rafter to 4:12 pitch, 18 ga. x 6" deep		2 Carp	35	.457	Ea.		25.50		25.50	38
2110	8" deep			30	.533			30		30	44
2120	10" deep			25	.640			36		36	53
2130	12" deep			20	.800			45		45	67
2200	16 ga. x 6" deep			30	.533			30		30	44
2210	8" deep			25	.640			36		36	53
2220	10" deep			20	.800			45		45	67
2230	12" deep			15	1.067			60		60	89
8100	Add to labor, ordinary rafters on steep roofs							25%			
8110	Dormers & complex roofs							50%			
8200	Hip & valley rafters to 4:12 pitch							25%			
8210	Steep roofs							50%			
8220	Dormers & complex roofs							75%			
8300	Hip & valley jack rafters to 4:12 pitch							50%			
8310	Steep roofs							75%			
8320	Dormers & complex roofs							100%			

05 42 23.70 Framing, Soffits and Canopies

0010	**FRAMING, SOFFITS & CANOPIES**										
0015	Made from recycled materials										
0130	Continuous ledger track @ wall, studs @ 16" OC, 18 ga. x 4" wide	G	2 Carp	535	.030	L.F.	.89	1.68		2.57	3.
0140	6" wide	G		500	.032		1.31	1.80		3.11	4
0150	8" wide	G		465	.034		1.61	1.94		3.55	4.
0160	10" wide	G		430	.037		2.05	2.09		4.14	5.
0230	Studs @ 24" OC, 18 ga. x 4" wide	G		800	.020		.85	1.13		1.98	2.
0240	6" wide	G		750	.021		1.25	1.20		2.45	3.
0250	8" wide	G		700	.023		1.53	1.29		2.82	3.
0260	10" wide	G		650	.025		1.95	1.39		3.34	4.
1000	Horizontal soffit and canopy members, material only										
1030	1-5/8" flange studs, 18 ga. x 4" deep	G				L.F.	1.16			1.16	1.
1040	6" deep	G					1.46			1.46	1.
1050	8" deep	G					1.96			1.96	2.
1140	2" flange joists, 18 ga. x 6" deep	G					2.10			2.10	2.
1150	8" deep	G					2.22			2.22	2.
1160	10" deep	G					2.64			2.64	2.
4030	Installation only, 18 ga., 1-5/8" flange x 4" deep		2 Carp	130	.123	Ea.		6.95		6.95	10.
4040	6" deep		"	110	.145	"		8.20		8.20	12.
4050	8" deep		2 Carp	90	.178	Ea.		10		10	14.
4140	2" flange, 18 ga. x 6" deep			110	.145			8.20		8.20	12.
4150	8" deep			90	.178			10		10	14.
4160	10" deep			80	.200			11.25		11.25	16.

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05 42 Cold-Formed Metal Joist Framing

05 42 23 – Cold-Formed Metal Roof Joist Framing

05 42 23.70 Framing, Soffits and Canopies			Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
6010	Clips to attach fascia to rafter tails, 2" x 2" x 18 ga. angle	G	1 Carp	120	.067	Ea.	.92	3.75		4.67	6.60
6020	16 ga. angle	G	"	100	.080		1.16	4.50		5.66	7.95

05 44 Cold-Formed Metal Trusses

05 44 13 – Cold-Formed Metal Roof Trusses

05 44 13.60 Framing, Roof Trusses

0010	**FRAMING, ROOF TRUSSES**										
0015	Made from recycled materials										
0020	Fabrication of trusses on ground, Fink (W) or King Post, to 4:12 pitch										
0120	18 ga. x 4" chords, 16' span	G	2 Carp	12	1.333	Ea.	54.50	75		129.50	172
0130	20' span	G		11	1.455		68	82		150	197
0140	24' span	G		11	1.455		81.50	82		163.50	212
0150	28' span	G		10	1.600		95	90		185	239
0160	32' span	G		10	1.600		109	90		199	254
0250	6" chords, 28' span	G		9	1.778		120	100		220	281
0260	32' span	G		9	1.778		137	100		237	299
0270	36' span	G		8	2		154	113		267	335
0280	40' span	G		8	2		171	113		284	355
1120	5:12 to 8:12 pitch, 18 ga. x 4" chords, 16' span	G		10	1.600		62	90		152	203
1130	20' span	G		9	1.778		77.50	100		177.50	235
1140	24' span	G		9	1.778		93	100		193	251
1150	28' span	G		8	2		109	113		222	288
1160	32' span	G		8	2		124	113		237	305
1250	6" chords, 28' span	G		7	2.286		137	129		266	340
1260	32' span	G		7	2.286		156	129		285	365
1270	36' span	G		6	2.667		176	150		326	415
1280	40' span	G		6	2.667		195	150		345	440
2120	9:12 to 12:12 pitch, 18 ga. x 4" chords, 16' span	G		8	2		77.50	113		190.50	254
2130	20' span	G		7	2.286		97	129		226	299
2140	24' span	G		7	2.286		116	129		245	320
2150	28' span	G		6	2.667		136	150		286	370
2160	32' span	G		6	2.667		155	150		305	395
2250	6" chords, 28' span	G		5	3.200		171	180		351	455
2260	32' span	G		5	3.200		195	180		375	485
2270	36' span	G		4	4		220	225		445	575
2280	40' span	G		4	4		244	225		469	605
5120	Erection only of roof trusses, to 4:12 pitch, 16' span		F-6	48	.833	Ea.		44.50	41.50	86	112
5130	20' span			46	.870			46.50	43	89.50	117
5140	24' span			44	.909			48.50	45	93.50	122
5150	28' span			42	.952			51	47	98	128
5160	32' span			40	1			53.50	49.50	103	134
5170	36' span			38	1.053			56.50	52	108.50	141
5180	40' span			36	1.111			59.50	55	114.50	149
5220	5:12 to 8:12 pitch, 16' span			42	.952			51	47	98	128
5230	20' span			40	1			53.50	49.50	103	134
5240	24' span			38	1.053			56.50	52	108.50	141
5250	28' span			36	1.111			59.50	55	114.50	149
5260	32' span			34	1.176			63	58.50	121.50	158
5270	36' span			32	1.250			67	62	129	168
5280	40' span			30	1.333			71.50	66	137.50	179
5320	9:12 to 12:12 pitch, 16' span			36	1.111			59.50	55	114.50	149

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05 44 Cold-Formed Metal Trusses

05 44 13 – Cold-Formed Metal Roof Trusses

05 44 13.60 Framing, Roof Trusses		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
5330	20′ span	F-6	34	1.176	Ea.		63	58.50	121.50	158
5340	24′ span		32	1.250			67	62	129	166
5350	28′ span		30	1.333			71.50	66	137.50	179
5360	32′ span		28	1.429			76.50	71	147.50	192
5370	36′ span		26	1.538			82	76.50	158.50	204
5380	40′ span		24	1.667			89	82.50	171.50	22[illegible]

05 51 Metal Stairs

05 51 13 – Metal Pan Stairs

05 51 13.50 Pan Stairs

0010	**PAN STAIRS**, shop fabricated, steel stringers										
0015	Made from recycled materials										
0200	Metal pan tread for concrete in-fill, picket rail, 3′-6″ wide	G	E-4	35	.914	Riser	570	57	4.21	631.21	72[illegible]
0300	4′-0″ wide	G		30	1.067		565	66.50	4.92	636.42	72[illegible]
0350	Wall rail, both sides, 3′-6″ wide	G		53	.604		490	37.50	2.78	530.28	60[illegible]
1500	Landing, steel pan, conventional	G		160	.200	S.F.	75.50	12.45	.92	88.87	10[illegible]
1600	Pre-erected	G		255	.125	″	111	7.80	.58	119.38	13[illegible]
1700	Pre-erected, steel pan tread, 3′-6″ wide, 2 line pipe rail	G	E-2	87	.644	Riser	470	39.50	28.50	538	61[illegible]

05 51 16 – Metal Floor Plate Stairs

05 51 16.50 Floor Plate Stairs

0010	**FLOOR PLATE STAIRS**, shop fabricated, steel stringers										
0015	Made from recycled materials										
0400	Cast iron tread and pipe rail, 3′-6″ wide	G	E-4	35	.914	Riser	540	57	4.21	601.21	69[illegible]
0500	Checkered plate tread, industrial, 3′-6″ wide	G		28	1.143		310	71.50	5.25	386.75	45[illegible]
0550	Circular, for tanks, 3′-0″ wide	G		33	.970		350	60.50	4.47	414.97	48[illegible]
0600	For isolated stairs, add					Riser		100%			
0800	Custom steel stairs, 3′-6″ wide, economy	G	E-4	35	.914		475	57	4.21	536.21	61[illegible]
0810	Medium priced	G		30	1.067		625	66.50	4.92	696.42	79[illegible]
0900	Deluxe	G		20	1.600		785	100	7.40	892.40	1,02[illegible]
1100	For 4′ wide stairs, add						5%	5%			
1300	For 5′ wide stairs, add						10%	10%			

05 51 19 – Metal Grating Stairs

05 51 19.50 Grating Stairs

0010	**GRATING STAIRS**, shop fabricated, steel stringers, safety nosing on treads										
0015	Made from recycled materials										
0020	Grating tread and pipe railing, 3′-6″ wide	G	E-4	35	.914	Riser	370	57	4.21	431.21	50[illegible]
0100	4′-0″ wide	G	″	30	1.067	″	365	66.50	4.92	436.42	51[illegible]

05 51 23 – Metal Fire Escapes

05 51 23.25 Fire Escapes

0010	**FIRE ESCAPES**, shop fabricated										
0200	2′ wide balcony, 1″ x 1/4″ bars 1-1/2″ OC, with railing	G	2 Sswk	10	1.600	L.F.	55.50	99		154.50	21[illegible]
0400	1st story cantilevered stair, standard, with railing	G		.50	32	Ea.	2,225	1,975		4,200	5,5[illegible]
0500	Cable counterweighted, with railing	G		.40	40	″	2,125	2,475		4,600	6,1[illegible]
0700	36″ x 40″ platform & fixed stair, with railing	G		.40	40	Flight	985	2,475		3,460	4,8[illegible]
0900	For 3′-6″ wide escapes, add to above						100%	150%			

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05 51 Metal Stairs

05 51 23 – Metal Fire Escapes

05 51 23.50 Fire Escape Stairs		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **FIRE ESCAPE STAIRS**, portable										
0100 Portable ladder					Ea.	126			126	139

05 51 33 – Metal Ladders

05 51 33.13 Vertical Metal Ladders

0010 **VERTICAL METAL LADDERS**, shop fabricated										
0015 Made from recycled materials										
0020 Steel, 20" wide, bolted to concrete, with cage	G	E-4	50	.640	V.L.F.	122	40	2.95	164.95	199
0100 Without cage	G		85	.376		54	23.50	1.74	79.24	97.50
0300 Aluminum, bolted to concrete, with cage	G		50	.640		119	40	2.95	161.95	196
0400 Without cage	G		85	.376		53.50	23.50	1.74	78.74	97

05 51 33.16 Inclined Metal Ladders

0010 **INCLINED METAL LADDERS**, shop fabricated										
0015 Made from recycled materials										
3900 Industrial ships ladder, steel, 24" W, grating treads, 2 line pipe rail	G	E-4	30	1.067	Riser	239	66.50	4.92	310.42	370
4000 Aluminum	G	"	30	1.067	"	405	66.50	4.92	476.42	550

05 51 33.23 Alternating Tread Ladders

0010 **ALTERNATING TREAD LADDERS**, shop fabricated										
0015 Made from recycled materials										
0800 Alternating tread ladders, 68° angle of incline										
0810 8' vertical rise, steel, 149 lb., standard paint color		B-68G	3	5.333	Ea.	2,075	330	134	2,539	2,950
0820 Non-standard paint color		B-68G	3	5.333	Ea.	2,475	330	134	2,939	3,375
0830 Galvanized			3	5.333		2,500	330	134	2,964	3,400
0840 Stainless			3	5.333		3,600	330	134	4,064	4,625
0850 Aluminum, 87 lb.			3	5.333		2,650	330	134	3,114	3,550
1010 10' vertical rise, steel, 181 lb., standard paint color			2.75	5.818		2,575	360	147	3,082	3,575
1020 Non-standard paint color			2.75	5.818		2,950	360	147	3,457	3,950
1030 Galvanized			2.75	5.818		3,025	360	147	3,532	4,050
1040 Stainless			2.75	5.818		4,350	360	147	4,857	5,500
1050 Aluminum, 103 lb.			2.75	5.818		3,175	360	147	3,682	4,225
1210 12' vertical rise, steel, 245 lb., standard paint color			2.50	6.400		3,025	395	161	3,581	4,100
1220 Non-standard paint color			2.50	6.400		3,425	395	161	3,981	4,550
1230 Galvanized			2.50	6.400		3,525	395	161	4,081	4,650
1240 Stainless			2.50	6.400		5,075	395	161	5,631	6,375
1250 Aluminum, 103 lb.			2.50	6.400		3,725	395	161	4,281	4,875
1410 14' vertical rise, steel, 281 lb., standard paint color			2.25	7.111		3,475	440	179	4,094	4,700
1420 Non-standard paint color			2.25	7.111		3,900	440	179	4,519	5,175
1430 Galvanized			2.25	7.111		4,050	440	179	4,669	5,350
1440 Stainless			2.25	7.111		5,825	440	179	6,444	7,275
1450 Aluminum, 136 lb.			2.25	7.111		4,250	440	179	4,869	5,550
1610 16' vertical rise, steel, 317 lb., standard paint color			2	8		3,925	495	202	4,622	5,300
1620 Non-standard paint color			2	8		4,400	495	202	5,097	5,800
1630 Galvanized			2	8		4,575	495	202	5,272	6,000
1640 Stainless			2	8		6,550	495	202	7,247	8,200
1650 Aluminum, 153 lb.			2	8		4,800	495	202	5,497	6,250

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05 52 13 – Pipe and Tube Railings

05 52 13.50 Railings, Pipe		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **RAILINGS, PIPE**, shop fab'd, 3'-6" high, posts @ 5' OC										
0015 Made from recycled materials										
0020 Aluminum, 2 rail, satin finish, 1-1/4" diameter	G	E-4	160	.200	L.F.	54	12.45	.92	67.37	79
0030 Clear anodized	G		160	.200		63.50	12.45	.92	76.87	90
0040 Dark anodized	G		160	.200		72	12.45	.92	85.37	99
0080 1-1/2" diameter, satin finish	G		160	.200		60.50	12.45	.92	73.87	87
0090 Clear anodized	G		160	.200		68.50	12.45	.92	81.87	95
0100 Dark anodized	G		160	.200		75	12.45	.92	88.37	103
0140 Aluminum, 3 rail, 1-1/4" diam., satin finish	G		137	.234		69	14.55	1.08	84.63	99.50
0150 Clear anodized	G		137	.234		95.50	14.55	1.08	111.13	129
0160 Dark anodized	G		137	.234		94.50	14.55	1.08	110.13	128
0200 1-1/2" diameter, satin finish	G	E-4	137	.234	L.F.	90.50	14.55	1.08	106.13	123
0210 Clear anodized	G		137	.234		93	14.55	1.08	108.63	126
0220 Dark anodized	G		137	.234		114	14.55	1.08	129.63	149
0500 Steel, 2 rail, on stairs, primed, 1-1/4" diameter	G		160	.200		38.50	12.45	.92	51.87	62.50
0520 1-1/2" diameter	G		160	.200		32.50	12.45	.92	45.87	56
0540 Galvanized, 1-1/4" diameter	G		160	.200		49.50	12.45	.92	62.87	74.50
0560 1-1/2" diameter	G		160	.200		58.50	12.45	.92	71.87	84.50
0580 Steel, 3 rail, primed, 1-1/4" diameter	G		137	.234		54.50	14.55	1.08	70.13	83.50
0600 1-1/2" diameter	G		137	.234		60	14.55	1.08	75.63	89.50
0620 Galvanized, 1-1/4" diameter	G		137	.234		76.50	14.55	1.08	92.13	108
0640 1-1/2" diameter	G		137	.234		92	14.55	1.08	107.63	125
0700 Stainless steel, 2 rail, 1-1/4" diam., #4 finish	G		137	.234		155	14.55	1.08	170.63	194
0720 High polish	G		137	.234		251	14.55	1.08	266.63	300
0740 Mirror polish	G		137	.234		310	14.55	1.08	325.63	370
0760 Stainless steel, 3 rail, 1-1/2" diam., #4 finish	G		120	.267		232	16.65	1.23	249.88	283
0770 High polish	G		120	.267		385	16.65	1.23	402.88	450
0780 Mirror finish	G		120	.267		470	16.65	1.23	487.88	540
0900 Wall rail, alum. pipe, 1-1/4" diam., satin finish	G		213	.150		25.50	9.35	.69	35.54	43
0905 Clear anodized	G		213	.150		35.50	9.35	.69	45.54	54
0910 Dark anodized	G		213	.150		41.50	9.35	.69	51.54	60.50
0915 1-1/2" diameter, satin finish	G		213	.150		31.50	9.35	.69	41.54	49.50
0920 Clear anodized	G		213	.150		39.50	9.35	.69	49.54	58.50
0925 Dark anodized	G		213	.150		49.50	9.35	.69	59.54	69.50
0930 Steel pipe, 1-1/4" diameter, primed	G		213	.150		22	9.35	.69	32.04	39
0935 Galvanized	G		213	.150		32	9.35	.69	42.04	50
0940 1-1/2" diameter	G		176	.182		18.65	11.35	.84	30.84	39
0945 Galvanized	G		213	.150		32	9.35	.69	42.04	50
0955 Stainless steel pipe, 1-1/2" diam., #4 finish	G		107	.299		124	18.65	1.38	144.03	166
0960 High polish	G		107	.299		252	18.65	1.38	272.03	305
0965 Mirror polish	G		107	.299		298	18.65	1.38	318.03	360
2000 2-line pipe rail (1-1/2" T&B) with 1/2" pickets @ 4-1/2" OC,										
2005 attached handrail on brackets										
2010 42" high aluminum, satin finish, straight & level	G	E-4	120	.267	L.F.	415	16.65	1.23	432.88	480
2050 42" high steel, primed, straight & level	G	"	120	.267		157	16.65	1.23	174.88	199
4000 For curved and level rails, add						10%	10%			
4100 For sloped rails for stairs, add						30%	30%			

05 52 16 – Industrial Railings

05 52 16.50 Railings, Industrial										
0010 **RAILINGS, INDUSTRIAL**, shop fab'd, 3'-6" high, posts @ 5' OC										
0020 2 rail, 3'-6" high, 1-1/2" pipe	G	E-4	255	.125	L.F.	43	7.80	.58	51.38	59.50
0100 2" angle rail	G	"	255	.125		38.50	7.80	.58	46.88	55

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05 52 Metal Railings

05 52 16 – Industrial Railings

05 52 16.50 Railings, Industrial		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0200 For 4" high kick plate, 10 ga., add	G				L.F.	6.05			6.05	6.65
0300 1/4" thick, add	G					7.90			7.90	8.70
0500 For curved level rails, add						10%	10%			
0550 For sloped rails for stairs, add						30%	30%			

05 53 Metal Gratings

05 53 13 – Bar Gratings

05 53 13.10 Floor Grating, Aluminum										
0010 **FLOOR GRATING, ALUMINUM**, field fabricated from panels										
0015 Made from recycled materials										
0110 Bearing bars @ 1-3/16" OC, cross bars @ 4" OC,										
0111 Up to 300 S.F., 1" x 1/8" bar	G	E-4	900	.036	S.F.	25.50	2.22	.16	27.88	32
0112 Over 300 S.F.	G		850	.038		23.50	2.35	.17	26.02	29.50
0113 1-1/4" x 1/8" bar, up to 300 S.F.	G		800	.040		21.50	2.49	.18	24.17	27.50
0114 Over 300 S.F.	G		1000	.032		19.40	2	.15	21.55	24.50
0122 1-1/4" x 3/16" bar, up to 300 S.F.	G		750	.043		30.50	2.66	.20	33.36	38
0124 Over 300 S.F.	G		1000	.032		28	2	.15	30.15	33.50
0132 1-1/2" x 3/16" bar, up to 300 S.F.	G		700	.046		46	2.85	.21	49.06	55
0134 Over 300 S.F.	G		1000	.032		42	2	.15	44.15	49
0136 1-3/4" x 3/16" bar, up to 300 S.F.	G		500	.064		48	3.99	.30	52.29	59.50
0138 Over 300 S.F.	G		1000	.032		43.50	2	.15	45.65	51
0146 2-1/4" x 3/16" bar, up to 300 S.F.	G		600	.053		66	3.33	.25	69.58	78
0148 Over 300 S.F.	G		1000	.032		60	2	.15	62.15	69
0162 Cross bars @ 2" OC, 1" x 1/8", up to 300 S.F.	G		600	.053		29	3.33	.25	32.58	37.50
0164 Over 300 S.F.	G		1000	.032		26.50	2	.15	28.65	32
0172 1-1/4" x 3/16" bar, up to 300 S.F.	G		600	.053		46.50	3.33	.25	50.08	56.50
0174 Over 300 S.F.	G		1000	.032		42.50	2	.15	44.65	49.50
0182 1-1/2" x 3/16" bar, up to 300 S.F.	G		600	.053		56	3.33	.25	59.58	67
0184 Over 300 S.F.	G		1000	.032		50.50	2	.15	52.65	59
0186 1-3/4" x 3/16" bar, up to 300 S.F.	G		600	.053		71.50	3.33	.25	75.08	84.50
0188 Over 300 S.F.	G		1000	.032		65	2	.15	67.15	74.50
0200 For straight cuts, add					L.F.	4.56			4.56	5
0300 For curved cuts, add						5.60			5.60	6.15
0400 For straight banding, add	G					5.80			5.80	6.40
0500 For curved banding, add	G					7.05			7.05	7.75
0600 For aluminum checkered plate nosings, add	G				L.F.	7.55			7.55	8.35
0700 For straight toe plate, add	G					11.45			11.45	12.55
0800 For curved toe plate, add	G					13.30			13.30	14.65
1000 For cast aluminum abrasive nosings, add	G					11.10			11.10	12.20
1400 Extruded I bars are 10% less than 3/16" bars										
1600 Heavy duty, all extruded plank, 3/4" deep, 1.8 #/S.F.	G	E-4	1100	.029	S.F.	28.50	1.81	.13	30.44	34.50
1700 1-1/4" deep, 2.9 #/S.F.	G		1000	.032		37.50	2	.15	39.65	44
1800 1-3/4" deep, 4.2 #/S.F.	G		925	.035		43.50	2.16	.16	45.82	51
1900 2-1/4" deep, 5.0 #/S.F.	G		875	.037		70	2.28	.17	72.45	80.50
2100 For safety serrated surface, add						15%				

05 53 13.70 Floor Grating, Steel										
0010 **FLOOR GRATING, STEEL**, field fabricated from panels										
0015 Made from recycled materials										
0300 Platforms, to 12' high, rectangular	G	E-4	3150	.010	Lb.	2.13	.63	.05	2.81	3.37
0400 Circular	G	"	2300	.014	"	4.11	.87	.06	5.04	5.95
0410 Painted bearing bars @ 1-3/16"										

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05 53 Metal Gratings

05 53 13 – Bar Gratings

	05 53 13.70 Floor Grating, Steel		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0412	Cross bars @ 4" OC, 3/4" x 1/8" bar, up to 300 S.F.	G	E-2	500	.112	S.F.	9	6.85	4.96	20.81	26
0414	Over 300 S.F.	G		750	.075		8.20	4.57	3.31	16.08	19.6
0422	1-1/4" x 3/16", up to 300 S.F.	G		400	.140		13.85	8.55	6.20	28.60	35
0424	Over 300 S.F.	G		600	.093		12.60	5.70	4.13	22.43	27
0432	1-1/2" x 3/16", up to 300 S.F.	G		400	.140		16	8.55	6.20	30.75	37.5
0434	Over 300 S.F.	G		600	.093		14.55	5.70	4.13	24.38	29.5
0436	1-3/4" x 3/16", up to 300 S.F.	G		400	.140		22	8.55	6.20	36.75	44.5
0438	Over 300 S.F.	G		600	.093		20	5.70	4.13	29.83	35.5
0452	2-1/4" x 3/16", up to 300 S.F.	G		300	.187		26.50	11.45	8.25	46.20	55.5
0454	Over 300 S.F.	G		450	.124		24	7.60	5.50	37.10	44
0462	Cross bars @ 2" OC, 3/4" x 1/8", up to 300 S.F.	G		500	.112		16.30	6.85	4.96	28.11	34
0464	Over 300 S.F.	G		750	.075		13.60	4.57	3.31	21.48	25.5
0472	1-1/4" x 3/16", up to 300 S.F.	G		400	.140		19.80	8.55	6.20	34.55	42
0474	Over 300 S.F.	G		600	.093		16.50	5.70	4.13	26.33	31.5
0482	1-1/2" x 3/16", up to 300 S.F.	G		400	.140		22.50	8.55	6.20	37.25	44.5
0484	Over 300 S.F.	G		600	.093		18.55	5.70	4.13	28.38	34
0486	1-3/4" x 3/16", up to 300 S.F.	G		400	.140		33.50	8.55	6.20	48.25	57
0488	Over 300 S.F.	G		600	.093		28	5.70	4.13	37.83	44.5
0502	2-1/4" x 3/16", up to 300 S.F.	G		300	.187		29	11.45	8.25	48.70	58.5
0504	Over 300 S.F.	G		450	.124		24	7.60	5.50	37.10	44
0690	For galvanized grating, add						25%				
0800	For straight cuts, add					L.F.	6.50			6.50	7.1
0900	For curved cuts, add						8.25			8.25	9.1
1000	For straight banding, add	G					7.05			7.05	7.7
1100	For curved banding, add	G					9.20			9.20	10.1
1200	For checkered plate nosings, add	G					8.10			8.10	8.9
1300	For straight toe or kick plate, add	G					14.50			14.50	15.9
1400	For curved toe or kick plate, add	G					16.40			16.40	18.0
1500	For abrasive nosings, add	G					10.75			10.75	11.8
1510	For stair treads, see Section 05 55 13.50										
1600	For safety serrated surface, bearing bars @ 1-3/16" OC, add						15%				
1700	Bearing bars @ 15/16" OC, add						25%				
2000	Stainless steel gratings, close spaced, 1" x 1/8" bars, up to 300 S.F.	G	E-4	450	.071	S.F.	53.50	4.43	.33	58.26	66
2100	Standard spacing, 3/4" x 1/8" bars	G		500	.064		104	3.99	.30	108.29	120
2200	1-1/4" x 3/16" bars	G		400	.080		129	4.99	.37	134.36	150

05 53 16 – Plank Gratings

05 53 16.50 Grating Planks

0010	**GRATING PLANKS**, field fabricated from planks										
0020	Aluminum, 9-1/2" wide, 14 ga., 2" rib	G	E-4	950	.034	L.F.	36	2.10	.16	38.26	43
0200	Galvanized steel, 9-1/2" wide, 14 ga., 2-1/2" rib	G		950	.034		19.50	2.10	.16	21.76	25
0300	4" rib	G		950	.034		21	2.10	.16	23.26	26.5
0500	12 ga., 2-1/2" rib	G		950	.034		22	2.10	.16	24.26	27.5
0600	3" rib	G		950	.034		26.50	2.10	.16	28.76	32.5
0800	Stainless steel, type 304, 16 ga., 2" rib	G		950	.034		40.50	2.10	.16	42.76	48
0900	Type 316	G		950	.034		56	2.10	.16	58.26	65.5

05 53 19 – Expanded Metal Gratings

05 53 19.10 Expanded Grating, Aluminum

0010	**EXPANDED GRATING, ALUMINUM**										
1200	Expanded aluminum, .65 #/S.F.	G	E-4	1050	.030	S.F.	22	1.90	.14	24.04	27

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05 53 Metal Gratings

05 53 19 – Expanded Metal Gratings

05 53 19.20 Expanded Grating, Steel		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **EXPANDED GRATING, STEEL**										
2400 Expanded steel grating, at ground, 3.0 #/S.F.	G	E-4	900	.036	S.F.	8.70	2.22	.16	11.08	13.15
2500 3.14 #/S.F.	G		900	.036		6.50	2.22	.16	8.88	10.75
2600 4.0 #/S.F.	G		850	.038		7.20	2.35	.17	9.72	11.70
2650 4.27 #/S.F.	G		850	.038		8.70	2.35	.17	11.22	13.35
2700 5.0 #/S.F.	G		800	.040		14.90	2.49	.18	17.57	20.50
2800 6.25 #/S.F.	G		750	.043		19.20	2.66	.20	22.06	25.50
2900 7.0 #/S.F.	G		700	.046		21	2.85	.21	24.06	28
3100 For flattened expanded steel grating, add						8%				
3300 For elevated installation above 15′, add							15%			

05 53 19.30 Grating Frame

0010 **GRATING FRAME**, field fabricated										
0020 Aluminum, for gratings 1″ to 1-1/2″ deep	G	1 Sswk	70	.114	L.F.	3.52	7.05		10.57	14.75
0100 For each corner, add	G				Ea.	5.25			5.25	5.80

05 54 Metal Floor Plates

05 54 13 – Floor Plates

05 54 13.20 Checkered Plates

0010 **CHECKERED PLATES**, steel, field fabricated										
0015 Made from recycled materials										
0020 1/4″ & 3/8″, 2000 to 5000 S.F., bolted	G	E-4	2900	.011	Lb.	1.46	.69	.05	2.20	2.73
0100 Welded	G		4400	.007	″	1.46	.45	.03	1.94	2.35
0300 Pit or trench cover and frame, 1/4″ plate, 2′ to 3′ wide	G		100	.320	S.F.	20.50	19.95	1.48	41.93	54.50
0400 For galvanizing, add	G				Lb.	.30			.30	.33
0500 Platforms, 1/4″ plate, no handrails included, rectangular	G	E-4	4200	.008		3.53	.48	.04	4.05	4.65
0600 Circular	G	″	2500	.013		4.42	.80	.06	5.28	6.15

05 54 13.70 Trench Covers

0010 **TRENCH COVERS**, field fabricated										
0020 Cast iron grating with bar stops and angle frame, to 18″ wide	G	1 Sswk	20	.400	L.F.	315	24.50		339.50	385
0100 Frame only (both sides of trench), 1″ grating	G		45	.178		1.67	11		12.67	18.80
0150 2″ grating	G		35	.229		2.61	14.15		16.76	25
0200 Aluminum, stock units, including frames and										
0210 3/8″ plain cover plate, 4″ opening	G	E-4	205	.156	L.F.	15.35	9.75	.72	25.82	32.50
0300 6″ opening	G		185	.173		19.30	10.80	.80	30.90	38.50
0400 10″ opening	G		170	.188		34	11.75	.87	46.62	56.50
0500 16″ opening	G		155	.206		39	12.85	.95	52.80	63.50
0700 Add per inch for additional widths to 24″	G					1.70			1.70	1.87
0900 For custom fabrication, add						50%				
1100 For 1/4″ plain cover plate, deduct						12%				
1500 For cover recessed for tile, 1/4″ thick, deduct						12%				
1600 3/8″ thick, add						5%				
1800 For checkered plate cover, 1/4″ thick, deduct						12%				
1900 3/8″ thick, add						2%				
2100 For slotted or round holes in cover, 1/4″ thick, add						3%				
2200 3/8″ thick, add						4%				
2300 For abrasive cover, add						12%				

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

05 55 13 – Metal Stair Treads

05 55 13.50 Stair Treads		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Tot Incl
0010 **STAIR TREADS**, stringers and bolts not included										
3000 Diamond plate treads, steel, 1/8" thick										
3005 Open riser, black enamel										
3010 9" deep x 36" long	G	2 Sswk	48	.333	Ea.	114	20.50		134.50	1
3020 42" long	G		48	.333		120	20.50		140.50	1
3030 48" long	G		48	.333		125	20.50		145.50	1
3040 11" deep x 36" long	G		44	.364		120	22.50		142.50	1
3050 42" long	G		44	.364		127	22.50		149.50	1
3060 48" long	G		44	.364		135	22.50		157.50	1
3110 Galvanized, 9" deep x 36" long	G		48	.333		180	20.50		200.50	2
3120 42" long	G		48	.333		191	20.50		211.50	2
3130 48" long	G		48	.333		203	20.50		223.50	2
3140 11" deep x 36" long	G		44	.364		186	22.50		208.50	2
3150 42" long	G		44	.364		203	22.50		225.50	2
3160 48" long	G		44	.364		211	22.50		233.50	2
3200 Closed riser, black enamel										
3210 12" deep x 36" long	G	2 Sswk	40	.400	Ea.	138	24.50		162.50	1
3220 42" long	G		40	.400		149	24.50		173.50	2
3230 48" long	G		40	.400		157	24.50		181.50	2
3240 Galvanized, 12" deep x 36" long	G		40	.400		217	24.50		241.50	2
3250 42" long	G		40	.400		237	24.50		261.50	2
3260 48" long	G		40	.400		248	24.50		272.50	3
4000 Bar grating treads										
4005 Steel, 1-1/4" x 3/16" bars, anti-skid nosing, black enamel										
4010 8-5/8" deep x 30" long	G	2 Sswk	48	.333	Ea.	56	20.50		76.50	9
4020 36" long	G		48	.333		65.50	20.50		86	1
4030 48" long	G		48	.333		101	20.50		121.50	1
4040 10-15/16" deep x 36" long	G		44	.364		72.50	22.50		95	1
4050 48" long	G		44	.364		102	22.50		124.50	1
4060 Galvanized, 8-5/8" deep x 30" long	G		48	.333		64	20.50		84.50	1
4070 36" long	G		48	.333		76	20.50		96.50	1
4080 48" long	G		48	.333		112	20.50		132.50	1
4090 10-15/16" deep x 36" long	G		44	.364		89	22.50		111.50	1
4100 48" long	G		44	.364		115	22.50		137.50	1
4200 Aluminum, 1-1/4" x 3/16" bars, serrated, with nosing										
4210 7-5/8" deep x 18" long	G	2 Sswk	52	.308	Ea.	54	19.05		73.05	8
4220 24" long	G		52	.308		62	19.05		81.05	9
4230 30" long	G		52	.308		71.50	19.05		90.55	1
4240 36" long	G		52	.308		185	19.05		204.05	2
4250 8-13/16" deep x 18" long	G	2 Sswk	48	.333	Ea.	70.50	20.50		91	1
4260 24" long	G		48	.333		117	20.50		137.50	1
4270 30" long	G		48	.333		117	20.50		137.50	1
4280 36" long	G		48	.333		204	20.50		224.50	2
4290 10" deep x 18" long	G		44	.364		136	22.50		158.50	1
4300 30" long	G		44	.364		181	22.50		203.50	2
4310 36" long	G		44	.364		220	22.50		242.50	2
5000 Channel grating treads										
5005 Steel, 14 ga., 2-1/2" thick, galvanized										
5010 9" deep x 36" long	G	2 Sswk	48	.333	Ea.	102	20.50		122.50	1
5020 48" long	G	"	48	.333	"	136	20.50		156.50	1

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

05 55 Metal Stair Treads and Nosings

05 55 19 – Metal Stair Tread Covers

05 55 19.50 Stair Tread Covers for Renovation	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **STAIR TREAD COVERS FOR RENOVATION**									
0205 Extruded tread cover with nosing, pre-drilled, includes screws									
0210 Aluminum with black abrasive strips, 9" wide x 3' long	1 Carp	24	.333	Ea.	104	18.75		122.75	143
0220 4' long		22	.364		137	20.50		157.50	181
0230 5' long		20	.400		185	22.50		207.50	238
0240 11" wide x 3' long		24	.333		147	18.75		165.75	189
0250 4' long		22	.364		200	20.50		220.50	251
0260 5' long		20	.400		239	22.50		261.50	296
0305 Black abrasive strips with yellow front strips									
0310 Aluminum, 9" wide x 3' long	1 Carp	24	.333	Ea.	127	18.75		145.75	167
0320 4' long		22	.364		169	20.50		189.50	217
0330 5' long		20	.400		217	22.50		239.50	272
0340 11" wide x 3' long		24	.333		161	18.75		179.75	205
0350 4' long		22	.364		205	20.50		225.50	257
0360 5' long		20	.400		267	22.50		289.50	330
0405 Black abrasive strips with photoluminescent front strips									
0410 Aluminum, 9" wide x 3' long	1 Carp	24	.333	Ea.	160	18.75		178.75	204
0420 4' long		22	.364		181	20.50		201.50	231
0430 5' long		20	.400		255	22.50		277.50	315
0440 11" wide x 3' long		24	.333		181	18.75		199.75	228
0450 4' long		22	.364		242	20.50		262.50	297
0460 5' long		20	.400		300	22.50		322.50	370

05 56 Metal Castings

05 56 13 – Metal Construction Castings

05 56 13.50 Construction Castings

0010 **CONSTRUCTION CASTINGS**										
0020 Manhole covers and frames, see Section 33 44 13.13										
0100 Column bases, cast iron, 16" x 16", approx. 65 lb.	G	E-4	46	.696	Ea.	126	43.50	3.21	172.71	209
0200 32" x 32", approx. 256 lb.	G	"	23	1.391		455	87	6.40	548.40	640
0400 Cast aluminum for wood columns, 8" x 8"	G	1 Carp	32	.250		27.50	14.10		41.60	51
0500 12" x 12"	G	"	32	.250		55	14.10		69.10	81
0600 Miscellaneous C.I. castings, light sections, less than 150 lb.	G	E-4	3200	.010	Lb.	8.20	.62	.05	8.87	10
1100 Heavy sections, more than 150 lb.	G		4200	.008		4.76	.48	.04	5.28	6
1300 Special low volume items	G		3200	.010		11.25	.62	.05	11.92	13.35
1500 For ductile iron, add						100%				

05 58 Formed Metal Fabrications

05 58 13 – Column Covers

05 58 13.05 Column Covers

0010 **COLUMN COVERS**										
0015 Made from recycled materials										
0020 Excludes structural steel, light ga. metal framing, misc. metals, sealants										
0100 Round covers, 2 halves with 2 vertical joints for backer rod and sealant										
0110 Up to 12' high, no horizontal joints										
0120 12" diameter, 0.125" aluminum, anodized/painted finish	G	2 Sswk	32	.500	V.L.F.	30.50	31		61.50	81
0130 Type 304 stainless steel, 16 gauge, #4 brushed finish	G		32	.500		44	31		75	96
0140 Type 316 stainless steel, 16 gauge, #4 brushed finish	G		32	.500		53	31		84	106
0150 18" diameter, aluminum	G		32	.500		45.50	31		76.50	97.50

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05 58 13 – Column Covers

	05 58 13.05 Column Covers		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0160	Type 304 stainless steel	G	2 Sswk	32	.500	V.L.F.	66	31		97	120
0170	Type 316 stainless steel	G		32	.500		79.50	31		110.50	135
0180	24" diameter, aluminum	G		32	.500		60.50	31		91.50	115
0190	Type 304 stainless steel	G		32	.500		88	31		119	145
0200	Type 316 stainless steel	G		32	.500		106	31		137	165
0210	30" diameter, aluminum	G		30	.533		76	33		109	135
0220	Type 304 stainless steel	G		30	.533		110	33		143	172
0230	Type 316 stainless steel	G		30	.533		133	33		166	197
0240	36" diameter, aluminum	G		30	.533		91	33		124	151
0250	Type 304 stainless steel	G		30	.533		132	33		165	196
0260	Type 316 stainless steel	G		30	.533		159	33		192	226
0400	Up to 24' high, 2 stacked sections with 1 horizontal joint										
0410	18" diameter, aluminum	G	2 Sswk	28	.571	V.L.F.	48	35.50		83.50	107
0450	Type 304 stainless steel	G		28	.571		69.50	35.50		105	131
0460	Type 316 stainless steel	G		28	.571		83.50	35.50		119	147
0470	24" diameter, aluminum	G		28	.571		63.50	35.50		99	125
0480	Type 304 stainless steel	G	2 Sswk	28	.571	V.L.F.	92.50	35.50		128	157
0490	Type 316 stainless steel	G		28	.571		112	35.50		147.50	178
0500	30" diameter, aluminum	G		24	.667		79.50	41		120.50	151
0510	Type 304 stainless steel	G		24	.667		116	41		157	191
0520	Type 316 stainless steel	G		24	.667		140	41		181	217
0530	36" diameter, aluminum	G		24	.667		95.50	41		136.50	169
0540	Type 304 stainless steel	G		24	.667		139	41		180	217
0550	Type 316 stainless steel	G		24	.667		167	41		208	248

05 58 21 – Formed Chain

05 58 21.05 Alloy Steel Chain

0010	**ALLOY STEEL CHAIN**, Grade 80, for lifting										
0015	Self-colored, cut lengths, 1/4"	G	E-17	4	4	C.L.F.	375	251		626	800
0020	3/8"	G		2	8		520	505		1,025	1,350
0030	1/2"	G		1.20	13.333		865	840		1,705	2,250
0040	5/8"	G		.72	22.222		1,200	1,400		2,600	3,475
0050	3/4"	G	E-18	.48	83.333		2,100	5,175	1,700	8,975	12,100
0060	7/8"	G		.40	100		3,325	6,200	2,050	11,575	15,400
0070	1"	G		.35	114		5,550	7,075	2,325	14,950	19,500
0080	1-1/4"	G		.24	167		13,900	10,300	3,400	27,600	34,800
0110	Hook, Grade 80, Clevis slip, 1/4"	G				Ea.	31.50			31.50	35
0120	3/8"	G					43			43	47.5
0130	1/2"	G					64.50			64.50	71
0140	5/8"	G					104			104	114
0150	3/4"	G					165			165	182
0160	Hook, Grade 80, eye/sling w/hammerlock coupling, 15 ton	G					395			395	435
0170	22 ton	G					1,825			1,825	2,000
0180	37 ton	G					3,275			3,275	3,600

05 58 23 – Formed Metal Guards

05 58 23.90 Window Guards

0010	**WINDOW GUARDS**, shop fabricated										
0015	Expanded metal, steel angle frame, permanent	G	E-4	350	.091	S.F.	21	5.70	.42	27.12	32.5
0025	Steel bars, 1/2" x 1/2", spaced 5" OC	G	"	290	.110	"	14.65	6.90	.51	22.06	27.5
0030	Hinge mounted, add	G				Opng.	42.50			42.50	46.5
0040	Removable type, add	G				"	27			27	29.5
0050	For galvanized guards, add					S.F.	35%				
0070	For pivoted or projected type, add						105%	40%			

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

05 58 Formed Metal Fabrications

05 58 23 – Formed Metal Guards

05 58 23.90 Window Guards		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0100 Mild steel, stock units, economy	G	E-4	405	.079	S.F.	5.75	4.93	.36	11.04	14.35
0200 Deluxe	G		405	.079		11.70	4.93	.36	16.99	21
0400 Woven wire, stock units, 3/8" channel frame, 3' x 5' opening	G		40	.800	Opng.	156	50	3.69	209.69	252
0500 4' x 6' opening	G		38	.842	"	249	52.50	3.88	305.38	360
0800 Basket guards for above, add	G				Opng.	222			222	245
1000 Swinging guards for above, add	G				"	76			76	83.50

05 58 25 – Formed Lamp Posts

05 58 25.40 Lamp Posts

0010 **LAMP POSTS**										
0020 Aluminum, 7' high, stock units, post only	G	1 Carp	16	.500	Ea.	94	28		122	145
0100 Mild steel, plain	G	"	16	.500	"	58.50	28		86.50	107

05 71 Decorative Metal Stairs

05 71 13 – Fabricated Metal Spiral Stairs

05 71 13.50 Spiral Stairs

0010 **SPIRAL STAIRS**										
1805 Shop fabricated, custom ordered										
1810 Aluminum, 5'-0" diameter, plain units	G	E-4	45	.711	Riser	625	44.50	3.28	672.78	755
1820 Fancy units	G		45	.711		1,025	44.50	3.28	1,072.78	1,200
1900 Cast iron, 4'-0" diameter, plain units	G		45	.711		750	44.50	3.28	797.78	895
1920 Fancy units	G		25	1.280		1,625	80	5.90	1,710.90	1,900
2000 Steel, industrial checkered plate, 4' diameter	G		45	.711		590	44.50	3.28	637.78	720
2200 6' diameter	G		40	.800		635	50	3.69	688.69	780
3100 Spiral stair kits, 12 stacking risers to fit exact floor height										
3110 Steel, flat metal treads, primed, 3'-6" diameter	G	2 Carp	1.60	10	Flight	1,275	565		1,840	2,250
3120 4'-0" diameter	G		1.45	11.034		1,375	620		1,995	2,425
3130 4'-6" diameter	G		1.35	11.852		1,650	665		2,315	2,800
3140 5'-0" diameter	G		1.25	12.800		1,825	720		2,545	3,075
3210 Galvanized, 3'-6" diameter	G		1.60	10		2,050	565		2,615	3,100
3220 4'-0" diameter	G		1.45	11.034		2,150	620		2,770	3,300
3230 4'-6" diameter	G		1.35	11.852		2,425	665		3,090	3,675
3240 5'-0" diameter	G		1.25	12.800		2,725	720		3,445	4,075
3310 Checkered plate tread, primed, 3'-6" diameter	G		1.45	11.034		1,525	620		2,145	2,600
3320 4'-0" diameter	G		1.35	11.852		1,625	665		2,290	2,775
3330 4'-6" diameter	G		1.25	12.800		1,900	720		2,620	3,150
3340 5'-0" diameter	G		1.15	13.913		2,100	785		2,885	3,475
3410 Galvanized, 3'-6" diameter	G		1.45	11.034		2,325	620		2,945	3,475
3420 4'-0" diameter	G		1.35	11.852		2,425	665		3,090	3,650
3430 4'-6" diameter	G		1.25	12.800		2,625	720		3,345	3,950
3440 5'-0" diameter	G		1.15	13.913		3,050	785		3,835	4,525
3510 Red oak covers on flat metal treads, 3'-6" diameter			1.35	11.852		1,750	665		2,415	2,925
3520 4'-0" diameter			1.25	12.800		1,900	720		2,620	3,150
3530 4'-6" diameter			1.15	13.913		2,150	785		2,935	3,550
3540 5'-0" diameter			1.05	15.238		2,550	860		3,410	4,100

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

05 73 Decorative Metal Railings

05 73 16 – Wire Rope Decorative Metal Railings

05 73 16.10 Cable Railings		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **CABLE RAILINGS**, with 316 stainless steel 1 x 19 cable, 3/16" diameter										
0015 Made from recycled materials										
0100 1-3/4" diameter stainless steel posts x 42" high, cables 4" OC	G	2 Sswk	25	.640	L.F.	47	39.50		86.50	113

05 73 23 – Ornamental Railings

05 73 23.50 Railings, Ornamental										
0010 **RAILINGS, ORNAMENTAL**, 3'-6" high, posts @ 6' OC										
0020 Bronze or stainless, hand forged, plain	G	2 Sswk	24	.667	L.F.	247	41		288	335
0100 Fancy	G		18	.889		495	55		550	630
0200 Aluminum, panelized, plain	G		24	.667		16.15	41		57.15	81.5
0300 Fancy	G		18	.889		23.50	55		78.50	111
0400 Wrought iron, hand forged, plain	G		24	.667		69	41		110	140
0500 Fancy	G		18	.889		218	55		273	325
0550 Steel, panelized, plain	G		24	.667		21	41		62	86.5
0560 Fancy	G		18	.889		23	55		78	110
0600 Composite metal/wood/glass, plain			18	.889		144	55		199	243
0700 Fancy			12	1.333		287	82.50		369.50	440

05 75 Decorative Formed Metal

05 75 13 – Columns

05 75 13.10 Aluminum Columns										
0010 **ALUMINUM COLUMNS**										
0015 Made from recycled materials										
0020 Aluminum, extruded, stock units, no cap or base, 6" diameter	G	E-4	240	.133	L.F.	20	8.30	.61	28.91	35.5
0100 8" diameter	G		170	.188		24	11.75	.87	36.62	45.5
0200 10" diameter	G		150	.213		32	13.30	.98	46.28	56.5
0300 12" diameter	G		140	.229		46.50	14.25	1.05	61.80	74
0400 15" diameter	G		120	.267		71	16.65	1.23	88.88	105
0410 Caps and bases, plain, 6" diameter	G				Set	31.50			31.50	35
0420 8" diameter	G					37.50			37.50	41.5
0430 10" diameter	G					61			61	67
0440 12" diameter	G					81.50			81.50	90
0450 15" diameter	G					123			123	136
0460 Caps, ornamental, plain	G					293			293	320
0470 Fancy	G					1,650			1,650	1,800
0500 For square columns, add to column prices above					L.F.	50%				
0700 Residential, flat, 8' high, plain	G	E-4	20	1.600	Ea.	162	100	7.40	269.40	340
0720 Fancy	G	"	20	1.600	"	261	100	7.40	368.40	450
0740 Corner type, plain	G	E-4	20	1.600	Ea.	264	100	7.40	371.40	450
0760 Fancy	G	"	20	1.600	"	405	100	7.40	512.40	605

05 75 13.20 Columns, Ornamental										
0010 **COLUMNS, ORNAMENTAL**, shop fabricated R051223-10										
6400 Mild steel, flat, 9" wide, stock units, painted, plain	G	E-4	160	.200	V.L.F.	15.20	12.45	.92	28.57	37
6450 Fancy	G		160	.200		24.50	12.45	.92	37.87	47
6500 Corner columns, painted, plain	G		160	.200		24.50	12.45	.92	37.87	47
6550 Fancy	G		160	.200		38	12.45	.92	51.37	62

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

Estimating Tips

06 05 00 Common Work Results for Wood, Plastics, and Composites

- Common to any wood-framed structure are the accessory connector items such as screws, nails, adhesives, hangers, connector plates, straps, angles, and hold-downs. For typical wood-framed buildings, such as residential projects, the aggregate total for these items can be significant, especially in areas where seismic loading is a concern. For floor and wall framing, the material cost is based on 10 to 25 lbs. of accessory connectors per MBF. Hold-downs, hangers, and other connectors should be taken off by the piece.

  Included with material costs are fasteners for a normal installation. Gordian's RSMeans engineers use manufacturers' recommendations, written specifications, and/or standard construction practice for the sizing and spacing of fasteners. Prices for various fasteners are shown for informational purposes only. Adjustments should be made if unusual fastening conditions exist.

06 10 00 Carpentry

- Lumber is a traded commodity and therefore sensitive to supply and demand in the marketplace. Even with "budgetary" estimating of wood-framed projects, it is advisable to call local suppliers for the latest market pricing.
- The common quantity unit for wood-framed projects is "thousand board feet" (MBF). A board foot is a volume of wood—1" x 1' x 1' or 144 cubic inches. Board-foot quantities are generally calculated using nominal material dimensions—dressed sizes are ignored. Board foot per lineal foot of any stick of lumber can be calculated by dividing the nominal cross-sectional area by 12. As an example, 2,000 lineal feet of 2 x 12 equates to 4 MBF by dividing the nominal area, 2 x 12, by 12, which equals 2, and multiplying that by 2,000 to give 4,000 board feet. This simple rule applies to all nominal dimensioned lumber.
- Waste is an issue of concern at the quantity takeoff for any area of construction. Framing lumber is sold in even foot lengths, i.e., 8', 10', 12', 14', 16', and depending on spans, wall heights, and the grade of lumber, waste is inevitable. A rule of thumb for lumber waste is 5–10% depending on material quality and the complexity of the framing.
- Wood in various forms and shapes is used in many projects, even where the main structural framing is steel, concrete, or masonry. Plywood as a back-up partition material and 2x boards used as blocking and cant strips around roof edges are two common examples. The estimator should ensure that the costs of all wood materials are included in the final estimate.

06 20 00 Finish Carpentry

- It is necessary to consider the grade of workmanship when estimating labor costs for erecting millwork and an interior finish. In practice, there are three grades: premium, custom, and economy. The RSMeans daily output for base and case moldings is in the range of 200 to 250 L.F. per carpenter per day. This is appropriate for most average custom-grade projects. For premium projects, an adjustment to productivity of 25–50% should be made, depending on the complexity of the job.

Reference Numbers

Reference numbers are shown at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear. ■

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06 05 05 – Selective Demolition for Wood, Plastics, and Composites

06 05 05.10 Selective Demolition Wood Framing	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **SELECTIVE DEMOLITION WOOD FRAMING** R024119-10									
0100 Timber connector, nailed, small	1 Clab	96	.083	Ea.		3.80		3.80	5.6
0110 Medium		60	.133			6.10		6.10	9.0
0120 Large		48	.167			7.60		7.60	11.3
0130 Bolted, small		48	.167			7.60		7.60	11.3
0140 Medium		32	.250			11.40		11.40	17
0150 Large		24	.333			15.20		15.20	22.5
2958 Beams, 2" x 6"	2 Clab	1100	.015	L.F.		.66		.66	.9
2960 2" x 8"		825	.019			.88		.88	1.3
2965 2" x 10"		665	.024			1.10		1.10	1.6
2970 2" x 12"		550	.029			1.33		1.33	1.9
2972 2" x 14"		470	.034			1.55		1.55	2.3
2975 4" x 8"	B-1	413	.058			2.69		2.69	4
2980 4" x 10"		330	.073			3.37		3.37	5
2985 4" x 12"		275	.087			4.04		4.04	6
3000 6" x 8"		275	.087			4.04		4.04	6
3040 6" x 10"		220	.109			5.05		5.05	7.5
3080 6" x 12"		185	.130			6		6	8.9
3120 8" x 12"		140	.171			7.95		7.95	11.8
3160 10" x 12"		110	.218			10.10		10.10	15.0
3162 Alternate pricing method		1.10	21.818	M.B.F.		1,000		1,000	1,500
3170 Blocking, in 16" OC wall framing, 2" x 4"	1 Clab	600	.013	L.F.		.61		.61	.9
3172 2" x 6"		400	.020			.91		.91	1.3
3174 In 24" OC wall framing, 2" x 4"		600	.013			.61		.61	.9
3176 2" x 6"		400	.020			.91		.91	1.3
3178 Alt method, wood blocking removal from wood framing		.40	20	M.B.F.		910		910	1,350
3179 Wood blocking removal from steel framing		.36	22.222	"		1,025		1,025	1,500
3180 Bracing, let in, 1" x 3", studs 16" OC		1050	.008	L.F.		.35		.35	.5
3181 Studs 24" OC		1080	.007	"		.34		.34	.5
3182 1" x 4", studs 16" OC	1 Clab	1050	.008	L.F.		.35		.35	.5
3183 Studs 24" OC		1080	.007			.34		.34	.5
3184 1" x 6", studs 16" OC		1050	.008			.35		.35	.5
3185 Studs 24" OC		1080	.007			.34		.34	.5
3186 2" x 3", studs 16" OC		800	.010			.46		.46	.6
3187 Studs 24" OC		830	.010			.44		.44	.6
3188 2" x 4", studs 16" OC		800	.010			.46		.46	.6
3189 Studs 24" OC		830	.010			.44		.44	.6
3190 2" x 6", studs 16" OC		800	.010			.46		.46	.6
3191 Studs 24" OC		830	.010			.44		.44	.6
3192 2" x 8", studs 16" OC		800	.010			.46		.46	.6
3193 Studs 24" OC		830	.010			.44		.44	.6
3194 "T" shaped metal bracing, studs at 16" OC		1060	.008			.34		.34	.5
3195 Studs at 24" OC		1200	.007			.30		.30	.4
3196 Metal straps, studs at 16" OC		1200	.007			.30		.30	.4
3197 Studs at 24" OC		1240	.006			.29		.29	.4
3199 2" x 6", studs 16" OC		480	.017	S.F.		.76		.76	1.1
3200 Columns, round, 8' to 14' tall		40	.200	Ea.		9.10		9.10	13.6
3202 Dimensional lumber sizes	2 Clab	1.10	14.545	M.B.F.		665		665	990
3250 Blocking, between joists	1 Clab	320	.025	Ea.		1.14		1.14	1.7
3252 Bridging, metal strap, between joists		320	.025	Pr.		1.14		1.14	1.7
3254 Wood, between joists		320	.025	"		1.14		1.14	1.7
3260 Door buck, studs, header & access., 8' high 2" x 4" wall, 3' wide		32	.250	Ea.		11.40		11.40	17
3261 4' wide		32	.250			11.40		11.40	17

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06 05 05 – Selective Demolition for Wood, Plastics, and Composites

06 05 05.10 Selective Demolition Wood Framing	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
3262 5′ wide	1 Clab	32	.250	Ea.		11.40		11.40	17
3263 6′ wide		32	.250			11.40		11.40	17
3264 8′ wide		30	.267			12.15		12.15	18.10
3265 10′ wide		30	.267			12.15		12.15	18.10
3266 12′ wide		30	.267			12.15		12.15	18.10
3267 2″ x 6″ wall, 3′ wide		32	.250			11.40		11.40	17
3268 4′ wide		32	.250			11.40		11.40	17
3269 5′ wide		32	.250			11.40		11.40	17
3270 6′ wide		32	.250			11.40		11.40	17
3271 8′ wide		30	.267			12.15		12.15	18.10
3272 10′ wide		30	.267			12.15		12.15	18.10
3273 12′ wide		30	.267			12.15		12.15	18.10
3274 Window buck, studs, header & access., 8′ high 2″ x 4″ wall, 2′ wide		24	.333			15.20		15.20	22.50
3275 3′ wide		24	.333			15.20		15.20	22.50
3276 4′ wide	1 Clab	24	.333	Ea.		15.20		15.20	22.50
3277 5′ wide		24	.333			15.20		15.20	22.50
3278 6′ wide		24	.333			15.20		15.20	22.50
3279 7′ wide		24	.333			15.20		15.20	22.50
3280 8′ wide		22	.364			16.60		16.60	24.50
3281 10′ wide		22	.364			16.60		16.60	24.50
3282 12′ wide		22	.364			16.60		16.60	24.50
3283 2″ x 6″ wall, 2′ wide		24	.333			15.20		15.20	22.50
3284 3′ wide		24	.333			15.20		15.20	22.50
3285 4′ wide		24	.333			15.20		15.20	22.50
3286 5′ wide		24	.333			15.20		15.20	22.50
3287 6′ wide		24	.333			15.20		15.20	22.50
3288 7′ wide		24	.333			15.20		15.20	22.50
3289 8′ wide		22	.364			16.60		16.60	24.50
3290 10′ wide		22	.364			16.60		16.60	24.50
3291 12′ wide		22	.364			16.60		16.60	24.50
3360 Deck or porch decking		825	.010	L.F.		.44		.44	.66
3400 Fascia boards, 1″ x 6″		500	.016			.73		.73	1.09
3440 1″ x 8″		450	.018			.81		.81	1.21
3480 1″ x 10″		400	.020			.91		.91	1.36
3490 2″ x 6″		450	.018			.81		.81	1.21
3500 2″ x 8″		400	.020			.91		.91	1.36
3510 2″ x 10″		350	.023			1.04		1.04	1.55
3610 Furring, on wood walls or ceiling		4000	.002	S.F.		.09		.09	.14
3620 On masonry or concrete walls or ceiling		1200	.007	″		.30		.30	.45
3800 Headers over openings, 2 @ 2″ x 6″		110	.073	L.F.		3.32		3.32	4.94
3840 2 @ 2″ x 8″		100	.080			3.65		3.65	5.45
3880 2 @ 2″ x 10″		90	.089			4.05		4.05	6.05
3885 Alternate pricing method		.26	30.651	M.B.F.		1,400		1,400	2,075
3920 Joists, 1″ x 4″		1250	.006	L.F.		.29		.29	.43
3930 1″ x 6″		1135	.007			.32		.32	.48
3940 1″ x 8″		1000	.008			.36		.36	.54
3950 1″ x 10″		895	.009			.41		.41	.61
3960 1″ x 12″		765	.010			.48		.48	.71
4200 2″ x 4″	2 Clab	1000	.016			.73		.73	1.09
4230 2″ x 6″		970	.016			.75		.75	1.12
4240 2″ x 8″		940	.017			.78		.78	1.16
4250 2″ x 10″		910	.018			.80		.80	1.19
4280 2″ x 12″		880	.018			.83		.83	1.23

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06 05 05 – Selective Demolition for Wood, Plastics, and Composites

	06 05 05.10 Selective Demolition Wood Framing	Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&P
4281	2" x 14"	2 Clab	850	.019	L.F.		.86		.86	1.[illegible]
4282	Composite joists, 9-1/2"		960	.017			.76		.76	1.[illegible]
4283	11-7/8"		930	.017			.78		.78	1.[illegible]
4284	14"		897	.018			.81		.81	1.[illegible]
4285	16"		865	.019			.84		.84	1.[illegible]
4290	Wood joists, alternate pricing method		1.50	10.667	M.B.F.		485		485	725
4500	Open web joist, 12" deep		500	.032	L.F.		1.46		1.46	2.[illegible]
4505	14" deep		475	.034			1.54		1.54	2.[illegible]
4510	16" deep		450	.036			1.62		1.62	2.[illegible]
4520	18" deep		425	.038			1.72		1.72	2.[illegible]
4530	24" deep		400	.040			1.82		1.82	2.[illegible]
4550	Ledger strips, 1" x 2"	1 Clab	1200	.007			.30		.30	.[illegible]
4560	1" x 3"		1200	.007			.30		.30	.[illegible]
4570	1" x 4"		1200	.007			.30		.30	.[illegible]
4580	2" x 2"		1100	.007			.33		.33	.[illegible]
4590	2" x 4"		1000	.008			.36		.36	.[illegible]
4600	2" x 6"		1000	.008			.36		.36	.[illegible]
4601	2" x 8 or 2" x 10"		800	.010			.46		.46	.[illegible]
4602	4" x 6"		600	.013			.61		.61	.9
4604	4" x 8"		450	.018			.81		.81	1.2
5400	Posts, 4" x 4"	2 Clab	800	.020			.91		.91	1.3
5405	4" x 6"		550	.029			1.33		1.33	1.9
5410	4" x 8"		440	.036			1.66		1.66	2.4
5425	4" x 10"		390	.041			1.87		1.87	2.7
5430	4" x 12"		350	.046			2.08		2.08	3.1
5440	6" x 6"		400	.040			1.82		1.82	2.7
5445	6" x 8"		350	.046			2.08		2.08	3.1
5450	6" x 10"		320	.050			2.28		2.28	3.4
5455	6" x 12"		290	.055			2.52		2.52	3.7
5480	8" x 8"		300	.053			2.43		2.43	3.6
5500	10" x 10"		240	.067			3.04		3.04	4.5
5660	T&G floor planks		2	8	M.B.F.		365		365	545
5682	Rafters, ordinary, 16" OC, 2" x 4"		880	.018	S.F.		.83		.83	1.2
5683	2" x 6"		840	.019			.87		.87	1.2
5684	2" x 8"		820	.020			.89		.89	1.3
5685	2" x 10"		820	.020			.89		.89	1.3
5686	2" x 12"		810	.020			.90		.90	1.3
5687	24" OC, 2" x 4"		1170	.014			.62		.62	.9
5688	2" x 6"		1117	.014			.65		.65	.9
5689	2" x 8"	2 Clab	1091	.015	S.F.		.67		.67	1
5690	2" x 10"		1091	.015			.67		.67	1
5691	2" x 12"		1077	.015			.68		.68	1.0
5795	Rafters, ordinary, 2" x 4" (alternate method)		862	.019	L.F.		.85		.85	1.2
5800	2" x 6" (alternate method)		850	.019			.86		.86	1.2
5840	2" x 8" (alternate method)		837	.019			.87		.87	1.3
5855	2" x 10" (alternate method)		825	.019			.88		.88	1.3
5865	2" x 12" (alternate method)		812	.020			.90		.90	1.3
5870	Sill plate, 2" x 4"	1 Clab	1170	.007			.31		.31	.4
5871	2" x 6"		780	.010			.47		.47	.7
5872	2" x 8"		586	.014			.62		.62	.9
5873	Alternate pricing method		.78	10.256	M.B.F.		470		470	695
5885	Ridge board, 1" x 4"	2 Clab	900	.018	L.F.		.81		.81	1.2
5886	1" x 6"		875	.018			.83		.83	1.2

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06 05 05 – Selective Demolition for Wood, Plastics, and Composites

	06 05 05.10 Selective Demolition Wood Framing	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
5887	1" x 8"	2 Clab	850	.019	L.F.		.86		.86	1.28
5888	1" x 10"		825	.019			.88		.88	1.32
5889	1" x 12"		800	.020			.91		.91	1.36
5890	2" x 4"		900	.018			.81		.81	1.21
5892	2" x 6"		875	.018			.83		.83	1.24
5894	2" x 8"		850	.019			.86		.86	1.28
5896	2" x 10"		825	.019			.88		.88	1.32
5898	2" x 12"		800	.020			.91		.91	1.36
6050	Rafter tie, 1" x 4"		1250	.013			.58		.58	.87
6052	1" x 6"		1135	.014			.64		.64	.96
6054	2" x 4"		1000	.016			.73		.73	1.09
6056	2" x 6"		970	.016			.75		.75	1.12
6070	Sleepers, on concrete, 1" x 2"	1 Clab	4700	.002			.08		.08	.12
6075	1" x 3"		4000	.002			.09		.09	.14
6080	2" x 4"		3000	.003			.12		.12	.18
6085	2" x 6"		2600	.003			.14		.14	.21
6086	Sheathing from roof, 5/16"	2 Clab	1600	.010	S.F.		.46		.46	.68
6088	3/8"		1525	.010			.48		.48	.71
6090	1/2"		1400	.011			.52		.52	.78
6092	5/8"		1300	.012			.56		.56	.84
6094	3/4"		1200	.013			.61		.61	.91
6096	Board sheathing from roof		1400	.011			.52		.52	.78
6100	Sheathing, from walls, 1/4"		1200	.013			.61		.61	.91
6110	5/16"		1175	.014			.62		.62	.92
6120	3/8"		1150	.014			.63		.63	.94
6130	1/2"	2 Clab	1125	.014	S.F.		.65		.65	.97
6140	5/8"		1100	.015			.66		.66	.99
6150	3/4"		1075	.015			.68		.68	1.01
6152	Board sheathing from walls		1500	.011			.49		.49	.72
6158	Subfloor/roof deck, with boards		2200	.007			.33		.33	.49
6159	Subfloor/roof deck, with tongue & groove boards		2000	.008			.36		.36	.54
6160	Plywood, 1/2" thick		768	.021			.95		.95	1.41
6162	5/8" thick		760	.021			.96		.96	1.43
6164	3/4" thick		750	.021			.97		.97	1.45
6165	1-1/8" thick		720	.022			1.01		1.01	1.51
6166	Underlayment, particle board, 3/8" thick	1 Clab	780	.010			.47		.47	.70
6168	1/2" thick		768	.010			.48		.48	.71
6170	5/8" thick		760	.011			.48		.48	.71
6172	3/4" thick		750	.011			.49		.49	.72
6200	Stairs and stringers, straight run	2 Clab	40	.400	Riser		18.25		18.25	27
6240	With platforms, winders or curves	"	26	.615	"		28		28	42
6300	Components, tread	1 Clab	110	.073	Ea.		3.32		3.32	4.94
6320	Riser		80	.100	"		4.56		4.56	6.80
6390	Stringer, 2" x 10"		260	.031	L.F.		1.40		1.40	2.09
6400	2" x 12"		260	.031			1.40		1.40	2.09
6410	3" x 10"		250	.032			1.46		1.46	2.17
6420	3" x 12"		250	.032			1.46		1.46	2.17
6590	Wood studs, 2" x 3"	2 Clab	3076	.005			.24		.24	.35
6600	2" x 4"		2000	.008			.36		.36	.54
6640	2" x 6"		1600	.010			.46		.46	.68
6720	Wall framing, including studs, plates and blocking, 2" x 4"	1 Clab	600	.013	S.F.		.61		.61	.91
6740	2" x 6"		480	.017	"		.76		.76	1.13
6750	Headers, 2" x 4"		1125	.007	L.F.		.32		.32	.48

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06 05 05 – Selective Demolition for Wood, Plastics, and Composites

	06 05 05.10 Selective Demolition Wood Framing	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O
6755	2" x 6"	1 Clab	1125	.007	L.F.		.32		.32	
6760	2" x 8"		1050	.008			.35		.35	
6765	2" x 10"		1050	.008			.35		.35	
6770	2" x 12"		1000	.008			.36		.36	
6780	4" x 10"		525	.015			.69		.69	
6785	4" x 12"		500	.016			.73		.73	
6790	6" x 8"		560	.014			.65		.65	
6795	6" x 10"		525	.015			.69		.69	
6797	6" x 12"		500	.016			.73		.73	
7000	Trusses									
7050	12' span	2 Clab	74	.216	Ea.		9.85		9.85	14
7150	24' span	F-3	66	.606	Ea.		35	30	65	85
7200	26' span		64	.625			36	31	67	87
7250	28' span		62	.645			37	32	69	90
7300	30' span		58	.690			40	34	74	97
7350	32' span		56	.714			41	35.50	76.50	101
7400	34' span		54	.741			43	36.50	79.50	104
7450	36' span		52	.769			44.50	38	82.50	108
8000	Soffit, T&G wood	1 Clab	520	.015	S.F.		.70		.70	1
8010	Hardboard, vinyl or aluminum	"	640	.013			.57		.57	
8030	Plywood	2 Carp	315	.051			2.86		2.86	4
9500	See Section 02 41 19.19 for rubbish handling									

06 05 05.20 Selective Demolition Millwork and Trim

0010	**SELECTIVE DEMOLITION MILLWORK AND TRIM** R024119-10									
1000	Cabinets, wood, base cabinets, per L.F.	2 Clab	80	.200	L.F.		9.10		9.10	13
1020	Wall cabinets, per L.F.	"	80	.200	"		9.10		9.10	13.
1060	Remove and reset, base cabinets	2 Carp	18	.889	Ea.		50		50	74.
1070	Wall cabinets		20	.800			45		45	67
1072	Oven cabinet, 7' high		11	1.455			82		82	122
1074	Cabinet door, up to 2' high	1 Clab	66	.121			5.55		5.55	8.
1076	2' - 4' high	"	46	.174			7.95		7.95	11.
1100	Steel, painted, base cabinets	2 Clab	60	.267	L.F.		12.15		12.15	18.
1120	Wall cabinets		60	.267	"		12.15		12.15	18.
1200	Casework, large area		320	.050	S.F.		2.28		2.28	3.
1220	Selective		200	.080	"		3.65		3.65	5.
1500	Counter top, straight runs		200	.080	L.F.		3.65		3.65	5.
1510	L, U or C shapes		120	.133			6.10		6.10	9.
1550	Remove and reset, straight runs	2 Carp	50	.320			18		18	27
1560	L, U or C shape	"	40	.400			22.50		22.50	33.
2000	Paneling, 4' x 8' sheets	2 Clab	2000	.008	S.F.		.36		.36	
2100	Boards, 1" x 4"		700	.023			1.04		1.04	1.
2120	1" x 6"		750	.021			.97		.97	1.
2140	1" x 8"		800	.020			.91		.91	1.
3000	Trim, baseboard, to 6" wide		1200	.013	L.F.		.61		.61	
3040	Greater than 6" and up to 12" wide		1000	.016			.73		.73	1.
3080	Remove and reset, minimum	2 Carp	400	.040			2.25		2.25	3.
3090	Maximum	"	300	.053			3		3	4.
3100	Ceiling trim	2 Clab	1000	.016			.73		.73	1.
3120	Chair rail	"	1200	.013			.61		.61	
3140	Railings with balusters	2 Clab	240	.067	L.F.		3.04		3.04	4.
3160	Wainscoting	"	700	.023	S.F.		1.04		1.04	1.

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06 05 23 – Wood, Plastic, and Composite Fastenings

06 05 23.10 Nails	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **NAILS**, material only, based upon 50# box purchase									
0020 Copper nails, plain				Lb.	13			13	14.30
0400 Stainless steel, plain					12.65			12.65	13.90
0500 Box, 3d to 20d, bright					3.10			3.10	3.41
0520 Galvanized					3.95			3.95	4.35
0600 Common, 3d to 60d, plain					1.67			1.67	1.84
0700 Galvanized					1.76			1.76	1.94
0800 Aluminum					12.80			12.80	14.10
1000 Annular or spiral thread, 4d to 60d, plain					3.33			3.33	3.66
1200 Galvanized					4.40			4.40	4.84
1400 Drywall nails, plain					2.90			2.90	3.19
1600 Galvanized					3			3	3.30
1800 Finish nails, 4d to 10d, plain					2			2	2.20
2000 Galvanized					3.30			3.30	3.63
2100 Aluminum					12.35			12.35	13.60
2300 Flooring nails, hardened steel, 2d to 10d, plain					3.51			3.51	3.86
2400 Galvanized					5.90			5.90	6.50
2500 Gypsum lath nails, 1-1/8", 13 ga. flathead, blued					3.20			3.20	3.52
2600 Masonry nails, hardened steel, 3/4" to 3" long, plain					3.49			3.49	3.84
2700 Galvanized					4.56			4.56	5
2900 Roofing nails, threaded, galvanized					3.54			3.54	3.89
3100 Aluminum					8.65			8.65	9.55
3300 Compressed lead head, threaded, galvanized					4.20			4.20	4.62
3600 Siding nails, plain shank, galvanized					2.53			2.53	2.78
3800 Aluminum					13			13	14.30
5000 Add to prices above for cement coating					.19			.19	.21
5200 Zinc or tin plating					.24			.24	.26
5500 Vinyl coated sinkers, 8d to 16d					1.45			1.45	1.60
06 05 23.40 Sheet Metal Screws									
0010 **SHEET METAL SCREWS**									
0020 Steel, standard, #8 x 3/4", plain				C	3.32			3.32	3.65
0100 Galvanized					3.30			3.30	3.63
0300 #10 x 1", plain					4.61			4.61	5.05
0400 Galvanized					4.59			4.59	5.05
0600 With washers, #14 x 1", plain				C	10.85			10.85	11.90
0700 Galvanized					10.75			10.75	11.85
0900 #14 x 2", plain					28			28	30.50
1000 Galvanized					17.70			17.70	19.50
1500 Self-drilling, with washers (pinch point), #8 x 3/4", plain					12.20			12.20	13.45
1600 Galvanized					3.38			3.38	3.72
1800 #10 x 3/4", plain					4.17			4.17	4.59
1900 Galvanized					4.50			4.50	4.95
3000 Stainless steel w/aluminum or neoprene washers, #14 x 1", plain					20.50			20.50	22.50
3100 #14 x 2", plain					33			33	36
06 05 23.50 Wood Screws									
0010 **WOOD SCREWS**									
0020 #8, 1" long, steel				C	6.45			6.45	7.10
0100 Brass					15.50			15.50	17.05
0200 #8, 2" long, steel					11			11	12.10
0300 Brass					28			28	31
0400 #10, 1" long, steel					4.50			4.50	4.95
0500 Brass					19.85			19.85	22

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06 05 23 – Wood, Plastic, and Composite Fastenings

		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
06 05 23.50	**Wood Screws**									
0600	#10, 2" long, steel				C	7.25			7.25	7.9
0700	Brass					34			34	37.5
0800	#10, 3" long, steel					12.10			12.10	13.3
1000	#12, 2" long, steel					10.70			10.70	11.8
1100	Brass					44			44	48.5
1500	#12, 3" long, steel					15.55			15.55	17.1
2000	#12, 4" long, steel					27.50			27.50	30
2050	Composite trim screws									
2100	Stainless steel, trim head, #7 x 1-5/8" long				C	11.55			11.55	12.7
2200	#7 x 2" long					11.45			11.45	12.5
2300	#7 x 2-1/2" long					25			25	27.5
2400	#7 x 3" long					18.65			18.65	20.5
2500	#9 x 3-1/2" long					30			30	33
2600	#9 x 4" long					32.50			32.50	36
3000	Stainless steel, flat head, #6 x 1-5/8" long					12.05			12.05	13.2
3100	#8 x 2" long					12.70			12.70	13.9
3200	#8 x 2-1/2" long					22			22	24
3300	#8 x 3" long					17.75			17.75	19.5
3400	#10 x 2" long					17.45			17.45	19.1
3500	#10 x 3-1/2" long					38			38	42
3600	#12 x 3" long				C	43.50			43.50	48
3700	#12 x 4" long					48			48	53
3800	#12 x 6" long					121			121	133
06 05 23.60	**Timber Connectors**									
0010	**TIMBER CONNECTORS**									
0020	Add up cost of each part for total cost of connection									
0100	Connector plates, steel, with bolts, straight	2 Carp	75	.213	Ea.	25.50	12		37.50	46
0110	Tee, 7 ga.		50	.320		68.50	18		86.50	103
0120	T- Strap, 14 ga., 12" x 8" x 2"		50	.320		68.50	18		86.50	103
0150	Anchor plates, 7 ga., 9" x 7"		75	.213		25.50	12		37.50	46
0200	Bolts, machine, sq. hd. with nut & washer, 1/2" diameter, 4" long	1 Carp	140	.057		.78	3.22		4	5.6
0300	7-1/2" long		130	.062		1.41	3.46		4.87	6.7
0500	3/4" diameter, 7-1/2" long		130	.062		3.84	3.46		7.30	9.3
0610	Machine bolts, w/nut, washer, 3/4" diameter, 15" L, HD's & beam hangers		95	.084		7.20	4.74		11.94	14.9
0800	Drilling bolt holes in timber, 1/2" diameter		450	.018	Inch		1		1	1.4
0900	1" diameter		350	.023	"		1.29		1.29	1.9
1100	Framing anchor, angle, 3" x 3" x 1-1/2", 12 ga.		175	.046	Ea.	3.20	2.57		5.77	7.3
1150	Framing anchors, 18 ga., 4-1/2" x 2-3/4"		175	.046		3.20	2.57		5.77	7.3
1160	Framing anchors, 18 ga., 4-1/2" x 3"		175	.046		3.20	2.57		5.77	7.3
1170	Clip anchors plates, 18 ga., 12" x 1-1/8"		175	.046		3.20	2.57		5.77	7.3
1250	Holdowns, 3 ga. base, 10 ga. body		8	1		69.50	56.50		126	161
1260	Holdowns, 7 ga. 11-1/16" x 3-1/4"		8	1		69.50	56.50		126	161
1270	Holdowns, 7 ga. 14-3/8" x 3-1/8"		8	1		69.50	56.50		126	161
1275	Holdowns, 12 ga. 8" x 2-1/2"		8	1		69.50	56.50		126	161
1300	Joist and beam hangers, 18 ga. galv., for 2" x 4" joist		175	.046		1.09	2.57		3.66	5.0
1400	2" x 6" to 2" x 10" joist		165	.048		1.95	2.73		4.68	6.2
1600	16 ga. galv., 3" x 6" to 3" x 10" joist		160	.050		6.95	2.82		9.77	11.8
1700	3" x 10" to 3" x 14" joist		160	.050		7.35	2.82		10.17	12.2
1800	4" x 6" to 4" x 10" joist		155	.052		5.90	2.91		8.81	10.8
1900	4" x 10" to 4" x 14" joist		155	.052		7.90	2.91		10.81	13.0
2000	Two-2" x 6" to two-2" x 10" joists		150	.053		6.20	3		9.20	11.3
2100	Two-2" x 10" to two-2" x 14" joists		150	.053		5.60	3		8.60	10.6

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06 05 23 – Wood, Plastic, and Composite Fastenings

	06 05 23.60 Timber Connectors	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2300	3/16" thick, 6" x 8" joist	1 Carp	145	.055	Ea.	51	3.11		54.11	60.50
2400	6" x 10" joist		140	.057		53	3.22		56.22	63.50
2500	6" x 12" joist		135	.059		90.50	3.34		93.84	104
2700	1/4" thick, 6" x 14" joist		130	.062		104	3.46		107.46	119
2900	Plywood clips, extruded aluminum H clip, for 3/4" panels				Ea.	.13			.13	.14
3000	Galvanized 18 ga. back-up clip					.16			.16	.18
3200	Post framing, 16 ga. galv. for 4" x 4" base, 2 piece	1 Carp	130	.062		16.25	3.46		19.71	23
3300	Cap		130	.062		49.50	3.46		52.96	59.50
3500	Rafter anchors, 18 ga. galv., 1-1/2" wide, 5-1/4" long		145	.055		.56	3.11		3.67	5.25
3600	10-3/4" long		145	.055		2.28	3.11		5.39	7.15
3800	Shear plates, 2-5/8" diameter		120	.067		5.55	3.75		9.30	11.70
3900	4" diameter		115	.070		4.64	3.92		8.56	10.95
4000	Sill anchors, embedded in concrete or block, 25-1/2" long		115	.070		3.14	3.92		7.06	9.30
4100	Spike grids, 3" x 6"		120	.067		2.20	3.75		5.95	8
4400	Split rings, 2-1/2" diameter		120	.067		5.70	3.75		9.45	11.90
4500	4" diameter		110	.073		6.05	4.09		10.14	12.75
4550	Tie plate, 20 ga., 7" x 3-1/8"		110	.073		6.05	4.09		10.14	12.75
4560	5" x 4-1/8"		110	.073		6.05	4.09		10.14	12.75
4575	Twist straps, 18 ga., 12" x 1-1/4"		110	.073		6.05	4.09		10.14	12.75
4580	16" x 1-1/4"		110	.073		6.05	4.09		10.14	12.75
4600	Strap ties, 20 ga., 2-1/16" wide, 12-13/16" long		180	.044		1.67	2.50		4.17	5.55
4700	16 ga., 1-3/8" wide, 12" long		180	.044		1.67	2.50		4.17	5.55
4800	1-1/4" wide, 21-5/8" long		160	.050		2.44	2.82		5.26	6.85
5000	Toothed rings, 2-5/8" or 4" diameter		90	.089		2.87	5		7.87	10.60
5200	Truss plates, nailed, 20 ga., up to 32' span		17	.471		20	26.50		46.50	61.50
5400	Washers, 2" x 2" x 1/8"					.59			.59	.65
5500	3" x 3" x 3/16"					1.57			1.57	1.73
6000	Angles and gussets, painted									
6012	7 ga., 3-1/4" x 3-1/4" x 2-1/2" long	1 Carp	1.90	4.211	C	1,125	237		1,362	1,575
6014	3-1/4" x 3-1/4" x 5" long		1.90	4.211		3,875	237		4,112	4,600
6016	3-1/4" x 3-1/4" x 7-1/2" long		1.85	4.324		2,700	243		2,943	3,325
6018	5-3/4" x 5-3/4" x 2-1/2" long		1.85	4.324		3,175	243		3,418	3,850
6020	5-3/4" x 5-3/4" x 5" long		1.85	4.324		3,850	243		4,093	4,600
6022	5-3/4" x 5-3/4" x 7-1/2" long		1.80	4.444		9,375	250		9,625	10,700
6024	3 ga., 4-1/4" x 4-1/4" x 3" long		1.85	4.324		3,550	243		3,793	4,250
6026	4-1/4" x 4-1/4" x 6" long		1.85	4.324		7,050	243		7,293	8,100
6028	4-1/4" x 4-1/4" x 9" long		1.80	4.444		8,575	250		8,825	9,800
6030	7-1/4" x 7-1/4" x 3" long		1.80	4.444		6,125	250		6,375	7,125
6032	7-1/4" x 7-1/4" x 6" long		1.80	4.444		8,275	250		8,525	9,475
6034	7-1/4" x 7-1/4" x 9" long		1.75	4.571		17,200	257		17,457	19,300
6036	Gussets									
6038	7 ga., 8-1/8" x 8-1/8" x 2-3/4" long	1 Carp	1.80	4.444	C	8,175	250		8,425	9,350
6040	3 ga., 9-3/4" x 9-3/4" x 3-1/4" long	"	1.80	4.444	"	8,450	250		8,700	9,675
6101	Beam hangers, polymer painted									
6102	Bolted, 3 ga. (W x H x L)									
6104	3-1/4" x 9" x 12" top flange	1 Carp	1	8	C	13,400	450		13,850	15,500
6106	5-1/4" x 9" x 12" top flange		1	8		14,000	450		14,450	16,100
6108	5-1/4" x 11" x 11-3/4" top flange		1	8		16,100	450		16,550	18,400
6110	6-7/8" x 9" x 12" top flange		1	8		26,100	450		26,550	29,400
6112	6-7/8" x 11" x 13-1/2" top flange		1	8		21,100	450		21,550	23,900
6114	8-7/8" x 11" x 15-1/2" top flange		1	8		25,900	450		26,350	29,200
6116	Nailed, 3 ga. (W x H x L)									
6118	3-1/4" x 10-1/2" x 10" top flange	1 Carp	1.80	4.444	C	21,100	250		21,350	23,600

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06 05 23.60 Timber Connectors		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Tot Incl O
6120	3-1/4" x 10-1/2" x 12" top flange	1 Carp	1.80	4.444	C	36,100	250		36,350	40,
6122	5-1/4" x 9-1/2" x 10" top flange		1.80	4.444		20,900	250		21,150	23,
6124	5-1/4" x 9-1/2" x 12" top flange		1.80	4.444		20,900	250		21,150	23,
6128	6-7/8" x 8-1/2" x 12" top flange		1.80	4.444		20,900	250		21,150	23,
6134	Saddle hangers, glu-lam (W x H x L)									
6136	3-1/4" x 10-1/2" x 5-1/4" x 6" saddle	1 Carp	.50	16	C	12,500	900		13,400	15,
6138	3-1/4" x 10-1/2" x 6-7/8" x 6" saddle		.50	16		16,400	900		17,300	19,
6140	3-1/4" x 10-1/2" x 8-7/8" x 6" saddle		.50	16		14,100	900		15,000	16,
6142	3-1/4" x 19-1/2" x 5-1/4" x 10-1/8" saddle		.40	20		26,200	1,125		27,325	30,
6144	3-1/4" x 19-1/2" x 6-7/8" x 10-1/8" saddle		.40	20		27,700	1,125		28,825	32,
6146	3-1/4" x 19-1/2" x 8-7/8" x 10-1/8" saddle		.40	20		16,800	1,125		17,925	20,
6148	5-1/4" x 9-1/2" x 5-1/4" x 12" saddle		.50	16		20,000	900		20,900	23,
6150	5-1/4" x 9-1/2" x 6-7/8" x 9" saddle		.50	16		19,800	900		20,700	23,
6152	5-1/4" x 10-1/2" x spec x 12" saddle		.50	16		37,300	900		38,200	42,
6154	5-1/4" x 18" x 5-1/4" x 12-1/8" saddle		.40	20		18,100	1,125		19,225	21,
6156	5-1/4" x 18" x 6-7/8" x 12-1/8" saddle		.40	20		19,800	1,125		20,925	23,
6158	5-1/4" x 18" x spec x 12-1/8" saddle		.40	20		21,500	1,125		22,625	25,
6160	6-7/8" x 8-1/2" x 6-7/8" x 12" saddle		.50	16		37,400	900		38,300	42,
6162	6-7/8" x 8-1/2" x 8-7/8" x 12" saddle		.50	16		38,700	900		39,600	44,
6164	6-7/8" x 10-1/2" x spec x 12" saddle		.50	16		37,400	900		38,300	42,
6166	6-7/8" x 18" x 6-7/8" x 13-3/4" saddle		.40	20		37,400	1,125		38,525	42,
6168	6-7/8" x 18" x 8-7/8" x 13-3/4" saddle		.40	20		26,000	1,125		27,125	30,
6170	6-7/8" x 18" x spec x 13-3/4" saddle		.40	20		41,800	1,125		42,925	47,
6172	8-7/8" x 18" x spec x 15-3/4" saddle		.40	20		62,500	1,125		63,625	70,
6201	Beam and purlin hangers, galvanized, 12 ga.									
6202	Purlin or joist size, 3" x 8"	1 Carp	1.70	4.706	C	1,625	265		1,890	2,
6204	3" x 10"		1.70	4.706		1,875	265		2,140	2,
6206	3" x 12"		1.65	4.848		2,625	273		2,898	3,
6208	3" x 14"		1.65	4.848		3,050	273		3,323	3,
6210	3" x 16"		1.65	4.848		2,750	273		3,023	3,
6212	4" x 8"		1.65	4.848		2,275	273		2,548	2,
6214	4" x 10"		1.65	4.848		1,850	273		2,123	2,
6216	4" x 12"		1.60	5		2,325	282		2,607	3,
6218	4" x 14"		1.60	5		2,825	282		3,107	3,
6220	4" x 16"		1.60	5		2,100	282		2,382	2,
6222	6" x 8"		1.60	5		2,075	282		2,357	2,
6224	6" x 10"		1.55	5.161		2,325	291		2,616	2,
6226	6" x 12"		1.55	5.161		5,675	291		5,966	6,
6228	6" x 14"		1.50	5.333		3,425	300		3,725	4,
6230	6" x 16"		1.50	5.333		4,575	300		4,875	5,
6250	Beam seats									
6252	Beam size, 5-1/4" wide									
6254	5" x 7" x 1/4"	1 Carp	1.80	4.444	C	7,525	250		7,775	8,
6256	6" x 7" x 3/8"		1.80	4.444		14,900	250		15,150	16,
6258	7" x 7" x 3/8"		1.80	4.444		9,125	250		9,375	10,
6260	8" x 7" x 3/8"		1.80	4.444		10,800	250		11,050	12,
6262	Beam size, 6-7/8" wide									
6264	5" x 9" x 1/4"	1 Carp	1.80	4.444	C	9,100	250		9,350	10,
6266	6" x 9" x 3/8"		1.80	4.444		11,800	250		12,050	13,
6268	7" x 9" x 3/8"		1.80	4.444		13,300	250		13,550	15,
6270	8" x 9" x 3/8"		1.80	4.444		15,800	250		16,050	17,
6272	Special beams, over 6-7/8" wide									
6274	5" x 10" x 3/8"	1 Carp	1.80	4.444	C	20,500	250		20,750	22,

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06 05 23 – Wood, Plastic, and Composite Fastenings

06 05 23.60 Timber Connectors	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
176 6" x 10" x 3/8"	1 Carp	1.80	4.444	C	23,900	250		24,150	26,700
178 7" x 10" x 3/8"		1.80	4.444		15,000	250		15,250	16,900
180 8" x 10" x 3/8"		1.75	4.571		19,100	257		19,357	21,500
182 5-1/4" x 12" x 5/16"		1.75	4.571		14,800	257		15,057	16,700
184 6-1/2" x 12" x 3/8"		1.75	4.571		24,600	257		24,857	27,500
186 5-1/4" x 16" x 5/16"		1.70	4.706		21,700	265		21,965	24,200
188 6-1/2" x 16" x 3/8"		1.70	4.706		26,800	265		27,065	29,800
190 5-1/4" x 20" x 5/16"		1.70	4.706		23,900	265		24,165	26,700
192 6-1/2" x 20" x 3/8"		1.65	4.848		26,800	273		27,073	29,800
300 Column bases									
302 4" x 4", 16 ga.	1 Carp	1.80	4.444	C	1,625	250		1,875	2,175
306 7 ga.		1.80	4.444		3,700	250		3,950	4,450
308 4" x 6", 16 ga.		1.80	4.444		2,000	250		2,250	2,575
312 7 ga.		1.80	4.444		4,375	250		4,625	5,175
314 6" x 6", 16 ga.		1.75	4.571		3,150	257		3,407	3,825
318 7 ga.		1.75	4.571		3,850	257		4,107	4,625
320 6" x 8", 7 ga.		1.70	4.706		6,325	265		6,590	7,350
322 6" x 10", 7 ga.		1.70	4.706		7,225	265		7,490	8,350
324 6" x 12", 7 ga.		1.70	4.706		7,800	265		8,065	8,975
326 8" x 8", 7 ga.		1.65	4.848		9,475	273		9,748	10,800
330 8" x 10", 7 ga		1.65	4.848		8,725	273		8,998	10,000
332 8" x 12", 7 ga.		1.60	5		9,475	282		9,757	10,800
334 10" x 10", 3 ga.		1.60	5		9,675	282		9,957	11,000
336 10" x 12", 3 ga.		1.60	5		11,100	282		11,382	12,600
338 12" x 12", 3 ga.		1.55	5.161		12,100	291		12,391	13,700
350 Column caps, painted, 3 ga.									
352 3-1/4" x 3-5/8"	1 Carp	1.80	4.444	C	17,000	250		17,250	19,100
354 3-1/4" x 5-1/2"		1.80	4.444		17,000	250		17,250	19,100
356 3-5/8" x 3-5/8"		1.80	4.444		14,400	250		14,650	16,300
358 3-5/8" x 5-1/2"		1.80	4.444		14,400	250		14,650	16,300
360 5-1/4" x 5-1/2"		1.75	4.571		15,300	257		15,557	17,300
362 5-1/4" x 7-1/2"		1.75	4.571		13,100	257		13,357	14,800
364 5-1/2" x 3-5/8"		1.75	4.571		10,300	257		10,557	11,800
366 5-1/2" x 5-1/2"		1.75	4.571		10,300	257		10,557	11,800
368 5-1/2" x 7-1/2"		1.70	4.706		14,100	265		14,365	16,000
370 6-7/8" x 5-1/2"		1.70	4.706		14,800	265		15,065	16,600
372 6-7/8" x 6-7/8"		1.70	4.706		14,800	265		15,065	16,600
374 6-7/8" x 7-1/2"		1.70	4.706		14,800	265		15,065	16,600
376 7-1/2" x 5-1/2"		1.65	4.848		15,400	273		15,673	17,400
378 7-1/2" x 7-1/2"		1.65	4.848		15,400	273		15,673	17,400
380 8-7/8" x 5-1/2"		1.60	5		16,300	282		16,582	18,300
382 8-7/8" x 7-1/2"		1.60	5		16,300	282		16,582	18,300
384 9-1/2" x 5-1/2"		1.60	5		22,000	282		22,282	24,600
400 Floor tie anchors, polymer paint									
402 10 ga., 3" x 37-1/2"	1 Carp	1.80	4.444	C	5,875	250		6,125	6,825
404 3-1/2" x 45-1/2"		1.75	4.571		6,125	257		6,382	7,125
406 3 ga., 3-1/2" x 56"		1.70	4.706		10,800	265		11,065	12,300
410 Girder hangers									
412 6" wall thickness, 4" x 6"	1 Carp	1.80	4.444	C	3,325	250		3,575	4,025
414 4" x 8"		1.80	4.444		5,375	250		5,625	6,275
416 8" wall thickness, 4" x 6"		1.80	4.444		3,800	250		4,050	4,550
418 4" x 8"		1.80	4.444		4,325	250		4,575	5,125
420 Hinge connections, polymer painted									

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06 05 23 – Wood, Plastic, and Composite Fastenings

06 05 23.60 Timber Connectors	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
6422 3/4" thick top plate									
6424 5-1/4" x 12" w/5" x 5" top	1 Carp	1	8	C	59,000	450		59,450	65,00
6426 5-1/4" x 15" w/6" x 6" top		.80	10		62,500	565		63,065	70,00
6428 5-1/4" x 18" w/7" x 7" top		.70	11.429		65,500	645		66,145	73,50
6430 5-1/4" x 26" w/9" x 9" top		.60	13.333		70,000	750		70,750	78,00
6432 1" thick top plate									
6434 6-7/8" x 14" w/5" x 5" top	1 Carp	.80	10	C	71,500	565		72,065	80,00
6436 6-7/8" x 17" w/6" x 6" top		.80	10		79,500	565		80,065	88,50
6438 6-7/8" x 21" w/7" x 7" top		.70	11.429		106,500	645		107,145	118,00
6440 6-7/8" x 31" w/9" x 9" top		.60	13.333		95,000	750		95,750	105,50
6442 1-1/4" thick top plate									
6444 8-7/8" x 16" w/5" x 5" top	1 Carp	.60	13.333	C	89,500	750		90,250	99,50
6446 8-7/8" x 21" w/6" x 6" top		.50	16		98,500	900		99,400	110,00
6448 8-7/8" x 26" w/7" x 7" top		.40	20		136,500	1,125		137,625	151,50
6450 8-7/8" x 39" w/9" x 9" top		.30	26.667		139,000	1,500		140,500	154,50
6460 Holddowns									
6462 Embedded along edge									
6464 26" long, 12 ga.	1 Carp	.90	8.889	C	2,300	500		2,800	3,27
6466 35" long, 12 ga.		.85	9.412		3,650	530		4,180	4,82
6468 35" long, 10 ga.		.85	9.412		3,700	530		4,230	4,87
6470 Embedded away from edge									
6472 Medium duty, 12 ga.									
6474 18-1/2" long	1 Carp	.95	8.421	C	1,250	475		1,725	2,07
6476 23-3/4" long		.90	8.889		1,925	500		2,425	2,87
6478 28" long		.85	9.412		2,000	530		2,530	2,97
6480 35" long		.85	9.412		2,275	530		2,805	3,30
6482 Heavy duty, 10 ga.									
6484 28" long	1 Carp	.85	9.412	C	3,550	530		4,080	4,70
6486 35" long	"	.85	9.412	"	4,075	530		4,605	5,30
6490 Surface mounted (W x H)									
6492 2-1/2" x 5-3/4", 7 ga.	1 Carp	1	8	C	2,375	450		2,825	3,27
6494 2-1/2" x 8", 12 ga.		1	8		1,400	450		1,850	2,22
6496 2-7/8" x 6-3/8", 7 ga.		1	8		4,825	450		5,275	6,00
6498 2-7/8" x 12-1/2", 3 ga.	1 Carp	1	8	C	7,550	450		8,000	8,97
6500 3-3/16" x 9-3/8", 10 ga.		1	8		8,225	450		8,675	9,72
6502 3-1/2" x 11-5/8", 3 ga.		1	8		10,700	450		11,150	12,50
6504 3-1/2" x 14-3/4", 3 ga.		1	8		17,100	450		17,550	19,50
6506 3-1/2" x 16-1/2", 3 ga.		1	8		30,200	450		30,650	34,00
6508 3-1/2" x 20-1/2", 3 ga.		.90	8.889		17,600	500		18,100	20,10
6510 3-1/2" x 24-1/2", 3 ga.		.90	8.889		24,500	500		25,000	27,60
6512 4-1/4" x 20-3/4", 3 ga.		.90	8.889		23,300	500		23,800	26,30
6520 Joist hangers									
6522 Sloped, field adjustable, 18 ga.									
6524 2" x 6"	1 Carp	1.65	4.848	C	965	273		1,238	1,47
6526 2" x 8"		1.65	4.848		1,750	273		2,023	2,32
6528 2" x 10" and up		1.65	4.848		1,875	273		2,148	2,47
6530 3" x 10" and up		1.60	5		1,600	282		1,882	2,17
6532 4" x 10" and up		1.55	5.161		1,850	291		2,141	2,45
6536 Skewed 45°, 16 ga.									
6538 2" x 4"	1 Carp	1.75	4.571	C	1,225	257		1,482	1,72
6540 2" x 6" or 2" x 8"		1.65	4.848		1,050	273		1,323	1,57
6542 2" x 10" or 2" x 12"		1.65	4.848		2,000	273		2,273	2,60
6544 2" x 14" or 2" x 16"		1.60	5		3,075	282		3,357	3,82

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06 05 23.60 Timber Connectors		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
6546	(2) 2" x 6" or (2) 2" x 8"	1 Carp	1.60	5	C	3,025	282		3,307	3,750
6548	(2) 2" x 10" or (2) 2" x 12"		1.55	5.161		3,925	291		4,216	4,725
6550	(2) 2" x 14" or (2) 2" x 16"		1.50	5.333		3,675	300		3,975	4,500
6552	4" x 6" or 4" x 8"		1.60	5		2,725	282		3,007	3,425
6554	4" x 10" or 4" x 12"		1.55	5.161		2,300	291		2,591	2,950
6556	4" x 14" or 4" x 16"		1.55	5.161		5,100	291		5,391	6,025
6560	Skewed 45°, 14 ga.									
6562	(2) 2" x 6" or (2) 2" x 8"	1 Carp	1.60	5	C	3,950	282		4,232	4,775
6564	(2) 2" x 10" or (2) 2" x 12"		1.55	5.161		5,125	291		5,416	6,075
6566	(2) 2" x 14" or (2) 2" x 16"		1.50	5.333		7,900	300		8,200	9,125
6568	4" x 6" or 4" x 8"		1.60	5		4,350	282		4,632	5,200
6570	4" x 10" or 4" x 12"		1.55	5.161		4,725	291		5,016	5,625
6572	4" x 14" or 4" x 16"		1.55	5.161		7,100	291		7,391	8,250
6590	Joist hangers, heavy duty 12 ga., galvanized									
6592	2" x 4"	1 Carp	1.75	4.571	C	2,575	257		2,832	3,200
6594	2" x 6"		1.65	4.848		3,000	273		3,273	3,700
6595	2" x 6", 16 ga.		1.65	4.848		2,850	273		3,123	3,525
6596	2" x 8"		1.65	4.848		3,675	273		3,948	4,425
6597	2" x 8", 16 ga.		1.65	4.848		3,475	273		3,748	4,225
6598	2" x 10"		1.65	4.848		3,850	273		4,123	4,625
6600	2" x 12"		1.65	4.848		4,425	273		4,698	5,275
6602	2" x 14"		1.65	4.848		5,375	273		5,648	6,325
6604	2" x 16"		1.65	4.848		6,250	273		6,523	7,275
6606	3" x 4"		1.65	4.848		2,925	273		3,198	3,625
6608	3" x 6"		1.65	4.848		4,225	273		4,498	5,050
6610	3" x 8"		1.65	4.848		4,525	273		4,798	5,400
6612	3" x 10"		1.60	5		5,275	282		5,557	6,225
6614	3" x 12"		1.60	5		6,050	282		6,332	7,075
6616	3" x 14"		1.60	5		6,775	282		7,057	7,900
6618	3" x 16"		1.60	5		7,700	282		7,982	8,900
6620	(2) 2" x 4"		1.75	4.571		3,700	257		3,957	4,425
6622	(2) 2" x 6"		1.60	5		4,025	282		4,307	4,875
6624	(2) 2" x 8"		1.60	5		4,775	282		5,057	5,675
6626	(2) 2" x 10"		1.55	5.161		5,125	291		5,416	6,075
6628	(2) 2" x 12"		1.55	5.161		5,675	291		5,966	6,675
6630	(2) 2" x 14"		1.50	5.333		6,225	300		6,525	7,300
6632	(2) 2" x 16"		1.50	5.333		7,650	300		7,950	8,875
6634	4" x 4"		1.65	4.848		3,050	273		3,323	3,750
6636	4" x 6"		1.60	5		3,900	282		4,182	4,700
6638	4" x 8"		1.60	5		3,675	282		3,957	4,450
6640	4" x 10"		1.55	5.161		4,400	291		4,691	5,275
6642	4" x 12"		1.55	5.161		4,775	291		5,066	5,675
6644	4" x 14"		1.55	5.161		5,675	291		5,966	6,675
6646	4" x 16"		1.55	5.161		6,450	291		6,741	7,500
6648	(3) 2" x 10"		1.50	5.333		6,050	300		6,350	7,100
6650	(3) 2" x 12"		1.50	5.333		7,625	300		7,925	8,850
6652	(3) 2" x 14"		1.45	5.517		8,650	310		8,960	9,950
6654	(3) 2" x 16"		1.45	5.517		9,225	310		9,535	10,700
6656	6" x 6"		1.60	5		4,050	282		4,332	4,875
6658	6" x 8"		1.60	5		4,250	282		4,532	5,100
6660	6" x 10"		1.55	5.161		4,650	291		4,941	5,550
6662	6" x 12"		1.55	5.161		5,325	291		5,616	6,275
6664	6" x 14"		1.50	5.333		6,925	300		7,225	8,075

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06 05 23 – Wood, Plastic, and Composite Fastenings

	06 05 23.60 Timber Connectors	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
6666	6" x 16"	1 Carp	1.50	5.333	C	8,050	300		8,350	9,32
6690	Knee braces, galvanized, 12 ga.									
6692	Beam depth, 10" x 15" x 5' long	1 Carp	1.80	4.444	C	11,100	250		11,350	12,60
6694	15" x 22-1/2" x 7' long		1.70	4.706		12,800	265		13,065	14,40
6696	22-1/2" x 28-1/2" x 8' long		1.60	5		13,700	282		13,982	15,50
6698	28-1/2" x 36" x 10' long		1.55	5.161		14,300	291		14,591	16,10
6700	36" x 42" x 12' long		1.50	5.333		15,800	300		16,100	17,70
6710	Mudsill anchors									
6714	2" x 4" or 3" x 4"	1 Carp	115	.070	C	203	3.92		206.92	22
6716	2" x 6" or 3" x 6"		115	.070		188	3.92		191.92	21
6718	Block wall, 13-1/4" long		115	.070		147	3.92		150.92	16
6720	21-1/4" long		115	.070		209	3.92		212.92	23
6730	Post bases, 12 ga. galvanized									
6732	Adjustable, 3-9/16" x 3-9/16"	1 Carp	1.30	6.154	C	2,150	345		2,495	2,87
6734	3-9/16" x 5-1/2"		1.30	6.154		2,800	345		3,145	3,60
6736	4" x 4"		1.30	6.154		1,175	345		1,520	1,82
6738	4" x 6"		1.30	6.154		4,925	345		5,270	5,95
6740	5-1/2" x 5-1/2"		1.30	6.154		2,050	345		2,395	2,80
6742	6" x 6"		1.30	6.154		4,600	345		4,945	5,60
6744	Elevated, 3-9/16" x 3-1/4"		1.30	6.154		2,225	345		2,570	2,95
6746	5-1/2" x 3-5/16"		1.30	6.154		3,150	345		3,495	3,97
6748	5-1/2" x 5"		1.30	6.154		3,700	345		4,045	4,60
6750	Regular, 3-9/16" x 3-3/8"		1.30	6.154		1,775	345		2,120	2,47
6752	4" x 3-3/8"		1.30	6.154		2,650	345		2,995	3,42
6754	18 ga., 5-1/4" x 3-1/8"		1.30	6.154		1,925	345		2,270	2,65
6755	5-1/2" x 3-3/8"		1.30	6.154		1,925	345		2,270	2,65
6756	5-1/2" x 5-3/8"		1.30	6.154		3,750	345		4,095	4,65
6758	6" x 3-3/8"		1.30	6.154		4,225	345		4,570	5,17
6760	6" x 5-3/8"		1.30	6.154		4,800	345		5,145	5,80
6762	Post combination cap/bases									
6764	3-9/16" x 3-9/16"	1 Carp	1.20	6.667	C	725	375		1,100	1,35
6766	3-9/16" x 5-1/2"		1.20	6.667		1,100	375		1,475	1,75
6768	4" x 4"		1.20	6.667		775	375		1,150	1,40
6770	5-1/2" x 5-1/2"		1.20	6.667		2,450	375		2,825	3,25
6772	6" x 6"		1.20	6.667		3,175	375		3,550	4,05
6774	7-1/2" x 7-1/2"		1.20	6.667		8,650	375		9,025	10,10
6776	8" x 8"		1.20	6.667		8,650	375		9,025	10,10
6790	Post-beam connection caps									
6792	Beam size 3-9/16"									
6794	12 ga. post, 4" x 4"	1 Carp	1	8	C	2,875	450		3,325	3,82
6796	4" x 6"		1	8		7,400	450		7,850	8,80
6798	4" x 8"		1	8		10,000	450		10,450	11,70
6800	16 ga. post, 4" x 4"		1	8		1,875	450		2,325	2,75
6802	4" x 6"		1	8		2,750	450		3,200	3,70
6804	4" x 8"		1	8		10,600	450		11,050	12,40
6805	18 ga. post, 2-7/8" x 3"		1	8		10,600	450		11,050	12,40
6806	Beam size 5-1/2"									
6808	12 ga. post, 6" x 4"	1 Carp	1	8	C	5,575	450		6,025	6,80
6810	6" x 6"		1	8		4,675	450		5,125	5,82
6812	6" x 8"		1	8		7,925	450		8,375	9,40
6816	16 ga. post, 6" x 4"		1	8		3,225	450		3,675	4,22
6818	6" x 6"		1	8		4,450	450		4,900	5,57
6820	Beam size 7-1/2"									

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06 05 23 – Wood, Plastic, and Composite Fastenings

06 05 23.60 Timber Connectors	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
6822 12 ga. post, 8" x 4"	1 Carp	1	8	C	7,950	450		8,400	9,425
6824 8" x 6"		1	8		7,950	450		8,400	9,425
6826 8" x 8"		1	8		12,300	450		12,750	14,200
6840 Purlin anchors, embedded									
6842 Heavy duty, 10 ga.									
6844 Straight, 28" long	1 Carp	1.60	5	C	3,050	282		3,332	3,775
6846 35" long		1.50	5.333		3,175	300		3,475	3,950
6848 Twisted, 28" long		1.60	5		2,975	282		3,257	3,700
6850 35" long		1.50	5.333		3,125	300		3,425	3,875
6852 Regular duty, 12 ga.									
6854 Straight, 18-1/2" long	1 Carp	1.80	4.444	C	1,300	250		1,550	1,800
6856 23-3/4" long		1.70	4.706		1,200	265		1,465	1,725
6858 29" long		1.60	5		2,425	282		2,707	3,100
6860 35" long		1.50	5.333		2,850	300		3,150	3,575
6862 Twisted, 18" long		1.80	4.444		1,800	250		2,050	2,350
6866 28" long		1.60	5		2,050	282		2,332	2,675
6868 35" long		1.50	5.333		3,175	300		3,475	3,950
6870 Straight, plastic coated									
6872 23-1/2" long	1 Carp	1.60	5	C	4,425	282		4,707	5,275
6874 26-7/8" long		1.60	5		5,175	282		5,457	6,100
6876 32-1/2" long		1.50	5.333		5,500	300		5,800	6,500
6878 35-7/8" long		1.50	5.333		5,750	300		6,050	6,775
6890 Purlin hangers, painted									
6892 12 ga., 2" x 6"	1 Carp	1.80	4.444	C	2,975	250		3,225	3,650
6894 2" x 8"		1.80	4.444		3,500	250		3,750	4,225
6896 2" x 10"		1.80	4.444		3,675	250		3,925	4,400
6898 2" x 12"		1.75	4.571		4,225	257		4,482	5,025
6900 2" x 14"		1.75	4.571		5,125	257		5,382	6,025
6902 2" x 16"		1.75	4.571		5,825	257		6,082	6,800
6904 3" x 6"		1.70	4.706		4,225	265		4,490	5,050
6906 3" x 8"	1 Carp	1.70	4.706	C	4,525	265		4,790	5,400
6908 3" x 10"		1.70	4.706		5,275	265		5,540	6,200
6910 3" x 12"		1.65	4.848		6,050	273		6,323	7,050
6912 3" x 14"		1.65	4.848		1,275	273		1,548	1,825
6914 3" x 16"		1.65	4.848		7,700	273		7,973	8,875
6916 4" x 6"		1.65	4.848		3,225	273		3,498	3,950
6918 4" x 8"		1.65	4.848		3,675	273		3,948	4,425
6920 4" x 10"		1.65	4.848		4,400	273		4,673	5,250
6922 4" x 12"		1.60	5		5,000	282		5,282	5,950
6924 4" x 14"		1.60	5		5,975	282		6,257	7,000
6926 4" x 16"		1.60	5		6,775	282		7,057	7,875
6928 6" x 6"		1.60	5		3,850	282		4,132	4,675
6930 6" x 8"		1.60	5		4,025	282		4,307	4,875
6932 6" x 10"		1.55	5.161		4,650	291		4,941	5,550
6934 double 2" x 6"		1.70	4.706		1,800	265		2,065	2,375
6936 double 2" x 8"		1.70	4.706		4,775	265		5,040	5,650
6938 double 2" x 10"		1.70	4.706		5,125	265		5,390	6,050
6940 double 2" x 12"		1.65	4.848		2,750	273		3,023	3,425
6942 double 2" x 14"		1.65	4.848		6,225	273		6,498	7,250
6944 double 2" x 16"		1.65	4.848		7,200	273		7,473	8,300
6960 11 ga., 4" x 6"		1.65	4.848		3,225	273		3,498	3,950
6962 4" x 8"		1.65	4.848		3,675	273		3,948	4,425
6964 4" x 10"		1.65	4.848		4,400	273		4,673	5,250

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06 05 23 – Wood, Plastic, and Composite Fastenings

	06 05 23.60 Timber Connectors	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
6966	6" x 6"	1 Carp	1.60	5	C	3,850	282		4,132	4,675
6968	6" x 8"		1.60	5		4,025	282		4,307	4,875
6970	6" x 10"		1.55	5.161		4,650	291		4,941	5,550
6972	6" x 12"		1.55	5.161		5,325	291		5,616	6,275
6974	6" x 14"		1.55	5.161		6,225	291		6,516	7,275
6976	6" x 16"		1.50	5.333		7,700	300		8,000	8,925
6978	7 ga., 8" x 6"		1.60	5		7,025	282		7,307	8,150
6980	8" x 8"		1.60	5		2,525	282		2,807	3,200
6982	8" x 10"		1.55	5.161		3,425	291		3,716	4,175
6984	8" x 12"		1.55	5.161		4,400	291		4,691	5,275
6986	8" x 14"		1.50	5.333		4,975	300		5,275	5,925
6988	8" x 16"		1.50	5.333		5,125	300		5,425	6,100
7000	Strap connectors, galvanized									
7002	12 ga., 2-1/16" x 36"	1 Carp	1.55	5.161	C	2,075	291		2,366	2,700
7004	2-1/16" x 47"		1.50	5.333		3,125	300		3,425	3,875
7005	10 ga., 2-1/16" x 72"		1.50	5.333		3,275	300		3,575	4,050
7006	7 ga., 2-1/16" x 34"		1.55	5.161		4,975	291		5,266	5,900
7008	2-1/16" x 45"		1.50	5.333		7,675	300		7,975	8,875
7010	3 ga., 3" x 32"		1.55	5.161		9,900	291		10,191	11,300
7012	3" x 41"		1.55	5.161		10,300	291		10,591	11,700
7014	3" x 50"		1.50	5.333		15,700	300		16,000	17,600
7016	3" x 59"		1.50	5.333		19,100	300		19,400	21,400
7018	3-1/2" x 68"		1.45	5.517		19,400	310		19,710	21,800
7030	Tension ties									
7032	19-1/8" long, 16 ga., 3/4" anchor bolt	1 Carp	1.80	4.444	C	2,625	250		2,875	3,250
7034	20" long, 12 ga., 1/2" anchor bolt		1.80	4.444		2,875	250		3,125	3,525
7036	20" long, 12 ga., 3/4" anchor bolt		1.80	4.444		2,900	250		3,150	3,575
7038	27-3/4" long, 12 ga., 3/4" anchor bolt		1.75	4.571		6,225	257		6,482	7,225
7050	Truss connectors, galvanized									
7052	Adjustable hanger									
7054	18 ga., 2" x 6"	1 Carp	1.65	4.848	C	830	273		1,103	1,325
7056	4" x 6"		1.65	4.848		1,400	273		1,673	1,950
7058	16 ga., 4" x 10"		1.60	5		2,050	282		2,332	2,675
7060	(2) 2" x 10"		1.60	5		2,050	282		2,332	2,675
7062	Connectors to plate									
7064	16 ga., 2" x 4" plate	1 Carp	1.80	4.444	C	960	250		1,210	1,425
7066	2" x 6" plate	"	1.80	4.444	"	1,225	250		1,475	1,725
7068	Hip jack connector									
7070	14 ga.	1 Carp	1.50	5.333	C	3,650	300		3,950	4,450

06 05 23.80 Metal Bracing

9010	**METAL BRACING**									
302	Let-in, "T" shaped, 22 ga. galv. steel, studs at 16" OC	1 Carp	580	.014	L.F.	1.26	.78		2.04	2.5
02	Studs at 24" OC		600	.013		1.26	.75		2.01	2.5
	Steel straps, 16 ga. galv. steel, studs at 16" OC		600	.013		1.95	.75		2.70	3.2
	Studs at 24" OC		620	.013		1.95	.73		2.68	3.2

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06 11 10 – Framing with Dimensional, Engineered or Composite Lumber

	06 11 10.01 Forest Stewardship Council Certification	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**FOREST STEWARDSHIP COUNCIL CERTIFICATION**									
0020	For Forest Stewardship Council (FSC) cert dimension lumber, add G					65%				
	06 11 10.02 Blocking									
0010	**BLOCKING**									
2600	Miscellaneous, to wood construction									
2620	2" x 4"	1 Carp	.17	47.059	M.B.F.	985	2,650		3,635	5,025
2625	Pneumatic nailed		.21	38.095		990	2,150		3,140	4,300
2660	2" x 8"		.27	29.630		1,075	1,675		2,750	3,650
2665	Pneumatic nailed		.33	24.242		1,075	1,375		2,450	3,225
2720	To steel construction									
2740	2" x 4"	1 Carp	.14	57.143	M.B.F.	985	3,225		4,210	5,875
2780	2" x 8"	"	.21	38.095	"	1,075	2,150		3,225	4,375
	06 11 10.04 Wood Bracing									
0010	**WOOD BRACING**									
0012	Let-in, with 1" x 6" boards, studs @ 16" OC	1 Carp	150	.053	L.F.	.98	3		3.98	5.55
0202	Studs @ 24" OC	"	230	.035	"	.98	1.96		2.94	3.98
	06 11 10.06 Bridging									
0010	**BRIDGING**									
0012	Wood, for joists 16" OC, 1" x 3"	1 Carp	130	.062	Pr.	.76	3.46		4.22	6
0017	Pneumatic nailed		170	.047		.83	2.65		3.48	4.85
0102	2" x 3" bridging		130	.062		.81	3.46		4.27	6.05
0107	Pneumatic nailed		170	.047		.82	2.65		3.47	4.84
0302	Steel, galvanized, 18 ga., for 2" x 10" joists at 12" OC		130	.062		2.04	3.46		5.50	7.40
0352	16" OC		135	.059		.02	3.34		3.36	4.99
0402	24" OC		140	.057		3.14	3.22		6.36	8.25
0602	For 2" x 14" joists at 16" OC		130	.062		2.71	3.46		6.17	8.15
0902	Compression type, 16" OC, 2" x 8" joists		200	.040		1.61	2.25		3.86	5.10
1002	2" x 12" joists		200	.040		2.14	2.25		4.39	5.70
	06 11 10.10 Beam and Girder Framing									
0010	**BEAM AND GIRDER FRAMING** R061110-30									
3500	Single, 2" x 6"	2 Carp	.70	22.857	M.B.F.	970	1,275		2,245	3,000
3505	Pneumatic nailed		.81	19.704		975	1,100		2,075	2,725
3520	2" x 8"		.86	18.605		1,075	1,050		2,125	2,725
3525	Pneumatic nailed		1	16.048		1,075	905		1,980	2,550
3540	2" x 10"		1	16		1,200	900		2,100	2,650
3545	Pneumatic nailed		1.16	13.793		1,200	775		1,975	2,475
3560	2" x 12"		1.10	14.545		1,375	820		2,195	2,750
3565	Pneumatic nailed		1.28	12.539		1,400	705		2,105	2,575
3580	2" x 14"		1.17	13.675		2,275	770		3,045	3,650
3585	Pneumatic nailed		1.36	11.791		2,275	665		2,940	3,500
3600	3" x 8"		1.10	14.545		2,775	820		3,595	4,275
3620	3" x 10"		1.25	12.800		2,725	720		3,445	4,075
3640	3" x 12"		1.35	11.852		2,725	665		3,390	4,000
3660	3" x 14"		1.40	11.429		2,000	645		2,645	3,150
3680	4" x 8"	F-3	2.66	15.038		2,100	870	745	3,715	4,450
3700	4" x 10"		3.16	12.658		2,100	730	630	3,460	4,100
3720	4" x 12"		3.60	11.111		2,175	640	550	3,365	3,925
3740	4" x 14"		3.96	10.101		2,175	585	500	3,260	3,825
4000	Double, 2" x 6"	2 Carp	1.25	12.800		970	720		1,690	2,150
4005	Pneumatic nailed		1.45	11.034		975	620		1,595	2,000
4020	2" x 8"		1.60	10		1,075	565		1,640	2,025
4025	Pneumatic nailed		1.86	8.621		1,075	485		1,560	1,925

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06 11 10 – Framing with Dimensional, Engineered or Composite Lumber

	06 11 10.10 Beam and Girder Framing	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4040	2" x 10"	2 Carp	1.92	8.333	M.B.F.	1,200	470		1,670	2,0
4045	Pneumatic nailed		2.23	7.185		1,200	405		1,605	1,9
4060	2" x 12"		2.20	7.273		1,375	410		1,785	2,1
4065	Pneumatic nailed		2.55	6.275		1,400	355		1,755	2,0
4080	2" x 14"		2.45	6.531		2,275	370		2,645	3,0
4085	Pneumatic nailed		2.84	5.634		2,275	315		2,590	2,9
5000	Triple, 2" x 6"		1.65	9.697		970	545		1,515	1,9
5005	Pneumatic nailed		1.91	8.377		975	470		1,445	1,7
5020	2" x 8"		2.10	7.619		1,075	430		1,505	1,8
5025	Pneumatic nailed		2.44	6.568		1,075	370		1,445	1,7
5040	2" x 10"		2.50	6.400		1,200	360		1,560	1,8
5045	Pneumatic nailed		2.90	5.517		1,200	310		1,510	1,7
5060	2" x 12"		2.85	5.614		1,375	315		1,690	2,0
5065	Pneumatic nailed		3.31	4.840		1,400	272		1,672	1,9
5080	2" x 14"		3.15	5.079		2,275	286		2,561	2,9
5085	Pneumatic nailed		3.35	4.770		2,275	269		2,544	2,9
	06 11 10.12 Ceiling Framing									
0010	**CEILING FRAMING**									
6400	Suspended, 2" x 3"	2 Carp	.50	32	M.B.F.	920	1,800		2,720	3,6
6450	2" x 4"		.59	27.119		985	1,525		2,510	3,3
6500	2" x 6"		.80	20		970	1,125		2,095	2,7
6550	2" x 8"		.86	18.605		1,075	1,050		2,125	2,7
	06 11 10.14 Posts and Columns									
0010	**POSTS AND COLUMNS**									
0400	4" x 4"	2 Carp	.52	30.769	M.B.F.	1,750	1,725		3,475	4,5
0420	4" x 6"		.55	29.091		2,075	1,650		3,725	4,7
0440	4" x 8"		.59	27.119		2,100	1,525		3,625	4,6
0460	6" x 6"		.65	24.615		3,175	1,375		4,550	5,5
0480	6" x 8"		.70	22.857		2,850	1,275		4,125	5,0
0500	6" x 10"		.75	21.333		2,950	1,200		4,150	5,0
	06 11 10.18 Joist Framing									
0010	**JOIST FRAMING** R061110-30									
2650	Joists, 2" x 4"	2 Carp	.83	19.277	M.B.F.	985	1,075		2,060	2,7
2655	Pneumatic nailed		.96	16.667		990	940		1,930	2,5
2680	2" x 6"		1.25	12.800		970	720		1,690	2,1
2685	Pneumatic nailed		1.44	11.111		975	625		1,600	2,0
2700	2" x 8"		1.46	10.959		1,075	615		1,690	2,1
2705	Pneumatic nailed		1.68	9.524		1,075	535		1,610	2,0
2720	2" x 10"		1.49	10.738		1,200	605		1,805	2,2
2725	Pneumatic nailed		1.71	9.357		1,200	525		1,725	2,1
2740	2" x 12"		1.75	9.143		1,375	515		1,890	2,3
2745	Pneumatic nailed		2.01	7.960		1,400	450		1,850	2,2
2760	2" x 14"		1.79	8.939		2,275	505		2,780	3,2
2765	Pneumatic nailed		2.06	7.767		2,275	435		2,710	3,1
2780	3" x 6"		1.39	11.511		2,775	650		3,425	4,0
2790	3" x 8"		1.90	8.421		2,775	475		3,250	3,7
2800	3" x 10"		1.95	8.205		2,725	460		3,185	3,7
2820	3" x 12"		1.80	8.889		2,725	500		3,225	3,7
2840	4" x 6"		1.60	10		2,075	565		2,640	3,1
2860	4" x 10"		2	8		2,100	450		2,550	3,0
2880	4" x 12"		1.80	8.889		2,175	500		2,675	3,1
3000	Composite wood joist 9-1/2" deep		.90	17.778	M.L.F.	4,250	1,000		5,250	6,1

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06 11 10 – Framing with Dimensional, Engineered or Composite Lumber

	06 11 10.18 Joist Framing	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
3010	11-1/2" deep	2 Carp	.88	18.182	M.L.F.	4,475	1,025		5,500	6,450
3020	14" deep		.82	19.512		5,150	1,100		6,250	7,300
3030	16" deep		.78	20.513		7,525	1,150		8,675	10,000
4000	Open web joist 12" deep		.88	18.182		7,600	1,025		8,625	9,875
4002	Per linear foot		880	.018	L.F.	7.60	1.02		8.62	9.85
4004	Treated, per linear foot		880	.018	"	8.65	1.02		9.67	11
4010	14" deep		.82	19.512	M.L.F.	8,250	1,100		9,350	10,700
4012	Per linear foot		820	.020	L.F.	8.25	1.10		9.35	10.70
4014	Treated, per linear foot		820	.020	"	9.50	1.10		10.60	12.05
4020	16" deep		.78	20.513	M.L.F.	11,800	1,150		12,950	14,700
4022	Per linear foot		780	.021	L.F.	11.80	1.15		12.95	14.65
4024	Treated, per linear foot		780	.021	"	13.20	1.15		14.35	16.20
4030	18" deep		.74	21.622	M.L.F.	9,150	1,225		10,375	11,900
4032	Per linear foot		740	.022	L.F.	9.15	1.22		10.37	11.85
4034	Treated, per linear foot		740	.022	"	10.75	1.22		11.97	13.60
6000	Composite rim joist, 1-1/4" x 9-1/2"		.90	17.778	M.L.F.	2,700	1,000		3,700	4,475
6010	1-1/4" x 11-1/2"		.88	18.182		4,200	1,025		5,225	6,125
6020	1-1/4" x 14-1/2"		.82	19.512		5,450	1,100		6,550	7,625
6030	1-1/4" x 16-1/2"		.78	20.513		6,275	1,150		7,425	8,650

06 11 10.24 Miscellaneous Framing

0010	**MISCELLANEOUS FRAMING**									
8500	Firestops, 2" x 4"	2 Carp	.51	31.373	M.B.F.	985	1,775		2,760	3,700
8505	Pneumatic nailed		.62	25.806		990	1,450		2,440	3,275
8520	2" x 6"		.60	26.667		970	1,500		2,470	3,300
8525	Pneumatic nailed		.73	21.858		975	1,225		2,200	2,900
8540	2" x 8"		.60	26.667		1,075	1,500		2,575	3,400
8560	2" x 12"		.70	22.857		1,375	1,275		2,650	3,450
8600	Nailers, treated, wood construction, 2" x 4"	2 Carp	.53	30.189	M.B.F.	1,275	1,700		2,975	3,950
8605	Pneumatic nailed		.64	25.157		1,300	1,425		2,725	3,525
8620	2" x 6"		.75	21.333		1,200	1,200		2,400	3,125
8625	Pneumatic nailed		.90	17.778		1,200	1,000		2,200	2,825
8640	2" x 8"		.93	17.204		1,200	970		2,170	2,775
8645	Pneumatic nailed		1.12	14.337		1,200	805		2,005	2,525
8660	Steel construction, 2" x 4"		.50	32		1,275	1,800		3,075	4,100
8680	2" x 6"		.70	22.857		1,200	1,275		2,475	3,250
8700	2" x 8"		.87	18.391		1,200	1,025		2,225	2,875
8760	Rough bucks, treated, for doors or windows, 2" x 6"		.40	40		1,200	2,250		3,450	4,675
8765	Pneumatic nailed		.48	33.333		1,200	1,875		3,075	4,125
8780	2" x 8"		.51	31.373		1,200	1,775		2,975	3,950
8785	Pneumatic nailed		.61	26.144		1,200	1,475		2,675	3,525
8800	Stair stringers, 2" x 10"		.22	72.727		1,200	4,100		5,300	7,400
8820	2" x 12"		.26	61.538		1,375	3,475		4,850	6,675
8840	3" x 10"		.31	51.613		2,725	2,900		5,625	7,325
8860	3" x 12"		.38	42.105		2,725	2,375		5,100	6,525
8870	Laminated structural lumber, 1-1/4" x 11-1/2"		130	.123	L.F.	4.19	6.95		11.14	14.90
8880	1-1/4" x 14-1/2"		130	.123	"	5.40	6.95		12.35	16.25

06 11 10.26 Partitions

0010	**PARTITIONS**									
0020	Single bottom and double top plate, no waste, std. & better lumber									
0180	2" x 4" studs, 8' high, studs 12" OC	2 Carp	80	.200	L.F.	7.25	11.25		18.50	24.50
0185	12" OC, pneumatic nailed		96	.167		7.25	9.40		16.65	22
0200	16" OC		100	.160		5.90	9		14.90	19.90

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06 11 10 – Framing with Dimensional, Engineered or Composite Lumber

06 11 10.26 Partitions		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0205	16" OC, pneumatic nailed	2 Carp	120	.133	L.F.	5.95	7.50		13.45	17.7
0300	24" OC		125	.128		4.60	7.20		11.80	15.8
0305	24" OC, pneumatic nailed		150	.107		4.62	6		10.62	14.0
0380	10' high, studs 12" OC		80	.200		8.55	11.25		19.80	26
0385	12" OC, pneumatic nailed		96	.167		8.60	9.40		18	23.5
0400	16" OC		100	.160		6.90	9		15.90	21
0405	16" OC, pneumatic nailed		120	.133		6.95	7.50		14.45	18.7
0500	24" OC		125	.128		5.25	7.20		12.45	16.5
0505	24" OC, pneumatic nailed		150	.107		5.30	6		11.30	14.7
0580	12' high, studs 12" OC		65	.246		9.85	13.85		23.70	31.5
0585	12" OC, pneumatic nailed		78	.205		9.90	11.55		21.45	28
0600	16" OC		80	.200		7.90	11.25		19.15	25.5
0605	16" OC, pneumatic nailed		96	.167		7.90	9.40		17.30	22.5
0700	24" OC	2 Carp	100	.160	L.F.	5.90	9		14.90	19.9
0705	24" OC, pneumatic nailed		120	.133		5.95	7.50		13.45	17.7
0780	2" x 6" studs, 8' high, studs 12" OC		70	.229		10.65	12.85		23.50	31
0785	12" OC, pneumatic nailed		84	.190		10.70	10.70		21.40	28
0800	16" OC		90	.178		8.70	10		18.70	24.5
0805	16" OC, pneumatic nailed		108	.148		8.75	8.35		17.10	22
0900	24" OC		115	.139		6.80	7.85		14.65	19.1
0905	24" OC, pneumatic nailed		138	.116		6.80	6.55		13.35	17.2
0980	10' high, studs 12" OC		70	.229		12.60	12.85		25.45	33
0985	12" OC, pneumatic nailed		84	.190		12.65	10.70		23.35	30
1000	16" OC		90	.178		10.15	10		20.15	26
1005	16" OC, pneumatic nailed		108	.148		10.20	8.35		18.55	23.5
1100	24" OC		115	.139		7.75	7.85		15.60	20
1105	24" OC, pneumatic nailed		138	.116		7.80	6.55		14.35	18.2
1180	12' high, studs 12" OC		55	.291		14.55	16.40		30.95	40.5
1185	12" OC, pneumatic nailed		66	.242		14.60	13.65		28.25	36.5
1200	16" OC		70	.229		11.60	12.85		24.45	32
1205	16" OC, pneumatic nailed		84	.190		11.70	10.70		22.40	29
1300	24" OC		90	.178		8.70	10		18.70	24.5
1305	24" OC, pneumatic nailed		108	.148		8.75	8.35		17.10	22
1400	For horizontal blocking, 2" x 4", add		600	.027		.66	1.50		2.16	2.9
1500	2" x 6", add		600	.027		.97	1.50		2.47	3.3
1600	For openings, add		250	.064			3.60		3.60	5.3
1700	Headers for above openings, material only, add				M.B.F.	1,075			1,075	1,200

06 11 10.28 Porch or Deck Framing

0010	**PORCH OR DECK FRAMING**									
0100	Treated lumber, posts or columns, 4" x 4"	2 Carp	390	.041	L.F.	1.63	2.31		3.94	5.2
0110	4" x 6"		275	.058		2.83	3.28		6.11	8
0120	4" x 8"		220	.073		6.75	4.09		10.84	13.5
0130	Girder, single, 4" x 4"		675	.024		1.63	1.33		2.96	3.7
0140	4" x 6"		600	.027		2.83	1.50		4.33	5.3
0150	4" x 8"		525	.030		6.75	1.72		8.47	10
0160	Double, 2" x 4"		625	.026		1.73	1.44		3.17	4.0
0170	2" x 6"		600	.027		2.44	1.50		3.94	4.9
0180	2" x 8"		575	.028		3.25	1.57		4.82	5.9
0190	2" x 10"		550	.029		3.77	1.64		5.41	6.6
0200	2" x 12"		525	.030		5.95	1.72		7.67	9.1
0210	Triple, 2" x 4"		575	.028		2.60	1.57		4.17	5.2
0220	2" x 6"		550	.029		3.66	1.64		5.30	6.4

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06 11 10 – Framing with Dimensional, Engineered or Composite Lumber

06 11 10.28 Porch or Deck Framing		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0230	2" x 8"	2 Carp	525	.030	L.F.	4.87	1.72		6.59	7.90
0240	2" x 10"		500	.032		5.65	1.80		7.45	8.90
0250	2" x 12"		475	.034		8.95	1.90		10.85	12.65
0260	Ledger, bolted 4' OC, 2" x 4"		400	.040		1.15	2.25		3.40	4.62
0270	2" x 6"		395	.041		1.50	2.28		3.78	5.05
0280	2" x 8"		390	.041		1.89	2.31		4.20	5.50
0290	2" x 10"		385	.042		2.15	2.34		4.49	5.85
0300	2" x 12"		380	.042		3.23	2.37		5.60	7.10
0310	Joists, 2" x 4"		1250	.013		.89	.72		1.61	2.05
0320	2" x 6"		1250	.013		1.25	.72		1.97	2.45
0330	2" x 8"		1100	.015		1.67	.82		2.49	3.05
0340	2" x 10"		900	.018		1.94	1		2.94	3.62
0350	2" x 12"		875	.018		2.33	1.03		3.36	4.09
0360	Railings and trim, 1" x 4"	1 Carp	300	.027		.63	1.50		2.13	2.93
0370	2" x 2"		300	.027		.80	1.50		2.30	3.11
0380	2" x 4"		300	.027		.86	1.50		2.36	3.17
0390	2" x 6"		300	.027		1.21	1.50		2.71	3.56
0400	Decking, 1" x 4"		275	.029	S.F.	2.66	1.64		4.30	5.35
0410	2" x 4"		300	.027		2.91	1.50		4.41	5.45
0420	2" x 6"		320	.025		2.61	1.41		4.02	4.97
0430	5/4" x 6"		320	.025		2.86	1.41		4.27	5.25
0440	Balusters, square, 2" x 2"	2 Carp	660	.024	L.F.	.81	1.36		2.17	2.92
0450	Turned, 2" x 2"		420	.038		1.07	2.14		3.21	4.37
0460	Stair stringer, 2" x 10"		130	.123		1.94	6.95		8.89	12.45
0470	2" x 12"		130	.123		2.33	6.95		9.28	12.85
0480	Stair treads, 1" x 4"		140	.114		2.67	6.45		9.12	12.55
0490	2" x 4"		140	.114		.89	6.45		7.34	10.60
0500	2" x 6"		160	.100		1.33	5.65		6.98	9.85
0510	5/4" x 6"		160	.100		1.35	5.65		7	9.90
0520	Turned handrail post, 4" x 4"		64	.250	Ea.	16.70	14.10		30.80	39.50
0530	Lattice panel, 4' x 8', 1/2"		1600	.010	S.F.	1.36	.56		1.92	2.34
0535	3/4"		1600	.010	"	2.02	.56		2.58	3.07
0540	Cedar, posts or columns, 4" x 4"		390	.041	L.F.	5.05	2.31		7.36	9
0550	4" x 6"		275	.058		8.20	3.28		11.48	13.90
0560	4" x 8"		220	.073		12.60	4.09		16.69	19.95
0800	Decking, 1" x 4"		550	.029		4.59	1.64		6.23	7.50
0810	2" x 4"		600	.027		9.50	1.50		11	12.70
0820	2" x 6"		640	.025		14.30	1.41		15.71	17.85
0830	5/4" x 6"		640	.025		11.35	1.41		12.76	14.60
0840	Railings and trim, 1" x 4"	2 Carp	600	.027	L.F.	4.59	1.50		6.09	7.30
0860	2" x 4"		600	.027		9.50	1.50		11	12.70
0870	2" x 6"		600	.027		14.30	1.50		15.80	18
0920	Stair treads, 1" x 4"		140	.114		4.59	6.45		11.04	14.65
0930	2" x 4"		140	.114		9.50	6.45		15.95	20
0940	2" x 6"		160	.100		14.30	5.65		19.95	24
0950	5/4" x 6"		160	.100		11.35	5.65		17	21
0980	Redwood, posts or columns, 4" x 4"		390	.041		12.35	2.31		14.66	17.05
0990	4" x 6"		275	.058		19.65	3.28		22.93	26.50
1000	4" x 8"		220	.073		37	4.09		41.09	46.50
1240	Decking, 1" x 4"	1 Carp	275	.029	S.F.	11.25	1.64		12.89	14.80
1260	2" x 6"		340	.024		20.50	1.32		21.82	25
1270	5/4" x 6"		320	.025		13.10	1.41		14.51	16.50
1280	Railings and trim, 1" x 4"	2 Carp	600	.027	L.F.	3.29	1.50		4.79	5.85

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06 11 10 – Framing with Dimensional, Engineered or Composite Lumber

	06 11 10.28 Porch or Deck Framing	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1310	2" x 6"	2 Carp	600	.027	L.F.	20.50	1.50		22	25
1420	Alternative decking, wood/plastic composite, 5/4" x 6" G		640	.025		2.31	1.41		3.72	4.
1440	1" x 4" square edge fir		550	.029		2.68	1.64		4.32	5.
1450	1" x 4" tongue and groove fir		450	.036		1.98	2		3.98	5.
1460	1" x 4" mahogany		550	.029		2.12	1.64		3.76	4.
1462	5/4" x 6" PVC		550	.029		3.30	1.64		4.94	6.
1465	Framing, porch or deck, alt deck fastening, screws, add	1 Carp	240	.033	S.F.		1.88		1.88	2.
1470	Accessories, joist hangers, 2" x 4"		160	.050	Ea.	1.09	2.82		3.91	5.
1480	2" x 6" through 2" x 12"		150	.053		1.95	3		4.95	6.
1530	Post footing, incl excav, backfill, tube form & concrete, 4' deep, 8" diam.	F-7	12	2.667		17.90	136		153.90	222
1540	10" diameter		11	2.909		29	148		177	253
1550	12" diameter		10	3.200		39	163		202	286

06 11 10.30 Roof Framing

0010	**ROOF FRAMING**									
5250	Composite rafter, 9-1/2" deep	2 Carp	575	.028	L.F.	4.25	1.57		5.82	7
5260	11-1/2" deep		575	.028	"	4.48	1.57		6.05	7.
6070	Fascia boards, 2" x 8"		.30	53.333	M.B.F.	1,075	3,000		4,075	5,650
6080	2" x 10"		.30	53.333		1,200	3,000		4,200	5,775
7000	Rafters, to 4 in 12 pitch, 2" x 6"		1	16		970	900		1,870	2,425
7060	2" x 8"		1.26	12.698		1,075	715		1,790	2,250
7300	Hip and valley rafters, 2" x 6"		.76	21.053		970	1,175		2,145	2,850
7360	2" x 8"		.96	16.667		1,075	940		2,015	2,575
7540	Hip and valley jacks, 2" x 6"		.60	26.667		970	1,500		2,470	3,300
7600	2" x 8"		.65	24.615		1,075	1,375		2,450	3,250
7780	For slopes steeper than 4 in 12, add						30%			
7790	For dormers or complex roofs, add						50%			
7800	Rafter tie, 1" x 4", #3	2 Carp	.27	59.259	M.B.F.	1,875	3,325		5,200	7,050
7820	Ridge board, #2 or better, 1" x 6"		.30	53.333		1,950	3,000		4,950	6,625
7840	1" x 8"		.37	43.243		2,025	2,425		4,450	5,875
7860	1" x 10"		.42	38.095		2,225	2,150		4,375	5,650
7880	2" x 6"		.50	32		970	1,800		2,770	3,750
7900	2" x 8"		.60	26.667		1,075	1,500		2,575	3,400
7920	2" x 10"		.66	24.242		1,200	1,375		2,575	3,325
7940	Roof cants, split, 4" x 4"		.86	18.605		1,750	1,050		2,800	3,475
7960	6" x 6"		1.80	8.889		3,175	500		3,675	4,225
7980	Roof curbs, untreated, 2" x 6"		.52	30.769		970	1,725		2,695	3,650
8000	2" x 12"		.80	20		1,375	1,125		2,500	3,200

06 11 10.32 Sill and Ledger Framing

0010	**SILL AND LEDGER FRAMING**									
0020	Extruded polystyrene sill sealer, 5-1/2" wide	1 Carp	1600	.005	L.F.	.18	.28		.46	.6
4482	Ledgers, nailed, 2" x 4"	2 Carp	.50	32	M.B.F.	985	1,800		2,785	3,750
4484	2" x 6"		.60	26.667		970	1,500		2,470	3,300
4486	Bolted, not including bolts, 3" x 8"		.65	24.615		2,750	1,375		4,125	5,100
4488	3" x 12"		.70	22.857		2,725	1,275		4,000	4,925
4490	Mud sills, redwood, construction grade, 2" x 4"		.59	27.119		9,375	1,525		10,900	12,600
4492	2" x 6"		.78	20.513		9,400	1,150		10,550	12,000
4500	Sills, 2" x 4"		.40	40		970	2,250		3,220	4,425
4520	2" x 6"		.55	29.091		955	1,650		2,605	3,500
4540	2" x 8"		.67	23.881		1,050	1,350		2,400	3,175
4600	Treated, 2" x 4"		.36	44.444		1,275	2,500		3,775	5,125
4620	2" x 6"		.50	32		1,200	1,800		3,000	3,975
4640	2" x 8"		.60	26.667		1,200	1,500		2,700	3,525

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06 11 10 – Framing with Dimensional, Engineered or Composite Lumber

		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
06 11 10.32 Sill and Ledger Framing										
4700	4" x 4"	2 Carp	.60	26.667	M.B.F.	1,200	1,500		2,700	3,550
4720	4" x 6"		.70	22.857		1,400	1,275		2,675	3,450
4740	4" x 8"		.80	20		2,500	1,125		3,625	4,425
4760	4" x 10"		.87	18.391		2,325	1,025		3,350	4,100
06 11 10.34 Sleepers										
0010	**SLEEPERS**									
0300	On concrete, treated, 1" x 2"	2 Carp	.39	41.026	M.B.F.	2,800	2,300		5,100	6,525
0320	1" x 3"		.50	32		1,925	1,800		3,725	4,775
0340	2" x 4"		.99	16.162		1,475	910		2,385	2,975
0360	2" x 6"		1.30	12.308		1,400	695		2,095	2,550
06 11 10.36 Soffit and Canopy Framing										
0010	**SOFFIT AND CANOPY FRAMING**									
1300	Canopy or soffit framing, 1" x 4"	2 Carp	.30	53.333	M.B.F.	1,875	3,000		4,875	6,550
1340	1" x 8"		.50	32		2,025	1,800		3,825	4,925
1360	2" x 4"		.41	39.024		985	2,200		3,185	4,350
1400	2" x 8"		.67	23.881		1,075	1,350		2,425	3,175
1420	3" x 4"		.50	32		2,325	1,800		4,125	5,225
1460	3" x 8"		.60	26.667		2,775	1,500		4,275	5,275
06 11 10.38 Treated Lumber Framing Material										
0010	**TREATED LUMBER FRAMING MATERIAL**									
0100	2" x 4"				M.B.F.	1,275			1,275	1,400
0110	2" x 6"					1,200			1,200	1,300
0120	2" x 8"					1,200			1,200	1,300
0130	2" x 10"					1,100			1,100	1,225
0140	2" x 12"					1,475			1,475	1,600
0200	4" x 4"					1,200			1,200	1,325
0210	4" x 6"					1,400			1,400	1,525
0220	4" x 8"					2,500			2,500	2,750
06 11 10.40 Wall Framing										
0010	**WALL FRAMING** R061110-30									
5860	Headers over openings, 2" x 6"	2 Carp	.36	44.444	M.B.F.	970	2,500		3,470	4,800
5865	2" x 6", pneumatic nailed		.43	37.209		975	2,100		3,075	4,200
5880	2" x 8"		.45	35.556		1,075	2,000		3,075	4,150
5885	2" x 8", pneumatic nailed		.54	29.630		1,075	1,675		2,750	3,675
5900	2" x 10"		.53	30.189		1,200	1,700		2,900	3,825
5905	2" x 10", pneumatic nailed		.67	23.881		1,200	1,350		2,550	3,325
5920	2" x 12"		.60	26.667		1,375	1,500		2,875	3,750
5925	2" x 12", pneumatic nailed		.72	22.222		1,400	1,250		2,650	3,375
5940	4" x 12"		.76	21.053		2,175	1,175		3,350	4,150
5945	4" x 12", pneumatic nailed		.92	17.391		2,175	980		3,155	3,825
5960	6" x 12"		.84	19.048		2,800	1,075		3,875	4,700
5965	6" x 12", pneumatic nailed		1.01	15.873		2,825	895		3,720	4,425
6000	Plates, untreated, 2" x 3"		.43	37.209		920	2,100		3,020	4,125
6005	2" x 3", pneumatic nailed		.52	30.769		925	1,725		2,650	3,600
6020	2" x 4"		.53	30.189		985	1,700		2,685	3,600
6025	2" x 4", pneumatic nailed		.67	23.881		990	1,350		2,340	3,100
6040	2" x 6"		.75	21.333		970	1,200		2,170	2,875
6045	2" x 6", pneumatic nailed		.90	17.778		975	1,000		1,975	2,575
6120	Studs, 8' high wall, 2" x 3"		.60	26.667		920	1,500		2,420	3,225
6125	2" x 3", pneumatic nailed		.72	22.222		925	1,250		2,175	2,875
6140	2" x 4"		.92	17.391		985	980		1,965	2,525
6145	2" x 4", pneumatic nailed		1.10	14.493		990	815		1,805	2,325

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06 11 Wood Framing

06 11 10 – Framing with Dimensional, Engineered or Composite Lumber

		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
06 11 10.40 Wall Framing										
6160	2" x 6"	2 Carp	1	16	M.B.F.	970	900		1,870	2,425
6165	2" x 6", pneumatic nailed		1.20	13.333		975	750		1,725	2,200
6180	3" x 4"		.80	20		2,325	1,125		3,450	4,225
6185	3" x 4", pneumatic nailed		.96	16.667		2,325	940		3,265	3,950
8200	For 12' high walls, deduct						5%			
8220	For stub wall, 6' high, add						20%			
8240	3' high, add						40%			
8250	For second story & above, add						5%			
8300	For dormer & gable, add						15%			
06 11 10.42 Furring										
0010	**FURRING**									
0012	Wood strips, 1" x 2", on walls, on wood	1 Carp	550	.015	L.F.	.30	.82		1.12	1.[illegible]
0015	On wood, pneumatic nailed		710	.011		.30	.63		.93	1.[illegible]
0300	On masonry		495	.016		.33	.91		1.24	1.[illegible]
0400	On concrete		260	.031		.33	1.73		2.06	2.[illegible]
0600	1" x 3", on walls, on wood		550	.015		.46	.82		1.28	1.[illegible]
0605	On wood, pneumatic nailed		710	.011		.46	.63		1.09	1.[illegible]
0700	On masonry		495	.016		.51	.91		1.42	1.[illegible]
0800	On concrete		260	.031		.51	1.73		2.24	3.[illegible]
0850	On ceilings, on wood		350	.023		.46	1.29		1.75	2.[illegible]
0855	On wood, pneumatic nailed		450	.018		.46	1		1.46	2
0900	On masonry		320	.025		.51	1.41		1.92	2.[illegible]
0950	On concrete		210	.038		.51	2.14		2.65	3.[illegible]
06 11 10.44 Grounds										
0010	**GROUNDS**									
0020	For casework, 1" x 2" wood strips, on wood	1 Carp	330	.024	L.F.	.30	1.36		1.66	2.[illegible]
0100	On masonry		285	.028		.33	1.58		1.91	2.[illegible]
0200	On concrete		250	.032		.33	1.80		2.13	3.[illegible]
0400	For plaster, 3/4" deep, on wood		450	.018		.30	1		1.30	1.[illegible]
0500	On masonry		225	.036		.33	2		2.33	3.[illegible]
0600	On concrete		175	.046		.33	2.57		2.90	4.[illegible]
0700	On metal lath		200	.040		.33	2.25		2.58	3.[illegible]

06 12 Structural Panels

06 12 10 – Structural Insulated Panels

			Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
06 12 10.10 OSB Faced Panels											
0010	**OSB FACED PANELS**										
0100	Structural insul. panels, 7/16" OSB both faces, EPS insul., 3-5/8" T	G	F-3	2075	.019	S.F.	6.50	1.11	.96	8.57	9.8
0110	5-5/8" thick	G		1725	.023		4.54	1.34	1.15	7.03	8.2
0120	7-3/8" thick	G		1425	.028		5.65	1.62	1.39	8.66	10.2
0130	9-3/8" thick	G		1125	.036		6.15	2.05	1.76	9.96	11.7
0140	7/16" OSB one face, EPS insul., 3-5/8" thick	G	F-3	2175	.018	S.F.	5.25	1.06	.91	7.22	8.3
0150	5-5/8" thick	G		1825	.022		5.45	1.27	1.09	7.81	9.0
0160	7-3/8" thick	G		1525	.026		6.25	1.51	1.30	9.06	10.5
0170	9-3/8" thick	G		1225	.033		6.65	1.88	1.62	10.15	11.9
0190	7/16" OSB - 1/2" GWB faces, EPS insul., 3-5/8" T	G		2075	.019		3.81	1.11	.96	5.88	6.9
0200	5-5/8" thick	G		1725	.023		4.93	1.34	1.15	7.42	8.6
0210	7-3/8" thick	G		1425	.028		5.65	1.62	1.39	8.66	10.2
0220	9-3/8" thick	G		1125	.036		5.40	2.05	1.76	9.21	10.9
0240	7/16" OSB - 1/2" MRGWB faces, EPS insul., 3-5/8" T	G		2075	.019		4.67	1.11	.96	6.74	7.8

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06 12 Structural Panels

06 12 10 – Structural Insulated Panels

06 12 10.10 OSB Faced Panels		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0250 5-5/8" thick	G	F-3	1725	.023	S.F.	5.70	1.34	1.15	8.19	9.50
0260 7-3/8" thick	G		1425	.028		5.80	1.62	1.39	8.81	10.35
0270 9-3/8" thick	G		1125	.036		5.65	2.05	1.76	9.46	11.20
0300 For 1/2" GWB added to OSB skin, add	G					1.60			1.60	1.76
0310 For 1/2" MRGWB added to OSB skin, add	G					1.77			1.77	1.95
0320 For one T1-11 skin, add to OSB-OSB	G					2.09			2.09	2.30
0330 For one 19/32" CDX skin, add to OSB-OSB	G					1.72			1.72	1.89
0500 Structural insulated panel, 7/16" OSB both sides, straw core										
0510 4-3/8" T, walls (w/sill, splines, plates)	G	F-6	2400	.017	S.F.	8.65	.89	.83	10.37	11.80
0520 Floors (w/splines)	G		2400	.017		8.65	.89	.83	10.37	11.80
0530 Roof (w/splines)	G		2400	.017		8.65	.89	.83	10.37	11.80
0550 7-7/8" T, walls (w/sill, splines, plates)	G		2400	.017		12.25	.89	.83	13.97	15.70
0560 Floors (w/splines)	G		2400	.017		12.25	.89	.83	13.97	15.70
0570 Roof (w/splines)	G		2400	.017		12.25	.89	.83	13.97	15.70

06 12 19 – Composite Shearwall Panels

06 12 19.10 Steel and Wood Composite Shearwall Panels

0010 **STEEL & WOOD COMPOSITE SHEARWALL PANELS**									
0020 Anchor bolts, 36" long (must be placed in wet concrete)	1 Carp	150	.053	Ea.	51.50	3		54.50	61
0030 On concrete, 2" x 4" & 2" x 6" walls, 7'-10' high, 360 lb. shear, 12" wide	2 Carp	8	2		630	113		743	865
0040 715 lb. shear, 15" wide		8	2		785	113		898	1,025
0050 1860 lb. shear, 18" wide		8	2		860	113		973	1,125
0060 2780 lb. shear, 21" wide		8	2		945	113		1,058	1,200
0070 3790 lb. shear, 24" wide		8	2		995	113		1,108	1,275
0080 2" x 6" walls, 11'-13' high, 1180 lb. shear, 18" wide		6	2.667		950	150		1,100	1,275
0090 1555 lb. shear, 21" wide		6	2.667		1,450	150		1,600	1,825
0100 2280 lb. shear, 24" wide		6	2.667		1,125	150		1,275	1,475
0110 For installing above on wood floor frame, add									
0120 Coupler nuts, threaded rods, bolts, shear transfer plate kit	1 Carp	16	.500	Ea.	85.50	28		113.50	136
0130 Framing anchors, angle (2 required)	1 Carp	96	.083	Ea.	3.20	4.69		7.89	10.50
0140 For blocking see Section 06 11 10.02									
0150 For installing above, first floor to second floor, wood floor frame, add									
0160 Add stack option to first floor wall panel				Ea.	94			94	103
0170 Threaded rods, bolts, shear transfer plate kit	1 Carp	16	.500		99	28		127	151
0180 Framing anchors, angle (2 required)	"	96	.083		3.20	4.69		7.89	10.50
0190 For blocking see section 06 11 10.02									
0200 For installing stacked panels, balloon framing									
0210 Add stack option to first floor wall panel				Ea.	94			94	103
0220 Threaded rods, bolts kit	1 Carp	16	.500	"	56	28		84	104

06 13 Heavy Timber Construction

06 13 23 – Heavy Timber Framing

06 13 23.10 Heavy Framing

0010 **HEAVY FRAMING**									
0020 Beams, single 6" x 10"	2 Carp	1.10	14.545	M.B.F.	2,225	820		3,045	3,675
0100 Single 8" x 16"		1.20	13.333		3,600	750		4,350	5,100
0200 Built from 2" lumber, multiple 2" x 14"		.90	17.778		2,250	1,000		3,250	3,975
0210 Built from 3" lumber, multiple 3" x 6"		.70	22.857		2,775	1,275		4,050	4,975
0220 Multiple 3" x 8"		.80	20		2,750	1,125		3,875	4,700
0230 Multiple 3" x 10"		.90	17.778		2,725	1,000		3,725	4,500
0240 Multiple 3" x 12"		1	16		2,725	900		3,625	4,350

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06 13 Heavy Timber Construction

06 13 23 – Heavy Timber Framing

06 13 23.10 Heavy Framing	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&
0250 Built from 4" lumber, multiple 4" x 6"	2 Carp	.80	20	M.B.F.	2,075	1,125		3,200	3,9
0260 Multiple 4" x 8"		.90	17.778		2,100	1,000		3,100	3,8
0270 Multiple 4" x 10"		1	16		2,100	900		3,000	3,6
0280 Multiple 4" x 12"		1.10	14.545		2,150	820		2,970	3,6
0290 Columns, structural grade, 1500 fb, 4" x 4"		.60	26.667		2,475	1,500		3,975	4,9
0300 6" x 6"		.65	24.615		2,825	1,375		4,200	5,2
0400 8" x 8"		.70	22.857		2,900	1,275		4,175	5,1
0500 10" x 10"		.75	21.333		2,900	1,200		4,100	5,0
0600 12" x 12"		.80	20		2,900	1,125		4,025	4,8
0800 Floor planks, 2" thick, T&G, 2" x 6"		1.05	15.238		3,250	860		4,110	4,8
0900 2" x 10"		1.10	14.545		4,250	820		5,070	5,9
1100 3" thick, 3" x 6"		1.05	15.238		4,250	860		5,110	5,9
1200 3" x 10"		1.10	14.545		4,250	820		5,070	5,9
1400 Girders, structural grade, 12" x 12"		.80	20		2,900	1,125		4,025	4,8
1500 10" x 16"		1	16		5,000	900		5,900	6,8
2300 Roof purlins, 4" thick, structural grade		1.05	15.238		2,100	860		2,960	3,5

06 15 Wood Decking

06 15 16 – Wood Roof Decking

06 15 16.10 Solid Wood Roof Decking

0010 **SOLID WOOD ROOF DECKING**									
0350 Cedar planks, 2" thick	2 Carp	350	.046	S.F.	8.10	2.57		10.67	12.6
0400 3" thick		320	.050		12.15	2.82		14.97	17.6
0500 4" thick		250	.064		16.25	3.60		19.85	23
0550 6" thick		200	.080		24.50	4.50		29	33.5
0650 Douglas fir, 2" thick		350	.046		5.35	2.57		7.92	9.7
0700 3" thick		320	.050		8.05	2.82		10.87	13.0
0800 4" thick		250	.064		10.70	3.60		14.30	17.1
0850 6" thick		200	.080		16.10	4.50		20.60	24.5
0950 Hemlock, 2" thick		350	.046		5.45	2.57		8.02	9.8
1000 3" thick		320	.050		8.20	2.82		11.02	13.2
1100 4" thick		250	.064		10.90	3.60		14.50	17.3
1150 6" thick		200	.080		16.35	4.50		20.85	24.5
1250 Western white spruce, 2" thick		350	.046		3.48	2.57		6.05	7.6
1300 3" thick		320	.050		5.25	2.82		8.07	9.9
1400 4" thick		250	.064		6.95	3.60		10.55	13
1450 6" thick		200	.080		10.45	4.50		14.95	18.2

06 15 23 – Laminated Wood Decking

06 15 23.10 Laminated Roof Deck

0010 **LAMINATED ROOF DECK**									
0020 Pine or hemlock, 3" thick	2 Carp	425	.038	S.F.	9.60	2.12		11.72	13.7
0100 4" thick		325	.049		11	2.77		13.77	16.2
0300 Cedar, 3" thick		425	.038		16.30	2.12		18.42	21
0400 4" thick		325	.049		22	2.77		24.77	28
0600 Fir, 3" thick		425	.038		12.80	2.12		14.92	17.2
0700 4" thick		325	.049		16.25	2.77		19.02	22

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06 16 Sheathing

06 16 13 – Insulating Sheathing

06 16 13.10 Insulating Sheathing		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **INSULATING SHEATHING**										
0020 Expanded polystyrene, 1#/C.F. density, 3/4" thick, R2.89	G	2 Carp	1400	.011	S.F.	.37	.64		1.01	1.36
0030 1" thick, R3.85	G		1300	.012		.44	.69		1.13	1.51
0040 2" thick, R7.69	G		1200	.013		.72	.75		1.47	1.91
0050 Extruded polystyrene, 15 psi compressive strength, 1" thick, R5	G		1300	.012		.74	.69		1.43	1.84
0060 2" thick, R10	G		1200	.013		.91	.75		1.66	2.12
0070 Polyisocyanurate, 2#/C.F. density, 3/4" thick	G		1400	.011		.81	.64		1.45	1.85
0080 1" thick	G		1300	.012		1	.69		1.69	2.13
0090 1-1/2" thick	G	2 Carp	1250	.013	S.F.	1.19	.72		1.91	2.38
0100 2" thick	G	"	1200	.013	"	1.52	.75		2.27	2.79

06 16 23 – Subflooring

06 16 23.10 Subfloor

0010 **SUBFLOOR**	R061636-20									
0011 Plywood, CDX, 1/2" thick		2 Carp	1500	.011	SF Flr.	.76	.60		1.36	1.73
0015 Pneumatic nailed			1860	.009		.76	.48		1.24	1.56
0100 5/8" thick			1350	.012		.82	.67		1.49	1.89
0105 Pneumatic nailed			1674	.010		.82	.54		1.36	1.70
0200 3/4" thick			1250	.013		.94	.72		1.66	2.11
0205 Pneumatic nailed			1550	.010		.94	.58		1.52	1.91
0300 1-1/8" thick, 2-4-1 including underlayment			1050	.015		3.62	.86		4.48	5.25
0440 With boards, 1" x 6", S4S, laid regular			900	.018		2.11	1		3.11	3.81
0450 1" x 8", laid regular			1000	.016		2.16	.90		3.06	3.71
0460 Laid diagonal			850	.019		2.16	1.06		3.22	3.95
0500 1" x 10", laid regular			1100	.015		2.32	.82		3.14	3.77
0600 Laid diagonal			900	.018		2.32	1		3.32	4.04
8990 Subfloor adhesive, 3/8" bead		1 Carp	2300	.003	L.F.	.10	.20		.30	.40

06 16 26 – Underlayment

06 16 26.10 Wood Product Underlayment

0010 **WOOD PRODUCT UNDERLAYMENT**	R061636-20									
0015 Plywood, underlayment grade, 1/4" thick		2 Carp	1500	.011	S.F.	1.85	.60		2.45	2.93
0018 Pneumatic nailed			1860	.009		1.85	.48		2.33	2.76
0030 3/8" thick			1500	.011		2.06	.60		2.66	3.16
0070 Pneumatic nailed			1860	.009		2.06	.48		2.54	2.99
0100 1/2" thick			1450	.011		2.75	.62		3.37	3.95
0105 Pneumatic nailed			1798	.009		2.75	.50		3.25	3.78
0200 5/8" thick			1400	.011		2.81	.64		3.45	4.05
0205 Pneumatic nailed			1736	.009		2.81	.52		3.33	3.86
0300 3/4" thick			1300	.012		3.08	.69		3.77	4.42
0305 Pneumatic nailed			1612	.010		3.08	.56		3.64	4.22
0500 Particle board, 3/8" thick	G		1500	.011		.58	.60		1.18	1.53
0505 Pneumatic nailed	G		1860	.009		.58	.48		1.06	1.36
0600 1/2" thick	G		1450	.011		1	.62		1.62	2.02
0605 Pneumatic nailed	G		1798	.009		1	.50		1.50	1.85
0800 5/8" thick	G		1400	.011		1.03	.64		1.67	2.09
0805 Pneumatic nailed	G		1736	.009		1.03	.52		1.55	1.90
0900 3/4" thick	G		1300	.012		1.06	.69		1.75	2.20
0905 Pneumatic nailed	G		1612	.010		1.06	.56		1.62	2
1100 Hardboard, underlayment grade, 4' x 4', .215" thick	G	2 Carp	1500	.011	S.F.	.87	.60		1.47	1.85

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06 16 Sheathing

06 16 33 – Wood Board Sheathing

06 16 33.10 Board Sheathing		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&
0009 **BOARD SHEATHING**										
0010 Roof, 1" x 6" boards, laid horizontal		2 Carp	725	.022	S.F.	2.11	1.24		3.35	4.
0020 On steep roof			520	.031		2.11	1.73		3.84	4.
0040 On dormers, hips, & valleys			480	.033		2.11	1.88		3.99	5.
0050 Laid diagonal			650	.025		2.11	1.39		3.50	4.
0070 1" x 8" boards, laid horizontal			875	.018		2.16	1.03		3.19	3.
0080 On steep roof			635	.025		2.16	1.42		3.58	4.
0090 On dormers, hips, & valleys			580	.028		2.21	1.55		3.76	4.
0100 Laid diagonal			725	.022		2.16	1.24		3.40	4.
0110 Skip sheathing, 1" x 4", 7" OC		1 Carp	1200	.007		.78	.38		1.16	1.
0120 1" x 6", 9" OC			1450	.006		.97	.31		1.28	1.
0180 T&G sheathing/decking, 1" x 6"			1000	.008		2.54	.45		2.99	3.
0190 2" x 6"			1000	.008		5.90	.45		6.35	7.
0200 Walls, 1" x 6" boards, laid regular		2 Carp	650	.025		2.11	1.39		3.50	4.
0210 Laid diagonal			585	.027		2.11	1.54		3.65	4.
0220 1" x 8" boards, laid regular			765	.021		2.16	1.18		3.34	4.
0230 Laid diagonal			650	.025		2.16	1.39		3.55	4.

06 16 36 – Wood Panel Product Sheathing

06 16 36.10 Sheathing

0010 **SHEATHING**	R061636-20									
0012 Plywood on roofs, CDX										
0030 5/16" thick		2 Carp	1600	.010	S.F.	.91	.56		1.47	1.
0035 Pneumatic nailed	R061110-30		1952	.008		.91	.46		1.37	1.
0050 3/8" thick			1525	.010		.68	.59		1.27	1.
0055 Pneumatic nailed			1860	.009		.68	.48		1.16	1.
0100 1/2" thick			1400	.011		.76	.64		1.40	1.
0105 Pneumatic nailed			1708	.009		.76	.53		1.29	1.
0200 5/8" thick			1300	.012		.82	.69		1.51	1.
0205 Pneumatic nailed			1586	.010		.82	.57		1.39	1.
0300 3/4" thick			1200	.013		.94	.75		1.69	2.
0305 Pneumatic nailed			1464	.011		.94	.62		1.56	1.
0500 Plywood on walls, with exterior CDX, 3/8" thick			1200	.013		.68	.75		1.43	1.
0505 Pneumatic nailed			1488	.011		.68	.61		1.29	1.
0600 1/2" thick			1125	.014		.76	.80		1.56	2.
0605 Pneumatic nailed			1395	.011		.76	.65		1.41	1.
0700 5/8" thick			1050	.015		.82	.86		1.68	2.
0705 Pneumatic nailed		2 Carp	1302	.012	S.F.	.82	.69		1.51	1.
0800 3/4" thick			975	.016		.94	.92		1.86	2.
0805 Pneumatic nailed			1209	.013		.94	.75		1.69	2.
1000 For shear wall construction, add							20%			
1200 For structural 1 exterior plywood, add					S.F.	10%				
3000 Wood fiber, regular, no vapor barrier, 1/2" thick		2 Carp	1200	.013		.73	.75		1.48	1.
3100 5/8" thick			1200	.013		.69	.75		1.44	1.
3300 No vapor barrier, in colors, 1/2" thick			1200	.013		.79	.75		1.54	1.
3400 5/8" thick			1200	.013		.83	.75		1.58	2.
3600 With vapor barrier one side, white, 1/2" thick			1200	.013		.81	.75		1.56	2.
3700 Vapor barrier 2 sides, 1/2" thick			1200	.013		.96	.75		1.71	2.
3800 Asphalt impregnated, 25/32" thick			1200	.013		.44	.75		1.19	1.
3850 Intermediate, 1/2" thick			1200	.013		.37	.75		1.12	1.
4500 Oriented strand board, on roof, 7/16" thick	G		1460	.011		.47	.62		1.09	1.
4505 Pneumatic nailed	G		1780	.009		.47	.51		.98	1.
4550 1/2" thick	G		1400	.011		.47	.64		1.11	1.

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06 16 Sheathing

06 16 36 – Wood Panel Product Sheathing

	06 16 36.10 Sheathing		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4555	Pneumatic nailed	G	2 Carp	1736	.009	S.F.	.47	.52		.99	1.29
4600	5/8" thick	G		1300	.012		1.07	.69		1.76	2.21
4605	Pneumatic nailed	G		1586	.010		1.07	.57		1.64	2.03
4610	On walls, 7/16" thick	G		1200	.013		.47	.75		1.22	1.64
4615	Pneumatic nailed	G		1488	.011		.47	.61		1.08	1.42
4620	1/2" thick	G		1195	.013		.47	.75		1.22	1.64
4625	Pneumatic nailed	G		1325	.012		.47	.68		1.15	1.53
4630	5/8" thick	G		1050	.015		1.07	.86		1.93	2.46
4635	Pneumatic nailed	G		1302	.012		1.07	.69		1.76	2.21
4700	Oriented strand board, factory laminated W.R. barrier, on roof, 1/2" thick	G		1400	.011		1.37	.64		2.01	2.47
4705	Pneumatic nailed	G		1736	.009		1.37	.52		1.89	2.28
4720	5/8" thick	G		1300	.012		2.47	.69		3.16	3.75
4725	Pneumatic nailed	G		1586	.010		2.47	.57		3.04	3.57
4730	5/8" thick, T&G	G		1150	.014		1.83	.78		2.61	3.18
4735	Pneumatic nailed, T&G	G		1400	.011		1.83	.64		2.47	2.97
4740	On walls, 7/16" thick	G		1200	.013		1.11	.75		1.86	2.34
4745	Pneumatic nailed	G		1488	.011		1.11	.61		1.72	2.12
4750	1/2" thick	G		1195	.013		1.37	.75		2.12	2.63
4755	Pneumatic nailed	G		1325	.012		1.37	.68		2.05	2.52
4800	Joint sealant tape, 3-1/2"			7600	.002	L.F.	.30	.12		.42	.51
4810	Joint sealant tape, 6"			7600	.002	"	.57	.12		.69	.81

06 16 43 – Gypsum Sheathing

06 16 43.10 Gypsum Sheathing

0010	**GYPSUM SHEATHING**									
0020	Gypsum, weatherproof, 1/2" thick	2 Carp	1125	.014	S.F.	.52	.80		1.32	1.76
0040	With embedded glass mats	"	1100	.015	"	.62	.82		1.44	1.90

06 17 Shop-Fabricated Structural Wood

06 17 33 – Wood I-Joists

06 17 33.10 Wood and Composite I-Joists

0010	**WOOD AND COMPOSITE I-JOISTS**									
0100	Plywood webs, incl. bridging & blocking, panels 24" OC									
1200	15' to 24' span, 50 psf live load	F-5	2400	.013	SF Flr.	4.82	.76		5.58	6.45
1300	55 psf live load		2250	.014		5.05	.81		5.86	6.80
1400	24' to 30' span, 45 psf live load		2600	.012		5.85	.70		6.55	7.45
1500	55 psf live load		2400	.013		8.55	.76		9.31	10.55

06 17 53 – Shop-Fabricated Wood Trusses

06 17 53.10 Roof Trusses

0010	**ROOF TRUSSES**									
0100	Fink (W) or King post type, 2'-0" OC									
0200	Metal plate connected, 4 in 12 slope									
0210	24' to 29' span	F-3	3000	.013	SF Flr.	3.26	.77	.66	4.69	5.45
0300	30' to 43' span		3000	.013		4.93	.77	.66	6.36	7.35
0400	44' to 60' span		3000	.013		4.75	.77	.66	6.18	7.10
0700	Glued and nailed, add					50%				

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06 18 13 – Glued-Laminated Beams

06 18 13.20 Laminated Framing	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&
0010 **LAMINATED FRAMING**									
0020 30 lb., short term live load, 15 lb. dead load									
0200 Straight roof beams, 20′ clear span, beams 8′ OC	F-3	2560	.016	SF Flr.	3.38	.90	.77	5.05	5.
0300 Beams 16′ OC		3200	.013		2.48	.72	.62	3.82	4.
0500 40′ clear span, beams 8′ OC		3200	.013		6.45	.72	.62	7.79	8.
0600 Beams 16′ OC		3840	.010		5.30	.60	.52	6.42	7.
0800 60′ clear span, beams 8′ OC	F-4	2880	.017		11	.95	.79	12.74	14.
0900 Beams 16′ OC	″	3840	.013		8.25	.71	.59	9.55	10.
1100 Tudor arches, 30′ to 40′ clear span, frames 8′ OC	F-3	1680	.024		14.35	1.37	1.18	16.90	19.
1200 Frames 16′ OC	″	2240	.018		11.20	1.03	.89	13.12	14.
1400 50′ to 60′ clear span, frames 8′ OC	F-4	2200	.022		15.40	1.25	1.03	17.68	19.
1500 Frames 16′ OC		2640	.018		13.15	1.04	.86	15.05	17
1700 Radial arches, 60′ clear span, frames 8′ OC		1920	.025		14.45	1.43	1.18	17.06	19.
1800 Frames 16′ OC		2880	.017		11.50	.95	.79	13.24	14.
2000 100′ clear span, frames 8′ OC	F-4	1600	.030	SF Flr.	14.85	1.71	1.42	17.98	20.
2100 Frames 16′ OC		2400	.020		13.15	1.14	.95	15.24	17.
2300 120′ clear span, frames 8′ OC		1440	.033		19.75	1.90	1.58	23.23	26
2400 Frames 16′ OC		1920	.025		18.05	1.43	1.18	20.66	23.
2600 Bowstring trusses, 20′ OC, 40′ clear span	F-3	2400	.017		8.95	.96	.83	10.74	12.
2700 60′ clear span	F-4	3600	.013		8.05	.76	.63	9.44	10.
2800 100′ clear span		4000	.012		11.40	.69	.57	12.66	14.
2900 120′ clear span		3600	.013		12.10	.76	.63	13.49	15.
3000 For less than 1000 B.F., add					20%				
3050 For over 5000 B.F., deduct					10%				
3100 For premium appearance, add to S.F. prices					5%				
3300 For industrial type, deduct					15%				
3500 For stain and varnish, add					5%				
3900 For 3/4″ laminations, add to straight					25%				
4100 Add to curved					15%				
4300 Alternate pricing method: (use nominal footage of									
4310 components). Straight beams, camber less than 6″	F-3	3.50	11.429	M.B.F.	4,225	660	565	5,450	6,250
4400 Columns, including hardware		2	20		4,525	1,150	990	6,665	7,800
4600 Curved members, radius over 32′		2.50	16		4,650	925	795	6,370	7,350
4700 Radius 10′ to 32′		3	13.333		4,600	770	660	6,030	6,925
4900 For complicated shapes, add maximum					100%				
5100 For pressure treating, add to straight					35%				
5200 Add to curved					45%				
6000 Laminated veneer members, southern pine or western species									
6050 1-3/4″ wide x 5-1/2″ deep	2 Carp	480	.033	L.F.	6.35	1.88		8.23	9.8
6100 9-1/2″ deep		480	.033		5.40	1.88		7.28	8.7
6150 14″ deep		450	.036		8.50	2		10.50	12.3
6200 18″ deep		450	.036		11.75	2		13.75	15.9
6300 Parallel strand members, southern pine or western species									
6350 1-3/4″ wide x 9-1/4″ deep	2 Carp	480	.033	L.F.	5.65	1.88		7.53	9
6400 11-1/4″ deep		450	.036		6.70	2		8.70	10.3
6450 14″ deep		400	.040		9.90	2.25		12.15	14.2
6500 3-1/2″ wide x 9-1/4″ deep		480	.033		27	1.88		28.88	32.5
6550 11-1/4″ deep		450	.036		29.50	2		31.50	35.5
6600 14″ deep		400	.040		27	2.25		29.25	33
6650 7″ wide x 9-1/4″ deep		450	.036		50	2		52	58
6700 11-1/4″ deep		420	.038		61	2.14		63.14	70
6750 14″ deep	2 Carp	400	.040	L.F.	73	2.25		75.25	83.5
8000 Straight beams									

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06 18 13 – Glued-Laminated Beams

06 18 13.20 Laminated Framing	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
8102 20′ span									
8104 3-1/8″ x 9″	F-3	30	1.333	Ea.	198	77	66	341	405
8106 x 10-1/2″		30	1.333		231	77	66	374	440
8108 x 12″		30	1.333		264	77	66	407	480
8110 x 13-1/2″		30	1.333		297	77	66	440	515
8112 x 15″		29	1.379		330	79.50	68.50	478	560
8114 5-1/8″ x 10-1/2″		30	1.333		380	77	66	523	605
8116 x 12″		30	1.333		435	77	66	578	665
8118 x 13-1/2″		30	1.333		485	77	66	628	725
8120 x 15″		29	1.379		540	79.50	68.50	688	790
8122 x 16-1/2″		29	1.379		595	79.50	68.50	743	850
8124 x 18″		29	1.379		650	79.50	68.50	798	910
8126 x 19-1/2″		29	1.379		705	79.50	68.50	853	970
8128 x 21″		28	1.429		760	82.50	71	913.50	1,025
8130 x 22-1/2″		28	1.429		810	82.50	71	963.50	1,100
8132 x 24″		28	1.429		865	82.50	71	1,018.50	1,150
8134 6-3/4″ x 12″		29	1.379		570	79.50	68.50	718	820
8136 x 13-1/2″		29	1.379		640	79.50	68.50	788	900
8138 x 15″		29	1.379		715	79.50	68.50	863	980
8140 x 16-1/2″		28	1.429		785	82.50	71	938.50	1,050
8142 x 18″		28	1.429		855	82.50	71	1,008.50	1,150
8144 x 19-1/2″		28	1.429		925	82.50	71	1,078.50	1,225
8146 x 21″		27	1.481		1,000	85.50	73.50	1,159	1,300
8148 x 22-1/2″		27	1.481		1,075	85.50	73.50	1,234	1,375
8150 x 24″		27	1.481		1,150	85.50	73.50	1,309	1,450
8152 x 25-1/2″		27	1.481		1,200	85.50	73.50	1,359	1,525
8154 x 27″		26	1.538		1,275	89	76.50	1,440.50	1,625
8156 x 28-1/2″		26	1.538		1,350	89	76.50	1,515.50	1,725
8158 x 30″		26	1.538		1,425	89	76.50	1,590.50	1,800
8200 30′ span									
8250 3-1/8″ x 9″	F-3	30	1.333	Ea.	297	77	66	440	515
8252 x 10-1/2″		30	1.333		345	77	66	488	570
8254 x 12″		30	1.333		395	77	66	538	625
8256 x 13-1/2″		30	1.333		445	77	66	588	680
8258 x 15″		29	1.379		495	79.50	68.50	643	740
8260 5-1/8″ x 10-1/2″		30	1.333		570	77	66	713	815
8262 x 12″		30	1.333		650	77	66	793	905
8264 x 13-1/2″		30	1.333		730	77	66	873	995
8266 x 15″		29	1.379		810	79.50	68.50	958	1,100
8268 x 16-1/2″		29	1.379		895	79.50	68.50	1,043	1,175
8270 x 18″		29	1.379		975	79.50	68.50	1,123	1,275
8272 x 19-1/2″		29	1.379		1,050	79.50	68.50	1,198	1,350
8274 x 21″		28	1.429		1,125	82.50	71	1,278.50	1,450
8276 x 22-1/2″		28	1.429		1,225	82.50	71	1,378.50	1,550
8278 x 24″		28	1.429		1,300	82.50	71	1,453.50	1,625
8280 6-3/4″ x 12″		29	1.379		855	79.50	68.50	1,003	1,125
8282 x 13-1/2″		29	1.379		960	79.50	68.50	1,108	1,250
8284 x 15″		29	1.379		1,075	79.50	68.50	1,223	1,375
8286 x 16-1/2″		28	1.429		1,175	82.50	71	1,328.50	1,500
8288 x 18″		28	1.429		1,275	82.50	71	1,428.50	1,600
8290 x 19-1/2″		28	1.429		1,400	82.50	71	1,553.50	1,725
8292 x 21″		27	1.481		1,500	85.50	73.50	1,659	1,850
8294 x 22-1/2″		27	1.481		1,600	85.50	73.50	1,759	1,975

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06 18 Glued-Laminated Construction

06 18 13 – Glued-Laminated Beams

	06 18 13.20 Laminated Framing	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
8296	x 24"	F-3	27	1.481	Ea.	1,700	85.50	73.50	1,859	2,07
8298	x 25-1/2"		27	1.481		1,825	85.50	73.50	1,984	2,20
8300	x 27"		26	1.538		1,925	89	76.50	2,090.50	2,35
8302	x 28-1/2"		26	1.538		2,025	89	76.50	2,190.50	2,45
8304	x 30"		26	1.538		2,150	89	76.50	2,315.50	2,57
8400	40' span									
8402	3-1/8" x 9"	F-3	30	1.333	Ea.	395	77	66	538	62
8404	x 10-1/2"		30	1.333		460	77	66	603	70
8406	x 12"		30	1.333		530	77	66	673	77
8408	x 13-1/2"		30	1.333		595	77	66	738	84
8410	x 15"		29	1.379		660	79.50	68.50	808	92
8412	5-1/8" x 10-1/2"		30	1.333		760	77	66	903	1,02
8414	x 12"		30	1.333		865	77	66	1,008	1,15
8416	x 13-1/2"		30	1.333		975	77	66	1,118	1,27
8418	x 15"		29	1.379		1,075	79.50	68.50	1,223	1,40
8420	x 16-1/2"		29	1.379		1,200	79.50	68.50	1,348	1,50
8422	x 18"		29	1.379		1,300	79.50	68.50	1,448	1,62
8424	x 19-1/2"		29	1.379		1,400	79.50	68.50	1,548	1,75
8426	x 21"		28	1.429		1,525	82.50	71	1,678.50	1,87
8428	x 22-1/2"		28	1.429		1,625	82.50	71	1,778.50	1,97
8430	x 24"		28	1.429		1,725	82.50	71	1,878.50	2,10
8432	6-3/4" x 12"		29	1.379		1,150	79.50	68.50	1,298	1,45
8434	x 13-1/2"		29	1.379		1,275	79.50	68.50	1,423	1,60
8436	x 15"		29	1.379		1,425	79.50	68.50	1,573	1,77
8438	x 16-1/2"		28	1.429		1,575	82.50	71	1,728.50	1,92
8440	x 18"		28	1.429		1,700	82.50	71	1,853.50	2,07
8442	x 19-1/2"		28	1.429		1,850	82.50	71	2,003.50	2,25
8444	x 21"		27	1.481		2,000	85.50	73.50	2,159	2,40
8446	x 22-1/2"		27	1.481		2,150	85.50	73.50	2,309	2,55
8448	x 24"		27	1.481		2,275	85.50	73.50	2,434	2,70
8450	x 25-1/2"		27	1.481		2,425	85.50	73.50	2,584	2,87
8452	x 27"		26	1.538		2,575	89	76.50	2,740.50	3,05
8454	x 28-1/2"		26	1.538		2,700	89	76.50	2,865.50	3,20
8456	x 30"		26	1.538		2,850	89	76.50	3,015.50	3,35

06 22 Millwork

06 22 13 – Standard Pattern Wood Trim

06 22 13.15 Moldings, Base

0010	**MOLDINGS, BASE**									
5100	Classic profile, 5/8" x 5-1/2", finger jointed and primed	1 Carp	250	.032	L.F.	1.71	1.80		3.51	4.5
5105	Poplar		240	.033		1.72	1.88		3.60	4.6
5110	Red oak		220	.036		2.64	2.05		4.69	5.9
5115	Maple		220	.036		3.98	2.05		6.03	7.4
5120	Cherry		220	.036		4.72	2.05		6.77	8.2
5125	3/4" x 7-1/2", finger jointed and primed		250	.032		2.17	1.80		3.97	5.0
5130	Poplar		240	.033		2.75	1.88		4.63	5.8
5135	Red oak		220	.036		3.84	2.05		5.89	7.3
5140	Maple		220	.036		5.30	2.05		7.35	8.9
5145	Cherry		220	.036		6.30	2.05		8.35	10
5150	Modern profile, 5/8" x 3-1/2", finger jointed and primed		250	.032		1.02	1.80		2.82	3.8
5155	Poplar		240	.033		1.10	1.88		2.98	4

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06 22 13 – Standard Pattern Wood Trim

	06 22 13.15 Moldings, Base	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
5160	Red oak	1 Carp	220	.036	L.F.	1.81	2.05		3.86	5.05
5165	Maple		220	.036		2.80	2.05		4.85	6.15
5170	Cherry		220	.036		3.01	2.05		5.06	6.35
5175	Ogee profile, 7/16" x 3", finger jointed and primed		250	.032		.73	1.80		2.53	3.49
5180	Poplar		240	.033		.76	1.88		2.64	3.63
5185	Red oak		220	.036		1.01	2.05		3.06	4.16
5200	9/16" x 3-1/2", finger jointed and primed		250	.032		1.10	1.80		2.90	3.89
5205	Pine		240	.033		1.20	1.88		3.08	4.11
5210	Red oak		220	.036		1.81	2.05		3.86	5.05
5215	9/16" x 4-1/2", red oak		220	.036		2.71	2.05		4.76	6.05
5220	5/8" x 3-1/2", finger jointed and primed		250	.032		1.10	1.80		2.90	3.89
5225	Poplar		240	.033		1.16	1.88		3.04	4.07
5230	Red oak		220	.036		1.81	2.05		3.86	5.05
5235	Maple		220	.036		2.80	2.05		4.85	6.15
5240	Cherry		220	.036		3.01	2.05		5.06	6.35
5245	5/8" x 4", finger jointed and primed	1 Carp	250	.032	L.F.	1.41	1.80		3.21	4.23
5250	Poplar		240	.033		1.50	1.88		3.38	4.44
5255	Red oak		220	.036		2.03	2.05		4.08	5.30
5260	Maple		220	.036		3.13	2.05		5.18	6.50
5265	Cherry		220	.036		3.27	2.05		5.32	6.65
5270	Rectangular profile, oak, 3/8" x 1-1/4"		260	.031		2.01	1.73		3.74	4.79
5275	1/2" x 2-1/2"		255	.031		2.38	1.77		4.15	5.25
5280	1/2" x 3-1/2"		250	.032		3.02	1.80		4.82	6
5285	1" x 6"		240	.033		2.84	1.88		4.72	5.90
5290	1" x 8"		240	.033		4.15	1.88		6.03	7.35
5295	Pine, 3/8" x 1-3/4"		260	.031		.52	1.73		2.25	3.16
5300	7/16" x 2-1/2"		255	.031		1.06	1.77		2.83	3.80
5305	1" x 6"		240	.033		1.99	1.88		3.87	4.98
5310	1" x 8"		240	.033		2.99	1.88		4.87	6.10
5315	Shoe, 1/2" x 3/4", primed		260	.031		.56	1.73		2.29	3.20
5320	Pine		240	.033		.66	1.88		2.54	3.52
5325	Poplar		240	.033		.46	1.88		2.34	3.30
5330	Red oak		220	.036		.62	2.05		2.67	3.74
5335	Maple		220	.036		.88	2.05		2.93	4.02
5340	Cherry		220	.036		.92	2.05		2.97	4.07
5345	11/16" x 1-1/2", pine		240	.033		.72	1.88		2.60	3.59
5350	Caps, 11/16" x 1-3/8", pine		240	.033		.71	1.88		2.59	3.57
5355	3/4" x 1-3/4", finger jointed and primed		260	.031		.90	1.73		2.63	3.57
5360	Poplar		240	.033		1.13	1.88		3.01	4.04
5365	Red oak		220	.036		1.33	2.05		3.38	4.52
5370	Maple		220	.036		1.79	2.05		3.84	5
5375	Cherry		220	.036		4.25	2.05		6.30	7.75
5380	Combination base & shoe, 9/16" x 3-1/2" & 1/2" x 3/4", pine		125	.064		1.87	3.60		5.47	7.40
5385	Three piece oak, 6" high		80	.100		4.80	5.65		10.45	13.70
5390	Including 3/4" x 1" base shoe		70	.114		5.45	6.45		11.90	15.55
5395	Flooring cant strip, 3/4" x 3/4", pre-finished pine		260	.031		.41	1.73		2.14	3.03
5400	For pre-finished, stain and clear coat, add					1.05			1.05	1.16
5405	Clear coat only, add					.89			.89	.98

06 22 13.30 Moldings, Casings

0010	**MOLDINGS, CASINGS**									
0085	Apron, 9/16" x 2-1/2", pine	1 Carp	250	.032	L.F.	1.86	1.80		3.66	4.73
0090	5/8" x 2-1/2", pine		250	.032		2.23	1.80		4.03	5.15

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06 22 13 – Standard Pattern Wood Trim

06 22 13.30 Moldings, Casings	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0110 5/8" x 3-1/2", pine	1 Carp	220	.036	L.F.	2.53	2.05		4.58	5.8
0300 Band, 11/16" x 1-1/8", pine		270	.030		.98	1.67		2.65	3.5
0310 11/16" x 1-1/2", finger jointed and primed	1 Carp	270	.030	L.F.	.85	1.67		2.52	3.4
0320 Pine		270	.030		1.31	1.67		2.98	3.9
0330 11/16" x 1-3/4", finger jointed and primed		270	.030		1.05	1.67		2.72	3.6
0350 Pine		270	.030		1.43	1.67		3.10	4.0
0355 Beaded, 3/4" x 3-1/2", finger jointed and primed		220	.036		1.10	2.05		3.15	4.2
0360 Poplar		220	.036		1.29	2.05		3.34	4.4
0365 Red oak		220	.036		1.81	2.05		3.86	5.0
0370 Maple		220	.036		2.80	2.05		4.85	6.1
0375 Cherry		220	.036		3.38	2.05		5.43	6.7
0380 3/4" x 4", finger jointed and primed		220	.036		1.92	2.05		3.97	5.1
0385 Poplar		220	.036		1.99	2.05		4.04	5.2
0390 Red oak		220	.036		2.84	2.05		4.89	6.2
0395 Maple		220	.036		4.38	2.05		6.43	7.8
0400 Cherry		220	.036		4.58	2.05		6.63	8.1
0405 3/4" x 5-1/2", finger jointed and primed		200	.040		1.80	2.25		4.05	5.3
0410 Poplar		200	.040		2.23	2.25		4.48	5.8
0415 Red oak		200	.040		3.12	2.25		5.37	6.8
0420 Maple		200	.040		4.09	2.25		6.34	7.8
0425 Cherry		200	.040		4.70	2.25		6.95	8.5
0430 Classic profile, 3/4" x 2-3/4", finger jointed and primed		250	.032		.96	1.80		2.76	3.7
0435 Poplar		250	.032		1.16	1.80		2.96	3.9
0440 Red oak		250	.032		1.61	1.80		3.41	4.4
0445 Maple		250	.032		2.29	1.80		4.09	5.2
0450 Cherry		250	.032		2.60	1.80		4.40	5.5
0455 Fluted, 3/4" x 3-1/2", poplar		220	.036		1.29	2.05		3.34	4.47
0460 Red oak		220	.036		1.81	2.05		3.86	5.05
0465 Maple		220	.036		2.80	2.05		4.85	6.15
0470 Cherry		220	.036		3.38	2.05		5.43	6.75
0475 3/4" x 4", poplar		220	.036		1.99	2.05		4.04	5.25
0480 Red oak		220	.036		2.84	2.05		4.89	6.20
0485 Maple		220	.036		4.38	2.05		6.43	7.85
0490 Cherry		220	.036		4.58	2.05		6.63	8.10
0495 3/4" x 5-1/2", poplar		200	.040		2.23	2.25		4.48	5.80
0500 Red oak		200	.040		3.12	2.25		5.37	6.80
0505 Maple		200	.040		4.09	2.25		6.34	7.85
0510 Cherry		200	.040		4.70	2.25		6.95	8.50
0515 3/4" x 7-1/2", poplar		190	.042		2.03	2.37		4.40	5.75
0520 Red oak		190	.042		5.40	2.37		7.77	9.45
0525 Maple		190	.042		7.40	2.37		9.77	11.70
0530 Cherry	1 Carp	190	.042	L.F.	8.85	2.37		11.22	13.30
0535 3/4" x 9-1/2", poplar		180	.044		5.30	2.50		7.80	9.50
0540 Red oak		180	.044		8.35	2.50		10.85	12.90
0545 Maple		180	.044		11.50	2.50		14	16.35
0550 Cherry		180	.044		12.50	2.50		15	17.45
0555 Modern profile, 9/16" x 2-1/4", poplar		250	.032		1.43	1.80		3.23	4.26
0560 Red oak		250	.032		1.83	1.80		3.63	4.70
0565 11/16" x 2-1/2", finger jointed & primed		250	.032		1.16	1.80		2.96	3.96
0570 Pine		250	.032		2.89	1.80		4.69	5.85
0575 3/4" x 2-1/2", poplar		250	.032		1.01	1.80		2.81	3.79
0580 Red oak		250	.032		1.37	1.80		3.17	4.19
0585 Maple		250	.032		2.07	1.80		3.87	4.96

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06 22 13 – Standard Pattern Wood Trim

		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
06 22 13.30	**Moldings, Casings**									
0590	Cherry	1 Carp	250	.032	L.F.	2.60	1.80		4.40	5.55
0595	Mullion, 5/16" x 2", pine		270	.030		1.10	1.67		2.77	3.69
0600	9/16" x 2-1/2", finger jointed and primed		250	.032		1.16	1.80		2.96	3.96
0605	Pine		250	.032		1.41	1.80		3.21	4.23
0610	Red oak		250	.032		3.61	1.80		5.41	6.65
0615	1-1/16" x 3-3/4", red oak		220	.036		7.45	2.05		9.50	11.25
0620	Ogee, 7/16" x 2-1/2", poplar		250	.032		1.42	1.80		3.22	4.25
0625	Red oak		250	.032		1	1.80		2.80	3.78
0630	9/16" x 2-1/4", finger jointed and primed		250	.032		.58	1.80		2.38	3.32
0635	Poplar		250	.032		.66	1.80		2.46	3.41
0640	Red oak		250	.032		.90	1.80		2.70	3.67
0645	11/16" x 2-1/2", finger jointed and primed		250	.032		1.16	1.80		2.96	3.96
0700	Pine		250	.032		1.44	1.80		3.24	4.27
0701	Red oak		250	.032		3.44	1.80		5.24	6.45
0730	11/16" x 3-1/2", finger jointed and primed		220	.036		1.06	2.05		3.11	4.22
0750	Pine		220	.036		1.78	2.05		3.83	5
0755	3/4" x 2-1/2", finger jointed and primed		250	.032		1.77	1.80		3.57	4.63
0760	Poplar		250	.032		1.53	1.80		3.33	4.37
0765	Red oak		250	.032		1.37	1.80		3.17	4.19
0770	Maple		250	.032		2.07	1.80		3.87	4.96
0775	Cherry		250	.032		2.60	1.80		4.40	5.55
0780	3/4" x 3-1/2", finger jointed and primed		220	.036		1.06	2.05		3.11	4.22
0785	Poplar		220	.036		1.27	2.05		3.32	4.45
0790	Red oak		220	.036		1.89	2.05		3.94	5.15
0795	Maple		220	.036		2.93	2.05		4.98	6.30
0800	Cherry		220	.036		3.53	2.05		5.58	6.95
4700	Square profile, 1" x 1", teak		215	.037		2.08	2.09		4.17	5.40
4800	Rectangular profile, 1" x 3", teak	1 Carp	200	.040	L.F.	6.20	2.25		8.45	10.20
06 22 13.35	**Moldings, Ceilings**									
0010	**MOLDINGS, CEILINGS**									
0600	Bed, 9/16" x 1-3/4", pine	1 Carp	270	.030	L.F.	.83	1.67		2.50	3.40
0650	9/16" x 2", pine		270	.030		1.32	1.67		2.99	3.94
0710	9/16" x 1-3/4", oak		270	.030		2.73	1.67		4.40	5.50
1200	Cornice, 9/16" x 1-3/4", pine		270	.030		1.11	1.67		2.78	3.70
1300	9/16" x 2-1/4", pine		265	.030		1.55	1.70		3.25	4.23
1350	Cove, 1/2" x 2-1/4", poplar		265	.030		1.38	1.70		3.08	4.04
1360	Red oak		265	.030		1.85	1.70		3.55	4.56
1370	Hard maple		265	.030		2.79	1.70		4.49	5.60
1380	Cherry		265	.030		3.51	1.70		5.21	6.40
2400	9/16" x 1-3/4", pine		270	.030		.79	1.67		2.46	3.35
2500	11/16" x 2-3/4", pine		265	.030		2.62	1.70		4.32	5.40
2510	Crown, 5/8" x 5/8", poplar		300	.027		.52	1.50		2.02	2.81
2520	Red oak		300	.027		.58	1.50		2.08	2.87
2530	Hard maple		300	.027		.78	1.50		2.28	3.09
2540	Cherry		300	.027		.82	1.50		2.32	3.14
2600	9/16" x 3-5/8", pine		250	.032		1.54	1.80		3.34	4.37
2700	11/16" x 4-1/4", pine		250	.032		2.56	1.80		4.36	5.50
2705	Oak		250	.032		3.27	1.80		5.07	6.25
2710	3/4" x 1-3/4", poplar		270	.030		.83	1.67		2.50	3.40
2720	Red oak		270	.030		1.16	1.67		2.83	3.76
2730	Hard maple		270	.030		1.60	1.67		3.27	4.24
2740	Cherry		270	.030		1.88	1.67		3.55	4.55

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06 22 13 – Standard Pattern Wood Trim

	06 22 13.35 Moldings, Ceilings	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2750	3/4" x 2", poplar	1 Carp	270	.030	L.F.	1.08	1.67		2.75	3.
2760	Red oak		270	.030		.69	1.67		2.36	3.
2770	Hard maple		270	.030		1.93	1.67		3.60	4.
2780	Cherry		270	.030		2.15	1.67		3.82	4.
2790	3/4" x 2-3/4", poplar		265	.030		1.19	1.70		2.89	3.
2800	Red oak		265	.030		1.73	1.70		3.43	4.
2810	Hard maple		265	.030		2.30	1.70		4	5.
2820	Cherry		265	.030		2.64	1.70		4.34	5.
2830	3/4" x 3-1/2", poplar		250	.032		1.52	1.80		3.32	4.
2840	Red oak		250	.032		2.16	1.80		3.96	5.
2850	Hard maple		250	.032		2.82	1.80		4.62	5.
2860	Cherry		250	.032		3.29	1.80		5.09	6.
2870	FJP poplar		250	.032		1.12	1.80		2.92	3.
2880	3/4" x 5", poplar		245	.033		2.24	1.84		4.08	5.
2890	Red oak		245	.033		3.14	1.84		4.98	6.
2900	Hard maple	1 Carp	245	.033	L.F.	4.11	1.84		5.95	7.
2910	Cherry		245	.033		4.73	1.84		6.57	7.
2920	FJP poplar		245	.033		1.55	1.84		3.39	4.
2930	3/4" x 6-1/4", poplar		240	.033		2.66	1.88		4.54	5.
2940	Red oak		240	.033		3.81	1.88		5.69	7
2950	Hard maple		240	.033		4.97	1.88		6.85	8.
2960	Cherry		240	.033		5.90	1.88		7.78	9.
2970	7/8" x 8-3/4", poplar		220	.036		5.30	2.05		7.35	8.
2980	Red oak		220	.036		8.75	2.05		10.80	12.
2990	Hard maple		220	.036		11.50	2.05		13.55	15.
3000	Cherry		220	.036		8.45	2.05		10.50	12.
3010	1" x 7-1/4", poplar		220	.036		4.34	2.05		6.39	7.
3020	Red oak		220	.036		6.75	2.05		8.80	10.
3030	Hard maple		220	.036		9.30	2.05		11.35	13.
3040	Cherry		220	.036		10.80	2.05		12.85	14.
3050	1-1/16" x 4-1/4", poplar		250	.032		2.63	1.80		4.43	5.
3060	Red oak		250	.032		3.09	1.80		4.89	6.
3070	Hard maple		250	.032		4.09	1.80		5.89	7.
3080	Cherry		250	.032		5.85	1.80		7.65	9.
3090	Dentil crown, 3/4" x 5", poplar		250	.032		2.14	1.80		3.94	5.
3100	Red oak		250	.032		3.28	1.80		5.08	6.
3110	Hard maple		250	.032		4.21	1.80		6.01	7.
3120	Cherry		250	.032		4.94	1.80		6.74	8
3130	Dentil piece for above, 1/2" x 1/2", poplar		300	.027		3.13	1.50		4.63	5
3140	Red oak		300	.027		3.60	1.50		5.10	6
3150	Hard maple		300	.027		4.09	1.50		5.59	6
3160	Cherry		300	.027		4.45	1.50		5.95	7
	06 22 13.40 Moldings, Exterior									
0010	**MOLDINGS, EXTERIOR**									
0100	Band board, cedar, rough sawn, 1" x 2"	1 Carp	300	.027	L.F.	.72	1.50		2.22	3
0110	1" x 3"		300	.027		1.07	1.50		2.57	3
0120	1" x 4"		250	.032		1.43	1.80		3.23	4
0130	1" x 6"		250	.032		2.14	1.80		3.94	5
0140	1" x 8"		225	.036		2.84	2		4.84	6
0150	1" x 10"		225	.036		3.54	2		5.54	6
0160	1" x 12"		200	.040		4.24	2.25		6.49	8
0240	STK, 1" x 2"		300	.027		.42	1.50		1.92	2

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06 22 13 – Standard Pattern Wood Trim

6 22 13.40 Moldings, Exterior		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
250	1" x 3"	1 Carp	300	.027	L.F.	.46	1.50		1.96	2.74
260	1" x 4"		250	.032		.92	1.80		2.72	3.70
270	1" x 6"		250	.032		1.48	1.80		3.28	4.31
280	1" x 8"	1 Carp	225	.036	L.F.	2.60	2		4.60	5.85
290	1" x 10"		225	.036		3.58	2		5.58	6.90
300	1" x 12"		200	.040		4.93	2.25		7.18	8.80
310	Pine, #2, 1" x 2"		300	.027		.33	1.50		1.83	2.60
320	1" x 3"		300	.027		.49	1.50		1.99	2.77
330	1" x 4"		250	.032		.69	1.80		2.49	3.44
340	1" x 6"		250	.032		1.03	1.80		2.83	3.82
350	1" x 8"		225	.036		1.41	2		3.41	4.53
360	1" x 10"		225	.036		1.94	2		3.94	5.10
370	1" x 12"		200	.040		2.68	2.25		4.93	6.30
380	D & better, 1" x 2"		300	.027		.74	1.50		2.24	3.05
390	1" x 3"		300	.027		1.10	1.50		2.60	3.44
400	1" x 4"		250	.032		1.54	1.80		3.34	4.38
410	1" x 6"		250	.032		2.85	1.80		4.65	5.80
420	1" x 8"		225	.036		3.50	2		5.50	6.85
430	1" x 10"		225	.036		3.83	2		5.83	7.20
440	1" x 12"		200	.040		4.18	2.25		6.43	7.95
450	Redwood, clear all heart, 1" x 2"		300	.027		1.73	1.50		3.23	4.13
460	1" x 3"		300	.027		2.58	1.50		4.08	5.05
470	1" x 4"		250	.032		3.35	1.80		5.15	6.35
480	1" x 6"		252	.032		4.86	1.79		6.65	8
490	1" x 8"		225	.036		5.35	2		7.35	8.90
500	1" x 10"		225	.036		16.45	2		18.45	21
510	1" x 12"		200	.040		6.35	2.25		8.60	10.35
530	Corner board, cedar, rough sawn, 1" x 2"		225	.036		.72	2		2.72	3.78
540	1" x 3"		225	.036		1.07	2		3.07	4.16
550	1" x 4"		200	.040		1.43	2.25		3.68	4.93
560	1" x 6"		200	.040		2.14	2.25		4.39	5.70
570	1" x 8"		200	.040		2.84	2.25		5.09	6.50
580	1" x 10"		175	.046		3.54	2.57		6.11	7.70
590	1" x 12"		175	.046		4.24	2.57		6.81	8.50
670	STK, 1" x 2"		225	.036		.42	2		2.42	3.44
680	1" x 3"		225	.036		.46	2		2.46	3.49
690	1" x 4"		200	.040		.89	2.25		3.14	4.33
700	1" x 6"		200	.040		1.48	2.25		3.73	4.98
710	1" x 8"		200	.040		2.60	2.25		4.85	6.20
720	1" x 10"		175	.046		3.58	2.57		6.15	7.75
730	1" x 12"		175	.046		4.93	2.57		7.50	9.30
740	Pine, #2, 1" x 2"		225	.036		.33	2		2.33	3.35
750	1" x 3"		225	.036		.49	2		2.49	3.52
760	1" x 4"	1 Carp	200	.040	L.F.	.69	2.25		2.94	4.11
770	1" x 6"		200	.040		1.03	2.25		3.28	4.49
780	1" x 8"		200	.040		1.41	2.25		3.66	4.90
790	1" x 10"		175	.046		1.94	2.57		4.51	5.95
800	1" x 12"		175	.046		2.68	2.57		5.25	6.80
810	D & better, 1" x 2"		225	.036		.74	2		2.74	3.80
820	1" x 3"		225	.036		1.10	2		3.10	4.19
830	1" x 4"		200	.040		1.54	2.25		3.79	5.05
840	1" x 6"		200	.040		2.85	2.25		5.10	6.50
850	1" x 8"		200	.040		3.50	2.25		5.75	7.20

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06 22 13 – Standard Pattern Wood Trim

06 22 13.40 Moldings, Exterior		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0860	1" x 10"	1 Carp	175	.046	L.F.	3.83	2.57		6.40	8.0
0870	1" x 12"		175	.046		4.18	2.57		6.75	8.4
0880	Redwood, clear all heart, 1" x 2"		225	.036		1.73	2		3.73	4.8
0890	1" x 3"		225	.036		2.58	2		4.58	5.8
0900	1" x 4"		200	.040		3.35	2.25		5.60	7.0
0910	1" x 6"		200	.040		4.86	2.25		7.11	8.7
0920	1" x 8"		200	.040		5.35	2.25		7.60	9.2
0930	1" x 10"		175	.046		16.45	2.57		19.02	22
0940	1" x 12"		175	.046		6.35	2.57		8.92	10.8
0950	Cornice board, cedar, rough sawn, 1" x 2"		330	.024		.72	1.36		2.08	2.8
0960	1" x 3"		290	.028		1.07	1.55		2.62	3.4
0970	1" x 4"		250	.032		1.43	1.80		3.23	4.2
0980	1" x 6"		250	.032		2.14	1.80		3.94	5.0
0990	1" x 8"		200	.040		2.84	2.25		5.09	6.5
1000	1" x 10"		180	.044		3.54	2.50		6.04	7.6
1010	1" x 12"		180	.044		4.24	2.50		6.74	8.4
1020	STK, 1" x 2"		330	.024		.42	1.36		1.78	2.4
1030	1" x 3"		290	.028		.46	1.55		2.01	2.8
1040	1" x 4"		250	.032		.92	1.80		2.72	3.7
1050	1" x 6"		250	.032		1.48	1.80		3.28	4.3
1060	1" x 8"		200	.040		2.60	2.25		4.85	6.2
1070	1" x 10"		180	.044		3.58	2.50		6.08	7.4
1080	1" x 12"		180	.044		4.93	2.50		7.43	9.1
1500	Pine, #2, 1" x 2"		330	.024		.33	1.36		1.69	2.4
1510	1" x 3"		290	.028		.34	1.55		1.89	2.6
1600	1" x 4"		250	.032		.69	1.80		2.49	3.4
1700	1" x 6"		250	.032		1.03	1.80		2.83	3.8
1800	1" x 8"		200	.040		1.41	2.25		3.66	4.5
1900	1" x 10"		180	.044		1.94	2.50		4.44	5.5
2000	1" x 12"		180	.044		2.68	2.50		5.18	6.6
2020	D & better, 1" x 2"	1 Carp	330	.024	L.F.	.74	1.36		2.10	2.8
2030	1" x 3"		290	.028		1.10	1.55		2.65	3.5
2040	1" x 4"		250	.032		1.54	1.80		3.34	4.3
2050	1" x 6"		250	.032		2.85	1.80		4.65	5.8
2060	1" x 8"		200	.040		3.50	2.25		5.75	7.2
2070	1" x 10"		180	.044		3.83	2.50		6.33	7.9
2080	1" x 12"		180	.044		4.18	2.50		6.68	8.3
2090	Redwood, clear all heart, 1" x 2"		330	.024		1.73	1.36		3.09	3.9
2100	1" x 3"		290	.028		2.58	1.55		4.13	5.1
2110	1" x 4"		250	.032		3.35	1.80		5.15	6.3
2120	1" x 6"		250	.032		4.86	1.80		6.66	8.0
2130	1" x 8"		200	.040		5.35	2.25		7.60	9.3
2140	1" x 10"		180	.044		16.45	2.50		18.95	22
2150	1" x 12"		180	.044		6.35	2.50		8.85	10.7
2160	3 piece, 1" x 2", 1" x 4", 1" x 6", rough sawn cedar		80	.100		4.31	5.65		9.96	13.1
2180	STK cedar		80	.100		2.83	5.65		8.48	11.5
2200	#2 pine		80	.100		2.05	5.65		7.70	10.6
2210	D & better pine		80	.100		5.15	5.65		10.80	14.0
2220	Clear all heart redwood		80	.100		9.95	5.65		15.60	19.3
2230	1" x 8", 1" x 10", 1" x 12", rough sawn cedar		65	.123		10.55	6.95		17.50	22
2240	STK cedar		65	.123		11.05	6.95		18	22.5
2300	#2 pine		65	.123		5.95	6.95		12.90	16.8
2320	D & better pine		65	.123		11.45	6.95		18.40	23

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06 22 13 – Standard Pattern Wood Trim

6 22 13.40 Moldings, Exterior		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
330	Clear all heart redwood	1 Carp	65	.123	L.F.	28	6.95		34.95	41.50
340	Door/window casing, cedar, rough sawn, 1" x 2"		275	.029		.72	1.64		2.36	3.24
350	1" x 3"		275	.029		1.07	1.64		2.71	3.62
360	1" x 4"		250	.032		1.43	1.80		3.23	4.26
370	1" x 6"		250	.032		2.14	1.80		3.94	5.05
380	1" x 8"		230	.035		2.84	1.96		4.80	6.05
390	1" x 10"		230	.035		3.54	1.96		5.50	6.80
395	1" x 12"		210	.038		4.24	2.14		6.38	7.85
410	STK, 1" x 2"		275	.029		.42	1.64		2.06	2.90
420	1" x 3"		275	.029		.46	1.64		2.10	2.95
430	1" x 4"		250	.032		.92	1.80		2.72	3.70
440	1" x 6"		250	.032		1.48	1.80		3.28	4.31
450	1" x 8"		230	.035		2.60	1.96		4.56	5.75
460	1" x 10"		230	.035		3.58	1.96		5.54	6.85
470	1" x 12"		210	.038		4.93	2.14		7.07	8.65
550	Pine, #2, 1" x 2"		275	.029		.33	1.64		1.97	2.81
560	1" x 3"	1 Carp	275	.029	L.F.	.49	1.64		2.13	2.98
570	1" x 4"		250	.032		.69	1.80		2.49	3.44
580	1" x 6"		250	.032		1.03	1.80		2.83	3.82
590	1" x 8"		230	.035		1.41	1.96		3.37	4.46
600	1" x 10"		230	.035		1.94	1.96		3.90	5.05
610	1" x 12"		210	.038		2.68	2.14		4.82	6.15
620	Pine, D & better, 1" x 2"		275	.029		.74	1.64		2.38	3.26
630	1" x 3"		275	.029		1.10	1.64		2.74	3.65
640	1" x 4"		250	.032		1.54	1.80		3.34	4.38
650	1" x 6"		250	.032		2.85	1.80		4.65	5.80
660	1" x 8"		230	.035		3.50	1.96		5.46	6.75
670	1" x 10"		230	.035		3.83	1.96		5.79	7.15
680	1" x 12"		210	.038		4.18	2.14		6.32	7.80
690	Redwood, clear all heart, 1" x 2"		275	.029		1.73	1.64		3.37	4.34
695	1" x 3"		275	.029		2.58	1.64		4.22	5.25
710	1" x 4"		250	.032		3.35	1.80		5.15	6.35
715	1" x 6"		250	.032		4.86	1.80		6.66	8.05
730	1" x 8"		230	.035		5.35	1.96		7.31	8.80
740	1" x 10"		230	.035		16.45	1.96		18.41	21
750	1" x 12"		210	.038		6.35	2.14		8.49	10.20
500	Bellyband, pine, 11/16" x 4-1/4"		250	.032		2.98	1.80		4.78	5.95
610	Brickmold, pine, 1-1/4" x 2"		200	.040		2.19	2.25		4.44	5.75
620	FJP, 1-1/4" x 2"		200	.040		1.17	2.25		3.42	4.64
100	Fascia, cedar, rough sawn, 1" x 2"		275	.029		.72	1.64		2.36	3.24
110	1" x 3"		275	.029		1.07	1.64		2.71	3.62
120	1" x 4"		250	.032		1.43	1.80		3.23	4.26
200	1" x 6"		250	.032		2.14	1.80		3.94	5.05
300	1" x 8"		230	.035		2.84	1.96		4.80	6.05
310	1" x 10"		230	.035		3.54	1.96		5.50	6.80
320	1" x 12"		210	.038		4.24	2.14		6.38	7.85
400	2" x 4"		220	.036		1.46	2.05		3.51	4.66
500	2" x 6"		220	.036		2.19	2.05		4.24	5.45
600	2" x 8"		200	.040		2.91	2.25		5.16	6.55
700	2" x 10"		180	.044		3.62	2.50		6.12	7.70
800	2" x 12"		170	.047		8.60	2.65		11.25	13.40
120	STK, 1" x 2"		275	.029		.42	1.64		2.06	2.90
130	1" x 3"		275	.029		.46	1.64		2.10	2.95

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06 22 13 – Standard Pattern Wood Trim

06 22 13.40 Moldings, Exterior		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
6140	1" x 4"	1 Carp	250	.032	L.F.	.92	1.80		2.72	3.70
6150	1" x 6"		250	.032		1.48	1.80		3.28	4.31
6160	1" x 8"		230	.035		2.60	1.96		4.56	5.75
6170	1" x 10"	1 Carp	230	.035	L.F.	3.58	1.96		5.54	6.85
6180	1" x 12"		210	.038		4.93	2.14		7.07	8.65
6185	2" x 2"		260	.031		.91	1.73		2.64	3.58
6190	Pine, #2, 1" x 2"		275	.029		.33	1.64		1.97	2.81
6200	1" x 3"		275	.029		.49	1.64		2.13	2.98
6210	1" x 4"		250	.032		.69	1.80		2.49	3.44
6220	1" x 6"		250	.032		1.03	1.80		2.83	3.82
6230	1" x 8"		230	.035		1.41	1.96		3.37	4.46
6240	1" x 10"		230	.035		1.94	1.96		3.90	5.05
6250	1" x 12"		210	.038		2.68	2.14		4.82	6.15
6260	D & better, 1" x 2"		275	.029		.74	1.64		2.38	3.26
6270	1" x 3"		275	.029		1.10	1.64		2.74	3.65
6280	1" x 4"		250	.032		1.54	1.80		3.34	4.38
6290	1" x 6"		250	.032		2.85	1.80		4.65	5.80
6300	1" x 8"		230	.035		3.50	1.96		5.46	6.75
6310	1" x 10"		230	.035		3.83	1.96		5.79	7.15
6312	1" x 12"		210	.038		4.18	2.14		6.32	7.80
6330	Southern yellow, 1-1/4" x 5"		240	.033		3.25	1.88		5.13	6.35
6340	1-1/4" x 6"		240	.033		2.64	1.88		4.52	5.70
6350	1-1/4" x 8"		215	.037		3.52	2.09		5.61	7
6360	1-1/4" x 12"		190	.042		5.65	2.37		8.02	9.80
6370	Redwood, clear all heart, 1" x 2"		275	.029		1.73	1.64		3.37	4.34
6380	1" x 3"		275	.029		3.35	1.64		4.99	6.10
6390	1" x 4"		250	.032		3.35	1.80		5.15	6.35
6400	1" x 6"		250	.032		4.86	1.80		6.66	8.05
6410	1" x 8"		230	.035		5.35	1.96		7.31	8.80
6420	1" x 10"		230	.035		16.45	1.96		18.41	21
6430	1" x 12"		210	.038		6.35	2.14		8.49	10.20
6440	1-1/4" x 5"		240	.033		5.10	1.88		6.98	8.40
6450	1-1/4" x 6"		240	.033		6.10	1.88		7.98	9.50
6460	1-1/4" x 8"		215	.037		8.05	2.09		10.14	11.95
6470	1-1/4" x 12"		190	.042		9.50	2.37		11.87	14
6580	Frieze, cedar, rough sawn, 1" x 2"		275	.029		.72	1.64		2.36	3.24
6590	1" x 3"		275	.029		1.07	1.64		2.71	3.63
6600	1" x 4"		250	.032		1.43	1.80		3.23	4.24
6610	1" x 6"		250	.032		2.14	1.80		3.94	5.05
6620	1" x 8"		250	.032		2.84	1.80		4.64	5.80
6630	1" x 10"		225	.036		3.54	2		5.54	6.8
6640	1" x 12"		200	.040		4.18	2.25		6.43	7.9
6650	STK, 1" x 2"		275	.029		.42	1.64		2.06	2.9
6660	1" x 3"	1 Carp	275	.029	L.F.	.46	1.64		2.10	2.9
6670	1" x 4"		250	.032		.92	1.80		2.72	3.7
6680	1" x 6"		250	.032		1.48	1.80		3.28	4.3
6690	1" x 8"		250	.032		2.60	1.80		4.40	5.5
6700	1" x 10"		225	.036		3.58	2		5.58	6.9
6710	1" x 12"		200	.040		4.93	2.25		7.18	8.8
6790	Pine, #2, 1" x 2"		275	.029		.33	1.64		1.97	2.8
6800	1" x 3"		275	.029		.49	1.64		2.13	2.9
6810	1" x 4"		250	.032		.69	1.80		2.49	3.4
6820	1" x 6"		250	.032		1.03	1.80		2.83	3.8

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06 22 13 – Standard Pattern Wood Trim

6 22 13.40 Moldings, Exterior	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
830 1" x 8"	1 Carp	250	.032	L.F.	1.41	1.80		3.21	4.23
840 1" x 10"		225	.036		1.94	2		3.94	5.10
850 1" x 12"		200	.040		2.68	2.25		4.93	6.30
860 D & better, 1" x 2"		275	.029		.74	1.64		2.38	3.26
870 1" x 3"		275	.029		1.10	1.64		2.74	3.65
880 1" x 4"		250	.032		1.54	1.80		3.34	4.38
890 1" x 6"		250	.032		2.85	1.80		4.65	5.80
900 1" x 8"		250	.032		3.50	1.80		5.30	6.55
910 1" x 10"		225	.036		3.83	2		5.83	7.20
920 1" x 12"		200	.040		4.18	2.25		6.43	7.95
930 Redwood, clear all heart, 1" x 2"		275	.029		1.73	1.64		3.37	4.34
940 1" x 3"		275	.029		2.58	1.64		4.22	5.25
950 1" x 4"		250	.032		3.35	1.80		5.15	6.35
960 1" x 6"		250	.032		4.86	1.80		6.66	8.05
970 1" x 8"		250	.032		5.35	1.80		7.15	8.60
980 1" x 10"		225	.036		16.45	2		18.45	21
990 1" x 12"		200	.040		6.35	2.25		8.60	10.35
000 Grounds, 1" x 1", cedar, rough sawn		300	.027		.38	1.50		1.88	2.64
010 STK		300	.027		.27	1.50		1.77	2.52
020 Pine, #2		300	.027		.21	1.50		1.71	2.46
030 D & better		300	.027		.46	1.50		1.96	2.73
050 Redwood		300	.027		1.05	1.50		2.55	3.38
060 Rake/verge board, cedar, rough sawn, 1" x 2"		225	.036		.72	2		2.72	3.78
070 1" x 3"		225	.036		1.07	2		3.07	4.16
080 1" x 4"		200	.040		1.43	2.25		3.68	4.93
090 1" x 6"		200	.040		2.14	2.25		4.39	5.70
100 1" x 8"		190	.042		2.84	2.37		5.21	6.65
110 1" x 10"		190	.042		3.54	2.37		5.91	7.40
120 1" x 12"		180	.044		4.24	2.50		6.74	8.40
130 STK, 1" x 2"		225	.036		.42	2		2.42	3.44
140 1" x 3"	1 Carp	225	.036	L.F.	.46	2		2.46	3.49
150 1" x 4"		200	.040		.92	2.25		3.17	4.37
160 1" x 6"		200	.040		1.48	2.25		3.73	4.98
170 1" x 8"		190	.042		2.60	2.37		4.97	6.40
180 1" x 10"		190	.042		3.58	2.37		5.95	7.45
190 1" x 12"		180	.044		4.93	2.50		7.43	9.15
200 Pine, #2, 1" x 2"		225	.036		.33	2		2.33	3.35
210 1" x 3"		225	.036		.49	2		2.49	3.52
220 1" x 4"		200	.040		.69	2.25		2.94	4.11
230 1" x 6"		200	.040		1.03	2.25		3.28	4.49
240 1" x 8"		190	.042		1.41	2.37		3.78	5.10
250 1" x 10"		190	.042		1.94	2.37		4.31	5.65
260 1" x 12"		180	.044		2.68	2.50		5.18	6.65
340 D & better, 1" x 2"		225	.036		.74	2		2.74	3.80
350 1" x 3"		225	.036		1.10	2		3.10	4.19
360 1" x 4"		200	.040		1.54	2.25		3.79	5.05
370 1" x 6"		200	.040		2.85	2.25		5.10	6.50
380 1" x 8"		190	.042		3.50	2.37		5.87	7.40
390 1" x 10"		190	.042		3.83	2.37		6.20	7.75
400 1" x 12"		180	.044		4.18	2.50		6.68	8.30
410 Redwood, clear all heart, 1" x 2"		225	.036		1.73	2		3.73	4.88
420 1" x 3"		225	.036		2.58	2		4.58	5.80
430 1" x 4"		200	.040		3.35	2.25		5.60	7.05

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06 22 13 – Standard Pattern Wood Trim

	06 22 13.40 Moldings, Exterior	Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&
7440	1" x 6"	1 Carp	200	.040	L.F.	4.86	2.25		7.11	8.
7450	1" x 8"		190	.042		5.35	2.37		7.72	9.
7460	1" x 10"		190	.042		16.45	2.37		18.82	21.
7470	1" x 12"		180	.044		6.35	2.50		8.85	10.
7480	2" x 4"		200	.040		6.30	2.25		8.55	10.
7490	2" x 6"		182	.044		9.45	2.47		11.92	14.
7500	2" x 8"		165	.048		12	2.73		14.73	17.
7630	Soffit, cedar, rough sawn, 1" x 2"	2 Carp	440	.036		.72	2.05		2.77	3.
7640	1" x 3"		440	.036		1.07	2.05		3.12	4.
7650	1" x 4"		420	.038		1.43	2.14		3.57	4.
7660	1" x 6"		420	.038		2.14	2.14		4.28	5.
7670	1" x 8"		420	.038		2.84	2.14		4.98	6.
7680	1" x 10"		400	.040		3.54	2.25		5.79	7.
7690	1" x 12"		400	.040		4.24	2.25		6.49	8
7700	STK, 1" x 2"		440	.036		.42	2.05		2.47	3.
7710	1" x 3"		440	.036		.46	2.05		2.51	3.
7720	1" x 4"		420	.038		.92	2.14		3.06	4.
7730	1" x 6"	2 Carp	420	.038	L.F.	1.48	2.14		3.62	4.
7740	1" x 8"		420	.038		2.60	2.14		4.74	6.
7750	1" x 10"		400	.040		3.58	2.25		5.83	7.
7760	1" x 12"		400	.040		4.93	2.25		7.18	8.
7770	Pine, #2, 1" x 2"		440	.036		.33	2.05		2.38	3.
7780	1" x 3"		440	.036		.49	2.05		2.54	3.
7790	1" x 4"		420	.038		.69	2.14		2.83	3.
7800	1" x 6"		420	.038		1.03	2.14		3.17	4.
7810	1" x 8"		420	.038		1.41	2.14		3.55	4.
7820	1" x 10"		400	.040		1.94	2.25		4.19	5.
7830	1" x 12"		400	.040		2.68	2.25		4.93	6.
7840	D & better, 1" x 2"		440	.036		.74	2.05		2.79	3.
7850	1" x 3"		440	.036		1.10	2.05		3.15	4.
7860	1" x 4"		420	.038		1.54	2.14		3.68	4.
7870	1" x 6"		420	.038		2.85	2.14		4.99	6.
7880	1" x 8"		420	.038		3.50	2.14		5.64	7.
7890	1" x 10"		400	.040		3.83	2.25		6.08	7.
7900	1" x 12"		400	.040		4.18	2.25		6.43	7.
7910	Redwood, clear all heart, 1" x 2"		440	.036		1.73	2.05		3.78	4.
7920	1" x 3"		440	.036		2.58	2.05		4.63	5.
7930	1" x 4"		420	.038		3.35	2.14		5.49	6.
7940	1" x 6"		420	.038		4.86	2.14		7	8.
7950	1" x 8"		420	.038		5.35	2.14		7.49	9.
7960	1" x 10"		400	.040		16.45	2.25		18.70	21.
7970	1" x 12"		400	.040		6.35	2.25		8.60	10.
8050	Trim, crown molding, pine, 11/16" x 4-1/4"	1 Carp	250	.032		4.68	1.80		6.48	7.
8060	Back band, 11/16" x 1-1/16"		250	.032		.93	1.80		2.73	3.
8070	Insect screen frame stock, 1-1/16" x 1-3/4"		395	.020		.45	1.14		1.59	2.
8080	Dentils, 2-1/2" x 2-1/2" x 4", 6" OC		30	.267		1.24	15		16.24	24.
8100	Fluted, 5-1/2"		165	.048		.40	2.73		3.13	4.
8110	Stucco bead, 1-3/8" x 1-5/8"		250	.032		2.41	1.80		4.21	5.

06 22 13.45 Moldings, Trim

0010	**MOLDINGS, TRIM**									
0200	Astragal, stock pine, 11/16" x 1-3/4"	1 Carp	255	.031	L.F.	1.33	1.77		3.10	4.
0250	1-5/16" x 2-3/16"		240	.033		4.89	1.88		6.77	8.

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6 22 13 – Standard Pattern Wood Trim

	22 13.45 Moldings, Trim	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
00	Chair rail, stock pine, 5/8" x 2-1/2"	1 Carp	270	.030	L.F.	1.53	1.67		3.20	4.16
00	5/8" x 3-1/2"		240	.033		4.16	1.88		6.04	7.35
00	Closet pole, stock pine, 1-1/8" diameter		200	.040		1.28	2.25		3.53	4.76
00	Fir, 1-5/8" diameter		200	.040		1.93	2.25		4.18	5.45
00	Half round, stock pine, 1/4" x 1/2"	1 Carp	270	.030	L.F.	.46	1.67		2.13	2.99
50	1/2" x 1"	"	255	.031	"	.62	1.77		2.39	3.31
00	Handrail, fir, single piece, stock, hardware not included									
50	1-1/2" x 1-3/4"	1 Carp	80	.100	L.F.	2.74	5.65		8.39	11.40
70	Pine, 1-1/2" x 1-3/4"		80	.100		2.16	5.65		7.81	10.80
00	1-1/2" x 2-1/2"		76	.105		3.36	5.95		9.31	12.50
00	Lattice, stock pine, 1/4" x 1-1/8"		270	.030		.47	1.67		2.14	3
00	1/4" x 1-3/4"		250	.032		.62	1.80		2.42	3.36
00	Miscellaneous, custom, pine, 1" x 1"		270	.030		.39	1.67		2.06	2.91
50	1" x 2"		265	.030		.79	1.70		2.49	3.40
00	1" x 3"		240	.033		1.18	1.88		3.06	4.09
00	Birch or oak, nominal 1" x 1"		240	.033		1.12	1.88		3	4.02
00	Nominal 1" x 3"		215	.037		3.35	2.09		5.44	6.80
00	Walnut, nominal 1" x 1"		215	.037		1.53	2.09		3.62	4.80
00	Nominal 1" x 3"		200	.040		4.58	2.25		6.83	8.40
00	Teak, nominal 1" x 1"		215	.037		6.15	2.09		8.24	9.90
00	Nominal 1" x 3"		200	.040		18.50	2.25		20.75	24
00	Quarter round, stock pine, 1/4" x 1/4"		275	.029		.49	1.64		2.13	2.98
50	3/4" x 3/4"		255	.031		.68	1.77		2.45	3.38
00	Wainscot moldings, 1-1/8" x 9/16", 2' high, minimum		76	.105	S.F.	14.50	5.95		20.45	25
00	Maximum		65	.123	"	21.50	6.95		28.45	34

6 22 13.50 Moldings, Window and Door

10	**MOLDINGS, WINDOW AND DOOR**									
00	Door moldings, stock, decorative, 1-1/8" wide, plain	1 Carp	17	.471	Set	48.50	26.50		75	93
00	Detailed		17	.471	"	117	26.50		143.50	168
60	Clear pine door jamb, no stops, 11/16" x 4-9/16"		240	.033	L.F.	6.40	1.88		8.28	9.85
50	Door trim set, 1 head and 2 sides, pine, 2-1/2" wide		12	.667	Opng.	24.50	37.50		62	82.50
70	3-1/2" wide		11	.727	"	30	41		71	94
50	Glass beads, stock pine, 3/8" x 1/2"		275	.029	L.F.	.41	1.64		2.05	2.89
70	3/8" x 7/8"		270	.030		.53	1.67		2.20	3.06
50	Parting bead, stock pine, 3/8" x 3/4"		275	.029		.62	1.64		2.26	3.12
70	1/2" x 3/4"		255	.031		.53	1.77		2.30	3.21
00	Stool caps, stock pine, 11/16" x 3-1/2"		200	.040		2.82	2.25		5.07	6.45
00	1-1/16" x 3-1/4"		150	.053		4.22	3		7.22	9.10
00	Threshold, oak, 3' long, inside, 5/8" x 3-5/8"		32	.250	Ea.	16	14.10		30.10	38.50
00	Outside, 1-1/2" x 7-5/8"		16	.500	"	65	28		93	114
00	Window trim sets, including casings, header, stops,									
10	stool and apron, 2-1/2" wide, FJP	1 Carp	13	.615	Opng.	36	34.50		70.50	91.50
50	Pine		10	.800		42.50	45		87.50	114
00	Oak		6	1.333		86	75		161	207

6 22 13.60 Moldings, Soffits

110	**MOLDINGS, SOFFITS**									
200	Soffits, pine, 1" x 4"	2 Carp	420	.038	L.F.	.62	2.14		2.76	3.88
210	1" x 6"		420	.038		.97	2.14		3.11	4.26
220	1" x 8"		420	.038		1.35	2.14		3.49	4.67
230	1" x 10"		400	.040		1.84	2.25		4.09	5.40
240	1" x 12"		400	.040		2.58	2.25		4.83	6.20
250	STK cedar, 1" x 4"		420	.038		.86	2.14		3	4.14

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06 22 Millwork

06 22 13 – Standard Pattern Wood Trim

06 22 13.60 Moldings, Soffits		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&
0260	1" x 6"	2 Carp	420	.038	L.F.	1.42	2.14		3.56	4.
0270	1" x 8"		420	.038		2.54	2.14		4.68	6
0280	1" x 10"		400	.040		3.49	2.25		5.74	7.
0290	1" x 12"		400	.040		4.84	2.25		7.09	8.
1000	Exterior AC plywood, 1/4" thick		400	.040	S.F.	1.70	2.25		3.95	5.
1050	3/8" thick		400	.040		2.06	2.25		4.31	5.
1100	1/2" thick		400	.040		2.75	2.25		5	6
1150	Polyvinyl chloride, white, solid	1 Carp	230	.035		1.56	1.96		3.52	4
1160	Perforated	"	230	.035		1.71	1.96		3.67	4.
1170	Accessories, "J" channel 5/8"	2 Carp	700	.023	L.F.	.66	1.29		1.95	2.

06 25 Prefinished Paneling

06 25 13 – Prefinished Hardboard Paneling

06 25 13.10 Paneling, Hardboard

0010	**PANELING, HARDBOARD**									
0050	Not incl. furring or trim, hardboard, tempered, 1/8" thick	G	2 Carp	500	.032	S.F.	.32	1.80	2.12	3.
0100	1/4" thick	G		500	.032		.70	1.80	2.50	3.
0300	Tempered pegboard, 1/8" thick	G		500	.032		.53	1.80	2.33	3
0400	1/4" thick	G		500	.032		.96	1.80	2.76	3.
0600	Untempered hardboard, natural finish, 1/8" thick	G		500	.032		.35	1.80	2.15	3.
0700	1/4" thick	G		500	.032		.59	1.80	2.39	3.
0900	Untempered pegboard, 1/8" thick	G		500	.032		.63	1.80	2.43	3.
1000	1/4" thick	G		500	.032		.71	1.80	2.51	3.
1200	Plastic faced hardboard, 1/8" thick	G		500	.032		.54	1.80	2.34	3.
1300	1/4" thick	G		500	.032		1.05	1.80	2.85	3.
1500	Plastic faced pegboard, 1/8" thick	G		500	.032		.81	1.80	2.61	3.
1600	1/4" thick	G		500	.032		1.09	1.80	2.89	3.
1800	Wood grained, plain or grooved, 1/8" thick	G		500	.032		.90	1.80	2.70	3.
1900	1/4" thick	G	2 Carp	425	.038	S.F.	1.70	2.12	3.82	5
2100	Moldings, wood grained MDF			500	.032	L.F.	.52	1.80	2.32	3.
2200	Pine			425	.038	"	1.43	2.12	3.55	4.

06 25 16 – Prefinished Plywood Paneling

06 25 16.10 Paneling, Plywood

0010	**PANELING, PLYWOOD** R061636-20									
2400	Plywood, prefinished, 1/4" thick, 4' x 8' sheets									
2410	with vertical grooves. Birch faced, economy		2 Carp	500	.032	S.F.	.88	1.80	2.68	3.
2420	Average			420	.038		1.53	2.14	3.67	4.
2430	Custom			350	.046		2	2.57	4.57	6.
2600	Mahogany, African			400	.040		3.30	2.25	5.55	7
2700	Philippine (Lauan)			500	.032		.53	1.80	2.33	3.
2900	Oak			500	.032		2.10	1.80	3.90	4.
3000	Cherry			400	.040		3.22	2.25	5.47	6.
3200	Rosewood			320	.050		3.92	2.82	6.74	8.
3400	Teak			400	.040		4.16	2.25	6.41	7.
3600	Chestnut			375	.043		6.85	2.40	9.25	11.
3800	Pecan			400	.040		3.20	2.25	5.45	6.
3900	Walnut, average			500	.032		3.38	1.80	5.18	6.
3950	Custom			400	.040		3.13	2.25	5.38	6.
4000	Plywood, prefinished, 3/4" thick, stock grades, economy			320	.050		1.90	2.82	4.72	6.
4100	Average			224	.071		6.40	4.02	10.42	13.

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06 25 Prefinished Paneling

06 25 16 – Prefinished Plywood Paneling

6 25 16.10 Paneling, Plywood	Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&P
300 Architectural grade, custom	2 Carp	224	.071	S.F.	6.90	4.02		10.92	13.60
400 Luxury		160	.100		7.10	5.65		12.75	16.20
500 Plywood, "A" face, birch, VC, 1/2" thick, natural		450	.036		2.81	2		4.81	6.05
700 Select		450	.036		2.42	2		4.42	5.65
900 Veneer core, 3/4" thick, natural		320	.050		2.89	2.82		5.71	7.35
000 Select		320	.050		3.40	2.82		6.22	7.95
200 Lumber core, 3/4" thick, natural		320	.050		3.81	2.82		6.63	8.40
500 Plywood, knotty pine, 1/4" thick, A2 grade		450	.036		2.08	2		4.08	5.25
600 A3 grade		450	.036		2.40	2		4.40	5.60
800 3/4" thick, veneer core, A2 grade		320	.050		3.09	2.82		5.91	7.60
900 A3 grade		320	.050		2.81	2.82		5.63	7.30
100 Aromatic cedar, 1/4" thick, plywood		400	.040		2.94	2.25		5.19	6.60
200 1/4" thick, particle board		400	.040		1.48	2.25		3.73	4.98

06 25 26 – Panel System

6 25 26.10 Panel Systems

010 PANEL SYSTEMS									
100 Raised panel, eng. wood core w/wood veneer, std., paint grade	2 Carp	300	.053	S.F.	14.50	3		17.50	20.50
110 Oak veneer	2 Carp	300	.053	S.F.	28	3		31	35.50
120 Maple veneer		300	.053		39	3		42	47.50
130 Cherry veneer		300	.053		38.50	3		41.50	46.50
300 Class I fire rated, paint grade		300	.053		16.75	3		19.75	23
310 Oak veneer		300	.053		37.50	3		40.50	45.50
320 Maple veneer		300	.053		42.50	3		45.50	51
330 Cherry veneer		300	.053		61	3		64	71.50
510 Beadboard, 5/8" MDF, standard, primed		300	.053		9.60	3		12.60	15
520 Oak veneer, unfinished		300	.053		17.15	3		20.15	23.50
530 Maple veneer, unfinished		300	.053		24.50	3		27.50	31.50
610 Rustic paneling, 5/8" MDF, standard, maple veneer, unfinished		300	.053		21	3		24	27.50

06 26 Board Paneling

06 26 13 – Profile Board Paneling

6 26 13.10 Paneling, Boards

010 PANELING, BOARDS									
400 Wood board paneling, 3/4" thick, knotty pine	2 Carp	300	.053	S.F.	2.33	3		5.33	7.05
500 Rough sawn cedar		300	.053		5.15	3		8.15	10.10
700 Redwood, clear, 1" x 4" boards		300	.053		14.05	3		17.05	19.90
900 Aromatic cedar, closet lining, boards		275	.058		2.48	3.28		5.76	7.60

06 43 Wood Stairs and Railings

06 43 13 – Wood Stairs

6 43 13.20 Prefabricated Wood Stairs

010 PREFABRICATED WOOD STAIRS									
100 Box stairs, prefabricated, 3'-0" wide									
110 Oak treads, up to 14 risers	2 Carp	39	.410	Riser	1,500	23		1,523	1,675
600 With pine treads for carpet, up to 14 risers	"	39	.410	"	1,000	23		1,023	1,125
100 For 4' wide stairs, add				Flight	25%				
550 Stairs, prefabricated stair handrail with balusters	1 Carp	30	.267	L.F.	82.50	15		97.50	114
700 Basement stairs, prefabricated, pine treads									
710 Pine risers, 3' wide, up to 14 risers	2 Carp	52	.308	Riser	1,000	17.30		1,017.30	1,125

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06 43 13 – Wood Stairs

	06 43 13.20 Prefabricated Wood Stairs	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4000	Residential, wood, oak treads, prefabricated	2 Carp	1.50	10.667	Flight	28,000	600		28,600	31,700
4200	Built in place		.44	36.364	"	2,725	2,050		4,775	6,050
4400	Spiral, oak, 4'-6" diameter, unfinished, prefabricated,									
4500	incl. railing, 9' high	2 Carp	1.50	10.667	Flight	2,325	600		2,925	3,450

	06 43 13.40 Wood Stair Parts									
0010	**WOOD STAIR PARTS**									
0020	Pin top balusters, 1-1/4", oak, 34"	1 Carp	96	.083	Ea.	7.10	4.69		11.79	14.
0030	38"		96	.083		7.75	4.69		12.44	15.
0040	42"		96	.083		8.15	4.69		12.84	16
0050	Poplar, 34"	1 Carp	96	.083	Ea.	5.30	4.69		9.99	12.
0060	38"		96	.083		5.70	4.69		10.39	13.
0070	42"		96	.083		5.95	4.69		10.64	13.
0080	Maple, 34"		96	.083		16.35	4.69		21.04	25
0090	38"		96	.083		18.80	4.69		23.49	27.
0100	42"		96	.083		20	4.69		24.69	29.
0130	Primed, 34"		96	.083		7.70	4.69		12.39	15.
0140	38"		96	.083		8.65	4.69		13.34	16.
0150	42"		96	.083		9.60	4.69		14.29	17.
0180	Box top balusters, 1-1/4", oak, 34"		60	.133		8.35	7.50		15.85	20.
0190	38"		60	.133		8.50	7.50		16	20.
0200	42"		60	.133		8.95	7.50		16.45	21
0210	Poplar, 34"		60	.133		6.25	7.50		13.75	18
0220	38"		60	.133		6.25	7.50		13.75	18
0230	42"		60	.133		6.50	7.50		14	18.
0240	Maple, 34"		60	.133		18.25	7.50		25.75	31
0250	38"		60	.133		28.50	7.50		36	42.
0260	42"		60	.133		17.20	7.50		24.70	30
0290	Primed, 34"		60	.133		8.10	7.50		15.60	20
0300	38"		60	.133		8.85	7.50		16.35	21
0310	42"		60	.133		9.85	7.50		17.35	22
0340	Square balusters, cut from lineal stock, pine, 1-1/16" x 1-1/16"		180	.044	L.F.	6.35	2.50		8.85	10.
0350	1-5/16" x 1-5/16"		180	.044		2.14	2.50		4.64	6.
0360	1-5/8" x 1-5/8"		180	.044		8.85	2.50		11.35	13.
0370	Turned newel, oak, 3-1/2" square, 48" high		8	1	Ea.	91.50	56.50		148	185
0380	62" high		8	1		140	56.50		196.50	238
0390	Poplar, 3-1/2" square, 48" high		8	1		58.50	56.50		115	148
0400	62" high		8	1		96	56.50		152.50	190
0410	Maple, 3-1/2" square, 48" high		8	1		58.50	56.50		115	148
0420	62" high		8	1		153	56.50		209.50	252
0430	Square newel, oak, 3-1/2" square, 48" high		8	1		119	56.50		175.50	215
0440	58" high		8	1		114	56.50		170.50	210
0450	Poplar, 3-1/2" square, 48" high		8	1		58.50	56.50		115	148
0460	58" high		8	1		118	56.50		174.50	214
0470	Maple, 3" square, 48" high		8	1		124	56.50		180.50	221
0480	58" high		8	1		156	56.50		212.50	255
0490	Railings, oak, economy		96	.083	L.F.	19.65	4.69		24.34	28.
0500	Average		96	.083		18.10	4.69		22.79	27
0510	Custom		96	.083		16.90	4.69		21.59	25.
0520	Maple, economy	1 Carp	96	.083	L.F.	11.25	4.69		15.94	19.
0530	Average		96	.083		21.50	4.69		26.19	31
0540	Custom		96	.083		23	4.69		27.69	32.
0550	Oak, for bending rail, economy		48	.167		27.50	9.40		36.90	44

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6 43 13 – Wood Stairs

43 13.40 Wood Stair Parts	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0 Average	1 Carp	48	.167	L.F.	57	9.40		66.40	76.50
0 Custom		48	.167		35	9.40		44.40	52.50
0 Maple, for bending rail, economy		48	.167		69	9.40		78.40	89.50
0 Average		48	.167		32.50	9.40		41.90	49.50
0 Custom		48	.167		63.50	9.40		72.90	84
0 Risers, oak, 3/4" x 8", 36" long		80	.100	Ea.	44.50	5.65		50.15	57.50
0 42" long		70	.114		52	6.45		58.45	66.50
0 48" long		63	.127		59.50	7.15		66.65	76
0 54" long		56	.143		67	8.05		75.05	85.50
0 60" long		50	.160		74.50	9		83.50	95
0 72" long		42	.190		89	10.70		99.70	114
0 Poplar, 3/4" x 8", 36" long		80	.100		33.50	5.65		39.15	45.50
0 42" long		71	.113		39	6.35		45.35	52.50
0 48" long		63	.127		44.50	7.15		51.65	59.50
0 54" long		56	.143		50.50	8.05		58.55	67.50
0 60" long		50	.160		56	9		65	75
0 72" long		42	.190		67	10.70		77.70	90
0 Pine, 1" x 8", 36" long		80	.100		4.05	5.65		9.70	12.85
0 42" long		70	.114		4.72	6.45		11.17	14.80
0 48" long		63	.127		5.40	7.15		12.55	16.60
0 54" long		56	.143		6.05	8.05		14.10	18.65
0 60" long		50	.160		6.75	9		15.75	21
0 72" long		42	.190		8.10	10.70		18.80	25
0 Treads, oak, no returns, 1-1/32" x 11-1/2" x 36" long		32	.250		47	14.10		61.10	72.50
0 42" long		32	.250		54.50	14.10		68.60	81
0 48" long		32	.250		62.50	14.10		76.60	90
0 54" long		32	.250		70.50	14.10		84.60	98.50
0 60" long		32	.250		78	14.10		92.10	107
0 72" long		32	.250		94	14.10		108.10	124
0 Mitred return one end, 1-1/32" x 11-1/2" x 36" long		24	.333		77	18.75		95.75	113
0 42" long		24	.333		90	18.75		108.75	127
0 48" long		24	.333		103	18.75		121.75	141
0 54" long		24	.333		116	18.75		134.75	155
0 60" long		24	.333		129	18.75		147.75	170
0 72" long		24	.333		154	18.75		172.75	198
0 Mitred return two ends, 1-1/32" x 11-1/2" x 36" long	1 Carp	12	.667	Ea.	68.50	37.50		106	132
0 42" long		12	.667		80	37.50		117.50	144
0 48" long		12	.667		91.50	37.50		129	157
0 54" long		12	.667		103	37.50		140.50	169
0 60" long		12	.667		114	37.50		151.50	182
0 72" long		12	.667		137	37.50		174.50	207
0 Starting step, oak, 48", bullnose		8	1		182	56.50		238.50	284
0 Double end bullnose		8	1		255	56.50		311.50	365
0 Skirt board, pine, 1" x 10"		55	.145	L.F.	1.84	8.20		10.04	14.25
0 1" x 12"		52	.154	"	2.58	8.65		11.23	15.75
0 Oak landing tread, 1-1/16" thick		54	.148	S.F.	8.85	8.35		17.20	22
0 Oak cove molding		96	.083	L.F.	1.93	4.69		6.62	9.10
0 Oak stringer molding		96	.083	"	3.74	4.69		8.43	11.10
0 Rail bolt, 5/16" x 3-1/2"		48	.167	Ea.	3.47	9.40		12.87	17.75
0 5/16" x 4-1/2"		48	.167		3.13	9.40		12.53	17.40
0 Newel post anchor		16	.500		30.50	28		58.50	75.50
0 Tapered plug, 1/2"		240	.033		.93	1.88		2.81	3.81
0 1"		240	.033		.38	1.88		2.26	3.21

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06 43 Wood Stairs and Railings

06 43 16 – Wood Railings

06 43 16.10 Wood Handrails and Railings	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **WOOD HANDRAILS AND RAILINGS**									
0020 Custom design, architectural grade, hardwood, plain	1 Carp	38	.211	L.F.	11.30	11.85		23.15	30
0100 Shaped		30	.267		58	15		73	86.5
0300 Stock interior railing with spindles 4" OC, 4' long		40	.200		61	11.25		72.25	84.5
0400 8' long		48	.167		61	9.40		70.40	81.5

06 44 Ornamental Woodwork

06 44 19 – Wood Grilles

06 44 19.10 Grilles

0010 **GRILLES** and panels, hardwood, sanded									
0020 2' x 4' to 4' x 8', custom designs, unfinished, economy	1 Carp	38	.211	S.F.	56.50	11.85		68.35	80
0050 Average		30	.267		65	15		80	94
0100 Custom		19	.421		76	23.50		99.50	119

06 44 33 – Wood Mantels

06 44 33.10 Fireplace Mantels

0010 **FIREPLACE MANTELS**									
0015 6" molding, 6' x 3'-6" opening, plain, paint grade	1 Carp	5	1.600	Opng.	480	90		570	665
0100 Ornate, oak		5	1.600		665	90		755	865
0300 Prefabricated pine, colonial type, stock, deluxe		2	4		2,225	225		2,450	2,775
0400 Economy		3	2.667		785	150		935	1,100

06 44 33.20 Fireplace Mantel Beam

0010 **FIREPLACE MANTEL BEAM**									
0020 Rough texture wood, 4" x 8"	1 Carp	36	.222	L.F.	11.45	12.50		23.95	31
0100 4" x 10"		35	.229	"	12.85	12.85		25.70	33.5
0300 Laminated hardwood, 2-1/4" x 10-1/2" wide, 6' long		5	1.600	Ea.	113	90		203	258
0400 8' long		5	1.600	"	190	90		280	345
0600 Brackets for above, rough sawn		12	.667	Pr.	12.30	37.50		49.80	69.5
0700 Laminated		12	.667	"	93	37.50		130.50	159

06 44 39 – Wood Posts and Columns

06 44 39.10 Decorative Beams

0010 **DECORATIVE BEAMS**									
0020 Rough sawn cedar, non-load bearing, 4" x 4"	2 Carp	180	.089	L.F.	1.97	5		6.97	9.4
0100 4" x 6"		170	.094		1.77	5.30		7.07	9.5
0200 4" x 8"		160	.100		2.35	5.65		8	11
0300 4" x 10"		150	.107		4.32	6		10.32	13.1
0400 4" x 12"		140	.114		5.05	6.45		11.50	15.
0500 8" x 8"		130	.123		4.84	6.95		11.79	15.4

06 44 39.20 Columns

0010 **COLUMNS**									
0050 Aluminum, round colonial, 6" diameter	2 Carp	80	.200	V.L.F.	11.60	11.25		22.85	29.
0100 8" diameter		62.25	.257		17.60	14.45		32.05	41
0200 10" diameter		55	.291		27.50	16.40		43.90	55
0250 Fir, stock units, hollow round, 6" diameter		80	.200		35.50	11.25		46.75	56.
0300 8" diameter		80	.200		32.50	11.25		43.75	52.
0350 10" diameter		70	.229		50	12.85		62.85	74
0360 12" diameter		65	.246		73	13.85		86.85	101
0400 Solid turned, to 8' high, 3-1/2" diameter		80	.200		12	11.25		23.25	30
0500 4-1/2" diameter		75	.213		14.95	12		26.95	34
0600 5-1/2" diameter		70	.229		20	12.85		32.85	41

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06 44 Ornamental Woodwork

06 44 39 – Wood Posts and Columns

6 44 39.20 Columns		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
800	Square columns, built-up, 5" x 5"	2 Carp	65	.246	V.L.F.	35	13.85		48.85	59
900	Solid, 3-1/2" x 3-1/2"		130	.123		11.80	6.95		18.75	23.50
600	Hemlock, tapered, T&G, 12" diam., 10' high		100	.160		49	9		58	67.50
700	16' high		65	.246		84.50	13.85		98.35	114
900	14" diameter, 10' high		100	.160		116	9		125	140
000	18' high		65	.246		101	13.85		114.85	132
200	18" diameter, 12' high		65	.246		177	13.85		190.85	215
300	20' high		50	.320		129	18		147	168
500	20" diameter, 14' high		40	.400		243	22.50		265.50	300
600	20' high		35	.457		196	25.50		221.50	255
800	For flat pilasters, deduct					33%				
000	For splitting into halves, add				Ea.	137			137	151
000	Rough sawn cedar posts, 4" x 4"	2 Carp	250	.064	V.L.F.	4.87	3.60		8.47	10.70
100	4" x 6"		235	.068		8.20	3.83		12.03	14.70
200	6" x 6"		220	.073		15	4.09		19.09	22.50
300	8" x 8"		200	.080		25	4.50		29.50	34

06 48 Wood Frames

06 48 13 – Exterior Wood Door Frames

6 48 13.10 Exterior Wood Door Frames and Accessories

010	EXTERIOR WOOD DOOR FRAMES AND ACCESSORIES									
400	Exterior frame, incl. ext. trim, pine, 5/4 x 4-9/16" deep	2 Carp	375	.043	L.F.	7.20	2.40		9.60	11.55
420	5-3/16" deep		375	.043		8.15	2.40		10.55	12.60
440	6-9/16" deep		375	.043		8.70	2.40		11.10	13.15
600	Oak, 5/4 x 4-9/16" deep		350	.046		10.75	2.57		13.32	15.70
620	5-3/16" deep		350	.046		11.85	2.57		14.42	16.85
640	6-9/16" deep		350	.046		24.50	2.57		27.07	31
1000	Sills, 8/4 x 8" deep, oak, no horns		100	.160		18.35	9		27.35	33.50
020	2" horns		100	.160		22	9		31	38
040	3" horns		100	.160		22	9		31	38
100	8/4 x 10" deep, oak, no horns		90	.178		7.45	10		17.45	23
120	2" horns		90	.178		29	10		39	46.50
140	3" horns		90	.178		29	10		39	46.50
2000	Wood frame & trim, ext., colonial, 3' opng., fluted pilasters, flat head		22	.727	Ea.	525	41		566	635
2010	Dentil head		21	.762		655	43		698	790
2020	Ram's head		20	.800		630	45		675	760
2100	5'-4" opening, in-swing, fluted pilasters, flat head		17	.941		560	53		613	695
2120	Ram's head		15	1.067		1,375	60		1,435	1,625
2140	Out-swing, fluted pilasters, flat head		17	.941		500	53		553	630
2160	Ram's head		15	1.067		1,400	60		1,460	1,650
2400	6'-0" opening, in-swing, fluted pilasters, flat head		16	1		500	56.50		556.50	635
2420	Ram's head		10	1.600		1,575	90		1,665	1,850
2460	Out-swing, fluted pilasters, flat head		16	1		500	56.50		556.50	635
2480	Ram's head		10	1.600		1,600	90		1,690	1,875
2600	For two sidelights, flat head, add		30	.533	Opng.	355	30		385	435
2620	Ram's head, add		20	.800	"	885	45		930	1,025
2700	Custom birch frame, 3'-0" opening		16	1	Ea.	269	56.50		325.50	380
2750	6'-0" opng.		16	1		430	56.50		486.50	560
2900	Exterior, modern, plain trim, 3' opng., in-swing, FJP		26	.615		54.50	34.50		89	112
2920	Fir		24	.667		63	37.50		100.50	126
2940	Oak	2 Carp	22	.727	Ea.	72.50	41		113.50	141

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06 48 Wood Frames

06 48 16 – Interior Wood Door Frames

06 48 16.10 Interior Wood Door Jamb and Frames	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&
0010 **INTERIOR WOOD DOOR JAMB AND FRAMES**									
3000 Interior frame, pine, 11/16" x 3-5/8" deep	2 Carp	375	.043	L.F.	5.80	2.40		8.20	10
3020 4-9/16" deep		375	.043		6.70	2.40		9.10	11
3200 Oak, 11/16" x 3-5/8" deep		350	.046		2.54	2.57		5.11	6.
3220 4-9/16" deep		350	.046		6.40	2.57		8.97	10.
3240 5-3/16" deep		350	.046		19.20	2.57		21.77	25
3400 Walnut, 11/16" x 3-5/8" deep		350	.046		15.15	2.57		17.72	20.
3420 4-9/16" deep		350	.046		12.50	2.57		15.07	17.
3440 5-3/16" deep		350	.046		12.10	2.57		14.67	17.
3600 Pocket door frame		16	1	Ea.	69	56.50		125.50	160
3800 Threshold, oak, 5/8" x 3-5/8" deep		200	.080	L.F.	2.75	4.50		7.25	9.
3820 4-5/8" deep		190	.084		4.50	4.74		9.24	12
3840 5-5/8" deep		180	.089		7.15	5		12.15	15.

06 49 Wood Screens and Exterior Wood Shutters

06 49 19 – Exterior Wood Shutters

06 49 19.10 Shutters, Exterior									
0010 **SHUTTERS, EXTERIOR**									
0012 Aluminum, louvered, 1'-4" wide, 3'-0" long	1 Carp	10	.800	Pr.	320	45		365	4
0400 6'-8" long		9	.889		525	50		575	6
1000 Pine, louvered, primed, each 1'-2" wide, 3'-3" long		10	.800		251	45		296	3
1100 4'-7" long		10	.800		330	45		375	4
1500 Each 1'-6" wide, 3'-3" long		10	.800		305	45		350	4
1600 4'-7" long		10	.800		410	45		455	5
1620 Cedar, louvered, 1'-2" wide, 5'-7" long		10	.800		390	45		435	4
1630 Each 1'-4" wide, 2'-2" long		10	.800		205	45		250	2
1670 4'-3" long		10	.800		350	45		395	4
1690 5'-11" long		10	.800		465	45		510	5
1700 Door blinds, 6'-9" long, each 1'-3" wide		9	.889		615	50		665	7
1710 1'-6" wide		9	.889		725	50		775	8
1720 Cedar, solid raised panel, each 1'-4" wide, 3'-3" long		10	.800		315	45		360	4
1740 4'-3" long		10	.800		395	45		440	5
1770 5'-11" long		10	.800		525	45		570	6
1800 Door blinds, 6'-9" long, each 1'-3" wide		9	.889		555	50		605	6
1900 1'-6" wide		9	.889		655	50		705	7
2500 Polystyrene, solid raised panel, each 1'-4" wide, 3'-3" long		10	.800		102	45		147	1
2700 4'-7" long		10	.800		123	45		168	2
4500 Polystyrene, louvered, each 1'-2" wide, 3'-3" long	1 Carp	10	.800	Pr.	35	45		80	
4750 5'-3" long		10	.800		82	45		127	
6000 Vinyl, louvered, each 1'-2" x 4'-7" long		10	.800		101	45		146	
6200 Each 1'-4" x 6'-8" long		9	.889		134	50		184	

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06 51 13 – Plastic Lumber

			Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
6 51 13.10 Recycled Plastic Lumber											
010	**RECYCLED PLASTIC LUMBER**										
000	Sheeting, recycled plastic, black or white, 4′ x 8′ x 1/8″	G	2 Carp	1100	.015	S.F.	1.35	.82		2.17	2.71
010	4′ x 8′ x 3/16″	G		1100	.015		1.76	.82		2.58	3.16
020	4′ x 8′ x 1/4″	G		950	.017		1.87	.95		2.82	3.47
030	4′ x 8′ x 3/8″	G		950	.017		3.44	.95		4.39	5.20
040	4′ x 8′ x 1/2″	G		900	.018		4.57	1		5.57	6.55
050	4′ x 8′ x 5/8″	G		900	.018		7.95	1		8.95	10.25
060	4′ x 8′ x 3/4″	G		850	.019		8.90	1.06		9.96	11.40
070	Add for colors	G				Ea.	5%				
500	100% recycled plastic, var colors, NLB, 2″ x 2″	G				L.F.	2.16			2.16	2.38
510	2″ x 4″	G					4.46			4.46	4.91
520	2″ x 6″	G					6.70			6.70	7.40
530	2″ x 8″	G					9.90			9.90	10.85
540	2″ x 10″	G					14			14	15.40
550	5/4″ x 4″	G					4.70			4.70	5.15
560	5/4″ x 6″	G					6.55			6.55	7.20
570	1″ x 6″	G					3.22			3.22	3.54
580	1/2″ x 8″	G					3.80			3.80	4.18
590	2″ x 10″ T&G	G					14			14	15.40
600	3″ x 10″ T&G	G					24			24	26.50
610	Add for premium colors	G					20%				
6 51 13.12 Structural Plastic Lumber											
010	**STRUCTURAL PLASTIC LUMBER**										
320	Plastic lumber, posts or columns, 4″ x 4″		2 Carp	390	.041	L.F.	17.40	2.31		19.71	22.50
325	4″ x 6″			275	.058		16.10	3.28		19.38	22.50
330	4″ x 8″			220	.073		23.50	4.09		27.59	32
340	Girder, single, 4″ x 4″			675	.024		17.40	1.33		18.73	21
345	4″ x 6″			600	.027		16.10	1.50		17.60	19.95
350	4″ x 8″			525	.030		23.50	1.72		25.22	28.50
352	Double, 2″ x 4″			625	.026		16.70	1.44		18.14	20.50
354	2″ x 6″			600	.027		25	1.50		26.50	29
356	2″ x 8″			575	.028		32	1.57		33.57	37.50
358	2″ x 10″			550	.029		39.50	1.64		41.14	45.50
360	2″ x 12″		2 Carp	525	.030	L.F.	48	1.72		49.72	55.50
362	Triple, 2″ x 4″			575	.028		25	1.57		26.57	30
364	2″ x 6″			550	.029		37	1.64		38.64	43.50
366	2″ x 8″			525	.030		48	1.72		49.72	55.50
368	2″ x 10″			500	.032		59	1.80		60.80	67.50
370	2″ x 12″			475	.034		72	1.90		73.90	82.50
372	Ledger, bolted 4′ OC, 2″ x 4″			400	.040		8.65	2.25		10.90	12.85
374	2″ x 6″			550	.029		12.45	1.64		14.09	16.10
376	2″ x 8″			390	.041		16.30	2.31		18.61	21.50
378	2″ x 10″			385	.042		19.90	2.34		22.24	25.50
380	2″ x 12″			380	.042		24.50	2.37		26.87	30
382	Joists, 2″ x 4″			1250	.013		8.40	.72		9.12	10.25
384	2″ x 6″			1250	.013		12.40	.72		13.12	14.70
386	2″ x 8″			1100	.015		16.05	.82		16.87	18.85
388	2″ x 10″			500	.032		19.70	1.80		21.50	24
390	2″ x 12″			875	.018		24	1.03		25.03	28
392	Railings and trim, 5/4″ x 4″		1 Carp	300	.027		5.45	1.50		6.95	8.25
394	2″ x 2″			300	.027		4.42	1.50		5.92	7.10
396	2″ x 4″			300	.027		8.35	1.50		9.85	11.40

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

06 51 Structural Plastic Shapes and Plates

06 51 13 – Plastic Lumber

	06 51 13.12 Structural Plastic Lumber	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1398	2" x 6"	1 Carp	300	.027	L.F.	12.35	1.50		13.85	15.

06 52 Plastic Structural Assemblies

06 52 10 – Fiberglass Structural Assemblies

	06 52 10.10 Castings, Fiberglass								
0010	**CASTINGS, FIBERGLASS**								
0100	Angle, 1" x 1" x 1/8" thick	2 Sswk	240	.067	L.F.	1.86	4.12	5.98	8.
0120	3" x 3" x 1/4" thick		200	.080		6.80	4.95	11.75	15.
0140	4" x 4" x 1/4" thick		200	.080		8.70	4.95	13.65	17.
0160	4" x 4" x 3/8" thick		200	.080		10.30	4.95	15.25	18.
0180	6" x 6" x 1/2" thick		160	.100		26	6.20	32.20	38
1000	Flat sheet, 1/8" thick		140	.114	S.F.	6.65	7.05	13.70	18.
1020	1/4" thick		120	.133		8.70	8.25	16.95	22.
1040	3/8" thick		100	.160		13.90	9.90	23.80	30.
1060	1/2" thick		80	.200		19.25	12.35	31.60	40
2000	Handrail, 42" high, 2" diam. rails pickets 5' OC		32	.500	L.F.	52.50	31	83.50	105
3000	Round bar, 1/4" diam.		240	.067		.41	4.12	4.53	6.
3020	1/2" diam.		200	.080		1.38	4.95	6.33	9.
3040	3/4" diam.		200	.080		2.79	4.95	7.74	10.
3060	1" diam.		160	.100		4.78	6.20	10.98	14.
3080	1-1/4" diam.		160	.100		8.55	6.20	14.75	18.
3100	1-1/2" diam.	2 Sswk	140	.114	L.F.	9.30	7.05	16.35	21
3500	Round tube, 1" diam. x 1/8" thick		240	.067		2.60	4.12	6.72	9.
3520	2" diam. x 1/4" thick		200	.080		8.95	4.95	13.90	17.
3540	3" diam. x 1/4" thick		160	.100		10.35	6.20	16.55	21
4000	Square bar, 1/2" square		240	.067		4.08	4.12	8.20	10.
4020	1" square		200	.080		6	4.95	10.95	14.
4040	1-1/2" square		160	.100		9	6.20	15.20	19.
4500	Square tube, 1" x 1" x 1/8" thick		240	.067		3.05	4.12	7.17	9.
4520	2" x 2" x 1/8" thick		200	.080		6.05	4.95	11	14.
4540	3" x 3" x 1/4" thick		160	.100		11.40	6.20	17.60	22
5000	Threaded rod, 3/8" diam.		320	.050		4.91	3.09	8	10
5020	1/2" diam.		320	.050		5.80	3.09	8.89	11.
5040	5/8" diam.		280	.057		6.15	3.53	9.68	12
5060	3/4" diam.		280	.057		7.35	3.53	10.88	13.
6000	Wide flange beam, 4" x 4" x 1/4" thick		120	.133		10.25	8.25	18.50	24
6020	6" x 6" x 1/4" thick		100	.160		16.05	9.90	25.95	33
6040	8" x 8" x 3/8" thick		80	.200		37.50	12.35	49.85	60
	06 52 10.20 Fiberglass Stair Treads								
0010	**FIBERGLASS STAIR TREADS**								
0100	24" wide	2 Sswk	52	.308	Ea.	22.50	19.05	41.55	54
0140	30" wide		52	.308		28	19.05	47.05	60
0180	36" wide		52	.308		33.50	19.05	52.55	66
0220	42" wide		52	.308		39	19.05	58.05	72
	06 52 10.30 Fiberglass Grating								
0010	**FIBERGLASS GRATING**								
0100	Molded, green (for mod. corrosive environment)								
0140	1" x 4" mesh, 1" thick	2 Sswk	400	.040	S.F.	5.85	2.47	8.32	10
0180	1-1/2" square mesh, 1" thick		400	.040		12.90	2.47	15.37	18
0220	1-1/4" thick		400	.040		6.10	2.47	8.57	10

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

06 52 Plastic Structural Assemblies

06 52 10 – Fiberglass Structural Assemblies

	06 52 10.30 Fiberglass Grating	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0260	1-1/2" thick	2 Sswk	400	.040	S.F.	18.80	2.47		21.27	24.50
0300	2" square mesh, 2" thick	↓	320	.050	↓	18.30	3.09		21.39	25
1000	Orange (for highly corrosive environment)									
1040	1" x 4" mesh, 1" thick	2 Sswk	400	.040	S.F.	11.85	2.47		14.32	16.80
1080	1-1/2" square mesh, 1" thick		400	.040		16.35	2.47		18.82	22
1120	1-1/4" thick		400	.040		13.75	2.47		16.22	18.90
1160	1-1/2" thick		400	.040		16.20	2.47		18.67	21.50
1200	2" square mesh, 2" thick	↓	320	.050	↓	14.45	3.09		17.54	20.50
3000	Pultruded, green (for mod. corrosive environment)									
3040	1" OC bar spacing, 1" thick	2 Sswk	400	.040	S.F.	11.05	2.47		13.52	15.95
3080	1-1/2" thick	2 Sswk	320	.050	S.F.	12.75	3.09		15.84	18.80
3120	1-1/2" OC bar spacing, 1" thick		400	.040		11.50	2.47		13.97	16.45
3160	1-1/2" thick	↓	400	.040	↓	12.80	2.47		15.27	17.85
4000	Grating support legs, fixed height, no base				Ea.	35			35	38.50
4040	With base					28.50			28.50	31.50
4080	Adjustable to 60"				↓	42.50			42.50	47

06 52 10.40 Fiberglass Floor Grating

	FIBERGLASS FLOOR GRATING									
0100	Reinforced polyester, fire retardant, 1" x 4" grid, 1" thick	E-4	510	.063	S.F.	10.55	3.91	.29	14.75	17.95
0200	1-1/2" x 6" mesh, 1-1/2" thick		500	.064		12.15	3.99	.30	16.44	19.80
0300	With grit surface, 1-1/2" x 6" grid, 1-1/2" thick	↓	500	.064	↓	12.40	3.99	.30	16.69	20

06 63 Plastic Railings

06 63 10 – Plastic (PVC) Railings

06 63 10.10 Plastic Railings

	PLASTIC RAILINGS									
0100	Horizontal PVC handrail with balusters, 3-1/2" wide, 36" high	1 Carp	96	.083	L.F.	25.50	4.69		30.19	35
0150	42" high		96	.083		24.50	4.69		29.19	34
0200	Angled PVC handrail with balusters, 3-1/2" wide, 36" high		72	.111		25.50	6.25		31.75	37.50
0250	42" high		72	.111		29.50	6.25		35.75	42
0300	Post sleeve for 4 x 4 post		96	.083	↓	27.50	4.69		32.19	37.50
0400	Post cap for 4 x 4 post, flat profile		48	.167	Ea.	13	9.40		22.40	28.50
0450	Newel post style profile		48	.167		36.50	9.40		45.90	54.50
0500	Raised corbeled profile		48	.167		35	9.40		44.40	52.50
0550	Post base trim for 4 x 4 post	↓	96	.083	↓	18.35	4.69		23.04	27

06 65 Plastic Trim

06 65 10 – PVC Trim

06 65 10.10 PVC Trim, Exterior

	PVC TRIM, EXTERIOR									
0100	Cornerboards, 5/4" x 6" x 6"	1 Carp	240	.033	L.F.	10.05	1.88		11.93	13.90
0110	Door/window casing, 1" x 4"		200	.040		2.47	2.25		4.72	6.05
0120	1" x 6"		200	.040		3.50	2.25		5.75	7.20
0130	1" x 8"		195	.041		3.90	2.31		6.21	7.75
0140	1" x 10"		195	.041		4.98	2.31		7.29	8.90
0150	1" x 12"		190	.042		6.40	2.37		8.77	10.60
0160	5/4" x 4"		195	.041		3.24	2.31		5.55	7
0170	5/4" x 6"		195	.041		4.04	2.31		6.35	7.90
0180	5/4" x 8"	↓	190	.042	↓	4.79	2.37		7.16	8.80

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

06 65 10 – PVC Trim

06 65 10.10 PVC Trim, Exterior		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&
0190	5/4" x 10"	1 Carp	190	.042	L.F.	5.95	2.37		8.32	10.
0200	5/4" x 12"		185	.043		6.90	2.43		9.33	11.
0210	Fascia, 1" x 4"		250	.032		2.47	1.80		4.27	5.
0220	1" x 6"	1 Carp	250	.032	L.F.	3.50	1.80		5.30	6.
0230	1" x 8"		225	.036		3.90	2		5.90	7.
0240	1" x 10"		225	.036		4.98	2		6.98	8.
0250	1" x 12"		200	.040		6.40	2.25		8.65	10.
0260	5/4" x 4"		240	.033		3.24	1.88		5.12	6.
0270	5/4" x 6"		240	.033		4.04	1.88		5.92	7.
0280	5/4" x 8"		215	.037		4.79	2.09		6.88	8.
0290	5/4" x 10"		215	.037		5.95	2.09		8.04	9.
0300	5/4" x 12"		190	.042		6.90	2.37		9.27	11.
0310	Frieze, 1" x 4"		250	.032		2.47	1.80		4.27	5.
0320	1" x 6"		250	.032		3.50	1.80		5.30	6.
0330	1" x 8"		225	.036		3.90	2		5.90	7.
0340	1" x 10"		225	.036		4.98	2		6.98	8.
0350	1" x 12"		200	.040		6.40	2.25		8.65	10.
0360	5/4" x 4"		240	.033		3.24	1.88		5.12	6.
0370	5/4" x 6"		240	.033		4.04	1.88		5.92	7.
0380	5/4" x 8"		215	.037		4.79	2.09		6.88	8.
0390	5/4" x 10"		215	.037		5.95	2.09		8.04	9.
0400	5/4" x 12"		190	.042		6.90	2.37		9.27	11.
0410	Rake, 1" x 4"		200	.040		2.47	2.25		4.72	6.
0420	1" x 6"		200	.040		3.50	2.25		5.75	7.
0430	1" x 8"		190	.042		3.90	2.37		6.27	7.
0440	1" x 10"		190	.042		4.98	2.37		7.35	9.
0450	1" x 12"		180	.044		6.40	2.50		8.90	10.
0460	5/4" x 4"		195	.041		3.24	2.31		5.55	7.
0470	5/4" x 6"		195	.041		4.04	2.31		6.35	7.
0480	5/4" x 8"		185	.043		4.79	2.43		7.22	8.
0490	5/4" x 10"		185	.043		5.95	2.43		8.38	10.
0500	5/4" x 12"		175	.046		6.90	2.57		9.47	11.
0510	Rake trim, 1" x 4"		225	.036		2.47	2		4.47	5.
0520	1" x 6"		225	.036		3.50	2		5.50	6.
0560	5/4" x 4"		220	.036		3.24	2.05		5.29	6.
0570	5/4" x 6"		220	.036		4.04	2.05		6.09	7.
0610	Soffit, 1" x 4"	2 Carp	420	.038		2.47	2.14		4.61	5.
0620	1" x 6"		420	.038		3.50	2.14		5.64	7.
0630	1" x 8"		420	.038		3.90	2.14		6.04	7.
0640	1" x 10"		400	.040		4.98	2.25		7.23	8.
0650	1" x 12"		400	.040		6.40	2.25		8.65	10.
0660	5/4" x 4"		410	.039		3.24	2.20		5.44	6.
0670	5/4" x 6"		410	.039		4.04	2.20		6.24	7.
0680	5/4" x 8"	2 Carp	410	.039	L.F.	4.79	2.20		6.99	8.
0690	5/4" x 10"		390	.041		5.95	2.31		8.26	10.
0700	5/4" x 12"		390	.041		6.90	2.31		9.21	11.

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06 73 Composite Decking

06 73 13 – Composite Decking

6 73 13.10 Woodgrained Composite Decking	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
010 **WOODGRAINED COMPOSITE DECKING**									
100 Woodgrained composite decking, 1" x 6"	2 Carp	640	.025	L.F.	3.24	1.41		4.65	5.65
110 Grooved edge		660	.024		3.42	1.36		4.78	5.80
120 2" x 6"		640	.025		4.69	1.41		6.10	7.25
130 Encased, 1" x 6"		640	.025		5.40	1.41		6.81	8.05
140 Grooved edge		660	.024		5.60	1.36		6.96	8.20
150 2" x 6"		640	.025		6.65	1.41		8.06	9.40

06 81 Composite Railings

06 81 10 – Encased Railings

6 81 10.10 Encased Composite Railings

010 **ENCASED COMPOSITE RAILINGS**									
100 Encased composite railing, 6' long, 36" high, incl. balusters	1 Carp	16	.500	Ea.	180	28		208	240
110 42" high, incl. balusters		16	.500		241	28		269	305
120 8' long, 36" high, incl. balusters		12	.667		248	37.50		285.50	330
130 42" high, incl. balusters		12	.667		365	37.50		402.50	455
140 Accessories, post sleeve, 4" x 4", 39" long		32	.250		51.50	14.10		65.60	77.50
150 96" long		24	.333		81.50	18.75		100.25	118
160 6" x 6", 39" long		32	.250		60.50	14.10		74.60	88
170 96" long		24	.333		166	18.75		184.75	210
180 Accessories, post skirt, 4" x 4"		96	.083		5.45	4.69		10.14	13
190 6" x 6"		96	.083		6.35	4.69		11.04	14
200 Post cap, 4" x 4", flat		48	.167		9.80	9.40		19.20	24.50
210 Pyramid		48	.167		8.50	9.40		17.90	23.50
220 Post cap, 6" x 6", flat		48	.167		12.70	9.40		22.10	28
230 Pyramid		48	.167		16.25	9.40		25.65	32

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

Division Notes

	CREW	DAILY OUTPUT	LABOR-HOURS	UNIT	BARE COSTS MAT.	BARE COSTS LABOR	BARE COSTS EQUIP.	BARE COSTS TOTAL	TOTAL INCL O&P

Estimating Tips

07 10 00 Dampproofing and Waterproofing

- Be sure of the job specifications before pricing this subdivision. The difference in cost between waterproofing and dampproofing can be great. Waterproofing will hold back standing water. Dampproofing prevents the transmission of water vapor. Also included in this section are vapor retarding membranes.

07 20 00 Thermal Protection

- Insulation and fireproofing products are measured by area, thickness, volume, or R-value. Specifications may give only what the specific R-value should be in a certain situation. The estimator may need to choose the type of insulation to meet that R-value.

07 30 00 Steep Slope Roofing
07 40 00 Roofing and Siding Panels

- Many roofing and siding products are bought and sold by the square. One square is equal to an area that measures 100 square feet.

  This simple change in unit of measure could create a large error if the estimator is not observant. Accessories necessary for a complete installation must be figured into any calculations for both material and labor.

07 50 00 Membrane Roofing
07 60 00 Flashing and Sheet Metal
07 70 00 Roofing and Wall Specialties and Accessories

- The items in these subdivisions compose a roofing system. No one component completes the installation, and all must be estimated. Built-up or single-ply membrane roofing systems are made up of many products and installation trades. Wood blocking at roof perimeters or penetrations, parapet coverings, reglets, roof drains, gutters, downspouts, sheet metal flashing, skylights, smoke vents, and roof hatches all need to be considered along with the roofing material. Several different installation trades will need to work together on the roofing system. Inherent difficulties in the scheduling and coordination of various trades must be accounted for when estimating labor costs.

07 90 00 Joint Protection

- To complete the weather-tight shell, the sealants and caulkings must be estimated. Where different materials meet—at expansion joints, at flashing penetrations, and at hundreds of other locations throughout a construction project—caulking and sealants provide another line of defense against water penetration. Often, an entire system is based on the proper location and placement of caulking or sealants. The detailed drawings that are included as part of a set of architectural plans show typical locations for these materials. When caulking or sealants are shown at typical locations, this means the estimator must include them for all the locations where this detail is applicable. Be careful to keep different types of sealants separate, and remember to consider backer rods and primers if necessary.

Reference Numbers

Reference numbers are shown at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear. ■

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07 01 Operation and Maint. of Thermal and Moisture Protection

07 01 50 – Maintenance of Membrane Roofing

07 01 50.10 Roof Coatings	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **ROOF COATINGS**									
0012 Asphalt, brush grade, material only				Gal.	8.60			8.60	9.
0200 Asphalt base, fibered aluminum coating [G]					10.40			10.40	11.
0300 Asphalt primer, 5 gal.					9.70			9.70	10.
0600 Coal tar pitch, 200 lb. barrels				Ton	1,325			1,325	1,450
0700 Tar roof cement, 5 gal. lots				Gal.	13.20			13.20	14.
0800 Glass fibered roof & patching cement, 5 gal.				Gal.	10.40			10.40	11.
0900 Reinforcing glass membrane, 450 S.F./roll				Ea.	52.50			52.50	57.
1000 Neoprene roof coating, 5 gal., 2 gal./sq.				Gal.	30			30	33
1100 Roof patch & flashing cement, 5 gal.					7.85			7.85	8.
1200 Roof resaturant, glass fibered, 3 gal./sq.					8.15			8.15	8.

07 01 90 – Maintenance of Joint Protection

07 01 90.81 Joint Sealant Replacement

0010 **JOINT SEALANT REPLACEMENT**									
0050 Control joints in concrete floors/slabs									
0100 Option 1 for joints with hard dry sealant									
0110 Step 1: Sawcut to remove 95% of old sealant									
0112 1/4" wide x 1/2" deep, with single saw blade	C-27	4800	.003	L.F.	.01	.18	.03	.22	
0114 3/8" wide x 3/4" deep, with single saw blade		4000	.004		.02	.21	.04	.27	
0116 1/2" wide x 1" deep, with double saw blades		3600	.004		.05	.24	.04	.33	
0118 3/4" wide x 1-1/2" deep, with double saw blades		3200	.005		.09	.27	.05	.41	
0120 Step 2: Water blast joint faces and edges	C-29	2500	.003			.15	.04	.19	
0130 Step 3: Air blast joint faces and edges	C-28	2000	.004			.21	.02	.23	
0140 Step 4: Sand blast joint faces and edges	E-11	2000	.016			.80	.16	.96	1.
0150 Step 5: Air blast joint faces and edges	C-28	2000	.004			.21	.02	.23	
0200 Option 2 for joints with soft pliable sealant									
0210 Step 1: Plow joint with rectangular blade	B-62	2600	.009	L.F.		.46	.10	.56	
0220 Step 2: Sawcut to re-face joint faces									
0222 1/4" wide x 1/2" deep, with single saw blade	C-27	2400	.007	L.F.	.02	.35	.07	.44	
0224 3/8" wide x 3/4" deep, with single saw blade		2000	.008		.03	.43	.08	.54	
0226 1/2" wide x 1" deep, with double saw blades		1800	.009		.06	.47	.09	.62	
0228 3/4" wide x 1-1/2" deep, with double saw blades		1600	.010		.12	.53	.10	.75	1.
0230 Step 3: Water blast joint faces and edges	C-29	2500	.003			.15	.04	.19	
0240 Step 4: Air blast joint faces and edges	C-28	2000	.004			.21	.02	.23	
0250 Step 5: Sand blast joint faces and edges	E-11	2000	.016			.80	.16	.96	1.
0260 Step 6: Air blast joint faces and edges	C-28	2000	.004			.21	.02	.23	
0290 For saw cutting new control joints, see Section 03 15 16.20									
8910 For backer rod, see Section 07 91 23.10									
8920 For joint sealant, see Section 03 15 16.30 or 07 92 13.20									

07 05 Common Work Results for Thermal and Moisture Protectio

07 05 05 – Selective Demolition for Thermal and Moisture Protection

07 05 05.10 Selective Demo., Thermal and Moist. Protection

0010 **SELECTIVE DEMO., THERMAL AND MOISTURE PROTECTION**									
0020 Caulking/sealant, to 1" x 1" joint R024119-10	1 Clab	600	.013	L.F.		.61		.61	
0120 Downspouts, including hangers		350	.023	"		1.04		1.04	1.
0220 Flashing, sheet metal		290	.028	S.F.		1.26		1.26	1.
0420 Gutters, aluminum or wood, edge hung		240	.033	L.F.		1.52		1.52	2.
0520 Built-in		100	.080	"		3.65		3.65	5.
0620 Insulation, air/vapor barrier		3500	.002	S.F.		.10		.10	

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07 05 05 – Selective Demolition for Thermal and Moisture Protection

7 05 05.10 Selective Demo., Thermal and Moist. Protection	Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&P
670 Batts or blankets	1 Clab	1400	.006	C.F.		.26		.26	.39
720 Foamed or sprayed in place	2 Clab	1000	.016	B.F.		.73		.73	1.09
770 Loose fitting	1 Clab	3000	.003	C.F.		.12		.12	.18
870 Rigid board		3450	.002	B.F.		.11		.11	.16
120 Roll roofing, cold adhesive		12	.667	Sq.		30.50		30.50	45.50
170 Roof accessories, adjustable metal chimney flashing		9	.889	Ea.		40.50		40.50	60.50
171 Selective demo, firstopping		20	.400			18.25		18.25	27
325 Plumbing vent flashing		32	.250			11.40		11.40	17
375 Ridge vent strip, aluminum		310	.026	L.F.		1.18		1.18	1.75
620 Skylight to 10 S.F.		8	1	Ea.		45.50		45.50	68
120 Roof edge, aluminum soffit and fascia		570	.014	L.F.		.64		.64	.95
170 Concrete coping, up to 12" wide	2 Clab	160	.100			4.56		4.56	6.80
220 Drip edge	1 Clab	1000	.008			.36		.36	.54
270 Gravel stop		950	.008			.38		.38	.57
370 Sheet metal coping, up to 12" wide		240	.033			1.52		1.52	2.26
470 Roof insulation board, over 2" thick	B-2	7800	.005	B.F.		.24		.24	.35
520 Up to 2" thick	"	3900	.010	S.F.		.47		.47	.70
620 Roof ventilation, louvered gable vent	1 Clab	16	.500	Ea.		23		23	34
670 Remove, roof hatch	G-3	15	2.133			121		121	181
675 Rafter vents	1 Clab	960	.008			.38		.38	.57
720 Soffit vent and/or fascia vent		575	.014	L.F.		.63		.63	.94
775 Soffit vent strip, aluminum, 3" to 4" wide		160	.050			2.28		2.28	3.40
820 Roofing accessories, shingle moulding, to 1" x 4"		1600	.005			.23		.23	.34
870 Cant strip	B-2	2000	.020			.92		.92	1.37
920 Concrete block walkway	1 Clab	230	.035			1.59		1.59	2.36
070 Roofing, felt paper, #15		70	.114	Sq.		5.20		5.20	7.75
125 #30 felt		30	.267	"		12.15		12.15	18.10
170 Asphalt shingles, 1 layer	B-2	3500	.011	S.F.		.53		.53	.78
180 2 layers	"	1750	.023	"		1.05		1.05	1.57
370 Modified bitumen	B-2	26	1.538	Sq.		71		71	105
420 Built-up, no gravel, 3 ply		25	1.600			73.50		73.50	110
470 4 ply		21	1.905			87.50		87.50	130
620 5 ply		1600	.025	S.F.		1.15		1.15	1.71
720 5 ply, with gravel		890	.045			2.07		2.07	3.08
725 Loose gravel removal		5000	.008			.37		.37	.55
730 Embedded gravel removal		2000	.020			.92		.92	1.37
870 Fiberglass sheet		1200	.033			1.53		1.53	2.28
120 Slate shingles		1900	.021			.97		.97	1.44
170 Ridge shingles, clay or slate		2000	.020	L.F.		.92		.92	1.37
320 Single ply membrane, attached at seams		52	.769	Sq.		35.50		35.50	52.50
370 Ballasted		75	.533			24.50		24.50	36.50
420 Fully adhered		39	1.026			47		47	70.50
550 Roof hatch, 2'-6" x 3'-0"	1 Clab	10	.800	Ea.		36.50		36.50	54.50
670 Wood shingles	B-2	2200	.018	S.F.		.84		.84	1.25
820 Sheet metal roofing	"	2150	.019			.86		.86	1.27
970 Siding, horizontal wood clapboards	1 Clab	380	.021			.96		.96	1.43
025 Exterior insulation finish system	"	120	.067			3.04		3.04	4.53
070 Tempered hardboard, remove and reset	1 Carp	380	.021			1.19		1.19	1.76
120 Tempered hardboard sheet siding	"	375	.021			1.20		1.20	1.79
170 Metal, corner strips	1 Clab	850	.009	L.F.		.43		.43	.64
225 Horizontal strips		444	.018	S.F.		.82		.82	1.22
320 Vertical strips		400	.020			.91		.91	1.36
520 Wood shingles		350	.023			1.04		1.04	1.55

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07 05 Common Work Results for Thermal and Moisture Protectio

07 05 05 – Selective Demolition for Thermal and Moisture Protection

07 05 05.10 Selective Demo., Thermal and Moist. Protection	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl 08
5620 Stucco siding	1 Clab	360	.022	S.F.		1.01		1.01	1
5670 Textured plywood		725	.011			.50		.50	
5720 Vinyl siding		510	.016			.72		.72	1
5770 Corner strips		900	.009	L.F.		.41		.41	
5870 Wood, boards, vertical		400	.020	S.F.		.91		.91	1
5880 Steel siding, corrugated/ribbed		402.50	.020	"		.91		.91	1
5920 Waterproofing, protection/drain board	2 Clab	3900	.004	B.F.		.19		.19	
5970 Over 1/2" thick		1750	.009	S.F.		.42		.42	
6020 To 1/2" thick		2000	.008	"		.36		.36	

07 11 Dampproofing

07 11 13 – Bituminous Dampproofing

07 11 13.10 Bituminous Asphalt Coating

0010 **BITUMINOUS ASPHALT COATING**									
0030 Brushed on, below grade, 1 coat	1 Rofc	665	.012	S.F.	.22	.60		.82	1
0100 2 coat	1 Rofc	500	.016	S.F.	.43	.79		1.22	1
0300 Sprayed on, below grade, 1 coat		830	.010		.22	.48		.70	1
0400 2 coat		500	.016		.42	.79		1.21	1
0500 Asphalt coating, with fibers				Gal.	10.40			10.40	11
0600 Troweled on, asphalt with fibers, 1/16" thick	1 Rofc	500	.016	S.F.	.45	.79		1.24	1
0700 1/8" thick		400	.020		.80	.99		1.79	2
1000 1/2" thick		350	.023		2.60	1.13		3.73	4

07 11 16 – Cementitious Dampproofing

07 11 16.20 Cementitious Parging

0010 **CEMENTITIOUS PARGING**									
0020 Portland cement, 2 coats, 1/2" thick	D-1	250	.064	S.F.	.35	3.21		3.56	5
0100 Waterproofed Portland cement, 1/2" thick, 2 coats	"	250	.064	"	2.66	3.21		5.87	7

07 12 Built-up Bituminous Waterproofing

07 12 13 – Built-Up Asphalt Waterproofing

07 12 13.20 Membrane Waterproofing

0010 **MEMBRANE WATERPROOFING**									
0012 On slabs, 1 ply, felt, mopped	G-1	3000	.019	S.F.	.40	.87	.18	1.45	2
0100 On slabs, 1 ply, glass fiber fabric, mopped		2100	.027		.46	1.24	.26	1.96	2
0300 On slabs, 2 ply, felt, mopped		2500	.022		.81	1.04	.22	2.07	2
0400 On slabs, 2 ply, glass fiber fabric, mopped		1650	.034		1.04	1.57	.33	2.94	4
0600 On slabs, 3 ply, felt, mopped		2100	.027		1.21	1.24	.26	2.71	3
0700 On slabs, 3 ply, glass fiber fabric, mopped		1550	.036		1.37	1.67	.36	3.40	4
0710 Asphaltic hardboard protection board, 1/8" thick	2 Rofc	500	.032		1.24	1.59		2.83	3
1000 EPS membrane protection board, 1/4" thick		3500	.005		.37	.23		.60	
1050 3/8" thick		3500	.005		.41	.23		.64	
1060 1/2" thick		3500	.005		.44	.23		.67	
1070 Fiberglass fabric, black, 20/10 mesh		116	.138	Sq.	18.05	6.85		24.90	31

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07 13 Sheet Waterproofing

07 13 53 – Elastomeric Sheet Waterproofing

	07 13 53.10 Elastomeric Sheet Waterproofing and Access.	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**ELASTOMERIC SHEET WATERPROOFING AND ACCESS.**									
0090	EPDM, plain, 45 mils thick	2 Rofc	580	.028	S.F.	.79	1.37		2.16	3.08
0100	60 mils thick		570	.028		.91	1.39		2.30	3.26
0300	Nylon reinforced sheets, 45 mils thick		580	.028		.97	1.37		2.34	3.29
0400	60 mils thick		570	.028		1.13	1.39		2.52	3.50
0600	Vulcanizing splicing tape for above, 2" wide				C.L.F.	63			63	69.50
0700	4" wide				"	355			355	390
0900	Adhesive, bonding, 60 S.F./gal.				Gal.	42			42	46
1000	Splicing, 75 S.F./gal.				Gal.	37			37	40.50
1200	Neoprene sheets, plain, 45 mils thick	2 Rofc	580	.028	S.F.	1.31	1.37		2.68	3.66
1300	60 mils thick		570	.028		2.03	1.39		3.42	4.49
1500	Nylon reinforced, 45 mils thick		580	.028		2.63	1.37		4	5.10
1600	60 mils thick		570	.028		4.81	1.39		6.20	7.55
1800	120 mils thick		500	.032		8.10	1.59		9.69	11.45
1900	Adhesive, splicing, 150 S.F./gal. per coat				Gal.	37			37	40.50
2100	Fiberglass reinforced, fluid applied, 1/8" thick	2 Rofc	500	.032	S.F.	1.58	1.59		3.17	4.31
2200	Polyethylene and rubberized asphalt sheets, 60 mils thick		550	.029		.70	1.44		2.14	3.11
2400	Polyvinyl chloride sheets, plain, 10 mils thick		580	.028		.17	1.37		1.54	2.41
2500	20 mils thick		570	.028		.23	1.39		1.62	2.51
2700	30 mils thick		560	.029		.23	1.42		1.65	2.55
3000	Adhesives, trowel grade, 40-100 S.F./gal.				Gal.	28.50			28.50	31.50
3100	Brush grade, 100-250 S.F./gal.				"	25.50			25.50	28.50
3300	Bitumen modified polyurethane, fluid applied, 55 mils thick	2 Rofc	665	.024	S.F.	1.17	1.19		2.36	3.22

07 16 Cementitious and Reactive Waterproofing

07 16 16 – Crystalline Waterproofing

07 16 16.20 Cementitious Waterproofing

0010	**CEMENTITIOUS WATERPROOFING**									
0020	1/8" application, sprayed on	G-2A	1000	.024	S.F.	.67	1.06	.66	2.39	3.14
0050	4 coat cementitious metallic slurry	1 Cefi	1.20	6.667	C.S.F.	81.50	355		436.50	610

07 17 Bentonite Waterproofing

07 17 13 – Bentonite Panel Waterproofing

07 17 13.10 Bentonite

0010	**BENTONITE**									
0020	Panels, 4' x 4', 3/16" thick	1 Rofc	625	.013	S.F.	2.33	.63		2.96	3.59
0100	Rolls, 3/8" thick, with geotextile fabric both sides	"	550	.015	"	1.97	.72		2.69	3.34
0300	Granular bentonite, 50 lb. bags (.625 C.F.)				Bag	25.50			25.50	28
0400	3/8" thick, troweled on	1 Rofc	475	.017	S.F.	1.28	.84		2.12	2.76
0500	Drain board, expanded polystyrene, 1-1/2" thick	1 Rohe	1600	.005		.42	.19		.61	.76
0510	2" thick		1600	.005		.56	.19		.75	.92
0520	3" thick		1600	.005		.84	.19		1.03	1.22
0530	4" thick		1600	.005		1.12	.19		1.31	1.53
0600	With filter fabric, 1-1/2" thick		1600	.005		.52	.19		.71	.87
0625	2" thick		1600	.005		.66	.19		.85	1.02
0650	3" thick		1600	.005		.94	.19		1.13	1.33
0675	4" thick		1600	.005		1.22	.19		1.41	1.64

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07 19 Water Repellents

07 19 19 – Silicone Water Repellents

07 19 19.10 Silicone Based Water Repellents		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **SILICONE BASED WATER REPELLENTS**										
0020 Water base liquid, roller applied		2 Rofc	7000	.002	S.F.	.45	.11		.56	
0200 Silicone or stearate, sprayed on CMU, 1 coat		1 Rofc	4000	.002		.42	.10		.52	
0300 2 coats		"	3000	.003		.84	.13		.97	1.

07 21 Thermal Insulation

07 21 13 – Board Insulation

07 21 13.10 Rigid Insulation

0010 **RIGID INSULATION**, for walls										
0040 Fiberglass, 1.5#/C.F., unfaced, 1" thick, R4.1	G	1 Carp	1000	.008	S.F.	.46	.45		.91	1
0060 1-1/2" thick, R6.2	G		1000	.008		.56	.45		1.01	1.
0080 2" thick, R8.3	G		1000	.008		.62	.45		1.07	1.
0120 3" thick, R12.4	G		800	.010		.75	.56		1.31	1.
0370 3#/C.F., unfaced, 1" thick, R4.3	G		1000	.008		.73	.45		1.18	1.
0390 1-1/2" thick, R6.5	G		1000	.008		.93	.45		1.38	1.
0400 2" thick, R8.7	G		890	.009		1.47	.51		1.98	2.
0420 2-1/2" thick, R10.9	G		800	.010		1.32	.56		1.88	2.
0440 3" thick, R13	G		800	.010		2.08	.56		2.64	3.
0520 Foil faced, 1" thick, R4.3	G		1000	.008		1.02	.45		1.47	1.
0540 1-1/2" thick, R6.5	G		1000	.008		1.41	.45		1.86	2.
0560 2" thick, R8.7	G		890	.009		1.77	.51		2.28	2.
0580 2-1/2" thick, R10.9	G		800	.010		2.23	.56		2.79	3.
0600 3" thick, R13	G		800	.010		2.36	.56		2.92	3.
1600 Isocyanurate, 4' x 8' sheet, foil faced, both sides										
1610 1/2" thick	G	1 Carp	800	.010	S.F.	.37	.56		.93	1
1620 5/8" thick	G		800	.010		.79	.56		1.35	1.
1630 3/4" thick	G		800	.010		.56	.56		1.12	1
1640 1" thick	G		800	.010		.70	.56		1.26	1.
1650 1-1/2" thick	G		730	.011		.83	.62		1.45	1.
1660 2" thick	G		730	.011		1.11	.62		1.73	2.
1670 3" thick	G		730	.011		1.94	.62		2.56	3.
1680 4" thick	G		730	.011		2.66	.62		3.28	3.
1700 Perlite, 1" thick, R2.77	G		800	.010		.59	.56		1.15	1.
1750 2" thick, R5.55	G		730	.011		1.06	.62		1.68	2.
1900 Extruded polystyrene, 25 psi compressive strength, 1" thick, R5	G		800	.010		.73	.56		1.29	1.
1940 2" thick, R10	G		730	.011		1.45	.62		2.07	2.
1960 3" thick, R15	G		730	.011		2.18	.62		2.80	3.
2100 Expanded polystyrene, 1" thick, R3.85	G	1 Carp	800	.010	S.F.	.28	.56		.84	1
2120 2" thick, R7.69	G		730	.011		.56	.62		1.18	1
2140 3" thick, R11.49	G		730	.011		.84	.62		1.46	1

07 21 13.13 Foam Board Insulation

0010 **FOAM BOARD INSULATION**										
0600 Polystyrene, expanded, 1" thick, R4	G	1 Carp	680	.012	S.F.	.28	.66		.94	1
0700 2" thick, R8	G	"	675	.012	"	.56	.67		1.23	1

07 21 16 – Blanket Insulation

07 21 16.10 Blanket Insulation for Floors/Ceilings

0010 **BLANKET INSULATION FOR FLOORS/CEILINGS**										
0020 Including spring type wire fasteners										
2000 Fiberglass, blankets or batts, paper or foil backing										
2100 3-1/2" thick, R13	G	1 Carp	700	.011	S.F.	.73	.64		1.37	1

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07 21 16 – Blanket Insulation

7 21 16.10 Blanket Insulation for Floors/Ceilings			Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
150	6-1/4" thick, R19	G	1 Carp	600	.013	S.F.	.99	.75		1.74	2.21
210	9-1/2" thick, R30	G		500	.016		1.14	.90		2.04	2.59
220	12" thick, R38	G		475	.017		1.44	.95		2.39	2.99
000	Unfaced, 3-1/2" thick, R13	G		600	.013		.54	.75		1.29	1.71
010	6-1/4" thick, R19	G		500	.016		.78	.90		1.68	2.20
020	9-1/2" thick, R30	G		450	.018		1.13	1		2.13	2.73
030	12" thick, R38	G		425	.019		1.66	1.06		2.72	3.41
7 21 16.20 Blanket Insulation for Walls											
010	**BLANKET INSULATION FOR WALLS**										
020	Kraft faced fiberglass, 3-1/2" thick, R11, 15" wide	G	1 Carp	1350	.006	S.F.	.53	.33		.86	1.08
030	23" wide	G		1600	.005		.53	.28		.81	1
060	R13, 11" wide	G		1150	.007		.60	.39		.99	1.24
080	15" wide	G		1350	.006		.60	.33		.93	1.16
100	23" wide	G		1600	.005		.60	.28		.88	1.08
110	R15, 11" wide	G		1150	.007		.89	.39		1.28	1.56
120	15" wide	G		1350	.006		.89	.33		1.22	1.48
130	23" wide	G		1600	.005		.89	.28		1.17	1.40
140	6" thick, R19, 11" wide	G		1150	.007		.86	.39		1.25	1.53
160	15" wide	G		1350	.006		.86	.33		1.19	1.45
180	23" wide	G		1600	.005		.86	.28		1.14	1.37
182	R21, 11" wide	G		1150	.007		.82	.39		1.21	1.48
184	15" wide	G		1350	.006		.82	.33		1.15	1.40
186	23" wide	G		1600	.005		.82	.28		1.10	1.32
188	9" thick, R30, 11" wide	G		985	.008		1.14	.46		1.60	1.93
200	15" wide	G		1150	.007		1.14	.39		1.53	1.83
220	23" wide	G		1350	.006		1.14	.33		1.47	1.75
230	12" thick, R38, 11" wide	G		985	.008		1.44	.46		1.90	2.26
240	15" wide	G	1 Carp	1150	.007	S.F.	1.44	.39		1.83	2.16
260	23" wide	G		1350	.006		1.44	.33		1.77	2.08
410	Foil faced fiberglass, 3-1/2" thick, R13, 11" wide	G		1150	.007		.70	.39		1.09	1.35
420	15" wide	G		1350	.006		.70	.33		1.03	1.27
440	23" wide	G		1600	.005		.70	.28		.98	1.19
442	R15, 11" wide	G		1150	.007		.60	.39		.99	1.24
444	15" wide	G		1350	.006		.60	.33		.93	1.16
446	23" wide	G		1600	.005		.60	.28		.88	1.08
448	6" thick, R19, 11" wide	G		1150	.007		.97	.39		1.36	1.65
460	15" wide	G		1350	.006		.97	.33		1.30	1.57
480	23" wide	G		1600	.005		.97	.28		1.25	1.49
482	R21, 11" wide	G		1150	.007		.84	.39		1.23	1.50
484	15" wide	G		1350	.006		.84	.33		1.17	1.42
486	23" wide	G		1600	.005		.84	.28		1.12	1.34
488	9" thick, R30, 11" wide	G		985	.008		1.54	.46		2	2.37
500	15" wide	G		1150	.007		1.54	.39		1.93	2.27
550	23" wide	G		1350	.006		1.54	.33		1.87	2.19
560	12" thick, R38, 11" wide	G		985	.008		1.44	.46		1.90	2.26
570	15" wide	G		1150	.007		1.44	.39		1.83	2.16
580	23" wide	G		1350	.006		1.44	.33		1.77	2.08
620	Unfaced fiberglass, 3-1/2" thick, R13, 11" wide	G		1150	.007		.54	.39		.93	1.17
820	15" wide	G		1350	.006		.54	.33		.87	1.09
830	23" wide	G		1600	.005		.54	.28		.82	1.01
832	R15, 11" wide	G		1150	.007		.75	.39		1.14	1.41
834	15" wide	G		1350	.006		.75	.33		1.08	1.33

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07 21 16 – Blanket Insulation

07 21 16.20 Blanket Insulation for Walls			Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0836	23" wide	G	1 Carp	1600	.005	S.F.	.75	.28		1.03	1.
0838	6" thick, R19, 11" wide	G		1150	.007		.78	.39		1.17	1.
0860	15" wide	G		1150	.007		.78	.39		1.17	1.
0880	23" wide	G		1350	.006		.78	.33		1.11	1.
0882	R21, 11" wide	G		1150	.007		.97	.39		1.36	1.
0886	15" wide	G		1350	.006		.97	.33		1.30	1.
0888	23" wide	G		1600	.005		.97	.28		1.25	1.
0890	9" thick, R30, 11" wide	G		985	.008		1.13	.46		1.59	1.
0900	15" wide	G		1150	.007		1.13	.39		1.52	1.
0920	23" wide	G		1350	.006		1.13	.33		1.46	1.
0930	12" thick, R38, 11" wide	G		985	.008		1.66	.46		2.12	2.
0940	15" wide	G		1000	.008		1.66	.45		2.11	2.
0960	23" wide	G		1150	.007		1.66	.39		2.05	2.
1300	Wall or ceiling insulation, mineral wool batts										
1320	3-1/2" thick, R15	G	1 Carp	1600	.005	S.F.	1.04	.28		1.32	1.
1340	5-1/2" thick, R23	G		1600	.005		1.63	.28		1.91	2.
1380	7-1/4" thick, R30	G		1350	.006		2.15	.33		2.48	2.
1700	Non-rigid insul., recycled blue cotton fiber, unfaced batts, R13, 16" wide	G		1600	.005		.86	.28		1.14	1.
1710	R19, 16" wide	G		1600	.005		1.29	.28		1.57	1.
1850	Friction fit wire insulation supports, 16" OC			960	.008	Ea.	.13	.47		.60	

07 21 19 – Foamed In Place Insulation

07 21 19.10 Masonry Foamed In Place Insulation

0010	**MASONRY FOAMED IN PLACE INSULATION**										
0100	Amino-plast foam, injected into block core, 6" block	G	G-2A	6000	.004	Ea.	.22	.18	.11	.51	
0110	8" block	G		5000	.005		.26	.21	.13	.60	
0120	10" block	G		4000	.006		.33	.26	.17	.76	
0130	12" block	G		3000	.008		.44	.35	.22	1.01	1.
0140	Injected into cavity wall	G		13000	.002	B.F.	.08	.08	.05	.21	
0150	Preparation, drill holes into mortar joint every 4 V.L.F., 5/8" diameter		1 Clab	960	.008	Ea.		.38		.38	
0160	7/8" diameter			680	.012			.54		.54	
0170	Patch drilled holes, 5/8" diameter			1800	.004		.04	.20		.24	
0180	7/8" diameter			1200	.007		.05	.30		.35	

07 21 23 – Loose-Fill Insulation

07 21 23.10 Poured Loose-Fill Insulation

0010	**POURED LOOSE-FILL INSULATION**										
0020	Cellulose fiber, R3.8 per inch	G	1 Carp	200	.040	C.F.	.83	2.25		3.08	4.
0021	4" thick	G		1000	.008	S.F.	.20	.45		.65	
0022	6" thick	G		800	.010	"	.34	.56		.90	1.
0080	Fiberglass wool, R4 per inch	G		200	.040	C.F.	.71	2.25		2.96	4.
0081	4" thick	G		600	.013	S.F.	.24	.75		.99	1.
0082	6" thick	G		400	.020	"	.35	1.13		1.48	2.
0100	Mineral wool, R3 per inch	G		200	.040	C.F.	.67	2.25		2.92	4.
0101	4" thick	G		600	.013	S.F.	.22	.75		.97	1.
0102	6" thick	G		400	.020	"	.34	1.13		1.47	2.
0300	Polystyrene, R4 per inch	G		200	.040	C.F.	1.78	2.25		4.03	5.
0301	4" thick	G		600	.013	S.F.	.59	.75		1.34	1.
0302	6" thick	G		400	.020	"	.89	1.13		2.02	2.
0400	Perlite, R2.78 per inch	G		200	.040	C.F.	3.15	2.25		5.40	6.
0401	4" thick	G		1000	.008	S.F.	1.05	.45		1.50	1.
0402	6" thick	G		800	.010	"	1.58	.56		2.14	2.

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07 21 Thermal Insulation

07 21 23 – Loose-Fill Insulation

07 21 23.20 Masonry Loose-Fill Insulation		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **MASONRY LOOSE-FILL INSULATION**, vermiculite or perlite										
0100 In cores of concrete block, 4" thick wall, .115 C.F./S.F.	G	D-1	4800	.003	S.F.	.36	.17		.53	.65
0200 6" thick wall, .175 C.F./S.F.	G	D-1	3000	.005	S.F.	.55	.27		.82	1.01
0300 8" thick wall, .258 C.F./S.F.	G		2400	.007		.81	.33		1.14	1.39
0400 10" thick wall, .340 C.F./S.F.	G		1850	.009		1.07	.43		1.50	1.83
0500 12" thick wall, .422 C.F./S.F.	G		1200	.013		1.33	.67		2	2.46
0600 Poured cavity wall, vermiculite or perlite, water repellent	G		250	.064	C.F.	3.15	3.21		6.36	8.30
0700 Foamed in place, urethane in 2-5/8" cavity	G	G-2A	1035	.023	S.F.	1.84	1.02	.64	3.50	4.34
0800 For each 1" added thickness, add	G	"	2372	.010	"	.70	.45	.28	1.43	1.78

07 21 26 – Blown Insulation

07 21 26.10 Blown Insulation

0010 **BLOWN INSULATION** Ceilings, with open access										
0020 Cellulose, 3-1/2" thick, R13	G	G-4	5000	.005	S.F.	.29	.22	.11	.62	.77
0030 5-3/16" thick, R19	G		3800	.006		.42	.29	.14	.85	1.07
0050 6-1/2" thick, R22	G		3000	.008		.54	.37	.18	1.09	1.35
0100 8-11/16" thick, R30	G		2600	.009		.73	.43	.21	1.37	1.67
0120 10-7/8" thick, R38	G		1800	.013		.93	.62	.30	1.85	2.28
1000 Fiberglass, 5.5" thick, R11	G		3800	.006		.24	.29	.14	.67	.87
1050 6" thick, R12	G		3000	.008		.35	.37	.18	.90	1.13
1100 8.8" thick, R19	G		2200	.011		.43	.50	.25	1.18	1.50
1200 10" thick, R22	G		1800	.013		.50	.62	.30	1.42	1.80
1300 11.5" thick, R26	G		1500	.016		.60	.74	.36	1.70	2.16
1350 13" thick, R30	G		1400	.017		.69	.79	.39	1.87	2.37
1450 16" thick, R38	G		1145	.021		.88	.97	.48	2.33	2.93
1500 20" thick, R49	G		920	.026		1.17	1.21	.59	2.97	3.74

07 21 29 – Sprayed Insulation

07 21 29.10 Sprayed-On Insulation

0010 **SPRAYED-ON INSULATION**										
0020 Fibrous/cementitious, finished wall, 1" thick, R3.7	G	G-2	2050	.012	S.F.	.46	.56	.07	1.09	1.41
0100 Attic, 5.2" thick, R19	G		1550	.015	"	.54	.74	.09	1.37	1.79
0200 Fiberglass, R4 per inch, vertical	G		1600	.015	B.F.	.26	.71	.09	1.06	1.44
0210 Horizontal	G		1200	.020	"	.26	.95	.12	1.33	1.83
0300 Closed cell, spray polyurethane foam, 2 lb./C.F. density										
0310 1" thick	G	G-2A	6000	.004	S.F.	.70	.18	.11	.99	1.17
0320 2" thick	G		3000	.008		1.41	.35	.22	1.98	2.35
0330 3" thick	G		2000	.012		2.11	.53	.33	2.97	3.51
0335 3-1/2" thick	G		1715	.014		2.46	.62	.39	3.47	4.10
0340 4" thick	G		1500	.016		2.81	.71	.44	3.96	4.68
0350 5" thick	G		1200	.020		3.51	.88	.55	4.94	5.85
0355 5-1/2" thick	G		1090	.022		3.86	.97	.61	5.44	6.45
0360 6" thick	G	G-2A	1000	.024	S.F.	4.22	1.06	.66	5.94	7.05

07 21 53 – Reflective Insulation

07 21 53.10 Reflective Insulation Options

0010 **REFLECTIVE INSULATION OPTIONS**										
0020 Aluminum foil on reinforced scrim	G	1 Carp	19	.421	C.S.F.	19.05	23.50		42.55	56.50
0100 Reinforced with woven polyolefin	G		19	.421		30	23.50		53.50	69
0500 With single bubble air space, R8.8	G		15	.533		33.50	30		63.50	81.50
0600 With double bubble air space, R9.8	G		15	.533		40.50	30		70.50	89

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07 22 16 – Roof Board Insulation

07 22 16.10 Roof Deck Insulation		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **ROOF DECK INSULATION**, fastening excluded										
0016 Asphaltic cover board, fiberglass lined, 1/8" thick		1 Rofc	1400	.006	S.F.	.50	.28		.78	1.0
0018 1/4" thick			1400	.006		1.02	.28		1.30	1.5
0020 Fiberboard low density, 1/2" thick, R1.39	G		1300	.006		.38	.31		.69	.9
0030 1" thick, R2.78	G		1040	.008		.78	.38		1.16	1.4
0080 1-1/2" thick, R4.17	G		1040	.008		1.18	.38		1.56	1.9
0100 2" thick, R5.56	G		1040	.008		1.13	.38		1.51	1.8
0110 Fiberboard high density, 1/2" thick, R1.3	G		1300	.006		.41	.31		.72	.9
0120 1" thick, R2.5	G		1040	.008		.67	.38		1.05	1.3
0130 1-1/2" thick, R3.8	G		1040	.008		1.42	.38		1.80	2.1
0200 Fiberglass, 3/4" thick, R2.78	G		1300	.006		.64	.31		.95	1.1
0400 15/16" thick, R3.70	G		1300	.006		.88	.31		1.19	1.4
0460 1-1/16" thick, R4.17	G		1300	.006		1.23	.31		1.54	1.8
0600 1-5/16" thick, R5.26	G		1300	.006		1.53	.31		1.84	2.1
0650 2-1/16" thick, R8.33	G		1040	.008		1.72	.38		2.10	2.5
0700 2-7/16" thick, R10	G		1040	.008		1.84	.38		2.22	2.6
0800 Gypsum cover board, fiberglass mat facer, 1/4" thick			1400	.006		.52	.28		.80	1.0
0810 1/2" thick			1300	.006		.69	.31		1	1.2
0820 5/8" thick			1200	.007		.68	.33		1.01	1.2
0830 Primed fiberglass mat facer, 1/4" thick			1400	.006		.63	.28		.91	1.
0840 1/2" thick			1300	.006		.71	.31		1.02	1.2
0850 5/8" thick			1200	.007		.73	.33		1.06	1.3
1650 Perlite, 1/2" thick, R1.32	G		1365	.006		.31	.29		.60	.8
1655 3/4" thick, R2.08	G		1040	.008		.40	.38		.78	1.0
1660 1" thick, R2.78	G		1040	.008		.62	.38		1	1.
1670 1-1/2" thick, R4.17	G		1040	.008		.88	.38		1.26	1.
1680 2" thick, R5.56	G		910	.009		1.10	.44		1.54	1.
1685 2-1/2" thick, R6.67	G		910	.009		1.41	.44		1.85	2.
1690 Tapered for drainage	G	1 Rofc	1040	.008	B.F.	1.21	.38		1.59	1.
1700 Polyisocyanurate, 2#/C.F. density, 3/4" thick	G		1950	.004	S.F.	.65	.20		.85	1.
1705 1" thick	G		1820	.004		.84	.22		1.06	1.
1715 1-1/2" thick	G		1625	.005		1.03	.24		1.27	1.
1725 2" thick	G		1430	.006		1.36	.28		1.64	1.
1735 2-1/2" thick	G		1365	.006		1.72	.29		2.01	2.
1745 3" thick	G		1300	.006		1.13	.31		1.44	1.
1755 3-1/2" thick	G		1300	.006		2.55	.31		2.86	3.
1765 Tapered for drainage	G		1820	.004	B.F.	1.03	.22		1.25	1.
1900 Extruded polystyrene										
1910 15 psi compressive strength, 1" thick, R5	G	1 Rofc	1950	.004	S.F.	.58	.20		.78	
1920 2" thick, R10	G		1625	.005		.75	.24		.99	1.
1930 3" thick, R15	G		1300	.006		1.51	.31		1.82	2.
1932 4" thick, R20	G		1300	.006		2.03	.31		2.34	2.
1934 Tapered for drainage	G		1950	.004	B.F.	.52	.20		.72	
1940 25 psi compressive strength, 1" thick, R5	G		1950	.004	S.F.	.79	.20		.99	1.
1942 2" thick, R10	G		1625	.005		1.50	.24		1.74	2.
1944 3" thick, R15	G		1300	.006		2.29	.31		2.60	3.
1946 4" thick, R20	G		1300	.006		3.16	.31		3.47	3.
1948 Tapered for drainage	G		1950	.004	B.F.	.59	.20		.79	
1950 40 psi compressive strength, 1" thick, R5	G		1950	.004	S.F.	.88	.20		1.08	1.
1952 2" thick, R10	G		1625	.005		1.67	.24		1.91	2.
1954 3" thick, R15	G		1300	.006		2.42	.31		2.73	3.
1956 4" thick, R20	G		1300	.006		3.17	.31		3.48	3.
1958 Tapered for drainage	G		1820	.004	B.F.	.89	.22		1.11	1.

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07 22 Roof and Deck Insulation

07 22 16 – Roof Board Insulation

07 22 16.10 Roof Deck Insulation		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1960 60 psi compressive strength, 1" thick, R5	G	1 Rofc	1885	.004	S.F.	1.10	.21		1.31	1.55
1962 2" thick, R10	G		1560	.005		2.09	.25		2.34	2.71
1964 3" thick, R15	G		1270	.006		3.41	.31		3.72	4.26
1966 4" thick, R20	G		1235	.006		4.24	.32		4.56	5.20
1968 Tapered for drainage	G		1820	.004	B.F.	1.01	.22		1.23	1.46
2010 Expanded polystyrene, 1#/C.F. density, 3/4" thick, R2.89	G		1950	.004	S.F.	.21	.20		.41	.56
2020 1" thick, R3.85	G		1950	.004		.28	.20		.48	.64
2100 2" thick, R7.69	G		1625	.005		.56	.24		.80	1.02
2110 3" thick, R11.49	G		1625	.005		.84	.24		1.08	1.32
2120 4" thick, R15.38	G		1625	.005		1.12	.24		1.36	1.63
2130 5" thick, R19.23	G		1495	.005		1.40	.27		1.67	1.97
2140 6" thick, R23.26	G		1495	.005		1.68	.27		1.95	2.28
2150 Tapered for drainage	G		1950	.004	B.F.	.46	.20		.66	.84
2400 Composites with 2" EPS										
2410 1" fiberboard	G	1 Rofc	1325	.006	S.F.	1.59	.30		1.89	2.24
2420 7/16" oriented strand board	G		1040	.008		1.41	.38		1.79	2.17
2430 1/2" plywood	G		1040	.008		3.28	.38		3.66	4.23
2440 1" perlite	G		1040	.008		1.07	.38		1.45	1.80
2450 Composites with 1-1/2" polyisocyanurate										
2460 1" fiberboard	G	1 Rofc	1040	.008	S.F.	1.23	.38		1.61	1.97
2470 1" perlite	G		1105	.007		1.02	.36		1.38	1.70
2480 7/16" oriented strand board	G		1040	.008		2.75	.38		3.13	3.65
3000 Fastening alternatives, coated screws, 2" long			3744	.002	Ea.	.05	.11		.16	.23
3010 4" long			3120	.003		.11	.13		.24	.33
3020 6" long			2675	.003		.24	.15		.39	.50
3030 8" long			2340	.003		.29	.17		.46	.59
3040 10" long			1872	.004		.53	.21		.74	.92
3050 Pre-drill and drive wedge spike, 2-1/2"			1248	.006		.64	.32		.96	1.22
3060 3-1/2"			1101	.007		1.42	.36		1.78	2.14
3070 4-1/2"			936	.009		1.99	.42		2.41	2.88
3075 3" galvanized deck plates			7488	.001		.23	.05		.28	.34
3080 Spot mop asphalt		G-1	295	.190	Sq.	5.50	8.80	1.87	16.17	22.50
3090 Full mop asphalt		"	192	.292		11	13.50	2.87	27.37	37.50
3110 Low-rise polyurethane adhesive, 12" OC beads		1 Rofc	45	.178		97	8.80		105.80	121
3120 6" OC beads			32	.250		194	12.40		206.40	233
3130 4" OC beads			30	.267		294	13.25		307.25	345

07 24 Exterior Insulation and Finish Systems

07 24 13 – Polymer-Based Exterior Insulation and Finish System

07 24 13.10 Exterior Insulation and Finish Systems

0010 **EXTERIOR INSULATION AND FINISH SYSTEMS**										
0095 Field applied, 1" EPS insulation	G	J-1	390	.103	S.F.	.40	5.05	.29	5.74	8.25
0100 With 1/2" cement board sheathing	G		268	.149		1.13	7.35	.42	8.90	12.60
0105 2" EPS insulation	G		390	.103		1.59	5.05	.29	6.93	9.55
0110 With 1/2" cement board sheathing	G		268	.149		1.41	7.35	.42	9.18	12.90
0115 3" EPS insulation	G		390	.103		.96	5.05	.29	6.30	8.90
0120 With 1/2" cement board sheathing	G		268	.149		1.69	7.35	.42	9.46	13.20
0125 4" EPS insulation	G		390	.103		1.24	5.05	.29	6.58	9.20
0130 With 1/2" cement board sheathing	G		268	.149		2.70	7.35	.42	10.47	14.35
0140 Premium finish add			1265	.032		.45	1.56	.09	2.10	2.91
0145 Drainage and ventilation cavity, add		2 Plas	1450	.011		.84	.57		1.41	1.76

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07 24 Exterior Insulation and Finish Systems

07 24 13 – Polymer-Based Exterior Insulation and Finish System

07 24 13.10 Exterior Insulation and Finish Systems	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0150 Heavy duty reinforcement add	J-1	914	.044	S.F.	.60	2.15	.12	2.87	4
0160 2.5#/S.Y. metal lath substrate add	1 Lath	75	.107	S.Y.	5.05	5.95		11	14.2
0170 3.4#/S.Y. metal lath substrate add	"	75	.107	"	5.15	5.95		11.10	14.4
0180 Color or texture change	J-1	1265	.032	S.F.	.76	1.56	.09	2.41	3.2
0190 With substrate leveling base coat	1 Plas	530	.015		.87	.78		1.65	2.1
0210 With substrate sealing base coat	1 Pord	1224	.007		.14	.31		.45	.6
0370 V groove shape in panel face				L.F.	.74			.74	.8
0380 U groove shape in panel face				"	.89			.89	.9
0440 For higher than one story, add						25%			

07 25 Weather Barriers

07 25 10 – Weather Barriers or Wraps

07 25 10.10 Weather Barriers

	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **WEATHER BARRIERS**									
0400 Asphalt felt paper, #15	1 Carp	37	.216	Sq.	4.43	12.15		16.58	23
0401 Per square foot	"	3700	.002	S.F.	.04	.12		.16	.2
0450 Housewrap, exterior, spun bonded polypropylene									
0470 Small roll	1 Carp	3800	.002	S.F.	.14	.12		.26	.3
0480 Large roll	"	4000	.002	"	.06	.11		.17	.2
2100 Asphalt felt roof deck vapor barrier, class 1 metal decks	1 Rofc	37	.216	Sq.	19.85	10.70		30.55	39.5
2200 For all other decks	"	37	.216		15.40	10.70		26.10	34.5
2800 Asphalt felt, 50% recycled content, 15 lb., 4 sq./roll	1 Carp	36	.222		5.70	12.50		18.20	25
2810 30 lb., 2 sq./roll	"	36	.222		12.75	12.50		25.25	32.5
3000 Building wrap, spun bonded polyethylene	2 Carp	8000	.002	S.F.	.18	.11		.29	.3

07 26 Vapor Retarders

07 26 13 – Above-Grade Vapor Retarders

07 26 13.10 Vapor Retarders

		Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **VAPOR RETARDERS**										
0020 Aluminum and kraft laminated, foil 1 side	G	1 Carp	37	.216	Sq.	12	12.15		24.15	31.5
0100 Foil 2 sides	G		37	.216		17.55	12.15		29.70	37.5
0600 Polyethylene vapor barrier, standard, 2 mil	G		37	.216		2	12.15		14.15	20.5
0700 4 mil	G		37	.216		4.40	12.15		16.55	23
0900 6 mil	G		37	.216		6	12.15		18.15	24.5
1200 10 mil	G		37	.216		8.15	12.15		20.30	27
1300 Clear reinforced, fire retardant, 8 mil	G		37	.216		25.50	12.15		37.65	46
1350 Cross laminated type, 3 mil	G		37	.216		12.30	12.15		24.45	31.5
1400 4 mil	G		37	.216		13.65	12.15		25.80	33
1800 Reinf. waterproof, 2 mil polyethylene backing, 1 side			37	.216		11.50	12.15		23.65	31
1900 2 sides			37	.216		14.50	12.15		26.65	34
2400 Waterproofed kraft with sisal or fiberglass fibers			37	.216		18.05	12.15		30.20	38

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07 27 Air Barriers

07 27 13 – Modified Bituminous Sheet Air Barriers

7 27 13.10 Modified Bituminous Sheet Air Barrier	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
010 **MODIFIED BITUMINOUS SHEET AIR BARRIER**									
100 SBS modified sheet laminated to polyethylene sheet, 40 mils, 4" wide	1 Carp	1200	.007	L.F.	.32	.38		.70	.91
120 6" wide		1100	.007		.43	.41		.84	1.08
140 9" wide		1000	.008		.60	.45		1.05	1.33
160 12" wide		900	.009		.77	.50		1.27	1.58
180 18" wide	2 Carp	1700	.009	S.F.	.72	.53		1.25	1.58
200 36" wide	"	1800	.009		.70	.50		1.20	1.51
220 Adhesive for above	1 Carp	1400	.006			.32		.32	.48

07 27 26 – Fluid-Applied Membrane Air Barriers

7 27 26.10 Fluid Applied Membrane Air Barrier

010 **FLUID APPLIED MEMBRANE AIR BARRIER**									
100 Spray applied vapor barrier, 25 S.F./gallon	1 Pord	1375	.006	S.F.	.02	.28		.30	.43

07 31 Shingles and Shakes

07 31 13 – Asphalt Shingles

7 31 13.10 Asphalt Roof Shingles

010 **ASPHALT ROOF SHINGLES**									
100 Standard strip shingles									
150 Inorganic, class A, 25 year	1 Rofc	5.50	1.455	Sq.	96	72		168	223
155 Pneumatic nailed		7	1.143		96	56.50		152.50	198
200 30 year		5	1.600		126	79.50		205.50	268
205 Pneumatic nailed		6.25	1.280		126	63.50		189.50	242
250 Standard laminated multi-layered shingles									
300 Class A, 240-260 lb./square	1 Rofc	4.50	1.778	Sq.	123	88		211	278
305 Pneumatic nailed		5.63	1.422		123	70.50		193.50	249
350 Class A, 250-270 lb./square		4	2		123	99		222	296
355 Pneumatic nailed		5	1.600		123	79.50		202.50	264
400 Premium, laminated multi-layered shingles									
450 Class A, 260-300 lb./square	1 Rofc	3.50	2.286	Sq.	160	113		273	360
455 Pneumatic nailed		4.37	1.831		160	91		251	325
500 Class A, 300-385 lb./square		3	2.667		415	132		547	675
505 Pneumatic nailed		3.75	2.133		415	106		521	630
800 #15 felt underlayment		64	.125		4.43	6.20		10.63	14.90
825 #30 felt underlayment		58	.138		8.70	6.85		15.55	20.50
850 Self adhering polyethylene and rubberized asphalt underlayment		22	.364		66	18.05		84.05	102
900 Ridge shingles		330	.024	L.F.	2.87	1.20		4.07	5.10
905 Pneumatic nailed		412.50	.019	"	2.87	.96		3.83	4.72
000 For steep roofs (7 to 12 pitch or greater), add						50%			

07 31 16 – Metal Shingles

07 31 16.10 Aluminum Shingles

010 **ALUMINUM SHINGLES**									
020 Mill finish, .019" thick	1 Carp	5	1.600	Sq.	283	90		373	445
100 .020" thick	"	5	1.600		340	90		430	510
300 For colors, add					25.50			25.50	28
600 Ridge cap, .024" thick	1 Carp	170	.047	L.F.	3.75	2.65		6.40	8.05
700 End wall flashing, .024" thick		170	.047		3.20	2.65		5.85	7.45
900 Valley section, .024" thick		170	.047		4.20	2.65		6.85	8.55
1000 Starter strip, .024" thick		400	.020		3.20	1.13		4.33	5.20
1200 Side wall flashing, .024" thick		170	.047		3.83	2.65		6.48	8.15
1500 Gable flashing, .024" thick		400	.020		2.43	1.13		3.56	4.35

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07 31 Shingles and Shakes

07 31 16 – Metal Shingles

07 31 16.20 Steel Shingles	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **STEEL SHINGLES**									
0012 Galvanized, 26 ga.	1 Rots	2.20	3.636	Sq.	293	180		473	610
0200 24 ga.	"	2.20	3.636		435	180		615	770
0300 For colored galvanized shingles, add					61.50			61.50	67.5

07 31 26 – Slate Shingles

07 31 26.10 Slate Roof Shingles

0010 **SLATE ROOF SHINGLES** R073126-20										
0100 Buckingham Virginia black, 3/16" - 1/4" thick	G	1 Rots	1.75	4.571	Sq.	690	227		917	1,125
0200 1/4" thick	G		1.75	4.571		690	227		917	1,125
0900 Pennsylvania black, Bangor, #1 clear	G		1.75	4.571		620	227		847	1,050
1200 Vermont, unfading, green, mottled green	G		1.75	4.571		630	227		857	1,075
1300 Semi-weathering green & gray	G		1.75	4.571		505	227		732	925
1400 Purple	G		1.75	4.571		620	227		847	1,050
1500 Black or gray	G		1.75	4.571		540	227		767	965
1600 Red	G		1.75	4.571		1,475	227		1,702	1,975
1700 Variegated purple			1.75	4.571		575	227		802	1,000
2700 Ridge shingles, slate			200	.040	L.F.	12.70	1.98		14.68	17.

07 31 29 – Wood Shingles and Shakes

07 31 29.13 Wood Shingles

0010 **WOOD SHINGLES**									
0012 16" No. 1 red cedar shingles, 5" exposure, on roof	1 Carp	2.50	3.200	Sq.	465	180		645	780
0015 Pneumatic nailed		3.25	2.462		465	139		604	715
0200 7-1/2" exposure, on walls		2.05	3.902		310	220		530	665
0205 Pneumatic nailed		2.67	2.996		310	169		479	590
0300 18" No. 1 red cedar perfections, 5-1/2" exposure, on roof		2.75	2.909		465	164		629	755
0305 Pneumatic nailed		3.57	2.241		465	126		591	700
0500 7-1/2" exposure, on walls	1 Carp	2.25	3.556	Sq.	340	200		540	675
0505 Pneumatic nailed		2.92	2.740		340	154		494	605
0600 Resquared and rebutted, 5-1/2" exposure, on roof		3	2.667		360	150		510	620
0605 Pneumatic nailed		3.90	2.051		360	115		475	565
0900 7-1/2" exposure, on walls		2.45	3.265		264	184		448	565
0905 Pneumatic nailed		3.18	2.516		264	142		406	500
1000 Add to above for fire retardant shingles					72			72	79
1060 Preformed ridge shingles	1 Carp	400	.020	L.F.	4.85	1.13		5.98	7.0
2000 White cedar shingles, 16" long, extras, 5" exposure, on roof		2.40	3.333	Sq.	160	188		348	455
2005 Pneumatic nailed		3.12	2.564		160	144		304	390
2050 5" exposure on walls		2	4		160	225		385	510
2055 Pneumatic nailed		2.60	3.077		160	173		333	435
2100 7-1/2" exposure, on walls		2	4		114	225		339	460
2105 Pneumatic nailed		2.60	3.077		114	173		287	385
2150 "B" grade, 5" exposure on walls		2	4		180	225		405	535
2155 Pneumatic nailed		2.60	3.077		180	173		353	455
2300 For #15 organic felt underlayment on roof, 1 layer, add		64	.125		4.43	7.05		11.48	15.3
2400 2 layers, add		32	.250		8.85	14.10		22.95	31
2600 For steep roofs (7/12 pitch or greater), add to above						50%			
2700 Panelized systems, No.1 cedar shingles on 5/16" CDX plywood									
2800 On walls, 8' strips, 7" or 14" exposure	2 Carp	700	.023	S.F.	9.30	1.29		10.59	12.
3500 On roofs, 8' strips, 7" or 14" exposure	1 Carp	3	2.667	Sq.	705	150		855	1,000
3505 Pneumatic nailed	"	4	2	"	705	113		818	950

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07 31 Shingles and Shakes

07 31 29 – Wood Shingles and Shakes

07 31 29.16 Wood Shakes	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **WOOD SHAKES**									
0100 Hand-split red cedar shakes, 1/2" thick x 24" long, 10" exp. on roof	1 Carp	2.50	3.200	Sq.	500	180		680	820
0105 Pneumatic nailed		3.25	2.462		500	139		639	755
0110 3/4" thick x 24" long, 10" exp. on roof		2.25	3.556		500	200		700	850
0115 Pneumatic nailed		2.92	2.740		500	154		654	780
0200 1/2" thick, 18" long, 8-1/2" exp. on roof		2	4		415	225		640	790
0205 Pneumatic nailed		2.60	3.077		415	173		588	715
0210 3/4" thick x 18" long, 8-1/2" exp. on roof		1.80	4.444		415	250		665	825
0215 Pneumatic nailed		2.34	3.419		415	192		607	740
0255 10" exposure on walls		2	4		400	225		625	775
0260 10" exposure on walls, pneumatic nailed		2.60	3.077		400	173		573	700
0700 Add to above for fire retardant shakes, 24" long					72			72	79
0800 18" long					72			72	79
0810 Ridge shakes	1 Carp	350	.023	L.F.	5.40	1.29		6.69	7.85

07 32 Roof Tiles

07 32 13 – Clay Roof Tiles

07 32 13.10 Clay Tiles

0010 **CLAY TILES**, including accessories									
0300 Flat shingle, interlocking, 15", 166 pcs./sq., fireflashed blend	3 Rots	6	4	Sq.	560	198		758	935
0500 Terra cotta red		6	4		660	198		858	1,050
0600 Roman pan and top, 18", 102 pcs./sq., fireflashed blend		5.50	4.364		520	216		736	920
0640 Terra cotta red	1 Rots	2.40	3.333		605	165		770	935
1100 Barrel mission tile, 18", 166 pcs./sq., fireflashed blend	3 Rots	5.50	4.364		435	216		651	825
1140 Terra cotta red		5.50	4.364		440	216		656	835
1700 Scalloped edge flat shingle, 14", 145 pcs./sq., fireflashed blend		6	4		1,125	198		1,323	1,575
1800 Terra cotta red		6	4		1,125	198		1,323	1,550
3010 #15 felt underlayment	1 Rofc	64	.125		4.43	6.20		10.63	14.90
3020 #30 felt underlayment		58	.138		8.70	6.85		15.55	20.50
3040 Polyethylene and rubberized asph. underlayment		22	.364		66	18.05		84.05	102

07 32 16 – Concrete Roof Tiles

07 32 16.10 Concrete Tiles

0010 **CONCRETE TILES**									
0020 Corrugated, 13" x 16-1/2", 90 per sq., 950 lb./sq.									
0050 Earthtone colors, nailed to wood deck	1 Rots	1.35	5.926	Sq.	119	294		413	605
0150 Blues		1.35	5.926		107	294		401	590
0200 Greens		1.35	5.926		118	294		412	605
0250 Premium colors		1.35	5.926		118	294		412	605
0500 Shakes, 13" x 16-1/2", 90 per sq., 950 lb./sq.									
0600 All colors, nailed to wood deck	1 Rots	1.50	5.333	Sq.	174	265		439	620
1500 Accessory pieces, ridge & hip, 10" x 16-1/2", 8 lb. each	"	120	.067	Ea.	3.78	3.31		7.09	9.50
1700 Rake, 6-1/2" x 16-3/4", 9 lb. each					3.78			3.78	4.16
1800 Mansard hip, 10" x 16-1/2", 9.2 lb. each					3.78			3.78	4.16
1900 Hip starter, 10" x 16-1/2", 10.5 lb. each					10.50			10.50	11.55
2000 3 or 4 way apex, 10" each side, 11.5 lb. each					12			12	13.20

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07 32 Roof Tiles

07 32 19 – Metal Roof Tiles

07 32 19.10 Metal Roof Tiles		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**METAL ROOF TILES**									
0020	Accessories included, .032" thick aluminum, mission tile	1 Carp	2.50	3.200	Sq.	805	180		985	1,15
0200	Spanish tiles	"	3	2.667	"	570	150		720	85

07 33 Natural Roof Coverings

07 33 63 – Vegetated Roofing

07 33 63.10 Green Roof Systems

0010	**GREEN ROOF SYSTEMS**										
0020	Soil mixture for green roof 30% sand, 55% gravel, 15% soil										
0100	Hoist and spread soil mixture 4" depth up to 5 stories tall roof	G	B-13B	4000	.014	S.F.	.26	.69	.57	1.52	1.9
0150	6" depth	G		2667	.021		.39	1.04	.85	2.28	2.9
0200	8" depth	G		2000	.028		.52	1.39	1.13	3.04	3.8
0250	10" depth	G		1600	.035		.65	1.74	1.42	3.81	4.8
0300	12" depth	G		1335	.042		.78	2.08	1.70	4.56	5.8
0310	Alt. man-made soil mix, hoist & spread, 4" deep up to 5 stories tall roof	G		4000	.014		1.78	.69	.57	3.04	3.6
0350	Mobilization 55 ton crane to site	G	1 Eqhv	3.60	2.222	Ea.		141		141	210
0355	Hoisting cost to 5 stories per day (Avg. 28 picks per day)	G	B-13B	1	56	Day		2,775	2,275	5,050	6,625
0360	Mobilization or demobilization, 100 ton crane to site driver & escort	G	A-3E	2.50	6.400	Ea.		375	72	447	635
0365	Hoisting cost 6-10 stories per day (Avg. 21 picks per day)	G	B-13C	1	56	Day		2,775	1,400	4,175	5,675
0370	Hoist and spread soil mixture 4" depth 6-10 stories tall roof	G		4000	.014	S.F.	.26	.69	.35	1.30	1.7
0375	6" depth	G		2667	.021		.39	1.04	.53	1.96	2.5
0380	8" depth	G		2000	.028		.52	1.39	.70	2.61	3.4
0385	10" depth	G		1600	.035		.65	1.74	.88	3.27	4.2
0390	12" depth	G		1335	.042		.78	2.08	1.05	3.91	5.1
0400	Green roof edging treated lumber 4" x 4", no hoisting included	G	2 Carp	400	.040	L.F.	1.63	2.25		3.88	5.1
0410	4" x 6"	G		400	.040		2.83	2.25		5.08	6.4
0420	4" x 8"	G		360	.044		6.75	2.50		9.25	11.1
0430	4" x 6" double stacked	G		300	.053		5.65	3		8.65	10.7
0500	Green roof edging redwood lumber 4" x 4", no hoisting included	G		400	.040		12.35	2.25		14.60	16.9
0510	4" x 6"	G		400	.040		19.65	2.25		21.90	25
0520	4" x 8"	G		360	.044		37	2.50		39.50	44
0530	4" x 6" double stacked	G		300	.053		39.50	3		42.50	47.5
0550	Components, not including membrane or insulation:										
0560	Fluid applied rubber membrane, reinforced, 215 mil thick	G	G-5	350	.114	S.F.	.27	5.15	.48	5.90	9.1
0570	Root barrier	G	2 Rofc	775	.021		.99	1.02		2.01	2.7
0580	Moisture retention barrier and reservoir	G	"	900	.018		3.97	.88		4.85	5.8
0600	Planting sedum, light soil, potted, 2-1/4" diameter, 2 per S.F.	G	1 Clab	420	.019		15.95	.87		16.82	18.8
0610	1 per S.F.	G	"	840	.010		8	.43		8.43	9.4
0630	Planting sedum mat per S.F. including shipping (4000 S.F. min)	G	4 Clab	4000	.008		19.15	.36		19.51	21.5
0640	Installation sedum mat system (no soil required) per S.F. (4000 S.F. min)	G	"	4000	.008		26.50	.36		26.86	30
0645	Note: pricing of sedum mats shipped in full truck loads (4000-5000 S.F.)										

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07 41 13 – Metal Roof Panels

7 41 13.10 Aluminum Roof Panels	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
010 **ALUMINUM ROOF PANELS**									
020 Corrugated or ribbed, .0155" thick, natural	G-3	1200	.027	S.F.	.79	1.51		2.30	3.13
300 Painted		1200	.027		1.16	1.51		2.67	3.54
400 Corrugated, .018" thick, on steel frame, natural finish		1200	.027		1.37	1.51		2.88	3.77
600 Painted		1200	.027		1.70	1.51		3.21	4.13
700 Corrugated, on steel frame, natural, .024" thick		1200	.027		1.98	1.51		3.49	4.44
800 Painted		1200	.027		2.26	1.51		3.77	4.75
900 .032" thick, natural		1200	.027		3.22	1.51		4.73	5.80
200 Painted		1200	.027		5.25	1.51		6.76	8.05
300 V-Beam, on steel frame construction, .032" thick, natural		1200	.027		2.82	1.51		4.33	5.35
500 Painted		1200	.027		4.57	1.51		6.08	7.30
600 .040" thick, natural		1200	.027		4.11	1.51		5.62	6.80
800 Painted		1200	.027		5.50	1.51		7.01	8.30
900 .050" thick, natural		1200	.027		4.22	1.51		5.73	6.90
100 Painted		1200	.027		5.05	1.51		6.56	7.85
200 For roofing on wood frame, deduct		4600	.007		.08	.39		.47	.68
400 Ridge cap, .032" thick, natural		800	.040	L.F.	3.47	2.26		5.73	7.20
7 41 13.20 Steel Roofing Panels									
010 **STEEL ROOFING PANELS**									
012 Corrugated or ribbed, on steel framing, 30 ga. galv	G-3	1100	.029	S.F.	1.19	1.65		2.84	3.78
100 28 ga.		1050	.030		1.62	1.72		3.34	4.37
300 26 ga.		1000	.032		2	1.81		3.81	4.91
400 24 ga.		950	.034		3.15	1.91		5.06	6.35
600 Colored, 28 ga.		1050	.030		1.97	1.72		3.69	4.76
700 26 ga.		1000	.032		2.23	1.81		4.04	5.15
710 Flat profile, 1-3/4" standing seams, 10" wide, standard finish, 26 ga.		1000	.032		4.10	1.81		5.91	7.20
715 24 ga.		950	.034		4.78	1.91		6.69	8.10
720 22 ga.		900	.036		5.90	2.01		7.91	9.50
725 Zinc aluminum alloy finish, 26 ga.		1000	.032		3.27	1.81		5.08	6.30
730 24 ga.		950	.034		3.86	1.91		5.77	7.10
735 22 ga.		900	.036		4.41	2.01		6.42	7.85
740 12" wide, standard finish, 26 ga.		1000	.032		6.55	1.81		8.36	9.95
745 24 ga.		950	.034		5.50	1.91		7.41	8.90
750 Zinc aluminum alloy finish, 26 ga.		1000	.032		4.64	1.81		6.45	7.80
755 24 ga.		950	.034		4.97	1.91		6.88	8.30
840 Flat profile, 1" x 3/8" batten, 12" wide, standard finish, 26 ga.		1000	.032		3.60	1.81		5.41	6.65
845 24 ga.		950	.034		6.35	1.91		8.26	9.80
850 22 ga.		900	.036		5.10	2.01		7.11	8.60
855 Zinc aluminum alloy finish, 26 ga.	G-3	1000	.032	S.F.	3.47	1.81		5.28	6.55
860 24 ga.		950	.034		5.70	1.91		7.61	9.15
865 22 ga.		900	.036		4.45	2.01		6.46	7.90
870 16-1/2" wide, standard finish, 24 ga.		950	.034		5.60	1.91		7.51	9.05
875 22 ga.		900	.036		4.70	2.01		6.71	8.15
880 Zinc aluminum alloy finish, 24 ga.		950	.034		5.05	1.91		6.96	8.40
885 22 ga.		900	.036		4.14	2.01		6.15	7.55
890 Flat profile, 2" x 2" batten, 12" wide, standard finish, 26 ga.		1000	.032		4.14	1.81		5.95	7.25
895 24 ga.		950	.034		5.30	1.91		7.21	8.70
900 22 ga.		900	.036		6.50	2.01		8.51	10.15
905 Zinc aluminum alloy finish, 26 ga.		1000	.032		4.19	1.81		6	7.30
910 24 ga.		950	.034		6.35	1.91		8.26	9.80
915 22 ga.		900	.036		5.15	2.01		7.16	8.70
920 16-1/2" wide, standard finish, 24 ga.		950	.034		4.60	1.91		6.51	7.90

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07 41 Roof Panels

07 41 13 – Metal Roof Panels

	07 41 13.20 Steel Roofing Panels		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0925	22 ga.		G-3	900	.036	S.F.	5.35	2.01		7.36	8.8
0930	Zinc aluminum alloy finish, 24 ga.			950	.034		4.14	1.91		6.05	7.4
0935	22 ga.			900	.036		4.72	2.01		6.73	8.2
1200	Ridge, galvanized, 10" wide	G		800	.040	L.F.	3.60	2.26		5.86	7.3
1203	14" wide	G	2 Shee	316	.051		4.32	3.42		7.74	9.9
1205	18" wide	G	"	308	.052		5.05	3.51		8.56	10.8
1210	20" wide	G	G-3	750	.043		4.35	2.41		6.76	8.4

07 41 33 – Plastic Roof Panels

07 41 33.10 Fiberglass Panels

0010	**FIBERGLASS PANELS**									
0012	Corrugated panels, roofing, 8 oz./S.F.	G-3	1000	.032	S.F.	3.44	1.81		5.25	6.5
0100	12 oz./S.F.		1000	.032		4.78	1.81		6.59	7.9
0300	Corrugated siding, 6 oz./S.F.		880	.036		2.79	2.06		4.85	6.1
0400	8 oz./S.F.		880	.036		3.44	2.06		5.50	6.8
0500	Fire retardant		880	.036		4.11	2.06		6.17	7.6
0600	12 oz. siding, textured		880	.036		3.88	2.06		5.94	7.3
0700	Fire retardant		880	.036		4.98	2.06		7.04	8.6
0900	Flat panels, 6 oz./S.F., clear or colors		880	.036		3.14	2.06		5.20	6.5
1100	Fire retardant, class A		880	.036		3.73	2.06		5.79	7.2
1300	8 oz./S.F., clear or colors		880	.036		2.47	2.06		4.53	5.8
1700	Sandwich panels, fiberglass, 1-9/16" thick, panels to 20 S.F.		180	.178		37.50	10.05		47.55	56
1900	As above, but 2-3/4" thick, panels to 100 S.F.		265	.121		26.50	6.85		33.35	39.5

07 42 Wall Panels

07 42 13 – Metal Wall Panels

07 42 13.10 Mansard Panels

0010	**MANSARD PANELS**									
0600	Aluminum, stock units, straight surfaces	1 Shee	115	.070	S.F.	4.85	4.70		9.55	12.4
0700	Concave or convex surfaces, add		75	.107	"	2.63	7.20		9.83	13.7
0800	For framing, to 5' high, add		115	.070	L.F.	3.96	4.70		8.66	11.4
0900	Soffits, to 1' wide		125	.064	S.F.	3.05	4.32		7.37	9.8

07 42 13.20 Aluminum Siding Panels

0010	**ALUMINUM SIDING PANELS**									
0012	Corrugated, on steel framing, .019" thick, natural finish	G-3	775	.041	S.F.	1.97	2.34		4.31	5.6
0100	Painted		775	.041		1.90	2.34		4.24	5.6
0400	Farm type, .021" thick on steel frame, natural		775	.041		1.80	2.34		4.14	5.5
0600	Painted		775	.041		1.90	2.34		4.24	5.6
0700	Industrial type, corrugated, on steel, .024" thick, mill		775	.041		2.47	2.34		4.81	6.2
0900	Painted		775	.041		2.63	2.34		4.97	6.4
1000	.032" thick, mill		775	.041		5.25	2.34		7.59	9.3
1200	Painted		775	.041		5.80	2.34		8.14	9.8
1300	V-Beam, on steel frame, .032" thick, mill		775	.041		4.57	2.34		6.91	8.5
1500	Painted		775	.041		5.05	2.34		7.39	9.0
1600	.040" thick, mill		775	.041		2.97	2.34		5.31	6.7
1800	Painted		775	.041		4.21	2.34		6.55	8.1
1900	.050" thick, mill		775	.041		3.49	2.34		5.83	7.3
2100	Painted		775	.041		4.06	2.34		6.40	7.9
2200	Ribbed, 3" profile, on steel frame, .032" thick, natural		775	.041		2.73	2.34		5.07	6.5
2400	Painted		775	.041		5.45	2.34		7.79	9.4
2500	.040" thick, natural		775	.041		3.15	2.34		5.49	6.9

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07 42 Wall Panels

07 42 13 – Metal Wall Panels

	07 42 13.20 Aluminum Siding Panels	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2700	Painted	G-3	775	.041	S.F.	3.65	2.34		5.99	7.50
2750	.050" thick, natural		775	.041		3.59	2.34		5.93	7.45
2760	Painted		775	.041		8.05	2.34		10.39	12.35
3300	For siding on wood frame, deduct from above		2800	.011		.09	.65		.74	1.07
3400	Screw fasteners, aluminum, self tapping, neoprene washer, 1"				M	214			214	235
3600	Stitch screws, self tapping, with neoprene washer, 5/8"				"	111			111	122
3630	Flashing, sidewall, .032" thick	G-3	800	.040	L.F.	2.13	2.26		4.39	5.75
3650	End wall, .040" thick		800	.040		2.51	2.26		4.77	6.15
3670	Closure strips, corrugated, .032" thick		800	.040		1	2.26		3.26	4.49
3680	Ribbed, 4" or 8", .032" thick		800	.040		1.05	2.26		3.31	4.55
3690	V-beam, .040" thick		800	.040		1.53	2.26		3.79	5.05
3800	Horizontal, colored clapboard, 8" wide, plain	2 Carp	515	.031	S.F.	3.21	1.75		4.96	6.15
3810	Insulated	"	515	.031	"	3.10	1.75		4.85	6
4000	Vertical board & batten, colored, non-insulated	2 Carp	515	.031	S.F.	2.70	1.75		4.45	5.55
4200	For simulated wood design, add				"	.18			.18	.20
4300	Corners for above, outside	2 Carp	515	.031	V.L.F.	4.13	1.75		5.88	7.15
4500	Inside corners	"	515	.031	"	1.85	1.75		3.60	4.64

07 42 13.30 Steel Siding

0010	**STEEL SIDING**									
0020	Beveled, vinyl coated, 8" wide	1 Carp	265	.030	S.F.	1.95	1.70		3.65	4.68
0050	10" wide	"	275	.029		1.91	1.64		3.55	4.54
0080	Galv, corrugated or ribbed, on steel frame, 30 ga.	G-3	800	.040		1.21	2.26		3.47	4.72
0100	28 ga.		795	.040		1.31	2.28		3.59	4.85
0300	26 ga.		790	.041		1.70	2.29		3.99	5.30
0400	24 ga.		785	.041		1.71	2.31		4.02	5.35
0600	22 ga.		770	.042		1.86	2.35		4.21	5.60
0700	Colored, corrugated/ribbed, on steel frame, 10 yr. finish, 28 ga.		800	.040		2.38	2.26		4.64	6
0900	26 ga.		795	.040		2.09	2.28		4.37	5.70
1000	24 ga.		790	.041		2.34	2.29		4.63	6
1020	20 ga.		785	.041		2.98	2.31		5.29	6.75
1200	Factory sandwich panel, 26 ga., 1" insulation, galvanized		380	.084		5.40	4.76		10.16	13.10
1300	Colored 1 side		380	.084		7.35	4.76		12.11	15.20
1500	Galvanized 2 sides		380	.084		8.30	4.76		13.06	16.25
1600	Colored 2 sides		380	.084		8.55	4.76		13.31	16.55
1800	Acrylic paint face, regular paint liner		380	.084		6.30	4.76		11.06	14.05
1900	For 2" thick polystyrene, add					1.04			1.04	1.14
2000	22 ga., galv, 2" insulation, baked enamel exterior	G-3	360	.089		12.35	5.05		17.40	21
2100	Polyvinylidene exterior finish	"	360	.089		13.10	5.05		18.15	22

07 44 Faced Panels

07 44 33 – Metal Faced Panels

07 44 33.10 Metal Faced Panels and Accessories

0010	**METAL FACED PANELS AND ACCESSORIES**									
0400	Textured aluminum, 4' x 8' x 5/16" plywood backing, single face	2 Shee	375	.043	S.F.	4.08	2.88		6.96	8.85
0600	Double face		375	.043		4.48	2.88		7.36	9.25
0700	4' x 10' x 5/16" plywood backing, single face		375	.043		4.06	2.88		6.94	8.80
0900	Double face		375	.043		5.15	2.88		8.03	10
1000	4' x 12' x 5/16" plywood backing, single face		375	.043		3.78	2.88		6.66	8.50
1300	Smooth aluminum, 1/4" plywood panel, fluoropolymer finish, double face		375	.043		5.65	2.88		8.53	10.60
1350	Clear anodized finish, double face		375	.043		9.60	2.88		12.48	14.90
1400	Double face textured aluminum, structural panel, 1" EPS insulation		375	.043		5.90	2.88		8.78	10.80

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07 44 Faced Panels

07 44 33 – Metal Faced Panels

	07 44 33.10 Metal Faced Panels and Accessories	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1500	Accessories, outside corner	1 Shee	175	.046	L.F.	1.60	3.09		4.69	6.4
1600	Inside corner	1 Shee	175	.046	L.F.	1.29	3.09		4.38	6.0
1800	Batten mounting clip		200	.040		.47	2.70		3.17	4.5
1900	Low profile batten		480	.017		.60	1.13		1.73	2.3
2100	High profile batten		480	.017		1.34	1.13		2.47	3.1
2200	Water table		200	.040		2.02	2.70		4.72	6.3
2400	Horizontal joint connector		200	.040		1.53	2.70		4.23	5.7
2500	Corner cap		200	.040		1.77	2.70		4.47	6
2700	H - moulding		480	.017		2.10	1.13		3.23	4.0

07 46 Siding

07 46 23 – Wood Siding

07 46 23.10 Wood Board Siding

0010	**WOOD BOARD SIDING**									
3200	Wood, cedar bevel, A grade, 1/2" x 6"	1 Carp	295	.027	S.F.	4.60	1.53		6.13	7.3
3300	1/2" x 8"		330	.024		7.85	1.36		9.21	10.6
3500	3/4" x 10", clear grade		375	.021		7.65	1.20		8.85	10.2
3600	"B" grade		375	.021		4.56	1.20		5.76	6.8
3800	Cedar, rough sawn, 1" x 4", A grade, natural		220	.036		9.15	2.05		11.20	13.1
3900	Stained		220	.036		9.10	2.05		11.15	13.0
4100	1" x 12", board & batten, #3 & Btr., natural		420	.019		5.05	1.07		6.12	7.1
4200	Stained		420	.019		5.50	1.07		6.57	7.6
4400	1" x 8" channel siding, #3 & Btr., natural		330	.024		5.45	1.36		6.81	8.0
4500	Stained		330	.024		6.25	1.36		7.61	8.9
4700	Redwood, clear, beveled, vertical grain, 1/2" x 4"		220	.036		5.20	2.05		7.25	8.7
4750	1/2" x 6"		295	.027		5.65	1.53		7.18	8.4
4800	1/2" x 8"		330	.024		5.75	1.36		7.11	8.4
5000	3/4" x 10"		375	.021		5.60	1.20		6.80	7.9
5200	Channel siding, 1" x 10", B grade		375	.021		5.10	1.20		6.30	7.4
5250	Redwood, T&G boards, B grade, 1" x 4"		220	.036		7.30	2.05		9.35	11.0
5270	1" x 8"		330	.024		9.35	1.36		10.71	12.3
5400	White pine, rough sawn, 1" x 8", natural		330	.024		2.51	1.36		3.87	4.7
5500	Stained		330	.024		2.51	1.36		3.87	4.7

07 46 29 – Plywood Siding

07 46 29.10 Plywood Siding Options

0010	**PLYWOOD SIDING OPTIONS**									
0900	Plywood, medium density overlaid, 3/8" thick	2 Carp	750	.021	S.F.	1.50	1.20		2.70	3.4
1000	1/2" thick		700	.023		1.98	1.29		3.27	4.1
1100	3/4" thick		650	.025		2.62	1.39		4.01	4.9
1600	Texture 1-11, cedar, 5/8" thick, natural		675	.024		2.69	1.33		4.02	4.9
1700	Factory stained		675	.024		2.98	1.33		4.31	5.2
1900	Texture 1-11, fir, 5/8" thick, natural	2 Carp	675	.024	S.F.	1.47	1.33		2.80	3.6
2000	Factory stained		675	.024		2.10	1.33		3.43	4.3
2050	Texture 1-11, S.Y.P., 5/8" thick, natural		675	.024		1.66	1.33		2.99	3.8
2100	Factory stained		675	.024		1.60	1.33		2.93	3.7
2200	Rough sawn cedar, 3/8" thick, natural		675	.024		1.33	1.33		2.66	3.4
2300	Factory stained		675	.024		1.60	1.33		2.93	3.7
2500	Rough sawn fir, 3/8" thick, natural		675	.024		1.06	1.33		2.39	3.1
2600	Factory stained		675	.024		1.18	1.33		2.51	3.2
2800	Redwood, textured siding, 5/8" thick		675	.024		2.14	1.33		3.47	4.3

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07 46 29 – Plywood Siding

	07 46 29.10 Plywood Siding Options	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
000	Polyvinyl chloride coated, 3/8" thick	2 Carp	750	.021	S.F.	1.23	1.20		2.43	3.14

07 46 33 – Plastic Siding

07 46 33.10 Vinyl Siding

010	**VINYL SIDING**									
995	Clapboard profile, woodgrain texture, .048 thick, double 4	2 Carp	495	.032	S.F.	1.15	1.82		2.97	3.98
000	Double 5		550	.029		1.15	1.64		2.79	3.71
005	Single 8		495	.032		1.96	1.82		3.78	4.87
010	Single 10		550	.029		2.35	1.64		3.99	5
015	.044 thick, double 4		495	.032		1.14	1.82		2.96	3.97
020	Double 5		550	.029		1.17	1.64		2.81	3.73
025	.042 thick, double 4		495	.032		1.25	1.82		3.07	4.09
030	Double 5		550	.029		1.89	1.64		3.53	4.52
035	Cross sawn texture, .040 thick, double 4		495	.032		.80	1.82		2.62	3.59
040	Double 5		550	.029		.77	1.64		2.41	3.29
045	Smooth texture, .042 thick, double 4		495	.032		1.91	1.82		3.73	4.81
050	Double 5		550	.029		.85	1.64		2.49	3.38
055	Single 8		495	.032		.77	1.82		2.59	3.56
060	Cedar texture, .044 thick, double 4		495	.032		1.21	1.82		3.03	4.04
065	Double 6		600	.027		1.56	1.50		3.06	3.95
070	Dutch lap profile, woodgrain texture, .048 thick, double 5		550	.029		1.28	1.64		2.92	3.85
075	.044 thick, double 4.5		525	.030		1.15	1.72		2.87	3.82
080	.042 thick, double 4.5		525	.030		.96	1.72		2.68	3.61
085	.040 thick, double 4.5		525	.030		.79	1.72		2.51	3.42
100	Shake profile, 10" wide		400	.040		3.93	2.25		6.18	7.70
105	Vertical pattern, .046 thick, double 5		550	.029		2.10	1.64		3.74	4.75
110	.044 thick, triple 3		550	.029		1.80	1.64		3.44	4.42
115	.040 thick, triple 4		550	.029		1.82	1.64		3.46	4.44
120	.040 thick, triple 2.66		550	.029		2.01	1.64		3.65	4.65
125	Insulation, fan folded extruded polystyrene, 1/4"		2000	.008		.32	.45		.77	1.02
130	3/8"	2 Carp	2000	.008	S.F.	.35	.45		.80	1.06
135	Accessories, J channel, 5/8" pocket		700	.023	L.F.	.68	1.29		1.97	2.66
140	3/4" pocket		695	.023		.76	1.30		2.06	2.76
145	1-1/4" pocket		680	.024		1.28	1.32		2.60	3.37
150	Flexible, 3/4" pocket		600	.027		3.50	1.50		5	6.10
155	Under sill finish trim		500	.032		.73	1.80		2.53	3.48
160	Vinyl starter strip		700	.023		.79	1.29		2.08	2.78
165	Aluminum starter strip		700	.023		.32	1.29		1.61	2.27
170	Window casing, 2-1/2" wide, 3/4" pocket		510	.031		2.04	1.77		3.81	4.87
175	Outside corner, woodgrain finish, 4" face, 3/4" pocket		700	.023		2.74	1.29		4.03	4.94
180	5/8" pocket		700	.023		2.11	1.29		3.40	4.24
185	Smooth finish, 4" face, 3/4" pocket		700	.023		2.78	1.29		4.07	4.98
190	7/8" pocket		690	.023		2.01	1.31		3.32	4.15
195	1-1/4" pocket		700	.023		1.59	1.29		2.88	3.67
200	Soffit and fascia, 1' overhang, solid		120	.133		5.80	7.50		13.30	17.55
205	Vented		120	.133		5.80	7.50		13.30	17.55
207	18" overhang, solid		110	.145		6.85	8.20		15.05	19.75
208	Vented		110	.145		6.85	8.20		15.05	19.75
210	2' overhang, solid		100	.160		7.90	9		16.90	22
215	Vented		100	.160		7.90	9		16.90	22
217	3' overhang, solid		100	.160		9.95	9		18.95	24.50
218	Vented		100	.160		9.95	9		18.95	24.50
220	Colors for siding and soffits, add				S.F.	.16			.16	.18

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07 46 33 – Plastic Siding

		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
07 46 33.10	**Vinyl Siding**									
4225	Colors for accessories and trim, add				L.F.	.30			.30	.3
07 46 33.20	**Polypropylene Siding**									
0010	**POLYPROPYLENE SIDING**									
4090	Shingle profile, random grooves, double 7	2 Carp	400	.040	S.F.	3.70	2.25		5.95	7.4
4092	Cornerpost for above	1 Carp	365	.022	L.F.	16.40	1.23		17.63	19.9
4095	Triple 5	2 Carp	400	.040	S.F.	3.88	2.25		6.13	7.6
4097	Cornerpost for above	1 Carp	365	.022	L.F.	13.15	1.23		14.38	16.3
5000	Staggered butt, double 7"	2 Carp	400	.040	S.F.	4.33	2.25		6.58	8.1
5002	Cornerpost for above	1 Carp	365	.022	L.F.	15.25	1.23		16.48	18.6
5010	Half round, double 6-1/4"	2 Carp	360	.044	S.F.	4.50	2.50		7	8.6
5020	Shake profile, staggered butt, double 9"	"	510	.031	"	4.01	1.77		5.78	7.0
5022	Cornerpost for above	1 Carp	365	.022	L.F.	12.25	1.23		13.48	15.3
5030	Straight butt, double 7"	2 Carp	400	.040	S.F.	4.50	2.25		6.75	8.3
5032	Cornerpost for above	1 Carp	365	.022	L.F.	15.30	1.23		16.53	18.6
6000	Accessories, J channel, 5/8" pocket	2 Carp	700	.023	"	.68	1.29		1.97	2.6
6010	3/4" pocket	2 Carp	695	.023	L.F.	.76	1.30		2.06	2.7
6020	1-1/4" pocket		680	.024		1.28	1.32		2.60	3.3
6030	Aluminum starter strip		700	.023		.32	1.29		1.61	2.2

07 46 46 – Fiber Cement Siding

07 46 46.10 Fiber Cement Siding

0010	**FIBER CEMENT SIDING**									
0020	Lap siding, 5/16" thick, 6" wide, 4-3/4" exposure, smooth texture	2 Carp	415	.039	S.F.	1.94	2.17		4.11	5.3
0025	Woodgrain texture		415	.039		1.94	2.17		4.11	5.3
0030	7-1/2" wide, 6-1/4" exposure, smooth texture		425	.038		1.77	2.12		3.89	5.1
0035	Woodgrain texture		425	.038		1.77	2.12		3.89	5.1
0040	8" wide, 6-3/4" exposure, smooth texture		425	.038		1.90	2.12		4.02	5.2
0045	Rough sawn texture		425	.038		1.90	2.12		4.02	5.2
0050	9-1/2" wide, 8-1/4" exposure, smooth texture		440	.036		1.77	2.05		3.82	5
0055	Woodgrain texture		440	.036		1.77	2.05		3.82	5
0060	12" wide, 10-3/8" exposure, smooth texture		455	.035		1.67	1.98		3.65	4.7
0065	Woodgrain texture		455	.035		1.67	1.98		3.65	4.7
0070	Panel siding, 5/16" thick, smooth texture		750	.021		1.33	1.20		2.53	3.2
0075	Stucco texture		750	.021		1.33	1.20		2.53	3.2
0080	Grooved woodgrain texture		750	.021		1.33	1.20		2.53	3.2
0088	Shingle siding, 48" x 15-1/4" panels, 7" exposure		700	.023		2.50	1.29		3.79	4.6
0090	Wood starter strip		400	.040	L.F.	.43	2.25		2.68	3.8

07 46 73 – Soffit

07 46 73.10 Soffit Options

0010	**SOFFIT OPTIONS**									
0012	Aluminum, residential, .020" thick	1 Carp	210	.038	S.F.	1.69	2.14		3.83	5.0
0100	Baked enamel on steel, 16 or 18 ga.		105	.076		4.94	4.29		9.23	11.8
0300	Polyvinyl chloride, white, solid		230	.035		1.56	1.96		3.52	4.6
0400	Perforated		230	.035		1.71	1.96		3.67	4.7
0500	For colors, add					.11			.11	.1

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07 51 13 – Built-Up Asphalt Roofing

	07 51 13.10 Built-Up Roofing Components	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**BUILT-UP ROOFING COMPONENTS**									
0012	Asphalt saturated felt, #30, 2 sq./roll	1 Rofc	58	.138	Sq.	8.70	6.85		15.55	20.50
0200	#15, 4 sq./roll, plain or perforated, not mopped		58	.138		4.43	6.85		11.28	15.95
0300	Roll roofing, smooth, #65		15	.533		10.35	26.50		36.85	54.50
0500	#90		12	.667		43	33		76	101
0520	Mineralized		12	.667		43	33		76	101
0540	D.C. (double coverage), 19" selvage edge		10	.800		50	39.50		89.50	120
0580	Adhesive (lap cement)				Gal.	11.20			11.20	12.35
0800	Steep, flat or dead level asphalt, 10 ton lots, packaged				Ton	915			915	1,000
	07 51 13.13 Cold-Applied Built-Up Asphalt Roofing									
0010	**COLD-APPLIED BUILT-UP ASPHALT ROOFING**									
0020	3 ply system, installation only (components listed below)	G-5	50	.800	Sq.		36	3.33	39.33	62
0100	Spunbond poly. fabric, 1.35 oz./S.Y., 36"W, 10.8 sq./roll				Ea.	173			173	191
0500	Base & finish coat, 3 gal./sq., 5 gal./can				Gal.	8.60			8.60	9.45
0600	Coating, ceramic granules, 1/2 sq./bag				Ea.	30.50			30.50	33.50
0700	Aluminum, 2 gal./sq.				Gal.	19.80			19.80	22
0800	Emulsion, fibered or non-fibered, 4 gal./sq.				"	7.40			7.40	8.15
	07 51 13.20 Built-Up Roofing Systems									
0010	**BUILT-UP ROOFING SYSTEMS** R075113-20									
0120	Asphalt flood coat with gravel/slag surfacing, not including									
0140	Insulation, flashing or wood nailers									
0200	Asphalt base sheet, 3 plies #15 asphalt felt, mopped	G-1	22	2.545	Sq.	109	118	25	252	340
0350	On nailable decks		21	2.667		101	124	26	251	340
0500	4 plies #15 asphalt felt, mopped		20	2.800		134	130	27.50	291.50	390
0550	On nailable decks		19	2.947		118	137	29	284	385
0700	Coated glass base sheet, 2 plies glass (type IV), mopped		22	2.545		111	118	25	254	340
0850	3 plies glass, mopped		20	2.800		133	130	27.50	290.50	390
0950	On nailable decks		19	2.947		126	137	29	292	390
100	4 plies glass fiber felt (type IV), mopped		20	2.800		164	130	27.50	321.50	420
150	On nailable decks		19	2.947		149	137	29	315	415
200	Coated & saturated base sheet, 3 plies #15 asph. felt, mopped		20	2.800		110	130	27.50	267.50	360
250	On nailable decks		19	2.947		102	137	29	268	365
300	4 plies #15 asphalt felt, mopped		22	2.545		127	118	25	270	360
2000	Asphalt flood coat, smooth surface									
2200	Asphalt base sheet & 3 plies #15 asphalt felt, mopped	G-1	24	2.333	Sq.	103	108	23	234	315
2400	On nailable decks		23	2.435		95	113	24	232	315
2600	4 plies #15 asphalt felt, mopped		24	2.333		120	108	23	251	335
2700	On nailable decks		23	2.435		112	113	24	249	335
2900	Coated glass fiber base sheet, mopped, and 2 plies of									
2910	glass fiber felt (type IV)	G-1	25	2.240	Sq.	105	104	22	231	305
3100	On nailable decks		24	2.333		99	108	23	230	310
3200	3 plies, mopped		23	2.435		127	113	24	264	350
3300	On nailable decks		22	2.545		120	118	25	263	350
3800	4 plies glass fiber felt (type IV), mopped		23	2.435		150	113	24	287	375
3900	On nailable decks	G-1	22	2.545	Sq.	142	118	25	285	375
4000	Coated & saturated base sheet, 3 plies #15 asph. felt, mopped		24	2.333		104	108	23	235	315
4200	On nailable decks		23	2.435		96	113	24	233	315
4300	4 plies #15 organic felt, mopped		22	2.545		121	118	25	264	350
4500	Coal tar pitch with gravel/slag surfacing									
4600	4 plies #15 tarred felt, mopped	G-1	21	2.667	Sq.	222	124	26	372	475
4800	3 plies glass fiber felt (type IV), mopped	"	19	2.947	"	182	137	29	348	455
5000	Coated glass fiber base sheet, and 2 plies of									

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07 51 Built-Up Bituminous Roofing

07 51 13 – Built-Up Asphalt Roofing

	07 51 13.20 Built-Up Roofing Systems	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
5010	glass fiber felt (type IV), mopped	G-1	19	2.947	Sq.	185	137	29	351	455
5300	On nailable decks		18	3.111		162	144	30.50	336.50	445
5600	4 plies glass fiber felt (type IV), mopped		21	2.667		253	124	26	403	505
5800	On nailable decks		20	2.800		230	130	27.50	387.50	495
	07 51 13.30 Cants									
0010	**CANTS**									
0012	Lumber, treated, 4" x 4" cut diagonally	1 Rofc	325	.025	L.F.	1.96	1.22		3.18	4.1
0300	Mineral or fiber, trapezoidal, 1" x 4" x 48"		325	.025		.37	1.22		1.59	2.3
0400	1-1/2" x 5-5/8" x 48"		325	.025		.49	1.22		1.71	2.5
	07 51 13.40 Felts									
0010	**FELTS**									
0012	Glass fibered roofing felt, #15, not mopped	1 Rofc	58	.138	Sq.	9.95	6.85		16.80	22
0300	Base sheet, #80, channel vented		58	.138		48.50	6.85		55.35	64
0400	#70, coated		58	.138		19.25	6.85		26.10	32
0500	Cap, #87, mineral surfaced		58	.138		73.50	6.85		80.35	92
0600	Flashing membrane, #65		16	.500		10.35	25		35.35	51.5
0800	Coal tar fibered, #15, no mopping		58	.138		19.15	6.85		26	32
0900	Asphalt felt, #15, 4 sq./roll, no mopping		58	.138		4.43	6.85		11.28	15.9
1100	#30, 2 sq./roll		58	.138		8.70	6.85		15.55	20.5
1200	Double coated, #33		58	.138		12.35	6.85		19.20	24.5
1400	#40, base sheet		58	.138		11.35	6.85		18.20	23.5
1450	Coated and saturated		58	.138		12.45	6.85		19.30	25
1500	Tarred felt, organic, #15, 4 sq. rolls		58	.138		16.60	6.85		23.45	29.5
1550	#30, 2 sq. roll		58	.138		27.50	6.85		34.35	41
1700	Add for mopping above felts, per ply, asphalt, 24 lb./sq.	G-1	192	.292		11	13.50	2.87	27.37	37.5
1800	Coal tar mopping, 30 lb./sq.		186	.301		19.80	13.95	2.96	36.71	48
1900	Flood coat, with asphalt, 60 lb./sq.		60	.933		27.50	43.50	9.20	80.20	110
2000	With coal tar, 75 lb./sq.		56	1		49.50	46.50	9.85	105.85	140
	07 51 13.50 Walkways for Built-Up Roofs									
0010	**WALKWAYS FOR BUILT-UP ROOFS**									
0020	Asphalt impregnated, 3' x 6' x 1/2" thick	1 Rofc	400	.020	S.F.	1.74	.99		2.73	3.5
0100	3' x 3' x 3/4" thick	1 Rofc	400	.020	S.F.	5	.99		5.99	7.
0300	Concrete patio blocks, 2" thick, natural	1 Clab	115	.070		3.70	3.17		6.87	8.9
0400	Colors	"	115	.070		2.42	3.17		5.59	7.4

07 52 Modified Bituminous Membrane Roofing

07 52 13 – Atactic-Polypropylene-Modified Bituminous Membrane Roofing

	07 52 13.10 APP Modified Bituminous Membrane	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**APP MODIFIED BITUMINOUS MEMBRANE** R075213-30									
0020	Base sheet, #15 glass fiber felt, nailed to deck	1 Rofc	58	.138	Sq.	11.95	6.85		18.80	24.5
0030	Spot mopped to deck	G-1	295	.190		15.45	8.80	1.87	26.12	33.5
0040	Fully mopped to deck	"	192	.292		21	13.50	2.87	37.37	48
0050	#15 organic felt, nailed to deck	1 Rofc	58	.138		6.40	6.85		13.25	18.
0060	Spot mopped to deck	G-1	295	.190		9.95	8.80	1.87	20.62	27
0070	Fully mopped to deck	"	192	.292		15.40	13.50	2.87	31.77	42
2100	APP mod., smooth surf. cap sheet, poly. reinf., torched, 160 mils	G-5	2100	.019	S.F.	.75	.86	.08	1.69	2.3
2150	170 mils		2100	.019		.68	.86	.08	1.62	2.
2200	Granule surface cap sheet, poly. reinf., torched, 180 mils		2000	.020		.87	.90	.08	1.85	2.
2250	Smooth surface flashing, torched, 160 mils		1260	.032		.75	1.43	.13	2.31	3.
2300	170 mils		1260	.032		.68	1.43	.13	2.24	3.

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07 52 Modified Bituminous Membrane Roofing

07 52 13 – Atactic-Polypropylene-Modified Bituminous Membrane Roofing

	07 52 13.10 APP Modified Bituminous Membrane	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2350	Granule surface flashing, torched, 180 mils	G-5	1260	.032	S.F.	.87	1.43	.13	2.43	3.43
2400	Fibrated aluminum coating	1 Rofc	3800	.002	↓	.10	.10		.20	.28
2450	Seam heat welding	"	205	.039	L.F.	.10	1.94		2.04	3.25

07 52 16 – Styrene-Butadiene-Styrene Modified Bituminous Membrane Roofing

07 52 16.10 SBS Modified Bituminous Membrane

0010	**SBS MODIFIED BITUMINOUS MEMBRANE**									
0080	Mod. bit. rfng., SBS mod, gran surf. cap sheet, poly. reinf.									
0650	120 to 149 mils thick	G-1	2000	.028	S.F.	1.27	1.30	.28	2.85	3.80
0750	150 to 160 mils		2000	.028		1.96	1.30	.28	3.54	4.56
1600	Smooth surface cap sheet, mopped, 145 mils		2100	.027		.85	1.24	.26	2.35	3.23
1620	Lightweight base sheet, fiberglass reinforced, 35 to 47 mil		2100	.027		.28	1.24	.26	1.78	2.60
1625	Heavyweight base/ply sheet, reinforced, 87 to 120 mil thick	↓	2100	.027		.87	1.24	.26	2.37	3.25
1650	Granulated walkpad, 180 to 220 mils	1 Rofc	400	.020		1.75	.99		2.74	3.53
1700	Smooth surface flashing, 145 mils	G-1	1260	.044		.85	2.06	.44	3.35	4.76
1800	150 mils		1260	.044		.49	2.06	.44	2.99	4.36
1900	Granular surface flashing, 150 mils		1260	.044		.65	2.06	.44	3.15	4.54
2000	160 mils	↓	1260	.044		.73	2.06	.44	3.23	4.62
2010	Elastomeric asphalt primer	1 Rofc	2600	.003		.16	.15		.31	.43
2015	Roofing asphalt, 30 lb./square	G-1	19000	.003	↓	.14	.14	.03	.31	.40
2020	Cold process adhesive, 20 to 30 mils thick	1 Rofc	750	.011	S.F.	.20	.53		.73	1.08
2025	Self adhering vapor retarder, 30 to 45 mils thick	G-5	2150	.019	"	1.01	.84	.08	1.93	2.56
2050	Seam heat welding	1 Rofc	205	.039	L.F.	.10	1.94		2.04	3.25

07 53 Elastomeric Membrane Roofing

07 53 16 – Chlorosulfonate-Polyethylene Roofing

07 53 16.10 Chlorosulfonated Polyethylene Roofing

0010	**CHLOROSULFONATED POLYETHYLENE ROOFING**									
0800	Chlorosulfonated polyethylene (CSPE)									
0900	45 mils, heat welded seams, plate attachment	G-5	35	1.143	Sq.	266	51.50	4.75	322.25	380
1100	Heat welded seams, plate attachment and ballasted		26	1.538		278	69.50	6.40	353.90	425
1200	60 mils, heat welded seams, plate attachment		35	1.143		365	51.50	4.75	421.25	490
1300	Heat welded seams, plate attachment and ballasted	↓	26	1.538	↓	375	69.50	6.40	450.90	535

07 53 23 – Ethylene-Propylene-Diene-Monomer Roofing

07 53 23.20 Ethylene-Propylene-Diene-Monomer Roofing

0010	**ETHYLENE-PROPYLENE-DIENE-MONOMER ROOFING (EPDM)**									
3500	Ethylene-propylene-diene-monomer (EPDM), 45 mils, 0.28 psf									
3600	Loose-laid & ballasted with stone (10 psf)	G-5	51	.784	Sq.	101	35.50	3.26	139.76	172
3700	Mechanically attached		35	1.143		95	51.50	4.75	151.25	193
3800	Fully adhered with adhesive	↓	26	1.538	↓	90	69.50	6.40	165.90	218
4500	60 mils, 0.40 psf									
4600	Loose-laid & ballasted with stone (10 psf)	G-5	51	.784	Sq.	118	35.50	3.26	156.76	190
4700	Mechanically attached		35	1.143		110	51.50	4.75	166.25	210
4800	Fully adhered with adhesive	↓	26	1.538		105	69.50	6.40	180.90	235
4810	45 mil, 0.28 psf, membrane only					64.50			64.50	71
4820	60 mil, 0.40 psf, membrane only				↓	78.50			78.50	86.50
4850	Seam tape for membrane, 3" x 100' roll				Ea.	42			42	46
4900	Batten strips, 10' sections					5.70			5.70	6.30
4910	Cover tape for batten strips, 6" x 100' roll				↓	156			156	172
4930	Plate anchors				M	105			105	115
4970	Adhesive for fully adhered systems, 60 S.F./gal.				S.F.	.70			.70	.77

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07 53 Elastomeric Membrane Roofing

07 53 29 – Polyisobutylene Roofing

07 53 29.10 Polyisobutylene Roofing	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **POLYISOBUTYLENE ROOFING**									
7500 Polyisobutylene (PIB), 100 mils, 0.57 psf									
7600 Loose-laid & ballasted with stone/gravel (10 psf)	G-5	51	.784	Sq.	219	35.50	3.26	257.76	30
7700 Partially adhered with adhesive		35	1.143		262	51.50	4.75	318.25	38
7800 Hot asphalt attachment		35	1.143		250	51.50	4.75	306.25	36
7900 Fully adhered with contact cement		26	1.538		276	69.50	6.40	351.90	42

07 54 Thermoplastic Membrane Roofing

07 54 16 – Ketone Ethylene Ester Roofing

07 54 16.10 Ketone Ethylene Ester Roofing	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **KETONE ETHYLENE ESTER ROOFING**									
0100 Ketone ethylene ester roofing, 50 mil, fully adhered	G-5	26	1.538	Sq.	215	69.50	6.40	290.90	355
0120 Mechanically attached		35	1.143		143	51.50	4.75	199.25	246
0140 Ballasted with stone		51	.784		149	35.50	3.26	187.76	225
0160 50 mil, fleece backed, adhered w/hot asphalt	G-1	26	2.154		160	100	21	281	360
0180 Accessories, pipe boot	1 Rofc	32	.250	Ea.	26	12.40		38.40	48.5
0200 Pre-formed corners		32	.250	"	9.75	12.40		22.15	31
0220 Ketone clad metal, including up to 4 bends		330	.024	S.F.	4.11	1.20		5.31	6.4
0240 Walkway pad	2 Rofc	800	.020	"	4.27	.99		5.26	6.3
0260 Stripping material	1 Rofc	310	.026	L.F.	.97	1.28		2.25	3.1

07 54 19 – Polyvinyl-Chloride Roofing

07 54 19.10 Polyvinyl-Chloride Roofing (PVC)	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **POLYVINYL-CHLORIDE ROOFING (PVC)**									
8200 Heat welded seams									
8700 Reinforced, 48 mils, 0.33 psf									
8750 Loose-laid & ballasted with stone/gravel (12 psf)	G-5	51	.784	Sq.	124	35.50	3.26	162.76	197
8800 Mechanically attached		35	1.143		118	51.50	4.75	174.25	219
8850 Fully adhered with adhesive		26	1.538		110	69.50	6.40	185.90	239
8860 Reinforced, 60 mils, 0.40 psf									
8870 Loose-laid & ballasted with stone/gravel (12 psf)	G-5	51	.784	Sq.	135	35.50	3.26	173.76	209
8880 Mechanically attached		35	1.143		129	51.50	4.75	185.25	231
8890 Fully adhered with adhesive		26	1.538		120	69.50	6.40	195.90	251

07 54 23 – Thermoplastic-Polyolefin Roofing

07 54 23.10 Thermoplastic Polyolefin Roofing (T.P.O.)	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **THERMOPLASTIC POLYOLEFIN ROOFING (T.P.O.)**									
0100 45 mil, loose laid & ballasted with stone (1/2 ton/sq.)	G-5	51	.784	Sq.	90.50	35.50	3.26	129.26	161
0120 Fully adhered		25	1.600		79	72	6.65	157.65	211
0140 Mechanically attached		34	1.176		78.50	53	4.89	136.39	178
0160 Self adhered		35	1.143		155	51.50	4.75	211.25	260
0180 60 mil membrane, heat welded seams, ballasted		50	.800		106	36	3.33	145.33	178
0200 Fully adhered		25	1.600		93.50	72	6.65	172.15	227
0220 Mechanically attached		34	1.176		99	53	4.89	156.89	200
0240 Self adhered		35	1.143		186	51.50	4.75	242.25	293

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07 55 Protected Membrane Roofing

07 55 10 – Protected Membrane Roofing Components

07 55 10.10 Protected Membrane Roofing Components	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **PROTECTED MEMBRANE ROOFING COMPONENTS**									
0100 Choose roofing membrane from 07 50									
0120 Then choose roof deck insulation from 07 22									
0130 Filter fabric	2 Rofc	10000	.002	S.F.	.05	.08		.13	.19
0140 Ballast, 3/8" - 1/2" in place	G-1	36	1.556	Ton	25	72	15.30	112.30	161
0150 3/4" - 1-1/2" in place	"	36	1.556	"	25	72	15.30	112.30	161
0200 2" concrete blocks, natural	1 Clab	115	.070	S.F.	3.70	3.17		6.87	8.80
0210 Colors	"	115	.070	"	2.42	3.17		5.59	7.40

07 56 Fluid-Applied Roofing

07 56 10 – Fluid-Applied Roofing Elastomers

07 56 10.10 Elastomeric Roofing

0010 **ELASTOMERIC ROOFING**									
0020 Acrylic, 44% solids, 2 coats, on corrugated metal	2 Rofc	2400	.007	S.F.	.70	.33		1.03	1.31
0025 On smooth metal		3000	.005		.56	.26		.82	1.04
0030 On foam or modified bitumen		1500	.011		1.12	.53		1.65	2.09
0035 On concrete		1500	.011		1.12	.53		1.65	2.09
0040 On tar and gravel		1500	.011		1.12	.53		1.65	2.09
0045 36% solids, 2 coats, on corrugated metal		2400	.007		.70	.33		1.03	1.31
0050 On smooth metal		3000	.005		.56	.26		.82	1.04
0055 On foam or modified bitumen		1500	.011		1.12	.53		1.65	2.09
0060 On concrete		1500	.011		1.12	.53		1.65	2.09
0065 On tar and gravel		1500	.011		1.12	.53		1.65	2.09
0070 Primer if required, 2 coats on corrugated metal		2400	.007		1.40	.33		1.73	2.08
0075 On smooth metal		3000	.005		1.40	.26		1.66	1.97
0080 On foam or modified bitumen		1500	.011		.83	.53		1.36	1.77
0085 On concrete		1500	.011		.62	.53		1.15	1.54
0090 On tar & gravel/rolled roof	↓	1500	.011		.83	.53		1.36	1.77
0110 Acrylic rubber, fluid applied, 20 mils thick	G-5	2000	.020		2.65	.90	.08	3.63	4.47
0120 50 mils, reinforced		1200	.033		.64	1.50	.14	2.28	3.29
0130 For walking surface, add		900	.044		1.70	2	.18	3.88	5.30
0300 Neoprene, fluid applied, 20 mil thick, not reinforced	G-1	1135	.049		1.35	2.29	.49	4.13	5.70
0600 Non-woven polyester, reinforced		960	.058		1.51	2.70	.57	4.78	6.65
0700 5 coat neoprene deck, 60 mil thick, under 10,000 S.F.		325	.172		4.50	8	1.70	14.20	19.75
0900 Over 10,000 S.F.	↓	625	.090	↓	4.50	4.15	.88	9.53	12.65

07 57 Coated Foamed Roofing

07 57 13 – Sprayed Polyurethane Foam Roofing

07 57 13.10 Sprayed Polyurethane Foam Roofing (S.P.F.)

0010 **SPRAYED POLYURETHANE FOAM ROOFING (S.P.F.)**									
0100 Primer for metal substrate (when required)	G-2A	3000	.008	S.F.	.59	.35	.22	1.16	1.45
0200 Primer for non-metal substrate (when required)		3000	.008		.22	.35	.22	.79	1.04
0300 Closed cell spray, polyurethane foam, 3 lb./C.F. density, 1", R6.7		15000	.002		.83	.07	.04	.94	1.07
0400 2", R13.4		13125	.002		1.66	.08	.05	1.79	2.01
0500 3", R18.6		11485	.002		2.49	.09	.06	2.64	2.94
0550 4", R24.8		10080	.002		3.31	.11	.07	3.49	3.89
0700 Spray-on silicone coating	↓	2500	.010	↓	.02	.42	.26	.70	.98

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07 58 Roll Roofing

07 58 10 – Asphalt Roll Roofing

07 58 10.10 Roll Roofing	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **ROLL ROOFING**									
0100 Asphalt, mineral surface									
0200 1 ply #15 organic felt, 1 ply mineral surfaced									
0300 Selvage roofing, lap 19", nailed & mopped	G-1	27	2.074	Sq.	72	96	20.50	188.50	25
0400 3 plies glass fiber felt (type IV), 1 ply mineral surfaced									
0500 Selvage roofing, lapped 19", mopped	G-1	25	2.240	Sq.	124	104	22	250	33
0600 Coated glass fiber base sheet, 2 plies of glass fiber									
0700 Felt (type IV), 1 ply mineral surfaced selvage									
0800 Roofing, lapped 19", mopped	G-1	25	2.240	Sq.	133	104	22	259	34
0900 On nailable decks	"	24	2.333	"	122	108	23	253	33
1000 3 plies glass fiber felt (type III), 1 ply mineral surfaced									
1100 Selvage roofing, lapped 19", mopped	G-1	25	2.240	Sq.	124	104	22	250	33

07 61 Sheet Metal Roofing

07 61 13 – Standing Seam Sheet Metal Roofing

07 61 13.10 Standing Seam Sheet Metal Roofing, Field Fab.

0010 **STANDING SEAM SHEET METAL ROOFING, FIELD FABRICATED**									
0400 Copper standing seam roofing, over 10 squares, 16 oz., 125 lb./sq.	1 Shee	1.30	6.154	Sq.	1,775	415		2,190	2,57
0600 18 oz., 140 lb./sq.		1.20	6.667		1,975	450		2,425	2,85
0700 20 oz., 150 lb./sq.		1.10	7.273		2,150	490		2,640	3,10
1200 For abnormal conditions or small areas, add					25%	100%			
1300 For lead-coated copper, add					25%				

07 61 16 – Batten Seam Sheet Metal Roofing

07 61 16.10 Batten Seam Sheet Metal Roofing, Field Fab.

0010 **BATTEN SEAM SHEET METAL ROOFING, FIELD FABRICATED**									
0012 Copper batten seam roofing, over 10 sq., 16 oz., 130 lb./sq.	1 Shee	1.10	7.273	Sq.	2,250	490		2,740	3,22
0020 Lead batten seam roofing, 5 lb./S.F.		1.20	6.667		2,725	450		3,175	3,65
0100 Zinc/copper alloy batten seam roofing, .020" thick		1.20	6.667		785	450		1,235	1,55
0200 Copper roofing, batten seam, over 10 sq., 18 oz., 145 lb./sq.		1	8		2,500	540		3,040	3,57
0300 20 oz., 160 lb./sq.	1 Shee	1	8	Sq.	2,725	540		3,265	3,82
0500 Stainless steel batten seam roofing, type 304, 28 ga.		1.20	6.667		495	450		945	1,22
0600 26 ga.		1.15	6.957		615	470		1,085	1,37
0800 Zinc, copper alloy roofing, batten seam, .027" thick		1.15	6.957		935	470		1,405	1,72
0900 .032" thick		1.10	7.273		965	490		1,455	1,80
1000 .040" thick		1.05	7.619		1,350	515		1,865	2,27

07 61 19 – Flat Seam Sheet Metal Roofing

07 61 19.10 Flat Seam Sheet Metal Roofing, Field Fabricated

0010 **FLAT SEAM SHEET METAL ROOFING, FIELD FABRICATED**									
0900 Copper flat seam roofing, over 10 squares, 16 oz., 115 lb./sq.	1 Shee	1.20	6.667	Sq.	1,650	450		2,100	2,47
0950 18 oz., 130 lb./sq.		1.15	6.957		1,850	470		2,320	2,72
1000 20 oz., 145 lb./sq.		1.10	7.273		2,000	490		2,490	2,95
1008 Zinc flat seam roofing, .020" thick		1.20	6.667		670	450		1,120	1,42
1010 .027" thick		1.15	6.957		800	470		1,270	1,60
1020 .032" thick		1.12	7.143		820	485		1,305	1,62
1030 .040" thick		1.05	7.619		1,150	515		1,665	2,05
1100 Lead flat seam roofing, 5 lb./S.F.		1.30	6.154		2,325	415		2,740	3,17

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07 65 Flexible Flashing

07 65 10 – Sheet Metal Flashing

	07 65 10.10 Sheet Metal Flashing and Counter Flashing	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**SHEET METAL FLASHING AND COUNTER FLASHING**									
0011	Including up to 4 bends									
0020	Aluminum, mill finish, .013" thick	1 Rofc	145	.055	S.F.	1.33	2.74		4.07	5.90
0030	.016" thick		145	.055		2.59	2.74		5.33	7.30
0060	.019" thick		145	.055		5.20	2.74		7.94	10.20
0100	.032" thick		145	.055		4.24	2.74		6.98	9.10
0200	.040" thick		145	.055		4.47	2.74		7.21	9.35
0300	.050" thick		145	.055		6.25	2.74		8.99	11.30
0325	Mill finish 5" x 7" step flashing, .016" thick		1920	.004	Ea.	.17	.21		.38	.53
0350	Mill finish 12" x 12" step flashing, .016" thick		1600	.005	"	.62	.25		.87	1.08
0400	Painted finish, add				S.F.	.32			.32	.35
1000	Mastic-coated 2 sides, .005" thick	1 Rofc	330	.024		1.91	1.20		3.11	4.05
1100	.016" thick		330	.024		2.11	1.20		3.31	4.27
1600	Copper, 16 oz. sheets, under 1000 lb.		115	.070		14.15	3.45		17.60	21
1700	Over 4000 lb.		155	.052		14.15	2.56		16.71	19.70
1900	20 oz. sheets, under 1000 lb.		110	.073		17.15	3.61		20.76	25
2000	Over 4000 lb.		145	.055		16.30	2.74		19.04	22.50
2200	24 oz. sheets, under 1000 lb.		105	.076		20.50	3.78		24.28	28.50
2300	Over 4000 lb.	1 Rofc	135	.059	S.F.	19.35	2.94		22.29	26.50
2500	32 oz. sheets, under 1000 lb.		100	.080		27.50	3.97		31.47	36.50
2600	Over 4000 lb.		130	.062		26	3.05		29.05	33.50
2700	W shape for valleys, 16 oz., 24" wide		100	.080	L.F.	18.40	3.97		22.37	26.50
5800	Lead, 2.5 lb./S.F., up to 12" wide		135	.059	S.F.	6.45	2.94		9.39	11.85
5900	Over 12" wide		135	.059		4.44	2.94		7.38	9.65
8900	Stainless steel sheets, 32 ga.		155	.052		3.63	2.56		6.19	8.15
9000	28 ga.		155	.052		8.30	2.56		10.86	13.30
9100	26 ga.		155	.052		6.45	2.56		9.01	11.25
9200	24 ga.		155	.052		7.75	2.56		10.31	12.65
9290	For mechanically keyed flashing, add					40%				
9320	Steel sheets, galvanized, 20 ga.	1 Rofc	130	.062	S.F.	3	3.05		6.05	8.25
9322	22 ga.		135	.059		1.69	2.94		4.63	6.60
9324	24 ga.		140	.057		.99	2.83		3.82	5.70
9326	26 ga.		148	.054		2.30	2.68		4.98	6.90
9328	28 ga.		155	.052		1.98	2.56		4.54	6.35
9340	30 ga.		160	.050		1.67	2.48		4.15	5.85
9400	Terne coated stainless steel, .015" thick, 28 ga.		155	.052		8.35	2.56		10.91	13.30
9500	.018" thick, 26 ga.		155	.052		9.30	2.56		11.86	14.40
9600	Zinc and copper alloy (brass), .020" thick		155	.052		9.25	2.56		11.81	14.30
9700	.027" thick		155	.052		10.90	2.56		13.46	16.10
9800	.032" thick		155	.052		13.65	2.56		16.21	19.15
9900	.040" thick		155	.052		19.90	2.56		22.46	26

07 65 12 – Fabric and Mastic Flashings

	07 65 12.10 Fabric and Mastic Flashing and Counter Flashing									
0010	**FABRIC AND MASTIC FLASHING AND COUNTER FLASHING**									
1300	Asphalt flashing cement, 5 gallon				Gal.	11.75			11.75	12.95
4900	Fabric, asphalt-saturated cotton, specification grade	1 Rofc	35	.229	S.Y.	3.40	11.35		14.75	22
5000	Utility grade		35	.229		1.48	11.35		12.83	20
5300	Close-mesh fabric, saturated, 17 oz./S.Y.		35	.229		2.26	11.35		13.61	21
5500	Fiberglass, resin-coated		35	.229		1.17	11.35		12.52	19.70
8500	Shower pan, bituminous membrane, 7 oz.		155	.052	S.F.	1.84	2.56		4.40	6.15

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07 65 Flexible Flashing

07 65 13 – Laminated Sheet Flashing

07 65 13.10 Laminated Sheet Flashing	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **LAMINATED SHEET FLASHING**, Including up to 4 bends									
0500 Aluminum, fabric-backed 2 sides, mill finish, .004" thick	1 Rofc	330	.024	S.F.	1.62	1.20		2.82	3.7
0700 .005" thick		330	.024		1.90	1.20		3.10	4.0
0750 Mastic-backed, self adhesive		460	.017		3.49	.86		4.35	5.2
0800 Mastic-coated 2 sides, .004" thick	1 Rofc	330	.024	S.F.	1.62	1.20		2.82	3.7
2800 Copper, paperbacked 1 side, 2 oz.		330	.024		2.20	1.20		3.40	4.3
2900 3 oz.		330	.024		3.21	1.20		4.41	5.5
3100 Paperbacked 2 sides, 2 oz.		330	.024		2.44	1.20		3.64	4.6
3150 3 oz.		330	.024		2.28	1.20		3.48	4.4
3200 5 oz.		330	.024		3.97	1.20		5.17	6.3
3250 7 oz.		330	.024		6.25	1.20		7.45	8.8
3400 Mastic-backed 2 sides, copper, 2 oz.		330	.024		2.32	1.20		3.52	4.5
3500 3 oz.		330	.024		2.63	1.20		3.83	4.8
3700 5 oz.		330	.024		4	1.20		5.20	6.3
3800 Fabric-backed 2 sides, copper, 2 oz.		330	.024		2.09	1.20		3.29	4.2
4000 3 oz.		330	.024		2.95	1.20		4.15	5.2
4100 5 oz.		330	.024		4.13	1.20		5.33	6.5
4300 Copper-clad stainless steel, .015" thick, under 500 lb.		115	.070		7.05	3.45		10.50	13.3
4400 Over 2000 lb.		155	.052		6.95	2.56		9.51	11.8
4600 .018" thick, under 500 lb.		100	.080		8.10	3.97		12.07	15.3
4700 Over 2000 lb.		145	.055		8.35	2.74		11.09	13.6
8550 Shower pan, 3 ply copper and fabric, 3 oz.		155	.052		4.22	2.56		6.78	8.8
8600 7 oz.		155	.052		5.10	2.56		7.66	9.7
9300 Stainless steel, paperbacked 2 sides, .005" thick		330	.024		4.14	1.20		5.34	6.5

07 65 19 – Plastic Sheet Flashing

07 65 19.10 Plastic Sheet Flashing and Counter Flashing

0010 **PLASTIC SHEET FLASHING AND COUNTER FLASHING**									
7300 Polyvinyl chloride, black, 10 mil	1 Rofc	285	.028	S.F.	.28	1.39		1.67	2.5
7400 20 mil		285	.028		.27	1.39		1.66	2.5
7600 30 mil		285	.028		.34	1.39		1.73	2.6
7700 60 mil		285	.028		.90	1.39		2.29	3.2
7900 Black or white for exposed roofs, 60 mil		285	.028		4.89	1.39		6.28	7.6
8060 PVC tape, 5" x 45 mils, for joint covers, 100 L.F./roll				Ea.	189			189	208
8850 Polyvinyl chloride, 30 mil	1 Rofc	160	.050	S.F.	1.06	2.48		3.54	5.2

07 65 23 – Rubber Sheet Flashing

07 65 23.10 Rubber Sheet Flashing and Counter Flashing

0010 **RUBBER SHEET FLASHING AND COUNTER FLASHING**									
4810 EPDM 90 mils, 1" diameter pipe flashing	1 Rofc	32	.250	Ea.	22	12.40		34.40	44
4820 2" diameter		30	.267		4.15	13.25		17.40	26
4830 3" diameter		28	.286		4.65	14.15		18.80	28
4840 4" diameter		24	.333		8.35	16.55		24.90	36
4850 6" diameter		22	.364		9.65	18.05		27.70	39.5
8100 Rubber, butyl, 1/32" thick		285	.028	S.F.	2.35	1.39		3.74	4.8
8200 1/16" thick	1 Rofc	285	.028	S.F.	4.91	1.39		6.30	7.6
8300 Neoprene, cured, 1/16" thick		285	.028		2.35	1.39		3.74	4.5
8400 1/8" thick		285	.028		6.20	1.39		7.59	9.0

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07 65 Flexible Flashing

07 65 26 – Self-Adhering Sheet Flashing

7 65 26.10 Self-Adhering Sheet or Roll Flashing	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
010 **SELF-ADHERING SHEET OR ROLL FLASHING**									
020 Self-adhered flashing, 25 mil cross laminated HDPE, 4" wide	1 Rofc	960	.008	L.F.	.27	.41		.68	.97
040 6" wide		896	.009		.41	.44		.85	1.17
060 9" wide		832	.010		.62	.48		1.10	1.45
080 12" wide	↓	768	.010	↓	.82	.52		1.34	1.74

07 71 Roof Specialties

07 71 16 – Manufactured Counterflashing Systems

7 71 16.20 Pitch Pockets, Variable Sizes

010 **PITCH POCKETS, VARIABLE SIZES**									
100 Adjustable, 4" to 7", welded corners, 4" deep	1 Rofc	48	.167	Ea.	26.50	8.25		34.75	42.50
200 Side extenders, 6"	"	240	.033	"	3.59	1.65		5.24	6.65

07 71 19 – Manufactured Gravel Stops and Fasciae

7 71 19.10 Gravel Stop

010 **GRAVEL STOP**									
020 Aluminum, .050" thick, 4" face height, mill finish	1 Shee	145	.055	L.F.	4.26	3.73		7.99	10.30
080 Duranodic finish		145	.055		4.26	3.73		7.99	10.30
100 Painted		145	.055		4.26	3.73		7.99	10.30
300 6" face height		135	.059		9.30	4		13.30	16.30
350 Duranodic finish		135	.059		10.80	4		14.80	17.95
400 Painted		135	.059		9.50	4		13.50	16.50
600 8" face height		125	.064		8.90	4.32		13.22	16.30
650 Duranodic finish		125	.064		10.80	4.32		15.12	18.35
700 Painted		125	.064		12	4.32		16.32	19.70
900 12" face height, .080" thick, 2 piece		100	.080		13.10	5.40		18.50	22.50
950 Duranodic finish		100	.080		12.70	5.40		18.10	22
000 Painted		100	.080		17.05	5.40		22.45	27
200 Copper, 16 oz., 3" face height		145	.055		41.50	3.73		45.23	51
300 6" face height		135	.059		50	4		54	61
350 Galv steel, 24 ga., 4" leg, plain, with continuous cleat, 4" face		145	.055		8.55	3.73		12.28	15
360 6" face height		145	.055		7.80	3.73		11.53	14.20
500 Polyvinyl chloride, 6" face height		135	.059		6.90	4		10.90	13.65
600 9" face height		125	.064		8.25	4.32		12.57	15.60
300 Stainless steel, 24 ga., 6" face height		135	.059		20	4		24	28.50
900 12" face height		100	.080		26.50	5.40		31.90	37
100 20 ga., 6" face height	↓	135	.059	↓	25	4		29	33.50
200 12" face height	1 Shee	100	.080	L.F.	31.50	5.40		36.90	42.50

7 71 19.30 Fascia

010 **FASCIA**									
100 Aluminum, reverse board and batten, .032" thick, colored, no furring incl.	1 Shee	145	.055	S.F.	8.85	3.73		12.58	15.35
300 Steel, galv and enameled, stock, no furring, long panels		145	.055		6.90	3.73		10.63	13.20
600 Short panels	↓	115	.070	↓	6.50	4.70		11.20	14.25

07 71 23 – Manufactured Gutters and Downspouts

7 71 23.10 Downspouts

010 **DOWNSPOUTS**									
020 Aluminum, embossed, .020" thick, 2" x 3"	1 Shee	190	.042	L.F.	1.40	2.84		4.24	5.80
100 Enameled		190	.042		1.40	2.84		4.24	5.80
300 .024" thick, 2" x 3"		180	.044		1.40	3		4.40	6.05
400 3" x 4"	↓	140	.057	↓	2.90	3.86		6.76	9

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07 71 23 – Manufactured Gutters and Downspouts

	07 71 23.10 Downspouts	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0600	Round, corrugated aluminum, 3" diameter, .020" thick	1 Shee	190	.042	L.F.	4.80	2.84		7.64	9.6
0700	4" diameter, .025" thick		140	.057		8.40	3.86		12.26	15
0900	Wire strainer, round, 2" diameter		155	.052	Ea.	2.14	3.49		5.63	7.6
1000	4" diameter		155	.052		3.79	3.49		7.28	9.4
1200	Rectangular, perforated, 2" x 3"		145	.055		3.06	3.73		6.79	8.9
1300	3" x 4"		145	.055		4.62	3.73		8.35	10.7
1500	Copper, round, 16 oz., stock, 2" diameter		190	.042	L.F.	9.65	2.84		12.49	14.9
1600	3" diameter		190	.042		9.65	2.84		12.49	14.9
1800	4" diameter		145	.055		13.05	3.73		16.78	19.9
1900	5" diameter		130	.062		18.85	4.16		23.01	27.5
2100	Rectangular, corrugated copper, stock, 2" x 3"		190	.042		10.55	2.84		13.39	15.9
2200	3" x 4"		145	.055		15.20	3.73		18.93	22.5
2400	Rectangular, plain copper, stock, 2" x 3"		190	.042		8.95	2.84		11.79	14.1
2500	3" x 4"		145	.055		9.90	3.73		13.63	16.5
2700	Wire strainers, rectangular, 2" x 3"		145	.055	Ea.	22	3.73		25.73	30
2800	3" x 4"		145	.055		18.30	3.73		22.03	25.5
3000	Round, 2" diameter		145	.055		12.20	3.73		15.93	19
3100	3" diameter		145	.055		14.10	3.73		17.83	21
3300	4" diameter		145	.055		16.30	3.73		20.03	23.5
3400	5" diameter		115	.070		21	4.70		25.70	30
3600	Lead-coated copper, round, stock, 2" diameter		190	.042	L.F.	35	2.84		37.84	43
3700	3" diameter		190	.042		33.50	2.84		36.34	41
3900	4" diameter		145	.055		37	3.73		40.73	46.5
4000	5" diameter, corrugated		130	.062		18.85	4.16		23.01	27.5
4200	6" diameter, corrugated		105	.076		25	5.15		30.15	35.5
4300	Rectangular, corrugated, stock, 2" x 3"	1 Shee	190	.042	L.F.	19.75	2.84		22.59	26
4500	Plain, stock, 2" x 3"		190	.042		34.50	2.84		37.34	42.5
4600	3" x 4"		145	.055		55	3.73		58.73	66
4800	Steel, galvanized, round, corrugated, 2" or 3" diameter, 28 ga.		190	.042		3.45	2.84		6.29	8.
4900	4" diameter, 28 ga.		145	.055		4.70	3.73		8.43	10.
5100	5" diameter, 26 ga.		130	.062		5.15	4.16		9.31	11.5
5400	6" diameter, 28 ga.		105	.076		5.90	5.15		11.05	14.5
5500	26 ga.		105	.076		5.95	5.15		11.10	14.5
5700	Rectangular, corrugated, 28 ga., 2" x 3"		190	.042		3.10	2.84		5.94	7.
5800	3" x 4"		145	.055		3.86	3.73		7.59	9.8
6000	Rectangular, plain, 28 ga., galvanized, 2" x 3"		190	.042		3.10	2.84		5.94	7.
6100	3" x 4"		145	.055		3.80	3.73		7.53	9.8
6300	Epoxy painted, 24 ga., corrugated, 2" x 3"		190	.042		5.80	2.84		8.64	10.
6400	3" x 4"		145	.055		7.10	3.73		10.83	13.4
6600	Wire strainers, rectangular, 2" x 3"		145	.055	Ea.	25	3.73		28.73	33
6700	3" x 4"		145	.055		25.50	3.73		29.23	33.5
6900	Round strainers, 2" or 3" diameter		145	.055		6.25	3.73		9.98	12.4
7000	4" diameter		145	.055		9.45	3.73		13.18	16
7800	Stainless steel tubing, schedule 5, 2" x 3" or 3" diameter		190	.042	L.F.	94	2.84		96.84	107
7900	3" x 4" or 4" diameter		145	.055		162	3.73		165.73	184
8100	4" x 5" or 5" diameter		135	.059		196	4		200	222
8200	Vinyl, rectangular, 2" x 3"		210	.038		2.45	2.57		5.02	6.4
8300	Round, 2-1/2"		220	.036		1.69	2.46		4.15	5.

07 71 23.20 Downspout Elbows

0010	**DOWNSPOUT ELBOWS**									
0020	Aluminum, embossed, 2" x 3", .020" thick	1 Shee	100	.080	Ea.	1.41	5.40		6.81	9.
0100	Enameled		100	.080		2.49	5.40		7.89	10.

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

07 71 23 – Manufactured Gutters and Downspouts

	07 71 23.20 Downspout Elbows	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
200	Embossed, 3" x 4", .025" thick	1 Shee	100	.080	Ea.	1.41	5.40		6.81	9.70
300	Enameled		100	.080		4.39	5.40		9.79	13
400	Embossed, corrugated, 3" diameter, .020" thick		100	.080		4.61	5.40		10.01	13.20
500	4" diameter, .025" thick		100	.080		8.25	5.40		13.65	17.25
600	Copper, 16 oz., 2" diameter		100	.080		12.40	5.40		17.80	22
700	3" diameter		100	.080		14.10	5.40		19.50	23.50
800	4" diameter		100	.080		18.10	5.40		23.50	28
900	Rectangular, 2" x 3" corrugated		100	.080		10.95	5.40		16.35	20
1100	3" x 4" corrugated		100	.080		16.90	5.40		22.30	26.50
1300	Vinyl, 2-1/2" diameter, 45 or 75 degree bend		100	.080		5.90	5.40		11.30	14.60
1400	Tee Y junction		75	.107		14.65	7.20		21.85	27

07 71 23.30 Gutters

1010	**GUTTERS**									
1012	Aluminum, stock units, 5" K type, .027" thick, plain	1 Shee	125	.064	L.F.	2.40	4.32		6.72	9.15
1100	Enameled		125	.064		2.35	4.32		6.67	9.10
1300	5" K type, .032" thick, plain		125	.064		2.70	4.32		7.02	9.45
1400	Enameled		125	.064		2.67	4.32		6.99	9.45
1700	Copper, half round, 16 oz., stock units, 4" wide		125	.064		8.30	4.32		12.62	15.60
1900	5" wide		125	.064		8.30	4.32		12.62	15.60
2000	6" wide		118	.068		11.15	4.58		15.73	19.15
2200	K type, 16 oz., stock, 5" wide		125	.064		11.75	4.32		16.07	19.45
2300	6" wide		125	.064		10.95	4.32		15.27	18.55
2500	Lead coated copper, 16 oz., half round, stock, 4" wide		125	.064		19.40	4.32		23.72	28
2600	6" wide		118	.068		19.55	4.58		24.13	28.50
2800	K type, stock, 5" wide		125	.064		20.50	4.32		24.82	29
2900	6" wide		125	.064		11.75	4.32		16.07	19.45
3100	Copper clad stainless steel, K type, 5" wide		125	.064		8.15	4.32		12.47	15.45
3200	6" wide		125	.064		4.22	4.32		8.54	11.15
3400	Steel, galv, half round or box, 28 ga., 5" wide, plain		125	.064		3.63	4.32		7.95	10.50
3500	Enameled		125	.064		3.60	4.32		7.92	10.45
3700	26 ga., stock, 5" wide		125	.064		3.63	4.32		7.95	10.50
3800	6" wide		125	.064		4.90	4.32		9.22	11.90
4000	Vinyl, O.G., 4" wide	1 Carp	115	.070		2.13	3.92		6.05	8.20
4100	5" wide		115	.070		2.13	3.92		6.05	8.20
4200	4" half round, stock units		115	.070		1.49	3.92		5.41	7.50
4250	Joint connectors				Ea.	4.88			4.88	5.35
4300	Wood, clear treated cedar, fir or hemlock, 3" x 4"	1 Carp	100	.080	L.F.	10.75	4.50		15.25	18.55
4400	4" x 5"	"	100	.080	"	18.95	4.50		23.45	27.50
5000	Accessories, end cap, K type, aluminum 5"	1 Shee	625	.013	Ea.	.81	.86		1.67	2.19
5010	6"		625	.013		1.44	.86		2.30	2.88
5020	Copper, 5"		625	.013		3.77	.86		4.63	5.45
5030	6"		625	.013		3.97	.86		4.83	5.65
5040	Lead coated copper, 5"		625	.013		14.45	.86		15.31	17.20
5050	6"		625	.013		15.45	.86		16.31	18.25
5060	Copper clad stainless steel, 5"		625	.013		3.93	.86		4.79	5.60
5070	6"		625	.013		3.93	.86		4.79	5.60
5080	Galvanized steel, 5"		625	.013		1.73	.86		2.59	3.20
5090	6"		625	.013		3.58	.86		4.44	5.25
6100	Vinyl, 4"	1 Carp	625	.013		2.88	.72		3.60	4.24
6110	5"	"	625	.013		3.19	.72		3.91	4.58
6120	Half round, copper, 4"	1 Shee	625	.013	Ea.	5.10	.86		5.96	6.90
6130	5"		625	.013		5.80	.86		6.66	7.65

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07 71 23 – Manufactured Gutters and Downspouts

	07 71 23.30 Gutters	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
5140	6"	1 Shee	625	.013	Ea.	9.40	.86		10.26	11.6
5150	Lead coated copper, 5"		625	.013		16.30	.86		17.16	19.2
5160	6"		625	.013		24	.86		24.86	28
5170	Copper clad stainless steel, 5"		625	.013		5.55	.86		6.41	7.4
5180	6"		625	.013		5.05	.86		5.91	6.9
5190	Galvanized steel, 5"		625	.013		3.68	.86		4.54	5.3
5200	6"		625	.013		3.84	.86		4.70	5.5
5210	Outlet, aluminum, 2" x 3"		420	.019		.98	1.29		2.27	3.0
5220	3" x 4"		420	.019		1.15	1.29		2.44	3.2
5230	2-3/8" round		420	.019		.73	1.29		2.02	2.7
5240	Copper, 2" x 3"		420	.019		8.55	1.29		9.84	11.4
5250	3" x 4"		420	.019		9.65	1.29		10.94	12.5
5260	2-3/8" round		420	.019		5.40	1.29		6.69	7.9
5270	Lead coated copper, 2" x 3"		420	.019		29	1.29		30.29	33.5
5280	3" x 4"		420	.019		32.50	1.29		33.79	38
5290	2-3/8" round		420	.019		29	1.29		30.29	34
5300	Copper clad stainless steel, 2" x 3"		420	.019		8.05	1.29		9.34	10.8
5310	3" x 4"		420	.019		9.15	1.29		10.44	12
5320	2-3/8" round		420	.019		5.40	1.29		6.69	7.9
5330	Galvanized steel, 2" x 3"		420	.019		4.18	1.29		5.47	6.5
5340	3" x 4"		420	.019		8	1.29		9.29	10.7
5350	2-3/8" round		420	.019		5.45	1.29		6.74	7.9
5360	K type mitres, aluminum		65	.123		7.15	8.30		15.45	20.5
5370	Copper		65	.123		19.35	8.30		27.65	34
5380	Lead coated copper		65	.123		61.50	8.30		69.80	80
5390	Copper clad stainless steel		65	.123		30.50	8.30		38.80	46
5400	Galvanized steel		65	.123		31	8.30		39.30	46.5
5420	Half round mitres, copper		65	.123		78	8.30		86.30	98.5
5430	Lead coated copper		65	.123		100	8.30		108.30	123
5440	Copper clad stainless steel		65	.123		63	8.30		71.30	81.5
5450	Galvanized steel		65	.123		37	8.30		45.30	53.5
5460	Vinyl mitres and outlets		65	.123		12	8.30		20.30	25.5
5470	Sealant		940	.009	L.F.	.01	.57		.58	.8
5480	Soldering		96	.083	"	.40	5.65		6.05	8.9
	07 71 23.35 Gutter Guard									
0010	**GUTTER GUARD**									
0020	6" wide strip, aluminum mesh	1 Carp	500	.016	L.F.	2.32	.90		3.22	3.8
0100	Vinyl mesh	"	500	.016	"	1.29	.90		2.19	2.7

07 71 26 – Reglets

	07 71 26.10 Reglets and Accessories									
0010	**REGLETS AND ACCESSORIES**									
0020	Reglet, aluminum, .025" thick, in parapet	1 Carp	225	.036	L.F.	2.25	2		4.25	5.4
0300	16 oz. copper		225	.036		8.65	2		10.65	12.5
0400	Galvanized steel, 24 ga.		225	.036		2.16	2		4.16	5.3
0600	Stainless steel, .020" thick		225	.036		4.88	2		6.88	8.3
0900	Counter flashing for above, 12" wide, .032" aluminum	1 Shee	150	.053		3.41	3.60		7.01	9.2
1200	16 oz. copper		150	.053		12.20	3.60		15.80	18.8
1300	Galvanized steel, 26 ga.		150	.053		1.95	3.60		5.55	7.6
1500	Stainless steel, .020" thick		150	.053		8.25	3.60		11.85	14.5

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07 71 29 – Manufactured Roof Expansion Joints

07 71 29.10 Expansion Joints	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
010 **EXPANSION JOINTS**									
300 Butyl or neoprene center with foam insulation, metal flanges									
400 Aluminum, .032" thick for openings to 2-1/2"	1 Rofc	165	.048	L.F.	15.20	2.40		17.60	20.50
600 For joint openings to 3-1/2"		165	.048		14	2.40		16.40	19.30
610 For joint openings to 5"		165	.048		17.30	2.40		19.70	23
620 For joint openings to 8"		165	.048		35	2.40		37.40	42.50
700 Copper, 16 oz. for openings to 2-1/2"		165	.048		29.50	2.40		31.90	36.50
900 For joint openings to 3-1/2"		165	.048		23	2.40		25.40	29.50
910 For joint openings to 5"		165	.048		29	2.40		31.40	35.50
920 For joint openings to 8"		165	.048		31.50	2.40		33.90	38.50
000 Galvanized steel, 26 ga. for openings to 2-1/2"		165	.048		9.25	2.40		11.65	14.10
200 For joint openings to 3-1/2"		165	.048		10.10	2.40		12.50	15.05
210 For joint openings to 5"		165	.048		12.50	2.40		14.90	17.65
220 For joint openings to 8"		165	.048		19.35	2.40		21.75	25.50
300 Lead-coated copper, 16 oz. for openings to 2-1/2"		165	.048		42.50	2.40		44.90	50.50
500 For joint openings to 3-1/2"		165	.048		46.50	2.40		48.90	55
600 Stainless steel, .018", for openings to 2-1/2"		165	.048		14.55	2.40		16.95	19.90
800 For joint openings to 3-1/2"		165	.048		16.75	2.40		19.15	22.50
810 For joint openings to 5"		165	.048		19.05	2.40		21.45	25
820 For joint openings to 8"		165	.048		26	2.40		28.40	33
900 Neoprene, double-seal type with thick center, 4-1/2" wide		125	.064		17.10	3.17		20.27	24
950 Polyethylene bellows, with galv steel flat flanges		100	.080		9.15	3.97		13.12	16.55
960 With galvanized angle flanges		100	.080		9.25	3.97		13.22	16.65
000 Roof joint with extruded aluminum cover, 2"	1 Shee	115	.070		40	4.70		44.70	51
100 Expansion, stainless flange, foam center, standard	1 Rofc	100	.080	L.F.	16.30	3.97		20.27	24.50
200 Large	"	100	.080		22	3.97		25.97	30.50
500 Roof to wall joint with extruded aluminum cover	1 Shee	115	.070		36	4.70		40.70	46.50
700 Wall joint, closed cell foam on PVC cover, 9" wide	1 Rofc	125	.064		7.40	3.17		10.57	13.25
800 12" wide	"	115	.070		8.35	3.45		11.80	14.80

07 71 43 – Drip Edge

07 71 43.10 Drip Edge, Rake Edge, Ice Belts									
010 **DRIP EDGE, RAKE EDGE, ICE BELTS**									
020 Aluminum, .016" thick, 5" wide, mill finish	1 Carp	400	.020	L.F.	.69	1.13		1.82	2.44
100 White finish		400	.020		.70	1.13		1.83	2.45
200 8" wide, mill finish		400	.020		.84	1.13		1.97	2.60
300 Ice belt, 28" wide, mill finish		100	.080		6.20	4.50		10.70	13.50
310 Vented, mill finish		400	.020		2.24	1.13		3.37	4.14
320 Painted finish		400	.020		2.97	1.13		4.10	4.95
400 Galvanized, 5" wide		400	.020		.96	1.13		2.09	2.74
500 8" wide, mill finish		400	.020		.99	1.13		2.12	2.77
510 Rake edge, aluminum, 1-1/2" x 1-1/2"		400	.020		.34	1.13		1.47	2.05
520 3-1/2" x 1-1/2"		400	.020		.49	1.13		1.62	2.22

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

07 72 Roof Accessories

07 72 23 – Relief Vents

07 72 23.10 Roof Vents	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **ROOF VENTS**									
0020 Mushroom shape, for built-up roofs, aluminum	1 Rofc	30	.267	Ea.	89	13.25		102.25	120
0100 PVC, 6" high	"	30	.267	"	29	13.25		42.25	53.

07 72 26 – Ridge Vents

07 72 26.10 Ridge Vents and Accessories

0010 **RIDGE VENTS AND ACCESSORIES**									
0100 Aluminum strips, mill finish	1 Rofc	160	.050	L.F.	2.53	2.48		5.01	6.
0150 Painted finish		160	.050	"	3.75	2.48		6.23	8
0200 Connectors		48	.167	Ea.	4.44	8.25		12.69	18.
0300 End caps		48	.167	"	2.04	8.25		10.29	15.
0400 Galvanized strips		160	.050	L.F.	5	2.48		7.48	9.
0430 Molded polyethylene, shingles not included		160	.050	"	2.62	2.48		5.10	6.
0440 End plugs		48	.167	Ea.	2.04	8.25		10.29	15.
0450 Flexible roll, shingles not included		160	.050	L.F.	2.55	2.48		5.03	6.
2300 Ridge vent strip, mill finish	1 Shee	155	.052	"	2.75	3.49		6.24	8.

07 72 33 – Roof Hatches

07 72 33.10 Roof Hatch Options

0010 **ROOF HATCH OPTIONS**									
0500 2'-6" x 3', aluminum curb and cover	G-3	10	3.200	Ea.	1,125	181		1,306	1,525
0520 Galvanized steel curb and aluminum cover	"	10	3.200	"	1,050	181		1,231	1,425
0540 Galvanized steel curb and cover	G-3	10	3.200	Ea.	835	181		1,016	1,200
0600 2'-6" x 4'-6", aluminum curb and cover		9	3.556		1,400	201		1,601	1,825
0800 Galvanized steel curb and aluminum cover		9	3.556		1,500	201		1,701	1,950
0900 Galvanized steel curb and cover		9	3.556		1,100	201		1,301	1,525
1100 4' x 4' aluminum curb and cover		8	4		2,250	226		2,476	2,825
1120 Galvanized steel curb and aluminum cover		8	4		2,350	226		2,576	2,925
1140 Galvanized steel curb and cover		8	4		1,225	226		1,451	1,700
1200 2'-6" x 8'-0", aluminum curb and cover		6.60	4.848		2,250	274		2,524	2,875
1400 Galvanized steel curb and aluminum cover		6.60	4.848		2,425	274		2,699	3,075
1500 Galvanized steel curb and cover		6.60	4.848		2,025	274		2,299	2,625
1800 For plexiglass panels, 2'-6" x 3'-0", add to above					630			630	695

07 72 36 – Smoke Vents

07 72 36.10 Smoke Hatches

0010 **SMOKE HATCHES**									
0200 For 3'-0" long, add to roof hatches from Section 07 72 33.10				Ea.	25%	5%			
0250 For 4'-0" long, add to roof hatches from Section 07 72 33.10					20%	5%			
0300 For 8'-0" long, add to roof hatches from Section 07 72 33.10					10%	5%			

07 72 36.20 Smoke Vent Options

0010 **SMOKE VENT OPTIONS**									
0100 4' x 4' aluminum cover and frame	G-3	13	2.462	Ea.	2,475	139		2,614	2,925
0200 Galvanized steel cover and frame		13	2.462		1,925	139		2,064	2,300
0300 4' x 8' aluminum cover and frame		8	4		3,750	226		3,976	4,475
0400 Galvanized steel cover and frame		8	4		3,100	226		3,326	3,775

07 72 53 – Snow Guards

07 72 53.10 Snow Guard Options

0010 **SNOW GUARD OPTIONS**									
0100 Slate & asphalt shingle roofs, fastened with nails	1 Rofc	160	.050	Ea.	14.15	2.48		16.63	19
0200 Standing seam metal roofs, fastened with set screws		48	.167		20	8.25		28.25	35
0300 Surface mount for metal roofs, fastened with solder		48	.167		8.80	8.25		17.05	23
0400 Double rail pipe type, including pipe		130	.062	L.F.	40.50	3.05		43.55	50

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07 72 Roof Accessories

07 72 80 – Vent Options

07 72 80.30 Vent Options	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
010 **VENT OPTIONS**									
020 Plastic, for insulated decks, 1 per M.S.F.	1 Rofc	40	.200	Ea.	23	9.90		32.90	41.50
100 Heavy duty		20	.400		59.50	19.85		79.35	97.50
300 Aluminum		30	.267		21	13.25		34.25	44.50
800 Polystyrene baffles, 12" wide for 16" OC rafter spacing	1 Carp	90	.089		.48	5		5.48	8
900 For 24" OC rafter spacing	"	110	.073		.83	4.09		4.92	7

07 76 Roof Pavers

07 76 16 – Roof Decking Pavers

07 76 16.10 Roof Pavers and Supports

010 **ROOF PAVERS AND SUPPORTS**									
100 Roof decking pavers, concrete blocks, 2" thick, natural	1 Clab	115	.070	S.F.	3.70	3.17		6.87	8.80
200 Colors		115	.070	"	2.42	3.17		5.59	7.40
300 Support pedestal, bottom cap		960	.008	Ea.	2.73	.38		3.11	3.57
400 Top cap		960	.008		5	.38		5.38	6.05
500 Leveling shims, 1/16"		1920	.004		1.24	.19		1.43	1.64
600 1/8"		1920	.004		2.05	.19		2.24	2.54
700 Buffer pad		960	.008		4.63	.38		5.01	5.65
800 PVC legs (4" SDR 35)		2880	.003	Inch	.18	.13		.31	.39
900 Alternate pricing method, system in place		101	.079	S.F.	8.20	3.61		11.81	14.45

07 81 Applied Fireproofing

07 81 16 – Cementitious Fireproofing

07 81 16.10 Sprayed Cementitious Fireproofing

010 **SPRAYED CEMENTITIOUS FIREPROOFING**									
050 Not including canvas protection, normal density									
100 Per 1" thick, on flat plate steel	G-2	3000	.008	S.F.	.59	.38	.05	1.02	1.26
200 Flat decking		2400	.010		.59	.48	.06	1.13	1.41
300 Beams		1500	.016		.59	.76	.09	1.44	1.87
500 Corrugated or fluted decks		1250	.019		.88	.91	.11	1.90	2.45
700 Columns, 1-1/8" thick		1100	.022		.66	1.04	.13	1.83	2.41
800 2-3/16" thick		700	.034		1.66	1.63	.20	3.49	4.48
900 For canvas protection, add		5000	.005		.11	.23	.03	.37	.49
100 Not including canvas protection, high density									
100 Per 1" thick, on flat plate steel	G-2	3000	.008	S.F.	2.35	.38	.05	2.78	3.21
110 On flat decking		2400	.010		2.35	.48	.06	2.89	3.36
120 On beams		1500	.016		2.35	.76	.09	3.20	3.82
130 Corrugated or fluted decks		1250	.019		2.35	.91	.11	3.37	4.07
140 Columns, 1-1/8" thick		1100	.022		2.64	1.04	.13	3.81	4.60
150 2-3/16" thick		1100	.022		5.30	1.04	.13	6.47	7.50
170 For canvas protection, add		5000	.005		.11	.23	.03	.37	.49
200 Not including canvas protection, retrofitting									
210 Per 1" thick, on flat plate steel	G-2	1500	.016	S.F.	.53	.76	.09	1.38	1.82
220 On flat decking		1200	.020		.53	.95	.12	1.60	2.14
230 On beams		750	.032		.53	1.52	.18	2.23	3.06
240 Corrugated or fluted decks		625	.038		.80	1.83	.22	2.85	3.84
250 Columns, 1-1/8" thick		550	.044		.60	2.08	.25	2.93	4.03
260 2-3/16" thick		500	.048		1.20	2.29	.28	3.77	5
400 Accessories, preliminary spattered texture coat	G-2	4500	.005	S.F.	.05	.25	.03	.33	.46

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07 81 Applied Fireproofing

07 81 16 – Cementitious Fireproofing

07 81 16.10 Sprayed Cementitious Fireproofing	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1410 Bonding agent	1 Plas	1000	.008	S.F.	.11	.41		.52	.7
1500 Intumescent epoxy fireproofing on wire mesh, 3/16" thick									
1550 1 hour rating, exterior use	G-2	136	.176	S.F.	7.85	8.40	1.02	17.27	22.5
1551 2 hour rating, exterior use		136	.176		7.85	8.40	1.02	17.27	22.5
1600 Magnesium oxychloride, 35# to 40# density, 1/4" thick		3000	.008		1.69	.38	.05	2.12	2.4
1650 1/2" thick		2000	.012		3.45	.57	.07	4.09	4.7
1700 60# to 70# density, 1/4" thick		3000	.008		2.19	.38	.05	2.62	3.0
1750 1/2" thick		2000	.012		4.40	.57	.07	5.04	5.7
2000 Vermiculite cement, troweled or sprayed, 1/4" thick		3000	.008		1.53	.38	.05	1.96	2.3
2050 1/2" thick		2000	.012		3.05	.57	.07	3.69	4.2

07 84 Firestopping

07 84 13 – Penetration Firestopping

07 84 13.10 Firestopping

0010 **FIRESTOPPING** R078413-30									
0100 Metallic piping, non insulated									
0110 Through walls, 2" diameter	1 Carp	16	.500	Ea.	11.50	28		39.50	54.5
0120 4" diameter		14	.571		20	32		52	70
0130 6" diameter		12	.667		29.50	37.50		67	88.5
0140 12" diameter		10	.800		25	45		70	94.5
0150 Through floors, 2" diameter		32	.250		5.75	14.10		19.85	27.5
0160 4" diameter		28	.286		10.10	16.10		26.20	35
0170 6" diameter		24	.333		14.75	18.75		33.50	44.5
0180 12" diameter		20	.400		12.95	22.50		35.45	48
0190 Metallic piping, insulated									
0200 Through walls, 2" diameter	1 Carp	16	.500	Ea.	20	28		48	64
0210 4" diameter		14	.571		29.50	32		61.50	80.5
0220 6" diameter		12	.667		39.50	37.50		77	99.5
0230 12" diameter		10	.800		67.50	45		112.50	142
0240 Through floors, 2" diameter		32	.250		10.10	14.10		24.20	32
0250 4" diameter		28	.286		14.75	16.10		30.85	40.5
0260 6" diameter		24	.333		19.80	18.75		38.55	50
0270 12" diameter		20	.400		34	22.50		56.50	70.5
0280 Non metallic piping, non insulated									
0290 Through walls, 2" diameter	1 Carp	12	.667	Ea.	70	37.50		107.50	133
0300 4" diameter		10	.800		129	45		174	209
0310 6" diameter		8	1		247	56.50		303.50	355
0330 Through floors, 2" diameter		16	.500		44.50	28		72.50	90.5
0340 4" diameter	1 Carp	6	1.333	Ea.	81	75		156	201
0350 6" diameter	"	6	1.333	"	147	75		222	273
0370 Ductwork, insulated & non insulated, round									
0380 Through walls, 6" diameter	1 Carp	12	.667	Ea.	39.50	37.50		77	99.5
0390 12" diameter		10	.800		67.50	45		112.50	142
0400 18" diameter		8	1		82	56.50		138.50	175
0410 Through floors, 6" diameter		16	.500		19.80	28		47.80	64
0420 12" diameter		14	.571		14.75	32		46.75	64.5
0430 18" diameter		12	.667		17.80	37.50		55.30	75.5
0440 Ductwork, insulated & non insulated, rectangular									
0450 With stiffener/closure angle, through walls, 6" x 12"	1 Carp	8	1	Ea.	52	56.50		108.50	141
0460 12" x 24"		6	1.333		104	75		179	226
0470 24" x 48"		4	2		207	113		320	395

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07 84 13.10 Firestopping	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
080 With stiffener/closure angle, through floors, 6" x 12"	1 Carp	10	.800	Ea.	10.50	45		55.50	78.50
090 12" x 24"		8	1		52	56.50		108.50	141
100 24" x 48"		6	1.333		104	75		179	226
510 Multi trade openings									
520 Through walls, 6" x 12"	1 Carp	2	4	Ea.	79	225		304	420
530 12" x 24"	"	1	8		213	450		663	905
540 24" x 48"	2 Carp	1	16		645	900		1,545	2,050
550 48" x 96"	"	.75	21.333		2,575	1,200		3,775	4,625
560 Through floors, 6" x 12"	1 Carp	2	4		48.50	225		273.50	390
570 12" x 24"	"	1	8		64.50	450		514.50	740
580 24" x 48"	2 Carp	.75	21.333		139	1,200		1,339	1,950
590 48" x 96"	"	.50	32		325	1,800		2,125	3,025
600 Structural penetrations, through walls									
610 Steel beams, W8 x 10	1 Carp	8	1	Ea.	74.50	56.50		131	166
620 W12 x 14		6	1.333		108	75		183	231
630 W21 x 44		5	1.600		166	90		256	315
640 W36 x 135		3	2.667		235	150		385	480
650 Bar joists, 18" deep		6	1.333		43.50	75		118.50	160
660 24" deep		6	1.333		61	75		136	180
670 36" deep		5	1.600		92	90		182	235
680 48" deep		4	2		133	113		246	315
690 Construction joints, floor slab at exterior wall									
700 Precast, brick, block or drywall exterior									
710 2" wide joint	1 Carp	125	.064	L.F.	11.10	3.60		14.70	17.55
720 4" wide joint	"	75	.107	"	17.10	6		23.10	28
730 Metal panel, glass or curtain wall exterior									
740 2" wide joint	1 Carp	40	.200	L.F.	12.60	11.25		23.85	30.50
750 4" wide joint	"	25	.320	"	14.30	18		32.30	43
760 Floor slab to drywall partition									
770 Flat joint	1 Carp	100	.080	L.F.	14.50	4.50		19	22.50
780 Fluted joint		50	.160		16.85	9		25.85	32
790 Etched fluted joint		75	.107		20.50	6		26.50	31.50
800 Floor slab to concrete/masonry partition									
810 Flat joint	1 Carp	75	.107	L.F.	16.90	6		22.90	27.50
820 Fluted joint	"	50	.160	"	18.40	9		27.40	33.50
830 Concrete/CMU wall joints									
840 1" wide	1 Carp	100	.080	L.F.	20.50	4.50		25	29
850 2" wide		75	.107		32	6		38	44
860 4" wide		50	.160		36	9		45	53.50
870 Concrete/CMU floor joints									
880 1" wide	1 Carp	200	.040	L.F.	21.50	2.25		23.75	27.50
890 2" wide		150	.053		25	3		28	32
900 4" wide		100	.080		36	4.50		40.50	46.50

07 91 Preformed Joint Seals

07 91 13 – Compression Seals

07 91 13.10 Compression Seals	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **COMPRESSION SEALS**									
4900 O-ring type cord, 1/4"	1 Bric	472	.017	L.F.	.43	.94		1.37	1.8
4910 1/2"		440	.018		1.14	1		2.14	2.7
4920 3/4"		424	.019		2.29	1.04		3.33	4.0
4930 1"		408	.020		4.59	1.08		5.67	6.7
4940 1-1/4"		384	.021		11.05	1.15		12.20	13.9
4950 1-1/2"		368	.022		13.55	1.20		14.75	16.7
4960 1-3/4"		352	.023		15.85	1.26		17.11	19.3
4970 2"		344	.023		27.50	1.28		28.78	32.5

07 91 16 – Joint Gaskets

07 91 16.10 Joint Gaskets

0010 **JOINT GASKETS**									
4400 Joint gaskets, neoprene, closed cell w/adh, 1/8" x 3/8"	1 Bric	240	.033	L.F.	.22	1.84		2.06	3.0
4500 1/4" x 3/4"		215	.037		.76	2.06		2.82	3.9
4700 1/2" x 1"		200	.040		.73	2.21		2.94	4.1
4800 3/4" x 1-1/2"		165	.048		1.42	2.68		4.10	5.6

07 91 23 – Backer Rods

07 91 23.10 Backer Rods

0010 **BACKER RODS**									
0030 Backer rod, polyethylene, 1/4" diameter	1 Bric	4.60	1.739	C.L.F.	7	96		103	152
0050 1/2" diameter	1 Bric	4.60	1.739	C.L.F.	16	96		112	162
0070 3/4" diameter		4.60	1.739		17	96		113	163
0090 1" diameter		4.60	1.739		30	96		126	177

07 91 26 – Joint Fillers

07 91 26.10 Joint Fillers

0010 **JOINT FILLERS**									
4360 Butyl rubber filler, 1/4" x 1/4"	1 Bric	290	.028	L.F.	.28	1.52		1.80	2.6
4365 1/2" x 1/2"		250	.032		1.13	1.77		2.90	3.8
4370 1/2" x 3/4"		210	.038		1.69	2.10		3.79	5
4375 3/4" x 3/4"		230	.035		2.54	1.92		4.46	5.7
4380 1" x 1"		180	.044		3.38	2.46		5.84	7.4
4390 For coloring, add					12%				
4980 Polyethylene joint backing, 1/4" x 2"	1 Bric	2.08	3.846	C.L.F.	13	213		226	335
4990 1/4" x 6"		1.28	6.250	"	30	345		375	555
5600 Silicone, room temp vulcanizing foam seal, 1/4" x 1/2"		1312	.006	L.F.	.31	.34		.65	.8
5610 1/2" x 1/2"		656	.012		.61	.67		1.28	1.6
5620 1/2" x 3/4"		442	.018		.92	1		1.92	2.5
5630 3/4" x 3/4"		328	.024		1.38	1.35		2.73	3.5
5640 1/8" x 1"		1312	.006		.31	.34		.65	.8
5650 1/8" x 3"		442	.018		.92	1		1.92	2.5
5670 1/4" x 3"		295	.027		1.84	1.50		3.34	4.2
5680 1/4" x 6"		148	.054		3.68	2.99		6.67	8.5
5690 1/2" x 6"		82	.098		7.35	5.40		12.75	16.2
5700 1/2" x 9"		52.50	.152		11.05	8.40		19.45	25
5710 1/2" x 12"		33	.242		14.70	13.40		28.10	36

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07 92 13 – Elastomeric Joint Sealants

07 92 13.20 Caulking and Sealant Options	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
010 **CAULKING AND SEALANT OPTIONS**									
050 Latex acrylic based, bulk				Gal.	31			31	34
055 Bulk in place 1/4" x 1/4" bead	1 Brlc	300	.027	L.F.	.10	1.47		1.57	2.32
060 1/4" x 3/8"		294	.027		.16	1.50		1.66	2.44
065 1/4" x 1/2"		288	.028		.22	1.53		1.75	2.54
075 3/8" x 3/8"		284	.028		.24	1.56		1.80	2.61
080 3/8" x 1/2"		280	.029		.33	1.58		1.91	2.73
085 3/8" x 5/8"		276	.029		.41	1.60		2.01	2.85
095 3/8" x 3/4"		272	.029		.49	1.63		2.12	2.98
100 1/2" x 1/2"		275	.029		.44	1.61		2.05	2.89
105 1/2" x 5/8"		269	.030		.54	1.64		2.18	3.07
110 1/2" x 3/4"		263	.030		.65	1.68		2.33	3.24
115 1/2" x 7/8"	1 Brlc	256	.031	L.F.	.76	1.73		2.49	3.43
120 1/2" x 1"		250	.032		.87	1.77		2.64	3.61
125 3/4" x 3/4"		244	.033		.98	1.81		2.79	3.80
130 3/4" x 1"		225	.036		1.31	1.96		3.27	4.39
135 1" x 1"		200	.040		1.74	2.21		3.95	5.25
190 Cartridges				Gal.	54.50			54.50	60
200 11 fl. oz. cartridge				Ea.	4.68			4.68	5.15
500 1/4" x 1/2"	1 Brlc	288	.028	L.F.	.38	1.53		1.91	2.72
500 1/2" x 1/2"		275	.029		.76	1.61		2.37	3.25
300 3/4" x 3/4"		244	.033		1.72	1.81		3.53	4.61
900 3/4" x 1"		225	.036		2.29	1.96		4.25	5.45
000 1" x 1"		200	.040		2.87	2.21		5.08	6.50
400 Butyl based, bulk				Gal.	42			42	46.50
500 Cartridges				"	42			42	46.50
700 1/4" x 1/2", 154 L.F./gal.	1 Brlc	288	.028	L.F.	.27	1.53		1.80	2.60
800 1/2" x 1/2", 77 L.F./gal.	"	275	.029	"	.55	1.61		2.16	3.01
300 Polysulfide compounds, 1 component, bulk				Gal.	86			86	94.50
600 1 or 2 component, in place, 1/4" x 1/4", 308 L.F./gal.	1 Brlc	300	.027	L.F.	.28	1.47		1.75	2.52
700 1/2" x 1/4", 154 L.F./gal.		288	.028		.56	1.53		2.09	2.91
900 3/4" x 3/8", 68 L.F./gal.		272	.029		1.26	1.63		2.89	3.83
000 1" x 1/2", 38 L.F./gal.		250	.032		2.26	1.77		4.03	5.15
200 Polyurethane, 1 or 2 component				Gal.	56			56	61.50
500 Bulk, in place, 1/4" x 1/4"	1 Brlc	300	.027	L.F.	.18	1.47		1.65	2.41
655 1/2" x 1/4"		288	.028		.36	1.53		1.89	2.70
300 3/4" x 3/8"		272	.029		.82	1.63		2.45	3.35
900 1" x 1/2"		250	.032		1.45	1.77		3.22	4.25
100 Silicone rubber, bulk				Gal.	67.50			67.50	74
200 Cartridges				"	45.50			45.50	50.50

07 92 16 – Rigid Joint Sealants

07 92 16.10 Rigid Joint Sealants

010 **RIGID JOINT SEALANTS**									
800 Tapes, sealant, PVC foam adhesive, 1/16" x 1/4"				C.L.F.	4.07			4.07	4.48
900 1/16" x 1/2"					9.30			9.30	10.20
950 1/16" x 1"					15.45			15.45	16.95
000 1/8" x 1/2"					9.40			9.40	10.35

07 92 19 – Acoustical Joint Sealants

07 92 19.10 Acoustical Sealant

010 **ACOUSTICAL SEALANT**									
020 Acoustical sealant, elastomeric, cartridges				Ea.	8.25			8.25	9.10
025 In place, 1/4" x 1/4"	1 Brlc	300	.027	L.F.	.34	1.47		1.81	2.58

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07 92 Joint Sealants

07 92 19 – Acoustical Joint Sealants

07 92 19.10 Acoustical Sealant		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0030	1/4" x 1/2"	1 Bric	288	.028	L.F.	.67	1.53		2.20	3.
0035	1/2" x 1/2"		275	.029		1.35	1.61		2.96	3.
0040	1/2" x 3/4"		263	.030		2.02	1.68		3.70	4.
0045	3/4" x 3/4"		244	.033		3.04	1.81		4.85	6.
0050	1" x 1"		200	.040		5.40	2.21		7.61	9.

07 95 Expansion Control

07 95 13 – Expansion Joint Cover Assemblies

07 95 13.50 Expansion Joint Assemblies

0010	**EXPANSION JOINT ASSEMBLIES**									
0200	Floor cover assemblies, 1" space, aluminum	1 Sswk	38	.211	L.F.	29	13		42	52
0300	Bronze		38	.211		54	13		67	79
0500	2" space, aluminum		38	.211		40.50	13		53.50	65
0600	Bronze		38	.211		62.50	13		75.50	88.
0800	Wall and ceiling assemblies, 1" space, aluminum		38	.211		17.40	13		30.40	39
0900	Bronze		38	.211		55	13		68	80.
1100	2" space, aluminum		38	.211		25.50	13		38.50	48
1200	Bronze		38	.211		53	13		66	78
1400	Floor to wall assemblies, 1" space, aluminum		38	.211		25	13		38	47.
1500	Bronze or stainless		38	.211		64.50	13		77.50	91
1700	Gym floor angle covers, aluminum, 3" x 3" angle		46	.174		21.50	10.75		32.25	40
1800	3" x 4" angle		46	.174		25.50	10.75		36.25	44.
2000	Roof closures, aluminum, flat roof, low profile, 1" space		57	.140		18.90	8.70		27.60	34.
2100	High profile		57	.140		26	8.70		34.70	42
2300	Roof to wall, low profile, 1" space		57	.140		25	8.70		33.70	41
2400	High profile		57	.140		33	8.70		41.70	49.

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Estimating Tips

08 10 00 Doors and Frames

All exterior doors should be addressed for their energy conservation (insulation and seals).

- Most metal doors and frames look alike, but there may be significant differences among them. When estimating these items, be sure to choose the line item that most closely compares to the specification or door schedule requirements regarding:
  - ☐ type of metal
  - ☐ metal gauge
  - ☐ door core material
  - ☐ fire rating
  - ☐ finish
- Wood and plastic doors vary considerably in price. The primary determinant is the veneer material. Lauan, birch, and oak are the most common veneers. Other variables include the following:
  - ☐ hollow or solid core
  - ☐ fire rating
  - ☐ flush or raised panel
  - ☐ finish
- Door pricing includes bore for cylindrical locksets and mortise for hinges.

08 30 00 Specialty Doors and Frames

- There are many varieties of special doors, and they are usually priced per each. Add frames, hardware, or operators required for a complete installation.

08 40 00 Entrances, Storefronts, and Curtain Walls

- Glazed curtain walls consist of the metal tube framing and the glazing material. The cost data in this subdivision is presented for the metal tube framing alone or the composite wall. If your estimate requires a detailed takeoff of the framing, be sure to add the glazing cost and any tints.

08 50 00 Windows

- Steel windows are unglazed and aluminum can be glazed or unglazed. Some metal windows are priced without glass. Refer to 08 80 00 Glazing for glass pricing. The grade C indicates commercial grade windows, usually ASTM C-35.
- All wood windows and vinyl are priced preglazed. The glazing is insulating glass. Add the cost of screens and grills if required and not already included.

08 70 00 Hardware

- Hardware costs add considerably to the cost of a door. The most efficient method to determine the hardware requirements for a project is to review the door and hardware schedule together. One type of door may have different hardware, depending on the door usage.
- Door hinges are priced by the pair, with most doors requiring 1-1/2 pairs per door. The hinge prices do not include installation labor because it is included in door installation. Hinges are classified according to the frequency of use, base material, and finish.

08 80 00 Glazing

- Different openings require different types of glass. The most common types are:
  - ☐ float
  - ☐ tempered
  - ☐ insulating
  - ☐ impact-resistant
  - ☐ ballistic-resistant
- Most exterior windows are glazed with insulating glass. Entrance doors and window walls, where the glass is less than 18" from the floor, are generally glazed with tempered glass. Interior windows and some residential windows are glazed with float glass.
- Coastal communities require the use of impact-resistant glass, dependent on wind speed.
- The insulation or 'u' value is a strong consideration, along with solar heat gain, to determine total energy efficiency.

Reference Numbers

Reference numbers are shown at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear. ■

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08 05 05 – Selective Demolition for Openings

08 05 05.10 Selective Demolition Doors	Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010 **SELECTIVE DEMOLITION DOORS** R024119-10									
0200 Doors, exterior, 1-3/4" thick, single, 3' x 7' high	1 Clab	16	.500	Ea.		23		23	34
0220 Double, 6' x 7' high		12	.667			30.50		30.50	45.
0500 Interior, 1-3/8" thick, single, 3' x 7' high		20	.400			18.25		18.25	27
0520 Double, 6' x 7' high		16	.500			23		23	34
0700 Bi-folding, 3' x 6'-8" high		20	.400			18.25		18.25	27
0720 6' x 6'-8" high		18	.444			20.50		20.50	30
0900 Bi-passing, 3' x 6'-8" high		16	.500			23		23	34
0940 6' x 6'-8" high		14	.571			26		26	39
0960 Interior metal door 1-3/4" thick, 3'-0" x 6'-8"		18	.444			20.50		20.50	30
0980 Interior metal door 1-3/4" thick, 3'-0" x 7'-0"	1 Clab	18	.444	Ea.		20.50		20.50	30
1000 Interior wood door 1-3/4" thick, 3'-0" x 6'-8"		20	.400			18.25		18.25	27
1020 Interior wood door 1-3/4" thick, 3'-0" x 7'-0"		20	.400			18.25		18.25	27
1100 Door demo, floor door	2 Sswk	5	3.200			198		198	305
1500 Remove and reset, hollow core	1 Carp	8	1			56.50		56.50	84
1520 Solid		6	1.333			75		75	112
2000 Frames, including trim, metal		8	1			56.50		56.50	84
2200 Wood	2 Carp	32	.500			28		28	42
3000 Special doors, counter doors		6	2.667			150		150	223
3100 Double acting		10	1.600			90		90	134
3200 Floor door (trap type), or access type		8	2			113		113	168
3300 Glass, sliding, including frames		12	1.333			75		75	112
3400 Overhead, commercial, 12' x 12' high		4	4			225		225	335
3440 up to 20' x 16' high		3	5.333			300		300	445
3445 up to 35' x 30' high		1	16			900		900	1,350
3500 Residential, 9' x 7' high		8	2			113		113	168
3540 16' x 7' high		7	2.286			129		129	192
3620 Large		2.50	6.400			360		360	535
3700 Roll-up grille		5	3.200			180		180	268
3800 Revolving door, no wire or connections		2	8			450		450	670
3900 Storefront swing door		3	5.333			300		300	445
6600 Demo flexible transparent strip entrance	3 Shee	115	.209	SF Surf		14.10		14.10	21
7100 Remove double swing pneumatic doors, openers and sensors	2 Skwk	.50	32	Opng.		1,875		1,875	2,825
7110 Remove automatic operators, industrial, sliding doors, to 12' wide	"	.40	40	"		2,350		2,350	3,550
7550 Hangar door demo	2 Sswk	330	.048	S.F.		3		3	4
7570 Remove shock absorbing door	"	1.90	8.421	Opng.		520		520	800

08 05 05.20 Selective Demolition of Windows

0010 **SELECTIVE DEMOLITION OF WINDOWS** R024119-10									
0200 Aluminum, including trim, to 12 S.F.	1 Clab	16	.500	Ea.		23		23	34
0240 To 25 S.F.		11	.727			33		33	49.
0280 To 50 S.F.		5	1.600			73		73	109
0320 Storm windows/screens, to 12 S.F.		27	.296			13.50		13.50	20
0360 To 25 S.F.		21	.381			17.35		17.35	26
0400 To 50 S.F.		16	.500			23		23	34
0600 Glass, up to 10 S.F./window		200	.040	S.F.		1.82		1.82	2.
0620 Over 10 S.F./window		150	.053	"		2.43		2.43	3.
1000 Steel, including trim, to 12 S.F.		13	.615	Ea.		28		28	42
1020 To 25 S.F.		9	.889			40.50		40.50	60.
1040 To 50 S.F.		4	2			91		91	136
2000 Wood, including trim, to 12 S.F.		22	.364			16.60		16.60	24.
2020 To 25 S.F.		18	.444			20.50		20.50	30
2060 To 50 S.F.		13	.615			28		28	42

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08 05 Common Work Results for Openings

08 05 05 – Selective Demolition for Openings

08 05 05.20 Selective Demolition of Windows	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
065 To 180 S.F.	1 Clab	8	1	Ea.		45.50		45.50	68
300 Remove bay/bow window	2 Carp	6	2.667			150		150	223
410 Remove skylight, plstc domes, flush/curb mtd	"	395	.041	S.F.		2.28		2.28	3.39
420 Remove skylight, plstc/glass up to 2' x 3'	1 Carp	15	.533	Ea.		30		30	44.50
440 Remove skylight, plstc/glass up to 4' x 6'	2 Carp	10	1.600			90		90	134
480 Remove roof window up to 3' x 4'	1 Carp	8	1			56.50		56.50	84
500 Remove roof window up to 4' x 6'	2 Carp	6	2.667			150		150	223
020 Remove and reset window, up to a 2' x 2' window	1 Carp	6	1.333			75		75	112
040 Up to a 3' x 3' window		4	2			113		113	168
080 Up to a 4' x 5' window		2	4			225		225	335

08 11 Metal Doors and Frames

08 11 16 – Aluminum Doors and Frames

08 11 16.10 Entrance Doors

010 **ENTRANCE DOORS** and frame, aluminum, narrow stile									
011 Including standard hardware, clear finish, no glass									
012 Top and bottom offset pivots, 1/4" beveled glass stops, threshold									
013 Dead bolt lock with inside thumb screw, standard push pull									
020 3'-0" x 7'-0" opening	2 Sswk	2	8	Ea.	1,125	495		1,620	1,975
025 Anodizing aluminum entr. door & frame, add					110			110	121
030 3'-6" x 7'-0" opening	2 Sswk	2	8		880	495		1,375	1,725
100 3'-0" x 10'-0" opening, 3' high transom		1.80	8.889		1,375	550		1,925	2,350
200 3'-6" x 10'-0" opening, 3' high transom		1.80	8.889		1,500	550		2,050	2,500
280 5'-0" x 7'-0" opening		2	8		1,600	495		2,095	2,525
300 6'-0" x 7'-0" opening		1.30	12.308		1,100	760		1,860	2,375
301 6'-0" x 7'-0" opening		1.30	12.308	Pr.	1,100	760		1,860	2,375
400 6'-0" x 10'-0" opening, 3' high transom		1.10	14.545	"	1,650	900		2,550	3,175
520 3'-0" x 7'-0" opening, wide stile		2	8	Ea.	930	495		1,425	1,775
540 3'-6" x 7'-0" opening		2	8		1,025	495		1,520	1,875
560 5'-0" x 7'-0" opening		2	8		1,525	495		2,020	2,450
580 6'-0" x 7'-0" opening		1.30	12.308	Pr.	1,675	760		2,435	3,025
600 7'-0" x 7'-0" opening		1	16	"	2,375	990		3,365	4,125
200 For non-standard size, add				Leaf	80%				
250 For installation of non-standard size, add						20%			
300 Light bronze finish, add				Leaf	36%				
400 Dark bronze finish, add					25%				
500 For black finish, add					40%				
600 Concealed panic device, add					1,125			1,125	1,225
700 Electric striker release, add				Opng.	335			335	370
800 Floor check, add				Leaf	720			720	790
900 Concealed closer, add				"	575			575	635

08 11 63 – Metal Screen and Storm Doors and Frames

08 11 63.23 Aluminum Screen and Storm Doors and Frames

010 **ALUMINUM SCREEN AND STORM DOORS AND FRAMES**									
020 Combination storm and screen									
420 Clear anodic coating, 2'-8" wide	2 Carp	14	1.143	Ea.	243	64.50		307.50	365
440 3'-0" wide	"	14	1.143	"	197	64.50		261.50	310
500 For 7'-0" door height, add					8%				
020 Mill finish, 2'-8" wide	2 Carp	14	1.143	Ea.	254	64.50		318.50	375
040 3'-0" wide	"	14	1.143		274	64.50		338.50	395

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08 11 Metal Doors and Frames

08 11 63 – Metal Screen and Storm Doors and Frames

08 11 63.23 Aluminum Screen and Storm Doors and Frames		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1100 For 7′-0″ door, add					Ea.	8%				
1520 White painted, 2′-8″ wide		2 Carp	14	1.143		266	64.50		330.50	3
1540 3′-0″ wide		″	14	1.143		300	64.50		364.50	4
1600 For 7′-0″ door, add						8%				
2000 Wood door & screen, see Section 08 14 33.20										

08 12 Metal Frames

08 12 13 – Hollow Metal Frames

08 12 13.13 Standard Hollow Metal Frames

0010	**STANDARD HOLLOW METAL FRAMES**									
0020	16 ga., up to 5-3/4″ jamb depth									
0025	3′-0″ x 6′-8″ single	G	2 Carp	16	1	Ea.	216	56.50	272.50	3
0028	3′-6″ wide, single	G		16	1		213	56.50	269.50	3
0030	4′-0″ wide, single	G		16	1		226	56.50	282.50	3
0040	6′-0″ wide, double	G		14	1.143		236	64.50	300.50	3
0045	8′-0″ wide, double	G		14	1.143		275	64.50	339.50	4
0100	3′-0″ x 7′-0″ single	G		16	1		175	56.50	231.50	2
0110	3′-6″ wide, single	G		16	1		184	56.50	240.50	2
0112	4′-0″ wide, single	G		16	1		184	56.50	240.50	2
0140	6′-0″ wide, double	G		14	1.143		261	64.50	325.50	3
0145	8′-0″ wide, double	G		14	1.143		260	64.50	324.50	3
1000	16 ga., up to 4-7/8″ deep, 3′-0″ x 7′-0″ single	G		16	1		195	56.50	251.50	2
1140	6′-0″ wide, double	G	2 Carp	14	1.143	Ea.	240	64.50	304.50	3
1200	16 ga., 8-3/4″ deep, 3′-0″ x 7′-0″ single	G		16	1		325	56.50	381.50	4
1240	6′-0″ wide, double	G		14	1.143		310	64.50	374.50	4
2800	14 ga., up to 3-7/8″ deep, 3′-0″ x 7′-0″ single	G		16	1		219	56.50	275.50	3
2840	6′-0″ wide, double	G		14	1.143		305	64.50	369.50	4
3000	14 ga., up to 5-3/4″ deep, 3′-0″ x 6′-8″ single	G		16	1		175	56.50	231.50	2
3002	3′-6″ wide, single	G		16	1		226	56.50	282.50	3
3005	4′-0″ wide, single	G		16	1		226	56.50	282.50	3
3600	up to 5-3/4″ jamb depth, 4′-0″ x 7′-0″ single	G		15	1.067		251	60	311	3
3620	6′-0″ wide, double	G		12	1.333		235	75	310	3
3640	8′-0″ wide, double	G		12	1.333		385	75	460	5
3700	8′-0″ high, 4′-0″ wide, single	G		15	1.067		287	60	347	4
3740	8′-0″ wide, double	G		12	1.333		390	75	465	5
4000	6-3/4″ deep, 4′-0″ x 7′-0″ single	G		15	1.067		300	60	360	4
4020	6′-0″ wide, double	G		12	1.333		315	75	390	4
4040	8′-0″ wide, double	G		12	1.333		315	75	390	4
4100	8′-0″ high, 4′-0″ wide, single	G		15	1.067		345	60	405	4
4140	8′-0″ wide, double	G		12	1.333		505	75	580	6
4400	8-3/4″ deep, 4′-0″ x 7′-0″, single	G		15	1.067		380	60	440	5
4440	8′-0″ wide, double	G		12	1.333		495	75	570	6
4500	4′-0″ x 8′-0″, single	G		15	1.067		425	60	485	5
4540	8′-0″ wide, double	G		12	1.333		535	75	610	7
4900	For welded frames, add						124		124	1
5400	14 ga., "B" label, up to 5-3/4″ deep, 4′-0″ x 7′-0″ single	G	2 Carp	15	1.067		310	60	370	4
5440	8′-0″ wide, double	G		12	1.333		425	75	500	5
5800	6-3/4″ deep, 7′-0″ high, 4′-0″ wide, single	G		15	1.067		187	60	247	2
5840	8′-0″ wide, double	G		12	1.333		390	75	465	5
6200	8-3/4″ deep, 4′-0″ x 7′-0″ single	G		15	1.067		435	60	495	5
6240	8′-0″ wide, double	G		12	1.333		445	75	520	6

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08 12 Metal Frames

08 12 13 – Hollow Metal Frames

08 12 13.13 Standard Hollow Metal Frames		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
00 For "A" label use same price as "B" label										
00 For baked enamel finish, add						30%	15%			
00 For galvanizing, add						20%				
00 For hospital stop, add					Ea.	284			284	315
20 For hospital stop, stainless steel, add					"	156			156	172
00 Transom lite frames, fixed, add		2 Carp	155	.103	S.F.	60	5.80		65.80	74.50
00 Movable, add		"	130	.123	"	80.50	6.95		87.45	99

08 12 13.25 Channel Metal Frames

10 **CHANNEL METAL FRAMES**										
20 Steel channels with anchors and bar stops										
00 6" channel @ 8.2#/L.F., 3' x 7' door, weighs 150#	G	E-4	13	2.462	Ea.	295	153	11.35	459.35	575
00 8" channel @ 11.5#/L.F., 6' x 8' door, weighs 275#	G		9	3.556		540	222	16.40	778.40	955
00 8' x 12' door, weighs 400#	G		6.50	4.923		785	305	22.50	1,112.50	1,375
00 10" channel @ 15.3#/L.F., 10' x 10' door, weighs 500#	G		6	5.333		980	335	24.50	1,339.50	1,600
00 12' x 12' door, weighs 600#	G		5.50	5.818		1,175	365	27	1,567	1,900
00 12" channel @ 20.7#/L.F., 12' x 12' door, weighs 825#	G		4.50	7.111		1,625	445	33	2,103	2,500
00 12' x 16' door, weighs 1000#	G		4	8		1,975	500	37	2,512	2,950
00 For frames without bar stops, light sections, deduct						15%				
00 Heavy sections, deduct						10%				

08 13 Metal Doors

08 13 13 – Hollow Metal Doors

08 13 13.13 Standard Hollow Metal Doors

10 **STANDARD HOLLOW METAL DOORS** R081313-20										
15 Flush, full panel, hollow core										
17 When noted doors are prepared but do not include glass or louvers										
20 1-3/8" thick, 20 ga., 2'-0" x 6'-8"	G	2 Carp	20	.800	Ea.	525	45		570	640
40 2'-8" x 6'-8"	G		18	.889		485	50		535	610
60 3'-0" x 6'-8"	G		17	.941		535	53		588	670
00 3'-0" x 7'-0"	G		17	.941		540	53		593	675
20 For vision lite, add						310			310	340
40 For narrow lite, add						42			42	46
20 Half glass, 20 ga., 2'-0" x 6'-8"	G	2 Carp	20	.800		860	45		905	1,000
40 2'-8" x 6'-8"	G		18	.889		900	50		950	1,075
60 3'-0" x 6'-8"	G		17	.941		860	53		913	1,025
00 3'-0" x 7'-0"	G		17	.941		870	53		923	1,025
10 1-3/8" thick, 18 ga., 2'-0" x 6'-8"	G		20	.800		705	45		750	840
20 3'-0" x 6'-8"	G		17	.941		420	53		473	545
25 3'-0" x 7'-0"	G		17	.941		550	53		603	685
50 For vision lite, add						310			310	340
52 For narrow lite, add						42			42	46
60 Half glass, 18 ga., 2'-0" x 6'-8"	G	2 Carp	20	.800		955	45		1,000	1,125
65 2'-8" x 6'-8"	G		18	.889		990	50		1,040	1,150
70 3'-0" x 6'-8"	G		17	.941		965	53		1,018	1,125
75 3'-0" x 7'-0"	G		17	.941		805	53		858	965
00 Hollow core, 1-3/4" thick, full panel, 20 ga., 2'-8" x 6'-8"	G		18	.889		550	50		600	680
20 3'-0" x 6'-8"	G	2 Carp	17	.941	Ea.	550	53		603	685
40 3'-0" x 7'-0"	G		17	.941		560	53		613	695
80 4'-0" x 7'-0"	G		15	1.067		760	60		820	925
00 4'-0" x 8'-0"	G		13	1.231		915	69.50		984.50	1,100
00 18 ga., 2'-8" x 6'-8"	G		17	.941		650	53		703	795

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08 13 13.13 Standard Hollow Metal Doors			Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1020	3'-0" x 6'-8"	G	2 Carp	16	1	Ea.	665	56.50		721.50	8
1120	3'-0" x 7'-0"	G		17	.941		665	53		718	8
1180	4'-0" x 7'-0"	G		14	1.143		780	64.50		844.50	9
1200	4'-0" x 8'-0"	G		17	.941		1,150	53		1,203	1,3
1212	For vision lite, add						310			310	3
1214	For narrow lite, add						42			42	
1230	Half glass, 20 ga., 2'-8" x 6'-8"	G	2 Carp	20	.800		775	45		820	9
1240	3'-0" x 6'-8"	G		18	.889		735	50		785	8
1260	3'-0" x 7'-0"	G		18	.889		870	50		920	1,0
1280	Embossed panel, 1-3/4" thick, poly core, 20 ga., 3'-0" x 7'-0"			18	.889		980	50		1,030	1,1
1290	Half glass, 1-3/4" thick, poly core, 20 ga., 3'-0" x 7'-0"	G		18	.889		890	50		940	1,0
1320	18 ga., 2'-8" x 6'-8"	G		18	.889		830	50		880	9
1340	3'-0" x 6'-8"	G		17	.941		820	53		873	9
1360	3'-0" x 7'-0"	G		17	.941		835	53		888	1,0
1380	4'-0" x 7'-0"	G		15	1.067		1,050	60		1,110	1,2
1400	4'-0" x 8'-0"	G		14	1.143		1,125	64.50		1,189.50	1,3
1500	Flush full panel, 16 ga., steel hollow core										
1520	2'-0" x 6'-8"	G	2 Carp	20	.800	Ea.	865	45		910	1,0
1530	2'-8" x 6'-8"	G		20	.800		865	45		910	1,0
1540	3'-0" x 6'-8"	G		20	.800		865	45		910	1,0
1560	2'-8" x 7'-0"	G		18	.889		910	50		960	1,0
1570	3'-0" x 7'-0"	G		18	.889		910	50		960	1,0
1580	3'-6" x 7'-0"	G		18	.889		1,050	50		1,100	1,2
1590	4'-0" x 7'-0"	G		18	.889		1,175	50		1,225	1,3
1600	2'-8" x 8'-0"	G		18	.889		1,100	50		1,150	1,2
1620	3'-0" x 8'-0"	G		18	.889		1,200	50		1,250	1,4
1630	3'-6" x 8'-0"	G		18	.889		1,275	50		1,325	1,5
1640	4'-0" x 8'-0"	G		18	.889		1,400	50		1,450	1,6
1720	Insulated, 1-3/4" thick, full panel, 18 ga., 3'-0" x 6'-8"	G		15	1.067		720	60		780	8
1740	2'-8" x 7'-0"	G		16	1		660	56.50		716.50	8
1760	3'-0" x 7'-0"	G		15	1.067		560	60		620	7
1800	4'-0" x 8'-0"	G		13	1.231		550	69.50		619.50	7
1820	Half glass, 18 ga., 3'-0" x 6'-8"	G		16	1		835	56.50		891.50	1,0
1840	2'-8" x 7'-0"	G	2 Carp	17	.941	Ea.	865	53		918	1,0
1860	3'-0" x 7'-0"	G		16	1		930	56.50		986.50	1,1
1900	4'-0" x 8'-0"	G		14	1.143		800	64.50		864.50	9
2000	For vision lite, add						310			310	3
2010	For narrow lite, add						42			42	
8100	For bottom louver, add						440			440	4
8110	For baked enamel finish, add						30%	15%			
8120	For galvanizing, add						20%				

08 13 13.15 Metal Fire Doors											
0010	**METAL FIRE DOORS**	R081313-20									
0015	Steel, flush, "B" label, 90 minutes										
0020	Full panel, 20 ga., 2'-0" x 6'-8"		2 Carp	20	.800	Ea.	565	45		610	6
0040	2'-8" x 6'-8"			18	.889		565	50		615	7
0060	3'-0" x 6'-8"			17	.941		570	53		623	7
0080	3'-0" x 7'-0"			17	.941		590	53		643	7
0140	18 ga., 3'-0" x 6'-8"			16	1		785	56.50		841.50	9
0160	2'-8" x 7'-0"			17	.941		830	53		883	9
0180	3'-0" x 7'-0"			16	1		690	56.50		746.50	8
0200	4'-0" x 7'-0"			15	1.067		1,225	60		1,285	1,4

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08 13 13 – Hollow Metal Doors

	08 13 13.15 Metal Fire Doors		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0220	For "A" label, 3 hour, 18 ga., use same price as "B" label										
0240	For vision lite, add					Ea.	232			232	255
0300	Full panel, 16 ga., 2'-0" x 6'-8"		2 Carp	20	.800		830	45		875	975
0310	2'-8" x 6'-8"			18	.889		850	50		900	1,025
0320	3'-0" x 6'-8"			17	.941		615	53		668	755
0350	2'-8" x 7'-0"			17	.941		885	53		938	1,050
0360	3'-0" x 7'-0"			16	1		885	56.50		941.50	1,050
0370	4'-0" x 7'-0"			15	1.067		1,125	60		1,185	1,325
0520	Flush, "B" label, 90 minutes, egress core, 20 ga., 2'-0" x 6'-8"			18	.889		915	50		965	1,075
0540	2'-8" x 6'-8"			17	.941		920	53		973	1,100
0560	3'-0" x 6'-8"			16	1		925	56.50		981.50	1,100
0580	3'-0" x 7'-0"			16	1		965	56.50		1,021.50	1,125
0640	Flush, "A" label, 3 hour, egress core, 18 ga., 3'-0" x 6'-8"			15	1.067		1,000	60		1,060	1,200
0660	2'-8" x 7'-0"			16	1		1,050	56.50		1,106.50	1,225
0680	3'-0" x 7'-0"			15	1.067		555	60		615	700
0700	4'-0" x 7'-0"			14	1.143		1,275	64.50		1,339.50	1,500

08 13 13.20 Residential Steel Doors

0010	**RESIDENTIAL STEEL DOORS**										
0020	Prehung, insulated, exterior										
0030	Embossed, full panel, 2'-8" x 6'-8"	G	2 Carp	17	.941	Ea.	480	53		533	610
0040	3'-0" x 6'-8"	G	2 Carp	15	1.067	Ea.	495	60		555	630
0060	3'-0" x 7'-0"	G		15	1.067		485	60		545	625
0070	5'-4" x 6'-8", double	G		8	2		1,100	113		1,213	1,400
0220	Half glass, 2'-8" x 6'-8"	G		17	.941		455	53		508	580
0240	3'-0" x 6'-8"	G		16	1		455	56.50		511.50	585
0260	3'-0" x 7'-0"	G		16	1		550	56.50		606.50	690
0270	5'-4" x 6'-8", double	G		8	2		1,300	113		1,413	1,625
0320	Flush face, full panel, 2'-8" x 6'-8"	G		16	1		475	56.50		531.50	605
0340	3'-0" x 6'-8"	G		15	1.067		480	60		540	620
0360	3'-0" x 7'-0"	G		15	1.067		420	60		480	555
0380	5'-4" x 6'-8", double	G		8	2		1,075	113		1,188	1,375
0420	Half glass, 2'-8" x 6'-8"	G		17	.941		470	53		523	595
0440	3'-0" x 6'-8"	G		16	1		470	56.50		526.50	600
0460	3'-0" x 7'-0"	G		16	1		635	56.50		691.50	780
0480	5'-4" x 6'-8", double	G		8	2		915	113		1,028	1,175
0500	Sidelight, full lite, 1'-0" x 6'-8" with grille	G					605			605	665
0510	1'-0" x 6'-8", low E	G					515			515	570
0520	1'-0" x 6'-8", half lite	G					415			415	455
0530	1'-0" x 6'-8", half lite, low E	G					405			405	445
0800	Interior, residential, closet, bi-fold, 2'-0" x 6'-8"	G	2 Carp	16	1		120	56.50		176.50	216
0830	3'-0" wide	G		16	1		380	56.50		436.50	505
0860	4'-0" wide	G		15	1.067		395	60		455	525
0400	5'-0" wide	G		14	1.143		505	64.50		569.50	650
0420	6'-0" wide	G		13	1.231		400	69.50		469.50	545

08 13 13.25 Doors Hollow Metal

0010	**DOORS HOLLOW METAL**										
0500	Exterior, commercial, flush, 20 ga., 1-3/4" x 7'-0" x 2'-6" wide	G	2 Carp	15	1.067	Ea.	555	60		615	705
0530	2'-8" wide	G		15	1.067		555	60		615	705
0560	3'-0" wide	G		14	1.143		560	64.50		624.50	710
0000	18 ga., 1-3/4" x 7'-0" x 2'-6" wide	G		15	1.067		635	60		695	790
0030	2'-8" wide	G		15	1.067		635	60		695	790
0060	3'-0" wide	G		14	1.143		635	64.50		699.50	795

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08 13 Metal Doors

08 13 13 – Hollow Metal Doors

08 13 13.25 Doors Hollow Metal		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1500	16 ga., 1-3/4" x 7'-0" x 2'-6" wide G	2 Carp	15	1.067	Ea.	750	60		810	9
1530	2'-8" wide G		15	1.067		750	60		810	9
1560	3'-0" wide G		14	1.143		645	64.50		709.50	8
1590	3'-6" wide G		14	1.143		865	64.50		929.50	1,0
2900	Fire door, "A" label, 18 gauge, 1-3/4" x 2'-6" x 7'-0" G		15	1.067		685	60		745	8
2930	2'-8" wide G		15	1.067		685	60		745	8
2960	3'-0" wide G		14	1.143		780	64.50		844.50	9
2990	3'-6" wide G		14	1.143		835	64.50		899.50	1,0
3100	"B" label, 2'-6" wide G		15	1.067		610	60		670	7
3130	2'-8" wide G		15	1.067		610	60		670	7
3160	3'-0" wide G		14	1.143		610	64.50		674.50	7

08 13 16 – Aluminum Doors

08 13 16.10 Commercial Aluminum Doors

0010	**COMMERCIAL ALUMINUM DOORS**, flush, no glazing									
5000	Flush panel doors, pair of 2'-6" x 7'-0"	2 Sswk	2	8	Pr.	1,300	495		1,795	2,1
5050	3'-0" x 7'-0", single		2.50	6.400	Ea.	670	395		1,065	1,3
5100	Pair of 3'-0" x 7'-0"		2	8	Pr.	1,450	495		1,945	2,3
5150	3'-6" x 7'-0", single		2.50	6.400	Ea.	880	395		1,275	1,5

08 14 Wood Doors

08 14 13 – Carved Wood Doors

08 14 13.10 Types of Wood Doors, Carved

0010	**TYPES OF WOOD DOORS, CARVED**									
3000	Solid wood, 1-3/4" thick stile and rail									
3020	Mahogany, 3'-0" x 7'-0", six panel	2 Carp	14	1.143	Ea.	1,350	64.50		1,414.50	1,5
3030	With two lites		10	1.600		1,525	90		1,615	1,8
3040	3'-6" x 8'-0", six panel		10	1.600		1,050	90		1,140	1,2
3050	With two lites		8	2		2,925	113		3,038	3,4
3100	Pine, 3'-0" x 7'-0", six panel		14	1.143		1,350	64.50		1,414.50	1,5
3110	With two lites		10	1.600		950	90		1,040	1,1
3120	3'-6" x 8'-0", six panel		10	1.600		1,100	90		1,190	1,3
3130	With two lites		8	2		1,675	113		1,788	2,0
3200	Red oak, 3'-0" x 7'-0", six panel		14	1.143		390	64.50		454.50	5
3210	With two lites		10	1.600		2,550	90		2,640	2,9
3220	3'-6" x 8'-0", six panel		10	1.600		2,650	90		2,740	3,0
3230	With two lites		8	2		3,450	113		3,563	3,9
4000	Hand carved door, mahogany									
4020	3'-0" x 7'-0", simple design	2 Carp	14	1.143	Ea.	1,800	64.50		1,864.50	2,1
4030	Intricate design		11	1.455		3,575	82		3,657	4,0
4040	3'-6" x 8'-0", simple design		10	1.600		3,250	90		3,340	3,7
4050	Intricate design		8	2		3,775	113		3,888	4,3
4400	For custom finish, add					560			560	6
4600	Side light, mahogany, 7'-0" x 1'-6" wide, 4 lites	2 Carp	18	.889		1,150	50		1,200	1,3
4610	6 lites		14	1.143		3,025	64.50		3,089.50	3,4
4620	8'-0" x 1'-6" wide, 4 lites		14	1.143		2,125	64.50		2,189.50	2,4
4630	6 lites		10	1.600		2,350	90		2,440	2,7
4640	Side light, oak, 7'-0" x 1'-6" wide, 4 lites	2 Carp	18	.889	Ea.	1,475	50		1,525	1,7
4650	6 lites		14	1.143		2,450	64.50		2,514.50	2,8
4660	8'-0" x 1'-6" wide, 4 lites		14	1.143		1,400	64.50		1,464.50	1,6
4670	6 lites		10	1.600		2,450	90		2,540	2,8

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8 14 16.09 Smooth Wood Doors	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
10 **SMOOTH WOOD DOORS**									
15 Flush, interior, hollow core									
25 Lauan face, 1-3/8", 3'-0" x 6'-8"	2 Carp	17	.941	Ea.	101	53		154	190
30 4'-0" x 6'-8"		16	1		156	56.50		212.50	255
80 1-3/4", 2'-0" x 6'-8"		17	.941		75	53		128	162
08 3'-0" x 7'-0"		16	1		254	56.50		310.50	365
12 Pair of 3'-0" x 7'-0"		9	1.778	Pr.	173	100		273	340
40 Birch face, 1-3/8", 2'-6" x 6'-8"		17	.941	Ea.	110	53		163	200
80 3'-0" x 6'-8"		17	.941		121	53		174	213
00 4'-0" x 6'-8"		16	1		197	56.50		253.50	300
02 1-3/4", 2'-0" x 6'-8"		17	.941		102	53		155	191
10 3'-0" x 7'-0"		16	1		200	56.50		256.50	305
14 Pair of 3'-0" x 7'-0"		9	1.778	Pr.	400	100		500	590
20 Oak face, 1-3/8", 2'-0" x 6'-8"		17	.941	Ea.	153	53		206	248
80 3'-0" x 6'-8"		17	.941		201	53		254	300
00 4'-0" x 6'-8"		16	1		203	56.50		259.50	305
05 1-3/4", 2'-6" x 6'-8"		17	.941		77	53		130	164
10 3'-0" x 7'-0"		16	1		325	56.50		381.50	445
20 Walnut face, 1-3/8", 2'-0" x 6'-8"		17	.941		285	53		338	395
40 2'-6" x 6'-8"		17	.941		267	53		320	370
80 3'-0" x 6'-8"		17	.941		278	53		331	385
00 4'-0" x 6'-8"		16	1		288	56.50		344.50	400
30 For 7'-0" high, add					37.50			37.50	41
40 For 8'-0" high, add					62			62	68
80 For prefinishing, clear, add					78.50			78.50	86.50
00 For prefinishing, stain, add					86.50			86.50	95
20 M.D. overlay on hardboard, 1-3/8", 2'-0" x 6'-8"	2 Carp	17	.941		166	53		219	261
40 2'-6" x 6'-8"		17	.941		183	53		236	281
80 3'-0" x 6'-8"		17	.941		168	53		221	264
00 4'-0" x 6'-8"		16	1		280	56.50		336.50	395
20 For 7'-0" high, add					25.50			25.50	28
40 For 8'-0" high, add					57.50			57.50	63
20 H.P. plastic laminate, 1-3/8", 2'-0" x 6'-8"	2 Carp	16	1	Ea.	310	56.50		366.50	430
40 2'-6" x 6'-8"		16	1		305	56.50		361.50	420
80 3'-0" x 6'-8"		15	1.067		325	60		385	445
00 4'-0" x 6'-8"		14	1.143		425	64.50		489.50	565
20 For 7'-0" high, add					25			25	28
40 For 8'-0" high, add					34			34	37.50
20 Particle core, lauan face, 1-3/8", 2'-6" x 6'-8"	2 Carp	15	1.067		131	60		191	234
40 3'-0" x 6'-8"		14	1.143		102	64.50		166.50	208
80 3'-0" x 7'-0"		13	1.231		235	69.50		304.50	360
85 4'-0" x 7'-0"		12	1.333		200	75		275	330
10 1-3/4", 3'-0" x 7'-0"		13	1.231		254	69.50		323.50	380
20 Birch face, 1-3/8", 2'-6" x 6'-8"		15	1.067		168	60		228	275
40 3'-0" x 6'-8"		14	1.143		198	64.50		262.50	315
80 3'-0" x 7'-0"		13	1.231		192	69.50		261.50	315
00 4'-0" x 7'-0"		12	1.333		219	75		294	350
05 1-3/4", 3'-0" x 7'-0"		13	1.231		260	69.50		329.50	390
20 Oak face, 1-3/8", 2'-6" x 6'-8"		15	1.067		192	60		252	300
40 3'-0" x 6'-8"		14	1.143		180	64.50		244.50	294
80 3'-0" x 7'-0"		13	1.231		201	69.50		270.50	325
00 4'-0" x 7'-0"		12	1.333		247	75		322	385

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08 14 16 – Flush Wood Doors

	08 14 16.09 Smooth Wood Doors	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2305	1-3/4", 3'-0" x 7'-0"	2 Carp	13	1.231	Ea.	286	69.50		355.50	420
2320	Walnut face, 1-3/8", 2'-0" x 6'-8"		15	1.067		170	60		230	277
2340	2'-6" x 6'-8"		14	1.143		191	64.50		255.50	305
2380	3'-0" x 6'-8"		13	1.231		220	69.50		289.50	345
2400	4'-0" x 6'-8"		12	1.333		282	75		357	420
2440	For 8'-0" high, add					61			61	67
2460	For 8'-0" high walnut, add					50			50	55
2720	For prefinishing, clear, add					58			58	63.50
2740	For prefinishing, stain, add					73.50			73.50	80.50
3320	M.D. overlay on hardboard, 1-3/8", 2'-6" x 6'-8"	2 Carp	14	1.143		235	64.50		299.50	355
3340	3'-0" x 6'-8"		13	1.231		266	69.50		335.50	395
3380	3'-0" x 7'-0"		12	1.333		270	75		345	410
3400	4'-0" x 7'-0"		10	1.600		365	90		455	535
3440	For 8'-0" height, add					56			56	62
3460	For solid wood core, add					95			95	105
3720	H.P. plastic laminate, 1-3/8", 2'-6" x 6'-8"	2 Carp	13	1.231		232	69.50		301.50	360
3740	3'-0" x 6'-8"	"	12	1.333		247	75		322	385
3780	3'-0" x 7'-0"	2 Carp	11	1.455	Ea.	263	82		345	410
3800	4'-0" x 7'-0"	"	8	2		595	113		708	825
3840	For 8'-0" height, add					56			56	62
3860	For solid wood core, add					56.50			56.50	62.50
4000	Exterior, flush, solid core, birch, 1-3/4" x 2'-6" x 7'-0"	2 Carp	15	1.067		199	60		259	310
4020	2'-8" wide		15	1.067		288	60		348	405
4040	3'-0" wide		14	1.143		225	64.50		289.50	345
4100	Oak faced 1-3/4" x 2'-6" x 7'-0"		15	1.067		268	60		328	385
4120	2'-8" wide		15	1.067		345	60		405	470
4140	3'-0" wide		14	1.143		286	64.50		350.50	410
4200	Walnut faced, 1-3/4" x 2'-6" x 7'-0"		15	1.067		445	60		505	580
4220	2'-8" wide		15	1.067		485	60		545	620
4240	3'-0" wide		14	1.143		425	64.50		489.50	560
4300	For 6'-8" high door, deduct from 7'-0" door					23.50			23.50	26
5000	Wood doors, for vision lite, add					310			310	340
5010	Wood doors, for narrow lite, add					42			42	46
5015	Wood doors, for bottom (or top) louver, add					440			440	485

08 14 16.20 Wood Fire Doors

0010	**WOOD FIRE DOORS**									
0020	Particle core, 7 face plys, "B" label,									
0040	1 hour, birch face, 1-3/4" x 2'-6" x 6'-8"	2 Carp	14	1.143	Ea.	515	64.50		579.50	660
0080	3'-0" x 6'-8"		13	1.231		460	69.50		529.50	610
0090	3'-0" x 7'-0"		12	1.333		475	75		550	635
0100	4'-0" x 7'-0"		12	1.333		800	75		875	990
0140	Oak face, 2'-6" x 6'-8"		14	1.143		635	64.50		699.50	790
0180	3'-0" x 6'-8"		13	1.231		635	69.50		704.50	805
0190	3'-0" x 7'-0"		12	1.333		655	75		730	830
0200	4'-0" x 7'-0"		12	1.333		750	75		825	935
0240	Walnut face, 2'-6" x 6'-8"		14	1.143		600	64.50		664.50	755
0280	3'-0" x 6'-8"		13	1.231		610	69.50		679.50	775
0290	3'-0" x 7'-0"		12	1.333		445	75		520	595
0300	4'-0" x 7'-0"		12	1.333		880	75		955	1,075
0440	M.D. overlay on hardboard, 2'-6" x 6'-8"		15	1.067		410	60		470	540
0480	3'-0" x 6'-8"		14	1.143		450	64.50		514.50	590
0490	3'-0" x 7'-0"		13	1.231		480	69.50		549.50	635

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08 14 16 – Flush Wood Doors

	8 14 16.20 Wood Fire Doors	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
500	4′-0″ x 7′-0″	2 Carp	12	1.333	Ea.	520	75		595	685
740	90 minutes, birch face, 1-3/4″ x 2′-6″ x 6′-8″		14	1.143		515	64.50		579.50	660
780	3′-0″ x 6′-8″		13	1.231		485	69.50		554.50	635
790	3′-0″ x 7′-0″	2 Carp	12	1.333	Ea.	500	75		575	660
800	4′-0″ x 7′-0″		12	1.333		665	75		740	840
840	Oak face, 2′-6″ x 6′-8″		14	1.143		445	64.50		509.50	585
880	3′-0″ x 6′-8″		13	1.231		500	69.50		569.50	655
890	3′-0″ x 7′-0″		12	1.333		535	75		610	695
900	4′-0″ x 7′-0″		12	1.333		670	75		745	845
940	Walnut face, 2′-6″ x 6′-8″		14	1.143		575	64.50		639.50	725
980	3′-0″ x 6′-8″		13	1.231		460	69.50		529.50	610
990	3′-0″ x 7′-0″		12	1.333		635	75		710	810
000	4′-0″ x 7′-0″		12	1.333		770	75		845	960
140	M.D. overlay on hardboard, 2′-6″ x 6′-8″		15	1.067		505	60		565	645
180	3′-0″ x 6′-8″		14	1.143		490	64.50		554.50	635
190	3′-0″ x 7′-0″		13	1.231		530	69.50		599.50	690
200	4′-0″ x 7′-0″		12	1.333		615	75		690	785
240	For 8′-0″ height, add					95.50			95.50	105
260	For 8′-0″ height walnut, add					106			106	117
200	Custom architectural "B" label, flush, 1-3/4″ thick, birch,									
210	Solid core									
220	2′-6″ x 7′-0″	2 Carp	15	1.067	Ea.	415	60		475	550
260	3′-0″ x 7′-0″		14	1.143		540	64.50		604.50	690
300	4′-0″ x 7′-0″		13	1.231		620	69.50		689.50	790
420	4′-0″ x 8′-0″		11	1.455		475	82		557	640
480	For oak veneer, add					50%				
500	For walnut veneer, add					75%				

08 14 33 – Stile and Rail Wood Doors

8 14 33.10 Wood Doors Paneled

010	**WOOD DOORS PANELED**									
020	Interior, six panel, hollow core, 1-3/8″ thick									
040	Molded hardboard, 2′-0″ x 6′-8″	2 Carp	17	.941	Ea.	108	53		161	198
060	2′-6″ x 6′-8″		17	.941		119	53		172	210
070	2′-8″ x 6′-8″		17	.941		91.50	53		144.50	180
080	3′-0″ x 6′-8″		17	.941		106	53		159	195
140	Embossed print, molded hardboard, 2′-0″ x 6′-8″		17	.941		88	53		141	176
160	2′-6″ x 6′-8″		17	.941		88	53		141	176
180	3′-0″ x 6′-8″		17	.941		106	53		159	195
540	Six panel, solid, 1-3/8″ thick, pine, 2′-0″ x 6′-8″		15	1.067		212	60		272	325
560	2′-6″ x 6′-8″		14	1.143		227	64.50		291.50	345
580	3′-0″ x 6′-8″		13	1.231		258	69.50		327.50	385
020	Two panel, bored rail, solid, 1-3/8″ thick, pine, 1′-6″ x 6′-8″	2 Carp	16	1	Ea.	325	56.50		381.50	440
040	2′-0″ x 6′-8″		15	1.067		435	60		495	570
060	2′-6″ x 6′-8″		14	1.143		480	64.50		544.50	620
340	Two panel, solid, 1-3/8″ thick, fir, 2′-0″ x 6′-8″		15	1.067		213	60		273	325
360	2′-6″ x 6′-8″		14	1.143		287	64.50		351.50	410
380	3′-0″ x 6′-8″		13	1.231		520	69.50		589.50	680
740	Five panel, solid, 1-3/8″ thick, fir, 2′-0″ x 6′-8″		15	1.067		385	60		445	515
760	2′-6″ x 6′-8″		14	1.143		505	64.50		569.50	650
780	3′-0″ x 6′-8″		13	1.231		505	69.50		574.50	660

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08 14 33.20 Wood Doors Residential	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&
0010 **WOOD DOORS RESIDENTIAL**									
0200 Exterior, combination storm & screen, pine									
0260 2′-8″ wide	2 Carp	10	1.600	Ea.	325	90		415	4
0280 3′-0″ wide		9	1.778		340	100		440	5
0300 7′-1″ x 3′-0″ wide		9	1.778		365	100		465	5
0400 Full lite, 6′-9″ x 2′-6″ wide		11	1.455		350	82		432	5
0420 2′-8″ wide		10	1.600		340	90		430	5
0440 3′-0″ wide		9	1.778		350	100		450	5
0500 7′-1″ x 3′-0″ wide		9	1.778		375	100		475	5
0700 Dutch door, pine, 1-3/4″ x 2′-8″ x 6′-8″, 6 panel		12	1.333		1,175	75		1,250	1,3
0720 Half glass		10	1.600		1,025	90		1,115	1,2
0800 3′-0″ wide, 6 panel		12	1.333		650	75		725	8
0820 Half glass		10	1.600		1,150	90		1,240	1,4
1000 Entrance door, colonial, 1-3/4″ x 6′-8″ x 2′-8″ wide		16	1		630	56.50		686.50	7
1020 6 panel pine, 3′-0″ wide		15	1.067		169	60		229	2
1100 8 panel pine, 2′-8″ wide		16	1		740	56.50		796.50	9
1120 3′-0″ wide		15	1.067		680	60		740	8
1200 For tempered safety glass lites (min. of 2), add					144			144	1
1300 Flush, birch, solid core, 1-3/4″ x 6′-8″ x 2′-8″ wide	2 Carp	16	1		490	56.50		546.50	6
1320 3′-0″ wide		15	1.067		505	60		565	6
1350 7′-0″ x 2′-8″ wide		16	1		140	56.50		196.50	2
1360 3′-0″ wide		15	1.067		585	60		645	7
1380 For tempered safety glass lites, add					119			119	1
1930 For dutch door with shelf, add					140%				
2700 Interior, closet, bi-fold, w/hardware, no frame or trim incl.									
2720 Flush, birch, 2′-6″ x 6′-8″	2 Carp	13	1.231	Ea.	172	69.50		241.50	2
2740 3′-0″ wide		13	1.231		190	69.50		259.50	3
2760 4′-0″ wide		12	1.333		299	75		374	4
2780 5′-0″ wide		11	1.455		330	82		412	4
2800 6′-0″ wide		10	1.600		365	90		455	5
3000 Raised panel pine, 6′-6″ or 6′-8″ x 2′-6″ wide		13	1.231		540	69.50		609.50	7
3020 3′-0″ wide		13	1.231		575	69.50		644.50	7
3040 4′-0″ wide		12	1.333		930	75		1,005	1,1
3060 5′-0″ wide		11	1.455		425	82		507	5
3080 6′-0″ wide		10	1.600		465	90		555	6
3200 Louvered, pine, 6′-6″ or 6′-8″ x 2′-6″ wide		13	1.231		171	69.50		240.50	2
3220 3′-0″ wide		13	1.231		270	69.50		339.50	4
3240 4′-0″ wide		12	1.333		930	75		1,005	1,1
3260 5′-0″ wide		11	1.455		277	82		359	4
3280 6′-0″ wide		10	1.600		340	90		430	5
4400 Bi-passing closet, incl. hardware and frame, no trim incl.									
4420 Flush, lauan, 6′-8″ x 4′-0″ wide	2 Carp	12	1.333	Opng.	192	75		267	3
4440 5′-0″ wide		11	1.455		258	82		340	4
4460 6′-0″ wide		10	1.600		191	90		281	3
4600 Flush, birch, 6′-8″ x 4′-0″ wide		12	1.333		285	75		360	4
4620 5′-0″ wide		11	1.455		244	82		326	3
4640 6′-0″ wide		10	1.600		400	90		490	5
4800 Louvered, pine, 6′-8″ x 4′-0″ wide		12	1.333		490	75		565	6
4820 5′-0″ wide		11	1.455		585	82		667	7
4840 6′-0″ wide		10	1.600		855	90		945	1,0
5000 Paneled, pine, 6′-8″ x 4′-0″ wide		12	1.333		545	75		620	7
5020 5′-0″ wide		11	1.455		860	82		942	1,0

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08 14 33 – Stile and Rail Wood Doors

08 14 33.20 Wood Doors Residential	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
6040 6′-0″ wide	2 Carp	10	1.600	Opng.	1,000	90		1,090	1,225
6042 8′-0″ wide	↓	12	1.333	↓	1,100	75		1,175	1,300
6100 Folding accordion, closet, including track and frame									
6120 Vinyl, 2 layer, stock	2 Carp	10	1.600	Ea.	675	90		765	875
6140 Woven mahogany and vinyl, stock		10	1.600		66	90		156	207
6160 Wood slats with vinyl overlay, stock		10	1.600		173	90		263	325
6180 Economy vinyl, stock		10	1.600		42	90		132	180
6200 Rigid PVC	↓	10	1.600	↓	127	90		217	274
7310 Passage doors, flush, no frame included									
7320 Hardboard, hollow core, 1-3/8″ x 6′-8″ x 1′-6″ wide	2 Carp	18	.889	Ea.	43	50		93	122
7330 2′-0″ wide		18	.889		48	50		98	127
7340 2′-6″ wide		18	.889		54.50	50		104.50	135
7350 2′-8″ wide		18	.889		56.50	50		106.50	137
7360 3′-0″ wide		17	.941		56.50	53		109.50	142
7420 Lauan, hollow core, 1-3/8″ x 6′-8″ x 1′-6″ wide		18	.889		85	50		135	168
7440 2′-0″ wide		18	.889		73.50	50		123.50	156
7450 2′-4″ wide		18	.889		84	50		134	167
7460 2′-6″ wide		18	.889		84	50		134	167
7480 2′-8″ wide		18	.889		96	50		146	181
7500 3′-0″ wide		17	.941		72	53		125	158
7700 Birch, hollow core, 1-3/8″ x 6′-8″ x 1′-6″ wide		18	.889		101	50		151	187
7720 2′-0″ wide		18	.889		115	50		165	202
7740 2′-6″ wide		18	.889		109	50		159	195
7760 2′-8″ wide		18	.889		124	50		174	212
7780 3′-0″ wide		17	.941		117	53		170	208
8000 Pine louvered, 1-3/8″ x 6′-8″ x 1′-6″ wide		19	.842		201	47.50		248.50	292
8020 2′-0″ wide		18	.889		223	50		273	320
8040 2′-6″ wide		18	.889		239	50		289	340
8060 2′-8″ wide		18	.889		274	50		324	375
8080 3′-0″ wide		17	.941		245	53		298	350
8300 Pine paneled, 1-3/8″ x 6′-8″ x 1′-6″ wide		19	.842		222	47.50		269.50	315
8320 2′-0″ wide		18	.889		320	50		370	425
8330 2′-4″ wide		18	.889		320	50		370	425
8340 2′-6″ wide		18	.889		345	50		395	455
8360 2′-8″ wide		18	.889		345	50		395	450
8380 3′-0″ wide	↓	17	.941	↓	370	53		423	490

08 14 35 – Torrified Doors

08 14 35.10 Torrified Exterior Doors

0010 **TORRIFIED EXTERIOR DOORS**									
0020 Wood doors made from torrified wood, exterior									
0030 All doors require a finish be applied, all glass is insulated									
0040 All doors require pilot holes for all fasteners									
0100 6 panel, paint grade poplar, 1-3/4″ x 3′-0″ x 6′-8″	2 Carp	12	1.333	Ea.	1,325	75		1,400	1,550
0120 Half glass 3′-0″ x 6′-8″	″	12	1.333		1,425	75		1,500	1,650
0200 Side lite, full glass, 1-3/4″ x 1′-2″ x 6′-8″					785			785	865
0220 Side lite, half glass, 1-3/4″ x 1′-2″ x 6′-8″					765			765	840
0300 Raised face, 2 panel, paint grade poplar, 1-3/4″ x 3′-0″ x 7′-0″	2 Carp	12	1.333		1,550	75		1,625	1,825
0320 Side lite, raised face, half glass, 1-3/4″ x 1′-2″ x 7′-0″					890			890	980
0500 6 panel, Fir, 1-3/4″ x 3′-0″ x 6′-8″	2 Carp	12	1.333		1,875	75		1,950	2,150
0520 Half glass 3′-0″ x 6′-8″	″	12	1.333	↓	1,700	75		1,775	1,975
0600 Side lite, full glass, 1-3/4″ x 1′-2″ x 6′-8″				Ea.	795			795	875
0620 Side lite, half glass, 1-3/4″ x 1′-2″ x 6′-8″				↓	825			825	905

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08 14 Wood Doors

08 14 35 – Torrified Doors

	08 14 35.10 Torrified Exterior Doors	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0700	6 panel, Mahogany, 1-3/4" x 3'-0" x 6'-8"	2 Carp	12	1.333	Ea.	2,475	75		2,550	2,8
0800	Side lite, full glass, 1-3/4" x 1'-2" x 6'-8"					900			900	9
0820	Side lite, half glass, 1-3/4" x 1'-2" x 6'-8"					910			910	1,0

08 14 40 – Interior Cafe Doors

08 14 40.10 Cafe Style Doors

0010	**CAFE STYLE DOORS**									
6520	Interior cafe doors, 2'-6" opening, stock, panel pine	2 Carp	16	1	Ea.	430	56.50		486.50	5
6540	3'-0" opening	"	16	1	"	445	56.50		501.50	5
6550	Louvered pine									
6560	2'-6" opening	2 Carp	16	1	Ea.	340	56.50		396.50	4
8000	3'-0" opening		16	1		335	56.50		391.50	4
8010	2'-6" opening, hardwood		16	1		380	56.50		436.50	5
8020	3'-0" opening		16	1		430	56.50		486.50	5

08 16 Composite Doors

08 16 13 – Fiberglass Doors

08 16 13.10 Entrance Doors, Fibrous Glass

0010	**ENTRANCE DOORS, FIBROUS GLASS**									
0020	Exterior, fiberglass, door, 2'-8" wide x 6'-8" high	G	2 Carp	15	1.067	Ea.	1,125	60	1,185	1,3
0040	3'-0" wide x 6'-8" high	G		15	1.067		281	60	341	4
0060	3'-0" wide x 7'-0" high	G		15	1.067		525	60	585	6
0080	3'-0" wide x 6'-8" high, with two lites	G		15	1.067		720	60	780	8
0100	3'-0" wide x 8'-0" high, with two lites	G		15	1.067		550	60	610	6
0110	Half glass, 3'-0" wide x 6'-8" high	G		15	1.067		485	60	545	6
0120	3'-0" wide x 6'-8" high, low E	G		15	1.067		530	60	590	6
0130	3'-0" wide x 8'-0" high	G		15	1.067		615	60	675	7
0140	3'-0" wide x 8'-0" high, low E	G		15	1.067		695	60	755	8
0150	Side lights, 1'-0" wide x 6'-8" high	G					285		285	3
0160	1'-0" wide x 6'-8" high, low E	G					280		280	3
0180	1'-0" wide x 6'-8" high, full glass	G					375		375	4
0190	1'-0" wide x 6'-8" high, low E	G					395		395	4

08 16 14 – French Doors

08 16 14.10 Exterior Doors With Glass Lites

0010	**EXTERIOR DOORS WITH GLASS LITES**									
0020	French, Fir, 1-3/4", 3'-0" wide x 6'-8" high	2 Carp	12	1.333	Ea.	1,250	75		1,325	1,4
0025	Double		12	1.333		2,525	75		2,600	2,8
0030	Maple, 1-3/4", 3'-0" wide x 6'-8" high		12	1.333		745	75		820	9
0035	Double		12	1.333		1,475	75		1,550	1,7
0040	Cherry, 1-3/4", 3'-0" wide x 6'-8" high	2 Carp	12	1.333	Ea.	865	75		940	1,0
0045	Double		12	1.333		1,725	75		1,800	2,0
0100	Mahogany, 1-3/4", 3'-0" wide x 8'-0" high		10	1.600		1,250	90		1,340	1,5
0105	Double		10	1.600		2,525	90		2,615	2,9
0110	Fir, 1-3/4", 3'-0" wide x 8'-0" high		10	1.600		555	90		645	7
0115	Double		10	1.600		1,100	90		1,190	1,3
0120	Oak, 1-3/4", 3'-0" wide x 8'-0" high		10	1.600		600	90		690	7
0125	Double		10	1.600		1,200	90		1,290	1,4

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08 17 13 – Integrated Metal Door Opening Assemblies

8 17 13.20 Stainless Steel Doors and Frames		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
010 **STAINLESS STEEL DOORS AND FRAMES**										
500 Stainless steel, prehung door, foam core, 14 ga., 3'-0" x 7'-0"	G	2 Carp	5	3.200	Ea.	4,475	180		4,655	5,200
600 Stainless steel, prehung double door, foam core, 14 ga., 3'-0" x 7'-0"	G	"	4	4	"	7,400	225		7,625	8,475

08 17 23 – Integrated Wood Door Opening Assemblies

8 17 23.10 Pre-Hung Doors										
010 **PRE-HUNG DOORS**										
300 Exterior, wood, comb. storm & screen, 6'-9" x 2'-6" wide		2 Carp	15	1.067	Ea.	262	60		322	380
320 2'-8" wide			15	1.067		350	60		410	475
340 3'-0" wide			15	1.067		330	60		390	455
360 For 7'-0" high door, add						46			46	50.50
600 Entrance door, flush, birch, solid core										
620 4-5/8" solid jamb, 1-3/4" x 6'-8" x 2'-8" wide		2 Carp	16	1	Ea.	375	56.50		431.50	500
640 3'-0" wide			16	1		445	56.50		501.50	575
642 5-5/8" jamb			16	1		410	56.50		466.50	540
680 For 7'-0" high door, add						25.50			25.50	28
000 Entrance door, colonial, 6 panel pine										
020 4-5/8" solid jamb, 1-3/4" x 6'-8" x 2'-8" wide		2 Carp	16	1	Ea.	755	56.50		811.50	915
040 3'-0" wide		"	16	1		645	56.50		701.50	795
060 For 7'-0" high door, add						64.50			64.50	71
200 For 5-5/8" solid jamb, add						49.50			49.50	54.50
000 Interior, passage door, 4-5/8" solid jamb										
400 Lauan, flush, solid core, 1-3/8" x 6'-8" x 2'-6" wide		2 Carp	17	.941	Ea.	223	53		276	325
420 2'-8" wide			17	.941		223	53		276	325
440 3'-0" wide			16	1		225	56.50		281.50	330
600 Hollow core, 1-3/8" x 6'-8" x 2'-6" wide			17	.941		227	53		280	330
620 2'-8" wide			17	.941		150	53		203	244
640 3'-0" wide		2 Carp	16	1	Ea.	225	56.50		281.50	330
700 For 7'-0" high door, add						48.50			48.50	53.50
000 Birch, flush, solid core, 1-3/8" x 6'-8" x 2'-6" wide		2 Carp	17	.941		315	53		368	425
020 2'-8" wide			17	.941		244	53		297	345
040 3'-0" wide			16	1		345	56.50		401.50	465
200 Hollow core, 1-3/8" x 6'-8" x 2'-6" wide			17	.941		215	53		268	315
220 2'-8" wide			17	.941		242	53		295	345
240 3'-0" wide			16	1		251	56.50		307.50	360
280 For 7'-0" high door, add						41.50			41.50	45.50
500 Hardboard paneled, 1-3/8" x 6'-8" x 2'-6" wide		2 Carp	17	.941		175	53		228	272
520 2'-8" wide			17	.941		184	53		237	281
540 3'-0" wide			16	1		185	56.50		241.50	288
000 Pine paneled, 1-3/8" x 6'-8" x 2'-6" wide			17	.941		310	53		363	425
020 2'-8" wide			17	.941		330	53		383	445
040 3'-0" wide			16	1		340	56.50		396.50	460

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08 31 13 – Access Doors and Frames

08 31 13.10 Types of Framed Access Doors	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **TYPES OF FRAMED ACCESS DOORS**									
1000 Fire rated door with lock									
1100 Metal, 12" x 12"	1 Carp	10	.800	Ea.	172	45		217	256
1150 18" x 18"		9	.889		340	50		390	450
1200 24" x 24"		9	.889		345	50		395	455
1250 24" x 36"		8	1		345	56.50		401.50	465
1300 24" x 48"		8	1		410	56.50		466.50	535
1350 36" x 36"		7.50	1.067		510	60		570	650
1400 48" x 48"		7.50	1.067		665	60		725	820
1600 Stainless steel, 12" x 12"		10	.800		335	45		380	435
1650 18" x 18"		9	.889		370	50		420	480
1700 24" x 24"		9	.889		545	50		595	675
1750 24" x 36"		8	1		650	56.50		706.50	800
2000 Flush door for finishing									
2100 Metal 8" x 8"	1 Carp	10	.800	Ea.	38	45		83	109
2150 12" x 12"	"	10	.800	"	38.50	45		83.50	109
3000 Recessed door for acoustic tile									
3100 Metal, 12" x 12"	1 Carp	4.50	1.778	Ea.	48.50	100		148.50	203
3150 12" x 24"		4.50	1.778		111	100		211	271
3200 24" x 24"		4	2		117	113		230	297
3250 24" x 36"		4	2		163	113		276	345
4000 Recessed door for drywall									
4100 Metal 12" x 12"	1 Carp	6	1.333	Ea.	75.50	75		150.50	195
4150 12" x 24"		5.50	1.455		118	82		200	252
4200 24" x 36"		5	1.600		188	90		278	340
6000 Standard door									
6100 Metal, 8" x 8"	1 Carp	10	.800	Ea.	31.50	45		76.50	102
6150 12" x 12"		10	.800		284	45		329	375
6200 18" x 18"		9	.889		35	50		85	113
6250 24" x 24"		9	.889		425	50		475	545
6300 24" x 36"		8	1		175	56.50		231.50	276
6350 36" x 36"		8	1		99	56.50		155.50	193
6500 Stainless steel, 8" x 8"		10	.800		80	45		125	155
6550 12" x 12"		10	.800		94	45		139	170
6600 18" x 18"		9	.889		170	50		220	262
6650 24" x 24"		9	.889		259	50		309	360
08 31 13.20 Bulkhead/Cellar Doors									
0010 **BULKHEAD/CELLAR DOORS**									
0020 Steel, not incl. sides, 44" x 62"	1 Carp	5.50	1.455	Ea.	715	82		797	910
0100 52" x 73"		5.10	1.569		895	88.50		983.50	1,125
0500 With sides and foundation plates, 57" x 45" x 24"		4.70	1.702		890	96		986	1,125
0600 42" x 49" x 51"		4.30	1.860		605	105		710	820
08 31 13.30 Commercial Floor Doors									
0010 **COMMERCIAL FLOOR DOORS**									
0020 Aluminum tile, steel frame, one leaf, 2' x 2' opng.	2 Sswk	3.50	4.571	Opng.	760	283		1,043	1,275
0050 3'-6" x 3'-6" opening		3.50	4.571		1,625	283		1,908	2,200
0500 Double leaf, 4' x 4' opening		3	5.333		1,650	330		1,980	2,325
0550 5' x 5' opening		3	5.333		2,750	330		3,080	3,525
08 31 13.35 Industrial Floor Doors									
0010 **INDUSTRIAL FLOOR DOORS**									
0020 Steel 300 psf L.L., single leaf, 2' x 2', 175#	2 Sswk	6	2.667	Opng.	1,800	165		1,965	2,225
0050 3' x 3' opening, 300#		5.50	2.909		1,400	180		1,580	1,825

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

08 31 Access Doors and Panels

08 31 13 – Access Doors and Frames

	08 31 13.35 Industrial Floor Doors	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
300	Double leaf, 4' x 4' opening, 455#	2 Sswk	5	3.200	Opng.	2,675	198		2,873	3,225
350	5' x 5' opening, 645#		4.50	3.556		3,150	220		3,370	3,825
000	Aluminum, 300 psf L.L., single leaf, 2' x 2', 60#		6	2.667		735	165		900	1,050
050	3' x 3' opening, 100#		5.50	2.909		890	180		1,070	1,250
500	Double leaf, 4' x 4' opening, 160#		5	3.200		3,200	198		3,398	3,825
550	5' x 5' opening, 235#		4.50	3.556		4,125	220		4,345	4,875
000	Aluminum, 150 psf L.L., single leaf, 2' x 2', 60#		6	2.667		765	165		930	1,100
050	3' x 3' opening, 95#		5.50	2.909		1,150	180		1,330	1,525
500	Double leaf, 4' x 4' opening, 150#		5	3.200		1,450	198		1,648	1,900
550	5' x 5' opening, 230#		4.50	3.556		1,950	220		2,170	2,500

08 31 13.40 Kennel Doors

010	**KENNEL DOORS**									
020	2 way, swinging type, 13" x 19" opening	2 Carp	11	1.455	Opng.	87	82		169	218
100	17" x 29" opening		11	1.455		122	82		204	256
200	9" x 9" opening, electronic with accessories		11	1.455		154	82		236	292

08 32 Sliding Glass Doors

08 32 13 – Sliding Aluminum-Framed Glass Doors

08 32 13.10 Sliding Aluminum Doors

010	**SLIDING ALUMINUM DOORS**									
350	Aluminum, 5/8" tempered insulated glass, 6' wide									
400	Premium	2 Carp	4	4	Ea.	1,500	225		1,725	1,975
450	Economy		4	4		860	225		1,085	1,275
500	8' wide, premium		3	5.333		1,725	300		2,025	2,350
550	Economy		3	5.333		1,525	300		1,825	2,125
600	12' wide, premium		2.50	6.400		3,000	360		3,360	3,825
650	Economy		2.50	6.400		1,525	360		1,885	2,200
000	Aluminum, baked on enamel, temp glass, 6'-8" x 10'-0" wide		4	4		1,150	225		1,375	1,600
020	Insulating glass, 6'-8" x 6'-0" wide		4	4		950	225		1,175	1,375
040	8'-0" wide		3	5.333		1,125	300		1,425	1,700
060	10'-0" wide		2	8		1,300	450		1,750	2,100
080	Anodized, temp glass, 6'-8" x 6'-0" wide		4	4		465	225		690	850
100	8'-0" wide		3	5.333		585	300		885	1,100
120	10'-0" wide		2	8		690	450		1,140	1,425
000	Aluminum sliding glass door system									
010	Sliding door 4' wide opening single side	2 Carp	2	8	Ea.	6,375	450		6,825	7,675
015	8' wide opening single side		2	8		1,700	450		2,150	2,550
020	Telescoping glass door system, 4' wide opening biparting		2	8		5,475	450		5,925	6,700
025	8' wide opening biparting		2	8		6,375	450		6,825	7,675
030	Folding glass door, 4' wide opening biparting		2	8		8,500	450		8,950	10,000
035	8' wide opening biparting		2	8		5,100	450		5,550	6,275
040	ICU-CCU sliding telescoping glass door, 4' x 7', single side opening		2	8		3,250	450		3,700	4,250
045	8' x 7', single side opening		2	8		4,950	450		5,400	6,100

08 32 19 – Sliding Wood-Framed Glass Doors

08 32 19.15 Sliding Glass Vinyl-Clad Wood Doors

010	**SLIDING GLASS VINYL-CLAD WOOD DOORS**									
020	Glass, sliding vinyl-clad, insul. glass, 6'-0" x 6'-8"	G 2 Carp	4	4	Opng.	1,575	225		1,800	2,050
025	6'-0" x 6'-10" high	G	4	4		1,725	225		1,950	2,225
030	6'-0" x 8'-0" high	G	4	4		2,125	225		2,350	2,650
050	5'-0" x 6'-8" high	G	4	4		1,650	225		1,875	2,150

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

08 32 Sliding Glass Doors

08 32 19 – Sliding Wood-Framed Glass Doors

08 32 19.15 Sliding Glass Vinyl-Clad Wood Doors		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0100 8′-0″ x 6′-10″ high	G	2 Carp	4	4	Opng.	2,250	225		2,475	2,80
0500 4 leaf, 9′-0″ x 6′-10″ high	G		3	5.333		3,275	300		3,575	4,05
0600 12′-0″ x 6′-10″ high	G		3	5.333		4,250	300		4,550	5,12

08 33 Coiling Doors and Grilles

08 33 13 – Coiling Counter Doors

08 33 13.10 Counter Doors, Coiling Type

0010	**COUNTER DOORS, COILING TYPE**									
0020	Manual, incl. frame and hardware, galv. stl., 4′ roll-up, 6′ long	2 Carp	2	8	Opng.	1,350	450		1,800	2,15
0300	Galvanized steel, UL label		1.80	8.889		1,350	500		1,850	2,22
0600	Stainless steel, 4′ high roll-up, 6′ long		2	8		2,250	450		2,700	3,15
0700	10′ long		1.80	8.889		2,725	500		3,225	3,72
2000	Aluminum, 4′ high, 4′ long		2.20	7.273		1,875	410		2,285	2,67
2020	6′ long		2	8		2,525	450		2,975	3,45
2040	8′ long		1.90	8.421		2,400	475		2,875	3,32
2060	10′ long		1.80	8.889		2,375	500		2,875	3,37
2080	14′ long		1.40	11.429		3,650	645		4,295	4,97
2100	6′ high, 4′ long		2	8		2,575	450		3,025	3,50
2120	6′ long		1.60	10		1,875	565		2,440	2,90
2140	10′ long		1.40	11.429		2,475	645		3,120	3,67

08 33 16 – Coiling Counter Grilles

08 33 16.10 Coiling Grilles

0010	**COILING GRILLES**									
0015	Aluminum, manual, incl. frame, mill finish									
0020	Top coiling, 4′ high, 4′ long	2 Sswk	3.20	5	Opng.	1,525	310		1,835	2,15
0030	6′ long		3.20	5		1,825	310		2,135	2,47
0040	8′ long		2.40	6.667		2,000	410		2,410	2,82
0050	12′ long		2.40	6.667		2,475	410		2,885	3,35
0060	16′ long		1.60	10		2,650	620		3,270	3,85
0070	6′ high, 4′ long		3.20	5		1,850	310		2,160	2,50
0080	6′ long		3.20	5		1,800	310		2,110	2,47
0090	8′ long		2.40	6.667		1,775	410		2,185	2,57
0100	12′ long		1.60	10		2,350	620		2,970	3,52
0110	16′ long		1.20	13.333		2,850	825		3,675	4,40
0200	Side coiling, 8′ high, 12′ long		.60	26.667		2,300	1,650		3,950	5,07
0220	18′ long		.50	32		5,250	1,975		7,225	8,82
0240	24′ long		.40	40		3,875	2,475		6,350	8,05
0260	12′ high, 12′ long		.50	32		3,325	1,975		5,300	6,72
0280	18′ long		.40	40		5,275	2,475		7,750	9,60
0300	24′ long		.28	57.143		6,625	3,525		10,150	12,70

08 33 23 – Overhead Coiling Doors

08 33 23.10 Coiling Service Doors

0010	**COILING SERVICE DOORS** Steel, manual, 20 ga., incl. hardware									
0050	8′ x 8′ high	2 Sswk	1.60	10	Ea.	535	620		1,155	1,55
0100	10′ x 10′ high		1.40	11.429		785	705		1,490	1,97
0200	20′ x 10′ high		1	16		3,025	990		4,015	4,85
0300	12′ x 12′ high		1.20	13.333		1,050	825		1,875	2,42
0400	20′ x 12′ high		.90	17.778		3,025	1,100		4,125	5,02
0500	14′ x 14′ high		.80	20		1,825	1,225		3,050	3,90
0600	20′ x 16′ high		.60	26.667		2,525	1,650		4,175	5,32

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

08 33 Coiling Doors and Grilles

08 33 23 – Overhead Coiling Doors

08 33 23.10 Coiling Service Doors	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0700 10′ x 20′ high	2 Sswk	.50	32	Ea.	1,600	1,975		3,575	4,825
1000 12′ x 12′, crank operated, crank on door side		.80	20		1,075	1,225		2,300	3,100
1100 Crank thru wall		.70	22.857		2,500	1,425		3,925	4,925
1300 For vision panel, add					144			144	158
1600 3′ x 7′ pass door within rolling steel door, new construction					985			985	1,075
1700 Existing construction	2 Sswk	2	8		675	495		1,170	1,500
2000 Class A fire doors, manual, 20 ga., 8′ x 8′ high		1.40	11.429		1,875	705		2,580	3,175
2100 10′ x 10′ high		1.10	14.545		3,100	900		4,000	4,775
2200 20′ x 10′ high		.80	20		5,300	1,225		6,525	7,725
2300 12′ x 12′ high		1	16		4,075	990		5,065	6,025
2400 20′ x 12′ high		.80	20		5,700	1,225		6,925	8,175
2500 14′ x 14′ high		.60	26.667		4,450	1,650		6,100	7,450
2600 20′ x 16′ high		.50	32		6,175	1,975		8,150	9,850
2700 10′ x 20′ high		.40	40		5,625	2,475		8,100	9,975
3000 For 18 ga. doors, add				S.F.	1.59			1.59	1.75
3300 For enamel finish, add				″	2.97			2.97	3.27
3600 For safety edge bottom bar, pneumatic, add				L.F.	29.50			29.50	32
3700 Electric, add					51			51	56
4000 For weatherstripping, extruded rubber, jambs, add					2.21			2.21	2.43
4100 Hood, add					9.50			9.50	10.45
4200 Sill, add					9.65			9.65	10.60
4500 Motor operators, to 14′ x 14′ opening	2 Sswk	5	3.200	Ea.	970	198		1,168	1,375
4600 Over 14′ x 14′, jack shaft type	″	5	3.200		920	198		1,118	1,300
4700 For fire door, additional fusible link, add					80.50			80.50	88.50

08 34 Special Function Doors

08 34 13 – Cold Storage Doors

08 34 13.10 Doors for Cold Area Storage

0010	**DOORS FOR COLD AREA STORAGE**								
0020	Single, 20 ga. galvanized steel								
0300	Horizontal sliding, 5′ x 7′, manual operation, 3.5″ thick	2 Carp	2	8	Ea.	3,300	450	3,750	4,300
0400	4″ thick		2	8		3,850	450	4,300	4,900
0500	6″ thick		2	8		3,800	450	4,250	4,850
0800	5′ x 7′, power operation, 2″ thick		1.90	8.421		5,475	475	5,950	6,700
0900	4″ thick		1.90	8.421		6,300	475	6,775	7,625
1000	6″ thick		1.90	8.421		7,175	475	7,650	8,600
1300	9′ x 10′, manual operation, 2″ insulation		1.70	9.412		4,775	530	5,305	6,050
1400	4″ insulation		1.70	9.412		5,400	530	5,930	6,750
1500	6″ insulation		1.70	9.412		5,450	530	5,980	6,800
1800	Power operation, 2″ insulation		1.60	10		7,525	565	8,090	9,125
1900	4″ insulation		1.60	10		8,575	565	9,140	10,300
2000	6″ insulation		1.70	9.412		9,075	530	9,605	10,800
2300	For stainless steel face, add					25%			
3000	Hinged, lightweight, 3′ x 7′-0″, 2″ thick	2 Carp	2	8	Ea.	1,375	450	1,825	2,200
3050	4″ thick		1.90	8.421		1,725	475	2,200	2,600
3300	Polymer doors, 3′ x 7′-0″		1.90	8.421		1,475	475	1,950	2,325
3350	6″ thick		1.40	11.429		2,575	645	3,220	3,800
3600	Stainless steel, 3′ x 7′-0″, 4″ thick		1.90	8.421		1,950	475	2,425	2,850
3650	6″ thick		1.40	11.429		3,175	645	3,820	4,450
3900	Painted, 3′ x 7′-0″, 4″ thick		1.90	8.421		1,475	475	1,950	2,300
3950	6″ thick		1.40	11.429		2,600	645	3,245	3,800

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

08 34 13 – Cold Storage Doors

08 34 13.10 Doors for Cold Area Storage	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
5000 Bi-parting, electric operated									
5010 6′ x 8′ opening, galv. faces, 4″ thick for cooler	2 Carp	.80	20	Opng.	7,975	1,125		9,100	10,5
5050 For freezer, 4″ thick		.80	20		8,775	1,125		9,900	11,3
5300 For door buck framing and door protection, add		2.50	6.400		710	360		1,070	1,3
6000 Galvanized batten door, galvanized hinges, 4′ x 7′		2	8		2,100	450		2,550	2,9
6050 6′ x 8′		1.80	8.889		2,750	500		3,250	3,7
6500 Fire door, 3 hr., 6′ x 8′, single slide		.80	20		9,450	1,125		10,575	12,1
6550 Double, bi-parting		.70	22.857		12,100	1,275		13,375	15,2

08 34 36 – Darkroom Doors

08 34 36.10 Various Types of Darkroom Doors

0010 **VARIOUS TYPES OF DARKROOM DOORS**									
0015 Revolving, standard, 2 way, 36″ diameter	2 Carp	3.10	5.161	Opng.	3,800	291		4,091	4,6
0020 41″ diameter		3.10	5.161		3,525	291		3,816	4,3
0050 3 way, 51″ diameter		1.40	11.429		5,350	645		5,995	6,8
1000 4 way, 49″ diameter		1.40	11.429		4,100	645		4,745	5,4
2000 Hinged safety, 2 way, 41″ diameter		2.30	6.957		4,250	390		4,640	5,2
2500 3 way, 51″ diameter		1.40	11.429		5,575	645		6,220	7,0
3000 Pop out safety, 2 way, 41″ diameter		3.10	5.161		4,325	291		4,616	5,1
4000 3 way, 51″ diameter		1.40	11.429		6,250	645		6,895	7,8
5000 Wheelchair-type, pop out, 51″ diameter		1.40	11.429		6,275	645		6,920	7,8
5020 72″ diameter		.90	17.778		11,800	1,000		12,800	14,5
9300 For complete darkrooms, see Section 13 21 53.50									

08 34 53 – Security Doors and Frames

08 34 53.20 Steel Door

0010 **STEEL DOOR** flush with ballistic core and welded frame both 14 ga.									
0120 UL 752 Level 3, 1-3/4″, 3′-0″ x 7′-0″	2 Carp	1.50	10.667	Opng.	2,600	600		3,200	3,7
0125 1-3/4″, 3′-6″ x 7′-0″		1.50	10.667		2,700	600		3,300	3,8
0130 1-3/4″, 4′-0″ x 7′-0″		1.20	13.333		2,800	750		3,550	4,2
0150 UL 752 Level 8, 1-3/4″, 3′-0″ x 7′-0″		1.50	10.667		6,450	600		7,050	8,0
0155 1-3/4″, 3′-6″ x 7′-0″		1.50	10.667		6,600	600		7,200	8,1
0160 1-3/4″, 4′-0″ x 7′-0″		1.20	13.333		6,700	750		7,450	8,4
1000 Safe room sliding door and hardware, 1-3/4″, 3′-0″ x 7′-0″ UL 752 Level 3		.50	32		19,000	1,800		20,800	23,6
1050 Safe room swinging door and hardware, 1-3/4″, 3′-0″ x 7′-0″ UL 752 Level 3		.50	32		22,800	1,800		24,600	27,8

08 34 53.30 Wood Ballistic Doors

0010 **WOOD BALLISTIC DOORS** with frames and hardware									
0050 Wood, 1-3/4″, 3′-0″ x 7′-0″ UL 752 Level 3	2 Carp	1.50	10.667	Opng.	3,425	600		4,025	4,6

08 34 56 – Security Gates

08 34 56.10 Gates

0010 **GATES**									
0015 Driveway gates include mounting hardware									
0500 Wood, security gate, driveway, dual, 10′ wide	H-4	.80	25	Opng.	3,525	1,325		4,850	5,8
0505 12′ wide		.80	25		3,825	1,325		5,150	6,1
0510 15′ wide		.80	25		4,425	1,325		5,750	6,8
0600 Steel, security gate, driveway, single, 10′ wide		.80	25		2,700	1,325		4,025	4,9
0605 12′ wide		.80	25		3,250	1,325		4,575	5,5
0620 Steel, security gate, driveway, dual, 12′ wide		.80	25		2,800	1,325		4,125	5,0
0625 14′ wide		.80	25		3,275	1,325		4,600	5,5
0630 16′ wide		.80	25		2,350	1,325		3,675	4,5
0700 Aluminum, security gate, driveway, dual, 10′ wide		.80	25		1,200	1,325		2,525	3,3
0705 12′ wide		.80	25		1,300	1,325		2,625	3,4
0710 16′ wide		.80	25		4,475	1,325		5,800	6,9

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08 34 Special Function Doors

08 34 56 – Security Gates

08 34 56.10 Gates	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1000 Security gate, driveway, opener 12 VDC				Ea.	2,375			2,375	2,600
1010 Wireless					1,925			1,925	2,125
1020 Security gate, driveway, opener 24 VDC					2,250			2,250	2,500
1030 Wireless					2,175			2,175	2,375
1040 Security gate, driveway, opener 12 VDC, solar panel 10 watt	1 Elec	2	4		2,325	265		2,590	2,975
1050 20 watt	"	2	4		1,250	265		1,515	1,775

08 34 59 – Vault Doors and Day Gates

08 34 59.10 Secure Storage Doors

0010 **SECURE STORAGE DOORS**									
0020 Door and frame, 32" x 78", clear opening									
0100 1 hour test, 32" door, weighs 750 lb.	2 Sswk	1.50	10.667	Opng.	9,025	660		9,685	11,000
0200 2 hour test, 32" door, weighs 950 lb.		1.30	12.308		7,075	760		7,835	8,950
0250 40" door, weighs 1130 lb.		1	16		7,450	990		8,440	9,700
0300 4 hour test, 32" door, weighs 1025 lb.		1.20	13.333		4,600	825		5,425	6,350
0350 40" door, weighs 1140 lb.		.90	17.778		5,375	1,100		6,475	7,600
0600 For time lock, two movement, add	1 Elec	2	4	Ea.	1,700	265		1,965	2,275
0800 Day gate, painted, steel, 32" wide	2 Sswk	1.50	10.667		2,200	660		2,860	3,450
0850 40" wide		1.40	11.429		2,800	705		3,505	4,175
0900 Aluminum, 32" wide		1.50	10.667		3,125	660		3,785	4,475
0950 40" wide		1.40	11.429		3,425	705		4,130	4,850
2050 Security vault door, class I, 3' wide, 3-1/2" thick	E-24	.19	167	Opng.	15,800	10,200	10,900	36,900	45,100
2100 Class II, 3' wide, 7" thick		.19	167		19,200	10,200	10,900	40,300	48,800
2150 Class III, 9R, 3' wide, 10" thick		.13	250		23,700	15,400	16,300	55,400	67,500
2160 Class V, type 1, 40" door		2.48	12.903	Ea.	7,050	795	845	8,690	9,875
2170 Class V, type 2, 40" door		2.48	12.903		6,925	795	845	8,565	9,750
2180 Day gate for class V vault	2 Sswk	2	8		1,875	495		2,370	2,800

08 34 73 – Sound Control Door Assemblies

08 34 73.10 Acoustical Doors

0010 **ACOUSTICAL DOORS**									
0020 Including framed seals, 3' x 7', wood, 40 STC rating	2 Carp	1.50	10.667	Ea.	3,250	600		3,850	4,475
0100 Steel, 41 STC rating		1.50	10.667		1,825	600		2,425	2,900
0200 45 STC rating		1.50	10.667		2,275	600		2,875	3,400
0300 48 STC rating		1.50	10.667		2,925	600		3,525	4,125
0400 52 STC rating		1.50	10.667		5,150	600		5,750	6,575

08 36 Panel Doors

08 36 13 – Sectional Doors

08 36 13.10 Overhead Commercial Doors

0010 **OVERHEAD COMMERCIAL DOORS**									
1000 Stock, sectional, heavy duty, wood, 1-3/4" thick, 8' x 8' high	2 Carp	2	8	Ea.	1,200	450		1,650	2,000
1100 10' x 10' high		1.80	8.889		1,700	500		2,200	2,625
1200 12' x 12' high		1.50	10.667		2,775	600		3,375	3,950
1300 Chain hoist, 14' x 14' high		1.30	12.308		3,775	695		4,470	5,175
1400 12' x 16' high		1	16		3,775	900		4,675	5,500
1500 20' x 8' high		1.30	12.270		2,900	690		3,590	4,200
1600 20' x 16' high		.65	24.615		7,125	1,375		8,500	9,925
1800 Center mullion openings, 8' high		4	4		1,450	225		1,675	1,900
1900 20' high		2	8		2,300	450		2,750	3,200
2100 For medium duty custom door, deduct					5%	5%			
2150 For medium duty stock doors, deduct					10%	5%			

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

08 36 13 – Sectional Doors

	08 36 13.10 Overhead Commercial Doors	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2300	Fiberglass and aluminum, heavy duty, sectional, 12′ x 12′ high	2 Carp	1.50	10.667	Ea.	3,375	600		3,975	4,625
2450	Chain hoist, 20′ x 20′ high		.50	32		7,725	1,800		9,525	11,200
2600	Steel, 24 ga. sectional, manual, 8′ x 8′ high		2	8		1,975	450		2,425	2,850
2650	10′ x 10′ high		1.80	8.889		1,550	500		2,050	2,450
2700	12′ x 12′ high		1.50	10.667		1,875	600		2,475	2,950
2800	Chain hoist, 20′ x 14′ high		.70	22.857		3,100	1,275		4,375	5,350
2850	For 1-1/4″ rigid insulation and 26 ga. galv.									
2860	back panel, add				S.F.	5.90			5.90	6.5
2900	For electric trolley operator, 1/3 HP, to 12′ x 12′, add	1 Carp	2	4	Ea.	865	225		1,090	1,300
2950	Over 12′ x 12′, 1/2 HP, add		1	8		865	450		1,315	1,625
2980	Overhead, for row of clear lites, add		1	8		262	450		712	960

08 36 13.20 Residential Garage Doors

0010	**RESIDENTIAL GARAGE DOORS**									
0050	Hinged, wood, custom, double door, 9′ x 7′	2 Carp	4	4	Ea.	2,300	225		2,525	2,850
0070	16′ x 7′		3	5.333		3,900	300		4,200	4,725
0200	Overhead, sectional, incl. hardware, fiberglass, 9′ x 7′, standard		5	3.200		960	180		1,140	1,325
0220	Deluxe		5	3.200		1,175	180		1,355	1,550
0300	16′ x 7′, standard		6	2.667		2,175	150		2,325	2,625
0320	Deluxe		6	2.667		2,400	150		2,550	2,875
0500	Hardboard, 9′ x 7′, standard		8	2		730	113		843	970
0520	Deluxe		8	2		930	113		1,043	1,200
0600	16′ x 7′, standard		6	2.667		1,350	150		1,500	1,700
0620	Deluxe		6	2.667		1,650	150		1,800	2,050
0700	Metal, 9′ x 7′, standard		8	2		605	113		718	835
0720	Deluxe		6	2.667		1,450	150		1,600	1,825
0800	16′ x 7′, standard		6	2.667		935	150		1,085	1,250
0820	Deluxe		5	3.200		1,625	180		1,805	2,050
0900	Wood, 9′ x 7′, standard		8	2		2,300	113		2,413	2,700
0920	Deluxe		8	2		2,375	113		2,488	2,775
1000	16′ x 7′, standard		6	2.667		3,500	150		3,650	4,075
1020	Deluxe		6	2.667		3,175	150		3,325	3,700
1800	Door hardware, sectional	1 Carp	4	2		370	113		483	580
1810	Door tracks only		4	2		173	113		286	360
1820	One side only		7	1.143		123	64.50		187.50	231
4000	For electric operator, economy, add		8	1		440	56.50		496.50	570
4100	Deluxe, including remote control		8	1		640	56.50		696.50	790
4500	For transmitter/receiver control, add to operator				Total	117			117	129
4600	Transmitters, additional				″	68.50			68.50	75.5

08 36 19 – Multi-Leaf Vertical Lift Doors

08 36 19.10 Sectional Vertical Lift Doors

0010	**SECTIONAL VERTICAL LIFT DOORS**									
0020	Motorized, 14 ga. steel, incl. frame and control panel									
0050	16′ x 16′ high	L-10	.50	48	Ea.	22,400	3,025	3,975	29,400	33,700
0100	10′ x 20′ high		1.30	18.462		38,800	1,175	1,525	41,500	46,200
0120	15′ x 20′ high		1.30	18.462		47,300	1,175	1,525	50,000	55,500
0140	20′ x 20′ high		1	24		55,500	1,525	1,975	59,000	65,500
0160	25′ x 20′ high		1	24		56,000	1,525	1,975	59,500	66,000
0170	32′ x 24′ high		.75	32		52,000	2,025	2,650	56,675	63,000
0180	20′ x 25′ high		1	24		58,000	1,525	1,975	61,500	68,000
0200	25′ x 25′ high		.70	34.286		80,500	2,150	2,825	85,475	95,000
0220	25′ x 30′ high		.70	34.286		84,500	2,150	2,825	89,475	99,500
0240	30′ x 30′ high		.70	34.286		93,000	2,150	2,825	97,975	108,500

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

08 36 Panel Doors

08 36 19 – Multi-Leaf Vertical Lift Doors

	08 36 19.10 Sectional Vertical Lift Doors	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0260	35' x 30' high	L-10	.70	34.286	Ea.	101,500	2,150	2,825	106,475	118,000

08 38 Traffic Doors

08 38 13 – Flexible Strip Doors

08 38 13.10 Flexible Transparent Strip Doors

0010	**FLEXIBLE TRANSPARENT STRIP DOORS**									
0100	12" strip width, 2/3 overlap	3 Shee	135	.178	SF Surf	7.65	12		19.65	26.50
0200	Full overlap		115	.209		9.10	14.10		23.20	31
0220	8" strip width, 1/2 overlap		140	.171		6.20	11.60		17.80	24.50
0240	Full overlap	↓	120	.200	↓	8.55	13.50		22.05	30
0300	Add for suspension system, header mount				L.F.	8.75			8.75	9.65
0400	Wall mount				"	9.55			9.55	10.50

08 38 19 – Rigid Traffic Doors

08 38 19.20 Double Acting Swing Doors

0010	**DOUBLE ACTING SWING DOORS**									
0020	Including frame, closer, hardware and vision panel									
1000	Polymer, 7'-0" high, 4'-0" wide	2 Carp	4.20	3.810	Pr.	2,025	214		2,239	2,550
1025	6'-0" wide		4	4		2,500	225		2,725	3,075
1050	6'-8" wide	↓	4	4	↓	2,650	225		2,875	3,250
2000	3/4" thick, stainless steel									
2010	Stainless steel, 7' high opening, 4' wide	2 Carp	4	4	Pr.	2,500	225		2,725	3,075
2050	7' wide	"	3.80	4.211	"	2,700	237		2,937	3,325

08 38 19.30 Shock Absorbing Doors

0010	**SHOCK ABSORBING DOORS**									
0020	Rigid, no frame, 1-1/2" thick, 5' x 7'	2 Sswk	1.90	8.421	Opng.	1,525	520		2,045	2,475
0100	8' x 8'		1.80	8.889		3,100	550		3,650	4,250
0500	Flexible, no frame, insulated, .16" thick, economy, 5' x 7'		2	8		2,850	495		3,345	3,875
0600	Deluxe		1.90	8.421		3,550	520		4,070	4,700
1000	8' x 8' opening, economy		2	8		3,100	495		3,595	4,150
1100	Deluxe	↓	1.90	8.421	↓	3,500	520		4,020	4,650

08 41 Entrances and Storefronts

08 41 13 – Aluminum-Framed Entrances and Storefronts

08 41 13.20 Tube Framing

0010	**TUBE FRAMING**, For window walls and storefronts, aluminum stock									
0050	Plain tube frame, mill finish, 1-3/4" x 1-3/4"	2 Glaz	103	.155	L.F.	10.95	8.40		19.35	24.50
0150	1-3/4" x 4"		98	.163		15.60	8.80		24.40	30.50
0200	1-3/4" x 4-1/2"		95	.168		17.20	9.10		26.30	32.50
0250	2" x 6"		89	.180		30.50	9.70		40.20	48
0350	4" x 4"		87	.184		25	9.95		34.95	42.50
0400	4-1/2" x 4-1/2"		85	.188		31.50	10.15		41.65	49.50
0450	Glass bead		240	.067		3.45	3.60		7.05	9.15
1000	Flush tube frame, mill finish, 1/4" glass, 1-3/4" x 4", open header		80	.200		15.65	10.80		26.45	33.50
1050	Open sill		82	.195		13.95	10.55		24.50	31
1100	Closed back header		83	.193		24.50	10.40		34.90	42.50
1150	Closed back sill	↓	85	.188	↓	23.50	10.15		33.65	41
1160	Tube fmg., spandrel cover both sides, alum 1" wide	1 Sswk	85	.094	S.F.	100	5.80		105.80	119
1170	Tube fmg., spandrel cover both sides, alum 2" wide	"	85	.094	"	41	5.80		46.80	54

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08 41 13 – Aluminum-Framed Entrances and Storefronts

	08 41 13.20 Tube Framing	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1200	Vertical mullion, one piece	2 Glaz	75	.213	L.F.	21.50	11.50		33	41
1250	Two piece		73	.219		23.50	11.85		35.35	43
1300	90° or 180° vertical corner post		75	.213		36.50	11.50		48	57
1400	1-3/4" x 4-1/2", open header		80	.200		18.40	10.80		29.20	36.5
1450	Open sill		82	.195		15.25	10.55		25.80	32.5
1500	Closed back header		83	.193		21.50	10.40		31.90	39
1550	Closed back sill		85	.188		21.50	10.15		31.65	38.5
1600	Vertical mullion, one piece		75	.213		24	11.50		35.50	43.5
1650	Two piece		73	.219		25.50	11.85		37.35	45.5
1700	90° or 180° vertical corner post		75	.213		26	11.50		37.50	45.5
2000	Flush tube frame, mil fin.,ins. glass w/thml brk, 2" x 4-1/2", open header		75	.213		16.15	11.50		27.65	35
2050	Open sill		77	.208		13.60	11.20		24.80	31.5
2100	Closed back header		78	.205		15	11.10		26.10	33
2150	Closed back sill		80	.200		14.55	10.80		25.35	32
2200	Vertical mullion, one piece		70	.229		17.15	12.35		29.50	37
2250	Two piece		68	.235		18.90	12.70		31.60	40
2300	90° or 180° vertical corner post		70	.229		19.50	12.35		31.85	40
5000	Flush tube frame, mill fin., thermal brk., 2-1/4" x 4-1/2", open header		74	.216		16.70	11.70		28.40	35.5
5050	Open sill		75	.213		14.45	11.50		25.95	33
5100	Vertical mullion, one piece		69	.232		19.20	12.50		31.70	39.5
5150	Two piece		67	.239		21	12.90		33.90	42.5
5200	90° or 180° vertical corner post		69	.232		19.40	12.50		31.90	40
6980	Door stop (snap in)		380	.042		3.25	2.27		5.52	6.9
7000	For joints, 90°, clip type, add				Ea.	27.50			27.50	30.5
7050	Screw spline joint, add					24.50			24.50	27
7100	For joint other than 90°, add					52			52	57
8000	For bronze anodized aluminum, add					15%				
8020	For black finish, add					30%				
8050	For stainless steel materials, add					350%				
8100	For monumental grade, add					53%				
8150	For steel stiffener, add	2 Glaz	200	.080	L.F.	11.70	4.32		16.02	19.2
8200	For 2 to 5 stories, add per story				Story		8%			

08 41 19 – Stainless-Steel-Framed Entrances and Storefronts

08 41 19.10 Stainless-Steel and Glass Entrance Unit

0010	**STAINLESS-STEEL AND GLASS ENTRANCE UNIT**, narrow stiles									
0020	3' x 7' opening, including hardware, minimum	2 Sswk	1.60	10	Opng.	8,000	620		8,620	9,750
0050	Average		1.40	11.429		8,475	705		9,180	10,400
0100	Maximum		1.20	13.333		9,100	825		9,925	11,300
1000	For solid bronze entrance units, statuary finish, add					64%				
1100	Without statuary finish, add					45%				
2000	Balanced doors, 3' x 7', economy	2 Sswk	.90	17.778	Ea.	10,600	1,100		11,700	13,400
2100	Premium	"	.70	22.857	"	17,300	1,425		18,725	21,200

08 41 26 – All-Glass Entrances and Storefronts

08 41 26.10 Window Walls Aluminum, Stock

0010	**WINDOW WALLS ALUMINUM, STOCK**, including glazing									
0020	Minimum	H-2	160	.150	S.F.	59.50	7.70		67.20	77
0050	Average		140	.171		82	8.80		90.80	103
0100	Maximum		110	.218		193	11.15		204.15	229
0500	For translucent sandwich wall systems, see Section 07 41 33.10									
0850	Cost of the above walls depends on material,									
0860	finish, repetition, and size of units.									
0870	The larger the opening, the lower the S.F. cost									

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08 42 Entrances

08 42 26 – All-Glass Entrances

	08 42 26.10 Swinging Glass Doors	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**SWINGING GLASS DOORS**									
0020	Including hardware, 1/2" thick, tempered, 3' x 7' opening	2 Glaz	2	8	Opng.	2,400	430		2,830	3,275
0100	6' x 7' opening	"	1.40	11.429	"	4,575	615		5,190	5,950

08 42 33 – Revolving Door Entrances

08 42 33.10 Circular Rotating Entrance Doors

0010	**CIRCULAR ROTATING ENTRANCE DOORS**, Aluminum									
0020	6'-10" to 7' high, stock units, minimum	4 Sswk	.75	42.667	Opng.	39,100	2,650		41,750	47,100
0050	Average		.60	53.333		44,500	3,300		47,800	54,000
0100	Maximum		.45	71.111		51,000	4,400		55,400	63,000
1000	Stainless steel		.30	106		50,500	6,550		57,050	65,500
1100	Solid bronze		.15	213		49,700	13,200		62,900	75,000
1500	For automatic controls, add	2 Elec	2	8		16,400	530		16,930	18,900

08 42 36 – Balanced Door Entrances

08 42 36.10 Balanced Entrance Doors

0010	**BALANCED ENTRANCE DOORS**									
0020	Hardware & frame, alum. & glass, 3' x 7', econ.	2 Sswk	.90	17.778	Ea.	7,525	1,100		8,625	9,975
0150	Premium	"	.70	22.857	"	8,975	1,425		10,400	12,000

08 43 Storefronts

08 43 13 – Aluminum-Framed Storefronts

08 43 13.10 Aluminum-Framed Entrance Doors and Frames

0010	**ALUMINUM-FRAMED ENTRANCE DOORS AND FRAMES**									
0015	Standard hardware and glass stops but no glass									
0020	Entrance door, 3' x 7' opening, clear anodized finish	2 Sswk	7	2.286	Opng.	740	141		881	1,025
0040	Bronze finish		7	2.286		925	141		1,066	1,250
0060	Black finish		7	2.286		900	141		1,041	1,200
0200	3'-6" x 7'-0", mill finish		7	2.286		1,000	141		1,141	1,325
0220	Bronze finish		7	2.286		795	141		936	1,100
0240	Black finish		7	2.286		805	141		946	1,100
0500	6' x 7' opening, clear finish		6	2.667		995	165		1,160	1,350
0520	Bronze finish		6	2.667		1,375	165		1,540	1,775
0540	Black finish		6	2.667		1,425	165		1,590	1,800
0600	Door frame for above doors 3'-0" x 7'-0", mill finish		6	2.667		625	165		790	945
0620	Bronze finish		6	2.667		665	165		830	990
0640	Black finish		6	2.667		750	165		915	1,075
0700	3'-6" x 7'-0", mill finish		6	2.667		450	165		615	750
0720	Bronze finish		6	2.667		450	165		615	750
0740	Black finish		6	2.667		450	165		615	750
0800	6'-0" x 7'-0", mill finish		6	2.667		450	165		615	750
0820	Bronze finish		6	2.667		455	165		620	755
0840	Black finish		6	2.667		490	165		655	795
1000	With 3' high transom above, 3' x 7' opening, clear finish		5.50	2.909		695	180		875	1,050
1050	Bronze finish		5.50	2.909		690	180		870	1,025
1100	Black finish		5.50	2.909		675	180		855	1,025
1300	3'-6" x 7'-0" opening, clear finish		5.50	2.909		450	180		630	770
1320	Bronze finish		5.50	2.909		475	180		655	795
1340	Black finish		5.50	2.909		480	180		660	805
1500	6' x 7' opening, clear finish		5.50	2.909		735	180		915	1,075
1550	Bronze finish		5.50	2.909		860	180		1,040	1,225
1600	Black finish		5.50	2.909		955	180		1,135	1,325

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08 43 Storefronts

08 43 13 – Aluminum-Framed Storefronts

08 43 13.20 Storefront Systems	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **STOREFRONT SYSTEMS**, aluminum frame clear 3/8" plate glass									
0020 incl. 3' x 7' door with hardware (400 sq. ft. max. wall)									
0500 Wall height to 12' high, commercial grade	2 Glaz	150	.107	S.F.	25.50	5.75		31.25	36.
0600 Institutional grade		130	.123		29.50	6.65		36.15	42.
0700 Monumental grade		115	.139		49.50	7.50		57	65.
1000 6' x 7' door with hardware, commercial grade		135	.119		75.50	6.40		81.90	92.
1100 Institutional grade		115	.139		43	7.50		50.50	58
1200 Monumental grade		100	.160		122	8.65		130.65	147
1500 For bronze anodized finish, add					15%				
1600 For black anodized finish, add					36%				
1700 For stainless steel framing, add to monumental					78%				

08 43 29 – Sliding Storefronts

08 43 29.10 Sliding Panels

0010 **SLIDING PANELS**									
0020 Mall fronts, aluminum & glass, 15' x 9' high	2 Glaz	1.30	12.308	Opng.	4,725	665		5,390	6,200
0100 24' x 9' high		.70	22.857		6,625	1,225		7,850	9,125
0200 48' x 9' high, with fixed panels		.90	17.778		11,900	960		12,860	14,500
0500 For bronze finish, add					17%				

08 44 Curtain Wall and Glazed Assemblies

08 44 13 – Glazed Aluminum Curtain Walls

08 44 13.10 Glazed Curtain Walls

0010 **GLAZED CURTAIN WALLS**, aluminum, stock, including glazing									
0020 Minimum	H-1	205	.156	S.F.	32	9.05		41.05	49
0050 Average, single glazed		195	.164		54.50	9.50		64	74.
0150 Average, double glazed		180	.178		77	10.30		87.30	101
0200 Maximum		160	.200		191	11.60		202.60	228

08 45 Translucent Wall and Roof Assemblies

08 45 10 – Translucent Roof Assemblies

08 45 10.10 Skyroofs

0010 **SKYROOFS**									
1200 Skylights, circular, clear, double glazed acrylic									
1230 30" diameter	2 Carp	3	5.333	Ea.	1,775	300		2,075	2,425
1250 60" diameter		3	5.333		2,950	300		3,250	3,700
1290 96" diameter		2	8		6,125	450		6,575	7,400
1300 Skylight Barrel Vault, clear, double glazed, acrylic									
1330 3'-0" x 12'-0"	G-3	3	10.667	Ea.	4,425	605		5,030	5,775
1350 4'-0" x 12'-0"		3	10.667		4,900	605		5,505	6,300
1390 5'-0" x 12'-0"		2	16		6,475	905		7,380	8,475
1400 Skylight Pyramid, aluminum frame, clear low E laminated glass									
1410 The glass is installed in the frame except where noted									
1430 Square, 3' x 3'	G-3	3	10.667	Ea.	4,300	605		4,905	5,625
1440 4' x 4'		3	10.667		4,875	605		5,480	6,275
1450 5' x 5', glass must be field installed		3	10.667		6,875	605		7,480	8,450
1460 6' x 6', glass must be field installed		2	16		9,525	905		10,430	11,900
1550 Install pre-cut laminated glass in aluminum frame on a flat roof	2 Glaz	55	.291	SF Surf		15.70		15.70	23.
1560 Install pre-cut laminated glass in aluminum frame on a sloped roof	"	40	.400	"		21.50		21.50	32

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08 51 13 – Aluminum Windows

	08 51 13.10 Aluminum Sash	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**ALUMINUM SASH**									
0020	Stock, grade C, glaze & trim not incl., casement	2 Sswk	200	.080	S.F.	43	4.95		47.95	54.50
0050	Double-hung		200	.080		42	4.95		46.95	53.50
0100	Fixed casement		200	.080		18.45	4.95		23.40	28
0150	Picture window		200	.080		19.75	4.95		24.70	29
0200	Projected window		200	.080		38	4.95		42.95	49.50
0250	Single-hung		200	.080		17.80	4.95		22.75	27
0300	Sliding		200	.080		23.50	4.95		28.45	33.50
1000	Mullions for above, tubular		240	.067	L.F.	6.55	4.12		10.67	13.55
2000	Custom aluminum sash, grade HC, glazing not included		140	.114	S.F.	42.50	7.05		49.55	58
	08 51 13.20 Aluminum Windows									
0010	**ALUMINUM WINDOWS**, incl. frame and glazing, commercial grade									
1000	Stock units, casement, 3'-1" x 3'-2" opening	2 Sswk	10	1.600	Ea.	730	99		829	955
1050	Add for storms					129			129	141
1600	Projected, with screen, 3'-1" x 3'-2" opening	2 Sswk	10	1.600		605	99		704	815
1700	Add for storms					125			125	138
2000	4'-5" x 5'-3" opening	2 Sswk	8	2		420	124		544	655
2100	Add for storms					128			128	141
2500	Enamel finish windows, 3'-1" x 3'-2"	2 Sswk	10	1.600		385	99		484	575
2600	4'-5" x 5'-3"		8	2		435	124		559	670
3000	Single-hung, 2' x 3' opening, enameled, standard glazed		10	1.600		223	99		322	400
3100	Insulating glass		10	1.600		271	99		370	450
3300	2'-8" x 6'-8" opening, standard glazed		8	2		375	124		499	605
3400	Insulating glass		8	2		495	124		619	735
3700	3'-4" x 5'-0" opening, standard glazed		9	1.778		325	110		435	525
3800	Insulating glass		9	1.778		350	110		460	555
3890	Awning type, 3' x 3' opening, standard glass		14	1.143		750	70.50		820.50	935
3900	Insulating glass		14	1.143		835	70.50		905.50	1,025
3910	3' x 4' opening, standard glass		10	1.600		865	99		964	1,100
3920	Insulating glass		10	1.600		885	99		984	1,125
3930	3' x 5'-4" opening, standard glass		10	1.600		1,975	99		2,074	2,325
3940	Insulating glass		10	1.600		2,200	99		2,299	2,575
3950	4' x 5'-4" opening, standard glass		9	1.778		2,300	110		2,410	2,725
3960	Insulating glass		9	1.778		870	110		980	1,125
4000	Sliding aluminum, 3' x 2' opening, standard glazed		10	1.600		1,025	99		1,124	1,275
4100	Insulating glass		10	1.600		1,200	99		1,299	1,475
4300	5' x 3' opening, standard glazed		9	1.778		1,200	110		1,310	1,500
4400	Insulating glass		9	1.778		1,350	110		1,460	1,675
4600	8' x 4' opening, standard glazed		6	2.667		1,875	165		2,040	2,325
4700	Insulating glass		6	2.667		2,025	165		2,190	2,475
5000	9' x 5' opening, standard glazed		4	4		550	247		797	985
5100	Insulating glass		4	4		840	247		1,087	1,300
5500	Sliding, with thermal barrier and screen, 6' x 4', 2 track		8	2		2,475	124		2,599	2,925
5700	4 track		8	2		905	124		1,029	1,175
6000	For above units with bronze finish, add					15%				
6200	For installation in concrete openings, add					8%				
	08 51 13.30 Impact Resistant Aluminum Windows									
0010	**IMPACT RESISTANT ALUMINUM WINDOWS**, incl. frame and glazing									
0100	Single-hung, impact resistant, 2'-8" x 5'-0"	2 Carp	9	1.778	Ea.	1,175	100		1,275	1,450
0120	3'-0" x 5'-0"		9	1.778		1,400	100		1,500	1,700
0130	4'-0" x 5'-0"		9	1.778		1,950	100		2,050	2,275
0250	Horizontal slider, impact resistant, 5'-5" x 5'-2"		9	1.778		2,225	100		2,325	2,600

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08 51 Metal Windows

08 51 23 – Steel Windows

08 51 23.10 Steel Sash		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **STEEL SASH** Custom units, glazing and trim not included	R085123-10									
0100 Casement, 100% vented		2 Sswk	200	.080	S.F.	69.50	4.95		74.45	84
0200 50% vented			200	.080		56.50	4.95		61.45	69.5
0300 Fixed			200	.080		29	4.95		33.95	39.5
1000 Projected, commercial, 40% vented			200	.080		53.50	4.95		58.45	66.5
1100 Intermediate, 50% vented			200	.080		64	4.95		68.95	78
1500 Industrial, horizontally pivoted			200	.080		56	4.95		60.95	69
1600 Fixed			200	.080		32.50	4.95		37.45	43
2000 Industrial security sash, 50% vented			200	.080		61.50	4.95		66.45	75
2100 Fixed			200	.080		49	4.95		53.95	61.5
2500 Picture window			200	.080		32.50	4.95		37.45	43.5
3000 Double-hung			200	.080		62	4.95		66.95	75.5
5000 Mullions for above, open interior face			240	.067	L.F.	10.90	4.12		15.02	18.3
5100 With interior cover			240	.067	"	18.10	4.12		22.22	26.5
08 51 23.20 Steel Windows										
0010 **STEEL WINDOWS** Stock, including frame, trim and insul. glass										
0020 See Section 13 34 19.50										
1000 Custom units, double-hung, 2'-8" x 4'-6" opening	R085123-10	2 Sswk	12	1.333	Ea.	720	82.50		802.50	915
1100 2'-4" x 3'-9" opening			12	1.333		590	82.50		672.50	775
1500 Commercial projected, 3'-9" x 5'-5" opening			10	1.600		1,250	99		1,349	1,525
1600 6'-9" x 4'-1" opening			7	2.286		1,650	141		1,791	2,050
2000 Intermediate projected, 2'-9" x 4'-1" opening			12	1.333		700	82.50		782.50	895
2100 4'-1" x 5'-5" opening			10	1.600		1,425	99		1,524	1,725
08 51 23.40 Basement Utility Windows										
0010 **BASEMENT UTILITY WINDOWS**										
0015 1'-3" x 2'-8"		1 Carp	16	.500	Ea.	152	28		180	209
1100 1'-7" x 2'-8"		"	16	.500	"	93.50	28		121.50	145

08 51 66 – Metal Window Screens

08 51 66.10 Screens										
0010 **SCREENS**										
0020 For metal sash, aluminum or bronze mesh, flat screen		2 Sswk	1200	.013	S.F.	39	.82		39.82	44
0500 Wicket screen, inside window			1000	.016		7	.99		7.99	9.2
0800 Security screen, aluminum frame with stainless steel cloth			1200	.013		25	.82		25.82	29
0900 Steel grate, painted, on steel frame			1600	.010		14	.62		14.62	16.3
1000 Screens for solar louvers			160	.100		25.50	6.20		31.70	37.5
4000 See Section 05 58 23.90 for window guards										

08 52 Wood Windows

08 52 10 – Plain Wood Windows

08 52 10.20 Awning Window										
0010 **AWNING WINDOW**, Including frame, screens and grilles										
0100 34" x 22", insulated glass		1 Carp	10	.800	Ea.	390	45		435	4
0200 Low E glass			10	.800		430	45		475	5
0300 40" x 28", insulated glass			9	.889		415	50		465	5
0400 Low E glass			9	.889		460	50		510	5
0500 48" x 36", insulated glass			8	1		630	56.50		686.50	7
0600 Low E glass			8	1		660	56.50		716.50	8

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08 52 10 – Plain Wood Windows

	08 52 10.40 Casement Window		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**CASEMENT WINDOW**, including frame, screen and grilles										
0100	2'-0" x 3'-0" H, double insulated glass	G	1 Carp	10	.800	Ea.	320	45		365	415
0150	Low E glass	G		10	.800		360	45		405	460
0200	2'-0" x 4'-6" high, double insulated glass	G		9	.889		425	50		475	540
0250	Low E glass	G		9	.889		425	50		475	540
0260	Casement 4'-2" x 4'-2" double insulated glass	G		11	.727		815	41		856	955
0270	4'-0" x 4'-0" Low E glass	G		11	.727		815	41		856	960
0290	6'-4" x 5'-7" Low E glass	G		9	.889		1,450	50		1,500	1,675
0300	2'-4" x 6'-0" high, double insulated glass	G		8	1		965	56.50		1,021.50	1,150
0350	Low E glass	G		8	1		900	56.50		956.50	1,075
0522	Vinyl-clad, premium, double insulated glass, 2'-0" x 3'-0"	G		10	.800		365	45		410	465
0524	2'-0" x 4'-0"	G		9	.889		435	50		485	555
0525	2'-0" x 5'-0"	G		8	1		510	56.50		566.50	645
0528	2'-0" x 6'-0"	G		8	1		625	56.50		681.50	775
0600	3'-0" x 5'-0"	G		8	1		470	56.50		526.50	605
0700	4'-0" x 3'-0"	G		8	1		935	56.50		991.50	1,100
0710	4'-0" x 4'-0"	G		8	1		765	56.50		821.50	930
0720	4'-8" x 4'-0"	G		8	1		765	56.50		821.50	925
0730	4'-8" x 5'-0"	G		6	1.333		880	75		955	1,075
0740	4'-8" x 6'-0"	G		6	1.333		950	75		1,025	1,150
0750	6'-0" x 4'-0"	G		6	1.333		955	75		1,030	1,150
0800	6'-0" x 5'-0"	G		6	1.333		995	75		1,070	1,200
0900	5'-6" x 5'-6"	G	2 Carp	15	1.067		990	60		1,050	1,200
2000	Bay, casement units, 8' x 5', w/screens, double insulated glass			2.50	6.400	Opng.	1,800	360		2,160	2,500
2100	Low E glass			2.50	6.400	"	1,900	360		2,260	2,600
8190	For installation, add per leaf					Ea.		15%			
8200	For multiple leaf units, deduct for stationary sash										
8220	2' high					Ea.	30			30	33
8240	4'-6" high						34			34	37.50
8260	6' high						45			45	49.50

08 52 10.50 Double-Hung

0010	**DOUBLE-HUNG**, Including frame, screens and grilles R085216-10										
0100	2'-0" x 3'-0" high, low E insul. glass	G	1 Carp	10	.800	Ea.	152	45		197	234
0200	3'-0" x 4'-0" high, double insulated glass	G		9	.889		291	50		341	395
0300	4'-0" x 4'-6" high, low E insulated glass	G		8	1		255	56.50		311.50	365

08 52 10.55 Picture Window

0010	**PICTURE WINDOW**, Including frame and grilles										
0100	3'-6" x 4'-0" high, double insulated glass		2 Carp	12	1.333	Ea.	700	75		775	880
0150	Low E glass			12	1.333		590	75		665	760
0200	4'-0" x 4'-6" high, double insulated glass			11	1.455		705	82		787	895
0250	Low E glass			11	1.455		800	82		882	1,000
0300	5'-0" x 4'-0" high, double insulated glass			11	1.455		800	82		882	1,000
0350	Low E glass			11	1.455		795	82		877	995
0400	6'-0" x 4'-6" high, double insulated glass			10	1.600		860	90		950	1,075
0450	Low E glass			10	1.600		835	90		925	1,050

08 52 10.65 Wood Sash

0010	**WOOD SASH**, Including glazing but not trim										
0050	Custom, 5'-0" x 4'-0", 1" double glazed, 3/16" thick lites		2 Carp	3.20	5	Ea.	320	282		602	775
0100	1/4" thick lites			5	3.200		465	180		645	780
0200	1" thick, triple glazed			5	3.200		560	180		740	885
0300	7'-0" x 4'-6" high, 1" double glazed, 3/16" thick lites			4.30	3.721		600	209		809	970

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08 52 Wood Windows

08 52 10 – Plain Wood Windows

		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&
08 52 10.65 Wood Sash										
0400	1/4" thick lites	2 Carp	4.30	3.721	Ea.	640	209		849	1,025
0500	1" thick, triple glazed		4.30	3.721		785	209		994	1,175
0600	8'-6" x 5'-0" high, 1" double glazed, 3/16" thick lites		3.50	4.571		815	257		1,072	1,275
0700	1/4" thick lites		3.50	4.571		895	257		1,152	1,375
0800	1" thick, triple glazed		3.50	4.571		835	257		1,092	1,300
0900	Window frames only, based on perimeter length				L.F.	5.10			5.10	5.
1200	Window sill, stock, per lineal foot					11.85			11.85	13.
1250	Casing, stock					4.32			4.32	4.
08 52 10.70 Sliding Windows										
0010	**SLIDING WINDOWS**									
0100	3'-0" x 3'-0" high, double insulated G	1 Carp	10	.800	Ea.	730	45		775	870
0120	Low E glass G		10	.800		745	45		790	885
0200	4'-0" x 3'-6" high, double insulated G		9	.889		950	50		1,000	1,125
0220	Low E glass G		9	.889		565	50		615	695
0300	6'-0" x 5'-0" high, double insulated G		8	1		645	56.50		701.50	795
0320	Low E glass G		8	1		785	56.50		841.50	950

08 52 13 – Metal-Clad Wood Windows

		Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&
08 52 13.10 Awning Windows, Metal-Clad										
0010	**AWNING WINDOWS, METAL-CLAD**									
2000	Metal-clad, awning deluxe, double insulated glass, 34" x 22"	1 Carp	9	.889	Ea.	330	50		380	435
2050	36" x 25"		9	.889		370	50		420	480
2100	40" x 22"		9	.889		395	50		445	510
2150	40" x 30"		9	.889		455	50		505	575
2200	48" x 28"		8	1		470	56.50		526.50	600
2250	60" x 36"		8	1		500	56.50		556.50	635
08 52 13.20 Casement Windows, Metal-Clad										
0010	**CASEMENT WINDOWS, METAL-CLAD**									
0100	Metal-clad, deluxe, dbl. insul. glass, 2'-0" x 3'-0" high G	1 Carp	10	.800	Ea.	370	45		415	470
0120	2'-0" x 4'-0" high G		9	.889		415	50		465	535
0130	2'-0" x 5'-0" high G		8	1		445	56.50		501.50	575
0140	2'-0" x 6'-0" high G		8	1		475	56.50		531.50	610
0300	Metal-clad, casement, bldrs mdl, 6'-0" x 4'-0", dbl. insul. glass, 3 panels	2 Carp	10	1.600		1,325	90		1,415	1,600
0310	9'-0" x 4'-0", 4 panels		8	2		1,700	113		1,813	2,025
0320	10'-0" x 5'-0", 5 panels		7	2.286		2,325	129		2,454	2,750
0330	12'-0" x 6'-0", 6 panels		6	2.667		2,925	150		3,075	3,450
08 52 13.30 Double-Hung Windows, Metal-Clad										
0010	**DOUBLE-HUNG WINDOWS, METAL-CLAD**									
0100	Metal-clad, deluxe, dbl. insul. glass, 2'-6" x 3'-0" high G	1 Carp	10	.800	Ea.	234	45		279	325
0120	3'-0" x 3'-6" high G		10	.800		260	45		305	355
0140	3'-0" x 4'-0" high G		9	.889		267	50		317	370
0160	3'-0" x 4'-6" high G		9	.889		285	50		335	390
0180	3'-0" x 5'-0" high G		8	1		315	56.50		371.50	430
0200	3'-6" x 6'-0" high G		8	1		380	56.50		436.50	500
08 52 13.35 Picture and Sliding Windows Metal-Clad										
0010	**PICTURE AND SLIDING WINDOWS METAL-CLAD**									
2000	Metal-clad, dlx picture, dbl. insul. glass, 4'-0" x 4'-0" high	2 Carp	12	1.333	Ea.	505	75		580	665
2100	4'-0" x 6'-0" high		11	1.455		755	82		837	950
2200	5'-0" x 6'-0" high		10	1.600		835	90		925	1,050
2300	6'-0" x 6'-0" high		10	1.600		955	90		1,045	1,175
2400	Metal-clad, dlx sliding, dbl. insul. glass, 3'-0" x 3'-0" high G	1 Carp	10	.800		430	45		475	535
2420	4'-0" x 3'-6" high G		9	.889		525	50		575	650

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08 52 13 – Metal-Clad Wood Windows

	08 52 13.35 Picture and Sliding Windows Metal-Clad		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2440	5'-0" x 4'-0" high	G	1 Carp	9	.889	Ea.	630	50		680	765
2460	6'-0" x 5'-0" high	G		8	1		1,025	56.50		1,081.50	1,200

08 52 13.40 Bow and Bay Windows, Metal-Clad

0010	**BOW AND BAY WINDOWS, METAL-CLAD**										
0100	Metal-clad, deluxe, dbl. insul. glass, 8'-0" x 5'-0" high, 4 panels		2 Carp	10	1.600	Ea.	1,875	90		1,965	2,175
0120	10'-0" x 5'-0" high, 5 panels			8	2		2,000	113		2,113	2,400
0140	10'-0" x 6'-0" high, 5 panels			7	2.286		2,375	129		2,504	2,800
0160	12'-0" x 6'-0" high, 6 panels			6	2.667		3,775	150		3,925	4,375
0400	Double-hung, bldrs. model, bay, 8' x 4' high, dbl. insul. glass			10	1.600		1,475	90		1,565	1,750
0440	Low E glass			10	1.600		1,600	90		1,690	1,900
0460	9'-0" x 5'-0" high, dbl. insul. glass			6	2.667		1,600	150		1,750	2,000
0480	Low E glass			6	2.667		1,700	150		1,850	2,075
0500	Metal-clad, deluxe, dbl. insul. glass, 7'-0" x 4'-0" high			10	1.600		1,425	90		1,515	1,700
0520	8'-0" x 4'-0" high			8	2		1,475	113		1,588	1,800
0540	8'-0" x 5'-0" high			7	2.286		1,500	129		1,629	1,850
0560	9'-0" x 5'-0" high			6	2.667		1,625	150		1,775	2,000

08 52 16 – Plastic-Clad Wood Windows

08 52 16.10 Bow Window

0010	**BOW WINDOW** including frames, screens, and grilles										
0020	End panels operable										
1000	Bow type, casement, wood, bldrs. mdl., 8' x 5' dbl. insul. glass, 4 panel		2 Carp	10	1.600	Ea.	1,700	90		1,790	2,000
1050	Low E glass			10	1.600		1,425	90		1,515	1,700
1100	10'-0" x 5'-0", dbl. insul. glass, 6 panels			6	2.667		1,500	150		1,650	1,875
1200	Low E glass, 6 panels			6	2.667		1,600	150		1,750	1,975
1300	Vinyl-clad, bldrs. model, dbl. insul. glass, 6'-0" x 4'-0", 3 panel			10	1.600		1,100	90		1,190	1,325
1340	9'-0" x 4'-0", 4 panel			8	2		1,575	113		1,688	1,900
1380	10'-0" x 6'-0", 5 panels			7	2.286		2,525	129		2,654	2,975
1420	12'-0" x 6'-0", 6 panels			6	2.667		3,325	150		3,475	3,875
2000	Bay window, 8' x 5', dbl. insul. glass			10	1.600		2,125	90		2,215	2,450
2050	Low E glass			10	1.600		2,550	90		2,640	2,950
2100	12'-0" x 6'-0", dbl. insul. glass, 6 panels			6	2.667		2,625	150		2,775	3,125
2200	Low E glass			6	2.667		3,700	150		3,850	4,300
2280	6'-0" x 4'-0"			11	1.455		1,425	82		1,507	1,675
2300	Vinyl-clad, premium, dbl. insul. glass, 8'-0" x 5'-0"			10	1.600		1,775	90		1,865	2,100
2340	10'-0" x 5'-0"			8	2		2,525	113		2,638	2,950
2380	10'-0" x 6'-0"			7	2.286		3,325	129		3,454	3,850
2420	12'-0" x 6'-0"			6	2.667		3,175	150		3,325	3,725
3300	Vinyl-clad, premium, dbl. insul. glass, 7'-0" x 4'-6"			10	1.600		1,500	90		1,590	1,750
3340	8'-0" x 4'-6"			8	2		1,575	113		1,688	1,900
3380	8'-0" x 5'-0"			7	2.286		1,650	129		1,779	2,000
3420	9'-0" x 5'-0"			6	2.667		1,700	150		1,850	2,075

08 52 16.15 Awning Window Vinyl-Clad

0010	**AWNING WINDOW VINYL-CLAD** including frames, screens, and grilles										
0240	Vinyl-clad, 34" x 22"		1 Carp	10	.800	Ea.	355	45		400	455
0280	36" x 28"			9	.889		405	50		455	520
0300	36" x 36"			9	.889		465	50		515	585
0340	40" x 22"			10	.800		395	45		440	500
0360	48" x 28"			8	1		490	56.50		546.50	625
0380	60" x 36"			8	1		675	56.50		731.50	825

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08 52 16 – Plastic-Clad Wood Windows

	08 52 16.30 Palladian Windows		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&
0010	**PALLADIAN WINDOWS**										
0020	Vinyl-clad, double insulated glass, including frame and grilles										
0040	3'-2" x 2'-6" high		2 Carp	11	1.455	Ea.	1,375	82		1,457	1,625
0060	3'-2" x 4'-10"			11	1.455		1,900	82		1,982	2,225
0080	3'-2" x 6'-4"			10	1.600		1,850	90		1,940	2,175
0100	4'-0" x 4'-0"			10	1.600		1,700	90		1,790	2,000
0120	4'-0" x 5'-4"		3 Carp	10	2.400		2,050	135		2,185	2,450
0140	4'-0" x 6'-0"			9	2.667		2,425	150		2,575	2,900
0160	4'-0" x 7'-4"			9	2.667		2,300	150		2,450	2,750
0180	5'-5" x 4'-10"			9	2.667		2,475	150		2,625	2,950
0200	5'-5" x 6'-10"			9	2.667		2,850	150		3,000	3,375
0220	5'-5" x 7'-9"			9	2.667		3,025	150		3,175	3,575
0240	6'-0" x 7'-11"			8	3		3,875	169		4,044	4,500
0260	8'-0" x 6'-0"			8	3		3,450	169		3,619	4,050
	08 52 16.35 Double-Hung Window										
0010	**DOUBLE-HUNG WINDOW** including frames, screens, and grilles										
0300	Vinyl-clad, premium, double insulated glass, 2'-6" x 3'-0"	G	1 Carp	10	.800	Ea.	340	45		385	440
0305	2'-6" x 4'-0"	G		10	.800		296	45		341	390
0400	3'-0" x 3'-6"	G		10	.800		283	45		328	375
0500	3'-0" x 4'-0"	G		9	.889		320	50		370	430
0600	3'-0" x 4'-6"	G		9	.889		355	50		405	465
0700	3'-0" x 5'-0"	G		8	1		365	56.50		421.50	485
0790	3'-4" x 5'-0"	G		8	1		375	56.50		431.50	495
0800	3'-6" x 6'-0"	G		8	1		415	56.50		471.50	545
0820	4'-0" x 5'-0"	G		7	1.143		440	64.50		504.50	580
0830	4'-0" x 6'-0"	G		7	1.143		535	64.50		599.50	685
	08 52 16.40 Transom Windows										
0010	**TRANSOM WINDOWS**										
0050	Vinyl-clad, premium, dbl. insul. glass, 32" x 8"		1 Carp	16	.500	Ea.	249	28		277	315
0100	36" x 8"			16	.500		224	28		252	289
0110	36" x 12"			16	.500		241	28		269	305
0200	44" x 48"			12	.667		630	37.50		667.50	750
1000	Vinyl-clad, premium, dbl. insul. glass, 4'-0" x 4'-0"		2 Carp	12	1.333		710	75		785	890
1100	4'-0" x 6'-0"			11	1.455		1,300	82		1,382	1,550
1200	5'-0" x 6'-0"			10	1.600		1,450	90		1,540	1,700
1300	6'-0" x 6'-0"			10	1.600		1,450	90		1,540	1,725
	08 52 16.70 Vinyl-Clad, Premium, DBL. Insul. Glass										
0010	**VINYL-CLAD, PREMIUM, DBL. INSUL. GLASS**										
1000	Sliding, 3'-0" x 3'-0"	G	1 Carp	10	.800	Ea.	855	45		900	1,000
1050	4'-0" x 3'-6"	G		9	.889		1,175	50		1,225	1,375
1100	5'-0" x 4'-0"	G		9	.889		1,250	50		1,300	1,450
1150	6'-0" x 5'-0"	G		8	1		1,600	56.50		1,656.50	1,825

08 52 50 – Window Accessories

	08 52 50.10 Window Grille or Muntin										
0010	**WINDOW GRILLE OR MUNTIN**, snap in type										
0020	Standard pattern interior grilles										
2000	Wood, awning window, glass size, 28" x 16" high		1 Carp	30	.267	Ea.	41	15		56	67.
2060	44" x 24" high			32	.250		59	14.10		73.10	86
2100	Casement, glass size, 20" x 36" high			30	.267		45.50	15		60.50	72.
2180	20" x 56" high			32	.250		61.50	14.10		75.60	88.
2200	Double-hung, glass size, 16" x 24" high			24	.333	Set	79	18.75		97.75	115

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08 52 Wood Windows

08 52 50 – Window Accessories

	08 52 50.10 Window Grille or Muntin	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
280	32" x 32" high	1 Carp	34	.235	Set	183	13.25		196.25	221
500	Picture, glass size, 48" x 48" high		30	.267	Ea.	170	15		185	210
580	60" x 68" high		28	.286	"	268	16.10		284.10	320
600	Sliding, glass size, 14" x 36" high		24	.333	Set	61.50	18.75		80.25	96
680	36" x 36" high		22	.364	"	61	20.50		81.50	97.50

08 52 66 – Wood Window Screens

08 52 66.10 Wood Screens

010	**WOOD SCREENS**									
020	Over 3 S.F., 3/4" frames	2 Carp	375	.043	S.F.	6.35	2.40		8.75	10.55
100	1-1/8" frames	"	375	.043	"	11.30	2.40		13.70	16.05

08 52 69 – Wood Storm Windows

08 52 69.10 Storm Windows

010	**STORM WINDOWS**, aluminum residential									
300	Basement, mill finish, incl. fiberglass screen									
320	1'-10" x 1'-0" high	G 2 Carp	30	.533	Ea.	49	30		79	98.50
340	2'-9" x 1'-6" high	G	30	.533		53.50	30		83.50	104
360	3'-4" x 2'-0" high	G	30	.533		69.50	30		99.50	121
600	Double-hung, combination, storm & screen									
000	Clear anodic coating, 2'-0" x 3'-5" high	G 2 Carp	30	.533	Ea.	136	30		166	195
020	2'-6" x 5'-0" high	G	28	.571		169	32		201	234
040	4'-0" x 6'-0" high	G	25	.640		174	36		210	245
400	White painted, 2'-0" x 3'-5" high	G	30	.533		141	30		171	200
420	2'-6" x 5'-0" high	G	28	.571		239	32		271	310
440	4'-0" x 6'-0" high	G	25	.640		158	36		194	228
600	Mill finish, 2'-0" x 3'-5" high	G	30	.533		113	30		143	169
620	2'-6" x 5'-0" high	G	28	.571		142	32		174	204
640	4'-0" x 6'-8" high	G	25	.640		180	36		216	251

08 53 Plastic Windows

08 53 13 – Vinyl Windows

08 53 13.20 Vinyl Single-Hung Windows

0010	**VINYL SINGLE-HUNG WINDOWS**, insulated glass									
0020	Grids, low E, J fin, extension jambs									
0130	25" x 41"	G 2 Carp	20	.800	Ea.	208	45		253	296
0140	25" x 49"	G	18	.889		215	50		265	310
0150	25" x 57"	G	17	.941		235	53		288	335
0160	25" x 65"	G	16	1		263	56.50		319.50	375
0170	29" x 41"	G	18	.889		209	50		259	305
0180	29" x 53"	G	18	.889		227	50		277	325
0190	29" x 57"	G	17	.941		245	53		298	350
0200	29" x 65"	G	16	1		292	56.50		348.50	405
0210	33" x 41"	G	20	.800		246	45		291	340
0220	33" x 53"	G	18	.889		221	50		271	320
0230	33" x 57"	G	17	.941		292	53		345	400
0240	33" x 65"	G	16	1		299	56.50		355.50	415
0250	37" x 41"	G	20	.800		227	45		272	315
0260	37" x 53"	G	18	.889		262	50		312	365
0270	37" x 57"	G	17	.941		274	53		327	380
0280	37" x 65"	G	16	1		310	56.50		366.50	430

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08 53 13.30 Vinyl Double-Hung Windows		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&
0010 **VINYL DOUBLE-HUNG WINDOWS**, insulated glass										
0100 Grids, low E, J fin, ext. jambs, 21" x 53"	G	2 Carp	18	.889	Ea.	143	50		193	2
0102 21" x 37"	G		18	.889		167	50		217	2
0104 21" x 41"	G		18	.889		243	50		293	3
0106 21" x 49"	G		18	.889		216	50		266	3
0110 21" x 57"	G		17	.941		268	53		321	3
0120 21" x 65"	G		16	1		289	56.50		345.50	4
0128 25" x 37"	G		20	.800		231	45		276	3
0130 25" x 41"	G		20	.800		241	45		286	3
0140 25" x 49"	G		18	.889		246	50		296	3
0145 25" x 53"	G		18	.889		271	50		321	3
0150 25" x 57"	G		17	.941		217	53		270	3
0160 25" x 65"	G		16	1		200	56.50		256.50	3
0162 25" x 69"	G		16	1		235	56.50		291.50	3
0164 25" x 77"	G		16	1		241	56.50		297.50	3
0168 29" x 37"	G		18	.889		240	50		290	3
0170 29" x 41"	G		18	.889		260	50		310	3
0172 29" x 49"	G		18	.889		268	50		318	3
0180 29" x 53"	G		18	.889		275	50		325	3
0190 29" x 57"	G		17	.941		185	53		238	2
0200 29" x 65"	G		16	1		277	56.50		333.50	3
0202 29" x 69"	G		16	1		257	56.50		313.50	3
0205 29" x 77"	G		16	1		229	56.50		285.50	3
0208 33" x 37"	G		20	.800		257	45		302	3
0210 33" x 41"	G		20	.800		264	45		309	3
0215 33" x 49"	G		20	.800		219	45		264	3
0220 33" x 53"	G		18	.889		188	50		238	2
0230 33" x 57"	G		17	.941		213	53		266	3
0240 33" x 65"	G		16	1		245	56.50		301.50	3
0242 33" x 69"	G		16	1		238	56.50		294.50	3
0246 33" x 77"	G		16	1		222	56.50		278.50	3
0250 37" x 41"	G		20	.800		225	45		270	3
0255 37" x 49"	G		20	.800		239	45		284	3
0260 37" x 53"	G		18	.889		245	50		295	3
0270 37" x 57"	G		17	.941		264	53		317	3
0280 37" x 65"	G		16	1		283	56.50		339.50	3
0282 37" x 69"	G		16	1		293	56.50		349.50	4
0286 37" x 77"	G		16	1		289	56.50		345.50	4
0300 Solid vinyl, average quality, double insulated glass, 2'-0" x 3'-0"	G	1 Carp	10	.800		237	45		282	3
0310 3'-0" x 4'-0"	G		9	.889		189	50		239	2
0330 Premium, double insulated glass, 2'-6" x 3'-0"	G		10	.800		255	45		300	3
0340 3'-0" x 3'-6"	G		9	.889		267	50		317	3
0350 3'-0" x 4'-0"	G		9	.889		273	50		323	3
0360 3'-0" x 4'-6"	G		9	.889		375	50		425	4
0370 3'-0" x 5'-0"	G		8	1		335	56.50		391.50	4
0380 3'-6" x 6'-0"	G		8	1		335	56.50		391.50	4
08 53 13.40 Vinyl Casement Windows										
0010 **VINYL CASEMENT WINDOWS**, insulated glass										
0015 Grids, low E, J fin, extension jambs, screens										
0100 One lite, 21" x 41"	G	2 Carp	20	.800	Ea.	370	45		415	4
0110 21" x 47"	G		20	.800		380	45		425	4
0120 21" x 53"	G		20	.800		410	45		455	5

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	08 53 13.40 Vinyl Casement Windows		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0128	24" x 35"	G	2 Carp	19	.842	Ea.	325	47.50		372.50	425
0130	24" x 41"	G		19	.842		375	47.50		422.50	485
0140	24" x 47"	G		19	.842		400	47.50		447.50	510
0150	24" x 53"	G		19	.842		420	47.50		467.50	530
0158	28" x 35"	G		19	.842		370	47.50		417.50	480
0160	28" x 41"	G		19	.842		335	47.50		382.50	435
0170	28" x 47"	G		19	.842		420	47.50		467.50	530
0180	28" x 53"	G		19	.842		273	47.50		320.50	370
0184	28" x 59"	G		19	.842		320	47.50		367.50	420
0188	Two lites, 33" x 35"	G		18	.889		380	50		430	495
0190	33" x 41"	G		18	.889		370	50		420	480
0200	33" x 47"	G		18	.889		390	50		440	505
0210	33" x 53"	G		18	.889		410	50		460	525
0212	33" x 59"	G		18	.889		430	50		480	550
0215	33" x 72"	G		18	.889		465	50		515	590
0220	41" x 41"	G		18	.889		460	50		510	580
0230	41" x 47"	G		18	.889		460	50		510	580
0240	41" x 53"	G		17	.941		550	53		603	685
0242	41" x 59"	G		17	.941		530	53		583	665
0246	41" x 72"	G		17	.941		545	53		598	680
0250	47" x 41"	G		17	.941		595	53		648	735
0260	47" x 47"	G		17	.941		450	53		503	575
0270	47" x 53"	G		17	.941		495	53		548	625
0272	47" x 59"	G		17	.941		670	53		723	820
0280	56" x 41"	G		15	1.067		495	60		555	635
0290	56" x 47"	G		15	1.067		495	60		555	635
0300	56" x 53"	G		15	1.067		540	60		600	685
0302	56" x 59"	G		15	1.067		540	60		600	685
0310	56" x 72"	G		15	1.067		700	60		760	860
0340	Solid vinyl, premium, double insulated glass, 2'-0" x 3'-0" high	G	1 Carp	10	.800		330	45		375	430
0360	2'-0" x 4'-0" high	G		9	.889		365	50		415	475
0380	2'-0" x 5'-0" high	G		8	1		415	56.50		471.50	540
	08 53 13.50 Vinyl Picture Windows										
0010	**VINYL PICTURE WINDOWS**, insulated glass										
0120	Grids, low E, J fin, ext. jambs, 47" x 35"		2 Carp	12	1.333	Ea.	229	75		304	365
0130	47" x 41"			12	1.333		320	75		395	465
0140	47" x 47"			12	1.333		237	75		312	370
0150	47" x 53"			11	1.455		305	82		387	455
0160	71" x 35"			11	1.455		271	82		353	420
0170	71" x 41"			11	1.455		218	82		300	360
0180	71" x 47"			11	1.455		243	82		325	390

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08 54 Composite Windows

08 54 13 – Fiberglass Windows

08 54 13.10 Fiberglass Single-Hung Windows		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **FIBERGLASS SINGLE-HUNG WINDOWS**										
0100 Grids, low E, 18" x 24"	G	2 Carp	18	.889	Ea.	375	50		425	4
0110 18" x 40"	G		17	.941		365	53		418	4
0130 24" x 40"	G		20	.800		395	45		440	5
0230 36" x 36"	G		17	.941		405	53		458	5
0250 36" x 48"	G		20	.800		440	45		485	5
0260 36" x 60"	G		18	.889		485	50		535	6
0280 36" x 72"	G		16	1		525	56.50		581.50	6
0290 48" x 40"	G		16	1		525	56.50		581.50	6

08 62 Unit Skylights

08 62 13 – Domed Unit Skylights

08 62 13.20 Skylights										
0010 **SKYLIGHTS**, flush or curb mounted										
2120 Ventilating insulated plexiglass dome with										
2130 curb mounting, 36" x 36"	G	G-3	12	2.667	Ea.	495	151		646	7
2150 52" x 52"	G		12	2.667		690	151		841	9
2160 28" x 52"	G		10	3.200		575	181		756	9
2170 36" x 52"	G		10	3.200		635	181		816	9
2180 For electric opening system, add	G					370			370	4
2300 Insulated safety glass with aluminum frame	G	G-3	160	.200	S.F.	99.50	11.30		110.80	1

08 63 Metal-Framed Skylights

08 63 13 – Domed Metal-Framed Skylights

08 63 13.20 Skylight Rigid Metal-Framed										
0010 **SKYLIGHT RIGID METAL-FRAMED** skylight framing is aluminum										
0050 Fixed acrylic double domes, curb mount, 25-1/2" x 25-1/2"		G-3	10	3.200	Ea.	210	181		391	5
0060 25-1/2" x 33-1/2"			10	3.200		254	181		435	5
0070 25-1/2" x 49-1/2"			6	5.333		279	300		579	7
0080 33-1/2" x 33-1/2"			8	4		310	226		536	6
0090 37-1/2" x 25-1/2"			8	4		271	226		497	6
0100 37-1/2" x 37-1/2"			8	4		370	226		596	7
0110 37-1/2" x 49-1/2"			6	5.333		445	300		745	9
0120 49-1/2" x 33-1/2"			6	5.333		420	300		720	9
0130 49-1/2" x 49-1/2"			6	5.333		465	300		765	9
1000 Fixed tempered glass, curb mount, 17-1/2" x 33-1/2"			10	3.200		155	181		336	4
1020 17-1/2" x 49-1/2"			6	5.333		176	300		476	6
1030 25-1/2" x 25-1/2"			10	3.200		155	181		336	4
1040 25-1/2" x 33-1/2"			10	3.200		184	181		365	4
1050 25-1/2" x 37-1/2"			8	4		196	226		422	5
1060 25-1/2" x 49-1/2"			6	5.333		520	300		820	1,0
1070 25-1/2" x 73-1/2"			6	5.333		355	300		655	8
1080 33-1/2" x 33-1/2"			8	4		215	226		441	5
2000 Manual vent tempered glass & screen, curb, 25-1/2" x 25-1/2"			10	3.200		400	181		581	7
2020 25-1/2" x 37-1/2"			10	3.200		460	181		641	7
2030 25-1/2" x 49-1/2"			8	4		495	226		721	8
2040 33-1/2" x 33-1/2"			8	4		530	226		756	9
2050 33-1/2" x 49-1/2"			6	5.333		670	300		970	1,1
2060 37-1/2" x 37-1/2"			6	5.333		610	300		910	1,1

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08 63 Metal-Framed Skylights

08 63 13 – Domed Metal-Framed Skylights

	08 63 13.20 Skylight Rigid Metal-Framed	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2070	49-1/2" x 49-1/2"	G-3	6	5.333	Ea.	785	300		1,085	1,300
3000	Electric vent tempered glass, curb mount, 25-1/2" x 25-1/2"		10	3.200		1,050	181		1,231	1,425
3020	25-1/2" x 37-1/2"		10	3.200		1,125	181		1,306	1,525
3030	25-1/2" x 49-1/2"		8	4		1,150	226		1,376	1,625
3040	33-1/2" x 33-1/2"		8	4		1,175	226		1,401	1,650
3050	33-1/2" x 49-1/2"		6	5.333		1,250	300		1,550	1,825
3060	37-1/2" x 37-1/2"		6	5.333		1,225	300		1,525	1,800
3070	49-1/2" x 49-1/2"		6	5.333		1,350	300		1,650	1,925

08 71 Door Hardware

08 71 13 – Automatic Door Operators

08 71 13.10 Automatic Openers Commercial

0010	**AUTOMATIC OPENERS COMMERCIAL**									
0020	Pneumatic door opener incl. motion sens, control box, tubing, compressor									
0050	For single swing door, per opening	2 Skwk	.80	20	Ea.	5,550	1,175		6,725	7,900
0100	Pair, per opening		.50	32	Opng.	7,950	1,875		9,825	11,600
1000	For single sliding door, per opening		.60	26.667		5,925	1,575		7,500	8,875
1300	Bi-parting pair		.50	32		7,925	1,875		9,800	11,600
1420	Electronic door opener incl. motion sens, 12 V control box, motor									
1450	For single swing door, per opening	2 Skwk	.80	20	Opng.	3,975	1,175		5,150	6,150
1500	Pair, per opening		.50	32		7,975	1,875		9,850	11,600
1600	For single sliding door, per opening		.60	26.667		5,225	1,575		6,800	8,100
1700	Bi-parting pair		.50	32		5,850	1,875		7,725	9,250
1750	Handicap actuator buttons, 2, incl. 12 V DC wiring, add	1 Carp	1.50	5.333	Pr.	480	300		780	975

08 71 13.20 Automatic Openers Industrial

0010	**AUTOMATIC OPENERS INDUSTRIAL**									
0015	Sliding doors up to 6' wide	2 Skwk	.60	26.667	Opng.	6,300	1,575		7,875	9,275
0200	To 12' wide	"	.40	40	"	7,550	2,350		9,900	11,900
0400	Over 12' wide, add per L.F. of excess				L.F.	815			815	900
1000	Swing doors, to 5' wide	2 Skwk	.80	20	Ea.	4,150	1,175		5,325	6,350
1860	Add for controls, wall pushbutton, 3 button		4	4		245	236		481	625
1870	Control pull cord		4.30	3.721		198	219		417	550
1880	For addl elec eye for sliding door operation, one side, add					9%				

08 71 20 – Hardware

08 71 20.10 Bolts, Flush

0010	**BOLTS, FLUSH**									
0020	Standard, concealed	1 Carp	7	1.143	Ea.	21.50	64.50		86	120
0800	Automatic fire exit	"	5	1.600		124	90		214	270
1600	Electrified dead bolt	1 Elec	3	2.667		195	177		372	475
3000	Barrel, brass, 2" long	1 Carp	40	.200		3.57	11.25		14.82	20.50
3020	4" long		40	.200		11.80	11.25		23.05	29.50
3060	6" long		40	.200		26.50	11.25		37.75	46

08 71 20.15 Hardware

0010	**HARDWARE**									
0020	Average hardware cost									
1000	Door hardware, apartment, interior	1 Carp	4	2	Door	535	113		648	760
1300	Average, door hardware, motel/hotel interior, with access card		4	2		785	113		898	1,025
1500	Hospital bedroom, average quality		4	2		505	113		618	725
2000	High quality		3	2.667		535	150		685	815
2100	Pocket door		6	1.333	Ea.	194	75		269	325

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08 71 20 – Hardware

08 71 20.15 Hardware	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2250 School, single exterior, incl. lever, incl. panic device	1 Carp	3	2.667	Door	1,900	150		2,050	2,325
2500 Single interior, regular use, lever included		3	2.667		455	150		605	730
2550 Average, door hdwe., school, classroom, ANSI F84, lever handl		3	2.667		515	150		665	795
2600 Average, door hdwe. set, school, classroom, ANSI F88, incl. lever		3	2.667		515	150		665	795
2850 Stairway, single interior		3	2.667		510	150		660	785
3100 Double exterior, with panic device		2	4	Pr.	3,625	225		3,850	4,325
6020 Add for fire alarm door holder, electro-magnetic	1 Elec	4	2	Ea.	106	132		238	315
08 71 20.20 Door Protectors									
0010 **DOOR PROTECTORS**									
0020 1-3/4" x 3/4" U channel	2 Carp	80	.200	L.F.	28	11.25		39.25	47.
0021 1-3/4" x 1-1/4" U channel		80	.200	"	26.50	11.25		37.75	46
1000 Tear drop, spring stl., 8" high x 19" long		15	1.067	Ea.	117	60		177	219
1010 8" high x 32" long		15	1.067		142	60		202	246
1100 Tear drop, stainless stl., 8" high x 19" long		15	1.067		300	60		360	420
1200 8" high x 32" long		15	1.067		375	60		435	500
08 71 20.30 Door Closers									
0010 **DOOR CLOSERS** adjustable backcheck, multiple mounting									
0015 and rack and pinion									
0020 Standard Regular Arm	1 Carp	6	1.333	Ea.	167	75		242	296
0040 Hold open arm		6	1.333		102	75		177	224
0100 Fusible link		6.50	1.231		193	69.50		262.50	315
0210 Light duty, regular arm		6	1.333		149	75		224	276
0220 Parallel arm		6	1.333		143	75		218	269
0230 Hold open arm		6	1.333		77	75		152	197
0240 Fusible link arm		6	1.333		185	75		260	315
0250 Medium duty, regular arm		6	1.333		196	75		271	330
0500 Surface mount regular arm		6.50	1.231		155	69.50		224.50	273
0550 Fusible link		6.50	1.231		168	69.50		237.50	288
1520 Overhead concealed, all sizes, regular arm		5.50	1.455		200	82		282	340
1525 Concealed arm		5	1.600		515	90		605	700
1530 Concealed in door, all sizes, regular arm		5.50	1.455		1,075	82		1,157	1,300
1535 Concealed arm		5	1.600		271	90		361	430
1560 Floor concealed, all sizes, single acting		2.20	3.636		595	205		800	960
1565 Double acting		2.20	3.636		2,400	205		2,605	2,950
1610 Hold open arm		6	1.333		277	75		352	415
1620 Double acting, standard arm		6	1.333		1,300	75		1,375	1,525
1630 Hold open arm		6	1.333		1,300	75		1,375	1,525
1640 Floor, center hung, single acting, bottom arm		6	1.333		475	75		550	630
1650 Double acting		6	1.333		1,000	75		1,075	1,200
1660 Offset hung, single acting, bottom arm		6	1.333		1,050	75		1,125	1,275
2000 Backcheck and adjustable power, hinge face mount									
5000 For cast aluminum cylinder, deduct				Ea.	41.50			41.50	45.
5010 For delayed action surface mounted, add	1 Carp	6	1.333		49	75		124	166
5040 For delayed action, add					51			51	56.
5080 For fusible link arm, add					193			193	212
5120 For shock absorbing arm, add					54.50			54.50	60
5160 For spring power adjustment, add					40			40	44
6000 Closer-holder, hinge face mount, all sizes, exposed arm	1 Carp	6.50	1.231		237	69.50		306.50	365
6500 Electro magnetic closer/holder									
6510 Single point, no detector	1 Carp	4	2	Ea.	950	113		1,063	1,225
6515 Including detector		4	2		830	113		943	1,075
6520 Multi-point, no detector		4	2		1,100	113		1,213	1,400

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08 71 20 – Hardware

	08 71 20.30 Door Closers	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
6524	Including detector	1 Carp	4	2	Ea.	1,725	113		1,838	2,075
6550	Electric automatic operators									
6555	Operator	1 Carp	4	2	Ea.	2,200	113		2,313	2,600
6570	Wall plate actuator		4	2		299	113		412	500
7000	Electronic closer-holder, hinge facemount, concealed arm		5	1.600		495	90		585	680
7400	With built-in detector		5	1.600		620	90		710	820
8000	Surface mounted, standard duty, parallel arm, primed, traditional		6	1.333		289	75		364	425
8030	Light duty		6	1.333		172	75		247	300
8042	Extra duty parallel arm		6	1.333		127	75		202	252
8044	Hold open arm		6	1.333		254	75		329	390
8046	Positive stop arm		6	1.333		335	75		410	480
8050	Heavy duty		6	1.333		265	75		340	405
8052	Heavy duty, regular arm		6	1.333		310	75		385	450
8054	Top jamb mount		6	1.333		325	75		400	465
8056	Extra duty parallel arm		6	1.333		360	75		435	510
8058	Hold open arm		6	1.333		440	75		515	590
8060	Positive stop arm		6	1.333		270	75		345	410
8062	Fusible link arm		6	1.333		216	75		291	350
8080	Universal heavy duty, regular arm		6	1.333		310	75		385	450
8084	Parallel arm		6	1.333		360	75		435	505
8088	Extra duty, parallel arm		6	1.333		315	75		390	460
8090	Hold open arm		6	1.333		360	75		435	505
8094	Positive stop arm		6	1.333		360	75		435	505
8100	Standard duty, parallel arm, modern		6	1.333		161	75		236	289
8150	Heavy duty		6	1.333		355	75		430	500

08 71 20.36 Panic Devices

0010	**PANIC DEVICES** R087110-10									
0015	Touch bars various styles									
0040	Single door exit only, rim device, wide stile									
0050	Economy US28	1 Carp	5	1.600	Ea.	315	90		405	480
0060	Standard duty US28		5	1.600		840	90		930	1,050
0065	US26D		5	1.600		925	90		1,015	1,150
0070	US10		5	1.600		980	90		1,070	1,200
0075	US3		5	1.600		1,125	90		1,215	1,350
0080	Night latch, economy US28		5	1.600		330	90		420	500
0085	Standard duty, night latch US28		5	1.600		1,025	90		1,115	1,250
0090	US26D		5	1.600		1,075	90		1,165	1,300
0095	US10		5	1.600		1,200	90		1,290	1,450
0100	US3		5	1.600		1,375	90		1,465	1,650
0500	Single door exit only, rim device, narrow stile									
0540	Economy US28	1 Carp	5	1.600	Ea.	535	90		625	720
0550	Standard duty US28		5	1.600		930	90		1,020	1,150
0565	US26D		5	1.600		1,150	90		1,240	1,375
0570	US10		5	1.600		1,000	90		1,090	1,225
0575	US3		5	1.600		1,250	90		1,340	1,500
0580	Economy with night latch US28		5	1.600		400	90		490	575
0585	Standard duty US28		5	1.600		1,100	90		1,190	1,350
0590	US26D		5	1.600		1,550	90		1,640	1,825
0595	US10		5	1.600		1,025	90		1,115	1,250
0600	US32D		5	1.600		1,450	90		1,540	1,725
1040	Single door exit only, surface vertical rod									
1050	Surface vertical rod, economy US28	1 Carp	4	2	Ea.	610	113		723	840

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08 71 20 – Hardware

		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
08 71 20.36	**Panic Devices**									
1060	Surface vertical rod, standard duty US28	1 Carp	4	2	Ea.	1,250	113		1,363	1,5
1065	US26D		4	2		1,375	113		1,488	1,7
1070	US10		4	2		1,350	113		1,463	1,6
1075	US3		4	2		1,400	113		1,513	1,7
1080	US32D		4	2		1,550	113		1,663	1,9
1500	Single door exit, rim, narrow stile, economy, surface vertical rod									
1540	Surface vertical rod, narrow, economy US28	1 Carp	4	2	Ea.	610	113		723	8
2040	Single door exit only, concealed vertical rod									
2042	These devices will require separate and extra door preparation									
2060	Concealed rod, standard duty US28	1 Carp	4	2	Ea.	1,250	113		1,363	1,5
2065	US26D		4	2		1,400	113		1,513	1,7
2070	US10		4	2		1,525	113		1,638	1,8
2560	Concealed rod, narrow, standard duty US28		4	2		1,425	113		1,538	1,7
2565	US26D		4	2		1,625	113		1,738	1,9
2567	US26		4	2		2,350	113		2,463	2,7
2570	US10		4	2		1,475	113		1,588	1,8
2575	US3		4	2		1,725	113		1,838	2,0
3040	Single door exit only, mortise device, wide stile									
3042	These devices must be combined with a mortise lock									
3060	Mortise, standard duty US28	1 Carp	4	2	Ea.	1,325	113		1,438	1,6
3065	US26D		4	2		1,350	113		1,463	1,6
3067	US26		4	2		1,575	113		1,688	1,9
3070	US10		4	2		1,425	113		1,538	1,7
3075	US3		4	2		1,400	113		1,513	1,7
3080	US32D		4	2		1,400	113		1,513	1,7
3500	Single door exit only, mortise device, narrow stile									
3510	These devices must be combined with a mortise lock									
3540	Mortise, economy US28	1 Carp	4	2	Ea.	455	113		568	6
08 71 20.40	**Lockset**									
0010	**LOCKSET**, Standard duty									
0020	Non-keyed, passage, w/sect. trim	1 Carp*	12	.667	Ea.	133	37.50		170.50	2
0100	Privacy		12	.667		144	37.50		181.50	2
0400	Keyed, single cylinder function		10	.800		178	45		223	2
0420	Hotel (see also Section 08 71 20.15)		8	1		266	56.50		322.50	3
0500	Lever handled, keyed, single cylinder function		10	.800		176	45		221	2
1000	Heavy duty with sectional trim, non-keyed, passages		12	.667		295	37.50		332.50	3
1100	Privacy		12	.667		197	37.50		234.50	2
1400	Keyed, single cylinder function		10	.800		400	45		445	5
1420	Hotel		8	1		475	56.50		531.50	6
1600	Communicating		10	.800		261	45		306	3
1690	For re-core cylinder, add					58			58	
3800	Cipher lockset w/key pad (security item)	1 Carp	13	.615		1,075	34.50		1,109.50	1,2
3900	Cipher lockset with dial for swinging doors (security item)		13	.615		1,900	34.50		1,934.50	2,1
3920	with dial for swinging doors & drill resistant plate (security item)		12	.667		2,300	37.50		2,337.50	2,6
3950	Cipher lockset with dial for safe/vault door (security item)		12	.667		1,650	37.50		1,687.50	1,8
3980	Keyless, pushbutton type									
4000	Residential/light commercial, deadbolt, standard	1 Carp	9	.889	Ea.	300	50		350	4
4010	Heavy duty		9	.889		305	50		355	4
4020	Industrial, heavy duty, with deadbolt		9	.889		375	50		425	4
4030	Key override		9	.889		415	50		465	5
4040	Lever activated handle		9	.889		375	50		425	4
4050	Key override		9	.889		415	50		465	5

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08 71 20 – Hardware

	08 71 20.40 Lockset	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4060	Double sided pushbutton type	1 Carp	8	1	Ea.	300	56.50		356.50	415
4070	Key override	↓	8	1	↓	950	56.50		1,006.50	1,125
	08 71 20.41 Dead Locks									
0010	**DEAD LOCKS**									
0011	Mortise heavy duty outside key (security item)	1 Carp	9	.889	Ea.	242	50		292	340
0020	Double cylinder		9	.889		156	50		206	247
0100	Medium duty, outside key		10	.800		121	45		166	200
0110	Double cylinder		10	.800		281	45		326	375
1000	Tubular, standard duty, outside key		10	.800		56.50	45		101.50	129
1010	Double cylinder		10	.800		90	45		135	166
1200	Night latch, outside key	↓	10	.800	↓	156	45		201	239
	08 71 20.42 Mortise Locksets									
0010	**MORTISE LOCKSETS**, Comm., wrought knobs & full escutcheon trim									
0015	Assumes mortise is cut									
0020	Non-keyed, passage, Grade 3	1 Carp	9	.889	Ea.	237	50		287	335
0030	Grade 1		8	1		395	56.50		451.50	515
0040	Privacy set, Grade 3		9	.889		171	50		221	264
0050	Grade 1		8	1		385	56.50		441.50	510
0100	Keyed, office/entrance/apartment, Grade 2		8	1		255	56.50		311.50	365
0110	Grade 1		7	1.143		325	64.50		389.50	455
0120	Single cylinder, typical, Grade 3		8	1		170	56.50		226.50	271
0130	Grade 1		7	1.143		420	64.50		484.50	555
0200	Hotel, room, Grade 3		7	1.143		192	64.50		256.50	310
0210	Grade 1 (see also Section 08 71 20.15)		6	1.333		560	75		635	725
0300	Double cylinder, Grade 3		8	1		241	56.50		297.50	350
0310	Grade 1		7	1.143		585	64.50		649.50	740
1000	Wrought knobs and sectional trim, non-keyed, passage, Grade 3		10	.800		139	45		184	220
1010	Grade 1		9	.889		430	50		480	550
1040	Privacy, Grade 3		10	.800		163	45		208	246
1050	Grade 1		9	.889		485	50		535	605
1100	Keyed, entrance, office/apartment, Grade 3		9	.889		235	50		285	335
1103	Install lockset		6.92	1.156		235	65		300	355
1110	Grade 1		8	1		555	56.50		611.50	695
1120	Single cylinder, Grade 3		9	.889		240	50		290	340
1130	Grade 1	↓	8	1	↓	510	56.50		566.50	650
2000	Cast knobs and full escutcheon trim									
2010	Non-keyed, passage, Grade 3	1 Carp	9	.889	Ea.	279	50		329	380
2020	Grade 1		8	1		460	56.50		516.50	590
2040	Privacy, Grade 3		9	.889		345	50		395	455
2050	Grade 1		8	1		450	56.50		506.50	580
2120	Keyed, single cylinder, Grade 3		8	1		515	56.50		571.50	650
2123	Mortise lock		6.15	1.301		515	73		588	675
2130	Grade 1		7	1.143		550	64.50		614.50	695
3000	Cast knob and sectional trim, non-keyed, passage, Grade 3		10	.800		222	45		267	310
3010	Grade 1		10	.800		430	45		475	540
3040	Privacy, Grade 3		10	.800		231	45		276	320
3050	Grade 1		10	.800		480	45		525	590
3100	Keyed, office/entrance/apartment, Grade 3		9	.889		262	50		312	365
3110	Grade 1		9	.889		485	50		535	610
3120	Single cylinder, Grade 3		9	.889		274	50		324	375
3130	Grade 1	↓	9	.889		555	50		605	685
3190	For re-core cylinder, add				↓	59			59	65

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08 71 20.44 Anti-Ligature Locksets Grade 1	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **ANTI-LIGATURE LOCKSETS GRADE 1**									
0100 Anti-ligature cylindrical locksets									
0500 Arch handle passage set, US32D	1 Carp	8	1	Ea.	299	56.50		355.50	415
0510 privacy set		8	1		375	56.50		431.50	495
0520 classroom set		8	1		370	56.50		426.50	490
0530 storeroom set		8	1		370	56.50		426.50	490
0550 Lever handle passage set US32D		8	1		355	56.50		411.50	475
0560 Hospital/privacy set		8	1		375	56.50		431.50	495
0570 Office set		8	1		375	56.50		431.50	500
0580 Classroom set		8	1		365	56.50		421.50	490
0590 Storeroom set		8	1		370	56.50		426.50	490
0600 Exit set		8	1		375	56.50		431.50	495
0610 Entry set		8	1		335	56.50		391.50	450
0620 Asylum set		8	1		360	56.50		416.50	480
0630 Back to back dummy set		8	1		229	56.50		285.50	335
0690 Anti-ligature mortise locksets									
0700 Knob handle privacy set, US32D	1 Carp	8	1	Ea.	450	56.50		506.50	580
0710 Office set		8	1		375	56.50		431.50	500
0720 Classroom set		8	1		475	56.50		531.50	605
0730 Hotel set		8	1		455	56.50		511.50	585
0740 Apartment set		8	1		385	56.50		441.50	510
0750 Institutional privacy set		8	1		585	56.50		641.50	730
0760 Lever handle office set		8	1		435	56.50		491.50	565
0770 Classroom set sectional trim		8	1		435	56.50		491.50	565
0780 Hotel set		8	1		445	56.50		501.50	575
0790 Apartment set		8	1		445	56.50		501.50	575
0800 Institutional privacy set		8	1		485	56.50		541.50	615
0810 Office set US32D		8	1		405	56.50		461.50	530
0820 Classroom set escutcheon trim		8	1		555	56.50		611.50	695
0830 Hotel set escutcheon trim		8	1		585	56.50		641.50	725
0840 Apartment set escutcheon trim		8	1		585	56.50		641.50	725
0850 Institutional privacy set escutcheon trim		8	1		585	56.50		641.50	725
08 71 20.45 Peepholes									
0010 **PEEPHOLES**									
2010 Peephole	1 Carp	32	.250	Ea.	12.95	14.10		27.05	35.
2020 Peephole, wide view	"	32	.250	"	9.55	14.10		23.65	31.
08 71 20.50 Door Stops									
0010 **DOOR STOPS**									
0020 Holder & bumper, floor or wall	1 Carp	32	.250	Ea.	32.50	14.10		46.60	56.
1300 Wall bumper, 4" diameter, with rubber pad, aluminum		32	.250		5.65	14.10		19.75	27
1600 Door bumper, floor type, aluminum		32	.250		6.20	14.10		20.30	28
1900 Plunger type, door mounted		32	.250		39.50	14.10		53.60	64.
08 71 20.55 Push-Pull Plates									
0010 **PUSH-PULL PLATES**									
0090 Push plate, 0.050 thick, 3" x 12", aluminum	1 Carp	12	.667	Ea.	5.50	37.50		43	62
0100 4" x 16"		12	.667		9.95	37.50		47.45	67
0110 6" x 16"		12	.667		7.40	37.50		44.90	64
0120 8" x 16"		12	.667		8.70	37.50		46.20	65.
0200 Push plate, 0.050 thick, 3" x 12", brass		12	.667		12.65	37.50		50.15	70
0210 4" x 16"		12	.667		15.80	37.50		53.30	73.
0220 6" x 16"		12	.667		24.50	37.50		62	82.

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08 71 20 – Hardware

		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
08 71 20.55	**Push-Pull Plates**									
0230	8" x 16"	1 Carp	12	.667	Ea.	32	37.50		69.50	91
0250	Push plate, 0.050 thick, 3" x 12", satin brass		12	.667		12.85	37.50		50.35	70
0260	4" x 16"		12	.667		16	37.50		53.50	73.50
0270	6" x 16"		12	.667		24.50	37.50		62	83
0280	8" x 16"		12	.667		32	37.50		69.50	91
0490	Push plate, 0.050 thick, 3" x 12", bronze		12	.667		15.25	37.50		52.75	73
0500	4" x 16"		12	.667		23	37.50		60.50	81
0510	6" x 16"		12	.667		29	37.50		66.50	88
0520	8" x 16"		12	.667		35	37.50		72.50	94.50
0740	Push plate, 0.050 thick, 3" x 12", stainless steel		12	.667		10.80	37.50		48.30	68
0760	6" x 16"		12	.667		16.90	37.50		54.40	74.50
0780	8" x 16"		12	.667		21.50	37.50		59	79.50
0790	Push plate, 0.050 thick, 3" x 12", satin stainless steel		12	.667		6.10	37.50		43.60	62.50
0820	6" x 16"		12	.667		10.65	37.50		48.15	67.50
0830	8" x 16"		12	.667		14.30	37.50		51.80	72
0980	Pull plate, 0.050 thick, 3" x 12", aluminum		12	.667		23.50	37.50		61	81.50
1050	Pull plate, 0.050 thick, 3" x 12", brass		12	.667		36	37.50		73.50	96
1080	Pull plate, 0.050 thick, 3" x 12", bronze		12	.667		45.50	37.50		83	107
1180	Pull plate, 0.050 thick, 3" x 12", stainless steel		12	.667		41.50	37.50		79	102
1250	Pull plate, 0.050 thick, 3" x 12", chrome		12	.667		41.50	37.50		79	102
1500	Pull handle and push bar, aluminum		11	.727		22.50	41		63.50	85.50
2000	Bronze		10	.800		86.50	45		131.50	163
08 71 20.60	**Entrance Locks**									
0010	**ENTRANCE LOCKS**									
0015	Cylinder, grip handle deadlocking latch	1 Carp	9	.889	Ea.	184	50		234	277
0020	Deadbolt		8	1		235	56.50		291.50	345
0100	Push and pull plate, dead bolt		8	1		188	56.50		244.50	291
0900	For handicapped lever, add					175			175	193
08 71 20.65	**Thresholds**									
0010	**THRESHOLDS**									
0011	Threshold 3' long saddles aluminum	1 Carp	48	.167	L.F.	12.05	9.40		21.45	27.50
0100	Aluminum, 8" wide, 1/2" thick		12	.667	Ea.	60	37.50		97.50	122
0500	Bronze		60	.133	L.F.	36.50	7.50		44	51.50
0600	Bronze, panic threshold, 5" wide, 1/2" thick		12	.667	Ea.	137	37.50		174.50	207
0700	Rubber, 1/2" thick, 5-1/2" wide		20	.400		35.50	22.50		58	72.50
0800	2-3/4" wide		20	.400		25.50	22.50		48	61.50
1950	ADA compliant thresholds									
2300	Threshold, aluminum 4" wide x 36" long	1 Carp	12	.667	Ea.	22	37.50		59.50	80.50
2310	4" wide x 48" long		12	.667		29.50	37.50		67	88.50
2360	6" wide x 36" long		12	.667		12.05	37.50		49.55	69.50
2370	6" wide x 48" long		12	.667		48.50	37.50		86	109
08 71 20.70	**Floor Checks**									
0010	**FLOOR CHECKS**									
0020	For over 3' wide doors single acting	1 Carp	2.50	3.200	Ea.	795	180		975	1,150
0500	Double acting	"	2.50	3.200	"	930	180		1,110	1,300
08 71 20.75	**Door Hardware Accessories**									
0010	**DOOR HARDWARE ACCESSORIES**									
0050	Door closing coordinator, 36" (for paired openings up to 56")	1 Carp	8	1	Ea.	134	56.50		190.50	231
0060	48" (for paired openings up to 84")		8	1		142	56.50		198.50	240
0070	56" (for paired openings up to 96")		8	1		151	56.50		207.50	251

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08 71 20 – Hardware

08 71 20.80 Hasps	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **HASPS**, steel assembly									
0015 3"	1 Carp	26	.308	Ea.	5.90	17.30		23.20	32.
0020 4-1/2"		13	.615		7.25	34.50		41.75	59.
0040 6"		12.50	.640		10.50	36		46.50	65

08 71 20.90 Hinges									
0010 **HINGES**									
0012 Full mortise, avg. freq., steel base, USP, 4-1/2" x 4-1/2"				Pr.	34.50			34.50	38
0100 5" x 5", USP					27			27	29.
0200 6" x 6", USP					56.50			56.50	62.
0400 Brass base, 4-1/2" x 4-1/2", US10					49.50			49.50	54.
0500 5" x 5", US10					57.50			57.50	63.
0600 6" x 6", US10					181			181	199
0800 Stainless steel base, 4-1/2" x 4-1/2", US32					55.50			55.50	61
0900 For non removable pin, add (security item)				Ea.	3.24			3.24	3.
0910 For floating pin, driven tips, add					3.33			3.33	3.
0930 For hospital type tip on pin, add					8.65			8.65	9.
0940 For steeple type tip on pin, add					11.50			11.50	12.
0950 Full mortise, high frequency, steel base, 3-1/2" x 3-1/2", US26D				Pr.	31.50			31.50	35
1000 4-1/2" x 4-1/2", USP					65			65	71.
1100 5" x 5", USP					22			22	24.
1200 6" x 6", USP					113			113	124
1400 Brass base, 3-1/2" x 3-1/2", US4					48			48	52.
1430 4-1/2" x 4-1/2", US10					60.50			60.50	66.
1500 5" x 5", US10					124			124	136
1600 6" x 6", US10					144			144	158
1800 Stainless steel base, 4-1/2" x 4-1/2", US32					55.50			55.50	61
1810 5" x 4-1/2", US32					55.50			55.50	61
1930 For hospital type tip on pin, add				Ea.	14.65			14.65	16.
1950 Full mortise, low frequency, steel base, 3-1/2" x 3-1/2", US26D				Pr.	8.25			8.25	9.
2000 4-1/2" x 4-1/2", USP					3.43			3.43	3.
2100 5" x 5", USP					55			55	60.
2200 6" x 6", USP					96			96	106
2300 4-1/2" x 4-1/2", US3					20.50			20.50	22.
2310 5" x 5", US3					41.50			41.50	45.
2400 Brass bass, 4-1/2" x 4-1/2", US10					94			94	103
2500 5" x 5", US10					120			120	132
2800 Stainless steel base, 4-1/2" x 4-1/2", US32					80.50			80.50	88.

08 71 20.91 Special Hinges									
0010 **SPECIAL HINGES**									
0015 Paumelle, high frequency									
0020 Steel base, 6" x 4-1/2", US10				Pr.	138			138	152
0100 Brass base, 5" x 4-1/2", US10				Ea.	236			236	260
0200 Paumelle, average frequency, steel base, 4-1/2" x 3-1/2", US10				Pr.	93.50			93.50	103
0400 Olive knuckle, low frequency, brass base, 6" x 4-1/2", US10				Ea.	154			154	169
1000 Electric hinge with concealed conductor, average frequency									
1010 Steel base, 4-1/2" x 4-1/2", US26D				Pr.	345			345	380
1100 Bronze base, 4-1/2" x 4-1/2", US26D				"	350			350	385
1200 Electric hinge with concealed conductor, high frequency									
1210 Steel base, 4-1/2" x 4-1/2", US26D				Pr.	285			285	315
1600 Double weight, 800 lb., steel base, removable pin, 5" x 6", USP					135			135	149
1700 Steel base-welded pin, 5" x 6", USP					174			174	192
1800 Triple weight, 2000 lb., steel base, welded pin, 5" x 6", USP					114			114	125

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	08 71 20.91 Special Hinges	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2000	Pivot reinf., high frequency, steel base, 7-3/4" door plate, USP				Pr.	171			171	188
2200	Bronze base, 7-3/4" door plate, US10				↓	257			257	283
3000	Swing clear, full mortise, full or half surface, high frequency,									
3010	Steel base, 5" high, USP				Pr.	150			150	165
3200	Swing clear, full mortise, average frequency									
3210	Steel base, 4-1/2" high, USP				Pr.	133			133	146
4000	Wide throw, average frequency, steel base, 4-1/2" x 6", USP					94.50			94.50	104
4200	High frequency, steel base, 4-1/2" x 6", USP				↓	129			129	142
4600	Spring hinge, single acting, 6" flange, steel				Ea.	50.50			50.50	55.50
4700	Brass					97			97	107
4900	Double acting, 6" flange, steel					61			61	67
4950	Brass				↓	134			134	148
8000	Continuous hinges									
8010	Steel, piano, 2" x 72"	1 Carp	20	.400	Ea.	28	22.50		50.50	64.50
8020	Brass, piano, 1-1/16" x 30"		30	.267		12.75	15		27.75	36.50
8030	Acrylic, piano, 1-3/4" x 12"		40	.200		15.85	11.25		27.10	34
9000	Continuous hinge, steel, full mortise, heavy duty, 96"	↓	2	4	↓	520	225		745	910

	08 71 20.95 Kick Plates									
0010	**KICK PLATES**									
0020	Stainless steel, .050", 16 ga., 8" x 28", US32	1 Carp	15	.533	Ea.	53	30		83	103
0030	8" x 30"		15	.533		54.50	30		84.50	104
0040	8" x 34"		15	.533		61.50	30		91.50	112
0050	10" x 28"		15	.533		66	30		96	118
0060	10" x 30"		15	.533		71	30		101	123
0070	10" x 34"		15	.533		80	30		110	133
0080	Mop/Kick, 4" x 28"		15	.533		40.50	30		70.50	89.50
0090	4" x 30"		15	.533		43	30		73	92
0100	4" x 34"		15	.533		49	30		79	98.50
0110	6" x 28"		15	.533		40	30		70	88.50
0120	6" x 30"		15	.533		42.50	30		72.50	91
0130	6" x 34"		15	.533		48	30		78	97.50
0500	Bronze, .050", 8" x 28"		15	.533		69.50	30		99.50	121
0510	8" x 30"		15	.533		75	30		105	127
0520	8" x 34"		15	.533		85	30		115	139
0530	10" x 28"		15	.533		87.50	30		117.50	141
0540	10" x 30"		15	.533		94	30		124	148
0550	10" x 34"		15	.533		106	30		136	162
0560	Mop/Kick, 4" x 28"		15	.533		39	30		69	87.50
0570	4" x 30"		15	.533		43.50	30		73.50	92
0580	4" x 34"		15	.533		43.50	30		73.50	92.50
0590	6" x 28"		15	.533		55	30		85	105
0600	6" x 30"		15	.533		59	30		89	110
0610	6" x 34"		15	.533		67	30		97	119
1000	Acrylic, .125", 8" x 26"		15	.533		30	30		60	77
1010	8" x 36"		15	.533		41.50	30		71.50	90
1020	8" x 42"		15	.533		48	30		78	97.50
1030	10" x 26"		15	.533		37.50	30		67.50	85.50
1040	10" x 36"		15	.533		52.50	30		82.50	102
1050	10" x 42"		15	.533		61	30		91	112
1060	Mop/Kick, 4" x 26"		15	.533		17.80	30		47.80	64
1070	4" x 36"		15	.533		25	30		55	72
1080	4" x 42"		15	.533		28.50	30		58.50	76

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08 71 20 – Hardware

	08 71 20.95 Kick Plates	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1090	6" x 26"	1 Carp	15	.533	Ea.	26.50	30		56.50	73.5
1100	6" x 36"		15	.533		36.50	30		66.50	84.5
1110	6" x 42"		15	.533		43	30		73	91.5
1220	Brass, .050", 8" x 26"		15	.533		76.50	30		106.50	129
1230	8" x 36"		15	.533		76.50	30		106.50	129
1240	8" x 42"		15	.533		93.50	30		123.50	148
1250	10" x 26"		15	.533		77.50	30		107.50	130
1260	10" x 36"		15	.533		113	30		143	169
1270	10" x 42"		15	.533		113	30		143	170
1320	Mop/Kick, 4" x 26"		15	.533		28.50	30		58.50	76
1330	4" x 36"		15	.533		39.50	30		69.50	88
1340	4" x 42"		15	.533		46	30		76	95
1350	6" x 26"		15	.533		42.50	30		72.50	91
1360	6" x 36"		15	.533		52	30		82	102
1370	6" x 42"		15	.533		156	30		186	216
1800	Aluminum, .050", 8" x 26"		15	.533		39	30		69	87.5
1810	8" x 36"		15	.533		46.50	30		76.50	95.5
1820	8" x 42"		15	.533		60	30		90	111
1830	10" x 26"		15	.533		36	30		66	84
1840	10" x 36"		15	.533		47	30		77	96
1850	10" x 42"		15	.533		51.50	30		81.50	102
1860	Mop/Kick, 4" x 26"		15	.533		28	30		58	75
1870	4" x 36"		15	.533		23	30		53	70
1880	4" x 42"		15	.533		34	30		64	82
1890	6" x 26"		15	.533		26	30		56	73
1900	6" x 36"		15	.533		38.50	30		68.50	87
1910	6" x 42"		15	.533		42	30		72	91

08 71 21 – Astragals

08 71 21.10 Exterior Mouldings, Astragals

0010	**EXTERIOR MOULDINGS, ASTRAGALS**									
0400	One piece, overlapping cadmium plated steel, flat, 3/16" x 2"	1 Carp	90	.089	L.F.	5.10	5		10.10	13.
0600	Prime coated steel, flat, 1/8" x 3"		90	.089		6.10	5		11.10	14.
0800	Stainless steel, flat, 3/32" x 1-5/8"		90	.089		15.75	5		20.75	25
1000	Aluminum, flat, 1/8" x 2"		90	.089		4.55	5		9.55	12.
1200	Nail on, "T" extrusion		120	.067		2.17	3.75		5.92	8
1300	Vinyl bulb insert		105	.076		2.65	4.29		6.94	9.
1600	Screw on, "T" extrusion		90	.089		4.68	5		9.68	12.
1700	Vinyl insert		75	.107		4.10	6		10.10	13.
2000	"L" extrusion, neoprene bulbs		75	.107		4.39	6		10.39	13.
2100	Neoprene sponge insert		75	.107		6.80	6		12.80	16.
2200	Magnetic		75	.107		10.40	6		16.40	20.
2400	Spring hinged security seal, with cam		75	.107		6.65	6		12.65	16.
2600	Spring loaded locking bolt, vinyl insert		45	.178		9.05	10		19.05	25
2800	Neoprene sponge strip, "Z" shaped, aluminum		60	.133		8	7.50		15.50	19.
2900	Solid neoprene strip, nail on aluminum strip		90	.089		3.78	5		8.78	11.
3000	One piece stile protection									
3020	Neoprene fabric loop, nail on aluminum strips	1 Carp	60	.133	L.F.	1.23	7.50		8.73	12.
3110	Flush mounted aluminum extrusion, 1/2" x 1-1/4"		60	.133		6.65	7.50		14.15	18.
3140	3/4" x 1-3/8"		60	.133		3.93	7.50		11.43	15.
3160	1-1/8" x 1-3/4"		60	.133		5.40	7.50		12.90	17.
3300	Mortise, 9/16" x 3/4"		60	.133		4.47	7.50		11.97	16.
3320	13/16" x 1-3/8"		60	.133		4.16	7.50		11.66	15.

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08 71 21 – Astragals

	08 71 21.10 Exterior Mouldings, Astragals	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
3600	Spring bronze strip, nail on type	1 Carp	105	.076	L.F.	2.36	4.29		6.65	9
3620	Screw on, with retainer		75	.107		2.62	6		8.62	11.85
3800	Flexible stainless steel housing, pile insert, 1/2" door		105	.076		6.95	4.29		11.24	14.05
3820	3/4" door		105	.076		7.95	4.29		12.24	15.15
4000	Extruded aluminum retainer, flush mount, pile insert		105	.076		2.73	4.29		7.02	9.40
4080	Mortise, felt insert		90	.089		4.55	5		9.55	12.45
4160	Mortise with spring, pile insert		90	.089		3.74	5		8.74	11.55
4400	Rigid vinyl retainer, mortise, pile insert		105	.076		3.06	4.29		7.35	9.75
4600	Wool pile filler strip, aluminum backing		105	.076		3.02	4.29		7.31	9.70
5000	Two piece overlapping astragal, extruded aluminum retainer									
5010	Pile insert	1 Carp	60	.133	L.F.	3.17	7.50		10.67	14.65
5020	Vinyl bulb insert		60	.133		1.72	7.50		9.22	13.05
5040	Vinyl flap insert		60	.133		4.33	7.50		11.83	15.90
5060	Solid neoprene flap insert		60	.133		6.45	7.50		13.95	18.25
5080	Hypalon rubber flap insert		60	.133		6.40	7.50		13.90	18.20
5090	Snap on cover, pile insert		60	.133		9.60	7.50		17.10	22
5400	Magnetic aluminum, surface mounted		60	.133		27	7.50		34.50	40.50
5500	Interlocking aluminum, 5/8" x 1" neoprene bulb insert		45	.178		4.31	10		14.31	19.65
5600	Adjustable aluminum, 9/16" x 21/32", pile insert		45	.178		17.70	10		27.70	34.50
5800	Magnetic, adjustable, 9/16" x 21/32"		45	.178		23	10		33	40.50
6000	Two piece stile protection									
6010	Cloth backed rubber loop, 1" gap, nail on aluminum strips	1 Carp	45	.178	L.F.	4.42	10		14.42	19.75
6040	Screw on aluminum strips		45	.178		6.45	10		16.45	22
6100	1-1/2" gap, screw on aluminum extrusion		45	.178		5.75	10		15.75	21
6240	Vinyl fabric loop, slotted aluminum extrusion, 1" gap		45	.178		2.34	10		12.34	17.45
6300	1-1/4" gap		45	.178		6.10	10		16.10	21.50

08 71 25 – Door Weatherstripping

08 71 25.10 Mechanical Seals, Weatherstripping

0010	**MECHANICAL SEALS, WEATHERSTRIPPING**									
1000	Doors, wood frame, interlocking, for 3' x 7' door, zinc	1 Carp	3	2.667	Opng.	53.50	150		203.50	282
1100	Bronze		3	2.667		69.50	150		219.50	300
1300	6' x 7' opening, zinc		2	4		56.50	225		281.50	400
1400	Bronze		2	4		70	225		295	410
1700	Wood frame, spring type, bronze									
1800	3' x 7' door	1 Carp	7.60	1.053	Opng.	22.50	59.50		82	113
1900	6' x 7' door	"	7	1.143	"	31.50	64.50		96	131
2200	Metal frame, spring type, bronze									
2300	3' x 7' door	1 Carp	3	2.667	Opng.	51	150		201	279
2400	6' x 7' door	"	2.50	3.200	"	52	180		232	325
2500	For stainless steel, spring type, add					133%				
2700	Metal frame, extruded sections, 3' x 7' door, aluminum	1 Carp	3	2.667	Opng.	33.50	150		183.50	260
2800	Bronze		3	2.667		95.50	150		245.50	330
3100	6' x 7' door, aluminum		1.50	5.333		41	300		341	490
3200	Bronze		1.50	5.333		148	300		448	610
3500	Threshold weatherstripping									
3650	Door sweep, flush mounted, aluminum	1 Carp	25	.320	Ea.	22	18		40	51.50
3700	Vinyl		25	.320		19.75	18		37.75	48.50
5000	Garage door bottom weatherstrip, 12' aluminum, clear		14	.571		24	32		56	74.50
5010	Bronze		14	.571		94	32		126	152
5050	Bottom protection, rubber		14	.571		55.50	32		87.50	109
5100	Threshold		14	.571		69	32		101	124

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08 75 Window Hardware

08 75 30 – Window Weatherstripping

08 75 30.10 Mechanical Weather Seals	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&
0010 **MECHANICAL WEATHER SEALS**, Window, double-hung, 3′ x 5′									
0020 Zinc	1 Carp	7.20	1.111	Opng.	19.65	62.50		82.15	1
0100 Bronze		7.20	1.111		39.50	62.50		102	1
0500 As above but heavy duty, zinc		4.60	1.739		20	98		118	1
0600 Bronze		4.60	1.739		77	98		175	2

08 79 Hardware Accessories

08 79 13 – Key Storage Equipment

08 79 13.10 Key Cabinets

0010 **KEY CABINETS**									
0020 Wall mounted, 60 key capacity	1 Carp	20	.400	Ea.	144	22.50		166.50	192
0400 Wall mounted, 30 key capacity	1 Clab	50	.160		76.50	7.30		83.80	95
0500 Wall mounted, 80 key capacity	"	40	.200		171	9.10		180.10	202

08 79 20 – Door Accessories

08 79 20.10 Door Hardware Accessories

0010 **DOOR HARDWARE ACCESSORIES**									
0140 Door bolt, surface, 4″	1 Carp	32	.250	Ea.	29.50	14.10		43.60	53
0160 Door latch	"	12	.667	"	29.50	37.50		67	88
0200 Sliding closet door									
0220 Track and hanger, single	1 Carp	10	.800	Ea.	88.50	45		133.50	165
0240 Double		8	1		114	56.50		170.50	209
0260 Door guide, single		48	.167		44	9.40		53.40	62
0280 Double		48	.167		3.45	9.40		12.85	17
0600 Deadbolt and lock cover plate, brass or stainless steel		30	.267		11.35	15		26.35	35
0620 Hole cover plate, brass or chrome		35	.229		12.25	12.85		25.10	32
2240 Mortise lockset, passage, lever handle		9	.889		112	50		162	198
4000 Security chain, standard		18	.444		15.80	25		40.80	54

08 81 Glass Glazing

08 81 10 – Float Glass

08 81 10.10 Various Types and Thickness of Float Glass

0010 **VARIOUS TYPES AND THICKNESS OF FLOAT GLASS** R088110-10									
0020 3/16″ plain	2 Glaz	130	.123	S.F.	7.15	6.65		13.80	17
0200 Tempered, clear		130	.123		21.50	6.65		28.15	33
0300 Tinted		130	.123		7.70	6.65		14.35	18
0600 1/4″ thick, clear, plain		120	.133		10.10	7.20		17.30	22
0700 Tinted		120	.133		9.55	7.20		16.75	21
0800 Tempered, clear		120	.133		12.90	7.20		20.10	25
0900 Tinted		120	.133		26	7.20		33.20	39
1600 3/8″ thick, clear, plain		75	.213		14.95	11.50		26.45	33
1700 Tinted		75	.213		20.50	11.50		32	39
1800 Tempered, clear		75	.213		28	11.50		39.50	47
1900 Tinted		75	.213		40.50	11.50		52	61
2200 1/2″ thick, clear, plain		55	.291		19.35	15.70		35.05	45
2300 Tinted		55	.291		35.50	15.70		51.20	62
2400 Tempered, clear		55	.291		32	15.70		47.70	59
2500 Tinted		55	.291		28.50	15.70		44.20	54
2800 5/8″ thick, clear, plain		45	.356		35.50	19.20		54.70	67
2900 Tempered, clear		45	.356		40.50	19.20		59.70	73

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08 81 Glass Glazing

08 81 10 – Float Glass

	08 81 10.10 Various Types and Thickness of Float Glass	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
3200	3/4" thick, clear, plain	2 Glaz	35	.457	S.F.	47	24.50		71.50	88
3300	Tempered, clear		35	.457		56.50	24.50		81	98.50
3600	1" thick, clear, plain		30	.533		76	29		105	127
8900	For low emissivity coating for 3/16" & 1/4" only, add to above					18%				

08 81 13 – Decorative Glass Glazing

08 81 13.10 Beveled Glass

0010	**BEVELED GLASS**, with design patterns									
0020	Simple pattern	2 Glaz	150	.107	S.F.	66	5.75		71.75	81
0050	Intricate pattern	"	125	.128	"	62.50	6.90		69.40	79

08 81 13.30 Sandblasted Glass

0010	**SANDBLASTED GLASS**, float glass									
0020	1/8" thick	2 Glaz	160	.100	S.F.	34	5.40		39.40	45.50
0100	3/16" thick		130	.123		21.50	6.65		28.15	33.50
0500	1/4" thick		120	.133		14.25	7.20		21.45	26.50
0600	3/8" thick		75	.213		17.40	11.50		28.90	36.50

08 81 17 – Fire Glass

08 81 17.10 Fire Resistant Glass

0010	**FIRE RESISTANT GLASS**									
0020	Fire glass minimum	2 Glaz	40	.400	S.F.	178	21.50		199.50	228
0030	Mid range		40	.400		236	21.50		257.50	291
0050	High end		40	.400		236	21.50		257.50	291

08 81 20 – Vision Panels

08 81 20.10 Full Vision

0010	**FULL VISION**, window system with 3/4" glass mullions									
0020	Up to 10' high	H-2	130	.185	S.F.	70	9.45		79.45	91
0100	10' to 20' high, minimum		110	.218		77	11.15		88.15	102
0150	Average		100	.240		80	12.30		92.30	106
0200	Maximum		80	.300		93	15.35		108.35	126

08 81 25 – Glazing Variables

08 81 25.10 Applications of Glazing

0010	**APPLICATIONS OF GLAZING** R088110-10									
0600	For glass replacement, add				S.F.		100%			
0700	For gasket settings, add				L.F.	6.05			6.05	6.65
0900	For sloped glazing, add				S.F.		26%			
2000	Fabrication, polished edges, 1/4" thick				Inch	.59			.59	.65
2100	1/2" thick					1.46			1.46	1.61
2500	Mitered edges, 1/4" thick					1.46			1.46	1.61
2600	1/2" thick					2.42			2.42	2.66

08 81 30 – Insulating Glass

08 81 30.10 Reduce Heat Transfer Glass

0010	**REDUCE HEAT TRANSFER GLASS** R088110-10									
0015	2 lites 1/8" float, 1/2" thk under 15 S.F.									
0020	Clear G	2 Glaz	95	.168	S.F.	28	9.10		37.10	44
0100	Tinted G		95	.168		30.50	9.10		39.60	47
0200	2 lites 3/16" float, for 5/8" thk unit, 15 to 30 S.F., clear G		90	.178		17.15	9.60		26.75	33
0300	Tinted G		90	.178		14.90	9.60		24.50	30.50
0400	1" thk, dbl. glazed, 1/4" float, 30 to 70 S.F., clear G		75	.213		17.50	11.50		29	36.50
0500	Tinted G		75	.213		29.50	11.50		41	49.50
0600	1" thk, dbl. glazed, 1/4" float, 1/4" wire		75	.213		31.50	11.50		43	51.50
0700	1/4" float, 1/4" tempered		75	.213		32	11.50		43.50	52

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08 81 Glass Glazing

08 81 30 – Insulating Glass

			Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
08 81 30.10	**Reduce Heat Transfer Glass**										
0800	1/4" wire, 1/4" tempered		2 Glaz	75	.213	S.F.	39	11.50		50.50	60
2000	Both lites, light & heat reflective	G		85	.188		39.50	10.15		49.65	58.
2500	Heat reflective, film inside, 1" thick unit, clear	G		85	.188		34.50	10.15		44.65	53
2600	Tinted	G		85	.188		32.50	10.15		42.65	51
3000	Film on weatherside, clear, 1/2" thick unit	G		95	.168		24.50	9.10		33.60	40.
3100	5/8" thick unit	G		90	.178		21.50	9.60		31.10	38
3200	1" thick unit	G		85	.188		34	10.15		44.15	52.

08 81 35 – Translucent Glass

08 81 35.10	**Obscure Glass**										
0010	**OBSCURE GLASS**										
0020	1/8" thick, textured		2 Glaz	140	.114	S.F.	12.50	6.15		18.65	23
0100	Color			125	.128		15.35	6.90		22.25	27
0300	7/32" thick, textured			120	.133		14.20	7.20		21.40	26.
0400	Color			105	.152		17.70	8.25		25.95	31.
08 81 35.20	**Patterned Glass**										
0010	**PATTERNED GLASS**, colored										
0020	1/8" thick		2 Glaz	140	.114	S.F.	10.30	6.15		16.45	20.
0300	7/32" thick		"	120	.133	"	13.90	7.20		21.10	26

08 81 45 – Sheet Glass

08 81 45.10	**Window Glass, Sheet**										
0010	**WINDOW GLASS, SHEET** gray										
0020	1/8" thick		2 Glaz	160	.100	S.F.	37	5.40		42.40	48.
0200	1/4" thick		"	130	.123	"	37.50	6.65		44.15	51

08 81 50 – Spandrel Glass

08 81 50.10	**Glass for Non Vision Areas**										
0010	**GLASS FOR NON VISION AREAS**, 1/4" thick standard colors										
0020	Up to 1,000 S.F.		2 Glaz	110	.145	S.F.	19.95	7.85		27.80	33.
0200	1,000 to 2,000 S.F.		"	120	.133	"	19.85	7.20		27.05	32.
0300	For custom colors, add					Total	10%				
0500	For 3/8" thick, add					S.F.	13.10			13.10	14.
1000	For double coated, 1/4" thick, add						5.75			5.75	6.
1200	For insulation on panels, add						7.90			7.90	8.
2000	Panels, insulated, with aluminum backed fiberglass, 1" thick		2 Glaz	120	.133		21.50	7.20		28.70	34
2100	2" thick		"	120	.133		23	7.20		30.20	36

08 81 55 – Window Glass

08 81 55.10	**Sheet Glass**										
0010	**SHEET GLASS** (window), clear float, stops, putty bed										
0015	1/8" thick, clear float		2 Glaz	480	.033	S.F.	4.35	1.80		6.15	7.
0500	3/16" thick, clear			480	.033		6.80	1.80		8.60	10.
0600	Tinted			480	.033		7.70	1.80		9.50	11.
0700	Tempered			480	.033		12.65	1.80		14.45	16.

08 81 65 – Wire Glass

08 81 65.10	**Glass Reinforced With Wire**										
0010	**GLASS REINFORCED WITH WIRE**										
0012	1/4" thick rough obscure		2 Glaz	135	.119	S.F.	25.50	6.40		31.90	37.
1000	Polished wire, 1/4" thick, diamond, clear			135	.119		33.50	6.40		39.90	46.
1500	Pinstripe, obscure			135	.119		54	6.40		60.40	69

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08 83 Mirrors

08 83 13 – Mirrored Glass Glazing

	08 83 13.10 Mirrors	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**MIRRORS**, No frames, wall type, 1/4" plate glass, polished edge									
0100	Up to 5 S.F.	2 Glaz	125	.128	S.F.	9.55	6.90		16.45	21
0200	Over 5 S.F.		160	.100		9.15	5.40		14.55	18.15
0500	Door type, 1/4" plate glass, up to 12 S.F.		160	.100		9.50	5.40		14.90	18.50
1000	Float glass, up to 10 S.F., 1/8" thick		160	.100		6.70	5.40		12.10	15.40
1100	3/16" thick		150	.107		8.65	5.75		14.40	18.05
1500	12" x 12" wall tiles, square edge, clear		195	.082		2.85	4.43		7.28	9.75
1600	Veined		195	.082		6.35	4.43		10.78	13.55
2000	1/4" thick, stock sizes, one way transparent		125	.128		23	6.90		29.90	35.50
2010	Bathroom, unframed, laminated		160	.100		16.40	5.40		21.80	26

08 83 13.15 Reflective Glass

0010	**REFLECTIVE GLASS**									
0100	1/4" float with fused metallic oxide fixed G	2 Glaz	115	.139	S.F.	18.25	7.50		25.75	31
0500	1/4" float glass with reflective applied coating G	"	115	.139	"	39.50	7.50		47	54

08 84 Plastic Glazing

08 84 10 – Plexiglass Glazing

08 84 10.10 Plexiglass Acrylic

0010	**PLEXIGLASS ACRYLIC**, clear, masked,									
0020	1/8" thick, cut sheets	2 Glaz	170	.094	S.F.	15.50	5.10		20.60	24.50
0200	Full sheets		195	.082		3.42	4.43		7.85	10.35
0500	1/4" thick, cut sheets		165	.097		11.60	5.25		16.85	20.50
0600	Full sheets		185	.086		6.75	4.67		11.42	14.35
0900	3/8" thick, cut sheets		155	.103		10.25	5.55		15.80	19.55
1000	Full sheets		180	.089		11	4.80		15.80	19.25
1300	1/2" thick, cut sheets		135	.119		24.50	6.40		30.90	36.50
1400	Full sheets		150	.107		15.10	5.75		20.85	25
1700	3/4" thick, cut sheets		115	.139		37	7.50		44.50	52
1800	Full sheets		130	.123		21	6.65		27.65	33
2100	1" thick, cut sheets		105	.152		54	8.25		62.25	72
2200	Full sheets		125	.128		20.50	6.90		27.40	33.50
3000	Colored, 1/8" thick, cut sheets		170	.094		19.65	5.10		24.75	29
3200	Full sheets		195	.082		11.30	4.43		15.73	19.05
3500	1/4" thick, cut sheets		165	.097		21.50	5.25		26.75	32
3600	Full sheets		185	.086		16.15	4.67		20.82	25
4000	Mirrors, untinted, cut sheets, 1/8" thick		185	.086		11.40	4.67		16.07	19.50
4200	1/4" thick		180	.089		20.50	4.80		25.30	29.50

08 84 20 – Polycarbonate

08 84 20.10 Thermoplastic

0010	**THERMOPLASTIC**, clear, masked, cut sheets									
0020	1/8" thick	2 Glaz	170	.094	S.F.	4.96	5.10		10.06	13
0500	3/16" thick		165	.097		7.45	5.25		12.70	16
1000	1/4" thick		155	.103		8.95	5.55		14.50	18.15
1500	3/8" thick		150	.107		16.25	5.75		22	26.50

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08 87 Glazing Surface Films

08 87 13 – Solar Control Films

08 87 13.10 Solar Films On Glass	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **SOLAR FILMS ON GLASS** (glass not included)									
1000 Bronze, 20% VLT	H-2	180	.133	S.F.	1.82	6.85		8.67	12
1020 50% VLT		180	.133		1.09	6.85		7.94	11
1050 Neutral, 20% VLT		180	.133		.72	6.85		7.57	10
1100 Silver, 15% VLT		180	.133		.86	6.85		7.71	11
1120 35% VLT		180	.133		1.19	6.85		8.04	11
1150 68% VLT		180	.133		.67	6.85		7.52	10
3000 One way mirror with night vision 5% in and 15% out VLT		180	.133		3.48	6.85		10.33	14

08 87 16 – Glass Safety Films

08 87 16.10 Safety Films On Glass

0010 **SAFETY FILMS ON GLASS** (glass not included)									
0015 Safety film helps hold glass together when broken									
0050 Safety film, clear, 2 mil	H-2	180	.133	S.F.	1.69	6.85		8.54	12
0100 Safety film, clear, 4 mil		180	.133		1.60	6.85		8.45	11
0110 Safety film, tinted, 4 mil		180	.133		1.06	6.85		7.91	11
0150 Safety film, black tint, 8 mil		180	.133		1.95	6.85		8.80	12

08 87 26 – Bird Control Film

08 87 26.10 Bird Control Film

0010 **BIRD CONTROL FILM**									
0050 Patterned, adhered to glass	2 Glaz	180	.089	S.F.	6.50	4.80		11.30	14
0200 Decals small, adhered to glass	1 Glaz	50	.160	Ea.	1.85	8.65		10.50	14
0250 Decals large, adhered to glass		50	.160	"	8.55	8.65		17.20	22
0300 Decals set of 4, adhered to glass		25	.320	Set	7.90	17.30		25.20	34
0400 Bird control film tape		10	.800	Roll	5.30	43		48.30	70

08 87 33 – Electrically Tinted Window Film

08 87 33.20 Window Film

0010 **WINDOW FILM** adhered on glass (glass not included)									
0015 Film is pre-wired and can be trimmed									
0100 Window film 4 S.F. adhered on glass	1 Glaz	200	.040	S.F.	254	2.16		256.16	282
0120 6 S.F.		180	.044		380	2.40		382.40	425
0160 9 S.F.		170	.047		570	2.54		572.54	630
0180 10 S.F.		150	.053		158	2.88		160.88	178
0200 12 S.F.		144	.056		760	3		763	840
0220 14 S.F.		140	.057		885	3.09		888.09	980
0240 16 S.F.		128	.063		1,025	3.38		1,028.38	1,125
0260 18 S.F.		126	.063		1,150	3.43		1,153.43	1,250
0280 20 S.F.		120	.067		1,275	3.60		1,278.60	1,400

08 87 53 – Security Films On Glass

08 87 53.10 Security Film Adhered On Glass

0010 **SECURITY FILM ADHERED ON GLASS** (glass not included)									
0020 Security film, clear, 7 mil	1 Glaz	200	.040	S.F.	2.42	2.16		4.58	5
0030 8 mil		200	.040		2.64	2.16		4.80	6
0040 9 mil		200	.040		1.27	2.16		3.43	4
0050 10 mil		200	.040		2.19	2.16		4.35	5
0060 12 mil		200	.040		3.21	2.16		5.37	6
0075 15 mil		200	.040		2.59	2.16		4.75	6
0100 Security film, sealed with structural adhesive, 7 mil		180	.044		2.43	2.40		4.83	6
0110 8 mil		180	.044		2.65	2.40		5.05	6
0140 14 mil		180	.044		4.39	2.40		6.79	8

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08 88 Special Function Glazing

08 88 40 – Acoustical Glass Units

08 88 40.10 Sound Reduction Units	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **SOUND REDUCTION UNITS**, 1 lite at 3/8", 1 lite at 3/16"									
0020 For 1" thick	2 Glaz	100	.160	S.F.	44	8.65		52.65	61.50
0100 For 4" thick	"	80	.200	"	75	10.80		85.80	98.50

08 88 56 – Ballistics-Resistant Glazing

08 88 56.10 Laminated Glass

0010 **LAMINATED GLASS**									
0020 Clear float .03" vinyl 1/4" thick	2 Glaz	90	.178	S.F.	13.35	9.60		22.95	29
0100 3/8" thick		78	.205		32	11.10		43.10	51.50
0200 .06" vinyl, 1/2" thick		65	.246		28	13.30		41.30	51
0000 5/8" thick		90	.178		39.50	9.60		49.10	58
2000 Bullet-resisting, 1-3/16" thick, to 15 S.F.		16	1		132	54		186	226
2100 Over 15 S.F.		16	1		131	54		185	225
2500 2-1/4" thick, to 15 S.F.		12	1.333		206	72		278	335
2600 Over 15 S.F.		12	1.333		195	72		267	320
2700 Level 2 (.357 magnum), NIJ and UL		12	1.333		56	72		128	169
2750 Level 3A (.44 magnum) NIJ, UL 3		12	1.333		60.50	72		132.50	174
2800 Level 4 (AK-47) NIJ, UL 7 & 8		12	1.333		82.50	72		154.50	198
2850 Level 5 (M-16) UL		12	1.333		81.50	72		153.50	197
2900 Level 3 (7.62 Armor Piercing) NIJ, UL 4 & 5		12	1.333		96.50	72		168.50	213

08 91 Louvers

08 91 19 – Fixed Louvers

08 91 19.10 Aluminum Louvers

0010 **ALUMINUM LOUVERS**									
0020 Aluminum with screen, residential, 8" x 8"	1 Carp	38	.211	Ea.	22	11.85		33.85	41.50
0100 12" x 12"		38	.211		28	11.85		39.85	48.50
0200 12" x 18"		35	.229		63	12.85		75.85	88.50
0250 14" x 24"		30	.267		43	15		58	69.50
0300 18" x 24"		27	.296		34	16.70		50.70	62.50
0500 24" x 30"		24	.333		100	18.75		118.75	138
0700 Triangle, adjustable, small		20	.400		95.50	22.50		118	139
0800 Large		15	.533		132	30		162	191
1200 Extruded aluminum, see Section 23 37 15.40									
2100 Round, aluminum, 3/4" deep, 1" diameter	1 Carp	85	.094	Ea.	1.37	5.30		6.67	9.40
2150 3" diameter		60	.133		3.24	7.50		10.74	14.70
2200 4" diameter		50	.160		7.05	9		16.05	21
2250 6" diameter		30	.267		5.10	15		20.10	28

08 91 26 – Door Louvers

08 91 26.10 Steel Louvers, 18 Gauge, Fixed Blade

0010 **STEEL LOUVERS, 18 GAUGE, FIXED BLADE**									
0050 12" x 12", with powder coat	1 Carp	20	.400	Ea.	82.50	22.50		105	124
0055 18" x 12"		20	.400		85.50	22.50		108	128
0060 18" x 18"		20	.400		95	22.50		117.50	139
0065 24" x 12"		20	.400		99	22.50		121.50	143
0070 24" x 18"		20	.400		104	22.50		126.50	149
0075 24" x 24"		20	.400		132	22.50		154.50	179
0100 12" x 12", galvanized		20	.400		56	22.50		78.50	95
0105 18" x 12"		20	.400		63	22.50		85.50	103
0115 24" x 12"		20	.400		90.50	22.50		113	133
0125 24" x 24"		20	.400		138	22.50		160.50	186

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08 91 Louvers

08 91 26 – Door Louvers

	08 91 26.10 Steel Louvers, 18 Gauge, Fixed Blade	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0300	6" x 12", painted	1 Carp	20	.400	Ea.	37.50	22.50		60	75
0320	10" x 16"		20	.400		59	22.50		81.50	98.5
0340	12" x 22"		20	.400		87	22.50		109.50	129
0360	14" x 14"		20	.400		87.50	22.50		110	130
0400	18" x 18"		20	.400		128	22.50		150.50	175
0420	20" x 26"		20	.400		119	22.50		141.50	165
0440	22" x 22"		20	.400		112	22.50		134.50	158
0460	26" x 26"		20	.400		223	22.50		245.50	279
3000	Fire rated									
3010	12" x 12"	1 Carp	10	.800	Ea.	148	45		193	229
3050	18" x 18"		10	.800		216	45		261	305
3100	24" x 12"		10	.800		227	45		272	315
3120	24" x 18"		10	.800		243	45		288	335
3130	24" x 24"		10	.800		242	45		287	335

08 91 26.20 Aluminum Louvers

0010	**ALUMINUM LOUVERS**, 18 ga., fixed blade, clear anodized									
0050	6" x 12"	1 Carp	20	.400	Ea.	61	22.50		83.50	101
0060	10" x 10"		20	.400		71	22.50		93.50	112
0065	10" x 14"		20	.400		80	22.50		102.50	122
0080	12" x 22"		20	.400		112	22.50		134.50	157
0090	14" x 14"		20	.400		100	22.50		122.50	144
0100	18" x 10"		20	.400		83.50	22.50		106	125
0110	18" x 18"		20	.400		146	22.50		168.50	195
0120	22" x 22"		20	.400		181	22.50		203.50	233
0130	26" x 26"		20	.400		232	22.50		254.50	289

08 95 Vents

08 95 13 – Soffit Vents

08 95 13.10 Wall Louvers

0010	**WALL LOUVERS**									
2340	Baked enamel finish	1 Carp	200	.040	L.F.	6.10	2.25		8.35	10.1
2400	Under eaves vent, aluminum, mill finish, 16" x 4"		48	.167	Ea.	1.71	9.40		11.11	15.8
2500	16" x 8"		48	.167	"	1.89	9.40		11.29	16.0

08 95 16 – Wall Vents

08 95 16.10 Louvers

0010	**LOUVERS**									
0020	Redwood, 2'-0" diameter, full circle	1 Carp	16	.500	Ea.	96	28		124	148
0100	Half circle		16	.500		233	28		261	298
0200	Octagonal		16	.500		218	28		246	282
0300	Triangular, 5/12 pitch, 5'-0" at base		16	.500		665	28		693	770
7000	Vinyl gable vent, 8" x 8"		38	.211		51.50	11.85		63.35	74
7020	12" x 12"		38	.211		33.50	11.85		45.35	54
7080	12" x 18"		35	.229		52	12.85		64.85	76
7200	18" x 24"		30	.267		62.50	15		77.50	91

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Estimating Tips

General

- Room Finish Schedule: A complete set of plans should contain a room finish schedule. If one is not available, it would be well worth the time and effort to obtain one.

09 20 00 Plaster and Gypsum Board

- Lath is estimated by the square yard plus a 5% allowance for waste. Furring, channels, and accessories are measured by the linear foot. An extra foot should be allowed for each accessory miter or stop.
- Plaster is also estimated by the square yard. Deductions for openings vary by preference, from zero deduction to 50% of all openings over 2 feet in width. The estimator should allow one extra square foot for each linear foot of horizontal interior or exterior angle located below the ceiling level. Also, double the areas of small radius work.
- Drywall accessories, studs, track, and acoustical caulking are all measured by the linear foot. Drywall taping is figured by the square foot. Gypsum wallboard is estimated by the square foot. No material deductions should be made for door or window openings under 32 S.F.

09 60 00 Flooring

- Tile and terrazzo areas are taken off on a square foot basis. Trim and base materials are measured by the linear foot. Accent tiles are listed per each. Two basic methods of installation are used. Mud set is approximately 30% more expensive than thin set. The cost of grout is included with tile unit price lines unless otherwise noted. In terrazzo work, be sure to include the linear footage of embedded decorative strips, grounds, machine rubbing, and power cleanup.
- Wood flooring is available in strip, parquet, or block configuration. The latter two types are set in adhesives with quantities estimated by the square foot. The laying pattern will influence labor costs and material waste. In addition to the material and labor for laying wood floors, the estimator must make allowances for sanding and finishing these areas, unless the flooring is prefinished.
- Sheet flooring is measured by the square yard. Roll widths vary, so consideration should be given to use the most economical width, as waste must be figured into the total quantity. Consider also the installation methods available—direct glue down or stretched. Direct glue-down installation is assumed with sheet carpet unit price lines unless otherwise noted.

09 70 00 Wall Finishes

- Wall coverings are estimated by the square foot. The area to be covered is measured—length by height of the wall above the baseboards—to calculate the square footage of each wall. This figure is divided by the number of square feet in the single roll which is being used. Deduct, in full, the areas of openings such as doors and windows. Where a pattern match is required allow 25–30% waste.

09 80 00 Acoustic Treatment

- Acoustical systems fall into several categories. The takeoff of these materials should be by the square foot of area with a 5% allowance for waste. Do not forget about scaffolding, if applicable, when estimating these systems.

09 90 00 Painting and Coating

- New line items created for cut-ins with reference diagram.
- A major portion of the work in painting involves surface preparation. Be sure to include cleaning, sanding, filling, and masking costs in the estimate.
- Protection of adjacent surfaces is not included in painting costs. When considering the method of paint application, an important factor is the amount of protection and masking required. These must be estimated separately and may be the determining factor in choosing the method of application.

Reference Numbers

Reference numbers are shown at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear. ■

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09 01 60 – Maintenance of Flooring

09 01 60.10 Carpet Maintenance	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **CARPET MAINTENANCE**									
0020 Steam clean, per cleaning, routine maintenance	1 Clab	3000	.003	S.F.	.09	.12		.21	
0500 Stain removal	"	2000	.004	"	.15	.18		.33	

09 01 70 – Maintenance of Wall Finishes

09 01 70.10 Gypsum Wallboard Repairs

0010 **GYPSUM WALLBOARD REPAIRS**									
0100 Fill and sand, pin/nail holes	1 Carp	960	.008	Ea.		.47		.47	
0110 Screw head pops		480	.017			.94		.94	1.
0120 Dents, up to 2" square		48	.167		.01	9.40		9.41	13.
0130 2" to 4" square		24	.333		.04	18.75		18.79	28
0140 Cut square, patch, sand and finish, holes, up to 2" square		12	.667		.03	37.50		37.53	56
0150 2" to 4" square		11	.727		.07	41		41.07	61
0160 4" to 8" square		10	.800		.19	45		45.19	67
0170 8" to 12" square		8	1		.38	56.50		56.88	84.
0180 12" to 32" square		6	1.333		1.36	75		76.36	113
0210 16" by 48"		5	1.600		2.25	90		92.25	136
0220 32" by 48"		4	2		3.56	113		116.56	172
0230 48" square		3.50	2.286		4.98	129		133.98	197
0240 60" square		3.20	2.500		7.60	141		148.60	218
0500 Skim coat surface with joint compound		1600	.005	S.F.	.04	.28		.32	
0510 Prepare, retape and refinish joints		60	.133	L.F.	.75	7.50		8.25	12

09 01 90 – Maintenance of Painting and Coating

09 01 90.92 Sanding

0010 **SANDING** and puttying interior trim, compared to R099100-10									
0100 Painting 1 coat, on quality work				L.F.		100%			
0300 Medium work						50%			
0400 Industrial grade						25%			
0500 Surface protection, placement and removal									
0510 Surface protection, placement and removal, basic drop cloths	1 Pord	6400	.001	S.F.		.06		.06	
0520 Masking with paper		800	.010		.07	.48		.55	
0530 Volume cover up (using plastic sheathing or building paper)		16000	.001			.02		.02	

09 01 90.93 Exterior Surface Preparation

0010 **EXTERIOR SURFACE PREPARATION** R099100-10									
0015 Doors, per side, not incl. frames or trim									
0020 Scrape & sand									
0030 Wood, flush	1 Pord	616	.013	S.F.		.62		.62	
0040 Wood, detail		496	.016			.77		.77	1.
0050 Wood, louvered		280	.029			1.37		1.37	2.
0060 Wood, overhead		616	.013			.62		.62	
0070 Wire brush									
0080 Metal, flush	1 Pord	640	.013	S.F.		.60		.60	
0090 Metal, detail		520	.015			.74		.74	1.
0100 Metal, louvered		360	.022			1.06		1.06	1.
0110 Metal or fibr., overhead		640	.013			.60		.60	
0120 Metal, roll up		560	.014			.68		.68	1.
0130 Metal, bulkhead		640	.013			.60		.60	
0140 Power wash, based on 2500 lb. operating pressure									
0150 Metal, flush	A-1H	2240	.004	S.F.		.16	.04	.20	
0160 Metal, detail		2120	.004			.17	.04	.21	
0170 Metal, louvered		2000	.004			.18	.04	.22	
0180 Metal or fibr., overhead		2400	.003			.15	.03	.18	

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	09 01 90.93 Exterior Surface Preparation	Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&P
0190	Metal, roll up	A-1H	2400	.003	S.F.		.15	.03	.18	.27
0200	Metal, bulkhead	↓	2200	.004	↓		.17	.04	.21	.29
0400	Windows, per side, not incl. trim									
0410	Scrape & sand									
0420	Wood, 1-2 lite	1 Pord	320	.025	S.F.		1.20		1.20	1.77
0430	Wood, 3-6 lite		280	.029			1.37		1.37	2.02
0440	Wood, 7-10 lite		240	.033			1.59		1.59	2.36
0450	Wood, 12 lite		200	.040			1.91		1.91	2.83
0460	Wood, Bay/Bow	↓	320	.025	↓		1.20		1.20	1.77
0470	Wire brush									
0480	Metal, 1-2 lite	1 Pord	480	.017	S.F.		.80		.80	1.18
0490	Metal, 3-6 lite		400	.020			.96		.96	1.42
0500	Metal, Bay/Bow	↓	480	.017	↓		.80		.80	1.18
0510	Power wash, based on 2500 lb. operating pressure									
0520	1-2 lite	A-1H	4400	.002	S.F.		.08	.02	.10	.14
0530	3-6 lite		4320	.002			.08	.02	.10	.15
0540	7-10 lite		4240	.002			.09	.02	.11	.15
0550	12 lite		4160	.002			.09	.02	.11	.15
0560	Bay/Bow	↓	4400	.002	↓		.08	.02	.10	.14
0600	Siding, scrape and sand, light=10-30%, med.=30-70%									
0610	Heavy=70-100% of surface to sand									
0650	Texture 1-11, light	1 Pord	480	.017	S.F.		.80		.80	1.18
0660	Med.		440	.018			.87		.87	1.29
0670	Heavy		360	.022			1.06		1.06	1.57
0680	Wood shingles, shakes, light		440	.018			.87		.87	1.29
0690	Med.		360	.022			1.06		1.06	1.57
0700	Heavy		280	.029			1.37		1.37	2.02
0710	Clapboard, light		520	.015			.74		.74	1.09
0720	Med.		480	.017			.80		.80	1.18
0730	Heavy	↓	400	.020	↓		.96		.96	1.42
0740	Wire brush									
0750	Aluminum, light	1 Pord	600	.013	S.F.		.64		.64	.94
0760	Med.		520	.015			.74		.74	1.09
0770	Heavy	↓	440	.018	↓		.87		.87	1.29
0780	Pressure wash, based on 2500 lb. operating pressure									
0790	Stucco	A-1H	3080	.003	S.F.		.12	.03	.15	.21
0800	Aluminum or vinyl		3200	.003			.11	.02	.13	.20
0810	Siding, masonry, brick & block	↓	2400	.003	↓		.15	.03	.18	.27
1300	Miscellaneous, wire brush									
1310	Metal, pedestrian gate	1 Pord	100	.080	S.F.		3.82		3.82	5.65
1320	Aluminum chain link, both sides		250	.032			1.53		1.53	2.27
1400	Existing galvanized surface, clean and prime, prep for painting	↓	380	.021	↓	.13	1.01		1.14	1.63
8000	For chemical washing, see Section 04 01 30									
8010	For steam cleaning, see Section 04 01 30.20									
8020	For sand blasting, see Sections 03 35 29.60 and 05 01 10.51									

	09 01 90.94 Interior Surface Preparation									
0010	**INTERIOR SURFACE PREPARATION** R099100-10									
0020	Doors, per side, not incl. frames or trim									
0030	Scrape & sand									
0040	Wood, flush	1 Pord	616	.013	S.F.		.62		.62	.92
0050	Wood, detail		496	.016			.77		.77	1.14
0060	Wood, louvered	↓	280	.029	↓		1.37		1.37	2.02

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09 01 Maintenance of Finishes

09 01 90 – Maintenance of Painting and Coating

09 01 90.94 Interior Surface Preparation	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0070 Wire brush									
0080 Metal, flush	1 Pord	640	.013	S.F.		.60		.60	
0090 Metal, detail		520	.015			.74		.74	1.
0100 Metal, louvered		360	.022			1.06		1.06	1.
0110 Hand wash									
0120 Wood, flush	1 Pord	2160	.004	S.F.		.18		.18	
0130 Wood, detail		2000	.004			.19		.19	
0140 Wood, louvered		1360	.006			.28		.28	
0150 Metal, flush		2160	.004			.18		.18	
0160 Metal, detail		2000	.004			.19		.19	
0170 Metal, louvered		1360	.006			.28		.28	
0400 Windows, per side, not incl. trim									
0410 Scrape & sand									
0420 Wood, 1-2 lite	1 Pord	360	.022	S.F.		1.06		1.06	1.
0430 Wood, 3-6 lite		320	.025			1.20		1.20	1.
0440 Wood, 7-10 lite		280	.029			1.37		1.37	2.
0450 Wood, 12 lite		240	.033			1.59		1.59	2.
0460 Wood, Bay/Bow		360	.022			1.06		1.06	1.
0470 Wire brush									
0480 Metal, 1-2 lite	1 Pord	520	.015	S.F.		.74		.74	1.
0490 Metal, 3-6 lite		440	.018			.87		.87	1.
0500 Metal, Bay/Bow		520	.015			.74		.74	1.
0600 Walls, sanding, light=10-30%, medium=30-70%,									
0610 heavy=70-100% of surface to sand									
0650 Walls, sand									
0660 Gypsum board or plaster, light	1 Pord	3077	.003	S.F.		.12		.12	
0670 Gypsum board or plaster, medium		2160	.004			.18		.18	
0680 Gypsum board or plaster, heavy		923	.009			.41		.41	
0690 Wood, T&G, light		2400	.003			.16		.16	
0700 Wood, T&G, medium		1600	.005			.24		.24	
0710 Wood, T&G, heavy		800	.010			.48		.48	
0720 Walls, wash									
0730 Gypsum board or plaster	1 Pord	3200	.003	S.F.		.12		.12	
0740 Wood, T&G		3200	.003			.12		.12	
0750 Masonry, brick & block, smooth		2800	.003			.14		.14	
0760 Masonry, brick & block, coarse		2000	.004			.19		.19	
8000 For chemical washing, see Section 04 01 30									
8010 For steam cleaning, see Section 04 01 30.20									
8020 For sand blasting, see Sections 03 35 29.60 and 05 01 10.51									

09 05 Common Work Results for Finishes

09 05 05 – Selective Demolition for Finishes

09 05 05.10 Selective Demolition, Ceilings

0010 **SELECTIVE DEMOLITION, CEILINGS** R024119-10									
0200 Ceiling, gypsum wall board, furred and nailed or screwed	2 Clab	800	.020	S.F.		.91		.91	1.
0220 On metal frame		760	.021			.96		.96	1.
0240 On suspension system, including system		720	.022			1.01		1.01	1.
1000 Plaster, lime and horse hair, on wood lath, incl. lath		700	.023			1.04		1.04	1.
1020 On metal lath		570	.028			1.28		1.28	1.
1100 Gypsum, on gypsum lath		720	.022			1.01		1.01	1.
1120 On metal lath		500	.032			1.46		1.46	2.

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09 05 05 – Selective Demolition for Finishes

	09 05 05.10 Selective Demolition, Ceilings	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1200	Suspended ceiling, mineral fiber, 2′ x 2′ or 2′ x 4′	2 Clab	1500	.011	S.F.		.49		.49	.72
1250	On suspension system, incl. system		1200	.013			.61		.61	.91
1500	Tile, wood fiber, 12″ x 12″, glued		900	.018			.81		.81	1.21
1540	Stapled		1500	.011			.49		.49	.72
1580	On suspension system, incl. system		760	.021			.96		.96	1.43
2000	Wood, tongue and groove, 1″ x 4″		1000	.016			.73		.73	1.09
2040	1″ x 8″		1100	.015			.66		.66	.99
2400	Plywood or wood fiberboard, 4′ x 8′ sheets		1200	.013			.61		.61	.91
2500	Remove & refinish textured ceiling	1 Plas	222	.036		.04	1.85		1.89	2.79
	09 05 05.20 Selective Demolition, Flooring									
0010	**SELECTIVE DEMOLITION, FLOORING** R024119-10									
0200	Brick with mortar	2 Clab	475	.034	S.F.		1.54		1.54	2.29
0400	Carpet, bonded, including surface scraping		2000	.008			.36		.36	.54
0440	Scrim applied		8000	.002			.09		.09	.14
0480	Tackless		9000	.002			.08		.08	.12
0550	Carpet tile, releasable adhesive		5000	.003			.15		.15	.22
0560	Permanent adhesive		1850	.009			.39		.39	.59
0600	Composition, acrylic or epoxy		400	.040			1.82		1.82	2.72
0700	Concrete, scarify skin	A-1A	225	.036			2.09	.96	3.05	4.19
0800	Resilient, sheet goods	2 Clab	1400	.011			.52		.52	.78
0820	For gym floors	″	900	.018			.81		.81	1.21
0850	Vinyl or rubber cove base	1 Clab	1000	.008	L.F.		.36		.36	.54
0860	Vinyl or rubber cove base, molded corner	″	1000	.008	Ea.		.36		.36	.54
0870	For glued and caulked installation, add to labor						50%			
0900	Vinyl composition tile, 12″ x 12″	2 Clab	1000	.016	S.F.		.73		.73	1.09
2000	Tile, ceramic, thin set		675	.024			1.08		1.08	1.61
2020	Mud set		625	.026			1.17		1.17	1.74
2200	Marble, slate, thin set		675	.024			1.08		1.08	1.61
2220	Mud set		625	.026			1.17		1.17	1.74
2600	Terrazzo, thin set		450	.036			1.62		1.62	2.41
2620	Mud set		425	.038			1.72		1.72	2.56
2640	Terrazzo, cast in place		300	.053			2.43		2.43	3.62
3000	Wood, block, on end	1 Carp	400	.020			1.13		1.13	1.68
3200	Parquet		450	.018			1		1	1.49
3400	Strip flooring, interior, 2-1/4″ x 25/32″ thick		325	.025			1.39		1.39	2.06
3500	Exterior, porch flooring, 1″ x 4″		220	.036			2.05		2.05	3.05
3800	Subfloor, tongue and groove, 1″ x 6″		325	.025			1.39		1.39	2.06
3820	1″ x 8″		430	.019			1.05		1.05	1.56
3840	1″ x 10″		520	.015			.87		.87	1.29
4000	Plywood, nailed		600	.013			.75		.75	1.12
4100	Glued and nailed		400	.020			1.13		1.13	1.68
4200	Hardboard, 1/4″ thick		760	.011			.59		.59	.88
8000	Remove flooring, bead blast, simple floor plan	A-1A	1000	.008		.05	.47	.22	.74	1.01
8100	Complex floor plan		400	.020		.05	1.18	.54	1.77	2.42
8150	Mastic only		1500	.005		.05	.31	.14	.50	.69
9050	For grinding concrete floors, see Section 03 35 43.10									
	09 05 05.30 Selective Demolition, Walls and Partitions									
0010	**SELECTIVE DEMOLITION, WALLS AND PARTITIONS** R024119-10									
0020	Walls, concrete, reinforced	B-39	120	.400	C.F.		19.15	2.76	21.91	31.50
0025	Plain	″	160	.300			14.35	2.07	16.42	24
0100	Brick, 4″ to 12″ thick	B-9	220	.182			8.35	1.51	9.86	14.10
0200	Concrete block, 4″ thick		1150	.035	S.F.		1.60	.29	1.89	2.70

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09 05 05 – Selective Demolition for Finishes

	09 05 05.30 Selective Demolition, Walls and Partitions	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&
0280	8" thick	B-9	1050	.038	S.F.		1.75	.32	2.07	2.
0300	Exterior stucco 1" thick over mesh	↓	3200	.013			.58	.10	.68	
1000	Gypsum wallboard, nailed or screwed	1 Clab	1000	.008			.36		.36	
1010	2 layers		400	.020			.91		.91	1.
1020	Glued and nailed		900	.009			.41		.41	
1500	Fiberboard, nailed		900	.009			.41		.41	
1520	Glued and nailed		800	.010			.46		.46	
1568	Plenum barrier, sheet lead		300	.027			1.22		1.22	1.
2000	Movable walls, metal, 5' high		300	.027			1.22		1.22	1
2020	8' high	↓	400	.020			.91		.91	1.
2200	Metal or wood studs, finish 2 sides, fiberboard	B-1	520	.046			2.14		2.14	3.
2250	Lath and plaster		260	.092			4.27		4.27	6.
2300	Gypsum wallboard		520	.046			2.14		2.14	3.
2350	Plywood	↓	450	.053			2.47		2.47	3.
2800	Paneling, 4' x 8' sheets	1 Clab	475	.017			.77		.77	1.
3000	Plaster, lime and horsehair, on wood lath		400	.020			.91		.91	1.
3020	On metal lath		335	.024			1.09		1.09	1
3400	Gypsum or perlite, on gypsum lath		410	.020			.89		.89	1.
3420	On metal lath		300	.027	↓		1.22		1.22	1
3450	Plaster, interior gypsum, acoustic, or cement		60	.133	S.Y.		6.10		6.10	9.
3500	Stucco, on masonry		145	.055			2.52		2.52	3.
3510	Commercial 3-coat		80	.100			4.56		4.56	6.
3520	Interior stucco	↓	25	.320	↓		14.60		14.60	21.
3600	Plywood, one side	B-1	1500	.016	S.F.		.74		.74	1.
3750	Terra cotta block and plaster, to 6" thick	"	175	.137			6.35		6.35	9
3760	Tile, ceramic, on walls, thin set	1 Clab	300	.027			1.22		1.22	1
3765	Mud set		250	.032	↓		1.46		1.46	2.
3800	Toilet partitions, slate or marble		5	1.600	Ea.		73		73	109
3820	Metal or plastic	↓	8	1	"		45.50		45.50	68
5000	Wallcovering, vinyl	1 Pape	700	.011	S.F.		.55		.55	
5010	With release agent		1500	.005			.26		.26	
5025	Wallpaper, 2 layers or less, by hand		250	.032			1.54		1.54	2.
5035	3 layers or more	↓	165	.048	↓		2.33		2.33	3.

09 05 71 – Acoustic Underlayment

09 05 71.10 Acoustical Underlayment

0010	**ACOUSTICAL UNDERLAYMENT**									
0100	Rubber underlayment, 5/64"	1 Tilf	275	.029	S.F.	.41	1.55		1.96	2.
0110	1/8" thk.		275	.029		.59	1.55		2.14	2
0120	13/64" thk.		270	.030		1	1.57		2.57	3.
0130	15/64" thk.		270	.030		1.49	1.57		3.06	3.
0140	23/64" thk.		265	.030		1.82	1.60		3.42	4
0150	15/32" thk.		265	.030		1.90	1.60		3.50	4
0400	Cork underlayment, 3/32"		275	.029		.77	1.55		2.32	3.
0410	1/8" thk.		275	.029		.69	1.55		2.24	3.
0420	5/32" thk.		275	.029		.63	1.55		2.18	2.
0430	15/64" thk.		270	.030		1.39	1.57		2.96	3.
0440	15/32" thk.		265	.030		2.09	1.60		3.69	4
0600	Rubber cork underlayment, 3/64"		275	.029		.47	1.55		2.02	2.
0610	13/64" thk.		270	.030		2.80	1.57		4.37	5.
0620	3/8" thk.		270	.030		3.36	1.57		4.93	6
0630	25/64" thk.		270	.030		3.52	1.57		5.09	6.
0800	Foam underlayment, 5/64"		275	.029		.55	1.55		2.10	2.

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09 05 Common Work Results for Finishes

09 05 71 – Acoustic Underlayment

	09 05 71.10 Acoustical Underlayment	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0810	1/8" thk.	1 Tilf	275	.029	S.F.	.83	1.55		2.38	3.17
0820	15/32" thk.		265	.030		.67	1.60		2.27	3.08
4000	Nylon matting 0.4" thick, with carbon black spinerette									
4010	plus polyester fabric, on floor	D-7	1600	.010	S.F.	1.62	.48		2.10	2.48

09 21 Plaster and Gypsum Board Assemblies

09 21 13 – Plaster Assemblies

09 21 13.10 Plaster Partition Wall

0010	**PLASTER PARTITION WALL**									
0400	Stud walls, 3.4 lb. metal lath, 3 coat gypsum plaster, 2 sides									
0600	2" x 4" wood studs, 16" OC	J-2	315	.152	S.F.	2.57	7.65	.36	10.58	14.55
0700	2-1/2" metal studs, 25 ga., 12" OC		325	.148		2.53	7.45	.35	10.33	14.15
0800	3-5/8" metal studs, 25 ga., 16" OC		320	.150		2.43	7.55	.35	10.33	14.25
0900	Gypsum lath, 2 coat vermiculite plaster, 2 sides									
1000	2" x 4" wood studs, 16" OC	J-2	355	.135	S.F.	2.56	6.80	.32	9.68	13.25
1200	2-1/2" metal studs, 25 ga., 12" OC		365	.132		2.51	6.60	.31	9.42	12.90
1300	3-5/8" metal studs, 25 ga., 16" OC		360	.133		2.41	6.70	.31	9.42	12.95

09 21 16 – Gypsum Board Assemblies

09 21 16.23 Gypsum Board Shaft Wall Assemblies

0010	**GYPSUM BOARD SHAFT WALL ASSEMBLIES**									
0020	Cavity type on 25 ga. J-track & C-H studs, 24" OC									
0030	1" thick coreboard wall liner on shaft side									
0040	2-hour assembly with double layer									
0060	5/8" f.r. gyp bd on rm side, 2-1/2" J-track & C-H studs	2 Carp	220	.073	S.F.	2.88	4.09		6.97	9.25
0065	4" J-track & C-H studs		220	.073		3.10	4.09		7.19	9.50
0070	6" J-track & C-H studs		220	.073		3.41	4.09		7.50	9.85
0100	3-hour assembly with triple layer									
0300	5/8" f.r. gyp bd on rm side, 2-1/2" J-track & C-H studs	2 Carp	180	.089	S.F.	2.62	5		7.62	10.35
0305	4" J-track & C-H studs		180	.089		2.84	5		7.84	10.60
0310	6" J-track & C-H studs		180	.089		3.15	5		8.15	10.90
0400	4-hour assembly, 1" coreboard, 5/8" fire rated gypsum board									
0600	and 3/4" galv. metal furring channels, 24" OC, with									
0700	Dbl. layer 5/8" f.r. gyp bd on rm side, 2-1/2" trk. & C-H studs	2 Carp	110	.145	S.F.	3.41	8.20		11.61	15.95
0705	4" J-track & C-H studs		110	.145		3.10	8.20		11.30	15.60
0710	6" J-track & C-H studs		110	.145		3.41	8.20		11.61	15.95
0900	For taping & finishing, add per side	1 Carp	1050	.008		.05	.43		.48	.70
1000	For insulation, see Section 07 21									
5200	For work over 8' high, add	2 Carp	3060	.005	S.F.		.29		.29	.44
5300	For distribution cost 3 stories and above, add per story	"	6100	.003	"		.15		.15	.22

09 21 16.33 Partition Wall

0010	**PARTITION WALL** Stud wall, 8' to 12' high									
0050	1/2", interior, gypsum board, std, tape & finish 2 sides									
0500	Installed on and incl., 2" x 4" wood studs, 16" OC	2 Carp	310	.052	S.F.	1.33	2.91		4.24	5.80
1000	Metal studs, NLB, 25 ga., 16" OC, 3-5/8" wide		350	.046		1.20	2.57		3.77	5.15
1200	6" wide		330	.048		1.38	2.73		4.11	5.60
1400	Water resistant, on 2" x 4" wood studs, 16" OC		310	.052		1.49	2.91		4.40	5.95
1600	Metal studs, NLB, 25 ga., 16" OC, 3-5/8" wide		350	.046		1.36	2.57		3.93	5.30
1800	6" wide		330	.048		1.54	2.73		4.27	5.75
2000	Fire res., 2 layers, 1-1/2 hr., on 2" x 4" wood studs, 16" OC		210	.076		2.67	4.29		6.96	9.35
2200	Metal studs, NLB, 25 ga., 16" OC, 3-5/8" wide		250	.064		2.54	3.60		6.14	8.15

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09 21 16 – Gypsum Board Assemblies

09 21 16.33 Partition Wall	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2400 6" wide	2 Carp	230	.070	S.F.	2.72	3.92		6.64	8.
2600 Fire & water res., 2 layers, 1-1/2 hr., 2" x 4" studs, 16" OC		210	.076		2.67	4.29		6.96	9.
2800 Metal studs, NLB, 25 ga., 16" OC, 3-5/8" wide		250	.064		2.54	3.60		6.14	8.
3000 6" wide		230	.070		2.72	3.92		6.64	8.
3200 5/8", interior, gypsum board, standard, tape & finish 2 sides									
3400 Installed on and including 2" x 4" wood studs, 16" OC	2 Carp	300	.053	S.F.	1.35	3		4.35	5.
3600 24" OC		330	.048		1.19	2.73		3.92	5.
3800 Metal studs, NLB, 25 ga., 16" OC, 3-5/8" wide		340	.047		1.22	2.65		3.87	5.
4000 6" wide		320	.050		1.40	2.82		4.22	5.
4200 24" OC, 3-5/8" wide		360	.044		1.06	2.50		3.56	4.
4400 6" wide		340	.047		1.20	2.65		3.85	5.
4800 Water resistant, on 2" x 4" wood studs, 16" OC		300	.053		1.69	3		4.69	6.
5000 24" OC		330	.048		1.53	2.73		4.26	5.
5200 Metal studs, NLB, 25 ga. 16" OC, 3-5/8" wide		340	.047		1.56	2.65		4.21	5.
5400 6" wide		320	.050		1.74	2.82		4.56	6.
5600 24" OC, 3-5/8" wide		360	.044		1.40	2.50		3.90	5.
5800 6" wide		340	.047		1.54	2.65		4.19	5.
6000 Fire resistant, 2 layers, 2 hr., on 2" x 4" wood studs, 16" OC		205	.078		2.19	4.39		6.58	8.
6200 24" OC		235	.068		2.03	3.83		5.86	7.
6400 Metal studs, NLB, 25 ga., 16" OC, 3-5/8" wide		245	.065		2.19	3.68		5.87	7.
6600 6" wide		225	.071		2.24	4		6.24	8.
6800 24" OC, 3-5/8" wide		265	.060		1.90	3.40		5.30	7.
7000 6" wide		245	.065		2.04	3.68		5.72	7.
7200 Fire & water resistant, 2 layers, 2 hr., 2" x 4" studs, 16" OC		205	.078		2.19	4.39		6.58	8.
7400 24" OC		235	.068		2.03	3.83		5.86	7.
7600 Metal studs, NLB, 25 ga., 16" OC, 3-5/8" wide		245	.065		2.06	3.68		5.74	7.
7800 6" wide		225	.071		2.24	4		6.24	8.
8000 24" OC, 3-5/8" wide		265	.060		1.90	3.40		5.30	7.
8200 6" wide		245	.065		2.04	3.68		5.72	7.
8600 1/2" blueboard, mesh tape both sides									
8620 Installed on and including 2" x 4" wood studs, 16" OC	2 Carp	300	.053	S.F.	1.49	3		4.49	6.
8640 Metal studs, NLB, 25 ga., 16" OC, 3-5/8" wide		340	.047		1.36	2.65		4.01	5.
8660 6" wide		320	.050		1.54	2.82		4.36	5.
8800 Hospital security partition, 5/8" fiber reinf. high abuse gyp. bd.									
8810 Mtl. studs, NLB, 20 ga., 16" OC, 3-5/8" wide, w/sec. mesh, gyp. bd.	2 Carp	208	.077	S.F.	6.30	4.33		10.63	13.
9000 Exterior, 1/2" gypsum sheathing, 1/2" gypsum finished, interior,									
9100 including foil faced insulation, metal studs, 20 ga.									
9200 16" OC, 3-5/8" wide	2 Carp	290	.055	S.F.	2.68	3.11		5.79	7.
9400 6" wide		270	.059		2.45	3.34		5.79	7.
9600 Partitions, for work over 8' high, add		1530	.010			.59		.59	

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09 22 03 – Fastening Methods for Finishes

09 22 03.20 Drilling Plaster/Drywall	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **DRILLING PLASTER/DRYWALL**									
1100 Drilling & layout for drywall/plaster walls, up to 1" deep, no anchor									
1200 Holes, 1/4" diameter	1 Carp	150	.053	Ea.	.01	3		3.01	4.48
1300 3/8" diameter		140	.057		.01	3.22		3.23	4.80
1400 1/2" diameter		130	.062		.01	3.46		3.47	5.15
1500 3/4" diameter		120	.067		.01	3.75		3.76	5.60
1600 1" diameter		110	.073		.02	4.09		4.11	6.15
1700 1-1/4" diameter		100	.080		.03	4.50		4.53	6.75
1800 1-1/2" diameter		90	.089		.04	5		5.04	7.50
1900 For ceiling installations, add						40%			

09 22 13 – Metal Furring

09 22 13.13 Metal Channel Furring

0010 **METAL CHANNEL FURRING**									
0030 Beams and columns, 7/8" hat channels, galvanized, 12" OC	1 Lath	155	.052	S.F.	.48	2.89		3.37	4.75
0050 16" OC		170	.047		.39	2.64		3.03	4.28
0070 24" OC		185	.043		.26	2.42		2.68	3.83
0100 Ceilings, on steel, 7/8" hat channels, galvanized, 12" OC		210	.038		.44	2.13		2.57	3.59
0300 16" OC		290	.028		.39	1.54		1.93	2.69
0400 24" OC		420	.019		.26	1.07		1.33	1.85
0600 1-5/8" hat channels, galvanized, 12" OC		190	.042		.59	2.36		2.95	4.09
0700 16" OC		260	.031		.53	1.72		2.25	3.10
0900 24" OC		390	.021		.35	1.15		1.50	2.07
0930 7/8" hat channels with sound isolation clips, 12" OC		120	.067		1.61	3.73		5.34	7.20
0940 16" OC		100	.080		1.21	4.48		5.69	7.90
0950 24" OC		165	.048		.80	2.72		3.52	4.84
0960 1-5/8" hat channels, galvanized, 12" OC		110	.073		1.76	4.07		5.83	7.90
0970 16" OC		100	.080		1.32	4.48		5.80	8
0980 24" OC		155	.052		.88	2.89		3.77	5.20
1000 Walls, 7/8" hat channels, galvanized, 12" OC		235	.034		.44	1.91		2.35	3.26
1200 16" OC		265	.030		.39	1.69		2.08	2.90
1300 24" OC		350	.023		.26	1.28		1.54	2.16
1500 1-5/8" hat channels, galvanized, 12" OC		210	.038		.59	2.13		2.72	3.76
1600 16" OC		240	.033		.53	1.87		2.40	3.31
1800 24" OC		305	.026		.35	1.47		1.82	2.53
1920 7/8" hat channels with sound isolation clips, 12" OC		125	.064		1.61	3.58		5.19	7
1940 16" OC		100	.080		1.21	4.48		5.69	7.90
1950 24" OC		150	.053		.80	2.99		3.79	5.25
1960 1-5/8" hat channels, galvanized, 12" OC		115	.070		1.76	3.90		5.66	7.65
1970 16" OC		95	.084		1.32	4.72		6.04	8.35
1980 24" OC		140	.057		.88	3.20		4.08	5.65
3000 Z Furring, walls, 1" deep, 25 ga., 24" OC		350	.023		.35	1.28		1.63	2.25
3010 48" OC		700	.011		.17	.64		.81	1.12
3020 1-1/2" deep, 24" OC		345	.023		1.66	1.30		2.96	3.73
3030 48" OC		695	.012		.83	.64		1.47	1.85
3040 2" deep, 24" OC		340	.024		2	1.32		3.32	4.11
3050 48" OC		690	.012		1	.65		1.65	2.05
3060 1" deep, 20 ga., 24" OC		350	.023		2.36	1.28		3.64	4.47
3070 48" OC		700	.011		1.18	.64		1.82	2.23
3080 1-1/2" deep, 24" OC		345	.023		3.90	1.30		5.20	6.20
3090 48" OC		695	.012		1.95	.64		2.59	3.08
4000 2" deep, 24" OC		340	.024		3.33	1.32		4.65	5.60
4010 48" OC		690	.012		1.67	.65		2.32	2.78

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09 22 16.13 Non-Structural Metal Stud Framing		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**NON-STRUCTURAL METAL STUD FRAMING**									
1600	Non-load bearing, galv., 8′ high, 25 ga. 1-5/8″ wide, 16″ OC	1 Carp	619	.013	S.F.	.59	.73		1.32	1.7
1610	24″ OC		950	.008		.44	.47		.91	1.1
1620	2-1/2″ wide, 16″ OC		613	.013		.58	.73		1.31	1.7
1630	24″ OC		938	.009		.44	.48		.92	1.1
1640	3-5/8″ wide, 16″ OC		600	.013		.62	.75		1.37	1.8
1650	24″ OC		925	.009		.46	.49		.95	1.2
1660	4″ wide, 16″ OC		594	.013		.76	.76		1.52	1.9
1670	24″ OC		925	.009		.56	.49		1.05	1.3
1680	6″ wide, 16″ OC		588	.014		.82	.77		1.59	2.0
1690	24″ OC		906	.009		.61	.50		1.11	1.4
1700	20 ga. studs, 1-5/8″ wide, 16″ OC		494	.016		.48	.91		1.39	1.8
1710	24″ OC		763	.010		.36	.59		.95	1.2
1720	2-1/2″ wide, 16″ OC		488	.016		.62	.92		1.54	2.0
1730	24″ OC		750	.011		.50	.60		1.10	1.4
1740	3-5/8″ wide, 16″ OC		481	.017		1.21	.94		2.15	2.7
1750	24″ OC		738	.011		.88	.61		1.49	1.8
1760	4″ wide, 16″ OC		475	.017		.99	.95		1.94	2.5
1770	24″ OC		738	.011		.75	.61		1.36	1.7
1780	6″ wide, 16″ OC		469	.017		1.02	.96		1.98	2.5
1790	24″ OC		725	.011		.83	.62		1.45	1.8
2000	Non-load bearing, galv., 10′ high, 25 ga. 1-5/8″ wide, 16″ OC		495	.016		.56	.91		1.47	1.9
2100	24″ OC		760	.011		.41	.59		1	1.3
2200	2-1/2″ wide, 16″ OC		490	.016		.55	.92		1.47	1.9
2250	24″ OC		750	.011		.41	.60		1.01	1.3
2300	3-5/8″ wide, 16″ OC		480	.017		.59	.94		1.53	2.0
2350	24″ OC		740	.011		.43	.61		1.04	1.3
2400	4″ wide, 16″ OC		475	.017		.73	.95		1.68	2.2
2450	24″ OC		740	.011		.53	.61		1.14	1.4
2500	6″ wide, 16″ OC		470	.017		.78	.96		1.74	2.2
2550	24″ OC		725	.011		.57	.62		1.19	1.5
2600	20 ga. studs, 1-5/8″ wide, 16″ OC		395	.020		.46	1.14		1.60	2.2
2650	24″ OC		610	.013		.34	.74		1.08	1.4
2700	2-1/2″ wide, 16″ OC		390	.021		.57	1.15		1.72	2.3
2750	24″ OC		600	.013		.45	.75		1.20	1.6
2800	3-5/8″ wide, 16″ OC		385	.021		1.16	1.17		2.33	3.0
2850	24″ OC		590	.014		.83	.76		1.59	2.0
2900	4″ wide, 16″ OC		380	.021		.94	1.19		2.13	2.7
2950	24″ OC		590	.014		.69	.76		1.45	1.9
3000	6″ wide, 16″ OC		375	.021		.93	1.20		2.13	2.8
3050	24″ OC		580	.014		.74	.78		1.52	1.9
3060	Non-load bearing, galv., 12′ high, 25 ga. 1-5/8″ wide, 16″ OC		413	.019		.54	1.09		1.63	2.2
3070	24″ OC		633	.013		.39	.71		1.10	1.4
3080	2-1/2″ wide, 16″ OC		408	.020		.53	1.10		1.63	2.2
3090	24″ OC		625	.013		.38	.72		1.10	1.4
3100	3-5/8″ wide, 16″ OC		400	.020		.57	1.13		1.70	2.3
3110	24″ OC		617	.013		.41	.73		1.14	1.5
3120	4″ wide, 16″ OC		396	.020		.71	1.14		1.85	2.4
3130	24″ OC		617	.013		.51	.73		1.24	1.6
3140	6″ wide, 16″ OC		392	.020		.75	1.15		1.90	2.4
3150	24″ OC		604	.013		.54	.75		1.29	1.7
3160	20 ga. studs, 1-5/8″ wide, 16″ OC		329	.024		.44	1.37		1.81	2.5

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

09 22 16 – Non-Structural Metal Framing

09 22 16.13 Non-Structural Metal Stud Framing	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
3170 24" OC	1 Carp	508	.016	S.F.	.32	.89		1.21	1.67
3180 2-1/2" wide, 16" OC		325	.025		.53	1.39		1.92	2.65
3190 24" OC		500	.016		.41	.90		1.31	1.79
3200 3-5/8" wide, 16" OC		321	.025		1.13	1.40		2.53	3.33
3210 24" OC		492	.016		.80	.92		1.72	2.24
3220 4" wide, 16" OC		317	.025		.90	1.42		2.32	3.10
3230 24" OC		492	.016		.65	.92		1.57	2.08
3240 6" wide, 16" OC		313	.026		.86	1.44		2.30	3.08
3250 24" OC		483	.017		.67	.93		1.60	2.13
3260 Non-load bearing, galv., 16' high, 25 ga. 4" wide, 12" OC		195	.041		.93	2.31		3.24	4.46
3270 16" OC		275	.029		.73	1.64		2.37	3.24
3280 24" OC		400	.020		.52	1.13		1.65	2.26
3290 6" wide, 12" OC		190	.042		.97	2.37		3.34	4.60
3300 16" OC		280	.029		.76	1.61		2.37	3.23
3310 24" OC		400	.020		.56	1.13		1.69	2.29
3320 20 ga. studs, 2-1/2" wide, 12" OC		180	.044		.65	2.50		3.15	4.43
3330 16" OC		254	.032		.52	1.77		2.29	3.22
3340 24" OC		390	.021		.40	1.15		1.55	2.16
3350 3-5/8" wide, 12" OC		170	.047		1.49	2.65		4.14	5.60
3360 16" OC		251	.032		1.16	1.79		2.95	3.95
3370 24" OC		384	.021		.83	1.17		2	2.67
3380 4" wide, 12" OC		170	.047		1.15	2.65		3.80	5.20
3390 16" OC		247	.032		.91	1.82		2.73	3.71
3400 24" OC		384	.021		.67	1.17		1.84	2.48
3410 6" wide, 12" OC		175	.046		1.02	2.57		3.59	4.95
3420 16" OC		245	.033		.83	1.84		2.67	3.65
3430 24" OC		400	.020		.64	1.13		1.77	2.39
3440 Non-load bearing, galv., 20' high, 25 ga. 6" wide, 12" OC		125	.064		.95	3.60		4.55	6.40
3450 16" OC		220	.036		.74	2.05		2.79	3.87
3460 24" OC		360	.022		.54	1.25		1.79	2.45
3470 20 ga. studs, 4" wide, 12" OC		120	.067		1.12	3.75		4.87	6.85
3480 16" OC		215	.037		.90	2.09		2.99	4.12
3490 6" wide, 12" OC		115	.070		.97	3.92		4.89	6.90
3500 16" OC		215	.037		.78	2.09		2.87	3.98
3510 24" OC	↓	331	.024	↓	.60	1.36		1.96	2.69
5000 For load bearing studs, see Section 05 41 13.30									

09 22 26 – Suspension Systems

09 22 26.13 Ceiling Suspension Systems

0010 **CEILING SUSPENSION SYSTEMS** for gypsum board or plaster									
3000 Suspended ceilings, including carriers									
3200 1-1/2" carriers, 24" OC with:									
3300 7/8" channels, 16" OC	1 Lath	275	.029	S.F.	.61	1.63		2.24	3.05
3320 24" OC		310	.026		.48	1.45		1.93	2.64
3400 1-5/8" channels, 16" OC		205	.039		.75	2.19		2.94	4.01
3420 24" OC	↓	250	.032	↓	.57	1.79		2.36	3.25
3600 2" carriers, 24" OC with:									
3700 7/8" channels, 16" OC	1 Lath	250	.032	S.F.	.66	1.79		2.45	3.35
3720 24" OC		285	.028		.53	1.57		2.10	2.88
3800 1-5/8" channels, 16" OC		190	.042		.80	2.36		3.16	4.32
3820 24" OC	↓	225	.036	↓	.62	1.99		2.61	3.60

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09 22 36 – Lath

09 22 36.13 Gypsum Lath		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **GYPSUM LATH**	R092000-50									
0020 Plain or perforated, nailed, 3/8" thick		1 Lath	85	.094	S.Y.	3.42	5.25		8.67	11.4
0100 1/2" thick			80	.100		2.97	5.60		8.57	11.4
0300 Clipped to steel studs, 3/8" thick			75	.107		3.42	5.95		9.37	12.4
0400 1/2" thick			70	.114		2.97	6.40		9.37	12.6
1500 For ceiling installations, add			216	.037			2.07		2.07	3.0
1600 For columns and beams, add			170	.047			2.64		2.64	3.8

09 22 36.23 Metal Lath										
0010 **METAL LATH**	R092000-50									
0020 Diamond, expanded, 2.5 lb./S.Y., painted					S.Y.	5.10			5.10	5.6
0100 Galvanized						5.05			5.05	5.5
0300 3.4 lb./S.Y., painted						5.70			5.70	6.2
0400 Galvanized						5.15			5.15	5.7
0600 For #15 asphalt sheathing paper, add						.40			.40	.4
0900 Flat rib, 1/8" high, 2.75 lb., painted						4			4	4.4
1000 Foil backed						3.75			3.75	4.1
1200 3.4 lb./S.Y., painted						4.21			4.21	4.6
1300 Galvanized						4.39			4.39	4.8
1500 For #15 asphalt sheathing paper, add						.40			.40	.4
1800 High rib, 3/8" high, 3.4 lb./S.Y., painted						5.10			5.10	5.6
1900 Galvanized						5.10			5.10	5.6
2400 3/4" high, painted, .60 lb./S.F.					S.F.	.85			.85	.9
2500 .75 lb./S.F.					"	1.78			1.78	1.9
2800 Stucco mesh, painted, 3.6 lb.					S.Y.	5.95			5.95	6.5
3000 K-lath, perforated, absorbent paper, regular						2.29			2.29	2.5
3100 Heavy duty						5.35			5.35	5.9
3300 Waterproof, heavy duty, grade B backing						5.25			5.25	5.7
3400 Fire resistant backing						5.80			5.80	6.3
3600 2.5 lb. diamond painted, on wood framing, on walls		1 Lath	85	.094		5.10	5.25		10.35	13.3
3700 On ceilings			75	.107		5.10	5.95		11.05	14.3
3900 3.4 lb. diamond painted, on wood framing, on walls			80	.100		4.21	5.60		9.81	12.6
4000 On ceilings			70	.114		4.21	6.40		10.61	14
4200 3.4 lb. diamond painted, wired to steel framing			75	.107		4.21	5.95		10.16	13.3
4300 On ceilings			60	.133		4.21	7.45		11.66	15.5
4500 Columns and beams, wired to steel			40	.200		4.21	11.20		15.41	21
4600 Cornices, wired to steel			35	.229		4.21	12.80		17.01	23.5
4800 Screwed to steel studs, 2.5 lb.			80	.100		5.10	5.60		10.70	13.8
4900 3.4 lb.			75	.107		5.70	5.95		11.65	14.9
5100 Rib lath, painted, wired to steel, on walls, 2.5 lb.			75	.107		4	5.95		9.95	13.1
5200 3.4 lb.			70	.114		5.10	6.40		11.50	14.9
5400 4.0 lb.			65	.123		5.95	6.90		12.85	16.6
5500 For self-furring lath, add						.12			.12	
5700 Suspended ceiling system, incl. 3.4 lb. diamond lath, painted		1 Lath	15	.533		4.34	30		34.34	48.5
5800 Galvanized		"	15	.533		3.97	30		33.97	48
6000 Hollow metal stud partitions, 3.4 lb. painted lath both sides										
6010 Non-load bearing, 25 ga., w/rib lath, 2-1/2" studs, 12" OC		1 Lath	20.30	.394	S.Y.	16.45	22		38.45	50
6300 16" OC			21.10	.379		15.15	21		36.15	47.5
6350 24" OC			22.70	.352		13.85	19.75		33.60	44.5
6400 3-5/8" studs, 16" OC			19.50	.410		15.55	23		38.55	50.5
6600 24" OC			20.40	.392		14.10	22		36.10	47.5
6700 4" studs, 16" OC			20.40	.392		16.80	22		38.80	50.5
6900 24" OC			21.60	.370		14.95	20.50		35.45	47

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09 22 Supports for Plaster and Gypsum Board

09 22 36 – Lath

	09 22 36.23 Metal Lath	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
7000	6" studs, 16" OC	1 Lath	19.50	.410	S.Y.	17.20	23		40.20	52.50
7100	24" OC		21.10	.379		15.35	21		36.35	48
7200	L.B. partitions, 16 ga., w/rib lath, 2-1/2" studs, 16" OC		20	.400		14.10	22.50		36.60	48
7300	3-5/8" studs, 16 ga.		19.70	.406		15.45	22.50		37.95	50
7500	4" studs, 16 ga.		19.50	.410		16.50	23		39.50	51.50
7600	6" studs, 16 ga.		18.70	.428		19.20	24		43.20	56
	09 22 36.43 Security Mesh									
0010	**SECURITY MESH**, expanded metal, flat, screwed to framing									
0100	On walls, 3/4", 1.76 lb./S.F.	2 Carp	1500	.011	S.F.	2.88	.60		3.48	4.06
0110	1-1/2", 1.14 lb./S.F.		1600	.010		2.09	.56		2.65	3.14
0200	On ceilings, 3/4", 1.76 lb./S.F.		1350	.012		2.88	.67		3.55	4.16
0210	1-1/2", 1.14 lb./S.F.		1450	.011		2.09	.62		2.71	3.22
	09 22 36.83 Accessories, Plaster									
0010	**ACCESSORIES, PLASTER**									
0020	Casing bead, expanded flange, galvanized	1 Lath	2.70	2.963	C.L.F.	71.50	166		237.50	320
0200	Foundation weep screed, galvanized	"	2.70	2.963		70	166		236	320
0900	Channels, cold rolled, 16 ga., 3/4" deep, galvanized					43.50			43.50	48
1200	1-1/2" deep, 16 ga., galvanized					59			59	64.50
1620	Corner bead, expanded bullnose, 3/4" radius, #10, galvanized	1 Lath	2.60	3.077		39.50	172		211.50	296
1650	#1, galvanized		2.55	3.137		32	176		208	291
1670	Expanded wing, 2-3/4" wide, #1, galvanized		2.65	3.019		38.50	169		207.50	289
1700	Inside corner (corner rite), 3" x 3", painted		2.60	3.077		22	172		194	276
1750	Strip-ex, 4" wide, painted		2.55	3.137		24.50	176		200.50	283
1800	Expansion joint, 3/4" grounds, limited expansion, galv., 1 piece		2.70	2.963		130	166		296	385
2100	Extreme expansion, galvanized, 2 piece		2.60	3.077		153	172		325	420

09 23 Gypsum Plastering

09 23 13 – Acoustical Gypsum Plastering

	09 23 13.10 Perlite or Vermiculite Plaster									
0010	**PERLITE OR VERMICULITE PLASTER** R092000-50									
0020	In 100 lb. bags, under 200 bags				Bag	11.15			11.15	12.30
0100	Over 200 bags				"	13.85			13.85	15.25
0300	2 coats, no lath included, on walls	J-1	92	.435	S.Y.	4.77	21.50	1.23	27.50	38.50
0400	On ceilings	"	79	.506		4.77	25	1.43	31.20	44
0600	On and incl. 3/8" gypsum lath, on metal studs	J-2	84	.571		9.85	29	1.35	40.20	55
0700	On ceilings	"	70	.686		9.85	34.50	1.62	45.97	63.50
0900	3 coats, no lath included, on walls	J-1	74	.541		6.85	26.50	1.53	34.88	48.50
1000	On ceilings	"	63	.635		6.85	31	1.80	39.65	56
1200	On and incl. painted metal lath, on metal studs	J-2	72	.667		11.95	33.50	1.57	47.02	64.50
1300	On ceilings		61	.787		11.95	39.50	1.86	53.31	73.50
1500	On and incl. suspended metal lath ceiling		37	1.297		11.20	65.50	3.06	79.76	112
1700	For irregular or curved surfaces, add to above						30%			
1800	For columns and beams, add to above						50%			
1900	For soffits, add to ceiling prices						40%			

09 23 20 – Gypsum Plaster

	09 23 20.10 Gypsum Plaster On Walls and Ceilings									
0010	**GYPSUM PLASTER ON WALLS AND CEILINGS** R092000-50									
0020	80# bag, less than 1 ton				Bag	10.55			10.55	11.65
0100	Over 1 ton				"	9.35			9.35	10.25
0300	2 coats, no lath included, on walls	J-1	105	.381	S.Y.	3.45	18.75	1.08	23.28	33

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09 23 Gypsum Plastering

09 23 20 – Gypsum Plaster

		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
09 23 20.10	**Gypsum Plaster On Walls and Ceilings**									
0400	On ceilings	J-1	92	.435	S.Y.	3.45	21.50	1.23	26.18	37
0600	On and incl. 3/8" gypsum lath on steel, on walls	J-2	97	.495		6.85	25	1.17	33.02	46
0700	On ceilings	"	83	.578		6.85	29	1.36	37.21	52
0900	3 coats, no lath included, on walls	J-1	87	.460		4.89	22.50	1.30	28.69	40
1000	On ceilings	"	78	.513		4.89	25	1.45	31.34	44
1200	On and including painted metal lath, on wood studs	J-2	86	.558		10.60	28	1.32	39.92	54
1300	On ceilings	"	76.50	.627		10.60	31.50	1.48	43.58	60
1600	For irregular or curved surfaces, add						30%			
1800	For columns & beams, add						50%			
09 23 20.20	**Gauging Plaster**									
0010	**GAUGING PLASTER** R092000-50									
0020	100 lb. bags, less than 1 ton				Bag	14.30			14.30	15
0100	Over 1 ton				"	11.15			11.15	12
09 23 20.30	**Keenes Cement**									
0010	**KEENES CEMENT** R092000-50									
0020	In 100 lb. bags, less than 1 ton				Bag	18			18	19
0100	Over 1 ton				"	18			18	19
0300	Finish only, add to plaster prices, standard	J-1	215	.186	S.Y.	1.73	9.15	.53	11.41	16
0400	High quality	"	144	.278	"	1.75	13.65	.79	16.19	23

09 24 Cement Plastering

09 24 23 – Cement Stucco

		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
09 24 23.40	**Stucco**									
0010	**STUCCO** R092000-50									
0015	3 coats 7/8" thick, float finish, with mesh, on wood frame	J-2	63	.762	S.Y.	8.90	38.50	1.80	49.20	68
0100	On masonry construction, no mesh incl.	J-1	67	.597		2.81	29.50	1.69	34	48
0300	For trowel finish, add	1 Plas	170	.047			2.42		2.42	3
0600	For coloring, add	J-1	685	.058		.44	2.87	.17	3.48	4
0700	For special texture, add	"	200	.200		1.55	9.85	.57	11.97	16
0900	For soffits, add	J-2	155	.310		2.36	15.60	.73	18.69	26
1000	Stucco, with bonding agent, 3 coats, on walls, no mesh incl.	J-1	200	.200		3.67	9.85	.57	14.09	19
1200	Ceilings		180	.222		3.95	10.95	.63	15.53	21
1300	Beams		80	.500		3.95	24.50	1.42	29.87	42
1500	Columns		100	.400		3.95	19.65	1.13	24.73	34
1600	Mesh, galvanized, nailed to wood, 1.8 lb.	1 Lath	60	.133		2.77	7.45		10.22	13
1800	3.6 lb.		55	.145		5.95	8.15		14.10	18
1900	Wired to steel, galvanized, 1.8 lb.		53	.151		2.77	8.45		11.22	15
2100	3.6 lb.		50	.160		5.95	8.95		14.90	19

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09 25 Other Plastering

09 25 23 – Lime Based Plastering

09 25 23.10 Venetian Plaster	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **VENETIAN PLASTER**									
0100 Walls, 1 coat primer, roller applied	1 Plas	950	.008	S.F.	.19	.43		.62	.85
0200 Plaster, 3 coats, incl. sanding	2 Plas	700	.023		.54	1.17		1.71	2.35
0210 For pigment, light colors add per S.F. plaster					.02			.02	.02
0220 For pigment, dark colors add per S.F. plaster					.04			.04	.04
0300 For sealer/wax coat incl. burnishing, add	1 Plas	300	.027		.16	1.37		1.53	2.22

09 26 Veneer Plastering

09 26 13 – Gypsum Veneer Plastering

09 26 13.20 Blueboard									
0010 **BLUEBOARD** For use with thin coat									
0100 plaster application see Section 09 26 13.80									
1000 3/8" thick, on walls or ceilings, standard, no finish included	2 Carp	1900	.008	S.F.	.32	.47		.79	1.06
1100 With thin coat plaster finish		875	.018		.44	1.03		1.47	2.02
1400 On beams, columns, or soffits, standard, no finish included		675	.024		.37	1.33		1.70	2.39
1450 With thin coat plaster finish		475	.034		.49	1.90		2.39	3.36
3000 1/2" thick, on walls or ceilings, standard, no finish included		1900	.008		.40	.47		.87	1.15
3100 With thin coat plaster finish		875	.018		.52	1.03		1.55	2.10
3300 Fire resistant, no finish included		1900	.008		.40	.47		.87	1.15
3400 With thin coat plaster finish		875	.018		.52	1.03		1.55	2.10
3450 On beams, columns, or soffits, standard, no finish included		675	.024		.46	1.33		1.79	2.50
3500 With thin coat plaster finish		475	.034		.58	1.90		2.48	3.46
3700 Fire resistant, no finish included		675	.024		.46	1.33		1.79	2.50
3800 With thin coat plaster finish		475	.034		.58	1.90		2.48	3.46
5000 5/8" thick, on walls or ceilings, fire resistant, no finish included		1900	.008		.61	.47		1.08	1.38
5100 With thin coat plaster finish		875	.018		.73	1.03		1.76	2.33
5500 On beams, columns, or soffits, no finish included		675	.024		.70	1.33		2.03	2.76
5600 With thin coat plaster finish		475	.034		.82	1.90		2.72	3.73
6000 For high ceilings, over 8' high, add		3060	.005			.29		.29	.44
6500 For distribution costs 3 stories and above, add per story		6100	.003			.15		.15	.22

09 26 13.80 Thin Coat Plaster									
0010 **THIN COAT PLASTER**									
0012 1 coat veneer, not incl. lath	J-1	3600	.011	S.F.	.12	.55	.03	.70	.97
1000 In 50 lb. bags				Bag	16.45			16.45	18.05

09 28 Backing Boards and Underlayments

09 28 13 – Cementitious Backing Boards

09 28 13.10 Cementitious Backerboard									
0010 **CEMENTITIOUS BACKERBOARD**									
0070 Cementitious backerboard, on floor, 3' x 4' x 1/2" sheets	2 Carp	525	.030	S.F.	1	1.72		2.72	3.65
0080 3' x 5' x 1/2" sheets		525	.030		.73	1.72		2.45	3.35
0090 3' x 6' x 1/2" sheets		525	.030		.73	1.72		2.45	3.35
0100 3' x 4' x 5/8" sheets		525	.030		.93	1.72		2.65	3.58
0110 3' x 5' x 5/8" sheets		525	.030		.93	1.72		2.65	3.57
0120 3' x 6' x 5/8" sheets		525	.030		.99	1.72		2.71	3.64
0150 On wall, 3' x 4' x 1/2" sheets		350	.046		1	2.57		3.57	4.93
0160 3' x 5' x 1/2" sheets		350	.046		.73	2.57		3.30	4.63
0170 3' x 6' x 1/2" sheets		350	.046		.73	2.57		3.30	4.63
0180 3' x 4' x 5/8" sheets		350	.046		.93	2.57		3.50	4.86

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09 28 Backing Boards and Underlayments

09 28 13 – Cementitious Backing Boards

09 28 13.10 Cementitious Backerboard		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0190	3' x 5' x 5/8" sheets	2 Carp	350	.046	S.F.	.93	2.57		3.50	4.8
0200	3' x 6' x 5/8" sheets		350	.046		.99	2.57		3.56	4.9
0250	On counter, 3' x 4' x 1/2" sheets		180	.089		1	5		6	8.5
0260	3' x 5' x 1/2" sheets		180	.089		.73	5		5.73	8.2
0270	3' x 6' x 1/2" sheets		180	.089		.73	5		5.73	8.2
0300	3' x 4' x 5/8" sheets		180	.089		.93	5		5.93	8.5
0310	3' x 5' x 5/8" sheets		180	.089		.93	5		5.93	8.4
0320	3' x 6' x 5/8" sheets		180	.089		.99	5		5.99	8.5

09 29 Gypsum Board

09 29 10 – Gypsum Board Panels

09 29 10.30 Gypsum Board										
0010	**GYPSUM BOARD** on walls & ceilings R092910-10									
0100	Nailed or screwed to studs unless otherwise noted									
0110	1/4" thick, on walls or ceilings, standard, no finish included	2 Carp	1330	.012	S.F.	.34	.68		1.02	1.
0115	1/4" thick, on walls or ceilings, flexible, no finish included		1050	.015		.32	.86		1.18	1.
0117	1/4" thick, on columns or soffits, flexible, no finish included		1050	.015		.32	.86		1.18	1.
0130	1/4" thick, standard, no finish included, less than 800 S.F.		510	.031		.34	1.77		2.11	3
0150	3/8" thick, on walls, standard, no finish included		2000	.008		.25	.45		.70	
0200	On ceilings, standard, no finish included		1800	.009		.25	.50		.75	1.
0250	On beams, columns, or soffits, no finish included		675	.024		.25	1.33		1.58	2.
0300	1/2" thick, on walls, standard, no finish included		2000	.008		.25	.45		.70	
0350	Taped and finished (level 4 finish)		965	.017		.30	.93		1.23	1.
0390	With compound skim coat (level 5 finish)		775	.021		.36	1.16		1.52	2.
0400	Fire resistant, no finish included		2000	.008		.46	.45		.91	1.
0450	Taped and finished (level 4 finish)		965	.017		.51	.93		1.44	1.
0490	With compound skim coat (level 5 finish)		775	.021		.57	1.16		1.73	2.
0500	Water resistant, no finish included		2000	.008		.33	.45		.78	1.
0550	Taped and finished (level 4 finish)		965	.017		.38	.93		1.31	1.
0590	With compound skim coat (level 5 finish)		775	.021		.44	1.16		1.60	2.
0600	Prefinished, vinyl, clipped to studs		900	.018		.47	1		1.47	2.
0700	Mold resistant, no finish included		2000	.008		.39	.45		.84	1.
0710	Taped and finished (level 4 finish)		965	.017		.44	.93		1.37	1.
0720	With compound skim coat (level 5 finish)		775	.021		.50	1.16		1.66	2.
1000	On ceilings, standard, no finish included		1800	.009		.25	.50		.75	1.
1050	Taped and finished (level 4 finish)		765	.021		.30	1.18		1.48	2.
1090	With compound skim coat (level 5 finish)		610	.026		.36	1.48		1.84	2.
1100	Fire resistant, no finish included		1800	.009		.46	.50		.96	1.
1150	Taped and finished (level 4 finish)		765	.021		.51	1.18		1.69	2.
1195	With compound skim coat (level 5 finish)		610	.026		.57	1.48		2.05	2.
1200	Water resistant, no finish included		1800	.009		.33	.50		.83	1.
1250	Taped and finished (level 4 finish)		765	.021		.38	1.18		1.56	2.
1290	With compound skim coat (level 5 finish)		610	.026		.44	1.48		1.92	2.
1310	Mold resistant, no finish included		1800	.009		.39	.50		.89	1.
1320	Taped and finished (level 4 finish)		765	.021		.44	1.18		1.62	2.
1330	With compound skim coat (level 5 finish)		610	.026		.50	1.48		1.98	2.
1350	Sag resistant, no finish included		1600	.010		.39	.56		.95	1.
1360	Taped and finished (level 4 finish)		765	.021		.44	1.18		1.62	2.
1370	With compound skim coat (level 5 finish)		610	.026		.50	1.48		1.98	2.
1500	On beams, columns, or soffits, standard, no finish included		675	.024		.29	1.33		1.62	2.
1550	Taped and finished (level 4 finish)		540	.030		.30	1.67		1.97	2.

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09 29 10.30 Gypsum Board	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1590 With compound skim coat (level 5 finish)	2 Carp	475	.034	S.F.	.36	1.90		2.26	3.22
1600 Fire resistant, no finish included		675	.024		.46	1.33		1.79	2.50
1650 Taped and finished (level 4 finish)		540	.030		.51	1.67		2.18	3.04
1690 With compound skim coat (level 5 finish)		475	.034		.57	1.90		2.47	3.45
1700 Water resistant, no finish included		675	.024		.38	1.33		1.71	2.41
1750 Taped and finished (level 4 finish)		540	.030		.38	1.67		2.05	2.90
1790 With compound skim coat (level 5 finish)		475	.034		.44	1.90		2.34	3.31
1800 Mold resistant, no finish included		675	.024		.45	1.33		1.78	2.48
1810 Taped and finished (level 4 finish)		540	.030		.44	1.67		2.11	2.97
1820 With compound skim coat (level 5 finish)		475	.034		.50	1.90		2.40	3.37
1850 Sag resistant, no finish included		675	.024		.45	1.33		1.78	2.48
1860 Taped and finished (level 4 finish)		540	.030		.44	1.67		2.11	2.97
1870 With compound skim coat (level 5 finish)		475	.034		.50	1.90		2.40	3.37
2000 5/8" thick, on walls, standard, no finish included		2000	.008		.26	.45		.71	.96
2050 Taped and finished (level 4 finish)		965	.017		.31	.93		1.24	1.73
2090 With compound skim coat (level 5 finish)		775	.021		.37	1.16		1.53	2.14
2100 Fire resistant, no finish included		2000	.008		.34	.45		.79	1.04
2150 Taped and finished (level 4 finish)		965	.017		.39	.93		1.32	1.82
2195 With compound skim coat (level 5 finish)		775	.021		.45	1.16		1.61	2.23
2200 Water resistant, no finish included		2000	.008		.43	.45		.88	1.14
2250 Taped and finished (level 4 finish)		965	.017		.48	.93		1.41	1.92
2290 With compound skim coat (level 5 finish)		775	.021		.54	1.16		1.70	2.33
2300 Prefinished, vinyl, clipped to studs		900	.018		.99	1		1.99	2.58
2510 Mold resistant, no finish included		2000	.008		.44	.45		.89	1.15
2520 Taped and finished (level 4 finish)		965	.017		.49	.93		1.42	1.93
2530 With compound skim coat (level 5 finish)		775	.021		.55	1.16		1.71	2.34
3000 On ceilings, standard, no finish included		1800	.009		.26	.50		.76	1.03
3050 Taped and finished (level 4 finish)		765	.021		.31	1.18		1.49	2.09
3090 With compound skim coat (level 5 finish)		615	.026		.37	1.46		1.83	2.59
3100 Fire resistant, no finish included		1800	.009		.34	.50		.84	1.11
3150 Taped and finished (level 4 finish)		765	.021		.39	1.18		1.57	2.18
3190 With compound skim coat (level 5 finish)		615	.026		.45	1.46		1.91	2.68
3200 Water resistant, no finish included		1800	.009		.43	.50		.93	1.21
3250 Taped and finished (level 4 finish)		765	.021		.48	1.18		1.66	2.28
3290 With compound skim coat (level 5 finish)		615	.026		.54	1.46		2	2.78
3300 Mold resistant, no finish included		1800	.009		.44	.50		.94	1.22
3310 Taped and finished (level 4 finish)		765	.021		.49	1.18		1.67	2.29
3320 With compound skim coat (level 5 finish)		615	.026		.55	1.46		2.01	2.79
3500 On beams, columns, or soffits, no finish included		675	.024		.30	1.33		1.63	2.32
3550 Taped and finished (level 4 finish)		475	.034		.36	1.90		2.26	3.21
3590 With compound skim coat (level 5 finish)		380	.042		.43	2.37		2.80	4
3600 Fire resistant, no finish included		675	.024		.39	1.33		1.72	2.42
3650 Taped and finished (level 4 finish)		475	.034		.45	1.90		2.35	3.32
3690 With compound skim coat (level 5 finish)		380	.042		.45	2.37		2.82	4.03
3700 Water resistant, no finish included		675	.024		.49	1.33		1.82	2.53
3750 Taped and finished (level 4 finish)		475	.034		.54	1.90		2.44	3.42
3790 With compound skim coat (level 5 finish)		380	.042		.55	2.37		2.92	4.14
3800 Mold resistant, no finish included		675	.024		.51	1.33		1.84	2.55
3810 Taped and finished (level 4 finish)		475	.034		.55	1.90		2.45	3.43
3820 With compound skim coat (level 5 finish)		380	.042		.57	2.37		2.94	4.15
4000 Fireproofing, beams or columns, 2 layers, 1/2" thick, incl finish		330	.048		1.02	2.73		3.75	5.20
4010 Mold resistant		330	.048		.88	2.73		3.61	5.05
4050 5/8" thick		300	.053		.78	3		3.78	5.35

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09 29 10.30 Gypsum Board	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4060 Mold resistant	2 Carp	300	.053	S.F.	.98	3		3.98	5.5
4100 3 layers, 1/2" thick		225	.071		1.54	4		5.54	7.6
4110 Mold resistant		225	.071		1.33	4		5.33	7.4
4150 5/8" thick		210	.076		1.18	4.29		5.47	7.7
4160 Mold resistant		210	.076		1.48	4.29		5.77	8
5050 For 1" thick coreboard on columns		480	.033		.73	1.88		2.61	3.5
5100 For foil-backed board, add					.20			.20	.2
5200 For work over 8' high, add	2 Carp	3060	.005			.29		.29	.4
5270 For textured spray, add	2 Lath	1600	.010		.05	.56		.61	.8
5300 For distribution cost 3 stories and above, add per story	2 Carp	6100	.003			.15		.15	.2
5350 For finishing inner corners, add		950	.017	L.F.	.11	.95		1.06	1.5
5355 For finishing outer corners, add		1250	.013		.39	.72		1.11	1.5
5500 For acoustical sealant, add per bead	1 Carp	500	.016		.03	.90		.93	1.3
5550 Sealant, 1 quart tube				Ea.	5.55			5.55	6.1
6000 Gypsum sound dampening panels									
6010 1/2" thick on walls, multi-layer, lightweight, no finish included	2 Carp	1500	.011	S.F.	1.65	.60		2.25	2.7
6015 Taped and finished (level 4 finish)		725	.022		1.70	1.24		2.94	3.7
6020 With compound skim coat (level 5 finish)		580	.028		1.76	1.55		3.31	4.2
6025 5/8" thick on walls, for wood studs, no finish included		1500	.011		1.76	.60		2.36	2.8
6030 Taped and finished (level 4 finish)		725	.022		1.81	1.24		3.05	3.8
6035 With compound skim coat (level 5 finish)		580	.028		1.87	1.55		3.42	4.3
6040 For metal stud, no finish included		1500	.011		1.76	.60		2.36	2.8
6045 Taped and finished (level 4 finish)		725	.022		1.81	1.24		3.05	3.8
6050 With compound skim coat (level 5 finish)		580	.028		1.87	1.55		3.42	4.3
6055 Abuse resist, no finish included		1500	.011		1.70	.60		2.30	2.7
6060 Taped and finished (level 4 finish)		725	.022		1.75	1.24		2.99	3.7
6065 With compound skim coat (level 5 finish)		580	.028		1.81	1.55		3.36	4.3
6070 Shear rated, no finish included		1500	.011		1.76	.60		2.36	2.8
6075 Taped and finished (level 4 finish)		725	.022		1.81	1.24		3.05	3.8
6080 With compound skim coat (level 5 finish)		580	.028		1.87	1.55		3.42	4.3
6085 For SCIF applications, no finish included		1500	.011		1.56	.60		2.16	2.6
6090 Taped and finished (level 4 finish)		725	.022		1.61	1.24		2.85	3.6
6095 With compound skim coat (level 5 finish)		580	.028		1.67	1.55		3.22	4.1
6100 1-3/8" thick on walls, THX certified, no finish included		1500	.011		8.45	.60		9.05	10.2
6105 Taped and finished (level 4 finish)		725	.022		8.50	1.24		9.74	11.2
6110 With compound skim coat (level 5 finish)		580	.028		8.60	1.55		10.15	11.7
6115 5/8" thick on walls, score & snap installation, no finish included		2000	.008		1.76	.45		2.21	2.6
6120 Taped and finished (level 4 finish)		965	.017		1.81	.93		2.74	3.3
6125 With compound skim coat (level 5 finish)		775	.021		1.87	1.16		3.03	3.7
7020 5/8" thick on ceilings, for wood joists, no finish included		1200	.013		1.76	.75		2.51	3.0
7025 Taped and finished (level 4 finish)		510	.031		1.81	1.77		3.58	4.6
7030 With compound skim coat (level 5 finish)		410	.039		1.87	2.20		4.07	5.3
7035 For metal joists, no finish included		1200	.013		1.76	.75		2.51	3.0
7040 Taped and finished (level 4 finish)		510	.031		1.81	1.77		3.58	4.6
7045 With compound skim coat (level 5 finish)		410	.039		1.87	2.20		4.07	5.3
7050 Abuse resist, no finish included		1200	.013		1.70	.75		2.45	2.9
7055 Taped and finished (level 4 finish)		510	.031		1.75	1.77		3.52	4.5
7060 With compound skim coat (level 5 finish)		410	.039		1.81	2.20		4.01	5.2
7065 Shear rated, no finish included		1200	.013		1.76	.75		2.51	3.0
7070 Taped and finished (level 4 finish)		510	.031		1.81	1.77		3.58	4.6
7075 With compound skim coat (level 5 finish)		410	.039		1.87	2.20		4.07	5.3
7080 For SCIF applications, no finish included		1200	.013		1.56	.75		2.31	2.8
7085 Taped and finished (level 4 finish)		510	.031		1.61	1.77		3.38	4.4

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09 29 10 – Gypsum Board Panels

		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
9 29 10.30	**Gypsum Board**									
090	With compound skim coat (level 5 finish)	2 Carp	410	.039	S.F.	1.67	2.20		3.87	5.10
010	5/8" thick on ceilings, score & snap installation, no finish included		1600	.010		1.76	.56		2.32	2.78
015	Taped and finished (level 4 finish)		680	.024		1.81	1.32		3.13	3.96
020	With compound skim coat (level 5 finish)		545	.029		1.87	1.65		3.52	4.52
9 29 10.50	**High Abuse Gypsum Board**									
010	**HIGH ABUSE GYPSUM BOARD**, fiber reinforced, nailed or									
100	screwed to studs unless otherwise noted									
110	1/2" thick, on walls, no finish included	2 Carp	1800	.009	S.F.	.67	.50		1.17	1.48
120	Taped and finished (level 4 finish)		870	.018		.72	1.04		1.76	2.33
130	With compound skim coat (level 5 finish)		700	.023		.78	1.29		2.07	2.78
150	On ceilings, no finish included		1620	.010		.67	.56		1.23	1.57
160	Taped and finished (level 4 finish)		690	.023		.72	1.31		2.03	2.73
170	With compound skim coat (level 5 finish)		550	.029		.78	1.64		2.42	3.30
210	5/8" thick, on walls, no finish included		1800	.009		1.08	.50		1.58	1.93
220	Taped and finished (level 4 finish)		870	.018		1.13	1.04		2.17	2.78
230	With compound skim coat (level 5 finish)		700	.023		1.19	1.29		2.48	3.23
250	On ceilings, no finish included		1620	.010		1.08	.56		1.64	2.02
260	Taped and finished (level 4 finish)		690	.023		1.13	1.31		2.44	3.18
270	With compound skim coat (level 5 finish)		550	.029		1.19	1.64		2.83	3.75
272	5/8" thick, on roof sheathing for 1-hour rating		1620	.010		1.08	.56		1.64	2.02
310	5/8" thick, on walls, very high impact, no finish included		1800	.009		.91	.50		1.41	1.74
320	Taped and finished (level 4 finish)		870	.018		.96	1.04		2	2.60
330	With compound skim coat (level 5 finish)		700	.023		1.02	1.29		2.31	3.05
350	On ceilings, no finish included		1620	.010		.91	.56		1.47	1.83
360	Taped and finished (level 4 finish)		690	.023		.96	1.31		2.27	3
370	With compound skim coat (level 5 finish)		550	.029		1.02	1.64		2.66	3.57
400	High abuse, gypsum core, paper face									
410	1/2" thick, on walls, no finish included	2 Carp	1800	.009	S.F.	.77	.50		1.27	1.59
420	Taped and finished (level 4 finish)		870	.018		.82	1.04		1.86	2.44
430	With compound skim coat (level 5 finish)		700	.023		.88	1.29		2.17	2.89
450	On ceilings, no finish included		1620	.010		.77	.56		1.33	1.68
460	Taped and finished (level 4 finish)		690	.023		.82	1.31		2.13	2.84
470	With compound skim coat (level 5 finish)		550	.029		.88	1.64		2.52	3.41
510	5/8" thick, on walls, no finish included		1800	.009		.37	.50		.87	1.15
520	Taped and finished (level 4 finish)		870	.018		.42	1.04		1.46	2
530	With compound skim coat (level 5 finish)		700	.023		.48	1.29		1.77	2.45
550	On ceilings, no finish included		1620	.010		.37	.56		.93	1.24
560	Taped and finished (level 4 finish)		690	.023		.42	1.31		1.73	2.40
570	With compound skim coat (level 5 finish)		550	.029		.48	1.64		2.12	2.97
000	For high ceilings, over 8' high, add		2750	.006			.33		.33	.49
010	For distribution cost 3 stories and above, add per story		5500	.003			.16		.16	.24

09 29 15 – Gypsum Board Accessories

9 29 15.10	**Accessories, Gypsum Board**									
010	**ACCESSORIES, GYPSUM BOARD**									
020	Casing bead, galvanized steel	1 Carp	2.90	2.759	C.L.F.	34	155		189	269
100	Vinyl		3	2.667		30.50	150		180.50	257
300	Corner bead, galvanized steel, 1" x 1"		4	2		29.50	113		142.50	201
400	1-1/4" x 1-1/4"		3.50	2.286		32	129		161	227
600	Vinyl		4	2		28	113		141	199
900	Furring channel, galv. steel, 7/8" deep, standard		2.60	3.077		72.50	173		245.50	340
1000	Resilient		2.55	3.137		52	177		229	320
100	J trim, galvanized steel, 1/2" wide		3	2.667		42.50	150		192.50	270

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09 29 Gypsum Board

09 29 15 – Gypsum Board Accessories

	09 29 15.10 Accessories, Gypsum Board	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1120	5/8" wide	1 Carp	2.95	2.712	C.L.F.	31.50	153		184.50	262
1140	L trim, galvanized		3	2.667		45.50	150		195.50	273
1150	U trim, galvanized		2.95	2.712		34.50	153		187.50	265
1160	Screws #6 x 1" A				M	11.75			11.75	12.
1170	#6 x 1-5/8" A				"	18.15			18.15	20
1200	For stud partitions, see Sections 05 41 13.30 and 09 22 16.13									
1500	Z stud, galvanized steel, 1-1/2" wide	1 Carp	2.60	3.077	C.L.F.	78	173		251	345
1600	2" wide	"	2.55	3.137	"	80	177		257	350

09 30 Tiling

09 30 13 – Ceramic Tiling

09 30 13.20 Ceramic Tile Repairs

0010	**CERAMIC TILE REPAIRS**									
1000	Grout removal, carbide tipped, rotary grinder	1 Clab	240	.033	L.F.		1.52		1.52	2.
1100	Regrout tile 4-1/2" x 4-1/2" or larger, wall	1 Tilf	100	.080	S.F.	.14	4.25		4.39	6.
1150	Floor		125	.064		.15	3.40		3.55	5.
1200	Seal tile and grout		360	.022			1.18		1.18	1.

09 30 13.45 Ceramic Tile Accessories

0010	**CERAMIC TILE ACCESSORIES**									
0100	Spacers, 1/8"				C	.69			.69	
1310	Sealer for natural stone tile, installed	1 Tilf	650	.012	S.F.	.07	.65		.72	1.

09 30 29 – Metal Tiling

09 30 29.10 Metal Tile

0010	**METAL TILE** 4' x 4' sheet, 24 ga., tile pattern, nailed									
0200	Stainless steel	2 Carp	512	.031	S.F.	25.50	1.76		27.26	30.
0400	Aluminized steel	"	512	.031	"	11.65	1.76		13.41	15.

09 30 95 – Tile & Stone Setting Materials and Specialties

09 30 95.10 Moisture Resistant, Anti-Fracture Membrane

0010	**MOISTURE RESISTANT, ANTI-FRACTURE MEMBRANE**									
0200	Elastomeric membrane, 1/16" thick	D-7	275	.058	S.F.	1.87	2.79		4.66	6.

09 31 Thin-Set Tiling

09 31 13 – Thin-Set Ceramic Tiling

09 31 13.10 Thin-Set Ceramic Tile

0010	**THIN-SET CERAMIC TILE**									
0020	Backsplash, average grade tiles	1 Tilf	50	.160	S.F.	1.47	8.50		9.97	14
0022	Custom grade tiles		50	.160		2.93	8.50		11.43	15.
0024	Luxury grade tiles		50	.160		5.85	8.50		14.35	18.
0026	Economy grade tiles		50	.160		1.34	8.50		9.84	13.
0100	Base, using 1' x 4" high piece with 1" x 1" tiles	D-7	128	.125	L.F.	4.40	6		10.40	13.
0300	For 6" high base, 1" x 1" tile face, add					.98			.98	1.
0400	For 2" x 2" tile face, add to above					.62			.62	.
0700	Cove base, 4-1/4" x 4-1/4"	D-7	128	.125		5.65	6		11.65	14.
1000	6" x 4-1/4" high		137	.117		3.10	5.60		8.70	11.
1300	Sanitary cove base, 6" x 4-1/4" high		124	.129		5.65	6.20		11.85	15.
1600	6" x 6" high		117	.137		5.85	6.55		12.40	16.
1800	Bathroom accessories, average (soap dish, toothbrush holder)		82	.195	Ea.	9.70	9.35		19.05	24.
1900	Bathtub, 5', rec. 4-1/4" x 4-1/4" tile wainscot, adhesive set 6' high		2.90	5.517		96	265		361	490

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09 31 13 – Thin-Set Ceramic Tiling

	09 31 13.10 Thin-Set Ceramic Tile	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2100	7' high wainscot	D-7	2.50	6.400	Ea.	112	305		417	575
2200	8' high wainscot		2.20	7.273		128	350		478	650
2500	Bullnose trim, 4-1/4" x 4-1/4"		128	.125	L.F.	2.24	6		8.24	11.20
2800	2" x 6"		124	.129	"	1.44	6.20		7.64	10.65
3300	Ceramic tile, porcelain type, 1 color, color group 2, 1" x 1"		183	.087	S.F.	6.75	4.19		10.94	13.55
3310	2" x 2" or 2" x 1"		190	.084		1.14	4.04		5.18	7.15
3350	For random blend, 2 colors, add					.91			.91	1
3360	4 colors, add					1.30			1.30	1.43
3370	For color group 3, add					.59			.59	.65
3380	For abrasive non-slip tile, add					.37			.37	.41
4300	Specialty tile, 4-1/4" x 4-1/4" x 1/2", decorator finish	D-7	183	.087		11.85	4.19		16.04	19.15
4500	Add for epoxy grout, 1/16" joint, 1" x 1" tile		800	.020		.60	.96		1.56	2.06
4600	2" x 2" tile		820	.020		.56	.94		1.50	1.99
4610	Add for epoxy grout, 1/8" joint, 8" x 8" x 3/8" tile, add		900	.018		.56	.85		1.41	1.86
4800	Pregrouted sheets, walls, 4-1/4" x 4-1/4", 6" x 4-1/4"									
4810	and 8-1/2" x 4-1/4", 4 S.F. sheets, silicone grout	D-7	240	.067	S.F.	5.20	3.20		8.40	10.35
5100	Floors, unglazed, 2 S.F. sheets,									
5110	urethane adhesive	D-7	180	.089	S.F.	2.53	4.26		6.79	9.05
5400	Walls, interior, 4-1/4" x 4-1/4" tile		190	.084		1.37	4.04		5.41	7.40
5500	6" x 4-1/4" tile		190	.084		13.25	4.04		17.29	20.50
5700	8-1/2" x 4-1/4" tile		190	.084		10.45	4.04		14.49	17.40
5800	6" x 6" tile		175	.091		1.83	4.39		6.22	8.40
5810	8" x 8" tile		170	.094		5.30	4.52		9.82	12.45
5820	12" x 12" tile		160	.100		2.82	4.80		7.62	10.10
5830	16" x 16" tile		150	.107		1.05	5.10		6.15	8.65
6000	Decorated wall tile, 4-1/4" x 4-1/4", color group 1		270	.059		8.40	2.84		11.24	13.35
6100	Color group 4		180	.089		62.50	4.26		66.76	75
9300	Ceramic tiles, recycled glass, standard colors, 2" x 2" thru 6" x 6" G		190	.084		22.50	4.04		26.54	30.50
9310	6" x 6" G		175	.091		20	4.39		24.39	28.50
9320	8" x 8" G		170	.094		21	4.52		25.52	29.50
9330	12" x 12" G		160	.100		21	4.80		25.80	30
9340	Earthtones, 2" x 2" to 4" x 8" G		190	.084		25	4.04		29.04	33
9350	6" x 6" G		175	.091		24.50	4.39		28.89	33.50
9360	8" x 8" G		170	.094		24	4.52		28.52	33
9370	12" x 12" G		160	.100		24	4.80		28.80	33.50
9380	Deep colors, 2" x 2" to 4" x 8" G		190	.084		28.50	4.04		32.54	37
9390	6" x 6" G		175	.091		28	4.39		32.39	37.50
9400	8" x 8" G		170	.094		29.50	4.52		34.02	39
9410	12" x 12" G		160	.100		29.50	4.80		34.30	39.50

09 31 33 – Thin-Set Stone Tiling

09 31 33.10 Tiling, Thin-Set Stone

0010	**TILING, THIN-SET STONE**									
3000	Floors, natural clay, random or uniform, color group 1	D-7	183	.087	S.F.	1.75	4.19		5.94	8.10
3100	Color group 2		183	.087		2.46	4.19		6.65	8.85
3255	Floors, glazed, 6" x 6", color group 1		300	.053		6	2.56		8.56	10.40
3260	8" x 8" tile		300	.053		6	2.56		8.56	10.35
3270	12" x 12" tile		290	.055		7.45	2.65		10.10	12.05
3280	16" x 16" tile		280	.057		1.79	2.74		4.53	5.95
3281	18" x 18" tile		270	.059		1.85	2.84		4.69	6.20
3282	20" x 20" tile		260	.062		2.81	2.95		5.76	7.40
3283	24" x 24" tile		250	.064		3.71	3.07		6.78	8.55
3285	Border, 6" x 12" tile		200	.080		9.25	3.84		13.09	15.75

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09 31 Thin-Set Tiling

09 31 33 – Thin-Set Stone Tiling

09 31 33.10 Tiling, Thin-Set Stone	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
3290 3" x 12" tile	D-7	200	.080	S.F.	8.20	3.84		12.04	14.6

09 32 Mortar-Bed Tiling

09 32 13 – Mortar-Bed Ceramic Tiling

09 32 13.10 Ceramic Tile

0010	**CERAMIC TILE**								
0050	Base, using 1' x 4" high pc. with 1" x 1" tiles	D-7	82	.195	L.F.	4.86	9.35	14.21	19.0
0600	Cove base, 4-1/4" x 4-1/4" high		91	.176		5.80	8.45	14.25	18.7
0900	6" x 4-1/4" high		100	.160		3.24	7.70	10.94	14.7
1200	Sanitary cove base, 6" x 4-1/4" high		93	.172		5.80	8.25	14.05	18.4
1500	6" x 6" high		84	.190		6	9.15	15.15	19.9
2400	Bullnose trim, 4-1/4" x 4-1/4"		82	.195		2.35	9.35	11.70	16.3
2700	2" x 6" bullnose trim		84	.190		1.50	9.15	10.65	15
6210	Wall tile, 4-1/4" x 4-1/4", better grade	1 Tilf	50	.160	S.F.	9	8.50	17.50	22.5
6240	2" x 2"		50	.160		7	8.50	15.50	20
6250	6" x 6"		55	.145		8.40	7.75	16.15	20.5
6260	8" x 8"		60	.133		5.05	7.10	12.15	15.9
6300	Exterior walls, frostproof, 4-1/4" x 4-1/4"	D-7	102	.157		6.65	7.55	14.20	18.3
6400	1-3/8" x 1-3/8"		93	.172		6.15	8.25	14.40	18.6
6600	Crystalline glazed, 4-1/4" x 4-1/4", plain		100	.160		4.28	7.70	11.98	15.9
6700	4-1/4" x 4-1/4", scored tile		100	.160		5.95	7.70	13.65	17.7
6900	6" x 6" plain		93	.172		1.98	8.25	10.23	14.2
7000	For epoxy grout, 1/16" joints, 4-1/4" tile, add		800	.020		.39	.96	1.35	1.8
7200	For tile set in dry mortar, add		1735	.009			.44	.44	.
7300	For tile set in Portland cement mortar, add		290	.055		.14	2.65	2.79	4.0

09 32 16 – Mortar-Bed Quarry Tiling

09 32 16.10 Quarry Tile

0010	**QUARRY TILE**								
0100	Base, cove or sanitary, to 5" high, 1/2" thick	D-7	110	.145	L.F.	1.50	7	8.50	11.
0300	Bullnose trim, red, 6" x 6" x 1/2" thick		120	.133		3.53	6.40	9.93	13.
0400	4" x 4" x 1/2" thick		110	.145		3.74	7	10.74	14.
0600	4" x 8" x 1/2" thick, using 8" as edge		130	.123		2.95	5.90	8.85	11.
0700	Floors, 1,000 S.F. lots, red, 4" x 4" x 1/2" thick		120	.133	S.F.	7.75	6.40	14.15	17.
0900	6" x 6" x 1/2" thick		140	.114		8.45	5.50	13.95	17.
1000	4" x 8" x 1/2" thick		130	.123		5.30	5.90	11.20	14.
1300	For waxed coating, add					.68		.68	.
1500	For non-standard colors, add					.45		.45	.
1600	For abrasive surface, add					.48		.48	.
1800	Brown tile, imported, 6" x 6" x 3/4"	D-7	120	.133		7.45	6.40	13.85	17.
1900	8" x 8" x 1"		110	.145		8.50	7	15.50	19.
2100	For thin set mortar application, deduct		700	.023			1.10	1.10	1.
2200	For epoxy grout & mortar, 6" x 6" x 1/2", add		350	.046		2.12	2.19	4.31	5.
2700	Stair tread, 6" x 6" x 3/4", plain		50	.320		5.15	15.35	20.50	28
2800	Abrasive		47	.340		7.75	16.35	24.10	32.
3000	Wainscot, 6" x 6" x 1/2", thin set, red		105	.152		2.59	7.30	9.89	13.
3100	Non-standard colors		105	.152		2.67	7.30	9.97	13.
3300	Window sill, 6" wide, 3/4" thick		90	.178	L.F.	7.50	8.55	16.05	21
3400	Corners		80	.200	Ea.	5.45	9.60	15.05	20

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09 32 Mortar-Bed Tiling

09 32 23 – Mortar-Bed Glass Mosaic Tiling

09 32 23.10 Glass Mosaics	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **GLASS MOSAICS** 3/4" tile on 12" sheets, standard grout									
0300 Color group 1 & 2	D-7	73	.219	S.F.	7.80	10.50		18.30	24
0350 Color group 3		73	.219		7	10.50		17.50	23
0400 Color group 4		73	.219		19.65	10.50		30.15	37
0450 Color group 5		73	.219		19.05	10.50		29.55	36.50
0500 Color group 6		73	.219		22.50	10.50		33	40
0600 Color group 7		73	.219		22	10.50		32.50	39.50
0700 Color group 8, golds, silvers & specialties		64	.250		16.95	12		28.95	36
1020 1" tile on 12" sheets, opalescent finish		73	.219		15.45	10.50		25.95	32.50
1040 1" x 2" tile on 12" sheet, blend		73	.219		20.50	10.50		31	38
1060 2" tile on 12" sheet, blend		73	.219		21.50	10.50		32	39
1080 5/8" x random tile, linear, on 12" sheet, blend		73	.219		20.50	10.50		31	38
1600 Dots on 12" sheet		73	.219		20.50	10.50		31	38
1700 For glass mosaic tiles set in dry mortar, add		290	.055		.40	2.65		3.05	4.31
1720 For glass mosaic tiles set in Portland cement mortar, add		290	.055		.01	2.65		2.66	3.88
1730 For polyblend sanded tile grout		96.15	.166	Lb.	1.97	8		9.97	13.80

09 34 Waterproofing-Membrane Tiling

09 34 13 – Waterproofing-Membrane Ceramic Tiling

09 34 13.10 Ceramic Tile Waterproofing Membrane

0010 **CERAMIC TILE WATERPROOFING MEMBRANE**									
0020 On floors, including thinset									
0030 Fleece laminated polyethylene grid, 1/8" thick	D-7	250	.064	S.F.	2.28	3.07		5.35	7
0040 5/16" thick	"	250	.064	"	2.60	3.07		5.67	7.35
0050 On walls, including thinset									
0060 Fleece laminated polyethylene sheet, 8 mil thick	D-7	480	.033	S.F.	2.55	1.60		4.15	5.15
0070 Accessories, including thinset									
0080 Joint and corner sheet, 4 mils thick, 5" wide	1 Tilf	240	.033	L.F.	1.26	1.77		3.03	3.97
0090 7-1/4" wide		180	.044		1.71	2.36		4.07	5.35
0100 10" wide		120	.067		2.09	3.54		5.63	7.50
0110 Pre-formed corners, inside		32	.250	Ea.	7.65	13.30		20.95	28
0120 Outside		32	.250		7.65	13.30		20.95	28
0130 2" flanged floor drain with 6" stainless steel grate		16	.500		360	26.50		386.50	435
0140 EPS, sloped shower floor		480	.017	S.F.	15.55	.89		16.44	18.40
0150 Curb		32	.250	L.F.	15.40	13.30		28.70	36.50

09 35 Chemical-Resistant Tiling

09 35 13 – Chemical-Resistant Ceramic Tiling

09 35 13.10 Chemical-Resistant Ceramic Tiling

0010 **CHEMICAL-RESISTANT CERAMIC TILING**									
0100 4-1/4" x 4-1/4" x 1/4", 1/8" joint	D-7	130	.123	S.F.	8.95	5.90		14.85	18.50
0200 6" x 6" x 1/2" thick		120	.133		10.55	6.40		16.95	21
0300 8" x 8" x 1/2" thick		110	.145		13.40	7		20.40	25
0400 4-1/4" x 4-1/4" x 1/4", 1/4" joint		130	.123		9.95	5.90		15.85	19.60
0500 6" x 6" x 1/2" thick		120	.133		12	6.40		18.40	22.50
0600 8" x 8" x 1/2" thick		110	.145		14.25	7		21.25	26
0700 4-1/4" x 4-1/4" x 1/4", 3/8" joint		130	.123		10.90	5.90		16.80	20.50
0800 6" x 6" x 1/2" thick		120	.133		13.25	6.40		19.65	24
0900 8" x 8" x 1/2" thick		110	.145		15.75	7		22.75	27.50

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09 35 Chemical-Resistant Tiling

09 35 16 – Chemical-Resistant Quarry Tiling

09 35 16.10 Chemical-Resistant Quarry Tiling	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **CHEMICAL-RESISTANT QUARRY TILING**									
0100 4" x 8" x 1/2" thick, 1/8" joint	D-7	130	.123	S.F.	10.75	5.90		16.65	20.
0200 6" x 6" x 1/2" thick		120	.133		13.80	6.40		20.20	24.
0300 8" x 8" x 1/2" thick		110	.145		9.90	7		16.90	21
0400 4" x 8" x 1/2" thick, 1/4" joint		130	.123		12.35	5.90		18.25	22.
0500 6" x 6" x 1/2" thick		120	.133		15.25	6.40		21.65	26
0600 8" x 8" x 1/2" thick		110	.145		10.70	7		17.70	22
0700 4" x 8" x 1/2" thick, 3/8" joint		130	.123		13.75	5.90		19.65	24
0800 6" x 6" x 1/2" thick		120	.133		16.45	6.40		22.85	27.
0900 8" x 8" x 1/2" thick		110	.145		12.25	7		19.25	23.

09 51 Acoustical Ceilings

09 51 13 – Acoustical Panel Ceilings

09 51 13.10 Ceiling, Acoustical Panel	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **CEILING, ACOUSTICAL PANEL**									
0100 Fiberglass boards, film faced, 2' x 2' or 2' x 4', 5/8" thick	1 Carp	625	.013	S.F.	4.59	.72		5.31	6.
0120 3/4" thick		600	.013		4.96	.75		5.71	6.
0130 3" thick, thermal, R11		450	.018		4.19	1		5.19	6.

09 51 14 – Acoustical Fabric-Faced Panel Ceilings

09 51 14.10 Ceiling, Acoustical Fabric-Faced Panel	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **CEILING, ACOUSTICAL FABRIC-FACED PANEL**									
0100 Glass cloth faced fiberglass, 3/4" thick	1 Carp	500	.016	S.F.	3.38	.90		4.28	5.
0120 1" thick		485	.016		7.25	.93		8.18	9.
0130 1-1/2" thick, nubby face		475	.017		2.85	.95		3.80	4.

09 51 23 – Acoustical Tile Ceilings

09 51 23.10 Suspended Acoustic Ceiling Tiles	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **SUSPENDED ACOUSTIC CEILING TILES**, not including									
0100 suspension system									
1110 Mineral fiber tile, lay-in, 2' x 2' or 2' x 4', 5/8" thick, fine texture	1 Carp	625	.013	S.F.	2.25	.72		2.97	3.
1115 Rough textured		625	.013		1.17	.72		1.89	2.
1125 3/4" thick, fine textured		600	.013		2.16	.75		2.91	3.
1130 Rough textured		600	.013		2.07	.75		2.82	3.
1135 Fissured		600	.013		2.28	.75		3.03	3.
1150 Tegular, 5/8" thick, fine textured		470	.017		2.55	.96		3.51	4.
1155 Rough textured		470	.017		1.92	.96		2.88	3.
1165 3/4" thick, fine textured		450	.018		4.26	1		5.26	6.
1170 Rough textured		450	.018		1.42	1		2.42	3.
1175 Fissured		450	.018		1.77	1		2.77	3.
1185 For plastic film face, add					.76			.76	
1190 For fire rating, add					.55			.55	
3720 Mineral fiber, 24" x 24" or 48", reveal edge, painted, 5/8" thick	1 Carp	600	.013		1.55	.75		2.30	2.
3740 3/4" thick		575	.014		1.77	.78		2.55	3.
5020 66-78% recycled content, 3/4" thick [G]		600	.013		6.90	.75		7.65	8.
5040 Mylar, 42% recycled content, 3/4" thick [G]		600	.013		4.85	.75		5.60	6.
6000 Remove & install new ceiling tiles, min fiber, 2' x 2' or 2' x 4', 5/8"thk.		335	.024		2.25	1.34		3.59	4.

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09 51 Acoustical Ceilings

09 51 23 – Acoustical Tile Ceilings

09 51 23.30 Suspended Ceilings, Complete	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **SUSPENDED CEILINGS, COMPLETE**, incl. standard									
0100 suspension system but not incl. 1-1/2" carrier channels									
0600 Fiberglass ceiling board, 2' x 4' x 5/8", plain faced	1 Carp	500	.016	S.F.	6.10	.90		7	8.05
0700 Offices, 2' x 4' x 3/4"		380	.021		6.45	1.19		7.64	8.85
0800 Mineral fiber, on 15/16" T bar susp. 2' x 2' x 3/4" lay-in board		345	.023		4.10	1.31		5.41	6.45
0810 2' x 4' x 5/8" tile		380	.021		5.30	1.19		6.49	7.60
0820 Tegular, 2' x 2' x 5/8" tile on 9/16" grid		250	.032		5.25	1.80		7.05	8.50
0830 2' x 4' x 3/4" tile		275	.029		5.05	1.64		6.69	8
0900 Luminous panels, prismatic, acrylic		255	.031		5.40	1.77		7.17	8.55
1200 Metal pan with acoustic pad, steel		75	.107		5.30	6		11.30	14.75
1300 Painted aluminum		75	.107		4.37	6		10.37	13.75
1500 Aluminum, degreased finish		75	.107		6	6		12	15.55
1600 Stainless steel		75	.107		9.30	6		15.30	19.15
1800 Tile, Z bar suspension, 5/8" mineral fiber tile		150	.053		1.09	3		4.09	5.65
1900 3/4" mineral fiber tile		150	.053		2.08	3		5.08	6.75
2400 For strip lighting, see Section 26 51 13.50									
2500 For rooms under 500 S.F., add				S.F.		25%			

09 51 33 – Acoustical Metal Pan Ceilings

09 51 33.10 Ceiling, Acoustical Metal Pan

0010 **CEILING, ACOUSTICAL METAL PAN**									
0100 Metal panel, lay-in, 2' x 2', sq. edge	1 Carp	500	.016	S.F.	12.10	.90		13	14.65
0110 Tegular edge		500	.016		14.55	.90		15.45	17.35
0120 2' x 4', sq. edge		500	.016		14.30	.90		15.20	17.05
0130 Tegular edge		500	.016		14.40	.90		15.30	17.20
0140 Perforated alum. clip-in, 2' x 2'		500	.016		3.19	.90		4.09	4.85
0150 2' x 4'		500	.016		11.85	.90		12.75	14.40

09 51 53 – Direct-Applied Acoustical Ceilings

09 51 53.10 Ceiling Tile

0010 **CEILING TILE**, stapled or cemented									
0100 12" x 12" or 12" x 24", not including furring									
0600 Mineral fiber, vinyl coated, 5/8" thick	1 Carp	300	.027	S.F.	4.32	1.50		5.82	7
0700 3/4" thick		300	.027		4.68	1.50		6.18	7.40
0900 Fire rated, 3/4" thick, plain faced		300	.027		1.89	1.50		3.39	4.31
1000 Plastic coated face		300	.027		1.15	1.50		2.65	3.50
1200 Aluminum faced, 5/8" thick, plain		300	.027		2.42	1.50		3.92	4.89
3700 Wall application of above, add		1000	.008			.45		.45	.67
3900 For ceiling primer, add					.15			.15	.17
4000 For ceiling cement, add					.50			.50	.55

09 53 Acoustical Ceiling Suspension Assemblies

09 53 23 – Metal Acoustical Ceiling Suspension Assemblies

09 53 23.30 Ceiling Suspension Systems

0010 **CEILING SUSPENSION SYSTEMS** for boards and tile									
0050 Class A suspension system, 15/16" T bar, 2' x 4' grid	1 Carp	800	.010	S.F.	1.51	.56		2.07	2.50
0300 2' x 2' grid		650	.012		1.94	.69		2.63	3.16
0310 25% recycled steel, 2' x 4' grid [G]		800	.010		1.24	.56		1.80	2.21
0320 2' x 2' grid [G]		650	.012		1.67	.69		2.36	2.87
0350 For 9/16" grid, add					.14			.14	.15
0360 For fire rated grid, add					.08			.08	.09

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09 53 Acoustical Ceiling Suspension Assemblies

09 53 23 – Metal Acoustical Ceiling Suspension Assemblies

	09 53 23.30 Ceiling Suspension Systems	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0370	For colored grid, add				S.F.	.20			.20	
0400	Concealed Z bar suspension system, 12" module	1 Carp	520	.015		.94	.87		1.81	2
0600	1-1/2" carrier channels, 4' OC, add	"	470	.017		.12	.96		1.08	1
0700	Carrier channels for ceilings with									
0900	recessed lighting fixtures, add	1 Carp	460	.017	S.F.	.22	.98		1.20	1
1040	Hanging wire, 12 ga., 4' long		65	.123	C.S.F.	1.12	6.95		8.07	11
1080	8' long		65	.123	"	2.23	6.95		9.18	12
3000	Seismic ceiling bracing, IBC Site Class D, Occupancy Category II									
3050	For ceilings less than 2500 S.F.									
3060	Seismic clips at attached walls	1 Carp	180	.044	Ea.	.88	2.50		3.38	4
3100	For ceilings greater than 2500 S.F., add									
3120	Seismic clips, joints at cross tees	1 Carp	120	.067	Ea.	.88	3.75		4.63	6
3140	At cross tees and mains, mains field cut	"	60	.133	"	.88	7.50		8.38	12
3200	Compression posts, telescopic, attached to structure above									
3210	To 30" high	1 Carp	26	.308	Ea.	36.50	17.30		53.80	66
3220	30" to 48" high		25.50	.314		37.50	17.65		55.15	68
3230	48" to 84" high		25	.320		45.50	18		63.50	77
3240	84" to 102" high		24.50	.327		52	18.40		70.40	84
3250	102" to 120" high		24	.333		74.50	18.75		93.25	110
3260	120" to 144" high		24	.333		83.50	18.75		102.25	120
3300	Stabilizer bars									
3310	12" long	1 Carp	240	.033	Ea.	1.01	1.88		2.89	3
3320	24" long		235	.034		.93	1.92		2.85	3
3330	36" long		230	.035		.93	1.96		2.89	3
3340	48" long		220	.036		.75	2.05		2.80	3
3400	Wire support for light fixtures, per L.F. height to structure above									
3410	Less than 10 lb.	1 Carp	400	.020	L.F.	.40	1.13		1.53	2
3420	10 lb. to 56 lb.	"	240	.033	"	.79	1.88		2.67	3

09 54 Specialty Ceilings

09 54 16 – Luminous Ceilings

09 54 16.10 Ceiling, Luminous

0010	**CEILING, LUMINOUS**									
0020	Translucent lay-in panels, 2' x 2'	1 Carp	500	.016	S.F.	1.53	.90		2.43	3
0030	2' x 6'	"	500	.016	"	18.45	.90		19.35	22

09 54 23 – Linear Metal Ceilings

09 54 23.10 Metal Ceilings

0010	**METAL CEILINGS**									
0015	Solid alum. planks, 3-1/4" x 12', open reveal	1 Carp	500	.016	S.F.	2.44	.90		3.34	4
0020	Closed reveal		500	.016		3.13	.90		4.03	4
0030	7-1/4" x 12', open reveal		500	.016		4.17	.90		5.07	5
0040	Closed reveal		500	.016		5.30	.90		6.20	7
0050	Metal, open cell, 2' x 2', 6" cell		500	.016		9.05	.90		9.95	11
0060	8" cell		500	.016		10	.90		10.90	12
0070	2' x 4', 6" cell		500	.016		5.95	.90		6.85	7
0080	8" cell		500	.016		5.95	.90		6.85	7

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09 54 Specialty Ceilings

09 54 26 – Suspended Wood Ceilings

09 54 26.10 Wood Ceilings	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **WOOD CEILINGS**									
1000 4"-6" wood slats on heavy duty 15/16" T-bar grid	2 Carp	250	.064	S.F.	22.50	3.60		26.10	30.50

09 54 33 – Decorative Panel Ceilings

09 54 33.20 Metal Panel Ceilings

0010 **METAL PANEL CEILINGS**									
0020 Lay-in or screwed to furring, not including grid									
0100 Tin ceilings, 2' x 2' or 2' x 4', bare steel finish	2 Carp	300	.053	S.F.	2.84	3		5.84	7.60
0120 Painted white finish		300	.053	"	4.36	3		7.36	9.25
0140 Copper, chrome or brass finish		300	.053	L.F.	4.35	3		7.35	9.25
0200 Cornice molding, 2-1/2" to 3-1/2" wide, 4' long, bare steel finish		200	.080	S.F.	2.04	4.50		6.54	8.95
0220 Painted white finish		200	.080		3.19	4.50		7.69	10.20
0240 Copper, chrome or brass finish		200	.080		3.48	4.50		7.98	10.55
0320 5" to 6-1/2" wide, 4' long, bare steel finish		150	.107		2.30	6		8.30	11.50
0340 Painted white finish		150	.107		3.32	6		9.32	12.60
0360 Copper, chrome or brass finish		150	.107		3.45	6		9.45	12.75
0420 Flat molding, 3-1/2" to 5" wide, 4' long, bare steel finish		250	.064		3.32	3.60		6.92	9
0440 Painted white finish		250	.064		3.74	3.60		7.34	9.45
0460 Copper, chrome or brass finish		250	.064		3.71	3.60		7.31	9.45

09 57 Special Function Ceilings

09 57 53 – Security Ceiling Assemblies

09 57 53.10 Ceiling Assem., Security, Radio Freq. Shielding

0010 **CEILING ASSEMBLY, SECURITY, RADIO FREQUENCY SHIELDING**									
0020 Prefabricated, galvanized steel	2 Carp	375	.043	SF Surf	6.70	2.40		9.10	11
0050 5 oz., copper ceiling panel		155	.103		5.45	5.80		11.25	14.65
0110 12 oz., copper ceiling panel		140	.114		11.35	6.45		17.80	22
0250 Ceiling hangers	E-1	45	.533	Ea.	44	32.50	3.27	79.77	102
0300 Shielding transition, 11 ga. preformed angles	"	1365	.018	L.F.	44	1.07	.11	45.18	50.50

09 61 Flooring Treatment

09 61 19 – Concrete Floor Staining

09 61 19.40 Floors, Interior

0010 **FLOORS, INTERIOR**									
0300 Acid stain and sealer									
0310 Stain, one coat	1 Pord	650	.012	S.F.	.12	.59		.71	1
0320 Two coats		570	.014		.24	.67		.91	1.26
0330 Acrylic sealer, one coat		2600	.003		.25	.15		.40	.50
0340 Two coats		1400	.006		.51	.27		.78	.96

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09 62 Specialty Flooring

09 62 19 – Laminate Flooring

09 62 19.10 Floating Floor		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **FLOATING FLOOR**										
8300 Floating floor, laminate, wood pattern strip, complete		1 Clab	133	.060	S.F.	5.45	2.74		8.19	10
8310 Components, T&G wood composite strips						4.20			4.20	4
8320 Film						.74			.74	
8330 Foam						.29			.29	
8340 Adhesive						.89			.89	
8350 Installation kit						.25			.25	
8360 Trim, 2" wide x 3' long					L.F.	8			8	8
8370 Reducer moulding					"	7.40			7.40	8

09 62 29 – Cork Flooring

09 62 29.10 Cork Tile Flooring

0010 **CORK TILE FLOORING**										
2200 Cork tile, standard finish, 1/8" thick	G	1 Tilf	315	.025	S.F.	3.51	1.35		4.86	5
2250 3/16" thick	G		315	.025		5.10	1.35		6.45	7
2300 5/16" thick	G		315	.025		4.49	1.35		5.84	6
2350 1/2" thick	G		315	.025		4.12	1.35		5.47	6
2500 Urethane finish, 1/8" thick	G		315	.025		5.70	1.35		7.05	8
2550 3/16" thick	G		315	.025		8.35	1.35		9.70	11
2600 5/16" thick	G		315	.025		6.90	1.35		8.25	9
2650 1/2" thick	G		315	.025		6.25	1.35		7.60	8

09 63 Masonry Flooring

09 63 13 – Brick Flooring

09 63 13.10 Miscellaneous Brick Flooring

0010 **MISCELLANEOUS BRICK FLOORING**										
0020 Acid-proof shales, red, 8" x 3-3/4" x 1-1/4" thick		D-7	.43	37.209	M	625	1,775		2,400	3,300
0050 2-1/4" thick		D-1	.40	40		1,025	2,000		3,025	4,125
0200 Acid-proof clay brick, 8" x 3-3/4" x 2-1/4" thick	G		.40	40		1,050	2,000		3,050	4,150
0250 9" x 4-1/2" x 3"	G		95	.168	S.F.	4.20	8.45		12.65	17
0260 Cast ceramic, pressed, 4" x 8" x 1/2", unglazed		D-7	100	.160		7.50	7.70		15.20	19
0270 Glazed			100	.160		10	7.70		17.70	22
0280 Hand molded flooring, 4" x 8" x 3/4", unglazed			95	.168		9.90	8.10		18	22
0290 Glazed			95	.168		10.90	8.10		19	24
0300 8" hexagonal, 3/4" thick, unglazed			85	.188		9.50	9.05		18.55	23
0310 Glazed			85	.188		17.15	9.05		26.20	32
0400 Heavy duty industrial, cement mortar bed, 2" thick, not incl. brick		D-1	80	.200		.91	10.05		10.96	16
0450 Acid-proof joints, 1/4" wide		"	65	.246		1.72	12.35		14.07	20
0500 Pavers, 8" x 4", 1" to 1-1/4" thick, red		D-7	95	.168		2.16	8.10		10.26	14
0510 Ironspot		"	95	.168		5.40	8.10		13.50	17
0540 1-3/8" to 1-3/4" thick, red		D-1	95	.168		2.07	8.45		10.52	15
0560 Ironspot			95	.168		5.35	8.45		13.80	18
0580 2-1/4" thick, red			90	.178		12.25	8.90		21.15	27
0590 Ironspot			90	.178		22.50	8.90		31.40	38
0700 Paver, adobe brick, 6" x 12", 1/2" joint	G		42	.381		1.30	19.10		20.40	30
0710 Mexican red, 12" x 12"	G	1 Tilf	48	.167		1.80	8.85		10.65	14
0720 Saltillo, 12" x 12"	G	"	48	.167		1.38	8.85		10.23	14
0800 For sidewalks and patios with pavers, see Section 32 14 16.10										
0870 For epoxy joints, add		D-1	600	.027	S.F.	3.27	1.34		4.61	5
0880 For Furan underlayment, add		"	600	.027		2.70	1.34		4.04	4
0890 For waxed surface, steam cleaned, add		A-1H	1000	.008		.21	.36	.08	.65	

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09 63 Masonry Flooring

09 63 40 – Stone Flooring

09 63 40.10 Marble	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **MARBLE**									
0020 Thin gauge tile, 12" x 6", 3/8", white Carara	D-7	60	.267	S.F.	7.65	12.80		20.45	27
0100 Travertine		60	.267		8.30	12.80		21.10	28
0200 12" x 12" x 3/8", thin set, floors		60	.267		.81	12.80		13.61	19.60
0300 On walls		52	.308		.81	14.75		15.56	22.50
1000 Marble threshold, 4" wide x 36" long x 5/8" thick, white		60	.267	Ea.	.81	12.80		13.61	19.60
09 63 40.20 Slate Tile									
0010 **SLATE TILE**									
0020 Vermont, 6" x 6" x 1/4" thick, thin set	D-7	180	.089	S.F.	7.80	4.26		12.06	14.80
0200 See also Section 32 14 40.10									

09 64 Wood Flooring

09 64 16 – Wood Block Flooring

09 64 16.10 End Grain Block Flooring									
0010 **END GRAIN BLOCK FLOORING**									
0020 End grain flooring, coated, 2" thick	1 Carp	295	.027	S.F.	12	1.53		13.53	15.45
0400 Natural finish, 1" thick, fir		125	.064		4.14	3.60		7.74	9.90
0600 1-1/2" thick, pine		125	.064		4.06	3.60		7.66	9.80
0700 2" thick, pine		125	.064		4.70	3.60		8.30	10.50

09 64 19 – Wood Composition Flooring

09 64 19.10 Wood Composition									
0010 **WOOD COMPOSITION** Gym floors									
0100 2-1/4" x 6-7/8" x 3/8", on adh, corkbd & bond coat	D-7	150	.107	S.F.	9.35	5.10		14.45	17.80
0200 Thin set, on concrete	"	250	.064		6.15	3.07		9.22	11.30
0300 Sanding and finishing, add	1 Carp	200	.040		.98	2.25		3.23	4.43

09 64 23 – Wood Parquet Flooring

09 64 23.10 Wood Parquet									
0010 **WOOD PARQUET** flooring									
5200 Parquetry, 5/16" thk, no finish, oak, plain pattern	1 Carp	160	.050	S.F.	10.95	2.82		13.77	16.25
5300 Intricate pattern		100	.080		19.95	4.50		24.45	28.50
5500 Teak, plain pattern		160	.050		7.65	2.82		10.47	12.60
5600 Intricate pattern		100	.080		13.05	4.50		17.55	21
5650 13/16" thick, select grade oak, plain pattern		160	.050		14.75	2.82		17.57	20.50
5700 Intricate pattern		100	.080		22	4.50		26.50	31
5800 Custom parquetry, including finish, plain pattern		100	.080		23.50	4.50		28	32
5900 Intricate pattern		50	.160		32	9		41	48.50
6700 Parquetry, prefinished white oak, 5/16" thick, plain pattern		160	.050		11.10	2.82		13.92	16.40
6800 Intricate pattern		100	.080		10.15	4.50		14.65	17.90
7000 Walnut or teak, parquetry, plain pattern		160	.050		17.95	2.82		20.77	24
7100 Intricate pattern		100	.080		27	4.50		31.50	36
7200 Acrylic wood parquet blocks, 12" x 12" x 5/16",									
7210 Irradiated, set in epoxy	1 Carp	160	.050	S.F.	14.25	2.82		17.07	19.85

09 64 29 – Wood Strip and Plank Flooring

09 64 29.10 Wood									
0010 **WOOD**									
0020 Fir, vertical grain, 1" x 4", not incl. finish, grade B & better	1 Carp	255	.031	S.F.	5.30	1.77		7.07	8.50
0100 Grade C & better		255	.031		5.35	1.77		7.12	8.55
4000 Maple, strip, 25/32" x 2-1/4", not incl. finish, select		170	.047		5.35	2.65		8	9.80

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09 64 29 – Wood Strip and Plank Flooring

	09 64 29.10 Wood	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4100	#2 & better	1 Carp	170	.047	S.F.	5.05	2.65		7.70	9.5
4300	33/32" x 3-1/4", not incl. finish, #1 grade		170	.047		8.05	2.65		10.70	12.8
4400	#2 & better		170	.047		6.95	2.65		9.60	11.6
4600	Oak, white or red, 25/32" x 2-1/4", not incl. finish									
4700	#1 common	1 Carp	170	.047	S.F.	4.16	2.65		6.81	8.5
4900	Select quartered, 2-1/4" wide		170	.047		4.38	2.65		7.03	8.7
5000	Clear		170	.047		4.63	2.65		7.28	9.0
6100	Prefinished, white oak, prime grade, 2-1/4" wide		170	.047		4.49	2.65		7.14	8.9
6200	3-1/4" wide		185	.043		3.94	2.43		6.37	7.9
6400	Ranch plank		145	.055		5.90	3.11		9.01	11.1
6500	Hardwood blocks, 9" x 9", 25/32" thick		160	.050		10.30	2.82		13.12	15.5
7400	Yellow pine, 3/4" x 3-1/8", T&G, C & better, not incl. finish		200	.040		3.46	2.25		5.71	7.1
7500	Refinish wood floor, sand, 2 coats poly, wax, soft wood	1 Clab	400	.020		.24	.91		1.15	1.6
7600	Hardwood		130	.062		.24	2.81		3.05	4.4
7800	Sanding and finishing, 2 coats polyurethane		295	.027		.24	1.24		1.48	2.1
7900	Subfloor and underlayment, see Section 06 16									
8015	Transition molding, 2-1/4" wide, 5' long	1 Carp	19.20	.417	Ea.	26.50	23.50		50	64.5

09 64 36 – Bamboo Flooring

09 64 36.10 Flooring, Bamboo

0010	**FLOORING, BAMBOO**									
8600	Flooring, wood, bamboo strips, unfinished, 5/8" x 4" x 3'	G	1 Carp	255	.031	S.F.	7.85	1.77	9.62	11.3
8610	5/8" x 4" x 4'	G		275	.029		7.90	1.64	9.54	11.1
8620	5/8" x 4" x 6'	G		295	.027		2.96	1.53	4.49	5.5
8630	Finished, 5/8" x 4" x 3'	G		255	.031		8.35	1.77	10.12	11.8
8640	5/8" x 4" x 4'	G		275	.029		9.10	1.64	10.74	12.4
8650	5/8" x 4" x 6'	G		295	.027		4.11	1.53	5.64	6.8
8660	Stair treads, unfinished, 1-1/16" x 11-1/2" x 4'	G		18	.444	Ea.	32	25	57	72
8670	Finished, 1-1/16" x 11-1/2" x 4'	G		18	.444		80	25	105	125
8680	Stair risers, unfinished, 5/8" x 7-1/2" x 4'	G		18	.444		40	25	65	81
8690	Finished, 5/8" x 7-1/2" x 4'	G		18	.444		35	25	60	75.5
8700	Stair nosing, unfinished, 6' long	G		16	.500		59.50	28	87.50	108
8710	Finished, 6' long	G		16	.500		75	28	103	125

09 64 66 – Wood Athletic Flooring

09 64 66.10 Gymnasium Flooring

0010	**GYMNASIUM FLOORING**									
0600	Gym floor, in mastic, over 2 ply felt, #2 & better									
0700	25/32" thick maple	1 Carp	100	.080	S.F.	5.95	4.50		10.45	13.2
0900	33/32" thick maple		98	.082		8.40	4.60		13	16.0
1000	For 1/2" corkboard underlayment, add		750	.011		1.61	.60		2.21	2.6
1300	For #1 grade maple, add					.87			.87	.9
1600	Maple flooring, over sleepers, #2 & better									
1700	25/32" thick	1 Carp	85	.094	S.F.	8.30	5.30		13.60	17
1900	33/32" thick	"	83	.096		9.35	5.45		14.80	18.4
2000	For #1 grade, add					.95			.95	1.0
2200	For 3/4" subfloor, add	1 Carp	350	.023		2.12	1.29		3.41	4.2
2300	With two 1/2" subfloors, 25/32" thick	"	69	.116		10.40	6.55		16.95	21
2500	Maple, incl. finish, #2 & btr., 25/32" thick, on rubber									
2600	Sleepers, with two 1/2" subfloors	1 Carp	76	.105	S.F.	10.80	5.95		16.75	20.5
2800	With steel spline, double connection to channels	"	73	.110		11.90	6.15		18.05	22.5
2900	For 33/32" maple, add					1.22			1.22	1.3
3100	For #1 grade maple, add					.95			.95	1.0
3500	For termite proofing all of the above, add					.49			.49	.5

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

09 64 Wood Flooring

09 64 66 – Wood Athletic Flooring

09 64 66.10 Gymnasium Flooring	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
3700 Portable hardwood, prefinished panels	1 Carp	83	.096	S.F.	14.40	5.45		19.85	24
3720 Insulated with polystyrene, 1" thick, add		165	.048		1.22	2.73		3.95	5.40
3750 Running tracks, Sitka spruce surface, 25/32" x 2-1/4"		62	.129		27	7.25		34.25	41
3770 3/4" plywood surface, finished		100	.080		6.25	4.50		10.75	13.60

09 65 Resilient Flooring

09 65 10 – Resilient Tile Underlayment

09 65 10.10 Latex Underlayment

0010 **LATEX UNDERLAYMENT**									
3600 Latex underlayment, 1/8" thk., cementitious for resilient flooring	1 Tilf	160	.050	S.F.	.60	2.66		3.26	4.54
4000 Liquid, fortified				Gal.	17.45			17.45	19.20

09 65 13 – Resilient Base and Accessories

09 65 13.13 Resilient Base

0010 **RESILIENT BASE**									
0690 1/8" vinyl base, 2-1/2" H, straight or cove, standard colors	1 Tilf	315	.025	L.F.	1.36	1.35		2.71	3.47
0700 4" high		315	.025		1.39	1.35		2.74	3.50
0710 6" high		315	.025		2.70	1.35		4.05	4.94
0720 Corners, 2-1/2" high		315	.025	Ea.	3.53	1.35		4.88	5.85
0730 4" high		315	.025		3.89	1.35		5.24	6.25
0740 6" high		315	.025		4.50	1.35		5.85	6.90
0800 1/8" rubber base, 2-1/2" H, straight or cove, standard colors		315	.025	L.F.	1.49	1.35		2.84	3.61
1100 4" high		315	.025		1.72	1.35		3.07	3.86
1110 6" high		315	.025		3.52	1.35		4.87	5.85
1150 Corners, 2-1/2" high		315	.025	Ea.	2.92	1.35		4.27	5.20
1153 4" high		315	.025		3.65	1.35		5	6
1155 6" high		315	.025		3.52	1.35		4.87	5.85
1450 For premium color/finish add					50%				
1500 Millwork profile	1 Tilf	315	.025	L.F.	5.05	1.35		6.40	7.50

09 65 13.23 Resilient Stair Treads and Risers

0010 **RESILIENT STAIR TREADS AND RISERS**									
0300 Rubber, molded tread, 12" wide, 5/16" thick, black	1 Tilf	115	.070	L.F.	18.90	3.70		22.60	26.50
0400 Colors		115	.070		18.90	3.70		22.60	26.50
0600 1/4" thick, black		115	.070		10.95	3.70		14.65	17.45
0700 Colors		115	.070		10.95	3.70		14.65	17.45
0900 Grip strip safety tread, colors, 5/16" thick		115	.070		22.50	3.70		26.20	30
1000 3/16" thick		120	.067		19.25	3.54		22.79	26
1200 Landings, smooth sheet rubber, 1/8" thick		120	.067	S.F.	5.05	3.54		8.59	10.75
1300 3/16" thick		120	.067	"	6.35	3.54		9.89	12.20
1500 Nosings, 3" wide, 3/16" thick, black		140	.057	L.F.	10.70	3.04		13.74	16.25
1600 Colors		140	.057		12	3.04		15.04	17.65
1800 Risers, 7" high, 1/8" thick, flat		250	.032		11.30	1.70		13	14.95
1900 Coved		250	.032		7.60	1.70		9.30	10.90
2100 Vinyl, molded tread, 12" wide, colors, 1/8" thick		115	.070		12.35	3.70		16.05	19
2200 1/4" thick		115	.070		9.35	3.70		13.05	15.65
2300 Landing material, 1/8" thick		200	.040	S.F.	8.55	2.13		10.68	12.55
2400 Riser, 7" high, 1/8" thick, coved		175	.046	L.F.	4.36	2.43		6.79	8.35
2500 Tread and riser combined, 1/8" thick		80	.100	"	13.20	5.30		18.50	22.50

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

09 65 13 – Resilient Base and Accessories

	09 65 13.37 Vinyl Transition Strips	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**VINYL TRANSITION STRIPS**									
0100	Various mats. to various mats., adhesive applied, 1/4" to 1/8"	1 Tilf	315	.025	L.F.	6	1.35		7.35	8.5
0105	0.08" to 1/8"		315	.025		4.21	1.35		5.56	6.6
0110	0.08" to 1/4"		315	.025		5.25	1.35		6.60	7.7
0115	1/4" to 3/8"		315	.025		7.50	1.35		8.85	10.2
0120	1/4" to 1/2"		315	.025		1.44	1.35		2.79	3.5
0125	1/4" to 0.08"		315	.025		1.51	1.35		2.86	3.6
0200	Vinyl wheeled trans. strips, carpet to var. mats., 1/4" to 1/8" x 2-1/2"		315	.025		6	1.35		7.35	8.5
0205	1/4" to 1/8" x 4"		315	.025		7.25	1.35		8.60	9.9
0210	Various mats. to various mats. 1/4" to 0.08" x 2-1/2"		315	.025		5.25	1.35		6.60	7.7
0215	Carpet to various materials, 1/4" to flush x 2-1/2"		315	.025		5	1.35		6.35	7.4
0220	1/4" to flush x 4"		315	.025		8.45	1.35		9.80	11.2
0225	Various materials to resilient, 3/8" to 1/8" x 2-1/2"		315	.025		5	1.35		6.35	7.4
0230	Carpet to various materials, 3/8" to 1/4" x 2-1/2"		315	.025		6.90	1.35		8.25	9.5
0235	1/4" to 1/4" x 2-1/2"		315	.025		8.45	1.35		9.80	11.2
0240	Various materials to resilient, 1/8" to 1/8" x 2-1/2"		315	.025		5.85	1.35		7.20	8.3
0245	Various materials to var. mats., 1/8" to flush x 2-1/2"		315	.025		4.29	1.35		5.64	6.5
0250	3/8" to flush x 4"		315	.025		8.65	1.35		10	11.5
0255	1/2" to flush x 4"		315	.025		10.55	1.35		11.90	13.5
0260	Various materials to resilient, 1/8" to 0.08" x 2-1/2"		315	.025		4.54	1.35		5.89	6.9
0265	0.08" to 0.08" x 2-1/2"		315	.025		4.72	1.35		6.07	7.
0270	3/8" to 0.08" x 2-1/2"		315	.025		4.72	1.35		6.07	7.

09 65 16 – Resilient Sheet Flooring

09 65 16.10 Rubber and Vinyl Sheet Flooring

0010	**RUBBER AND VINYL SHEET FLOORING**									
5500	Linoleum, sheet goods G	1 Tilf	360	.022	S.F.	3.92	1.18		5.10	6.0
5900	Rubber, sheet goods, 36" wide, 1/8" thick		120	.067		1.32	3.54		4.86	6.
5950	3/16" thick		100	.080		9.15	4.25		13.40	16.
6000	1/4" thick		90	.089		1.83	4.72		6.55	8.
8000	Vinyl sheet goods, backed, .065" thick, plain pattern/colors		250	.032		1.20	1.70		2.90	3.
8050	Intricate pattern/colors		200	.040		1.20	2.13		3.33	4.
8100	.080" thick, plain pattern/colors		230	.035		2.79	1.85		4.64	5.
8150	Intricate pattern/colors		200	.040		5.20	2.13		7.33	8.
8200	.125" thick, plain pattern/colors		230	.035		3.47	1.85		5.32	6.
8250	Intricate pattern/colors		200	.040		6.80	2.13		8.93	10.
8400	For welding seams, add		100	.080	L.F.	.11	4.25		4.36	6.
8450	For integral cove base, add		175	.046	"	8.70	2.43		11.13	13.
8700	Adhesive cement, 1 gallon per 200 to 300 S.F.				Gal.	19.50			19.50	21.
8800	Asphalt primer, 1 gallon per 300 S.F.					15.60			15.60	17.
8900	Emulsion, 1 gallon per 140 S.F.					48			48	52.

09 65 19 – Resilient Tile Flooring

09 65 19.19 Vinyl Composition Tile Flooring

0010	**VINYL COMPOSITION TILE FLOORING**									
7000	Vinyl composition tile, 12" x 12", 1/16" thick	1 Tilf	500	.016	S.F.	.77	.85		1.62	2.
7050	Embossed		500	.016		1.40	.85		2.25	2.
7100	Marbleized		500	.016		1.20	.85		2.05	2.
7150	Solid		500	.016		3.27	.85		4.12	4.
7200	3/32" thick, embossed		500	.016		1.29	.85		2.14	2.
7250	Marbleized		500	.016		.94	.85		1.79	2.
7300	Solid		500	.016		1.21	.85		2.06	2.
7350	1/8" thick, marbleized		500	.016		1.96	.85		2.81	3.

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09 65 Resilient Flooring

09 65 19 – Resilient Tile Flooring

09 65 19.19 Vinyl Composition Tile Flooring	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
7400 Solid	1 Tilf	500	.016	S.F.	1.10	.85		1.95	2.45
7450 Conductive		500	.016		8.35	.85		9.20	10.45
09 65 19.23 Vinyl Tile Flooring									
0010 **VINYL TILE FLOORING**									
7500 Vinyl tile, 12" x 12", 3/32" thick, standard colors/patterns	1 Tilf	500	.016	S.F.	1.36	.85		2.21	2.74
7550 1/8" thick, standard colors/patterns		500	.016		1.17	.85		2.02	2.53
7600 1/8" thick, premium colors/patterns		500	.016		6.10	.85		6.95	7.95
7650 Solid colors		500	.016		1.10	.85		1.95	2.45
7700 Marbleized or Travertine pattern		500	.016		2.99	.85		3.84	4.53
7750 Florentine pattern		500	.016		1.98	.85		2.83	3.42
7800 Premium colors/patterns		500	.016		3.25	.85		4.10	4.82
09 65 19.33 Rubber Tile Flooring									
0010 **RUBBER TILE FLOORING**									
6050 Rubber tile, marbleized colors, 12" x 12", 1/8" thick	1 Tilf	400	.020	S.F.	6.35	1.06		7.41	8.55
6100 3/16" thick		400	.020		7.85	1.06		8.91	10.20
6300 Special tile, plain colors, 1/8" thick		400	.020		7.85	1.06		8.91	10.20
6350 3/16" thick		400	.020		9.25	1.06		10.31	11.75
6410 Raised, radial or square, .5 mm black		400	.020		7.40	1.06		8.46	9.70
6430 .5 mm colored		400	.020		6	1.06		7.06	8.15
6450 For golf course, skating rink, etc., 1/4" thick		275	.029		4.26	1.55		5.81	6.95

09 65 33 – Conductive Resilient Flooring

09 65 33.10 Conductive Rubber and Vinyl Flooring									
0010 **CONDUCTIVE RUBBER AND VINYL FLOORING**									
1700 Conductive flooring, rubber tile, 1/8" thick	1 Tilf	315	.025	S.F.	15.30	1.35		16.65	18.80
1800 Homogeneous vinyl tile, 1/8" thick	"	315	.025	"	4.15	1.35		5.50	6.55

09 65 66 – Resilient Athletic Flooring

09 65 66.10 Resilient Athletic Flooring									
0010 **RESILIENT ATHLETIC FLOORING**									
1000 Recycled rubber rolled goods, for weight rooms, 3/8" thk.	1 Tilf	315	.025	S.F.	2.64	1.35		3.99	4.87
1050 Interlocking 2' x 2' squares, rubber, 1/4" thk.		310	.026		13.05	1.37		14.42	16.35
1055 5/16" thk.		310	.026		2.32	1.37		3.69	4.55
1060 3/8" thk.		300	.027		4.39	1.42		5.81	6.90
1065 1/2" thk.		310	.026		4.92	1.37		6.29	7.40
2000 Vinyl sheet flooring, 1/4" thk.		315	.025		5.15	1.35		6.50	7.65

09 66 Terrazzo Flooring

09 66 13 – Portland Cement Terrazzo Flooring

09 66 13.10 Portland Cement Terrazzo									
0010 **PORTLAND CEMENT TERRAZZO**, cast-in-place R096613-10									
0020 Cove base, 6" high, 16 ga. zinc	1 Mstz	20	.400	L.F.	4.08	21.50		25.58	35.50
0100 Curb, 6" high and 6" wide		6	1.333		6.70	71		77.70	111
0300 Divider strip for floors, 14 ga., 1-1/4" deep, zinc		375	.021		1.48	1.14		2.62	3.29
0400 Brass		375	.021		2.99	1.14		4.13	4.95
0600 Heavy top strip 1/4" thick, 1-1/4" deep, zinc		300	.027		2.27	1.42		3.69	4.58
0900 Galv. bottoms, brass		300	.027		2.88	1.42		4.30	5.25
1200 For thin set floors, 16 ga., 1/2" x 1/2", zinc		350	.023		1.55	1.22		2.77	3.49
1300 Brass		350	.023		3.09	1.22		4.31	5.20
1500 Floor, bonded to concrete, 1-3/4" thick, gray cement	J-3	75	.213	S.F.	4.09	10.45	3.19	17.73	23.50
1600 White cement, mud set		75	.213		4.82	10.45	3.19	18.46	24

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09 66 13 – Portland Cement Terrazzo Flooring

	09 66 13.10 Portland Cement Terrazzo	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1800	Not bonded, 3" total thickness, gray cement	J-3	70	.229	S.F.	5.05	11.20	3.42	19.67	25.
1900	White cement, mud set		70	.229		5.80	11.20	3.42	20.42	26.
2100	For Venetian terrazzo, 1" topping, add					50%	50%			
2200	For heavy duty abrasive terrazzo, add					50%	50%			
2700	Monolithic terrazzo, 1/2" thick									
2710	10' panels	J-3	125	.128	S.F.	3.62	6.30	1.92	11.84	15.
3000	Stairs, cast-in-place, pan filled treads		30	.533	L.F.	4.66	26	8	38.66	52.
3100	Treads and risers		14	1.143	"	6.90	56	17.10	80	108
3300	For stair landings, add to floor prices						50%			
3400	Stair stringers and fascia	J-3	30	.533	S.F.	5.55	26	8	39.55	53.
3600	For abrasive metal nosings on stairs, add		150	.107	L.F.	10.55	5.25	1.60	17.40	21
3700	For abrasive surface finish, add		600	.027	S.F.	1.95	1.31	.40	3.66	4.
3900	For raised abrasive strips, add		150	.107	L.F.	1.44	5.25	1.60	8.29	11
4000	Wainscot, bonded, 1-1/2" thick		30	.533	S.F.	4.27	26	8	38.27	52
4200	1/4" thick		40	.400	"	6.95	19.65	6	32.60	42.
4300	Stone chips, onyx gemstone, per 50 lb. bag				Bag	20.50			20.50	22.

09 66 16 – Terrazzo Floor Tile

09 66 16.10 Tile or Terrazzo Base

0010	**TILE OR TERRAZZO BASE**									
0020	Scratch coat only	1 Mstz	150	.053	S.F.	.20	2.85		3.05	4.
0500	Scratch and brown coat only	"	75	.107	"	.40	5.70		6.10	8.

09 66 16.13 Portland Cement Terrazzo Floor Tile

0010	**PORTLAND CEMENT TERRAZZO FLOOR TILE**									
1200	Floor tiles, non-slip, 1" thick, 12" x 12"	D-1	60	.267	S.F.	29	13.35		42.35	52
1300	1-1/4" thick, 12" x 12"		60	.267		27	13.35		40.35	50
1500	16" x 16"		50	.320		30	16.05		46.05	57
1600	1-1/2" thick, 16" x 16"		45	.356		27.50	17.80		45.30	57
1800	For Venetian terrazzo, add					8.20			8.20	9.
1900	For white cement, add					.75			.75	

09 66 16.16 Plastic Matrix Terrazzo Floor Tile

0010	**PLASTIC MATRIX TERRAZZO FLOOR TILE**									
0100	12" x 12", 3/16" thick, floor tiles w/marble chips	1 Tilf	500	.016	S.F.	8.20	.85		9.05	10.
0200	12" x 12", 3/16" thick, floor tiles w/glass chips		500	.016		8.80	.85		9.65	10.
0300	12" x 12", 3/16" thick, floor tiles w/recycled content		500	.016		17.50	.85		18.35	20.

09 66 16.30 Terrazzo, Precast

0010	**TERRAZZO, PRECAST**									
0020	Base, 6" high, straight	1 Mstz	70	.114	L.F.	13.25	6.10		19.35	23.
0100	Cove		60	.133		18	7.10		25.10	30
0300	8" high, straight		60	.133		16.90	7.10		24	29
0400	Cove		50	.160		26	8.55		34.55	41
0600	For white cement, add					.64			.64	
0700	For 16 ga. zinc toe strip, add					2.49			2.49	2.
0900	Curbs, 4" x 4" high	1 Mstz	40	.200		46	10.70		56.70	66
1000	8" x 8" high	"	30	.267		50.50	14.25		64.75	76.
2400	Stair treads, 1-1/2" thick, non-slip, three line pattern	2 Mstz	70	.229		57	12.20		69.20	81
2500	Nosing and two lines		70	.229		57	12.20		69.20	81
2700	2" thick treads, straight		60	.267		66.50	14.25		80.75	94
2800	Curved		50	.320		89.50	17.10		106.60	124
3000	Stair risers, 1" thick, to 6" high, straight sections		60	.267		17.20	14.25		31.45	40
3100	Cove		50	.320		21.50	17.10		38.60	48.
3300	Curved, 1" thick, to 6" high, vertical		48	.333		30	17.80		47.80	59

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09 66 Terrazzo Flooring

09 66 16 – Terrazzo Floor Tile

	09 66 16.30 Terrazzo, Precast	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
3400	Cove	2 Mstz	38	.421	L.F.	44.50	22.50		67	82
3600	Stair tread and riser, single piece, straight, smooth surface		60	.267		70.50	14.25		84.75	98.50
3700	Non skid surface		40	.400		91.50	21.50		113	131
3900	Curved tread and riser, smooth surface		40	.400		101	21.50		122.50	143
4000	Non skid surface		32	.500		124	26.50		150.50	176
4200	Stair stringers, notched, 1" thick		25	.640		40.50	34		74.50	94.50
4300	2" thick		22	.727		47.50	39		86.50	109
4500	Stair landings, structural, non-slip, 1-1/2" thick		85	.188	S.F.	45	10.05		55.05	64
4600	3" thick		75	.213		62.50	11.40		73.90	85
4800	Wainscot, 12" x 12" x 1" tiles	1 Mstz	12	.667		10.05	35.50		45.55	63
4900	16" x 16" x 1-1/2" tiles	"	8	1		19.85	53.50		73.35	100

09 66 23 – Resinous Matrix Terrazzo Flooring

09 66 23.13 Polyacrylate Mod. Cementitious Terrazzo Flr.

0010	**POLYACRYLATE MODIFIED CEMENTITIOUS TERRAZZO FLOORING**									
3150	Polyacrylate, 1/4" thick, granite chips	C-6	735	.065	S.F.	4.73	3.08	.08	7.89	9.85
3170	Recycled porcelain		480	.100		5.35	4.72	.12	10.19	13.05
3200	3/8" thick, granite chips		620	.077		5.65	3.65	.09	9.39	11.70
3220	Recycled porcelain		480	.100		7.45	4.72	.12	12.29	15.30

09 66 23.16 Epoxy-Resin Terrazzo Flooring

0010	**EPOXY-RESIN TERRAZZO FLOORING**									
1800	Epoxy terrazzo, 1/4" thick, chemical resistant, granite chips	J-3	200	.080	S.F.	6.45	3.93	1.20	11.58	14.10
1900	Recycled porcelain		150	.107		10.95	5.25	1.60	17.80	21.50
2500	Epoxy terrazzo, 1/4" thick, granite chips		200	.080		6.30	3.93	1.20	11.43	14
2550	Average		175	.091		6.05	4.49	1.37	11.91	14.75
2600	Recycled aggregate		150	.107		6.20	5.25	1.60	13.05	16.20
2650	Epoxy terrazzo, 3/8" thick, marble chips		200	.080		6.20	3.93	1.20	11.33	13.85
2675	Glass or mother of pearl		200	.080		7.70	3.93	1.20	12.83	15.55

09 66 33 – Conductive Terrazzo Flooring

09 66 33.10 Conductive Terrazzo

0010	**CONDUCTIVE TERRAZZO**									
2400	Bonded conductive floor for hospitals	J-3	90	.178	S.F.	5.90	8.75	2.66	17.31	22

09 66 33.13 Conductive Epoxy-Resin Terrazzo

0010	**CONDUCTIVE EPOXY-RESIN TERRAZZO**									
2100	Epoxy terrazzo, 1/4" thick, conductive, granite chips	J-3	100	.160	S.F.	10.70	7.85	2.40	20.95	26
2200	Recycled porcelain	"	90	.178	"	12.80	8.75	2.66	24.21	30

09 66 33.19 Conductive Plastic-Matrix Terrazzo Flooring

0010	**CONDUCTIVE PLASTIC-MATRIX TERRAZZO FLOORING**									
3300	Conductive, 1/4" thick, granite chips	C-6	450	.107	S.F.	9.25	5.05	.12	14.42	17.80
3330	Recycled porcelain		305	.157		11.45	7.45	.18	19.08	24
3350	3/8" thick, granite chips		365	.132		13.10	6.20	.15	19.45	24
3370	Recycled porcelain		255	.188		16.05	8.90	.22	25.17	31
3450	Granite, conductive, 1/4" thick, 20% chip		695	.069		10.80	3.26	.08	14.14	16.85
3470	50% chip		420	.114		13.95	5.40	.13	19.48	23.50
3500	3/8" thick, 20% chip		695	.069		15.80	3.26	.08	19.14	22.50
3520	50% chip		380	.126		19.10	5.95	.15	25.20	30

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09 67 Fluid-Applied Flooring

09 67 13 – Elastomeric Liquid Flooring

09 67 13.13 Elastomeric Liquid Flooring	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&
0010 **ELASTOMERIC LIQUID FLOORING**									
0020 Cementitious acrylic, 1/4" thick	C-6	520	.092	S.F.	1.91	4.36	.11	6.38	8.
0100 3/8" thick	"	450	.107		2.55	5.05	.12	7.72	10.
0200 Methyl methachrylate, 1/4" thick	C-8A	3000	.016		7.90	.78		8.68	9.
0210 1/8" thick	"	3000	.016		6.35	.78		7.13	8
0300 Cupric oxychloride, on bond coat, simple configs and patterns	C-6	480	.100		4.38	4.72	.12	9.22	11.
0400 Complex configurations and patterns		420	.114		7.30	5.40	.13	12.83	16
2400 Mastic, hot laid, 2 coat, 1-1/2" thick, std., simple configs and patterns		690	.070		5.05	3.28	.08	8.41	10
2500 Maximum		520	.092		6.50	4.36	.11	10.97	13
2700 Acid-proof, minimum		605	.079		6.50	3.74	.09	10.33	12.
2800 Maximum		350	.137		9	6.45	.16	15.61	19.
3000 Neoprene, troweled on, 1/4" thick, minimum		545	.088		4.99	4.16	.10	9.25	11
3100 Maximum		430	.112		6	5.25	.13	11.38	14
4300 Polyurethane, with suspended vinyl chips, clear		1065	.045		8.35	2.13	.05	10.53	12.
4500 Pigmented		860	.056		12	2.63	.06	14.69	17

09 67 23 – Resinous Flooring

09 67 23.23 Resinous Flooring

0010 **RESINOUS FLOORING**									
1200 Heavy duty epoxy topping, 1/4" thick,									
1300 500 to 1,000 S.F.	C-6	420	.114	S.F.	6.65	5.40	.13	12.18	15
1500 1,000 to 2,000 S.F.		450	.107		5.65	5.05	.12	10.82	13
1600 Over 10,000 S.F.		480	.100		5.35	4.72	.12	10.19	13

09 67 26 – Quartz Flooring

09 67 26.26 Quartz Flooring

0010 **QUARTZ FLOORING**									
0600 Epoxy, with colored quartz chips, broadcast, 3/8" thick	C-6	675	.071	S.F.	3.54	3.36	.08	6.98	8
0700 1/2" thick		490	.098		4.75	4.62	.11	9.48	12
0900 Troweled, minimum		560	.086		3.80	4.04	.10	7.94	10
1000 Maximum		480	.100		6.55	4.72	.12	11.39	14
3600 Polyester, with colored quartz chips, 1/16" thick, minimum		1065	.045		3.89	2.13	.05	6.07	7
3700 Maximum		560	.086		5.30	4.04	.10	9.44	11
3900 1/8" thick, minimum		810	.059		4.50	2.80	.07	7.37	9
4000 Maximum		675	.071		5.90	3.36	.08	9.34	11
4200 Polyester, heavy duty, compared to epoxy, add		2590	.019		1.77	.87	.02	2.66	3

09 67 66 – Fluid-Applied Athletic Flooring

09 67 66.10 Polyurethane

0010 **POLYURETHANE**									
4400 Thermoset, prefabricated in place, indoor									
4500 3/8" thick for basketball, gyms, etc.	1 Tilf	100	.080	S.F.	5.80	4.25		10.05	12
4600 1/2" thick for professional sports		95	.084		7.75	4.48		12.23	15
4700 Outdoor, 1/4" thick, smooth, for tennis		100	.080		6	4.25		10.25	12
5000 Poured in place, indoor, with finish, 1/4" thick		80	.100		4.28	5.30		9.58	12
5050 3/8" thick		65	.123		5.20	6.55		11.75	15
5100 1/2" thick		50	.160		6.05	8.50		14.55	19

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

09 68 Carpeting

09 68 05 – Carpet Accessories

09 68 05.11 Flooring Transition Strip	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **FLOORING TRANSITION STRIP**									
0107 Clamp down brass divider, 12′ strip, vinyl to carpet	1 Tilf	31.25	.256	Ea.	4.81	13.60		18.41	25
0117 Vinyl to hard surface	"	31.25	.256	"	4.81	13.60		18.41	25

09 68 10 – Carpet Pad

09 68 10.10 Commercial Grade Carpet Pad

0010 **COMMERCIAL GRADE CARPET PAD**									
9000 Sponge rubber pad, 20 oz./sq. yd.	1 Tilf	150	.053	S.Y.	4.88	2.83		7.71	9.50
9100 40 to 62 oz./sq. yd.		150	.053		8.15	2.83		10.98	13.10
9200 Felt pad, 20 oz./sq. yd.		150	.053		6.35	2.83		9.18	11.15
9300 32 to 56 oz./sq. yd.		150	.053		12.20	2.83		15.03	17.55
9400 Bonded urethane pad, 2.7 density		150	.053		5.95	2.83		8.78	10.70
9500 13.0 density		150	.053		7.95	2.83		10.78	12.90
9600 Prime urethane pad, 2.7 density		150	.053		3.65	2.83		6.48	8.15
9700 13.0 density		150	.053		8.15	2.83		10.98	13.10

09 68 13 – Tile Carpeting

09 68 13.10 Carpet Tile

0010 **CARPET TILE**									
0100 Tufted nylon, 18" x 18", hard back, 20 oz.	1 Tilf	80	.100	S.Y.	26.50	5.30		31.80	37
0110 26 oz.		80	.100		25	5.30		30.30	35.50
0200 Cushion back, 20 oz.		80	.100		11.55	5.30		16.85	20.50
0210 26 oz.		80	.100		36.50	5.30		41.80	48.50
1100 Tufted, 24" x 24", hard back, 24 oz. nylon		80	.100		32	5.30		37.30	43.50
1180 35 oz.		80	.100		38.50	5.30		43.80	50.50
5060 42 oz.		80	.100		43.50	5.30		48.80	56
6000 Electrostatic dissapative carpet tile, 24" x 24", 24 oz.		80	.100		38.50	5.30		43.80	50.50
6100 Electrostatic dissapative carpet tile for access floors, 24" x 24", 24 oz.		80	.100		48.50	5.30		53.80	61.50

09 68 16 – Sheet Carpeting

09 68 16.10 Sheet Carpet

0010 **SHEET CARPET**									
0700 Nylon, level loop, 26 oz., light to medium traffic	1 Tilf	75	.107	S.Y.	15.90	5.65		21.55	26
0720 28 oz., light to medium traffic		75	.107		32	5.65		37.65	44
0900 32 oz., medium traffic		75	.107		41.50	5.65		47.15	54
1100 40 oz., medium to heavy traffic		75	.107		56	5.65		61.65	70
2920 Nylon plush, 30 oz., medium traffic		75	.107		15.15	5.65		20.80	25
3000 36 oz., medium traffic		75	.107		38.50	5.65		44.15	51
3100 42 oz., medium to heavy traffic		70	.114		20.50	6.05		26.55	31.50
3200 46 oz., medium to heavy traffic		70	.114		54	6.05		60.05	68
3300 54 oz., heavy traffic		70	.114		32	6.05		38.05	44.50
3340 60 oz., heavy traffic		70	.114		69	6.05		75.05	84.50
3665 Olefin, 24 oz., light to medium traffic		75	.107		11.55	5.65		17.20	21
3670 26 oz., medium traffic		75	.107		12.85	5.65		18.50	22.50
3680 28 oz., medium to heavy traffic		75	.107		25	5.65		30.65	36
3700 32 oz., medium to heavy traffic		75	.107		32	5.65		37.65	44
3730 42 oz., heavy traffic		70	.114		28	6.05		34.05	39.50
4110 Wool, level loop, 40 oz., medium traffic		70	.114		117	6.05		123.05	138
4500 50 oz., medium to heavy traffic		70	.114		109	6.05		115.05	129
4700 Patterned, 32 oz., medium to heavy traffic		70	.114		99.50	6.05		105.55	118
4900 48 oz., heavy traffic		70	.114		109	6.05		115.05	129
5000 For less than full roll (approx. 1500 S.F.), add					25%				
5100 For small rooms, less than 12′ wide, add						25%			
5200 For large open areas (no cuts), deduct						25%			

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09 68 Carpeting

09 68 16 – Sheet Carpeting

	09 68 16.10 Sheet Carpet	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
5600	For bound carpet baseboard, add	1 Tilf	300	.027	L.F.	2.03	1.42		3.45	4.3
5610	For stairs, not incl. price of carpet, add	"	30	.267	Riser		14.15		14.15	20.5
5620	For borders and patterns, add to labor						18%			
8950	For tackless, stretched installation, add padding from 09 68 10.10 to above									
9850	For brand-named specific fiber, add				S.Y.	25%				

09 68 20 – Athletic Carpet

09 68 20.10 Indoor Athletic Carpet

0010	**INDOOR ATHLETIC CARPET**									
3700	Polyethylene, in rolls, no base incl., landscape surfaces	1 Tilf	275	.029	S.F.	3.59	1.55		5.14	6.2
3800	Nylon action surface, 1/8" thick		275	.029		4.05	1.55		5.60	6.7
3900	1/4" thick		275	.029		5.85	1.55		7.40	8.6
4000	3/8" thick		275	.029		7.35	1.55		8.90	10.3
4100	Golf tee surface with foam back		235	.034		7.25	1.81		9.06	10.6
4200	Practice putting, knitted nylon surface		235	.034		6.15	1.81		7.96	9.4
4300	Synthetic turf, 1/2" ht.		90	.089		3.93	4.72		8.65	11.2
4350	3/4" ht.		210	.038		6.40	2.02		8.42	10
4400	1" ht.		190	.042		7	2.24		9.24	10.9
5500	Polyvinyl chloride, sheet goods for gyms, 1/4" thick		80	.100		6.10	5.30		11.40	14.5
5600	3/8" thick		60	.133		8.95	7.10		16.05	20

09 69 Access Flooring

09 69 13 – Rigid-Grid Access Flooring

09 69 13.10 Access Floors

0010	**ACCESS FLOORS**									
0015	Access floor pkg. including panel, pedestal, & stringers 1500 lbs. load									
0100	Package pricing, conc. fill panels, no fin., 6" ht.	4 Carp	750	.043	S.F.	15.20	2.40		17.60	20.5
0105	12" ht.		750	.043		17.45	2.40		19.85	23
0110	18" ht.		750	.043		15.60	2.40		18	20.5
0115	24" ht.		750	.043		15.80	2.40		18.20	21
0120	Package pricing, steel panels, no fin., 6" ht.		750	.043		17.15	2.40		19.55	22.5
0125	12" ht.		750	.043		18.30	2.40		20.70	23.5
0130	18" ht.		750	.043		17.75	2.40		20.15	23
0135	24" ht.		750	.043		18.10	2.40		20.50	23.5
0140	Package pricing, wood core panels, no fin., 6" ht.		750	.043		12.35	2.40		14.75	17.2
0145	12" ht.		750	.043		12.55	2.40		14.95	17.4
0150	18" ht.		750	.043		12.75	2.40		15.15	17.6
0155	24" ht.		750	.043		12.95	2.40		15.35	17.8
0160	Pkg. pricing, conc. fill pnls, no stringers, no fin., 6" ht, 1250 lbs. load		700	.046		18.15	2.57		20.72	24
0165	12" ht.		700	.046		18.35	2.57		20.92	24
0170	18" ht.		700	.046		18.55	2.57		21.12	24.5
0175	24" ht.		700	.046		18.80	2.57		21.37	24.5
0250	Panels, 2' x 2' conc. fill, no fin.	2 Carp	500	.032		23	1.80		24.80	28
0255	With 1/8" high pressure laminate		500	.032		57	1.80		58.80	65.5
0260	Metal panels with 1/8" high pressure laminate		500	.032		67.50	1.80		69.30	77
0265	Wood core panels with 1/8" high pressure laminate		500	.032		44.50	1.80		46.30	51.5
0400	Aluminum panels, no fin.		500	.032		35.50	1.80		37.30	41.5
0600	For carpet covering, add					9.35			9.35	10.3
0700	For vinyl floor covering, add					9.95			9.95	10.9
0900	For high pressure laminate covering, add					8.25			8.25	9.0
0910	For snap on stringer system, add	2 Carp	1000	.016		1.47	.90		2.37	2.9

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09 69 Access Flooring

09 69 13 – Rigid-Grid Access Flooring

	09 69 13.10 Access Floors	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1000	Machine cutouts after initial installation	1 Carp	50	.160	Ea.	20	9		29	35.50
1050	Pedestals, 6" to 12"	2 Carp	85	.188		9.35	10.60		19.95	26
1100	Air conditioning grilles, 4" x 12"	1 Carp	17	.471		73.50	26.50		100	121
1150	4" x 18"	"	14	.571		101	32		133	159
1200	Approach ramps, steel	2 Carp	60	.267	S.F.	30	15		45	55.50
1300	Aluminum	"	40	.400	"	35.50	22.50		58	72.50
1500	Handrail, 2 rail, aluminum	1 Carp	15	.533	L.F.	128	30		158	185

09 72 Wall Coverings

09 72 13 – Cork Wall Coverings

09 72 13.10 Covering, Cork Wall

0010	**COVERING, CORK WALL**									
0600	Cork tiles, light or dark, 12" x 12" x 3/16"	1 Pape	240	.033	S.F.	4.04	1.60		5.64	6.80
0700	5/16" thick		235	.034		3.38	1.64		5.02	6.15
0900	1/4" basket weave		240	.033		3.12	1.60		4.72	5.80
1000	1/2" natural, non-directional pattern		240	.033		6.60	1.60		8.20	9.60
1100	3/4" natural, non-directional pattern		240	.033		12.35	1.60		13.95	15.90
1200	Granular surface, 12" x 36", 1/2" thick		385	.021		1.35	1		2.35	2.97
1300	1" thick		370	.022		1.76	1.04		2.80	3.48
1500	Polyurethane coated, 12" x 12" x 3/16" thick		240	.033		4.26	1.60		5.86	7.05
1600	5/16" thick		235	.034		6.10	1.64		7.74	9.10
1800	Cork wallpaper, paperbacked, natural		480	.017		1.65	.80		2.45	3.01
1900	Colors		480	.017		2.14	.80		2.94	3.54

09 72 16 – Vinyl-Coated Fabric Wall Coverings

09 72 16.13 Flexible Vinyl Wall Coverings

0010	**FLEXIBLE VINYL WALL COVERINGS**									
3000	Vinyl wall covering, fabric-backed, lightweight, type 1 (12-15 oz./S.Y.)	1 Pape	640	.013	S.F.	1.57	.60		2.17	2.62
3300	Medium weight, type 2 (20-24 oz./S.Y.)		480	.017		1.23	.80		2.03	2.54
3400	Heavy weight, type 3 (28 oz./S.Y.)		435	.018		1.87	.88		2.75	3.37
3600	Adhesive, 5 gal. lots (18 S.Y./gal.)				Gal.	9.70			9.70	10.70

09 72 16.16 Rigid-Sheet Vinyl Wall Coverings

0010	**RIGID-SHEET VINYL WALL COVERINGS**									
0100	Acrylic, modified, semi-rigid PVC, .028" thick	2 Carp	330	.048	S.F.	1.54	2.73		4.27	5.75
0110	.040" thick	"	320	.050	"	2.04	2.82		4.86	6.45

09 72 19 – Textile Wall Coverings

09 72 19.10 Textile Wall Covering

0010	**TEXTILE WALL COVERING**, including sizing; add 10-30% waste @ takeoff									
0020	Silk	1 Pape	640	.013	S.F.	6.10	.60		6.70	7.60
0030	Cotton		640	.013		4.75	.60		5.35	6.10
0040	Linen		640	.013		4.36	.60		4.96	5.70
0050	Blend		640	.013		3.28	.60		3.88	4.50
0060	Linen wall covering, paper backed									
0070	Flame treatment				S.F.	1.03			1.03	1.13
0080	Stain resistance treatment					1.91			1.91	2.10
0090	Grass cloth, natural fabric G	1 Pape	400	.020		1.82	.96		2.78	3.42
0100	Grass cloths with lining paper G		400	.020		1.26	.96		2.22	2.81
0110	Premium texture/color G		350	.023		3.47	1.10		4.57	5.45

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09 72 Wall Coverings

09 72 20 – Natural Fiber Wall Covering

09 72 20.10 Natural Fiber Wall Covering	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **NATURAL FIBER WALL COVERING**, including sizing; add 10-30% waste @ takeoff									
0015 Bamboo	1 Pape	640	.013	S.F.	2.72	.60		3.32	3.8
0030 Burlap		640	.013		2.72	.60		3.32	3.8
0045 Jute		640	.013		2.36	.60		2.96	3.4
0060 Sisal		640	.013		1.74	.60		2.34	2.8

09 72 23 – Wallpapering

09 72 23.10 Wallpaper

0010 **WALLPAPER** including sizing; add 10-30% waste @ takeoff R097223-10									
0050 Aluminum foil	1 Pape	275	.029	S.F.	1.07	1.40		2.47	3.2
0100 Copper sheets, .025" thick, vinyl backing		240	.033		5.70	1.60		7.30	8.6
0300 Phenolic backing		240	.033		7.40	1.60		9	10.5
2400 Gypsum-based, fabric-backed, fire resistant									
2500 for masonry walls, 21 oz./S.Y.	1 Pape	800	.010	S.F.	.89	.48		1.37	1.6
2700 Small quantities		640	.013		.89	.60		1.49	1.8
3700 Wallpaper, average workmanship, solid pattern, low cost paper		640	.013		.60	.60		1.20	1.5
3900 Basic patterns (matching required), avg. cost paper		535	.015		1.35	.72		2.07	2.5
4000 Paper at $85 per double roll, quality workmanship		435	.018		2.34	.88		3.22	3.8

09 74 Flexible Wood Sheets

09 74 16 – Flexible Wood Veneers

09 74 16.10 Veneer, Flexible Wood

0010 **VENEER, FLEXIBLE WOOD**									
0100 Flexible wood veneer, 1/32" thick, plain woods	1 Pape	100	.080	S.F.	2.55	3.84		6.39	8.5
0110 Exotic woods	"	95	.084	"	3.85	4.05		7.90	10.2

09 77 Special Wall Surfacing

09 77 30 – Fiberglass Reinforced Panels

09 77 30.10 Fiberglass Reinforced Plastic Panels

0010 **FIBERGLASS REINFORCED PLASTIC PANELS**, .090" thick									
0020 On walls, adhesive mounted, embossed surface	2 Carp	640	.025	S.F.	1.50	1.41		2.91	3.7
0030 Smooth surface		640	.025		1.97	1.41		3.38	4.2
0040 Fire rated, embossed surface		640	.025		3	1.41		4.41	5.4
0050 Nylon rivet mounted, on drywall, embossed surface		480	.033		1.50	1.88		3.38	4.4
0060 Smooth surface		480	.033		2.06	1.88		3.94	5.0
0070 Fire rated, embossed surface		480	.033		2.50	1.88		4.38	5.5
0080 On masonry, embossed surface		320	.050		1.41	2.82		4.23	5.7
0090 Smooth surface		320	.050		1.77	2.82		4.59	6.1
0100 Fire rated, embossed surface		320	.050		2.50	2.82		5.32	6.9
0110 Nylon rivet and adhesive mounted, on drywall, embossed surface		240	.067		1.63	3.75		5.38	7.4
0120 Smooth surface		240	.067		1.73	3.75		5.48	7.5
0130 Fire rated, embossed surface		240	.067		2.81	3.75		6.56	8.7
0140 On masonry, embossed surface		190	.084		1.63	4.74		6.37	8.8
0150 Smooth surface		190	.084		1.73	4.74		6.47	8.9
0160 Fire rated, embossed surface		190	.084		2.81	4.74		7.55	10.1
0170 For moldings, add	1 Carp	250	.032	L.F.	.30	1.80		2.10	3.0
0180 On ceilings, for lay in grid system, embossed surface		400	.020	S.F.	1.50	1.13		2.63	3.3
0190 Smooth surface		400	.020		1.97	1.13		3.10	3.8
0200 Fire rated, embossed surface		400	.020		3	1.13		4.13	4.9

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09 77 Special Wall Surfacing

09 77 43 – Panel Systems

09 77 43.20 Slatwall Panels and Accessories	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **SLATWALL PANELS AND ACCESSORIES**									
0100 Slatwall panel, 4′ x 8′ x 3/4″ T, MDF, paint grade	1 Carp	500	.016	S.F.	1.69	.90		2.59	3.20
0110 Melamine finish		500	.016		2.66	.90		3.56	4.27
0120 High pressure plastic laminate finish		500	.016		3.73	.90		4.63	5.45
0125 Wood veneer		500	.016		2.73	.90		3.63	4.34
0130 Aluminum channel inserts, add					2.84			2.84	3.12
0200 Accessories, corner forms, 8′ L				L.F.	4.37			4.37	4.81
0210 T-connector, 8′ L					5.75			5.75	6.30
0220 J-mold, 8′ L					1.31			1.31	1.44
0230 Edge cap, 8′ L					3.12			3.12	3.43
0240 Finish end cap, 8′ L					3.62			3.62	3.98
0300 Display hook, metal, 4″ L				Ea.	.46			.46	.51
0310 6″ L					.51			.51	.56
0320 8″ L					.56			.56	.62
0330 10″ L					.53			.53	.58
0340 12″ L					.50			.50	.55
0350 Acrylic, 4″ L					.16			.16	.18
0360 6″ L					.18			.18	.20
0400 Waterfall hanger, metal, 12″-16″					4.08			4.08	4.49
0410 Acrylic					11			11	12.10
0500 Shelf bracket, metal, 8″					1.96			1.96	2.16
0510 10″					2.04			2.04	2.24
0520 12″					2.04			2.04	2.24
0530 14″					2.50			2.50	2.75
0540 16″					3.20			3.20	3.52
0550 Acrylic, 8″					4.30			4.30	4.73
0560 10″					4.55			4.55	5
0570 12″					4.96			4.96	5.45
0580 14″					5.70			5.70	6.25
0600 Shelf, acrylic, 12″ x 16″ x 1/4″					24.50			24.50	27
0610 12″ x 24″ x 1/4″					39			39	43

09 81 Acoustic Insulation

09 81 13 – Acoustic Board Insulation

09 81 13.10 Acoustic Board Insulation

0010 **ACOUSTIC BOARD INSULATION**									
0020 Cellulose fiber board, 1/2″ thk.	1 Carp	800	.010	S.F.	.90	.56		1.46	1.83

09 81 16 – Acoustic Blanket Insulation

09 81 16.10 Sound Attenuation Blanket

0010 **SOUND ATTENUATION BLANKET**									
0020 Blanket, 1″ thick	1 Carp	925	.009	S.F.	.30	.49		.79	1.05
0500 1-1/2″ thick		920	.009		.37	.49		.86	1.14
1000 2″ thick		915	.009		.46	.49		.95	1.24
1500 3″ thick		910	.009		.72	.49		1.21	1.53
2000 Wall hung, STC 18-21, 1″ thick, 4′ x 20′	2 Carp	22	.727	Ea.	107	41		148	179
2010 10′ x 20′	″	19	.842		268	47.50		315.50	365
2020 Wall hung, STC 27-28, 3″ thick, 4′ x 20′	3 Carp	12	2		620	113		733	855
2030 10′ x 20′	″	9	2.667		1,550	150		1,700	1,925
3000 Thermal or acoustical batt above ceiling, 2″ thick	1 Carp	900	.009	S.F.	.53	.50		1.03	1.32
3100 3″ thick		900	.009		.72	.50		1.22	1.53

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09 81 Acoustic Insulation

09 81 16 – Acoustic Blanket Insulation

	09 81 16.10 Sound Attenuation Blanket	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&
3200	4" thick	1 Carp	900	.009	S.F.	1	.50		1.50	1
3400	Urethane plastic foam, open cell, on wall, 2" thick	2 Carp	2050	.008		3.35	.44		3.79	4
3500	3" thick		1550	.010		4.46	.58		5.04	5
3600	4" thick		1050	.015		6.25	.86		7.11	8
3700	On ceiling, 2" thick		1700	.009		3.34	.53		3.87	4
3800	3" thick		1300	.012		4.46	.69		5.15	5
3900	4" thick		900	.018		6.25	1		7.25	8

09 84 Acoustic Room Components

09 84 13 – Fixed Sound-Absorptive Panels

	09 84 13.10 Fixed Panels	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&
0010	**FIXED PANELS** Perforated steel facing, painted with									
0100	Fiberglass or mineral filler, no backs, 2-1/4" thick, modular									
0200	space units, ceiling or wall hung, white or colored	1 Carp	100	.080	S.F.	11.60	4.50		16.10	19
0300	Fiberboard sound deadening panels, 1/2" thick	"	600	.013	"	.31	.75		1.06	1
0500	Fiberglass panels, 4' x 8' x 1" thick, with									
0600	glass cloth face for walls, cemented	1 Carp	155	.052	S.F.	9.75	2.91		12.66	15
0700	1-1/2" thick, dacron covered, inner aluminum frame,									
0710	wall mounted	1 Carp	300	.027	S.F.	8.55	1.50		10.05	11
0900	Mineral fiberboard panels, fabric covered, 30" x 108",									
1000	3/4" thick, concealed spline, wall mounted	1 Carp	150	.053	S.F.	6.15	3		9.15	11

09 84 36 – Sound-Absorbing Ceiling Units

	09 84 36.10 Barriers	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&
0010	**BARRIERS** Plenum									
0600	Aluminum foil, fiberglass reinf., parallel with joists	1 Carp	275	.029	S.F.	2.29	1.64		3.93	4
0700	Perpendicular to joists		180	.044		2.29	2.50		4.79	6
0900	Aluminum mesh, kraft paperbacked		275	.029		.73	1.64		2.37	3
0970	Fiberglass batts, kraft faced, 3-1/2" thick		1400	.006		.35	.32		.67	
0980	6" thick		1300	.006		.63	.35		.98	1
1000	Sheet lead, 1 lb., 1/64" thick, perpendicular to joists		150	.053		8.35	3		11.35	13
1100	Vinyl foam reinforced, 1/8" thick, 1.0 lb./S.F.		150	.053		5.55	3		8.55	10

09 91 Painting

09 91 13 – Exterior Painting

	09 91 13.30 Fences	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&
0010	**FENCES** R099100-20									
0100	Chain link or wire metal, one side, water base									
0110	Roll & brush, first coat	1 Pord	960	.008	S.F.	.12	.40		.52	
0120	Second coat		1280	.006		.12	.30		.42	
0130	Spray, first coat		2275	.004		.12	.17		.29	
0140	Second coat		2600	.003		.12	.15		.27	
0150	Picket, water base									
0160	Roll & brush, first coat	1 Pord	865	.009	S.F.	.13	.44		.57	
0170	Second coat		1050	.008		.13	.36		.49	
0180	Spray, first coat		2275	.004		.13	.17		.30	
0190	Second coat		2600	.003		.13	.15		.28	
0200	Stockade, water base									
0210	Roll & brush, first coat	1 Pord	1040	.008	S.F.	.13	.37		.50	
0220	Second coat		1200	.007		.13	.32		.45	

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09 91 13 – Exterior Painting

	09 91 13.30 Fences	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0230	Spray, first coat	1 Pord	2275	.004	S.F.	.13	.17		.30	.40
0240	Second coat	↓	2600	.003	↓	.13	.15		.28	.37
	09 91 13.42 Miscellaneous, Exterior									
0010	**MISCELLANEOUS, EXTERIOR** R099100-20									
0015	For painting metals, see Section 09 97 13.23									
0100	Railing, ext., decorative wood, incl. cap & baluster									
0110	Newels & spindles @ 12" OC									
0120	Brushwork, stain, sand, seal & varnish									
0130	First coat	1 Pord	90	.089	L.F.	1.08	4.25		5.33	7.50
0140	Second coat	"	120	.067	"	1.08	3.19		4.27	5.90
0150	Rough sawn wood, 42" high, 2" x 2" verticals, 6" OC									
0160	Brushwork, stain, each coat	1 Pord	90	.089	L.F.	.34	4.25		4.59	6.70
0170	Wrought iron, 1" rail, 1/2" sq. verticals									
0180	Brushwork, zinc chromate, 60" high, bars 6" OC									
0190	Primer	1 Pord	130	.062	L.F.	1.53	2.94		4.47	6.05
0200	Finish coat		130	.062		2.30	2.94		5.24	6.90
0210	Additional coat	↓	190	.042	↓	2.68	2.01		4.69	5.95
0220	Shutters or blinds, single panel, 2' x 4', paint all sides									
0230	Brushwork, primer	1 Pord	20	.400	Ea.	1.54	19.10		20.64	30
0240	Finish coat, exterior latex		20	.400		1	19.10		20.10	29.50
0250	Primer & 1 coat, exterior latex		13	.615		2.18	29.50		31.68	46
0260	Spray, primer		35	.229		2.24	10.95		13.19	18.65
0270	Finish coat, exterior latex		35	.229		2.12	10.95		13.07	18.55
0280	Primer & 1 coat, exterior latex	↓	20	.400	↓	2.37	19.10		21.47	31
0290	For louvered shutters, add				S.F.	10%				
0300	Stair stringers, exterior, metal									
0310	Roll & brush, zinc chromate, to 14", each coat	1 Pord	320	.025	L.F.	.77	1.20		1.97	2.61
0320	Rough sawn wood, 4" x 12"									
0330	Roll & brush, exterior latex, each coat	1 Pord	215	.037	L.F.	.15	1.78		1.93	2.80
0340	Trellis/lattice, 2" x 2" @ 3" OC with 2" x 8" supports									
0350	Spray, latex, per side, each coat	1 Pord	475	.017	S.F.	.15	.81		.96	1.35
0450	Decking, ext., sealer, alkyd, brushwork, sealer coat		1140	.007		.15	.34		.49	.67
0460	1st coat		1140	.007		.13	.34		.47	.64
0470	2nd coat		1300	.006		.10	.29		.39	.55
0500	Paint, alkyd, brushwork, primer coat		1140	.007		.12	.34		.46	.63
0510	1st coat		1140	.007		.20	.34		.54	.72
0520	2nd coat		1300	.006		.15	.29		.44	.60
0600	Sand paint, alkyd, brushwork, 1 coat	↓	150	.053	↓	.13	2.55		2.68	3.93
	09 91 13.60 Siding Exterior									
0010	**SIDING EXTERIOR**, Alkyd (oil base) R099100-10									
0450	Steel siding, oil base, paint 1 coat, brushwork	2 Pord	2015	.008	S.F.	.16	.38		.54	.74
0500	Spray R099100-20		4550	.004		.24	.17		.41	.52
0800	Paint 2 coats, brushwork		1300	.012		.32	.59		.91	1.22
1000	Spray		2750	.006		.15	.28		.43	.58
1200	Stucco, rough, oil base, paint 2 coats, brushwork		1300	.012		.32	.59		.91	1.22
1400	Roller		1625	.010		.34	.47		.81	1.07
1600	Spray		2925	.005		.36	.26		.62	.78
1800	Texture 1-11 or clapboard, oil base, primer coat, brushwork		1300	.012		.15	.59		.74	1.04
2000	Spray		4550	.004		.15	.17		.32	.42
2400	Paint 2 coats, brushwork		810	.020		.47	.94		1.41	1.91
2600	Spray		2600	.006		.52	.29		.81	1.01
3400	Stain 2 coats, brushwork	↓	950	.017	↓	.23	.81		1.04	1.44

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09 91 13 – Exterior Painting

	09 91 13.60 Siding Exterior		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4000	Spray		2 Pord	3050	.005	S.F.	.25	.25		.50	
4200	Wood shingles, oil base primer coat, brushwork			1300	.012		.14	.59		.73	1.
4400	Spray			3900	.004		.13	.20		.33	
5000	Paint 2 coats, brushwork			810	.020		.39	.94		1.33	1.
5200	Spray			2275	.007		.37	.34		.71	
6500	Stain 2 coats, brushwork			950	.017		.23	.81		1.04	1.
7000	Spray			2660	.006		.31	.29		.60	
8000	For latex paint, deduct						10%				
8100	For work over 12′ H, from pipe scaffolding, add							15%			
8200	For work over 12′ H, from extension ladder, add							25%			
8300	For work over 12′ H, from swing staging, add							35%			
	09 91 13.62 Siding, Misc.										
0010	**SIDING, MISC.**, latex paint	R099100-10									
0100	Aluminum siding										
0110	Brushwork, primer	R099100-20	2 Pord	2275	.007	S.F.	.14	.34		.48	
0120	Finish coat, exterior latex			2275	.007		.13	.34		.47	
0130	Primer & 1 coat exterior latex			1300	.012		.29	.59		.88	1.
0140	Primer & 2 coats exterior latex			975	.016		.42	.78		1.20	1.
0150	Mineral fiber shingles										
0160	Brushwork, primer		2 Pord	1495	.011	S.F.	.15	.51		.66	
0170	Finish coat, industrial enamel			1495	.011		.42	.51		.93	1.
0180	Primer & 1 coat enamel			810	.020		.57	.94		1.51	2.
0190	Primer & 2 coats enamel			540	.030		1	1.42		2.42	3.
0200	Roll, primer			1625	.010		.17	.47		.64	
0210	Finish coat, industrial enamel			1625	.010		.45	.47		.92	1.
0220	Primer & 1 coat enamel			975	.016		.63	.78		1.41	1.
0230	Primer & 2 coats enamel			650	.025		1.08	1.18		2.26	2.
0240	Spray, primer			3900	.004		.13	.20		.33	
0250	Finish coat, industrial enamel			3900	.004		.38	.20		.58	
0260	Primer & 1 coat enamel			2275	.007		.51	.34		.85	1.
0270	Primer & 2 coats enamel			1625	.010		.89	.47		1.36	1.
0280	Waterproof sealer, first coat			4485	.004		.12	.17		.29	
0290	Second coat			5235	.003		.12	.15		.27	
0300	Rough wood incl. shingles, shakes or rough sawn siding										
0310	Brushwork, primer		2 Pord	1280	.013	S.F.	.31	.60		.91	1.
0320	Finish coat, exterior latex			1280	.013		.23	.60		.83	1.
0330	Primer & 1 coat exterior latex			960	.017		.54	.80		1.34	1.
0340	Primer & 2 coats exterior latex			700	.023		.76	1.09		1.85	2.
0350	Roll, primer			2925	.005		.41	.26		.67	
0360	Finish coat, exterior latex			2925	.005		.27	.26		.53	
0370	Primer & 1 coat exterior latex			1790	.009		.69	.43		1.12	1.
0380	Primer & 2 coats exterior latex			1300	.012		.96	.59		1.55	1.
0390	Spray, primer			3900	.004		.35	.20		.55	
0400	Finish coat, exterior latex			3900	.004		.21	.20		.41	
0410	Primer & 1 coat exterior latex			2600	.006		.56	.29		.85	1.
0420	Primer & 2 coats exterior latex			2080	.008		.77	.37		1.14	1.
0430	Waterproof sealer, first coat			4485	.004		.22	.17		.39	
0440	Second coat			4485	.004		.12	.17		.29	
0450	Smooth wood incl. butt, T&G, beveled, drop or B&B siding										
0460	Brushwork, primer		2 Pord	2325	.007	S.F.	.22	.33		.55	
0470	Finish coat, exterior latex			1280	.013		.23	.60		.83	1.
0480	Primer & 1 coat exterior latex			800	.020		.45	.96		1.41	1.

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09 91 13 – Exterior Painting

	09 91 13.62 Siding, Misc.	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0490	Primer & 2 coats exterior latex	2 Pord	630	.025	S.F.	.68	1.21		1.89	2.54
0500	Roll, primer		2275	.007		.25	.34		.59	.77
0510	Finish coat, exterior latex		2275	.007		.24	.34		.58	.77
0520	Primer & 1 coat exterior latex		1300	.012		.49	.59		1.08	1.41
0530	Primer & 2 coats exterior latex		975	.016		.74	.78		1.52	1.97
0540	Spray, primer		4550	.004		.19	.17		.36	.46
0550	Finish coat, exterior latex		4550	.004		.21	.17		.38	.48
0560	Primer & 1 coat exterior latex		2600	.006		.40	.29		.69	.88
0570	Primer & 2 coats exterior latex		1950	.008		.61	.39		1	1.26
0580	Waterproof sealer, first coat		5230	.003		.12	.15		.27	.35
0590	Second coat		5980	.003		.12	.13		.25	.32
0600	For oil base paint, add					10%				

09 91 13.70 Doors and Windows, Exterior

0010	**DOORS AND WINDOWS, EXTERIOR** R099100-10									
0100	Door frames & trim, only									
0110	Brushwork, primer R099100-20	1 Pord	512	.016	L.F.	.14	.75		.89	1.26
0120	Finish coat, exterior latex		512	.016		.12	.75		.87	1.25
0130	Primer & 1 coat, exterior latex		300	.027		.26	1.27		1.53	2.18
0140	Primer & 2 coats, exterior latex		265	.030		.39	1.44		1.83	2.57
0150	Doors, flush, both sides, incl. frame & trim									
0160	Roll & brush, primer	1 Pord	10	.800	Ea.	10.65	38		48.65	68
0170	Finish coat, exterior latex		10	.800		9.50	38		47.50	67
0180	Primer & 1 coat, exterior latex		7	1.143		20	54.50		74.50	103
0190	Primer & 2 coats, exterior latex		5	1.600		29.50	76.50		106	146
0200	Brushwork, stain, sealer & 2 coats polyurethane		4	2		36.50	95.50		132	183
0210	Doors, French, both sides, 10-15 lite, incl. frame & trim									
0220	Brushwork, primer	1 Pord	6	1.333	Ea.	5.30	63.50		68.80	100
0230	Finish coat, exterior latex		6	1.333		4.74	63.50		68.24	99.50
0240	Primer & 1 coat, exterior latex		3	2.667		10.05	127		137.05	200
0250	Primer & 2 coats, exterior latex		2	4		14.50	191		205.50	299
0260	Brushwork, stain, sealer & 2 coats polyurethane		2.50	3.200		13.65	153		166.65	242
0270	Doors, louvered, both sides, incl. frame & trim									
0280	Brushwork, primer	1 Pord	7	1.143	Ea.	10.65	54.50		65.15	92.50
0290	Finish coat, exterior latex		7	1.143		9.50	54.50		64	91.50
0300	Primer & 1 coat, exterior latex		4	2		20	95.50		115.50	164
0310	Primer & 2 coats, exterior latex		3	2.667		29	127		156	221
0320	Brushwork, stain, sealer & 2 coats polyurethane		4.50	1.778		36.50	85		121.50	167
0330	Doors, panel, both sides, incl. frame & trim									
0340	Roll & brush, primer	1 Pord	6	1.333	Ea.	10.65	63.50		74.15	106
0350	Finish coat, exterior latex		6	1.333		9.50	63.50		73	105
0360	Primer & 1 coat, exterior latex		3	2.667		20	127		147	211
0370	Primer & 2 coats, exterior latex		2.50	3.200		29	153		182	259
0380	Brushwork, stain, sealer & 2 coats polyurethane		3	2.667		36.50	127		163.50	230
0400	Windows, per ext. side, based on 15 S.F.									
0410	1 to 6 lite									
0420	Brushwork, primer	1 Pord	13	.615	Ea.	2.10	29.50		31.60	46
0430	Finish coat, exterior latex		13	.615		1.87	29.50		31.37	45.50
0440	Primer & 1 coat, exterior latex		8	1		3.97	48		51.97	75.50
0450	Primer & 2 coats, exterior latex		6	1.333		5.75	63.50		69.25	101
0460	Stain, sealer & 1 coat varnish		7	1.143		5.40	54.50		59.90	87
0470	7 to 10 lite									
0480	Brushwork, primer	1 Pord	11	.727	Ea.	2.10	35		37.10	54

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09 91 13 – Exterior Painting

	09 91 13.70 Doors and Windows, Exterior	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0490	Finish coat, exterior latex	1 Pord	11	.727	Ea.	1.87	35		36.87	53.5
0500	Primer & 1 coat, exterior latex		7	1.143		3.97	54.50		58.47	85.5
0510	Primer & 2 coats, exterior latex		5	1.600		5.75	76.50		82.25	119
0520	Stain, sealer & 1 coat varnish		6	1.333		5.40	63.50		68.90	100
0530	12 lite									
0540	Brushwork, primer	1 Pord	10	.800	Ea.	2.10	38		40.10	59
0550	Finish coat, exterior latex		10	.800		1.87	38		39.87	58.5
0560	Primer & 1 coat, exterior latex		6	1.333		3.97	63.50		67.47	99
0570	Primer & 2 coats, exterior latex		5	1.600		5.75	76.50		82.25	119
0580	Stain, sealer & 1 coat varnish		6	1.333		5.70	63.50		69.20	101
0590	For oil base paint, add					10%				

09 91 13.80 Trim, Exterior

0010	**TRIM, EXTERIOR** R099100-10									
0100	Door frames & trim (see Doors, interior or exterior)									
0110	Fascia, latex paint, one coat coverage R099100-20									
0120	1" x 4", brushwork	1 Pord	640	.013	L.F.	.04	.60		.64	
0130	Roll		1280	.006		.04	.30		.34	
0140	Spray		2080	.004		.03	.18		.21	
0150	1" x 6" to 1" x 10", brushwork		640	.013		.13	.60		.73	1.
0160	Roll		1230	.007		.14	.31		.45	
0170	Spray		2100	.004		.11	.18		.29	
0180	1" x 12", brushwork		640	.013		.13	.60		.73	1.
0190	Roll		1050	.008		.14	.36		.50	
0200	Spray		2200	.004		.11	.17		.28	
0210	Gutters & downspouts, metal, zinc chromate paint									
0220	Brushwork, gutters, 5", first coat	1 Pord	640	.013	L.F.	.81	.60		1.41	1.
0230	Second coat		960	.008		.77	.40		1.17	1.
0240	Third coat		1280	.006		.62	.30		.92	1.
0250	Downspouts, 4", first coat		640	.013		.81	.60		1.41	1.
0260	Second coat		960	.008		.77	.40		1.17	1.
0270	Third coat		1280	.006		.62	.30		.92	1.
0280	Gutters & downspouts, wood									
0290	Brushwork, gutters, 5", primer	1 Pord	640	.013	L.F.	.14	.60		.74	1.
0300	Finish coat, exterior latex		640	.013		.11	.60		.71	1.
0310	Primer & 1 coat exterior latex		400	.020		.26	.96		1.22	1.
0320	Primer & 2 coats exterior latex		325	.025		.39	1.18		1.57	2.
0330	Downspouts, 4", primer		640	.013		.14	.60		.74	1.
0340	Finish coat, exterior latex		640	.013		.11	.60		.71	1.
0350	Primer & 1 coat exterior latex		400	.020		.26	.96		1.22	1.
0360	Primer & 2 coats exterior latex		325	.025		.19	1.18		1.37	1.
0370	Molding, exterior, up to 14" wide									
0380	Brushwork, primer	1 Pord	640	.013	L.F.	.17	.60		.77	1.
0390	Finish coat, exterior latex		640	.013		.13	.60		.73	1.
0400	Primer & 1 coat exterior latex		400	.020		.32	.96		1.28	1.
0410	Primer & 2 coats exterior latex		315	.025		.32	1.21		1.53	2.
0420	Stain & fill		1050	.008		.14	.36		.50	
0430	Shellac		1850	.004		.15	.21		.36	
0440	Varnish		1275	.006		.16	.30		.46	

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09 91 13 – Exterior Painting

09 91 13.90 Walls, Masonry (CMU), Exterior		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **WALLS, MASONRY (CMU), EXTERIOR**	R099100-10									
0360 Concrete masonry units (CMU), smooth surface										
0370 Brushwork, latex, first coat		1 Pord	640	.013	S.F.	.06	.60		.66	.96
0380 Second coat			960	.008		.05	.40		.45	.64
0390 Waterproof sealer, first coat			736	.011		.48	.52		1	1.30
0400 Second coat			1104	.007		.48	.35		.83	1.04
0410 Roll, latex, paint, first coat			1465	.005		.07	.26		.33	.47
0420 Second coat			1790	.004		.05	.21		.26	.38
0430 Waterproof sealer, first coat			1680	.005		.48	.23		.71	.87
0440 Second coat			2060	.004		.48	.19		.67	.81
0450 Spray, latex, paint, first coat			1950	.004		.06	.20		.26	.35
0460 Second coat			2600	.003		.05	.15		.20	.27
0470 Waterproof sealer, first coat			2245	.004		.48	.17		.65	.78
0480 Second coat			2990	.003		.48	.13		.61	.72
0490 Concrete masonry unit (CMU), porous										
0500 Brushwork, latex, first coat		1 Pord	640	.013	S.F.	.12	.60		.72	1.02
0510 Second coat			960	.008		.06	.40		.46	.66
0520 Waterproof sealer, first coat			736	.011		.48	.52		1	1.30
0530 Second coat			1104	.007		.48	.35		.83	1.04
0540 Roll latex, first coat			1465	.005		.09	.26		.35	.49
0550 Second coat			1790	.004		.06	.21		.27	.38
0560 Waterproof sealer, first coat			1680	.005		.48	.23		.71	.87
0570 Second coat			2060	.004		.48	.19		.67	.81
0580 Spray latex, first coat			1950	.004		.07	.20		.27	.36
0590 Second coat			2600	.003		.05	.15		.20	.27
0600 Waterproof sealer, first coat			2245	.004		.48	.17		.65	.78
0610 Second coat			2990	.003		.48	.13		.61	.72

09 91 23 – Interior Painting

09 91 23.20 Cabinets and Casework

0010 **CABINETS AND CASEWORK**	R099100-10									
1000 Primer coat, oil base, brushwork		1 Pord	650	.012	S.F.	.10	.59		.69	.98
2000 Paint, oil base, brushwork, 1 coat	R099100-20		650	.012		.20	.59		.79	1.09
3000 Stain, brushwork, wipe off			650	.012		.11	.59		.70	1
4000 Shellac, 1 coat, brushwork			650	.012		.13	.59		.72	1.01
4500 Varnish, 3 coats, brushwork, sand after 1st coat			325	.025		.40	1.18		1.58	2.19
5000 For latex paint, deduct						10%				
5300 Strip, prep and refinish wood furniture										
5310 Remove paint using chemicals, wood furniture		1 Pord	28	.286	S.F.	1.70	13.65		15.35	22
5320 Prep for painting, sanding			75	.107		.28	5.10		5.38	7.85
5350 Stain and wipe, brushwork			600	.013		.11	.64		.75	1.07
5355 Spray applied			900	.009		.10	.42		.52	.74
5360 Sealer or varnish, brushwork			1080	.007		.13	.35		.48	.67
5365 Spray applied			2100	.004		.13	.18		.31	.42
5370 Paint, primer, brushwork			720	.011		.10	.53		.63	.90
5375 Spray applied			2100	.004		.09	.18		.27	.37
5380 Finish coat, brushwork			810	.010		.20	.47		.67	.92
5385 Spray applied			2100	.004		.19	.18		.37	.48

09 91 23.33 Doors and Windows, Interior Alkyd (Oil Base)

0010 **DOORS AND WINDOWS, INTERIOR ALKYD (OIL BASE)**	R099100-10									
0500 Flush door & frame, 3′ x 7′, oil, primer, brushwork		1 Pord	10	.800	Ea.	3.66	38		41.66	60.50
1000 Paint, 1 coat	R099100-20		10	.800		6.80	38		44.80	64

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	09 91 23.33 Doors and Windows, Interior Alkyd (Oil Base)	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1400	Stain, brushwork, wipe off	1 Pord	18	.444	Ea.	2.39	21		23.39	34
1600	Shellac, 1 coat, brushwork		25	.320		2.64	15.30		17.94	25.
1800	Varnish, 3 coats, brushwork, sand after 1st coat		9	.889		8.50	42.50		51	72.
2000	Panel door & frame, 3′ x 7′, oil, primer, brushwork		6	1.333		3.71	63.50		67.21	98.
2200	Paint, 1 coat		6	1.333		6.80	63.50		70.30	102
2600	Stain, brushwork, panel door, 3′ x 7′, not incl. frame		16	.500		2.39	24		26.39	38
2800	Shellac, 1 coat, brushwork		22	.364		2.64	17.40		20.04	29
3000	Varnish, 3 coats, brushwork, sand after 1st coat		7.50	1.067		8.50	51		59.50	85
4400	Windows, including frame and trim, per side									
4600	Colonial type, 6/6 lites, 2′ x 3′, oil, primer, brushwork	1 Pord	14	.571	Ea.	.59	27.50		28.09	41
5800	Paint, 1 coat		14	.571		1.07	27.50		28.57	41.
6200	3′ x 5′ opening, 6/6 lites, primer coat, brushwork		12	.667		1.47	32		33.47	48.
6400	Paint, 1 coat		12	.667		2.68	32		34.68	50
6800	4′ x 8′ opening, 6/6 lites, primer coat, brushwork		8	1		3.13	48		51.13	74.
7000	Paint, 1 coat		8	1		5.70	48		53.70	77.
8000	Single lite type, 2′ x 3′, oil base, primer coat, brushwork		33	.242		.59	11.60		12.19	17.
8200	Paint, 1 coat		33	.242		1.07	11.60		12.67	18.
8600	3′ x 5′ opening, primer coat, brushwork		20	.400		1.47	19.10		20.57	30
8800	Paint, 1 coat		20	.400		2.68	19.10		21.78	31.
9200	4′ x 8′ opening, primer coat, brushwork		14	.571		3.13	27.50		30.63	44
9400	Paint, 1 coat		14	.571		5.70	27.50		33.20	47

	09 91 23.35 Doors and Windows, Interior Latex									
0010	**DOORS & WINDOWS, INTERIOR LATEX** R099100-10									
0100	Doors, flush, both sides, incl. frame & trim									
0110	Roll & brush, primer R099100-20	1 Pord	10	.800	Ea.	4.44	38		42.44	61.
0120	Finish coat, latex		10	.800		2.58	38		40.58	59.
0130	Primer & 1 coat latex		7	1.143		7	54.50		61.50	88.
0140	Primer & 2 coats latex		5	1.600		9.45	76.50		85.95	123
0160	Spray, both sides, primer		20	.400		4.68	19.10		23.78	33.
0170	Finish coat, latex		20	.400		2.70	19.10		21.80	31.
0180	Primer & 1 coat latex		11	.727		7.40	35		42.40	59.
0190	Primer & 2 coats latex		8	1		10	48		58	82
0200	Doors, French, both sides, 10-15 lite, incl. frame & trim									
0210	Roll & brush, primer	1 Pord	6	1.333	Ea.	2.22	63.50		65.72	97
0220	Finish coat, latex		6	1.333		1.29	63.50		64.79	96
0230	Primer & 1 coat latex		3	2.667		3.51	127		130.51	193
0240	Primer & 2 coats latex		2	4		4.72	191		195.72	288
0260	Doors, louvered, both sides, incl. frame & trim									
0270	Roll & brush, primer	1 Pord	7	1.143	Ea.	4.44	54.50		58.94	86
0280	Finish coat, latex		7	1.143		2.58	54.50		57.08	84
0290	Primer & 1 coat, latex		4	2		6.75	95.50		102.25	149
0300	Primer & 2 coats, latex		3	2.667		9.60	127		136.60	200
0320	Spray, both sides, primer		20	.400		4.68	19.10		23.78	33.
0330	Finish coat, latex		20	.400		2.70	19.10		21.80	31.
0340	Primer & 1 coat, latex		11	.727		7.40	35		42.40	59.
0350	Primer & 2 coats, latex		8	1		10.15	48		58.15	82
0360	Doors, panel, both sides, incl. frame & trim									
0370	Roll & brush, primer	1 Pord	6	1.333	Ea.	4.68	63.50		68.18	99.
0380	Finish coat, latex		6	1.333		2.58	63.50		66.08	97.
0390	Primer & 1 coat, latex		3	2.667		7	127		134	197
0400	Primer & 2 coats, latex		2.50	3.200		9.60	153		162.60	238
0420	Spray, both sides, primer		10	.800		4.68	38		42.68	61.

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	09 91 23.35 Doors and Windows, Interior Latex	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0430	Finish coat, latex	1 Pord	10	.800	Ea.	2.70	38		40.70	59.50
0440	Primer & 1 coat, latex		5	1.600		7.40	76.50		83.90	121
0450	Primer & 2 coats, latex		4	2		10.15	95.50		105.65	153
0460	Windows, per interior side, based on 15 S.F.									
0470	1 to 6 lite									
0480	Brushwork, primer	1 Pord	13	.615	Ea.	.88	29.50		30.38	44.50
0490	Finish coat, enamel		13	.615		.51	29.50		30.01	44
0500	Primer & 1 coat enamel		8	1		1.39	48		49.39	72.50
0510	Primer & 2 coats enamel		6	1.333		1.89	63.50		65.39	96.50
0530	7 to 10 lite									
0540	Brushwork, primer	1 Pord	11	.727	Ea.	.88	35		35.88	52.50
0550	Finish coat, enamel		11	.727		.51	35		35.51	52
0560	Primer & 1 coat enamel		7	1.143		1.39	54.50		55.89	82.50
0570	Primer & 2 coats enamel		5	1.600		1.89	76.50		78.39	115
0590	12 lite									
0600	Brushwork, primer	1 Pord	10	.800	Ea.	.88	38		38.88	57.50
0610	Finish coat, enamel		10	.800		.51	38		38.51	57
0620	Primer & 1 coat enamel		6	1.333		1.39	63.50		64.89	96
0630	Primer & 2 coats enamel		5	1.600		1.89	76.50		78.39	115
0650	For oil base paint, add					10%				

	09 91 23.39 Doors and Windows, Interior Latex, Zero Voc		Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010	**DOORS & WINDOWS, INTERIOR LATEX, ZERO VOC**										
0100	Doors flush, both sides, incl. frame & trim										
0110	Roll & brush, primer	G	1 Pord	10	.800	Ea.	5.35	38		43.35	62.50
0120	Finish coat, latex	G		10	.800		12	38		50	69.50
0130	Primer & 1 coat latex	G		7	1.143		17.35	54.50		71.85	100
0140	Primer & 2 coats latex	G		5	1.600		28.50	76.50		105	145
0160	Spray, both sides, primer	G		20	.400		5.65	19.10		24.75	34.50
0170	Finish coat, latex	G		20	.400		12.60	19.10		31.70	42.50
0180	Primer & 1 coat latex	G		11	.727		18.40	35		53.40	71.50
0190	Primer & 2 coats latex	G		8	1		30.50	48		78.50	105
0200	Doors, French, both sides, 10-15 lite, incl. frame & trim										
0210	Roll & brush, primer	G	1 Pord	6	1.333	Ea.	2.68	63.50		66.18	97.50
0220	Finish coat, latex	G		6	1.333		6	63.50		69.50	101
0230	Primer & 1 coat latex	G		3	2.667		8.70	127		135.70	199
0240	Primer & 2 coats latex	G		2	4		14.35	191		205.35	299
0360	Doors, panel, both sides, incl. frame & trim										
0370	Roll & brush, primer	G	1 Pord	6	1.333	Ea.	5.65	63.50		69.15	101
0380	Finish coat, latex	G		6	1.333		12	63.50		75.50	108
0390	Primer & 1 coat, latex	G		3	2.667		17.35	127		144.35	208
0400	Primer & 2 coats, latex	G		2.50	3.200		29.50	153		182.50	260
0420	Spray, both sides, primer	G		10	.800		5.65	38		43.65	62.50
0430	Finish coat, latex	G		10	.800		12.60	38		50.60	70.50
0440	Primer & 1 coat, latex	G		5	1.600		18.40	76.50		94.90	133
0450	Primer & 2 coats, latex	G		4	2		31	95.50		126.50	177
0460	Windows, per interior side, based on 15 S.F.										
0470	1 to 6 lite										
0480	Brushwork, primer	G	1 Pord	13	.615	Ea.	1.06	29.50		30.56	44.50
0490	Finish coat, enamel	G		13	.615		2.37	29.50		31.87	46
0500	Primer & 1 coat enamel	G		8	1		3.43	48		51.43	75
0510	Primer & 2 coats enamel	G		6	1.333		5.80	63.50		69.30	101

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09 91 23 – Interior Painting

09 91 23.40 Floors, Interior		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **FLOORS, INTERIOR**	R099100-10									
0100 Concrete paint, latex										
0110 Brushwork										
0120 1st coat		1 Pord	975	.008	S.F.	.15	.39		.54	.7
0130 2nd coat			1150	.007		.10	.33		.43	.6
0140 3rd coat			1300	.006		.08	.29		.37	.5
0150 Roll										
0160 1st coat		1 Pord	2600	.003	S.F.	.20	.15		.35	.4
0170 2nd coat			3250	.002		.12	.12		.24	.3
0180 3rd coat			3900	.002		.09	.10		.19	.2
0190 Spray										
0200 1st coat		1 Pord	2600	.003	S.F.	.17	.15		.32	.4
0210 2nd coat			3250	.002		.09	.12		.21	.2
0220 3rd coat			3900	.002		.08	.10		.18	.2
09 91 23.44 Anti-Slip Floor Treatments										
0010 **ANTI-SLIP FLOOR TREATMENTS**										
1000 Walking surface treatment, ADA compliant, mop on and rinse										
1100 For tile, terrazzo, stone or smooth concrete		1 Pord	4000	.002	S.F.	.16	.10		.26	.3
1110 For marble			4000	.002		.22	.10		.32	.3
1120 For wood			4000	.002		.21	.10		.31	.3
1130 For baths and showers			500	.016		.18	.76		.94	1.3
2000 Granular additive for paint or sealer, add to paint cost						.02			.02	.0
09 91 23.52 Miscellaneous, Interior										
0010 **MISCELLANEOUS, INTERIOR**	R099100-10									
2400 Floors, conc./wood, oil base, primer/sealer coat, brushwork		2 Pord	1950	.008	S.F.	.10	.39		.49	.6
2450 Roller			5200	.003		.10	.15		.25	.3
2600 Spray			6000	.003		.10	.13		.23	.3
2650 Paint 1 coat, brushwork			1950	.008		.22	.39		.61	.8
2800 Roller			5200	.003		.23	.15		.38	.4
2850 Spray			6000	.003		.24	.13		.37	.4
3000 Stain, wood floor, brushwork, 1 coat			4550	.004		.11	.17		.28	.3
3200 Roller			5200	.003		.12	.15		.27	.3
3250 Spray			6000	.003		.12	.13		.25	.3
3400 Varnish, wood floor, brushwork			4550	.004		.13	.17		.30	.4
3450 Roller			5200	.003		.14	.15		.29	.3
3600 Spray			6000	.003		.15	.13		.28	.3
3650 For anti-skid, see Section 09 91 23.44										
3800 Grilles, per side, oil base, primer coat, brushwork		1 Pord	520	.015	S.F.	.20	.74		.94	1.3
3850 Spray			1140	.007		.20	.34		.54	.7
3920 Paint 2 coats, brushwork			325	.025		.69	1.18		1.87	2.5
3940 Spray			650	.012		.79	.59		1.38	1.7
4600 Miscellaneous surfaces, metallic paint, spray applied										
4610 Water based, non-tintable, warm silver		1 Pord	1140	.007	S.F.	.57	.34		.91	1.1
4620 Rusted iron			1140	.007		.72	.34		1.06	1.2
4630 Low VOC, tintable			1140	.007		.18	.34		.52	.7
5000 Pipe, 1"-4" diameter, primer or sealer coat, oil base, brushwork		2 Pord	1250	.013	L.F.	.10	.61		.71	1.0
5100 Spray			2165	.007		.10	.35		.45	.6
5350 Paint 2 coats, brushwork			775	.021		.33	.99		1.32	1.8
5400 Spray			1240	.013		.37	.62		.99	1.3
6300 13"-16" diameter, primer or sealer coat, brushwork			310	.052		.40	2.47		2.87	4.1
6350 Spray			540	.030		.45	1.42		1.87	2.5
6500 Paint 2 coats, brushwork			195	.082		1.32	3.92		5.24	7.2

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09 91 23 – Interior Painting

	09 91 23.52 Miscellaneous, Interior	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
6550	Spray	2 Pord	310	.052	L.F.	1.46	2.47		3.93	5.25
7000	Trim, wood, incl. puttying, under 6" wide									
7200	Primer coat, oil base, brushwork	1 Pord	650	.012	L.F.	.05	.59		.64	.92
7250	Paint, 1 coat, brushwork		650	.012		.09	.59		.68	.97
7450	3 coats		325	.025		.26	1.18		1.44	2.02
7500	Over 6" wide, primer coat, brushwork		650	.012		.10	.59		.69	.98
7550	Paint, 1 coat, brushwork		650	.012		.18	.59		.77	1.07
7650	3 coats		325	.025		.52	1.18		1.70	2.31
8000	Cornice, simple design, primer coat, oil base, brushwork		650	.012	S.F.	.10	.59		.69	.98
8250	Paint, 1 coat		650	.012		.18	.59		.77	1.07
8350	Ornate design, primer coat		350	.023		.10	1.09		1.19	1.73
8400	Paint, 1 coat		350	.023		.18	1.09		1.27	1.82
8600	Balustrades, primer coat, oil base, brushwork		520	.015		.10	.74		.84	1.20
8650	Paint, 1 coat		520	.015		.18	.74		.92	1.29
8900	Trusses and wood frames, primer coat, oil base, brushwork		800	.010		.10	.48		.58	.82
8950	Spray		1200	.007		.10	.32		.42	.58
9220	Paint 2 coats, brushwork		500	.016		.35	.76		1.11	1.51
9240	Spray		600	.013		.39	.64		1.03	1.36
9260	Stain, brushwork, wipe off		600	.013		.11	.64		.75	1.07
9280	Varnish, 3 coats, brushwork		275	.029		.40	1.39		1.79	2.51
9350	For latex paint, deduct					10%				

09 91 23.62 Electrostatic Painting

0010	**ELECTROSTATIC PAINTING**									
0100	In shop									
0200	Flat surfaces (lockers, casework, elevator doors, etc.)									
0300	One coat	1 Pord	200	.040	S.F.	.22	1.91		2.13	3.08
0400	Two coats	"	120	.067	"	.32	3.19		3.51	5.10
0500	Irregular surfaces (furniture, door frames, etc.)									
0600	One coat	1 Pord	150	.053	S.F.	.22	2.55		2.77	4.03
0700	Two coats	"	100	.080	"	.32	3.82		4.14	6
0800	On site									
0900	Flat surfaces (lockers, casework, elevator doors, etc.)									
1000	One coat	1 Pord	150	.053	S.F.	.22	2.55		2.77	4.03
1100	Two coats	"	100	.080	"	.32	3.82		4.14	6
1200	Irregular surfaces (furniture, door frames, etc.)									
1300	One coat	1 Pord	115	.070	S.F.	.22	3.33		3.55	5.20
1400	Two coats		70	.114		.32	5.45		5.77	8.45
2000	Anti-microbial coating, hospital application		150	.053		.41	2.55		2.96	4.24

09 91 23.72 Walls and Ceilings, Interior

0010	**WALLS AND CEILINGS, INTERIOR** R099100-10									
0100	Concrete, drywall or plaster, latex, primer or sealer coat R099100-20									
0150	Smooth finish, cut-in by brush	1 Pord	1150	.007	L.F.	.02	.33		.35	.51
0200	Brushwork		1150	.007	S.F.	.07	.33		.40	.56
0240	Roller		1350	.006		.07	.28		.35	.49
0280	Spray		2750	.003		.06	.14		.20	.27
0290	Sand finish, cut-in by brush		975	.008	L.F.	.02	.39		.41	.60
0300	Brushwork		975	.008	S.F.	.07	.39		.46	.65
0340	Roller		1150	.007		.07	.33		.40	.56
0380	Spray		2275	.004		.06	.17		.23	.31
0590	Paint 2 coats, smooth finish, cut-in by brush		680	.012	L.F.	.09	.56		.65	.93
0800	Brushwork		680	.012	S.F.	.36	.56		.92	1.23
0840	Roller		800	.010		.36	.48		.84	1.11

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09 91 23.72 Walls and Ceilings, Interior	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0880 Spray	1 Pord	1625	.005	S.F.	.34	.24		.58	.72
0890 Sand finish, cut-in by brush		605	.013	L.F.	.09	.63		.72	1.04
0900 Brushwork		605	.013	S.F.	.36	.63		.99	1.34
0940 Roller		1020	.008		.36	.37		.73	.96
0980 Spray		1700	.005		.34	.22		.56	.70
1190 Paint 3 coats, smooth finish, cut-in by brush		510	.016	L.F.	.14	.75		.89	1.26
1200 Brushwork		510	.016	S.F.	.54	.75		1.29	1.71
1240 Roller		650	.012		.54	.59		1.13	1.47
1280 Spray		850	.009		.51	.45		.96	1.23
1600 Glaze coating, 2 coats, spray, clear		1200	.007		.56	.32		.88	1.09
1640 Multicolor		1200	.007		.91	.32		1.23	1.47
1660 Painting walls, complete, including surface prep, primer &									
1670 2 coats finish, on drywall or plaster, with roller	1 Pord	325	.025	S.F.	.44	1.18		1.62	2.23
1700 For oil base paint, add					10%				
1800 For ceiling installations, add						25%			
2000 Masonry or concrete block, primer/sealer, latex paint									
2090 Primer, smooth finish, cut-in by brush	1 Pord	1000	.008	L.F.	.07	.38		.45	.64
2100 Brushwork		1000	.008	S.F.	.26	.38		.64	.8
2110 Roller		1150	.007		.12	.33		.45	.6
2180 Spray		2400	.003		.10	.16		.26	.3
2190 Sand finish, cut-in by brush		850	.009	L.F.	.03	.45		.48	.7
2200 Brushwork		850	.009	S.F.	.12	.45		.57	.8
2210 Roller		975	.008		.12	.39		.51	.7
2280 Spray		2050	.004		.10	.19		.29	.3
2290 Finish coat, smooth finish, cut-in by brush		1100	.007	L.F.	.03	.35		.38	.5
2400 Brushwork		1100	.007	S.F.	.14	.35		.49	.6
2410 Roller		1300	.006		.14	.29		.43	.5
2480 Spray		2400	.003		.12	.16		.28	.3
2490 Sand finish, cut-in by brush		950	.008	L.F.	.03	.40		.43	.6
2500 Brushwork		950	.008	S.F.	.14	.40		.54	.7
2510 Roller		1090	.007		.14	.35		.49	.6
2580 Spray		2040	.004		.12	.19		.31	.4
2590 Primer plus one finish coat, smooth cut-in by brush		525	.015	L.F.	.09	.73		.82	1.1
2800 Brushwork		525	.015	S.F.	.37	.73		1.10	1.4
2810 Roller		615	.013		.25	.62		.87	1.2
2880 Spray		1200	.007		.22	.32		.54	.7
2890 Sand finish, cut-in by brush		450	.018	L.F.	.06	.85		.91	1.3
2900 Brushwork		450	.018	S.F.	.25	.85		1.10	1.5
2910 Roller		515	.016		.25	.74		.99	1.3
2980 Spray		1025	.008		.22	.37		.59	.8
3190 Primer plus 2 finish coats, smooth, cut-in by brush		355	.023	L.F.	.10	1.08		1.18	1.7
3200 Brushwork		355	.023	S.F.	.39	1.08		1.47	2.0
3210 Roller		415	.019		.39	.92		1.31	1.8
3280 Spray		800	.010		.34	.48		.82	1.0
3290 Sand finish, cut-in by brush		305	.026	L.F.	.10	1.25		1.35	1.9
3300 Brushwork		305	.026	S.F.	.39	1.25		1.64	2.2
3310 Roller		350	.023		.39	1.09		1.48	2.0
3380 Spray		675	.012		.34	.57		.91	1.2
3600 Glaze coating, 3 coats, spray, clear		900	.009		.80	.42		1.22	1.5
3620 Multicolor		900	.009		1.11	.42		1.53	1.8
4000 Block filler, 1 coat, brushwork		425	.019		.29	.90		1.19	1.6
4100 Silicone, water repellent, 2 coats, spray		2000	.004		.46	.19		.65	.7
4120 For oil base paint, add					10%				

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09 91 23 – Interior Painting

		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
9 91 23.72 Walls and Ceilings, Interior										
200 For work 8'-15' H, add					S.F.		10%			
300 For work over 15' H, add							20%			
400 For light textured surfaces, add							10%			
410 Heavy textured, add							25%			
9 91 23.74 Walls and Ceilings, Interior, Zero VOC Latex										
010 **WALLS AND CEILINGS, INTERIOR, ZERO VOC LATEX**										
100 Concrete, dry wall or plaster, latex, primer or sealer coat										
190 Smooth finish, cut-in by brush		1 Pord	1150	.007	L.F.	.02	.33		.35	.51
200 Brushwork	G		1150	.007	S.F.	.07	.33		.40	.57
240 Roller	G		1350	.006		.07	.28		.35	.49
280 Spray	G		2750	.003		.05	.14		.19	.27
290 Sand finish, cut-in by brush			975	.008	L.F.	.02	.39		.41	.60
300 Brushwork	G		975	.008	S.F.	.07	.39		.46	.65
340 Roller	G		1150	.007		.07	.33		.40	.57
380 Spray	G		2275	.004		.06	.17		.23	.31
790 Paint 2 coats, smooth finish, cut-in by brush			680	.012	L.F.	.03	.56		.59	.87
800 Brushwork	G		680	.012	S.F.	.03	.56		.59	.87
840 Roller	G		800	.010		.13	.48		.61	.86
880 Spray	G		1625	.005		.11	.24		.35	.48
890 Sand finish, cut-in by brush			605	.013	L.F.	.03	.63		.66	.97
900 Brushwork	G		605	.013	S.F.	.13	.63		.76	1.08
940 Roller	G		1020	.008		.13	.37		.50	.71
980 Spray	G		1700	.005		.11	.22		.33	.46
190 Paint 3 coats, smooth finish, cut-in my brush			510	.016	L.F.	.05	.75		.80	1.16
200 Brushwork	G		510	.016	S.F.	.19	.75		.94	1.32
240 Roller	G		650	.012		.20	.59		.79	1.09
280 Spray	G		850	.009		.17	.45		.62	.86
800 For ceiling installations, add	G						25%			
200 For work 8' - 15' H, add							10%			
300 For work over 15' H, add							20%			
9 91 23.75 Dry Fall Painting										
010 **DRY FALL PAINTING**	R099100-10									
100 Sprayed on walls, gypsum board or plaster										
220 One coat	R099100-20	1 Pord	2600	.003	S.F.	.08	.15		.23	.31
250 Two coats			1560	.005		.17	.25		.42	.55
280 Concrete or textured plaster, one coat			1560	.005		.08	.25		.33	.45
310 Two coats			1300	.006		.17	.29		.46	.63
340 Concrete block, one coat			1560	.005		.08	.25		.33	.45
370 Two coats			1300	.006		.17	.29		.46	.63
400 Wood, one coat			877	.009		.08	.44		.52	.74
430 Two coats			650	.012		.17	.59		.76	1.06
440 On ceilings, gypsum board or plaster										
470 One coat		1 Pord	1560	.005	S.F.	.08	.25		.33	.45
500 Two coats			1300	.006		.17	.29		.46	.63
530 Concrete or textured plaster, one coat			1560	.005		.08	.25		.33	.45
560 Two coats			1300	.006		.17	.29		.46	.63
570 Structural steel, bar joists or metal deck, one coat			1560	.005		.08	.25		.33	.45
580 Two coats			1040	.008		.17	.37		.54	.74

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09 93 Staining and Transparent Finishing

09 93 23 – Interior Staining and Finishing

09 93 23.10 Varnish	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O
0010 **VARNISH**									
0012 1 coat + sealer, on wood trim, brush, no sanding included	1 Pord	400	.020	S.F.	.20	.96		1.16	1
0020 1 coat + sealer, on wood trim, brush, no sanding included, no VOC		400	.020		.22	.96		1.18	1
0100 Hardwood floors, 2 coats, no sanding included, roller		1890	.004		.15	.20		.35	

09 96 High-Performance Coatings

09 96 23 – Graffiti-Resistant Coatings

09 96 23.10 Graffiti-Resistant Treatments									
0010 **GRAFFITI-RESISTANT TREATMENTS**, sprayed on walls									
0100 Non-sacrificial, permanent non-stick coating, clear, on metals	1 Pord	2000	.004	S.F.	.35	.19		.54	
0200 Concrete		2000	.004		.40	.19		.59	
0300 Concrete block		2000	.004		.52	.19		.71	
0400 Brick		2000	.004		.58	.19		.77	
0500 Stone		2000	.004		.58	.19		.77	
0600 Unpainted wood		2000	.004		.67	.19		.86	1
2000 Semi-permanent cross linking polymer primer, on metals		2000	.004		.41	.19		.60	
2100 Concrete		2000	.004		.50	.19		.69	
2200 Concrete block		2000	.004		.62	.19		.81	
2300 Brick		2000	.004		.50	.19		.69	
2400 Stone		2000	.004		.50	.19		.69	
2500 Unpainted wood		2000	.004		.69	.19		.88	1
3000 Top coat, on metals		2000	.004		.51	.19		.70	
3100 Concrete		2000	.004		.58	.19		.77	
3200 Concrete block		2000	.004		.81	.19		1	1
3300 Brick		2000	.004		.67	.19		.86	1
3400 Stone		2000	.004		.67	.19		.86	1
3500 Unpainted wood		2000	.004		.81	.19		1	1
5000 Sacrificial, water based, on metal		2000	.004		.22	.19		.41	
5100 Concrete		2000	.004		.22	.19		.41	
5200 Concrete block		2000	.004		.22	.19		.41	
5300 Brick		2000	.004		.22	.19		.41	
5400 Stone		2000	.004		.22	.19		.41	
5500 Unpainted wood		2000	.004		.22	.19		.41	
8000 Cleaner for use after treatment									
8100 Towels or wipes, per package of 30				Ea.	.49			.49	
8200 Aerosol spray, 24 oz. can				"	13			13	14
8500 Graffiti removal with chemicals									
8510 Brush on, spray rinse off, on brick, masonry or stone	A-1H	200	.040	S.F.	.33	1.82	.40	2.55	3
8520 On smooth concrete	"	400	.020		.26	.91	.20	1.37	1
8530 Wipe on, wipe off, on plastic or painted metal	1 Clab	1500	.005		.49	.24		.73	
8540 Brush on, wipe off, on painted wood	"	500	.016		.25	.73		.98	1

09 96 46 – Intumescent Painting

09 96 46.10 Coatings, Intumescent									
0010 **COATINGS, INTUMESCENT**, spray applied									
0100 On exterior structural steel, 0.25" d.f.t.	1 Pord	475	.017	S.F.	.51	.81		1.32	1
0150 0.51" d.f.t.		350	.023		.51	1.09		1.60	2
0200 0.98" d.f.t.		280	.029		.51	1.37		1.88	2
0300 On interior structural steel, 0.108" d.f.t.		300	.027		.51	1.27		1.78	2
0350 0.310" d.f.t.		150	.053		.51	2.55		3.06	4
0400 0.670" d.f.t.		100	.080		.51	3.82		4.33	6

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09 96 High-Performance Coatings

09 96 53 – Elastomeric Coatings

09 96 53.10 Coatings, Elastomeric	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **COATINGS, ELASTOMERIC**									
0020 High build, water proof, one coat system									
0100 Concrete, brush	1 Pord	650	.012	S.F.	.50	.59		1.09	1.42
0110 Roll		1650	.005		.50	.23		.73	.89
0120 Spray		2600	.003		.50	.15		.65	.77
0200 Concrete block, brush		600	.013		.59	.64		1.23	1.59
0210 Roll		1400	.006		.59	.27		.86	1.05
0220 Spray		1900	.004		.59	.20		.79	.95
0300 Stucco, brush		400	.020		.81	.96		1.77	2.31
0310 Roll		1000	.008		.81	.38		1.19	1.46
0320 Spray		1500	.005		.81	.25		1.06	1.27

09 96 56 – Epoxy Coatings

09 96 56.20 Wall Coatings

0010 **WALL COATINGS**									
0100 Acrylic glazed coatings, matte	1 Pord	525	.015	S.F.	.40	.73		1.13	1.52
0200 Gloss		305	.026		.80	1.25		2.05	2.74
0300 Epoxy coatings, solvent based		525	.015		.50	.73		1.23	1.63
0400 Water based		170	.047		.40	2.25		2.65	3.77
0600 Exposed aggregate, troweled on, 1/16" to 1/4", solvent based		235	.034		.81	1.63		2.44	3.30
0700 Water based (epoxy or polyacrylate)		130	.062		1.75	2.94		4.69	6.30
0900 1/2" to 5/8" aggregate, solvent based		130	.062		1.52	2.94		4.46	6.05
1000 Water based		80	.100		2.64	4.78		7.42	10
1500 Exposed aggregate, sprayed on, 1/8" aggregate, solvent based		295	.027		.61	1.30		1.91	2.59
1600 Water based		145	.055		1.32	2.64		3.96	5.35
1800 High build epoxy, 50 mil, solvent based		390	.021		.81	.98		1.79	2.34
1900 Water based		95	.084		1.46	4.03		5.49	7.55
2100 Laminated epoxy with fiberglass, solvent based		295	.027		.90	1.30		2.20	2.91
2200 Water based		145	.055		1.73	2.64		4.37	5.80
2400 Sprayed perlite or vermiculite, 1/16" thick, solvent based		2935	.003		.29	.13		.42	.51
2500 Water based		640	.013		.92	.60		1.52	1.90
2700 Vinyl plastic wall coating, solvent based		735	.011		.43	.52		.95	1.24
2800 Water based		240	.033		1.07	1.59		2.66	3.54
3000 Urethane on smooth surface, 2 coats, solvent based		1135	.007		.36	.34		.70	.90
3100 Water based		665	.012		.66	.58		1.24	1.58
3600 Ceramic-like glazed coating, cementitious, solvent based		440	.018		.52	.87		1.39	1.86
3700 Water based		345	.023		1.06	1.11		2.17	2.81
3900 Resin base, solvent based		640	.013		.36	.60		.96	1.29
4000 Water based		330	.024		.71	1.16		1.87	2.50

09 97 Special Coatings

09 97 13 – Steel Coatings

09 97 13.23 Exterior Steel Coatings

0010 **EXTERIOR STEEL COATINGS** R050516-30									
6100 Cold galvanizing, brush in field	1 Psst	1100	.007	S.F.	.77	.36		1.13	1.41
6510 Paints & protective coatings, sprayed in field									
6520 Alkyds, primer	2 Psst	3600	.004	S.F.	.10	.22		.32	.46
6540 Gloss topcoats		3200	.005		.14	.24		.38	.54
6560 Silicone alkyd		3200	.005		.45	.24		.69	.88
6610 Epoxy, primer		3000	.005		.72	.26		.98	1.22
6630 Intermediate or topcoat		2800	.006		.55	.28		.83	1.05

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09 97 13 – Steel Coatings

09 97 13.23 Exterior Steel Coatings	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
6650 Enamel coat	2 Psst	2800	.006	S.F.	.68	.28		.96	1.2
6700 Epoxy ester, primer		2800	.006		.49	.28		.77	.9
6720 Topcoats		2800	.006		.45	.28		.73	.9
6810 Latex primer		3600	.004		.14	.22		.36	.5
6830 Topcoats		3200	.005		.12	.24		.36	.5
6910 Universal primers, one part, phenolic, modified alkyd		2000	.008		.35	.39		.74	1
6940 Two part, epoxy spray		2000	.008		1.21	.39		1.60	1.9
7000 Zinc rich primers, self cure, spray, inorganic		1800	.009		1.53	.43		1.96	2.3
7010 Epoxy, spray, organic		1800	.009		.55	.43		.98	1.2
7020 Above one story, spray painting simple structures, add						25%			
7030 Intricate structures, add						50%			

09 97 35 – Dry Erase Coatings

09 97 35.10 Dry Erase Coatings

0010 **DRY ERASE COATINGS**									
0020 Dry erase coatings, clear, roller applied	1 Pord	1325	.006	S.F.	2.14	.29		2.43	2.7

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Estimating Tips

General

- The items in this division are usually priced per square foot or each.
- Many items in Division 10 require some type of support system or special anchors that are not usually furnished with the item. The required anchors must be added to the estimate in the appropriate division.
- Some items in Division 10, such as lockers, may require assembly before installation. Verify the amount of assembly required. Assembly can often exceed installation time.

10 20 00 Interior Specialties

- Support angles and blocking are not included in the installation of toilet compartments, shower/dressing compartments, or cubicles. Appropriate line items from Division 5 or 6 may need to be added to support the installations.
- Toilet partitions are priced by the stall. A stall consists of a side wall, pilaster, and door with hardware. Toilet tissue holders and grab bars are extra.
- The required acoustical rating of a folding partition can have a significant impact on costs. Verify the sound transmission coefficient rating of the panel priced against the specification requirements.
- Grab bar installation does not include supplemental blocking or backing to support the required load. When grab bars are installed at an existing facility, provisions must be made to attach the grab bars to a solid structure.

Reference Numbers

Reference numbers are shown at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear. ■

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10 05 Common Work Results for Specialties

10 05 05 – Selective Demolition for Specialties

10 05 05.10 Selective Demolition, Specialties	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **SELECTIVE DEMOLITION, SPECIALTIES**									
1100 Boards and panels, wall mounted	2 Clab	15	1.067	Ea.		48.50		48.50	72.5
1105 Demolition, mirror, wall mounted	1 Clab	30	.267			12.15		12.15	18.1
1200 Cases, for directory and/or bulletin boards, including doors	2 Clab	24	.667			30.50		30.50	45.5
1850 Shower partitions, cabinet or stall, including base and door	"	8	2			91		91	136
1855 Shower receptor, terrazzo or concrete	1 Clab	14	.571			26		26	39
1900 Curtain track or rod, hospital type, ceiling mounted or suspended	"	220	.036	L.F.		1.66		1.66	2.4
1910 Toilet cubicles, remove	2 Clab	8	2	Ea.		91		91	136
1930 Urinal screen, remove	1 Clab	12	.667	"		30.50		30.50	45.5
2650 Wall guard, misc. wall or corner protection	"	320	.025	L.F.		1.14		1.14	1.7
2750 Access floor, metal panel system, including pedestals, covering	2 Clab	850	.019	S.F.		.86		.86	1.2
3050 Fireplace, prefab, freestanding or wall hung, including hood and screen	1 Clab	2	4	Ea.		182		182	272
3054 Chimney top, simulated brick, 4' high	"	15	.533			24.50		24.50	36
3200 Stove, woodburning, cast iron	2 Clab	2	8			365		365	545
3440 Weathervane, residential	1 Clab	12	.667			30.50		30.50	45.5
3500 Flagpole, groundset, to 70' high, excluding base/foundation	K-1	1	16			855	375	1,230	1,700
3555 To 30' high	"	2.50	6.400			340	151	491	675
4300 Letter, signs or plaques, exterior on wall	1 Clab	20	.400			18.25		18.25	27
4310 Signs, street, reflective aluminum, including post and bracket		60	.133			6.10		6.10	9.0
4320 Door signs interior on door 6" x 6", selective demolition		20	.400			18.25		18.25	27
4550 Turnstiles, manual or electric	2 Clab	2	8			365		365	545
5050 Lockers	1 Clab	15	.533	Opng.		24.50		24.50	36
5250 Cabinets, recessed	Q-12	12	1.333	Ea.		82.50		82.50	123
5260 Mail boxes, horiz., key lock, front loading, remove	1 Carp	34	.235	"		13.25		13.25	19.7
5350 Awning, fabric, including frame	2 Clab	100	.160	S.F.		7.30		7.30	10.8
6050 Partition, woven wire		1400	.011			.52		.52	.7
6100 Folding gate, security, door or window		500	.032			1.46		1.46	2.1
6580 Acoustic air wall		650	.025			1.12		1.12	1.6
7550 Telephone enclosure, exterior, post mounted		3	5.333	Ea.		243		243	360
8850 Scale, platform, excludes foundation or pit		.25	64	"		2,925		2,925	4,350

10 11 Visual Display Units

10 11 13 – Chalkboards

10 11 13.13 Fixed Chalkboards

0010 **FIXED CHALKBOARDS** Porcelain enamel steel									
3900 Wall hung									
4000 Aluminum frame and chalktrough									
4200 3' x 4'	2 Carp	16	1	Ea.	210	56.50		266.50	31
4300 3' x 5'		15	1.067		218	60		278	33
4500 4' x 8'		14	1.143		365	64.50		429.50	49
4600 4' x 12'		13	1.231		525	69.50		594.50	68
4700 Wood frame and chalktrough									
4800 3' x 4'	2 Carp	16	1	Ea.	420	56.50		476.50	54
5000 3' x 5'		15	1.067		420	60		480	55
5100 4' x 5'		14	1.143		420	64.50		484.50	55
5300 4' x 8'		13	1.231		370	69.50		439.50	51
5400 Liquid chalk, white porcelain enamel, wall hung									
5420 Deluxe units, aluminum trim and chalktrough									
5450 4' x 4'	2 Carp	16	1	Ea.	169	56.50		225.50	27
5500 4' x 8'		14	1.143		465	64.50		529.50	60
5550 4' x 12'		12	1.333		510	75		585	67

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10 11 13 – Chalkboards

	10 11 13.13 Fixed Chalkboards	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
5700	Wood trim and chalktrough									
5900	4′ x 4′	2 Carp	16	1	Ea.	595	56.50		651.50	740
6000	4′ x 6′		15	1.067		241	60		301	355
6200	4′ x 8′		14	1.143		815	64.50		879.50	995
6300	Liquid chalk, felt tip markers					1.93			1.93	2.12
6500	Erasers					2.14			2.14	2.35
6600	Board cleaner, 8 oz. bottle					4.72			4.72	5.20

10 11 13.23 Modular-Support-Mounted Chalkboards

0010	**MODULAR-SUPPORT-MOUNTED CHALKBOARDS**									
0400	Sliding chalkboards									
0450	Vertical, one sliding board with back panel, wall mounted									
0500	8′ x 4′	2 Carp	8	2	Ea.	2,500	113		2,613	2,925
0520	8′ x 8′		7.50	2.133		4,875	120		4,995	5,525
0540	8′ x 12′		7	2.286		2,600	129		2,729	3,050
0600	Two sliding boards, with back panel									
0620	8′ x 4′	2 Carp	8	2	Ea.	1,800	113		1,913	2,150
0640	8′ x 8′		7.50	2.133		4,875	120		4,995	5,525
0660	8′ x 12′		7	2.286		5,900	129		6,029	6,700
0700	Horizontal, two track									
0800	4′ x 8′, 2 sliding panels	2 Carp	8	2	Ea.	1,800	113		1,913	2,150
0820	4′ x 12′, 2 sliding panels		7.50	2.133		2,350	120		2,470	2,775
0840	4′ x 16′, 4 sliding panels		7	2.286		3,175	129		3,304	3,700
0900	Four track, four sliding panels									
0920	4′ x 8′	2 Carp	8	2	Ea.	2,900	113		3,013	3,375
0940	4′ x 12′		7.50	2.133		5,825	120		5,945	6,600
0960	4′ x 16′		7	2.286		6,575	129		6,704	7,450
1200	Vertical, motor operated									
1400	One sliding panel with back panel									
1450	10′ x 4′	2 Carp	4	4	Ea.	5,925	225		6,150	6,850
1500	10′ x 10′		3.75	4.267		6,025	240		6,265	6,975
1550	10′ x 16′		3.50	4.571		8,125	257		8,382	9,325
1700	Two sliding panels with back panel									
1750	10′ x 4′	2 Carp	4	4	Ea.	8,850	225		9,075	10,100
1800	10′ x 10′		3.75	4.267		9,825	240		10,065	11,200
1850	10′ x 16′		3.50	4.571		20,600	257		20,857	23,000
2000	Three sliding panels with back panel									
2100	10′ x 4′	2 Carp	4	4	Ea.	14,400	225		14,625	16,200
2150	10′ x 10′		3.75	4.267		15,600	240		15,840	17,600
2200	10′ x 16′		3.50	4.571		18,300	257		18,557	20,500
2400	For projection screen, glass beaded, add				S.F.	6.25			6.25	6.90
2500	For remote control, 1 panel control, add				Ea.	340			340	375
2600	2 panel control, add				″	585			585	645
2800	For units without back panels, deduct				S.F.	5.25			5.25	5.80
2850	For liquid chalk porcelain panels, add				″	4.88			4.88	5.35
3000	Swing leaf, any comb. of chalkboard & cork, aluminum frame									
3100	Floor style, 6 panels									
3150	30″ x 40″ panels				Ea.	1,450			1,450	1,600
3200	48″ x 40″ panels				″	2,500			2,500	2,750
3300	Wall mounted, 6 panels									
3400	30″ x 40″ panels	2 Carp	16	1	Ea.	1,400	56.50		1,456.50	1,625
3450	48″ x 40″ panels	″	16	1	″	1,700	56.50		1,756.50	1,950
3600	Extra panels for swing leaf units									

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10 11 13 – Chalkboards

	10 11 13.23 Modular-Support-Mounted Chalkboards	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
3700	30" x 40" panels				Ea.	278			278	305
3750	48" x 40" panels				"	350			350	385
	10 11 13.43 Portable Chalkboards									
0010	**PORTABLE CHALKBOARDS**									
0100	Freestanding, reversible									
0120	Economy, wood frame, 4' x 6'									
0140	Chalkboard both sides				Ea.	710			710	785
0160	Chalkboard one side, cork other side				"	625			625	685
0200	Standard, lightweight satin finished aluminum, 4' x 6'									
0220	Chalkboard both sides				Ea.	710			710	785
0240	Chalkboard one side, cork other side				"	410			410	450
0300	Deluxe, heavy duty extruded aluminum, 4' x 6'									
0320	Chalkboard both sides				Ea.	405			405	445
0340	Chalkboard one side, cork other side				"	1,300			1,300	1,425

10 11 16 – Markerboards

	10 11 16.53 Electronic Markerboards									
0010	**ELECTRONIC MARKERBOARDS**									
0100	Wall hung or free standing, 3' x 4' to 4' x 6'	2 Carp	8	2	S.F.	28	113		141	199
0150	5' x 6' to 4' x 8'		8	2	"	26.50	113		139.50	197
0500	Interactive projection module for existing whiteboards		8	2	Ea.	845	113		958	1,100

10 11 23 – Tackboards

	10 11 23.10 Fixed Tackboards									
0010	**FIXED TACKBOARDS**									
0020	Cork sheets, unbacked, no frame, 1/4" thick	2 Carp	290	.055	S.F.	2.35	3.11		5.46	7.20
0100	1/2" thick		290	.055		2.81	3.11		5.92	7.70
0300	Fabric-face, no frame, on 7/32" cork underlay		290	.055		4.77	3.11		7.88	9.85
0400	On 1/4" cork on 1/4" hardboard		290	.055		6.45	3.11		9.56	11.70
0600	With edges wrapped		290	.055		7.45	3.11		10.56	12.80
0700	On 7/16" fire retardant core		290	.055		4.23	3.11		7.34	9.25
0900	With edges wrapped		290	.055		7	3.11		10.11	12.30
1000	Designer fabric only, cut to size					1.90			1.90	2.09
1200	1/4" vinyl cork, on 1/4" hardboard, no frame	2 Carp	290	.055		6.45	3.11		9.56	11.70
1300	On 1/4" coreboard		290	.055		3.35	3.11		6.46	8.30
2000	For map and display rail, economy, add		385	.042	L.F.	1.98	2.34		4.32	5.65
2100	Deluxe, add		350	.046	"	3.88	2.57		6.45	8.10
2120	Prefabricated, 1/4" cork, 3' x 5' with aluminum frame		16	1	Ea.	99	56.50		155.50	193
2140	Wood frame		16	1		179	56.50		235.50	280
2160	4' x 4' with aluminum frame		16	1		120	56.50		176.50	216
2180	Wood frame		16	1		162	56.50		218.50	262
2200	4' x 8' with aluminum frame		14	1.143		167	64.50		231.50	280
2210	Wood frame		14	1.143		151	64.50		215.50	262
2220	4' x 12' with aluminum frame		12	1.333		211	75		286	345
2230	Bulletin board case, single glass door, with lock									
2240	36" x 24", economy	2 Carp	12	1.333	Ea.	182	75		257	315
2250	Deluxe		12	1.333		230	75		305	365
2260	42" x 30", economy		12	1.333		235	75		310	370
2270	Deluxe		12	1.333		229	75		304	365
2300	Glass enclosed cabinets, alum., cork panel, hinged doors									
2400	3' x 3', 1 door	2 Carp	12	1.333	Ea.	425	75		500	580
2500	4' x 4', 2 door		11	1.455		330	82		412	485
2600	4' x 7', 3 door		10	1.600		525	90		615	710

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10 11 Visual Display Units

10 11 23 – Tackboards

	10 11 23.10 Fixed Tackboards	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2800	4′ x 10′, 4 door	2 Carp	8	2	Ea.	2,350	113		2,463	2,775
2900	For lights, add per door opening	1 Elec	13	.615		153	40.50		193.50	229
3100	Horizontal sliding units, 4 doors, 4′ x 8′, 8′ x 4′	2 Carp	9	1.778		1,375	100		1,475	1,650
3200	4′ x 12′		7	2.286		2,550	129		2,679	3,000
3400	8 doors, 4′ x 16′		5	3.200		3,525	180		3,705	4,150
3500	4′ x 24′		4	4		4,750	225		4,975	5,550
	10 11 23.20 Control Boards									
0010	**CONTROL BOARDS**									
0020	Magnetic, porcelain finish, 18″ x 24″, framed	2 Carp	8	2	Ea.	159	113		272	345
0100	24″ x 36″		7.50	2.133		320	120		440	530
0200	36″ x 48″		7	2.286		115	129		244	320
0300	48″ x 72″		6	2.667		480	150		630	755
0400	48″ x 96″		5	3.200		710	180		890	1,050
1000	Hospital patient display board, 4-color custom design									
1010	Porcelain steel dry erase board, 36″ x 24″	2 Carp	7.50	2.133	Ea.	239	120		359	440

10 13 Directories

10 13 10 – Building Directories

	10 13 10.10 Directory Boards									
0010	**DIRECTORY BOARDS**									
0050	Plastic, glass covered, 30″ x 20″	2 Carp	3	5.333	Ea.	219	300		519	685
0100	36″ x 48″		2	8		565	450		1,015	1,300
0300	Grooved cork, 30″ x 20″		3	5.333		300	300		600	775
0400	36″ x 48″		2	8		620	450		1,070	1,350
0600	Black felt, 30″ x 20″		3	5.333		261	300		561	730
0700	36″ x 48″		2	8		445	450		895	1,150
0900	Outdoor, weatherproof, black plastic, 36″ x 24″		2	8		535	450		985	1,250
1000	36″ x 36″		1.50	10.667		460	600		1,060	1,400
1800	Indoor, economy, open face, 18″ x 24″		7	2.286		167	129		296	375
1900	24″ x 36″		7	2.286		252	129		381	470
2000	36″ x 24″		6	2.667		174	150		324	415
2100	36″ x 48″		6	2.667		495	150		645	770
2400	Building directory, alum., black felt panels, 1 door, 24″ x 18″		4	4		260	225		485	620
2500	36″ x 24″		3.50	4.571		425	257		682	855
2600	48″ x 32″		3	5.333		605	300		905	1,100
2700	2 door, 36″ x 48″		2.50	6.400		755	360		1,115	1,375
2800	36″ x 60″		2	8		870	450		1,320	1,625
2900	48″ x 60″		1	16		965	900		1,865	2,400
3100	For bronze enamel finish, add					15%				
3200	For bronze anodized finish, add					25%				
3400	For illuminated directory, single door unit, add					156			156	171
3500	For 6″ header panel, 6 letters per foot, add				L.F.	26			26	28.50
6050	Building directory, electronic display, alum. frame, wall mounted	2 Carp	32	.500	Ea.	1,050	28		1,078	1,225
6100	Free standing	″	60	.267	″	1,175	15		1,190	1,325

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10 14 19 – Dimensional Letter Signage

	10 14 19.10 Exterior Signs	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**EXTERIOR SIGNS**									
0020	Letters, 2" high, 3/8" deep, cast bronze	1 Carp	24	.333	Ea.	23	18.75		41.75	53.50
0140	1/2" deep, cast aluminum		18	.444		23	25		48	62.50
0160	Cast bronze		32	.250		14.50	14.10		28.60	37
0300	6" high, 5/8" deep, cast aluminum		24	.333		39	18.75		57.75	71
0400	Cast bronze		24	.333		80	18.75		98.75	116
0600	8" high, 3/4" deep, cast aluminum		14	.571		39	32		71	91
0700	Cast bronze		20	.400		194	22.50		216.50	247
0900	10" high, 1" deep, cast aluminum		18	.444		50	25		75	92
1000	Cast bronze		18	.444		53	25		78	95.50
1200	12" high, 1-1/4" deep, cast aluminum		12	.667		63	37.50		100.50	126
1500	Cast bronze		18	.444		63	25		88	107
1600	14" high, 2-5/16" deep, cast aluminum		12	.667		280	37.50		317.50	365
1800	Fabricated stainless steel, 6" high, 2" deep		20	.400		33	22.50		55.50	70
1900	12" high, 3" deep		18	.444		63	25		88	107
2100	18" high, 3" deep		12	.667		135	37.50		172.50	205
2200	24" high, 4" deep		10	.800		390	45		435	495
2700	Acrylic, on high density foam, 12" high, 2" deep		20	.400		29.50	22.50		52	66
2800	18" high, 2" deep		18	.444		48.50	25		73.50	90.50
3900	Plaques, custom, 20" x 30", for up to 450 letters, cast aluminum	2 Carp	4	4		1,325	225		1,550	1,775
4000	Cast bronze		4	4		2,325	225		2,550	2,875
4200	30" x 36", up to 900 letters, cast aluminum		3	5.333		2,650	300		2,950	3,375
4300	Cast bronze		3	5.333		4,600	300		4,900	5,500
4500	36" x 48", for up to 1300 letters, cast bronze		2	8		7,100	450		7,550	8,500
4800	Signs, reflective alum. directional signs, dbl. face, 2-way, w/bracket		30	.533		40.50	30		70.50	89
4900	4-way		30	.533		80.50	30		110.50	133
5100	Exit signs, 24 ga. alum., 14" x 12" surface mounted	1 Carp	30	.267		21.50	15		36.50	46.50
5200	10" x 7"		20	.400		13.80	22.50		36.30	48.50
5400	Bracket mounted, double face, 12" x 10"		30	.267		20	15		35	44.50
5500	Sticky back, stock decals, 14" x 10"	1 Clab	50	.160		10.95	7.30		18.25	23
6400	Replacement sign faces, 6" or 8"	"	50	.160		4.65	7.30		11.95	15.95
8000	Internally illuminated, custom									
8100	On pedestal, 84" x 30" x 12"	L-7	.50	56	Ea.	1,850	3,050		4,900	6,575

10 14 23 – Panel Signage

10 14 23.13 Engraved Panel Signage

0010	**ENGRAVED PANEL SIGNAGE**, interior									
1010	Flexible door sign, adhesive back, w/Braille, 5/8" letters, 4" x 4"	1 Clab	32	.250	Ea.	44.50	11.40		55.90	66
1050	6" x 6"		32	.250		68.50	11.40		79.90	92
1100	8" x 2"		32	.250		19.65	11.40		31.05	38.50
1150	8" x 4"		32	.250		26	11.40		37.40	46
1200	8" x 8"		32	.250		38.50	11.40		49.90	59.50
1250	12" x 2"		32	.250		41.50	11.40		52.90	63
1300	12" x 6"		32	.250		52	11.40		63.40	74.50
1350	12" x 12"		32	.250		155	11.40		166.40	187
1500	Graphic symbols, 2" x 2"		32	.250		18.50	11.40		29.90	37.50
1550	6" x 6"		32	.250		24.50	11.40		35.90	44
1600	8" x 8"		32	.250		30.50	11.40		41.90	50.50
2010	Corridor, stock acrylic, 2-sided, with mounting bracket, 2" x 8"	1 Carp	24	.333		28	18.75		46.75	58.50
2020	2" x 10"		24	.333		28.50	18.75		47.25	59
2050	3" x 8"		24	.333		54.50	18.75		73.25	88
2060	3" x 10"		24	.333		35.50	18.75		54.25	67
2070	3" x 12"		24	.333		48.50	18.75		67.25	81

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10 14 Signage

10 14 23 – Panel Signage

	10 14 23.13 Engraved Panel Signage	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2100	4" x 8"	1 Carp	24	.333	Ea.	53.50	18.75		72.25	86.50
2110	4" x 10"		24	.333		53.50	18.75		72.25	87
2120	4" x 12"		24	.333		53.50	18.75		72.25	87
7000	Wayfinding signage, custom									
7010	Plastic, flexible, 1/8" thick, incl. mounting									
7020	6" x 6"	1 Carp	32	.250	Ea.	21	14.10		35.10	44
7030	6" x 12"		32	.250		85	14.10		99.10	115
7040	6" x 24"		28	.286		59	16.10		75.10	89
7050	8" x 8"		32	.250		15	14.10		29.10	37.50
7060	8" x 16"		28	.286		47	16.10		63.10	75.50
7070	8" x 24"		26	.308		62	17.30		79.30	94.50
7080	12" x 12"		28	.286		23.50	16.10		39.60	50
7090	12" x 24"		24	.333		29.50	18.75		48.25	60.50
7100	12" x 36"		20	.400		54	22.50		76.50	93
7210	Weather resistant, engraved and color filled									
7220	8" x 8"	1 Carp	32	.250	Ea.	36.50	14.10		50.60	61
7230	8" x 16"		28	.286		50.50	16.10		66.60	79.50
7240	8" x 24"		26	.308		70.50	17.30		87.80	104
7250	12" x 12"		28	.286		41	16.10		57.10	69
7260	12" x 24"		24	.333		70.50	18.75		89.25	106
7270	12" x 36"		20	.400		165	22.50		187.50	216
7280	16" x 32"	2 Carp	60	.267		54	15		69	82
7290	16" x 48"	"	60	.267		72	15		87	102
7320	For engraved letters, 1/2" high, add					27.50			27.50	30.50
7330	1" high, add					31			31	34
7340	2" high, add					1.20			1.20	1.32
7350	3" high, add					1.20			1.20	1.32
7360	For engraved graphic symbols, 3" high, add					16			16	17.60
7370	7" high, add					16.45			16.45	18.10
7380	10" high, add					16.45			16.45	18.10
9990	Replace interior labels	1 Carp	12	.667		32.50	37.50		70	92
9991	Replace interior plaques	"	12	.667		106	37.50		143.50	172

10 14 26 – Post and Panel/Pylon Signage

10 14 26.10 Post and Panel Signage

0010	**POST AND PANEL SIGNAGE**, Alum., incl. 2 posts,									
0011	2-sided panel (blank), concrete footings per post									
0025	24" W x 18" H	B-1	25	.960	Ea.	144	44.50		188.50	225
0050	36" W x 24" H		25	.960		1,200	44.50		1,244.50	1,400
0100	57" W x 36" H		25	.960		2,100	44.50		2,144.50	2,400
0150	81" W x 46" H		25	.960		2,575	44.50		2,619.50	2,900

10 14 43 – Photoluminescent Signage

10 14 43.10 Photoluminescent Signage

0010	**PHOTOLUMINESCENT SIGNAGE**									
0011	Photoluminescent exit sign, plastic, 7"x10"	1 Carp	32	.250	Ea.	32	14.10		46.10	56
0022	Polyester		32	.250		20.50	14.10		34.60	43.50
0033	Aluminum		32	.250		71	14.10		85.10	99.50
0044	Plastic, 10"x14"		32	.250		71.50	14.10		85.60	99.50
0055	Polyester		32	.250		74	14.10		88.10	103
0066	Aluminum		32	.250		163	14.10		177.10	201
0111	Directional exit sign, plastic, 10"x14"		32	.250		74	14.10		88.10	103
0122	Polyester		32	.250		74	14.10		88.10	103
0133	Aluminum		32	.250		91	14.10		105.10	121

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10 14 Signage

10 14 43 – Photoluminescent Signage

	10 14 43.10 Photoluminescent Signage	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0153	Kick plate exit sign, 10"x34"	1 Carp	28	.286	Ea.	375	16.10		391.10	435
0173	Photoluminescent tape, 1"x60'		300	.027	L.F.	.68	1.50		2.18	2.98
0183	2"x60'		290	.028	"	1.08	1.55		2.63	3.50
0211	Photoluminescent directional arrows		42	.190	Ea.	14.75	10.70		25.45	32

10 14 53 – Traffic Signage

10 14 53.20 Traffic Signs

0010	**TRAFFIC SIGNS**									
0012	Stock, 24" x 24", no posts, .080" alum. reflectorized	B-80	70	.457	Ea.	39.50	23	7.75	70.25	86
0100	High intensity		70	.457		28.50	23	7.75	59.25	74
0300	30" x 30", reflectorized		70	.457		62	23	7.75	92.75	111
0400	High intensity		70	.457		96.50	23	7.75	127.25	149
0600	Guide and directional signs, 12" x 18", reflectorized		70	.457		37.50	23	7.75	68.25	83.50
0700	High intensity		70	.457		36.50	23	7.75	67.25	82.50
0900	18" x 24", stock signs, reflectorized		70	.457		32.50	23	7.75	63.25	78.50
1000	High intensity		70	.457		51.50	23	7.75	82.25	99
1200	24" x 24", stock signs, reflectorized		70	.457		38.50	23	7.75	69.25	85
1300	High intensity		70	.457		54.50	23	7.75	85.25	103
1500	Add to above for steel posts, galvanized, 10'-0" upright, bolted		200	.160		32.50	8	2.71	43.21	51
1600	12'-0" upright, bolted		140	.229		48.50	11.45	3.87	63.82	75
1800	Highway road signs, aluminum, over 20 S.F., reflectorized		350	.091	S.F.	20	4.59	1.55	26.14	30.50
2000	High intensity		350	.091		19.45	4.59	1.55	25.59	30
2200	Highway, suspended over road, 80 S.F. min., reflectorized		165	.194		21.50	9.75	3.28	34.53	41.50
2300	High intensity		165	.194		21.50	9.75	3.28	34.53	41.50
9000	Replace directional sign		6	5.333	Ea.	96.50	267	90.50	454	605

10 17 Telephone Specialties

10 17 16 – Telephone Enclosures

10 17 16.10 Commercial Telephone Enclosures

0010	**COMMERCIAL TELEPHONE ENCLOSURES**									
0300	Shelf type, wall hung, recessed	2 Carp	5	3.200	Ea.	370	180		550	675
0400	Surface mount	"	5	3.200	"	277	180		457	575

10 21 Compartments and Cubicles

10 21 13 – Toilet Compartments

10 21 13.13 Metal Toilet Compartments

0010	**METAL TOILET COMPARTMENTS**									
0110	Cubicles, ceiling hung									
0200	Powder coated steel	2 Carp	4	4	Ea.	470	225		695	850
0500	Stainless steel	"	4	4		2,050	225		2,275	2,575
0600	For handicap units, add					122			122	134
0900	Floor and ceiling anchored									
1000	Powder coated steel	2 Carp	5	3.200	Ea.	780	180		960	1,125
1300	Stainless steel	"	5	3.200		2,000	180		2,180	2,475
1400	For handicap units, add					385			385	425
1610	Floor anchored									
1700	Powder coated steel	2 Carp	7	2.286	Ea.	1,000	129		1,129	1,300
2000	Stainless steel	"	7	2.286		1,050	129		1,179	1,350
2100	For handicap units, add					365			365	400
2200	For juvenile units, deduct					45.50			45.50	50.50

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10 21 13 – Toilet Compartments

	10 21 13.13 Metal Toilet Compartments	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2450	Floor anchored, headrail braced									
2500	Powder coated steel	2 Carp	6	2.667	Ea.	475	150		625	750
2804	Stainless steel	"	6	2.667		1,200	150		1,350	1,525
2900	For handicap units, add					335			335	365
3000	Wall hung partitions, powder coated steel	2 Carp	7	2.286		565	129		694	815
3300	Stainless steel	"	7	2.286		420	129		549	650
3400	For handicap units, add					335			335	365
4000	Screens, entrance, floor mounted, 58" high, 48" wide									
4200	Powder coated steel	2 Carp	15	1.067	Ea.	208	60		268	320
4500	Stainless steel	"	15	1.067	"	520	60		580	660
4650	Urinal screen, 18" wide									
4704	Powder coated steel	2 Carp	6.15	2.602	Ea.	230	146		376	470
5004	Stainless steel	"	6.15	2.602	"	540	146		686	815
5100	Floor mounted, headrail braced									
5300	Powder coated steel	2 Carp	8	2	Ea.	244	113		357	435
5600	Stainless steel	"	8	2	"	625	113		738	860
5750	Pilaster, flush									
5800	Powder coated steel	2 Carp	10	1.600	Ea.	273	90		363	435
6100	Stainless steel		10	1.600		184	90		274	335
6300	Post braced, powder coated steel		10	1.600		172	90		262	325
6800	Powder coated steel		10	1.600		105	90		195	250
7800	Wedge type, powder coated steel		10	1.600		140	90		230	288
8100	Stainless steel		10	1.600		640	90		730	835

10 21 13.16 Plastic-Laminate-Clad Toilet Compartments

0010	**PLASTIC-LAMINATE-CLAD TOILET COMPARTMENTS**									
0110	Cubicles, ceiling hung									
0300	Plastic laminate on particle board	2 Carp	4	4	Ea.	650	225		875	1,050
0600	For handicap units, add				"	122			122	134
0900	Floor and ceiling anchored									
1100	Plastic laminate on particle board	2 Carp	5	3.200	Ea.	690	180		870	1,025
1400	For handicap units, add				"	385			385	425
1610	Floor mounted									
1800	Plastic laminate on particle board	2 Carp	7	2.286	Ea.	745	129		874	1,000
2450	Floor mounted, headrail braced									
2600	Plastic laminate on particle board	2 Carp	6	2.667	Ea.	910	150		1,060	1,225
3400	For handicap units, add					335			335	365
4300	Entrance screen, floor mtd., plas. lam., 58" high, 48" wide	2 Carp	15	1.067		282	60		342	400
4800	Urinal screen, 18" wide, ceiling braced, plastic laminate		8	2		291	113		404	490
5400	Floor mounted, headrail braced		8	2		216	113		329	405
5900	Pilaster, flush, plastic laminate		10	1.600		445	90		535	625
6400	Post braced, plastic laminate		10	1.600		239	90		329	395
6700	Wall hung, bracket supported									
6900	Plastic laminate on particle board	2 Carp	10	1.600	Ea.	98.50	90		188.50	242
7450	Flange supported									
7500	Plastic laminate on particle board	2 Carp	10	1.600	Ea.	116	90		206	262

10 21 13.19 Plastic Toilet Compartments

0010	**PLASTIC TOILET COMPARTMENTS**									
0110	Cubicles, ceiling hung									
0250	Phenolic	2 Carp	4	4	Ea.	835	225		1,060	1,250
0260	Polymer plastic	"	4	4		350	225		575	720
0600	For handicap units, add					122			122	134
0900	Floor and ceiling anchored									

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10 21 13 – Toilet Compartments

	10 21 13.19 Plastic Toilet Compartments	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1050	Phenolic	2 Carp	5	3.200	Ea.	1,025	180		1,205	1,400
1060	Polymer plastic	"	5	3.200		995	180		1,175	1,375
1400	For handicap units, add					385			385	425
1610	Floor mounted									
1750	Phenolic	2 Carp	7	2.286	Ea.	820	129		949	1,100
1760	Polymer plastic	"	7	2.286		925	129		1,054	1,225
2100	For handicap units, add					365			365	400
2200	For juvenile units, deduct					45.50			45.50	50.50
2450	Floor mounted, headrail braced									
2550	Phenolic	2 Carp	6	2.667	Ea.	995	150		1,145	1,325
3600	Polymer plastic		6	2.667		380	150		530	645
3810	Entrance screen, polymer plastic, flr. mtd., 48"x58"		6	2.667		252	150		402	500
3820	Entrance screen, polymer plastic, flr. to clg pilaster, 48"x58"		6	2.667		252	150		402	500
6110	Urinal screen, polymer plastic, pilaster flush, 18" w		6	2.667		244	150		394	490
7110	Wall hung		6	2.667		138	150		288	375
7710	Flange mounted		6	2.667		221	150		371	465

10 21 13.40 Stone Toilet Compartments

0010	**STONE TOILET COMPARTMENTS**									
0100	Cubicles, ceiling hung, marble	2 Marb	2	8	Ea.	1,675	440		2,115	2,500
0600	For handicap units, add					122			122	134
0800	Floor & ceiling anchored, marble	2 Marb	2.50	6.400		1,700	350		2,050	2,400
1400	For handicap units, add					385			385	425
1600	Floor mounted, marble	2 Marb	3	5.333		1,075	294		1,369	1,625
2400	Floor mounted, headrail braced, marble	"	3	5.333		1,225	294		1,519	1,800
2900	For handicap units, add					335			335	365
4100	Entrance screen, floor mounted marble, 58" high, 48" wide	2 Marb	9	1.778		735	98		833	955
4600	Urinal screen, 18" wide, ceiling braced, marble	D-1	6	2.667		770	134		904	1,050
5100	Floor mounted, headrail braced									
5200	Marble	D-1	6	2.667	Ea.	660	134		794	925
5700	Pilaster, flush, marble		9	1.778		865	89		954	1,075
6200	Post braced, marble		9	1.778		845	89		934	1,075

10 21 14 – Toilet Compartment Components

10 21 14.13 Metal Toilet Compartment Components

0010	**METAL TOILET COMPARTMENT COMPONENTS**									
0100	Pilasters									
0110	Overhead braced, powder coated steel, 7" wide x 82" high	2 Carp	22.20	.721	Ea.	72	40.50		112.50	140
0120	Stainless steel		22.20	.721		166	40.50		206.50	243
0130	Floor braced, powder coated steel, 7" wide x 70" high		23.30	.687		109	38.50		147.50	178
0140	Stainless steel		23.30	.687		215	38.50		253.50	294
0150	Ceiling hung, powder coated steel, 7" wide x 83" high		13.30	1.203		118	67.50		185.50	231
0160	Stainless steel		13.30	1.203		293	67.50		360.50	420
0170	Wall hung, powder coated steel, 3" wide x 58" high		18.90	.847		83.50	47.50		131	163
0180	Stainless steel		18.90	.847		184	47.50		231.50	274
0200	Panels									
0210	Powder coated steel, 31" wide x 58" high	2 Carp	18.90	.847	Ea.	161	47.50		208.50	248
0220	Stainless steel		18.90	.847		480	47.50		527.50	600
0230	Powder coated steel, 53" wide x 58" high		18.90	.847		198	47.50		245.50	289
0240	Stainless steel		18.90	.847		575	47.50		622.50	705
0250	Powder coated steel, 63" wide x 58" high		18.90	.847		262	47.50		309.50	360
0260	Stainless steel		18.90	.847		690	47.50		737.50	830
0300	Doors									
0310	Powder coated steel, 24" wide x 58" high	2 Carp	14.10	1.135	Ea.	188	64		252	300

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10 21 14 – Toilet Compartment Components

	10 21 14.13 Metal Toilet Compartment Components	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0320	Stainless steel	2 Carp	14.10	1.135	Ea.	430	64		494	570
0330	Powder coated steel, 26" wide x 58" high		14.10	1.135		194	64		258	310
0340	Stainless steel		14.10	1.135		475	64		539	620
0350	Powder coated steel, 28" wide x 58" high		14.10	1.135		196	64		260	310
0360	Stainless steel		14.10	1.135		460	64		524	600
0370	Powder coated steel, 36" wide x 58" high		14.10	1.135		204	64		268	320
0380	Stainless steel		14.10	1.135		550	64		614	700
0400	Headrails									
0410	For powder coated steel, 62" long	2 Carp	65	.246	Ea.	39	13.85		52.85	63.50
0420	Stainless steel		65	.246		39	13.85		52.85	63.50
0430	For powder coated steel, 84" long		50	.320		32.50	18		50.50	63
0440	Stainless steel		50	.320		34	18		52	64
0450	For powder coated steel, 120" long		30	.533		45	30		75	94
0460	Stainless steel		30	.533		45	30		75	94

10 21 14.16 Plastic-Laminate Clad Toilet Compartment Components

0010	**PLASTIC-LAMINATE CLAD TOILET COMPARTMENT COMPONENTS**									
0100	Pilasters									
0110	Overhead braced, 7" wide x 82" high	2 Carp	22.20	.721	Ea.	111	40.50		151.50	183
0130	Floor anchored, 7" wide x 70" high		23.30	.687		111	38.50		149.50	180
0150	Ceiling hung, 7" wide x 83" high		13.30	1.203		129	67.50		196.50	243
0180	Wall hung, 3" wide x 58" high		18.90	.847		87.50	47.50		135	167
0200	Panels									
0210	31" wide x 58" high	2 Carp	18.90	.847	Ea.	188	47.50		235.50	278
0230	51" wide x 58" high		18.90	.847		245	47.50		292.50	340
0250	63" wide x 58" high		18.90	.847		300	47.50		347.50	400
0300	Doors									
0310	24" wide x 58" high	2 Carp	14.10	1.135	Ea.	175	64		239	288
0330	26" wide x 58" high		14.10	1.135		181	64		245	294
0350	28" wide x 58" high		14.10	1.135		185	64		249	298
0370	36" wide x 58" high		14.10	1.135		226	64		290	345
0400	Headrails									
0410	62" long	2 Carp	65	.246	Ea.	26.50	13.85		40.35	50
0430	84" long		60	.267		37	15		52	63.50
0450	120" long		30	.533		46.50	30		76.50	95.50

10 21 14.19 Plastic Toilet Compartment Components

0010	**PLASTIC TOILET COMPARTMENT COMPONENTS**									
0100	Pilasters									
0110	Overhead braced, polymer plastic, 7" wide x 82" high	2 Carp	22.20	.721	Ea.	111	40.50		151.50	183
0120	Phenolic		22.20	.721		179	40.50		219.50	258
0130	Floor braced, polymer plastic, 7" wide x 70" high		23.30	.687		190	38.50		228.50	267
0140	Phenolic		23.30	.687		159	38.50		197.50	233
0150	Ceiling hung, polymer plastic, 7" wide x 83" high		13.30	1.203		190	67.50		257.50	310
0160	Phenolic		13.30	1.203		190	67.50		257.50	310
0180	Wall hung, phenolic, 3" wide x 58" high		18.90	.847		105	47.50		152.50	187
0200	Panels									
0203	Polymer plastic, 18" wide x 55" high	2 Carp	18.90	.847	Ea.	300	47.50		347.50	400
0206	Phenolic, 18" wide x 58" high		18.90	.847		335	47.50		382.50	440
0210	Polymer plastic, 31" wide x 55" high		18.90	.847		410	47.50		457.50	520
0220	Phenolic, 31" wide x 58" high		18.90	.847		375	47.50		422.50	480
0223	Polymer plastic, 48" wide x 55" high		18.90	.847		570	47.50		617.50	695
0226	Phenolic, 48" wide x 58" high		18.90	.847		525	47.50		572.50	650
0230	Polymer plastic, 51" wide x 55" high		18.90	.847		575	47.50		622.50	705

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10 21 Compartments and Cubicles

10 21 14 – Toilet Compartment Components

10 21 14.19 Plastic Toilet Compartment Components	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0240 Phenolic, 51" wide x 58" high	2 Carp	18.90	.847	Ea.	525	47.50		572.50	650
0250 Polymer plastic, 63" wide x 55" high		18.90	.847		740	47.50		787.50	885
0260 Phenolic, 63" wide x 58" high		18.90	.847		680	47.50		727.50	815
0300 Doors									
0310 Polymer plastic, 24" wide x 55" high	2 Carp	14.10	1.135	Ea.	272	64		336	395
0320 Phenolic, 24" wide x 58" high		14.10	1.135		380	64		444	515
0330 Polymer plastic, 26" wide x 55" high		14.10	1.135		290	64		354	415
0340 Phenolic, 26" wide x 58" high		14.10	1.135		310	64		374	435
0350 Polymer plastic, 28" wide x 55" high		14.10	1.135		325	64		389	455
0360 Phenolic, 28" wide x 58" high		14.10	1.135		420	64		484	555
0370 Polymer plastic, 36" wide x 55" high		14.10	1.135		390	64		454	525
0380 Phenolic, 36" wide x 58" high		14.10	1.135		460	64		524	600
0400 Headrails									
0410 For polymer plastic, 62" long	2 Carp	65	.246	Ea.	39	13.85		52.85	63.50
0420 Phenolic		65	.246		39	13.85		52.85	63.50
0430 For polymer plastic, 84" long		50	.320		39	18		57	70
0440 Phenolic		50	.320		40.50	18		58.50	71.50
0450 For polymer plastic, 120" long		30	.533		56.50	30		86.50	107
0460 Phenolic		30	.533		45	30		75	93.50

10 21 23 – Cubicle Curtains and Track

10 21 23.16 Cubicle Track and Hardware

0010 **CUBICLE TRACK AND HARDWARE**									
0020 Curtain track, box channel, ceiling mounted	1 Carp	135	.059	L.F.	12	3.34		15.34	18.15
0100 Suspended	"	100	.080	"	10	4.50		14.50	17.70
0300 Curtains, nylon mesh tops, fire resistant, 11 oz. per lineal yard									
0310 Polyester oxford cloth, 9' ceiling height	1 Carp	425	.019	L.F.	13.95	1.06		15.01	16.95
0500 8' ceiling height		425	.019		12.30	1.06		13.36	15.10
0550 Polyester, antimicrobial, 9' ceiling height		425	.019		17.45	1.06		18.51	21
0560 8' ceiling height		425	.019		13.90	1.06		14.96	16.90
0700 Designer oxford cloth		425	.019		12.30	1.06		13.36	15.10
0800 I.V. track systems									
0820 I.V. track, oval	1 Carp	135	.059	L.F.	10.60	3.34		13.94	16.65
0830 I.V. trolley		32	.250	Ea.	245	14.10		259.10	290
0840 I.V. pendant (tree, 5 hook)		32	.250	"	169	14.10		183.10	207

10 22 Partitions

10 22 13 – Wire Mesh Partitions

10 22 13.10 Partitions, Woven Wire

0010 **PARTITIONS, WOVEN WIRE** for tool or stockroom enclosures									
0100 Channel frame, 1-1/2" diamond mesh, 10 ga. wire, painted									
0300 Wall panels, 4'-0" wide, 7' high	2 Carp	25	.640	Ea.	139	36		175	207
0400 8' high		23	.696		139	39		178	212
0600 10' high		18	.889		193	50		243	287
0700 For 5' wide panels, add					5%				
0900 Ceiling panels, 10' long, 2' wide	2 Carp	25	.640		305	36		341	390
1000 4' wide		15	1.067		212	60		272	325
1200 Panel with service window & shelf, 5' wide, 7' high		20	.800		237	45		282	330
1300 8' high		15	1.067		237	60		297	350
1500 Sliding doors, full height, 3' wide, 7' high		6	2.667		325	150		475	580
1600 10' high		5	3.200		345	180		525	645

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10 22 13 – Wire Mesh Partitions

	10 22 13.10 Partitions, Woven Wire	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1800	6' wide sliding door, 7' full height	2 Carp	5	3.200	Ea.	870	180		1,050	1,225
1900	10' high		4	4		770	225		995	1,175
2100	Swinging doors, 3' wide, 7' high, no transom		6	2.667		530	150		680	810
2200	7' high, 3' transom		5	3.200		440	180		620	755

10 22 16 – Folding Gates

10 22 16.10 Security Gates

0010	**SECURITY GATES**									
0015	For roll up type, see Section 08 33 13.10									
0300	Scissors type folding gate, ptd. steel, single, 6-1/2' high, 5-1/2'wide	2 Sswk	4	4	Opng.	205	247		452	605
0350	6-1/2' wide		4	4		500	247		747	930
0400	7-1/2' wide		4	4		500	247		747	930
0600	Double gate, 8' high, 8' wide		2.50	6.400		400	395		795	1,050
0650	10' wide		2.50	6.400		435	395		830	1,100
0700	12' wide		2	8		530	495		1,025	1,350
0750	14' wide		2	8		530	495		1,025	1,350
0900	Door gate, folding steel, 4' wide, 61" high		4	4		167	247		414	565
1000	71" high		4	4		179	247		426	575
1200	81" high		4	4		194	247		441	595
1300	Window gates, 2' to 4' wide, 31" high		4	4		134	247		381	525
1500	55" high		3.75	4.267		245	264		509	675
1600	79" high		3.50	4.571		245	283		528	705

10 22 19 – Demountable Partitions

10 22 19.43 Demountable Composite Partitions

0010	**DEMOUNTABLE COMPOSITE PARTITIONS**, add for doors									
0100	Do not deduct door openings from total L.F.									
0900	Demountable gypsum system on 2" to 2-1/2"									
1000	Steel studs, 9' high, 3" to 3-3/4" thick									
1200	Vinyl-clad gypsum	2 Carp	48	.333	L.F.	72	18.75		90.75	107
1300	Fabric clad gypsum		44	.364		154	20.50		174.50	200
1500	Steel clad gypsum		40	.400		173	22.50		195.50	224
1600	1.75 system, aluminum framing, vinyl-clad hardboard,									
1800	Paper honeycomb core panel, 1-3/4" to 2-1/2" thick									
1900	9' high	2 Carp	48	.333	L.F.	104	18.75		122.75	142
2100	7' high		60	.267		93	15		108	125
2200	5' high		80	.200		78.50	11.25		89.75	103
2250	Unitized gypsum system									
2300	Unitized panel, 9' high, 2" to 2-1/2" thick									
2350	Vinyl-clad gypsum	2 Carp	48	.333	L.F.	134	18.75		152.75	175
2400	Fabric clad gypsum	"	44	.364	"	220	20.50		240.50	273
2500	Unitized mineral fiber system									
2510	Unitized panel, 9' high, 2-1/4" thick, aluminum frame									
2550	Vinyl-clad mineral fiber	2 Carp	48	.333	L.F.	133	18.75		151.75	174
2600	Fabric clad mineral fiber	"	44	.364	"	198	20.50		218.50	249
2800	Movable steel walls, modular system									
2900	Unitized panels, 9' high, 48" wide									
3100	Baked enamel, pre-finished	2 Carp	60	.267	L.F.	151	15		166	189
3200	Fabric clad steel		56	.286	"	218	16.10		234.10	263
5310	Trackless wall, cork finish, semi-acoustic, 1-5/8" thick, unsealed		325	.049	S.F.	42.50	2.77		45.27	50.50
5320	Sealed		190	.084		50.50	4.74		55.24	62.50
5330	Acoustic, 2" thick, unsealed		305	.052		43	2.95		45.95	52
5340	Sealed		225	.071		60	4		64	72
5500	For acoustical partitions, add, unsealed					2.40			2.40	2.64

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10 22 19 – Demountable Partitions

	10 22 19.43 Demountable Composite Partitions	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
5550	Sealed				S.F.	11.20			11.20	12.30
5700	For doors, see Section 08 16									
5800	For door hardware, see Section 08 71									
6100	In-plant modular office system, w/prehung hollow core door									
6200	3" thick polystyrene core panels									
6250	12' x 12', 2 wall	2 Clab	3.80	4.211	Ea.	4,650	192		4,842	5,400
6300	4 wall		1.90	8.421		6,750	385		7,135	8,000
6350	16' x 16', 2 wall		3.60	4.444		6,425	203		6,628	7,375
6400	4 wall		1.80	8.889		9,425	405		9,830	11,000

10 22 23 – Portable Partitions, Screens, and Panels

10 22 23.13 Wall Screens

0010	**WALL SCREENS**, divider panels, free standing, fiber core									
0020	Fabric face straight									
0100	3'-0" long, 4'-0" high	2 Carp	100	.160	L.F.	108	9		117	131
0200	5'-0" high		90	.178		87.50	10		97.50	111
0500	6'-0" high		75	.213		93.50	12		105.50	121
0900	5'-0" long, 4'-0" high		175	.091		87.50	5.15		92.65	104
1000	5'-0" high		150	.107		104	6		110	123
1500	6'-0" high		125	.128		134	7.20		141.20	159
1600	6'-0" long, 5'-0" high		162	.099		134	5.55		139.55	156
3200	Economical panels, fabric face, 4'-0" long, 5'-0" high		132	.121		152	6.80		158.80	178
3250	6'-0" high		112	.143		152	8.05		160.05	180
3300	5'-0" long, 5'-0" high		150	.107		128	6		134	150
3350	6'-0" high		125	.128		128	7.20		135.20	152
3450	Acoustical panels, 60 to 90 NRC, 3'-0" long, 5'-0" high		90	.178		119	10		129	146
3550	6'-0" high		75	.213		113	12		125	143
3600	5'-0" long, 5'-0" high		150	.107		128	6		134	150
3650	6'-0" high		125	.128		86.50	7.20		93.70	106
3700	6'-0" long, 5'-0" high		162	.099		61	5.55		66.55	75.50
3750	6'-0" high		138	.116		110	6.55		116.55	131
3800	Economy acoustical panels, 40 NRC, 4'-0" long, 5'-0" high		132	.121		152	6.80		158.80	178
3850	6'-0" high		112	.143		152	8.05		160.05	180
3900	5'-0" long, 6'-0" high		125	.128		128	7.20		135.20	152
3950	6'-0" long, 5'-0" high		162	.099		112	5.55		117.55	131
4000	Metal chalkboard, 6'-6" high, chalkboard, 1 side		125	.128		161	7.20		168.20	188
4100	Metal chalkboard, 2 sides		120	.133		184	7.50		191.50	214
4300	Tackboard, both sides		123	.130		146	7.30		153.30	171

10 22 33 – Accordion Folding Partitions

10 22 33.10 Partitions, Accordion Folding

0010	**PARTITIONS, ACCORDION FOLDING**									
0100	Vinyl covered, over 150 S.F., frame not included									
0300	Residential, 1.25 lb./S.F., 8' maximum height	2 Carp	300	.053	S.F.	29	3		32	36.50
0400	Commercial, 1.75 lb./S.F., 8' maximum height		225	.071		23	4		27	31
0600	2 lb./S.F., 17' maximum height		150	.107		34.50	6		40.50	47
0700	Industrial, 4 lb./S.F., 20' maximum height		75	.213		51.50	12		63.50	75
0900	Acoustical, 3 lb./S.F., 17' maximum height		100	.160		36	9		45	53
1200	5 lb./S.F., 20' maximum height		95	.168		58	9.50		67.50	78
1300	5.5 lb./S.F., 17' maximum height		90	.178		68.50	10		78.50	90
1400	Fire rated, 4.5 psf, 20' maximum height		160	.100		68	5.65		73.65	83.50
1500	Vinyl-clad wood or steel, electric operation, 5.0 psf		160	.100		73	5.65		78.65	88.50
1900	Wood, non-acoustic, birch or mahogany, to 10' high		300	.053		39.50	3		42.50	47.50

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10 22 Partitions

10 22 39 – Folding Panel Partitions

10 22 39.10 Partitions, Folding Panel	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **PARTITIONS, FOLDING PANEL**, acoustic, wood									
0100 Vinyl faced, to 18′ high, 6 psf, economy trim	2 Carp	60	.267	S.F.	84	15		99	115
0150 Standard trim		45	.356		101	20		121	141
0200 Premium trim		30	.533		130	30		160	188
0400 Plastic laminate or hardwood finish, standard trim		60	.267		86.50	15		101.50	118
0500 Premium trim		30	.533		91.50	30		121.50	146
0600 Wood, low acoustical type, 4.5 psf, to 14′ high		50	.320		63	18		81	96.50
1100 Steel, acoustical, 9 to 12 lb./S.F., vinyl faced, standard trim		60	.267		89.50	15		104.50	121
1200 Premium trim		30	.533		99.50	30		129.50	155
1700 Aluminum framed, acoustical, to 12′ high, 5.5 psf, standard trim		60	.267		64	15		79	93
1800 Premium trim		30	.533		73	30		103	125
2000 6.5 lb./S.F., standard trim		60	.267		63.50	15		78.50	92.50
2100 Premium trim		30	.533		81.50	30		111.50	134

10 22 43 – Sliding Partitions

10 22 43.10 Partitions, Sliding									
0010 **PARTITIONS, SLIDING**									
0020 Acoustic air wall, 1-5/8″ thick, standard trim	2 Carp	375	.043	S.F.	45	2.40		47.40	53
0100 Premium trim		365	.044		77	2.47		79.47	88
0300 2-1/4″ thick, standard trim		360	.044		50.50	2.50		53	59
0400 Premium trim		330	.048		88.50	2.73		91.23	101
0600 For track type, add to above				L.F.	164			164	181
0700 Overhead track type, acoustical, 3″ thick, 11 psf, standard trim	2 Carp	350	.046	S.F.	113	2.57		115.57	129
0800 Premium trim	″	300	.053	″	136	3		139	154

10 26 Wall and Door Protection

10 26 13 – Corner Guards

10 26 13.20 Corner Protection									
0010 **CORNER PROTECTION**									
0100 Stainless steel, 16 ga., adhesive mount, 3-1/2″ leg	1 Carp	80	.100	L.F.	25	5.65		30.65	36
0200 12 ga. stainless, adhesive mount	″	80	.100		26.50	5.65		32.15	37.50
0300 For screw mount, add						10%			
0500 Vinyl acrylic, adhesive mount, 3″ leg	1 Carp	128	.063		9.05	3.52		12.57	15.20
0550 1-1/2″ leg		160	.050		3.25	2.82		6.07	7.75
0600 Screw mounted, 3″ leg		80	.100		9.05	5.65		14.70	18.35
0650 1-1/2″ leg		100	.080		2.10	4.50		6.60	9
0700 Clear plastic, screw mounted, 2-1/2″		60	.133		3.96	7.50		11.46	15.50
1000 Vinyl cover, alum. retainer, surface mount, 3″ x 3″		48	.167		9	9.40		18.40	24
1050 2″ x 2″		48	.167		26	9.40		35.40	43
1100 Flush mounted, 3″ x 3″		32	.250		9	14.10		23.10	31
1150 2″ x 2″		32	.250		13.45	14.10		27.55	36

10 26 16 – Bumper Guards

10 26 16.10 Guard, Bumper									
0010 **GUARD, BUMPER**									
1200 Bed bumper, vinyl acrylic, alum. retainer, 21″ long	1 Carp	10	.800	Ea.	89	45		134	165
1300 53″ long with aligner		9	.889	″	89	50		139	173
1400 Bumper, vinyl cover, alum. retain., cush. mnt., 1-1/2″ x 2-3/4″		80	.100	L.F.	14.25	5.65		19.90	24
1500 2″ x 4-1/4″		80	.100		20.50	5.65		26.15	31.50
1600 Surface mounted, 1-3/4″ x 3-5/8″		80	.100		12	5.65		17.65	21.50

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10 26 Wall and Door Protection

10 26 16 – Bumper Guards

10 26 16.16 Protective Corridor Handrails	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **PROTECTIVE CORRIDOR HANDRAILS**									
3000 Handrail/bumper, vinyl cover, alum. retainer									
3010 Bracket mounted, flat rail, 5-1/2"	1 Carp	80	.100	L.F.	17.10	5.65		22.75	27
3100 6-1/2"		80	.100		12.85	5.65		18.50	22.50
3200 Bronze bracket, 1-3/4" diam. rail		80	.100		15.40	5.65		21.05	25.50

10 26 23 – Protective Wall Covering

10 26 23.10 Wall Covering, Protective

0010 **WALL COVERING, PROTECTIVE**									
0400 Rub rail, vinyl, adhesive mounted	1 Carp	185	.043	L.F.	4.37	2.43		6.80	8.45
0500 Neoprene, aluminum backing, 1-1/2" x 2"		110	.073		6.70	4.09		10.79	13.50
1000 Trolley rail, PVC, clipped to wall, 5" high		185	.043		13.45	2.43		15.88	18.40
1050 8" high		180	.044		12.75	2.50		15.25	17.75
1700 Bumper rail, stainless steel, flat bar on brackets, 4" x 1/4"	2 Skwk	120	.133		32	7.85		39.85	47
1775 Wall end guard, stainless steel, 16 ga., 36" tall, screwed to studs	1 Skwk	30	.267	Ea.	44.50	15.70		60.20	72.50
2000 Crash rail, vinyl cover, alum. retainer, 1" x 4"	1 Carp	110	.073	L.F.	11.05	4.09		15.14	18.25
2100 1" x 8"		90	.089		15.90	5		20.90	25
2150 Vinyl inserts, aluminum plate, 1" x 2-1/2"		110	.073		14.90	4.09		18.99	22.50
2200 1" x 5"		90	.089		20.50	5		25.50	30

10 26 23.13 Impact Resistant Wall Protection

0010 **IMPACT RESISTANT WALL PROTECTION**									
0100 Vinyl wall protection, complete instl. incl. panels, trim, adhesive									
0110 .040" thk., std. colors	2 Carp	320	.050	S.F.	10.75	2.82		13.57	16
0120 .040" thk., element patterns		300	.053		9.20	3		12.20	14.55
0130 .060" thk., std. colors		300	.053		11.30	3		14.30	16.85
0140 .060" thk., element patterns		280	.057		10.75	3.22		13.97	16.60
1750 Wallguard stainless steel baseboard, 12" tall, adhesive applied	2 Skwk	260	.062	L.F.	28	3.62		31.62	36.50
1775 Wall protection, stainless steel, 16 ga., 48" x 36" tall, screwed to studs	"	500	.032	S.F.	21	1.88		22.88	26

10 26 33 – Door and Frame Protection

10 26 33.10 Protection, Door and Frame

0010 **PROTECTION, DOOR AND FRAME**									
0100 Door frame guard, vinyl, 3" x 3" x 4'	1 Carp	30	.267	Ea.	98	15		113	131
0110 Door frame guard, vinyl, 3" x 3" x 8'		26	.308		128	17.30		145.30	166
0120 Door frame guard, stainless steel, 3" x 3" x 4'		30	.267		415	15		430	480
0500 Steel door track/wheel guards, 4'-0" high	E-4	22	1.455		48	90.50	6.70	145.20	200

10 28 Toilet, Bath, and Laundry Accessories

10 28 13 – Toilet Accessories

10 28 13.13 Commercial Toilet Accessories

0010 **COMMERCIAL TOILET ACCESSORIES**									
0200 Curtain rod, stainless steel, 5' long, 1" diameter	1 Carp	13	.615	Ea.	41	34.50		75.50	96.50
0300 1-1/4" diameter		13	.615		18.65	34.50		53.15	72
0350 Chrome, 1" diameter		13	.615		10.15	34.50		44.65	62.50
0360 For vinyl curtain, add		1950	.004	S.F.	134	.23		134.23	147
0400 Diaper changing station, horizontal, wall mounted, plastic		10	.800	Ea.	320	45		365	415
0420 Vertical		10	.800		212	45		257	300
0430 Oval shaped		10	.800		212	45		257	300
0440 Recessed, with stainless steel flange		6	1.333		800	75		875	990
0500 Dispenser units, combined soap & towel dispensers,									
0510 Mirror and shelf, flush mounted	1 Carp	10	.800	Ea.	320	45		365	420

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10 28 13.13 Commercial Toilet Accessories	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0600 Towel dispenser and waste receptacle,									
0610 18 gallon capacity	1 Carp	10	.800	Ea.	445	45		490	555
0800 Grab bar, straight, 1-1/4" diameter, stainless steel, 18" long		24	.333		28.50	18.75		47.25	59.50
0900 24" long		23	.348		21.50	19.60		41.10	52.50
1000 30" long		22	.364		33	20.50		53.50	67
1100 36" long		20	.400		18.90	22.50		41.40	54.50
1105 42" long		20	.400		32.50	22.50		55	69.50
1120 Corner, 36" long		20	.400		89	22.50		111.50	132
1200 1-1/2" diameter, 24" long		23	.348		22	19.60		41.60	53.50
1300 36" long		20	.400		35	22.50		57.50	72
1310 42" long		18	.444		38.50	25		63.50	79
1500 Tub bar, 1-1/4" diameter, 24" x 36"		14	.571		95.50	32		127.50	153
1600 Plus vertical arm		12	.667		153	37.50		190.50	224
1900 End tub bar, 1" diameter, 90° angle, 16" x 32"		12	.667		92.50	37.50		130	158
2010 Tub/shower/toilet, 2-wall, 36" x 24"		12	.667		92.50	37.50		130	158
2300 Hand dryer, surface mounted, electric, 115 volt, 20 amp		4	2		415	113		528	625
2400 230 volt, 10 amp		4	2		585	113		698	815
2450 Hand dryer, touch free, 1400 watt, 81,000 rpm		4	2		1,450	113		1,563	1,775
2600 Hat and coat strip, stainless steel, 4 hook, 36" long		24	.333		39.50	18.75		58.25	71.50
2700 6 hook, 60" long		20	.400		92	22.50		114.50	135
3000 Mirror, with stainless steel 3/4" square frame, 18" x 24"		20	.400		43	22.50		65.50	81
3100 36" x 24"		15	.533		67	30		97	118
3200 48" x 24"		10	.800		98	45		143	175
3300 72" x 24"		6	1.333		121	75		196	246
3500 With 5" stainless steel shelf, 18" x 24"		20	.400		97	22.50		119.50	141
3600 36" x 24"		15	.533		122	30		152	179
3700 48" x 24"		10	.800		162	45		207	245
3800 72" x 24"		6	1.333		262	75		337	400
4100 Mop holder strip, stainless steel, 5 holders, 48" long		20	.400		78.50	22.50		101	120
4200 Napkin/tampon dispenser, recessed		15	.533		390	30		420	475
4220 Semi-recessed		6.50	1.231		375	69.50		444.50	520
4250 Napkin receptacle, recessed		6.50	1.231		177	69.50		246.50	298
4300 Robe hook, single, regular		96	.083		21.50	4.69		26.19	31
4400 Heavy duty, concealed mounting		56	.143		21.50	8.05		29.55	36
4600 Soap dispenser, chrome, surface mounted, liquid		20	.400		52.50	22.50		75	91
5000 Recessed stainless steel, liquid		10	.800		199	45		244	285
5600 Shelf, stainless steel, 5" wide, 18 ga., 24" long		24	.333		63.50	18.75		82.25	98
5700 48" long		16	.500		103	28		131	155
5800 8" wide shelf, 18 ga., 24" long		22	.364		55	20.50		75.50	91
5900 48" long		14	.571		158	32		190	222
6000 Toilet seat cover dispenser, stainless steel, recessed		20	.400		197	22.50		219.50	251
6050 Surface mounted		15	.533		37	30		67	85
6100 Toilet tissue dispenser, surface mounted, SS, single roll		30	.267		14.60	15		29.60	38.50
6200 Double roll		24	.333		98	18.75		116.75	136
6240 Plastic, twin/jumbo dbl. roll		24	.333		33	18.75		51.75	64.50
6400 Towel bar, stainless steel, 18" long		23	.348		34	19.60		53.60	66.50
6500 30" long		21	.381		57.50	21.50		79	95.50
6700 Towel dispenser, stainless steel, surface mounted		16	.500		67	28		95	116
6800 Flush mounted, recessed		10	.800		44	45		89	116
6900 Plastic, touchless, battery operated		16	.500		120	28		148	174
7000 Towel holder, hotel type, 2 guest size		20	.400		67.50	22.50		90	108
7200 Towel shelf, stainless steel, 24" long, 8" wide		20	.400		92.50	22.50		115	136
7400 Tumbler holder, for tumbler only		30	.267		18.80	15		33.80	43

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10 28 13 – Toilet Accessories

	10 28 13.13 Commercial Toilet Accessories	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
7410	Tumbler holder, recessed	1 Carp	20	.400	Ea.	8.95	22.50		31.45	43.50
7500	Soap, tumbler & toothbrush		30	.267		18.95	15		33.95	43.50
7510	Tumbler & toothbrush holder		20	.400		12.15	22.50		34.65	47
8000	Waste receptacles, stainless steel, with top, 13 gallon		10	.800		340	45		385	440
8100	36 gallon		8	1		430	56.50		486.50	560
9996	Bathroom access., grab bar, straight, 1-1/2" diam., SS, 42" L install only		18	.444			25		25	37

10 28 16 – Bath Accessories

10 28 16.20 Medicine Cabinets

0010	**MEDICINE CABINETS**									
0020	With mirror, sst frame, 16" x 22", unlighted	1 Carp	14	.571	Ea.	226	32		258	297
0100	Wood frame		14	.571		149	32		181	212
0300	Sliding mirror doors, 20" x 16" x 4-3/4", unlighted		7	1.143		145	64.50		209.50	256
0400	24" x 19" x 8-1/2", lighted		5	1.600		167	90		257	320
0600	Triple door, 30" x 32", unlighted, plywood body		7	1.143		239	64.50		303.50	360
0700	Steel body		7	1.143		410	64.50		474.50	545
0900	Oak door, wood body, beveled mirror, single door		7	1.143		138	64.50		202.50	248
1000	Double door		6	1.333		450	75		525	605
1200	Hotel cabinets, stainless, with lower shelf, unlighted		10	.800		345	45		390	445
1300	Lighted		5	1.600		360	90		450	535

10 28 19 – Tub and Shower Enclosures

10 28 19.10 Partitions, Shower

0010	**PARTITIONS, SHOWER** floor mounted, no plumbing									
0400	Cabinet, one piece, fiberglass, 32" x 32"	2 Carp	5	3.200	Ea.	460	180		640	775
0420	36" x 36"		5	3.200		950	180		1,130	1,325
0440	36" x 48"		5	3.200		1,025	180		1,205	1,400
0460	Acrylic, 32" x 32"		5	3.200		197	180		377	485
0480	36" x 36"		5	3.200		935	180		1,115	1,300
0500	36" x 48"		5	3.200		815	180		995	1,175
0520	Shower door for above, clear plastic, 24" wide	1 Carp	8	1		111	56.50		167.50	206
0540	28" wide		8	1		187	56.50		243.50	290
0560	Tempered glass, 24" wide		8	1		135	56.50		191.50	233
0580	28" wide		8	1		160	56.50		216.50	260
2400	Glass stalls, with doors, no receptors, chrome on brass	2 Shee	3	5.333		1,000	360		1,360	1,650
2700	Anodized aluminum	"	4	4		1,475	270		1,745	2,025
2900	Marble shower stall, stock design, with shower door	2 Marb	1.20	13.333		650	735		1,385	1,825
3000	With curtain		1.30	12.308		1,975	680		2,655	3,200
3200	Receptors, precast terrazzo, 32" x 32"		14	1.143		288	63		351	410
3300	48" x 34"		9.50	1.684		410	92.50		502.50	590
3500	Plastic, simulated terrazzo receptor, 32" x 32"		14	1.143		122	63		185	230
3600	32" x 48"		12	1.333		605	73.50		678.50	775
3800	Precast concrete, colors, 32" x 32"		14	1.143		139	63		202	248
3900	48" x 48"		8	2		785	110		895	1,025
4100	Shower doors, economy plastic, 24" wide	1 Shee	9	.889		131	60		191	235
4200	Tempered glass door, economy		8	1		273	67.50		340.50	400
4400	Folding, tempered glass, aluminum frame		6	1.333		470	90		560	650
4500	Sliding, tempered glass, 48" opening		6	1.333		490	90		580	670
4700	Deluxe, tempered glass, chrome on brass frame, 42" to 44"		8	1		320	67.50		387.50	450
4800	39" to 48" wide		1	8		600	540		1,140	1,475
4850	On anodized aluminum frame, obscure glass		2	4		505	270		775	960
4900	Clear glass		1	8		410	540		950	1,275
5100	Shower enclosure, tempered glass, anodized alum. frame									
5120	2 panel & door, corner unit, 32" x 32"	1 Shee	2	4	Ea.	830	270		1,100	1,325

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10 28 Toilet, Bath, and Laundry Accessories

10 28 19 – Tub and Shower Enclosures

	10 28 19.10 Partitions, Shower	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
5140	Neo-angle corner unit, 16" x 24" x 16"	1 Shee	2	4	Ea.	1,100	270		1,370	1,625
5200	Shower surround, 3 wall, polypropylene, 32" x 32"	1 Carp	4	2		460	113		573	675
5220	PVC, 32" x 32"		4	2		400	113		513	610
5240	Fiberglass		4	2		380	113		493	590
5250	2 wall, polypropylene, 32" x 32"		4	2		305	113		418	505
5270	PVC		4	2		360	113		473	570
5290	Fiberglass		4	2		365	113		478	570
5300	Tub doors, tempered glass & frame, obscure glass	1 Shee	8	1		215	67.50		282.50	340
5400	Clear glass		6	1.333		500	90		590	685
5600	Chrome plated, brass frame, obscure glass		8	1		283	67.50		350.50	410
5700	Clear glass		6	1.333		695	90		785	900
5900	Tub/shower enclosure, temp. glass, alum. frame, obscure glass		2	4		385	270		655	830
6200	Clear glass		1.50	5.333		800	360		1,160	1,425
6500	On chrome-plated brass frame, obscure glass		2	4		530	270		800	985
6600	Clear glass		1.50	5.333		1,125	360		1,485	1,800
6800	Tub surround, 3 wall, polypropylene	1 Carp	4	2		245	113		358	440
6900	PVC		4	2		360	113		473	565
7000	Fiberglass, obscure glass		4	2		375	113		488	585
7100	Clear glass		3	2.667		635	150		785	925

10 28 23 – Laundry Accessories

10 28 23.13 Built-In Ironing Boards

0010	**BUILT-IN IRONING BOARDS**									
0020	Including cabinet, board & light, 42"	1 Carp	2	4	Ea.	680	225		905	1,075
0100	46"	"	1.50	5.333	"	765	300		1,065	1,300

10 31 Manufactured Fireplaces

10 31 13 – Manufactured Fireplace Chimneys

10 31 13.10 Fireplace Chimneys

0010	**FIREPLACE CHIMNEYS**									
0500	Chimney dbl. wall, all stainless, over 8'-6", 7" diam., add to fireplace	1 Carp	33	.242	V.L.F.	57	13.65		70.65	83
0600	10" diameter, add to fireplace		32	.250		116	14.10		130.10	149
0700	12" diameter, add to fireplace		31	.258		211	14.55		225.55	254
0800	14" diameter, add to fireplace		30	.267		219	15		234	264
1000	Simulated brick chimney top, 4' high, 16" x 16"		10	.800	Ea.	500	45		545	615
1100	24" x 24"		7	1.143	"	595	64.50		659.50	750

10 31 13.20 Chimney Accessories

0010	**CHIMNEY ACCESSORIES**									
0020	Chimney screens, galv., 13" x 13" flue	1 Bric	8	1	Ea.	59	55.50		114.50	148
0050	24" x 24" flue		5	1.600		126	88.50		214.50	272
0200	Stainless steel, 13" x 13" flue		8	1		107	55.50		162.50	201
0250	20" x 20" flue		5	1.600		151	88.50		239.50	299
2400	Squirrel and bird screens, galvanized, 8" x 8" flue		16	.500		58	27.50		85.50	105
2450	13" x 13" flue		12	.667		151	37		188	222

10 31 16 – Manufactured Fireplace Forms

10 31 16.10 Fireplace Forms

0010	**FIREPLACE FORMS**									
1800	Fireplace forms, no accessories, 32" opening	1 Bric	3	2.667	Ea.	710	147		857	1,000
1900	36" opening		2.50	3.200		905	177		1,082	1,250
2000	40" opening		2	4		1,200	221		1,421	1,650
2100	78" opening		1.50	5.333		1,750	295		2,045	2,375

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10 31 Manufactured Fireplaces

10 31 23 – Prefabricated Fireplaces

10 31 23.10 Fireplace, Prefabricated	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **FIREPLACE, PREFABRICATED**, free standing or wall hung									
0100 With hood & screen, painted	1 Carp	1.30	6.154	Ea.	1,700	345		2,045	2,400
0150 Average		1	8		1,575	450		2,025	2,425
0200 Stainless steel		.90	8.889		2,900	500		3,400	3,925
1500 Simulated logs, gas fired, 40,000 BTU, 2′ long, manual safety pilot		7	1.143	Set	790	64.50		854.50	965
1600 Adjustable flame remote pilot		6	1.333		2,525	75		2,600	2,875
1700 Electric, 1,500 BTU, 1′-6″ long, incandescent flame		7	1.143		294	64.50		358.50	420
1800 1,500 BTU, LED flame		6	1.333		355	75		430	500
2000 Fireplace, built-in, 36″ hearth, radiant		1.30	6.154	Ea.	790	345		1,135	1,375
2100 Recirculating, small fan		1	8		945	450		1,395	1,725
2150 Large fan		.90	8.889		2,525	500		3,025	3,525
2200 42″ hearth, radiant		1.20	6.667		1,100	375		1,475	1,775
2300 Recirculating, small fan		.90	8.889		1,275	500		1,775	2,150
2350 Large fan		.80	10		1,375	565		1,940	2,350
2400 48″ hearth, radiant		1.10	7.273		2,175	410		2,585	3,000
2500 Recirculating, small fan		.80	10		2,775	565		3,340	3,900
2550 Large fan		.70	11.429		2,775	645		3,420	4,000
3000 See through, including doors		.80	10		2,200	565		2,765	3,275
3200 Corner (2 wall)		1	8		3,675	450		4,125	4,700

10 32 Fireplace Specialties

10 32 13 – Fireplace Dampers

10 32 13.10 Dampers

0010 **DAMPERS**									
0800 Damper, rotary control, steel, 30″ opening	1 Bric	6	1.333	Ea.	127	73.50		200.50	251
0850 Cast iron, 30″ opening		6	1.333		126	73.50		199.50	250
0880 36″ opening		6	1.333		130	73.50		203.50	254
0900 48″ opening		6	1.333		152	73.50		225.50	279
0920 60″ opening		6	1.333		365	73.50		438.50	510
0950 72″ opening		5	1.600		440	88.50		528.50	620
1000 84″ opening, special order		5	1.600		945	88.50		1,033.50	1,150
1050 96″ opening, special order		4	2		955	111		1,066	1,225
1200 Steel plate, poker control, 60″ opening		8	1		335	55.50		390.50	450
1250 84″ opening, special order		5	1.600		610	88.50		698.50	805
1400 "Universal" type, chain operated, 32″ x 20″ opening		8	1		259	55.50		314.50	370
1450 48″ x 24″ opening		5	1.600		385	88.50		473.50	560

10 32 23 – Fireplace Doors

10 32 23.10 Doors

0010 **DOORS**									
0400 Cleanout doors and frames, cast iron, 8″ x 8″	1 Bric	12	.667	Ea.	54	37		91	115
0450 12″ x 12″		10	.800		105	44		149	182
0500 18″ x 24″		8	1		156	55.50		211.50	254
0550 Cast iron frame, steel door, 24″ x 30″		5	1.600		385	88.50		473.50	560
1600 Dutch oven door and frame, cast iron, 12″ x 15″ opening		13	.615		136	34		170	201
1650 Copper plated, 12″ x 15″ opening		13	.615		266	34		300	345

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10 35 Stoves

10 35 13 – Heating Stoves

10 35 13.10 Wood Burning Stoves	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **WOOD BURNING STOVES**									
0015 Cast iron, less than 1,500 S.F.	2 Carp	1.30	12.308	Ea.	1,700	695		2,395	2,900
0020 1,500 to 2,000 S.F.		1	16		2,800	900		3,700	4,425
0030 greater than 2,000 S.F.		.80	20		2,850	1,125		3,975	4,800
0050 For gas log lighter, add					33			33	36.50

10 43 Emergency Aid Specialties

10 43 13 – Defibrillator Cabinets

10 43 13.05 Defibrillator Cabinets

0010 **DEFIBRILLATOR CABINETS**, not equipped, stainless steel									
0050 Defibrillator cabinet, stainless steel with strobe & alarm 12" x 27"	1 Carp	10	.800	Ea.	325	45		370	420
0100 Automatic External Defibrillator	"	30	.267	"	1,125	15		1,140	1,275

10 44 Fire Protection Specialties

10 44 13 – Fire Protection Cabinets

10 44 13.53 Fire Equipment Cabinets

0010 **FIRE EQUIPMENT CABINETS**, not equipped, 20 ga. steel box									
0040 Recessed, D.S. glass in door, box size given									
1000 Portable extinguisher, single, 8" x 12" x 27", alum. door & frame	Q-12	8	2	Ea.	116	123		239	310
1100 Steel door and frame		8	2		93	123		216	286
2700 Fire blanket & extinguisher cab, inc blanket, rec stl., 14" x 40" x 8"		7	2.286		400	141		541	650
2800 Fire blanket cab, inc blanket, surf mtd, stl, 15"x10"x5", w/pwdr coat fin		8	2		94	123		217	288
3000 Hose rack assy., 1-1/2" valve & 100' hose, 24" x 40" x 5-1/2"									
3100 Aluminum door and frame	Q-12	6	2.667	Ea.	805	165		970	1,125
3200 Steel door and frame		6	2.667		227	165		392	495
3300 Stainless steel door and frame		6	2.667		1,075	165		1,240	1,450
4000 Hose rack assy., 2-1/2" x 1-1/2" valve, 100' hose, 24" x 40" x 8"									
4100 Aluminum door and frame	Q-12	6	2.667	Ea.	950	165		1,115	1,300
4200 Steel door and frame		6	2.667		840	165		1,005	1,175
4300 Stainless steel door and frame		6	2.667		1,075	165		1,240	1,425
5000 Hose rack assy., 2-1/2" x 1-1/2" valve, 100' hose									
5010 and extinguisher, 30" x 40" x 8"									
5100 Aluminum door and frame	Q-12	5	3.200	Ea.	320	197		517	645
5200 Steel door and frame		5	3.200		280	197		477	600
5300 Stainless steel door and frame		5	3.200		560	197		757	910
8000 Valve cabinet for 2-1/2" FD angle valve, 18" x 18" x 8"									
8100 Aluminum door and frame	Q-12	12	1.333	Ea.	251	82.50		333.50	400
8200 Steel door and frame		12	1.333		207	82.50		289.50	350
8300 Stainless steel door and frame		12	1.333		335	82.50		417.50	495

10 44 16 – Fire Extinguishers

10 44 16.13 Portable Fire Extinguishers

0010 **PORTABLE FIRE EXTINGUISHERS**									
0140 CO_2, with hose and "H" horn, 10 lb.				Ea.	330			330	365
0160 15 lb.					405			405	445
0180 20 lb.					515			515	565
1000 Dry chemical, pressurized									
1040 Standard type, portable, painted, 2-1/2 lb.				Ea.	25.50			25.50	28
1060 5 lb.					37.50			37.50	41
1080 10 lb.					62.50			62.50	68.50

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10 44 Fire Protection Specialties

10 44 16 – Fire Extinguishers

	10 44 16.13 Portable Fire Extinguishers	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1100	20 lb.				Ea.	152			152	167
1120	30 lb.					870			870	955
1300	Standard type, wheeled, 150 lb.					1,850			1,850	2,025
2000	ABC all purpose type, portable, 2-1/2 lb.					17.45			17.45	19.20
2060	5 lb.					31.50			31.50	35
2080	9-1/2 lb.					60			60	66
2100	20 lb.					100			100	110
3500	Halotron 1, 2-1/2 lb.					110			110	121
3600	5 lb.					197			197	217
3700	60 lb.					400			400	440
5000	Pressurized water, 2-1/2 gallon, stainless steel					82.50			82.50	90.50
5060	With anti-freeze					141			141	155
9400	Installation of extinguishers, 12 or more, on nailable surface	1 Carp	30	.267			15		15	22.50
9420	On masonry or concrete	"	15	.533			30		30	44.50

10 44 16.16 Wheeled Fire Extinguisher Units

0010	**WHEELED FIRE EXTINGUISHER UNITS**									
0350	CO_2, portable, with swivel horn									
0360	Wheeled type, cart mounted, 50 lb.				Ea.	1,375			1,375	1,525
0400	100 lb.				"	2,500			2,500	2,750
2200	ABC all purpose type									
2300	Wheeled, 45 lb.				Ea.	2,025			2,025	2,225
2360	150 lb.				"	2,600			2,600	2,850

10 51 Lockers

10 51 13 – Metal Lockers

10 51 13.10 Lockers

0011	**LOCKERS** steel, baked enamel, knock down construction									
0012	Body- 24ga, door- 16 or 18ga									
0110	1-tier locker, 12" x 15" x 72"	1 Shee	20	.400	Ea.	156	27		183	213
0120	18" x 15" x 72"		20	.400		495	27		522	585
0130	12" x 18" x 72"		20	.400		240	27		267	305
0140	18" x 18" x 72"		20	.400		390	27		417	470
0410	2- tier, 12" x 15" x 36"		30	.267		390	18		408	455
0420	18" x 15" x 36"		30	.267		405	18		423	470
0430	12" x 18" x 36"		30	.267		405	18		423	470
0440	18" x 18" x 36"		30	.267		345	18		363	400
0450	3- tier 12" x 15" x 24"		30	.267		420	18		438	485
0455	12" x 18" x 24"		30	.267		455	18		473	525
0480	4- tier 12" x 15" x 18"		30	.267		184	18		202	229
0485	12" x 18" x 18"		30	.267		228	18		246	278
0500	Two person, 18" x 15" x 72"		20	.400		345	27		372	420
0510	18" x 18" x 72"		20	.400		345	27		372	420
0520	Duplex, 15" x 15" x 72"		20	.400		925	27		952	1,075
0530	15" x 21" x 72"		20	.400		445	27		472	530
0600	5 tier box lockers, unassembled		30	.267	Opng.	250	18		268	300
0700	Set up		24	.333		63	22.50		85.50	104
0900	6 tier box lockers, unassembled		36	.222		54	15		69	82
1000	Set up		30	.267		54	18		72	86
1098	All welded, ventilated athletic lockers, body- 16 ga., door- 14 ga.									
1100	1-tier, 12" x 18" x 72"	1 Shee	7.50	1.067	Ea.	260	72		332	395
1110	18" x 15" x 72"		7.50	1.067		260	72		332	395

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10 51 13 – Metal Lockers

	10 51 13.10 Lockers	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1115	18" x 18" x 72"	1 Shee	7.50	1.067	Ea.	180	72		252	305
1130	2-tier, 12" x 15" x 36"		7.50	1.067		885	72		957	1,075
1135	12" x 18" x 36"		7.50	1.067		885	72		957	1,075
1140	18" x 15" x 36"		7.50	1.067		245	72		317	380
1145	18" x 18" x 36"		7.50	1.067		256	72		328	390
1160	3-tier, 12" x 18" x 24"		7.50	1.067		169	72		241	295
1180	4-tier, 12" x 18" x 18"		7.50	1.067		209	72		281	340
1190	5H box, 12" x 18" x 14.4"		7.50	1.067		350	72		422	495
1195	18" x 18" x 14.4"		7.50	1.067		247	72		319	380
1196	6H box, 12" x 15" x 12"		7.50	1.067		415	72		487	565
1197	12" x 18" x 12"		7.50	1.067		460	72		532	615
1198	18" x 18" x 12"		7.50	1.067		625	72		697	800
2399	Standard duty lockers, body- 24 ga., doors- 16-18 ga.									
2400	16-person locker unit with clothing rack									
2500	72" wide x 15" deep x 72" high	1 Shee	15	.533	Ea.	750	36		786	880
2550	18" deep	"	15	.533	"	975	36		1,011	1,125
3000	Wall mounted lockers, 4 person, with coat bar									
3100	48" wide x 18" deep x 12" high	1 Shee	20	.400	Ea.	256	27		283	325
3250	Rack w/24 wire mesh baskets		1.50	5.333	Set	605	360		965	1,200
3260	30 baskets		1.25	6.400		510	430		940	1,225
3270	36 baskets		.95	8.421		600	570		1,170	1,525
3280	42 baskets		.80	10		615	675		1,290	1,700
3300	For built-in lock with 2 keys, add				Ea.	16.10			16.10	17.70
3600	For hanger rods, add					3.27			3.27	3.60
3650	For number plate kit, 100 plates #1 - #100, add	1 Shee	4	2		113	135		248	330
3700	For locker base, closed front panel		90	.089		7.75	6		13.75	17.60
3710	End panel, bolted		36	.222		26	15		41	51
3800	For sloping top, 12" wide		24	.333		41.50	22.50		64	79.50
3810	15" wide		24	.333		86.50	22.50		109	130
3820	18" wide		24	.333		67	22.50		89.50	108
3850	Sloping top end panel, 12" deep		72	.111		21	7.50		28.50	35
3860	15" deep		72	.111		22.50	7.50		30	36
3870	18" deep		72	.111		26	7.50		33.50	40
3900	For finish end panels, steel, 60" high, 15" deep		12	.667		110	45		155	189
3910	72" high, 12" deep		12	.667		35.50	45		80.50	107
3920	18" deep		12	.667		57	45		102	131
5000	For "ready to assemble" lockers,									
5010	Add to labor						75%			
5020	Deduct from material					20%				
6000	Heavy duty for detention facility, tamper proof, 14 ga. welded steel, solid									
6100	24" W x 24" D x 74" H, single tier	1 Shee	18	.444	Ea.	785	30		815	910
6110	Double tier		18	.444		745	30		775	860
6120	Triple tier		18	.444		795	30		825	920

10 51 26 – Plastic Lockers

10 51 26.13 Recycled Plastic Lockers

0011	**RECYCLED PLASTIC LOCKERS**, 30% recycled									
0110	Single tier box locker, 12" x 12" x 72"	G	1 Shee	8	1	Ea.	505	67.50	572.50	655
0120	12" x 15" x 72"	G		8	1		435	67.50	502.50	575
0130	12" x 18" x 72"	G		8	1		665	67.50	732.50	830
0410	Double tier, 12" x 12" x 72"	G		21	.381		490	25.50	515.50	580
0420	12" x 15" x 72"	G		21	.381		520	25.50	545.50	610
0430	12" x 18" x 72"	G		21	.381		530	25.50	555.50	625

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10 51 Lockers

10 51 53 – Locker Room Benches

10 51 53.10 Benches	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **BENCHES**									
2100 Locker bench, laminated maple, top only	1 Shee	100	.080	L.F.	81.50	5.40		86.90	97.50
2200 Pedestals, steel pipe		25	.320	Ea.	63	21.50		84.50	102
2250 Plastic, 9.5" top with PVC pedestals		80	.100	L.F.	23	6.75		29.75	35

10 55 Postal Specialties

10 55 23 – Mail Boxes

10 55 23.10 Commercial Mail Boxes

0010 **COMMERCIAL MAIL BOXES**									
0020 Horiz., key lock, 5"H x 6"W x 15"D, alum., rear load	1 Carp	34	.235	Ea.	24.50	13.25		37.75	46.50
0100 Front loading		34	.235		48.50	13.25		61.75	72.50
0200 Double, 5"H x 12"W x 15"D, rear loading		26	.308		112	17.30		129.30	149
0300 Front loading		26	.308		90	17.30		107.30	125
0500 Quadruple, 10"H x 12"W x 15"D, rear loading		20	.400		81.50	22.50		104	123
0600 Front loading		20	.400		49	22.50		71.50	87.50
0800 Vertical, front load, 15"H x 5"W x 6"D, alum., per compartment		34	.235		52	13.25		65.25	76.50
0900 Bronze, duranodic finish		34	.235		62.50	13.25		75.75	88.50
1000 Steel, enameled		34	.235		45	13.25		58.25	69
1700 Alphabetical directories, 120 names		10	.800		510	45		555	625
1800 Letter collection box		6	1.333		195	75		270	325
1830 Lobby collection boxes, aluminum	2 Shee	5	3.200		199	216		415	545
1840 Bronze or stainless	"	4.50	3.556		2,275	240		2,515	2,850
1900 Letter slot, residential	1 Carp	20	.400		49	22.50		71.50	87.50
2000 Post office type		8	1		213	56.50		269.50	320
2250 Key keeper, single key, aluminum		26	.308		45	17.30		62.30	75.50
2300 Steel, enameled		26	.308		84	17.30		101.30	119

10 56 Storage Assemblies

10 56 13 – Metal Storage Shelving

10 56 13.10 Shelving

0010 **SHELVING**									
0020 Metal, industrial, cross-braced, 3' W, 12" D	1 Sswk	175	.046	SF Shlf	17.25	2.83		20.08	23.50
0100 24" D		330	.024		11.25	1.50		12.75	14.65
0300 4' W, 12" D		185	.043		10.80	2.67		13.47	15.95
0400 24" D		380	.021		7.95	1.30		9.25	10.75
1200 Enclosed sides, cross-braced back, 3' W, 12" D		175	.046		10.85	2.83		13.68	16.30
1300 24" D		290	.028		7.50	1.71		9.21	10.90
1500 Fully enclosed, sides and back, 3' W, 12" D		150	.053		13.35	3.30		16.65	19.75
1600 24" D		255	.031		8	1.94		9.94	11.80
1800 4' W, 12" D		150	.053		11	3.30		14.30	17.20
1900 24" D		290	.028		7.25	1.71		8.96	10.65
2200 Wide span, 1600 lb. capacity per shelf, 6' W, 24" D		380	.021		30	1.30		31.30	35
2400 36" D		440	.018		11.80	1.12		12.92	14.70
2600 8' W, 24" D		440	.018		14.50	1.12		15.62	17.70
2800 36" D		520	.015		12.40	.95		13.35	15.10
4000 Pallet racks, steel frame 5,000 lb. capacity, 8' long, 36" D	2 Sswk	450	.036		14.35	2.20		16.55	19.20
4200 42" D		500	.032		12.60	1.98		14.58	16.90
4400 48" D		520	.031		11.35	1.90		13.25	15.40

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10 56 Storage Assemblies

10 56 13 – Metal Storage Shelving

10 56 13.20 Parts Bins	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **PARTS BINS** metal, gray baked enamel finish									
0100 6′-3″ high, 3′ wide									
0300 12 bins, 18″ wide x 12″ high, 12″ deep	2 Clab	10	1.600	Ea.	410	73		483	560
0400 24″ deep		10	1.600		455	73		528	610
0600 72 bins, 6″ wide x 6″ high, 12″ deep		8	2		930	91		1,021	1,150
0700 18″ deep		8	2		870	91		961	1,100
1000 7′-3″ high, 3′ wide									
1200 14 bins, 18″ wide x 12″ high, 12″ deep	2 Clab	10	1.600	Ea.	405	73		478	555
1300 24″ deep		10	1.600		375	73		448	520
1500 84 bins, 6″ wide x 6″ high, 12″ deep		8	2		730	91		821	940
1600 24″ deep		8	2		870	91		961	1,100

10 57 Wardrobe and Closet Specialties

10 57 13 – Hat and Coat Racks

10 57 13.10 Coat Racks and Wardrobes

0010 **COAT RACKS AND WARDROBES**									
0020 Hat & coat rack, floor model, 6 hangers									
0050 Standing, beech wood, 21″ x 21″ x 72″, chrome				Ea.	64.50			64.50	71
0100 18 ga. tubular steel, 21″ x 21″ x 69″, wood walnut				″	475			475	525
0500 16 ga. steel frame, 22 ga. steel shelves									
0650 Single pedestal, 30″ x 18″ x 63″				Ea.	540			540	595
0800 Single face rack, 29″ x 18-1/2″ x 62″					685			685	755
0900 51″ x 18-1/2″ x 70″					1,325			1,325	1,450
0910 Double face rack, 39″ x 26″ x 70″					535			535	585
0920 63″ x 26″ x 70″					1,400			1,400	1,550
0940 For 2″ ball casters, add				Set	84			84	92.50
1400 Utility hook strips, 3/8″ x 2-1/2″ x 18″, 6 hooks	1 Carp	48	.167	Ea.	92	9.40		101.40	115
1500 34″ long, 12 hooks	″	48	.167	″	77.50	9.40		86.90	99.50
1650 Wall mounted racks, 16 ga. steel frame, 22 ga. steel shelves									
1850 12″ x 15″ x 26″, 6 hangers	1 Carp	32	.250	Ea.	31	14.10		45.10	55
2000 12″ x 15″ x 50″, 12 hangers	″	32	.250	″	213	14.10		227.10	255
2150 Wardrobe cabinet, steel, baked enamel finish									
2300 36″ x 21″ x 78″, incl. top shelf & hanger rod				Ea.	315			315	345
2400 Wardrobe, 24″ x 24″ x 76″, KD, w/door, hospital, baked enamel steel	1 Carp	2	4		405	225		630	780
2500 Hardwood	″	2	4		900	225		1,125	1,325

10 57 23 – Closet and Utility Shelving

10 57 23.19 Wood Closet and Utility Shelving

0010 **WOOD CLOSET AND UTILITY SHELVING**									
0020 Pine, clear grade, no edge band, 1″ x 8″	1 Carp	115	.070	L.F.	3.15	3.92		7.07	9.30
0100 1″ x 10″		110	.073		3.93	4.09		8.02	10.40
0200 1″ x 12″		105	.076		4.73	4.29		9.02	11.60
0600 Plywood, 3/4″ thick with lumber edge, 12″ wide		75	.107		3.47	6		9.47	12.75
0700 24″ wide		70	.114		6.55	6.45		13	16.80
0900 Bookcase, clear grade pine, shelves 12″ OC, 8″ deep, per S.F. shelf		70	.114	S.F.	10.25	6.45		16.70	21
1000 12″ deep shelves		65	.123	″	15.35	6.95		22.30	27
1200 Adjustable closet rod and shelf, 12″ wide, 3′ long		20	.400	Ea.	13.85	22.50		36.35	49
1300 8′ long		15	.533	″	25	30		55	72
1500 Prefinished shelves with supports, stock, 8″ wide		75	.107	L.F.	10.05	6		16.05	20
1600 10″ wide		70	.114	″	15.70	6.45		22.15	27

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10 71 Exterior Protection

10 71 13 – Exterior Sun Control Devices

10 71 13.19 Rolling Exterior Shutters	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **ROLLING EXTERIOR SHUTTERS**									
0020 Roll-up, manual operation, aluminum, 3′ x 4′, incl. frame	2 Carp	8	2	Ea.	340	113		453	545
0030 6′ x 7′	"	8	2	"	1,375	113		1,488	1,700

10 73 Protective Covers

10 73 13 – Awnings

10 73 13.10 Awnings, Fabric	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **AWNINGS, FABRIC**									
0020 Including acrylic canvas and frame, standard design									
0100 Door and window, slope, 3′ high, 4′ wide	1 Carp	4.50	1.778	Ea.	940	100		1,040	1,175
0110 6′ wide		3.50	2.286		1,200	129		1,329	1,525
0120 8′ wide		3	2.667		1,475	150		1,625	1,850
0200 Quarter round convex, 4′ wide		3	2.667		1,450	150		1,600	1,825
0210 6′ wide		2.25	3.556		1,900	200		2,100	2,400
0220 8′ wide		1.80	4.444		2,325	250		2,575	2,925
0300 Dome, 4′ wide		7.50	1.067		565	60		625	710
0310 6′ wide		3.50	2.286		1,275	129		1,404	1,600
0320 8′ wide		2	4		2,250	225		2,475	2,800
0350 Elongated dome, 4′ wide		1.33	6.015		2,125	340		2,465	2,825
0360 6′ wide		1.11	7.207		2,525	405		2,930	3,375
0370 8′ wide		1	8		2,950	450		3,400	3,925
1000 Entry or walkway, peak, 12′ long, 4′ wide	2 Carp	.90	17.778		10,600	1,000		11,600	13,200
1010 6′ wide		.60	26.667		16,400	1,500		17,900	20,200
1020 8′ wide		.40	40		22,600	2,250		24,850	28,200
1100 Radius with dome end, 4′ wide		1.10	14.545		8,050	820		8,870	10,100
1110 6′ wide		.70	22.857		12,900	1,275		14,175	16,100
1120 8′ wide		.50	32		18,400	1,800		20,200	22,900
2000 Retractable lateral arm awning, manual									
2010 To 12′ wide, 8′-6″ projection	2 Carp	1.70	9.412	Ea.	2,275	530		2,805	3,300
2020 To 14′ wide, 8′-6″ projection		1.10	14.545		2,650	820		3,470	4,150
2030 To 19′ wide, 8′-6″ projection		.85	18.824		3,600	1,050		4,650	5,525
2040 To 24′ wide, 8′-6″ projection		.67	23.881		4,550	1,350		5,900	7,000
2050 Motor for above, add	1 Carp	2.67	3		655	169		824	970
3000 Patio/deck canopy with frame									
3010 12′ wide, 12′ projection	2 Carp	2	8	Ea.	3,200	450		3,650	4,200
3020 16′ wide, 14′ projection	"	1.20	13.333		4,975	750		5,725	6,600
9000 For fire retardant canvas, add					7%				
9010 For lettering or graphics, add					35%				
9020 For painted or coated acrylic canvas, deduct					8%				
9030 For translucent or opaque vinyl canvas, add					10%				
9040 For 6 or more units, deduct					20%	15%			

10 73 16 – Canopies

10 73 16.20 Metal Canopies	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **METAL CANOPIES**									
0020 Wall hung, .032″, aluminum, prefinished, 8′ x 10′	K-2	1.30	18.462	Ea.	3,500	1,075	290	4,865	5,825
0300 8′ x 20′		1.10	21.818		5,275	1,275	345	6,895	8,150
0500 10′ x 10′		1.30	18.462		3,075	1,075	290	4,440	5,375
0700 10′ x 20′		1.10	21.818		5,275	1,275	345	6,895	8,150
1000 12′ x 20′		1	24		5,275	1,400	375	7,050	8,400
1360 12′ x 30′		.80	30		10,200	1,750	470	12,420	14,400

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10 73 Protective Covers

10 73 16 – Canopies

	10 73 16.20 Metal Canopies	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1700	12′ x 40′	K-2	.60	40	Ea.	6,225	2,350	630	9,205	11,100
1900	For free standing units, add					20%	10%			
2300	Aluminum entrance canopies, flat soffit, .032″									
2500	3′-6″ x 4′-0″, clear anodized	2 Carp	4	4	Ea.	1,500	225		1,725	1,975
2700	Bronze anodized		4	4		1,375	225		1,600	1,825
3000	Polyurethane painted		4	4		1,700	225		1,925	2,200
3300	4′-6″ x 10′-0″, clear anodized		2	8		2,825	450		3,275	3,775
3500	Bronze anodized		2	8		2,600	450		3,050	3,550
3700	Polyurethane painted		2	8		291	450		741	990
4000	Wall downspout, 10 L.F., clear anodized	1 Carp	7	1.143		204	64.50		268.50	320
4300	Bronze anodized		7	1.143		291	64.50		355.50	415
4500	Polyurethane painted		7	1.143		291	64.50		355.50	415
7000	Carport, baked vinyl finish, .032″, 20′ x 10′, no foundations, flat panel	K-2	4	6	Car	2,800	350	94.50	3,244.50	3,725
7250	Insulated flat panel		2	12	″	1,650	705	189	2,544	3,075
7500	Walkway cover, to 12′ wide, stl., vinyl finish, .032″, no fndtns., flat		250	.096	S.F.	58.50	5.65	1.51	65.66	74.50
7750	Arched		200	.120	″	57.50	7.05	1.89	66.44	76.50

10 74 Manufactured Exterior Specialties

10 74 23 – Cupolas

10 74 23.10 Wood Cupolas

0010	**WOOD CUPOLAS**									
0020	Stock units, pine, painted, 18″ sq., 28″ high, alum. roof	1 Carp	4.10	1.951	Ea.	249	110		359	440
0100	Copper roof		3.80	2.105		259	119		378	460
0300	23″ square, 33″ high, aluminum roof		3.70	2.162		385	122		507	600
0400	Copper roof		3.30	2.424		625	136		761	890
0600	30″ square, 37″ high, aluminum roof		3.70	2.162		610	122		732	850
0700	Copper roof		3.30	2.424		630	136		766	895
0900	Hexagonal, 31″ wide, 46″ high, copper roof		4	2		1,125	113		1,238	1,400
1000	36″ wide, 50″ high, copper roof		3.50	2.286		1,275	129		1,404	1,600
1200	For deluxe stock units, add to above					25%				
1400	For custom built units, add to above					50%	50%			

10 74 29 – Steeples

10 74 29.10 Prefabricated Steeples

0010	**PREFABRICATED STEEPLES**									
4000	Steeples, translucent fiberglass, 30″ square, 15′ high	F-3	2	20	Ea.	1,525	1,150	990	3,665	4,500
4150	25′ high		1.80	22.222		5,600	1,275	1,100	7,975	9,275
4350	Opaque fiberglass, 24″ square, 14′ high		2	20		1,500	1,150	990	3,640	4,475
4500	28′ high		1.80	22.222		7,300	1,275	1,100	9,675	11,100
4600	Aluminum, baked finish, 16″ square, 14′ high					6,100			6,100	6,700
4620	20′ high, 3′-6″ base					10,600			10,600	11,700
4640	35′ high, 8′ base					38,000			38,000	41,800
4660	60′ high, 14′ base					94,500			94,500	104,000
4680	152′ high, custom					711,000			711,000	782,000
4700	Porcelain enamel steeples, custom, 40′ high	F-3	.50	80		14,400	4,625	3,975	23,000	27,000
4800	60′ high	″	.30	133		18,500	7,700	6,600	32,800	39,200

10 74 46 – Window Wells

10 74 46.10 Area Window Wells

0010	**AREA WINDOW WELLS**, Galvanized steel									
0020	20 ga., 3′-2″ wide, 1′ deep	1 Sswk	29	.276	Ea.	17.80	17.05		34.85	46
0100	2′ deep		23	.348		425	21.50		446.50	505

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10 74 Manufactured Exterior Specialties

10 74 46 – Window Wells

10 74 46.10 Area Window Wells	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0300 16 ga., 3'-2" wide, 1' deep	1 Sswk	29	.276	Ea.	335	17.05		352.05	395
0400 3' deep		23	.348		50.50	21.50		72	88.50
0600 Welded grating for above, 15 lb., painted		45	.178		107	11		118	135
0700 Galvanized		45	.178		131	11		142	161
0900 Translucent plastic cap for above		60	.133		21.50	8.25		29.75	36

10 75 Flagpoles

10 75 16 – Ground-Set Flagpoles

10 75 16.10 Flagpoles									
0010 **FLAGPOLES**, ground set									
0050 Not including base or foundation									
0100 Aluminum, tapered, ground set 20' high	K-1	2	8	Ea.	1,400	425	189	2,014	2,375
0200 25' high		1.70	9.412		1,425	500	222	2,147	2,575
0300 30' high		1.50	10.667		1,350	570	252	2,172	2,600
0400 35' high		1.40	11.429		1,950	610	269	2,829	3,350
0500 40' high		1.20	13.333		2,475	710	315	3,500	4,125
0600 50' high		1	16		5,900	855	375	7,130	8,200
0700 60' high		.90	17.778		7,350	950	420	8,720	9,950
0800 70' high		.80	20		8,125	1,075	470	9,670	11,000
1100 Counterbalanced, internal halyard, 20' high		1.80	8.889		2,400	475	210	3,085	3,575
1200 30' high		1.50	10.667		3,500	570	252	4,322	4,975
1300 40' high		1.30	12.308		4,300	655	290	5,245	6,025
1400 50' high		1	16		5,900	855	375	7,130	8,200
2820 Aluminum, electronically operated, 30' high		1.40	11.429		5,075	610	269	5,954	6,800
2840 35' high		1.30	12.308		5,775	655	290	6,720	7,675
2860 39' high		1.10	14.545		6,650	775	345	7,770	8,850
2880 45' high		1	16		6,800	855	375	8,030	9,175
2900 50' high		.90	17.778		8,950	950	420	10,320	11,700
3000 Fiberglass, tapered, ground set, 23' high		2	8		1,275	425	189	1,889	2,250
3100 29'-7" high		1.50	10.667		1,675	570	252	2,497	2,975
3200 36'-1" high		1.40	11.429		2,075	610	269	2,954	3,475
3300 39'-5" high		1.20	13.333		2,050	710	315	3,075	3,650
3400 49'-2" high		1	16		5,350	855	375	6,580	7,575
3500 59' high		.90	17.778		6,925	950	420	8,295	9,500
4300 Steel, direct imbedded installation									
4400 Internal halyard, 20' high	K-1	2.50	6.400	Ea.	200	340	151	691	895
4500 25' high		2.50	6.400		199	340	151	690	895
4600 30' high		2.30	6.957		2,725	370	164	3,259	3,725
4700 40' high		2.10	7.619		3,800	405	180	4,385	4,975
4800 50' high		1.90	8.421		5,375	450	199	6,024	6,825
5000 60' high		1.80	8.889		7,800	475	210	8,485	9,525
5100 70' high		1.60	10		9,900	535	236	10,671	12,000
5200 80' high		1.40	11.429		13,000	610	269	13,879	15,500
5300 90' high		1.20	13.333		24,700	710	315	25,725	28,600
5500 100' high		1	16		29,000	855	375	30,230	33,500
6400 Wood poles, tapered, clear vertical grain fir with tilting									
6410 base, not incl. foundation, 4" butt, 25' high	K-1	1.90	8.421	Ea.	6,700	450	199	7,349	8,275
6800 6" butt, 30' high	"	1.30	12.308	"	8,200	655	290	9,145	10,300
7300 Foundations for flagpoles, including									
7400 excavation and concrete, to 35' high poles	C-1	10	3.200	Ea.	158	172		330	430
7600 40' to 50' high		3.50	9.143		225	490		715	980

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10 75 Flagpoles

10 75 16 – Ground-Set Flagpoles

		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
10 75 16.10	**Flagpoles**									
7700	Over 60′ high	C-1	2	16	Ea.	490	860		1,350	1,800

10 75 23 – Wall-Mounted Flagpoles

10 75 23.10	**Flagpoles**									
0010	**FLAGPOLES**, structure mounted									
0100	Fiberglass, vertical wall set, 19′-8″ long	K-1	1.50	10.667	Ea.	925	570	252	1,747	2,150
0200	23′ long		1.40	11.429		1,375	610	269	2,254	2,700
0300	26′-3″ long		1.30	12.308		1,325	655	290	2,270	2,775
0800	19′-8″ long outrigger		1.30	12.308		1,100	655	290	2,045	2,500
1300	Aluminum, vertical wall set, tapered, with base, 20′ high		1.20	13.333		995	710	315	2,020	2,500
1400	29′-6″ high		1	16		2,525	855	375	3,755	4,475
2400	Outrigger poles with base, 12′ long		1.30	12.308		965	655	290	1,910	2,350
2500	14′ long		1	16		1,400	855	375	2,630	3,225

10 81 Pest Control Devices

10 81 13 – Bird Control Devices

10 81 13.10	**Bird Control Netting**									
0010	**BIRD CONTROL NETTING**									
0020	1/8″ square mesh	4 Clab	4000	.008	S.F.	.62	.36		.98	1.22
0100	1/4″ square mesh		4000	.008		.19	.36		.55	.75
0120	1/2″ square mesh		4000	.008		.26	.36		.62	.83
0140	5/8″ x 3/4″ mesh		4000	.008		.30	.36		.66	.87
0160	1-1/4″ x 1-1/2″ mesh		4000	.008		.16	.36		.52	.72
0200	4″ square mesh		4000	.008		.24	.36		.60	.80
1000	Poly clips				Ea.	.54			.54	.59

10 86 Security Mirrors and Domes

10 86 10 – Security Mirrors

10 86 10.10	**Exterior Traffic Control Mirrors**									
0010	**EXTERIOR TRAFFIC CONTROL MIRRORS**									
0100	Convex, stainless steel, 20 ga., 26″ diameter	1 Carp	12	.667	Ea.	305	37.50		342.50	390

10 86 20 – Security Domes

10 86 20.10	**Domes**									
0010	**DOMES** for security cameras (CCTV)									
0100	Ceiling mounted, 10″ diameter	1 Carp	30	.267	Ea.	54	15		69	82
0110	12″ diameter	″	30	.267	″	54	15		69	82

10 88 Scales

10 88 05 – Commercial Scales

10 88 05.10	**Scales**									
0010	**SCALES**									
0700	Truck scales, incl. steel weigh bridge,									
0800	not including foundation, pits									
1550	Digital, electronic, 100 ton capacity, steel deck 12′ x 10′ platform	3 Carp	.20	120	Ea.	18,100	6,750		24,850	30,100
1600	40′ x 10′ platform		.14	171		36,200	9,650		45,850	54,000
1640	60′ x 10′ platform		.13	185		50,500	10,400		60,900	71,000
1680	70′ x 10′ platform		.12	200		51,000	11,300		62,300	73,000

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10 88 05 – Commercial Scales

10 88 05.10 Scales		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2000	For standard automatic printing device, add				Ea.	1,975			1,975	2,175
2100	For remote reading electronic system, add					1,200			1,200	1,300
2300	Concrete foundation pits for above, 8′ x 6′, 5 C.Y. required	C-1	.50	64		1,375	3,425		4,800	6,625
2400	14′ x 6′ platform, 10 C.Y. required		.35	91.429		2,025	4,900		6,925	9,525
2600	50′ x 10′ platform, 30 C.Y. required		.25	128		2,725	6,875		9,600	13,200
2700	70′ x 10′ platform, 40 C.Y. required		.15	213		5,975	11,400		17,375	23,600
2750	Crane scales, dial, 1 ton capacity					1,350			1,350	1,500
2780	5 ton capacity					1,600			1,600	1,750
2800	Digital, 1 ton capacity					1,100			1,100	1,200
2850	10 ton capacity					1,600			1,600	1,750
2900	Low profile electronic warehouse scale,									
3000	not incl. printer, 4′ x 4′ platform, 10,000 lb. capacity	2 Carp	.30	53.333	Ea.	1,300	3,000		4,300	5,900
3300	5′ x 7′ platform, 10,000 lb. capacity		.25	64		3,250	3,600		6,850	8,950
3400	20,000 lb. capacity		.20	80		4,025	4,500		8,525	11,100
3500	For printers, incl. time, date & numbering, add					935			935	1,025
3800	Portable, beam type, capacity 1000 lb., platform 18″ x 24″					1,125			1,125	1,225
3900	Dial type, capacity 2000 lb., platform 24″ x 24″					2,025			2,025	2,225
4000	Digital type, capacity 1000 lb., platform 24″ x 30″					3,250			3,250	3,575
4100	Portable contractor truck scales, 50 ton cap., 40′ x 10′ platform					37,800			37,800	41,500
4200	60′ x 10′ platform					45,100			45,100	49,600
4400	Heavy-Duty Steel Deck Truck Scales 20′ x 10′	3 Carp	.20	120		22,300	6,750		29,050	34,700
4500	Heavy-Duty Steel Deck Truck Scales 80′ x 10′		.10	240		60,000	13,500		73,500	86,000
4600	Heavy-Duty Steel Deck Truck Scales 160′ x 10′		.04	600		129,000	33,800		162,800	192,500
4700	Heavy-Duty Steel Deck Truck Scales 20′ x 12′		.18	137		26,100	7,725		33,825	40,200
4800	Heavy-Duty Steel Deck Truck Scales 80′ x 12′		.09	267		74,500	15,000		89,500	104,500
4900	Heavy-Duty Steel Deck Truck Scales 160′ x 12′		.04	600		150,500	33,800		184,300	216,000
5000	Heavy-Duty Steel Deck Truck Scales 20′ x 14′		.16	150		34,700	8,450		43,150	50,500
5100	Heavy-Duty Steel Deck Truck Scales 80′ x 14′		.06	400		82,000	22,500		104,500	123,500
5200	Heavy-Duty Steel Deck Truck Scales 160′ x 14′		.03	800		160,000	45,000		205,000	243,000

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Estimating Tips

General

- The items in this division are usually priced per square foot or each. Many of these items are purchased by the owner for installation by the contractor. Check the specifications for responsibilities and include time for receiving, storage, installation, and mechanical and electrical hookups in the appropriate divisions.
- Many items in Division 11 require some type of support system that is not usually furnished with the item. Examples of these systems include blocking for the attachment of casework and support angles/blocking for ceiling-hung projection screens. The required blocking or supports must be added to the estimate in the appropriate division.
- Some items in Division 11 may require assembly or electrical hookups. Verify the amount of assembly required or the need for a hard electrical connection and add the appropriate costs.

Reference Numbers

Reference numbers are shown at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

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11 05 05 – Selective Demolition for Equipment

11 05 05.10 Selective Demolition	Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010 **SELECTIVE DEMOLITION**									
0130 Central vacuum, motor unit, residential or commercial	1 Clab	2	4	Ea.		182		182	272
0210 Vault door and frame	2 Skwk	2	8			470		470	710
0215 Day gate, for vault	"	3	5.333			315		315	470
0380 Bank equipment, teller window, bullet resistant	1 Clab	1.20	6.667			305		305	455
0381 Counter	2 Clab	1.50	10.667	Station		485		485	725
0382 Drive-up window, including drawer and glass		1.50	10.667	"		485		485	725
0383 Thru-wall boxes and chests, selective demolition		2.50	6.400	Ea.		292		292	435
0384 Bullet resistant partitions		20	.800	L.F.		36.50		36.50	54.50
0385 Pneumatic tube system, 2 lane drive-up	L-3	.45	35.556	Ea.		2,200		2,200	3,275
0386 Safety deposit box	1 Clab	50	.160	Opng.		7.30		7.30	10.85
0387 Surveillance system, video, complete	2 Elec	2	8	Ea.		530		530	785
0410 Church equipment, misc movable fixtures	2 Clab	1	16			730		730	1,075
0412 Steeple, to 28′ high	F-3	3	13.333			770	660	1,430	1,875
0414 40′ to 60′ high	"	.80	50			2,875	2,475	5,350	7,025
0510 Library equipment, bookshelves, wood, to 90″ high	1 Clab	20	.400	L.F.		18.25		18.25	27
0515 Carrels, hardwood, 36″ x 24″	"	9	.889	Ea.		40.50		40.50	60.50
0630 Stage equipment, light control panel	1 Elec	1	8	"		530		530	785
0632 Border lights		40	.200	L.F.		13.25		13.25	19.70
0634 Spotlights		8	1	Ea.		66		66	98.50
0636 Telescoping platforms and risers	2 Clab	175	.091	SF Stg.		4.17		4.17	6.20
1020 Barber equipment, hydraulic chair	1 Clab	40	.200	Ea.		9.10		9.10	13.60
1030 Checkout counter, supermarket or warehouse conveyor	2 Clab	18	.889			40.50		40.50	60.50
1040 Food cases, refrigerated or frozen	Q-5	6	2.667			169		169	252
1190 Laundry equipment, commercial	L-6	3	4			274		274	410
1360 Movie equipment, lamphouse, to 4000 watt, incl. rectifier	1 Elec	4	2			132		132	197
1365 Sound system, incl. amplifier	"	1.25	6.400			425		425	630
1410 Air compressor, to 5 HP	2 Clab	2.50	6.400			292		292	435
1412 Lubrication equipment, automotive, 3 reel type, incl. pump, excl. piping	L-4	1	24	Set		1,300		1,300	1,950
1414 Booth, spray paint, complete, to 26′ long	"	.80	30	"		1,600		1,600	2,425
1560 Parking equipment, cashier booth	B-22	2	15	Ea.		800	130	930	1,350
1600 Loading dock equipment, dock bumpers, rubber	1 Clab	50	.160	"		7.30		7.30	10.85
1610 Door seal for door perimeter	"	50	.160	L.F.		7.30		7.30	10.85
1611 Loading dock equipment, dock seal for perimeter, selective demolition	2 Clab	13	1.231	"		56		56	83.50
1620 Platform lifter, fixed, 6′ x 8′, 5000 lb. capacity	E-16	1.50	10.667	Ea.		670	98	768	1,125
1630 Dock leveller	"	2	8			505	73.50	578.50	855
1640 Lights, single or double arm	1 Elec	8	1			66		66	98.50
1650 Shelter, fabric, truck or train	1 Clab	1.50	5.333			243		243	360
1790 Waste handling equipment, commercial compactor	L-4	2	12			645		645	970
1792 Commercial or municipal incinerator, gas	"	2	12			645		645	970
1795 Crematory, excluding building	Q-3	.25	128			8,500		8,500	12,700
1910 Detection equipment, cell bar front	E-4	4	8			500	37	537	810
1912 Cell door and frame		8	4			249	18.45	267.45	405
1914 Prefab cell, 4′ to 5′ wide, 7′ to 8′ high, 7′ deep		8	4			249	18.45	267.45	405
1916 Cot, bolted, single		40	.800			50	3.69	53.69	81
1918 Visitor cubicle		4	8			500	37	537	810
2850 Hydraulic gates, canal, flap, knife, slide or sluice, to 18″ diameter	L-5A	8	4			251	105	356	500
2852 19″ to 36″ diameter		6	5.333			335	140	475	665
2854 37″ to 48″ diameter		2	16			1,000	420	1,420	2,000
2856 49″ to 60″ diameter		1	32			2,000	845	2,845	4,000
2858 Over 60″ diameter		.30	107			6,700	2,800	9,500	13,300

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11 05 05 – Selective Demolition for Equipment

11 05 05.10 Selective Demolition	Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&P
3100 Sewage pumping system, prefabricated, to 1000 GPM	C-17D	.20	420	Ea.		25,000	6,100	31,100	44,200
3110 Sewage treatment, holding tank for recirc chemical water closet	1 Plum	8	1			70		70	104
3900 Wastewater treatment system, to 1500 gal.	B-21	2	14			735	86.50	821.50	1,200
4050 Food storage equipment, walk-in refrigerator/freezer	2 Clab	64	.250	S.F.		11.40		11.40	17
4052 Shelving, stainless steel, 4 tier or dunnage rack	1 Clab	12	.667	Ea.		30.50		30.50	45.50
4100 Food preparation equipment, small countertop		18	.444			20.50		20.50	30
4150 Food delivery carts, heated cabinets		18	.444			20.50		20.50	30
4200 Cooking equipment, commercial range	Q-1	12	1.333			84		84	125
4250 Hood and ventilation equipment, kitchen exhaust hood, excl. fire prot	1 Clab	3	2.667			122		122	181
4255 Fire protection system	Q-1	3	5.333			335		335	500
4300 Food dispensing equipment, countertop items	1 Clab	15	.533			24.50		24.50	36
4310 Serving counter	"	65	.123	L.F.		5.60		5.60	8.35
4350 Ice machine, ice cube maker, flakers and storage bins, to 2000 lb./day	Q-1	1.60	10	Ea.		630		630	935
4400 Cleaning and disposal, commercial dishwasher, to 50 racks/hour	L-6	1	12			825		825	1,225
4405 To 275 racks/hour	L-4	1	24			1,300		1,300	1,950
4410 Dishwasher hood	2 Clab	5	3.200			146		146	217
4420 Garbage disposal, commercial, to 5 HP	L-1	8	2			136		136	203
4540 Water heater, residential, to 80 gal./day	"	5	3.200			218		218	325
4542 Water softener, automatic	2 Plum	10	1.600			112		112	167
4544 Disappearing stairway, to 15' floor height	2 Clab	6	2.667			122		122	181
4710 Darkroom equipment, light	L-7	10	2.800			153		153	228
4712 Heavy	"	1.50	18.667			1,025		1,025	1,525
4720 Doors	2 Clab	3.50	4.571	Opng.		208		208	310
4830 Bowling alley, complete, incl. pinsetter, scorer, counters, misc supplies	4 Clab	.40	80	Lane		3,650		3,650	5,425
4840 Health club equipment, circuit training apparatus	2 Clab	2	8	Set		365		365	545
4842 Squat racks	"	10	1.600	Ea.		73		73	109
4860 School equipment, basketball backstop	L-2	2	8			400		400	595
4862 Table and benches, folding, in wall, 14' long	L-4	4	6			320		320	485
4864 Bleachers, telescoping, to 30 tier	F-5	120	.267	Seat		15.15		15.15	22.50
4865 to 15 tier	"	160	.200	"		11.35		11.35	16.90
4866 Boxing ring, elevated	L-4	.20	120	Ea.		6,450		6,450	9,700
4867 Boxing ring, floor level	"	2	12			645		645	970
4868 Exercise equipment	1 Clab	6	1.333			61		61	90.50
4870 Gym divider	L-4	1000	.024	S.F.		1.29		1.29	1.94
4875 Scoreboard	R-3	2	10	Ea.		660	86.50	746.50	1,075
4880 Shooting range, incl. bullet traps, targets, excl. structure	L-9	1	36	Point		1,850		1,850	2,800
5200 Vocational shop equipment	2 Clab	8	2	Ea.		91		91	136
6200 Fume hood, incl. countertop, excl. HVAC	"	6	2.667	L.F.		122		122	181
7100 Medical sterilizing, distiller, water, steam heated, 50 gal. capacity	1 Plum	2.80	2.857	Ea.		199		199	297
7200 Medical equipment, surgery table, minor	1 Clab	1	8			365		365	545
7210 Surgical lights, doctor's office, single or double arm	2 Elec	3	5.333			355		355	525
7300 Physical therapy, table	2 Clab	4	4			182		182	272
7310 Whirlpool bath, fixed, incl. mixing valves	1 Plum	4	2			140		140	208
7400 Dental equipment, chair, electric or hydraulic	1 Clab	.75	10.667			485		485	725
7410 Central suction system	1 Plum	2	4			279		279	415
7420 Drill console with accessories	1 Clab	3.20	2.500			114		114	170
7430 X-ray unit	"	4	2			91		91	136
7440 X-ray developer	1 Plum	10	.800			56		56	83.50

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11 05 Common Work Results for Equipment

11 05 10 – Equipment Installation

11 05 10.10 Industrial Equipment Installation	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **INDUSTRIAL EQUIPMENT INSTALLATION**									
0020 Industrial equipment, minimum	E-2	12	4.667	Ton		286	207	493	660
0200 Maximum	"	2	28	"		1,725	1,250	2,975	4,000

11 11 Vehicle Service Equipment

11 11 13 – Compressed-Air Vehicle Service Equipment

11 11 13.10 Compressed Air Equipment

0010 **COMPRESSED AIR EQUIPMENT**									
0030 Compressors, electric, 1-1/2 HP, standard controls	L-4	1.50	16	Ea.	1,100	860		1,960	2,525
0550 Dual controls		1.50	16		1,050	860		1,910	2,450
0600 5 HP, 115/230 volt, standard controls		1	24		1,875	1,300		3,175	4,000
0650 Dual controls		1	24		1,450	1,300		2,750	3,525

11 11 19 – Vehicle Lubrication Equipment

11 11 19.10 Lubrication Equipment

0010 **LUBRICATION EQUIPMENT**									
3000 Lube equipment, 3 reel type, with pumps, not including piping	L-4	.50	48	Set	12,100	2,575		14,675	17,300
3100 Hose reel, including hose, oil/lube, 1000 psi	2 Sswk	2	8	Ea.	290	495		785	1,075
3200 Grease, 5000 psi		2	8		530	495		1,025	1,350
3300 Air, 50', 160 psi		2	8		130	495		625	905
3350 25', 160 psi		2	8		78	495		573	845

11 11 33 – Vehicle Spray Painting Equipment

11 11 33.10 Spray Painting Equipment

0010 **SPRAY PAINTING EQUIPMENT**									
4000 Spray painting booth, 26' long, complete	L-4	.40	60	Ea.	21,100	3,225		24,325	28,100

11 12 Parking Control Equipment

11 12 13 – Parking Key and Card Control Units

11 12 13.10 Parking Control Units

0010 **PARKING CONTROL UNITS**									
5100 Card reader	1 Elec	2	4	Ea.	725	265		990	1,200
5120 Proximity with customer display	2 Elec	1	16		2,975	1,050		4,025	4,850
6000 Parking control software, basic functionality	1 Elec	.50	16		18,700	1,050		19,750	22,200
6020 Multi-function	"	.20	40		73,500	2,650		76,150	84,500

11 12 16 – Parking Ticket Dispensers

11 12 16.10 Ticket Dispensers

0010 **TICKET DISPENSERS**									
5900 Ticket spitter with time/date stamp, standard	2 Elec	2	8	Ea.	9,650	530		10,180	11,400
5920 Mag stripe encoding	"	2	8	"	15,400	530		15,930	17,700

11 12 26 – Parking Fee Collection Equipment

11 12 26.13 Parking Fee Coin Collection Equipment

0010 **PARKING FEE COIN COLLECTION EQUIPMENT**									
5200 Cashier booth, average	B-22	1	30	Ea.	8,450	1,600	260	10,310	12,000
5300 Collector station, pay on foot	2 Elec	.20	80		91,000	5,300		96,300	108,000
5320 Credit card only	"	.50	32		16,800	2,125		18,925	21,600

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11 12 Parking Control Equipment

11 12 26 – Parking Fee Collection Equipment

11 12 26.23 Fee Equipment	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **FEE EQUIPMENT**									
5600 Fee computer	1 Elec	1.50	5.333	Ea.	10,600	355		10,955	12,100

11 12 33 – Parking Gates

11 12 33.13 Lift Arm Parking Gates

0010 **LIFT ARM PARKING GATES**									
5000 Barrier gate with programmable controller	2 Elec	3	5.333	Ea.	2,975	355		3,330	3,800
5020 Industrial		3	5.333		925	355		1,280	1,550
5050 Non-programmable, with reader and 12′ arm		3	5.333		1,400	355		1,755	2,075
5500 Exit verifier		1	16		2,450	1,050		3,500	4,275
5700 Full sign, 4″ letters	1 Elec	2	4		1,000	265		1,265	1,500
5800 Inductive loop	2 Elec	4	4		135	265		400	545
5950 Vehicle detector, microprocessor based	1 Elec	3	2.667		380	177		557	680
7100 Traffic spike unit, flush mount, spring loaded, 72″ L	B-89	4	4		1,625	215	157	1,997	2,300
7200 Surface mount, 72″ L	2 Skwk	10	1.600		2,000	94		2,094	2,350

11 13 Loading Dock Equipment

11 13 13 – Loading Dock Bumpers

11 13 13.10 Dock Bumpers

0010 **DOCK BUMPERS** Bolts not included									
0020 2″ x 6″ to 4″ x 8″, average	1 Carp	.30	26.667	M.B.F.	34	1,500		1,534	2,275
0050 Bumpers, lam. rubber blocks 4-1/2″ thick, 10″ high, 14″ long		26	.308	Ea.	45.50	17.30		62.80	76
0200 24″ long		22	.364		70.50	20.50		91	108
0300 36″ long		17	.471		106	26.50		132.50	156
0500 12″ high, 14″ long		25	.320		55	18		73	87.50
0550 24″ long		20	.400		86.50	22.50		109	129
0600 36″ long		15	.533		130	30		160	188
0800 Laminated rubber blocks 6″ thick, 10″ high, 14″ long		22	.364		59.50	20.50		80	96
0850 24″ long		18	.444		92	25		117	138
0900 36″ long		13	.615		136	34.50		170.50	202
0910 20″ high, 11″ long		13	.615		92	34.50		126.50	153
0920 Extruded rubber bumpers, T section, 22″ x 22″ x 3″ thick		41	.195		73	11		84	97
0940 Molded rubber bumpers, 24″ x 12″ x 3″ thick		20	.400		62.50	22.50		85	102
1000 Welded installation of above bumpers	E-14	8	1		4.52	64	18.40	86.92	124
1100 For drilled anchors, add per anchor	1 Carp	36	.222		34	12.50		46.50	56
1300 Steel bumpers, see Section 10 26 13.10									

11 13 16 – Loading Dock Seals and Shelters

11 13 16.10 Dock Seals and Shelters

0010 **DOCK SEALS AND SHELTERS**									
3600 Door seal for door perimeter, 12″ x 12″, vinyl covered	1 Carp	26	.308	L.F.	1,050	17.30		1,067.30	1,175
3700 Loading dock, seal for perimeter, 9′ x 8′, with 12″ vinyl	2 Carp	6	2.667	Ea.	1,825	150		1,975	2,250
3900 Folding gates, see Section 10 22 16.10									
6200 Shelters, fabric, for truck or train, scissor arms, minimum	1 Carp	1	8	Ea.	2,725	450		3,175	3,675
6300 Maximum	"	.50	16	"	2,525	900		3,425	4,125

11 13 19 – Stationary Loading Dock Equipment

11 13 19.10 Dock Equipment

0010 **DOCK EQUIPMENT**									
2200 Dock boards, heavy duty, 60″ x 60″, aluminum, 5,000 lb. capacity				Ea.	1,075			1,075	1,175
2700 9,000 lb. capacity					1,525			1,525	1,675
3200 15,000 lb. capacity					1,575			1,575	1,750

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11 13 Loading Dock Equipment

11 13 19 – Stationary Loading Dock Equipment

	11 13 19.10 Dock Equipment	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4200	Platform lifter, 6′ x 6′, portable, 3,000 lb. capacity				Ea.	8,150			8,150	8,95
4250	4,000 lb. capacity					5,650			5,650	6,22
4400	Fixed, 6′ x 8′, 5,000 lb. capacity	E-16	.70	22.857		9,925	1,450	211	11,586	13,40
4500	Levelers, hinged for trucks, 10 ton capacity, 6′ x 8′		1.08	14.815		4,550	935	136	5,621	6,57
4650	7′ x 8′		1.08	14.815		5,825	935	136	6,896	8,00
4670	Air bag power operated, 10 ton cap., 6′ x 8′		1.08	14.815		6,175	935	136	7,246	8,37
4680	7′ x 8′		1.08	14.815		6,350	935	136	7,421	8,55
4700	Hydraulic, 10 ton capacity, 6′ x 8′		1.08	14.815		5,000	935	136	6,071	7,07
4800	7′ x 8′		1.08	14.815		5,625	935	136	6,696	7,75
5800	Loading dock safety restraints, manual style		1.08	14.815		3,500	935	136	4,571	5,45
5900	Automatic style		1.08	14.815		5,925	935	136	6,996	8,07
6000	Dock leveler, 15 ton capacity									
6100	I-beam construction, mechanical, 6′ x 8′	E-16	.50	32	Ea.	5,950	2,025	295	8,270	9,97
6150	Hydraulic		.50	32		6,650	2,025	295	8,970	10,80
6200	Formed beam deck construction, mechanical, 6′ x 8′		.50	32		2,200	2,025	295	4,520	5,85
6250	Hydraulic		.50	32		4,200	2,025	295	6,520	8,05
6300	Edge of dock leveler, mechanical, 15 ton capacity		2	8		2,200	505	73.50	2,778.50	3,27
6301	Edge of dock leveler, mechanical, 10 ton capacity		2	8		2,200	505	73.50	2,778.50	3,27
7000	22.5 ton capacity									
7100	Vertical storing dock leveler, hydraulic, 6′ x 6′	E-16	.40	40	Ea.	8,625	2,525	370	11,520	13,80

11 13 26 – Loading Dock Lights

11 13 26.10 Dock Lights

0010	**DOCK LIGHTS**									
5000	Lights for loading docks, single arm, 24″ long	1 Elec	3.80	2.105	Ea.	172	139		311	39
5700	Double arm, 60″ long	″	3.80	2.105	″	110	139		249	33

11 14 Pedestrian Control Equipment

11 14 13 – Pedestrian Gates

11 14 13.19 Turnstiles

0010	**TURNSTILES**									
0020	One way, 4 arm, 46″ diameter, economy, manual	2 Carp	5	3.200	Ea.	2,200	180		2,380	2,700
0100	Electric		1.20	13.333		2,650	750		3,400	4,050
0300	High security, galv., 5′-5″ diameter, 7′ high, manual		1	16		8,350	900		9,250	10,500
0350	Electric		.60	26.667		10,900	1,500		12,400	14,200
0420	Three arm, 24″ opening, light duty, manual		2	8		3,700	450		4,150	4,750
0450	Heavy duty		1.50	10.667		3,700	600		4,300	4,975
0460	Manual, with registering & controls, light duty		2	8		5,775	450		6,225	7,025
0470	Heavy duty		1.50	10.667		5,975	600		6,575	7,450
0480	Electric, heavy duty		1.10	14.545		5,900	820		6,720	7,725
0500	For coin or token operating, add					945			945	1,050
1200	One way gate with horizontal bars, 5′-5″ diameter									
1300	7′ high, recreation or transit type	2 Carp	.80	20	Ea.	7,400	1,125		8,525	9,825
1500	For electronic counter, add				″	520			520	575

11 14 19 – Portable Posts and Railings

11 14 19.13 Portable Posts and Railings

0010	**PORTABLE POSTS AND RAILINGS**									
0020	Portable for pedestrian traffic control, standard				Ea.	38.50			38.50	42.5
0300	Deluxe posts				″	23			23	25.5
0600	Ropes for above posts, plastic covered, 1-1/2″ diameter				L.F.	19.35			19.35	21.5
0700	Chain core				″	13.95			13.95	15.3

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11 14 Pedestrian Control Equipment

11 14 19 – Portable Posts and Railings

11 14 19.13 Portable Posts and Railings	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1500 Portable security or safety barrier, black with 7' yellow strap				Ea.	85.50			85.50	94
1510 12' yellow strap					166			166	183
1550 Sign holder, standard design					72			72	79.50

11 21 Retail and Service Equipment

11 21 13 – Cash Registers and Checking Equipment

11 21 13.10 Checkout Counter

0010	**CHECKOUT COUNTER**								
0020	Supermarket conveyor, single belt	2 Clab	10	1.600	Ea.	3,900	73	3,973	4,400
0100	Double belt, power take-away		9	1.778		5,375	81	5,456	6,050
0400	Double belt, power take-away, incl. side scanning		7	2.286		5,925	104	6,029	6,675
0800	Warehouse or bulk type		6	2.667		6,900	122	7,022	7,750
1000	Scanning system, 2 lanes, w/registers, scan gun & memory				System	19,600		19,600	21,600
1100	10 lanes, single processor, full scan, with scales				"	186,000		186,000	204,500
2000	Register, restaurant, minimum				Ea.	820		820	905
2100	Maximum					207		207	228
2150	Store, minimum					820		820	905
2200	Maximum					3,150		3,150	3,450

11 21 33 – Checkroom Equipment

11 21 33.10 Clothes Check Equipment

0010	**CLOTHES CHECK EQUIPMENT**								
0030	Clothes check rack, free standing, st. stl., 2-tier, 90 bag capacity				Ea.	1,600		1,600	1,750
0050	Wall mounted, 45 bag capacity	L-2	8	2		935	99.50	1,034.50	1,175
0100	Garment checking bag, green mesh fabric, 21" H x 17" W with 4.5" hook					29		29	31.50

11 21 53 – Barber and Beauty Shop Equipment

11 21 53.10 Barber Equipment

0010	**BARBER EQUIPMENT**								
0020	Chair, hydraulic, movable, minimum	1 Carp	24	.333	Ea.	645	18.75	663.75	735
0050	Maximum	"	16	.500		4,000	28	4,028	4,425
0200	Wall hung styling station with mirrors, minimum	L-2	8	2		660	99.50	759.50	875
0300	Maximum	"	4	4		2,650	199	2,849	3,225
0500	Sink, hair washing basin, rough plumbing not incl.	1 Plum	8	1		249	70	319	380
1000	Sterilizer, liquid solution for tools					165		165	181
1100	Total equipment, rule of thumb, per chair, minimum	L-8	1	20		1,300	1,175	2,475	3,175
1150	Maximum	"	1	20		5,900	1,175	7,075	8,250

11 21 73 – Commercial Laundry and Dry Cleaning Equipment

11 21 73.13 Dry Cleaning Equipment

0010	**DRY CLEANING EQUIPMENT**								
2000	Dry cleaners, electric, 20 lb. capacity, not incl. rough-in	L-1	.20	80	Ea.	35,800	5,450	41,250	47,500
2050	25 lb. capacity		.17	94.118		54,000	6,400	60,400	68,500
2100	30 lb. capacity		.15	107		56,500	7,250	63,750	73,500
2150	60 lb. capacity		.09	178		80,500	12,100	92,600	107,000

11 21 73.16 Drying and Conditioning Equipment

0010	**DRYING AND CONDITIONING EQUIPMENT**								
0100	Dryers, not including rough-in								
1500	Industrial, 30 lb. capacity	1 Plum	2	4	Ea.	1,650	279	1,929	2,250
1600	50 lb. capacity	"	1.70	4.706		4,675	330	5,005	5,650
4700	Lint collector, ductwork not included, 8,000 to 10,000 CFM	Q-10	.30	80		11,500	5,050	16,550	20,300

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11 21 73 – Commercial Laundry and Dry Cleaning Equipment

11 21 73.19 Finishing Equipment	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **FINISHING EQUIPMENT**									
3500 Folders, blankets & sheets, minimum	1 Elec	.17	47.059	Ea.	36,800	3,125		39,925	45,10
3700 King size with automatic stacker		.10	80		66,500	5,300		71,800	81,00
3800 For conveyor delivery, add		.45	17.778		16,900	1,175		18,075	20,40
4900 Spreader feeders, 240V, 2 station	L-6	.70	17.143		62,000	1,175		63,175	70,00
4920 4 station	"	.35	34.286		75,000	2,350		77,350	86,00
11 21 73.23 Commercial Ironing Equipment									
0010 **COMMERCIAL IRONING EQUIPMENT**									
4500 Ironers, institutional, 110", single roll	1 Elec	.20	40	Ea.	35,600	2,650		38,250	43,10
4800 Pressers, low capacity air operated	L-6	1.75	6.857		10,600	470		11,070	12,40
4820 Hand operated		1.75	6.857		9,900	470		10,370	11,60
4840 Ironer 48", 240V		3.50	3.429		122,500	235		122,735	135,50
6600 Hand operated presser		.70	17.143		6,600	1,175		7,775	9,00
6620 Mushroom press 115V		.70	17.143		8,450	1,175		9,625	11,10
11 21 73.26 Commercial Washers and Extractors									
0010 **COMMERCIAL WASHERS AND EXTRACTORS**, not including rough-in									
6000 Combination washer/extractor, 20 lb. capacity	L-6	1.50	8	Ea.	5,050	550		5,600	6,37
6100 30 lb. capacity		.80	15		11,200	1,025		12,225	13,80
6200 50 lb. capacity		.68	17.647		14,100	1,200		15,300	17,40
6300 75 lb. capacity		.30	40		19,700	2,750		22,450	25,70
6350 125 lb. capacity		.16	75		30,800	5,150		35,950	41,60
6380 Washer extractor/dryer, 110 lb., 240V		1	12		20,600	825		21,425	23,90
6400 Washer extractor, 135 lb., 240V		1	12		36,200	825		37,025	41,10
6450 Pass through		1	12		59,500	825		60,325	66,50
6500 200 lb. washer extractor		1	12		77,500	825		78,325	86,00
6550 Pass through		1	12		82,000	825		82,825	91,00
6600 Extractor, low capacity		1.75	6.857		7,925	470		8,395	9,42
11 21 73.33 Coin-Operated Laundry Equipment									
0010 **COIN-OPERATED LAUNDRY EQUIPMENT**									
0990 Dryer, gas fired									
1000 Commercial, 30 lb. capacity, coin operated, single	1 Plum	3	2.667	Ea.	1,175	186		1,361	1,55
1100 Double stacked	"	2	4		3,000	279		3,279	3,72
4860 Coin dry cleaner 20 lb.	L-6	1.75	6.857		30,800	470		31,270	34,60
5290 Clothes washer									
5300 Commercial, coin operated, average	1 Plum	3	2.667	Ea.	1,400	186		1,586	1,80

11 21 83 – Photo Processing Equipment

11 21 83.13 Darkroom Equipment	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **DARKROOM EQUIPMENT**									
0020 Developing sink, 5" deep, 24" x 48"	Q-1	2	8	Ea.	430	505		935	1,22
0050 48" x 52"		1.70	9.412		1,725	590		2,315	2,77
0200 10" deep, 24" x 48"		1.70	9.412		1,900	590		2,490	2,97
0250 24" x 108"		1.50	10.667		5,175	670		5,845	6,70
0500 Dryers, dehumidified filtered air, 36" x 25" x 68" high	L-7	6	4.667		585	255		840	1,02
3000 Viewing lights, 20" x 24"		6	4.667		320	255		575	73
3100 20" x 24" with color correction		6	4.667		990	255		1,245	1,47

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11 22 13 – Vault Equipment

11 22 13.16 Safes	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **SAFES**									
0200 Office, 1 hr. rating, 30" x 18" x 18"				Ea.	2,200			2,200	2,425
0250 40" x 18" x 18"					4,850			4,850	5,350
0300 60" x 36" x 18", double door					10,100			10,100	11,100
0600 Data, 1 hr. rating, 27" x 19" x 16"					6,650			6,650	7,325
0700 63" x 34" x 16"					17,300			17,300	19,000
0750 Diskette, 1 hr., 14" x 12" x 11", inside					5,175			5,175	5,700
0800 Money, "B" label, 9" x 14" x 14"					630			630	695
0900 Tool resistive, 24" x 24" x 20"					4,225			4,225	4,650
1050 Tool and torch resistive, 24" x 24" x 20"					8,925			8,925	9,800
1150 Jewelers, 23" x 20" x 18"					10,300			10,300	11,300
1200 63" x 25" x 18"					14,500			14,500	15,900
1300 For handling into building, add, minimum	A-2	8.50	2.824			133	40	173	243
1400 Maximum	"	.78	30.769			1,450	435	1,885	2,650

11 22 16 – Teller and Service Equipment

11 22 16.13 Teller Equipment Systems

0010 **TELLER EQUIPMENT SYSTEMS**									
0020 Alarm system, police	2 Elec	1.60	10	Ea.	6,600	660		7,260	8,250
0100 With vault alarm	"	.40	40		26,200	2,650		28,850	32,800
0400 Bullet resistant teller window, 44" x 60"	1 Glaz	.60	13.333		6,050	720		6,770	7,725
0500 48" x 60"	"	.60	13.333		7,875	720		8,595	9,725
3000 Counters for banks, frontal only	2 Carp	1	16	Station	2,750	900		3,650	4,375
3100 Complete with steel undercounter	"	.50	32	"	4,825	1,800		6,625	7,975
4600 Door and frame, bullet-resistant, with vision panel, minimum	2 Sswk	1.10	14.545	Ea.	4,050	900		4,950	5,825
4700 Maximum		1.10	14.545		9,050	900		9,950	11,300
4800 Drive-up window, drawer & mike, not incl. glass, minimum		1	16		4,425	990		5,415	6,400
4900 Maximum		.50	32		6,500	1,975		8,475	10,200
5000 Night depository, with chest, minimum		1	16		960	990		1,950	2,575
5100 Maximum		.50	32		2,250	1,975		4,225	5,525
5200 Package receiver, painted		3.20	5		2,825	310		3,135	3,600
5300 Stainless steel		3.20	5		1,500	310		1,810	2,125
5400 Partitions, bullet-resistant, 1-3/16" glass, 8' high	2 Carp	10	1.600	L.F.	267	90		357	430
5450 Acrylic	"	10	1.600	"	505	90		595	690
5500 Pneumatic tube systems, 2 lane drive-up, complete	L-3	.25	64	Total	34,800	3,950		38,750	44,200
5550 With T.V. viewer	"	.20	80	"	67,500	4,925		72,425	81,500
5570 Safety deposit boxes, minimum	1 Sswk	44	.182	Opng.	335	11.25		346.25	385
5580 Maximum, 10" x 15" opening		19	.421		650	26		676	755
5590 Teller locker, average		15	.533		765	33		798	895
5600 Pass thru, bullet-res. window, painted steel, 24" x 36"	2 Sswk	1.60	10	Ea.	4,900	620		5,520	6,350
5700 48" x 48"		1.20	13.333		7,100	825		7,925	9,075
5800 72" x 40"		.80	20		5,850	1,225		7,075	8,325
5900 For stainless steel frames, add					20%				
6100 Surveillance system, video camera, complete	2 Elec	1	16	Ea.	2,000	1,050		3,050	3,775
6110 For each additional camera, add				"	187			187	206
6120 CCTV system, see Section 28 23 13.10									
6200 24 hour teller, single unit,									
6300 automated deposit, cash and memo	L-3	.25	64	Ea.	6,650	3,950		10,600	13,200
7000 Vault front, see Section 08 34 59.10									

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11 30 13 – Residential Appliances

	11 30 13.15 Cooking Equipment	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**COOKING EQUIPMENT**									
0020	Cooking range, 30" free standing, 1 oven, minimum	2 Clab	10	1.600	Ea.	630	73		703	800
0050	Maximum		4	4		900	182		1,082	1,250
0150	2 oven, minimum		10	1.600		1,225	73		1,298	1,425
0200	Maximum		10	1.600		3,700	73		3,773	4,175
0350	Built-in, 30" wide, 1 oven, minimum	1 Elec	6	1.333		1,200	88.50		1,288.50	1,450
0400	Maximum	2 Carp	2	8		1,900	450		2,350	2,775
0500	2 oven, conventional, minimum		4	4		2,400	225		2,625	2,975
0550	1 conventional, 1 microwave, maximum		2	8		2,775	450		3,225	3,750
0700	Free standing, 1 oven, 21" wide range, minimum	2 Clab	10	1.600		650	73		723	825
0750	21" wide, maximum	"	4	4		550	182		732	875
0900	Countertop cooktops, 4 burner, standard, minimum	1 Elec	6	1.333		294	88.50		382.50	455
0950	Maximum		3	2.667		540	177		717	855
1050	As above, but with grill and griddle attachment, minimum		6	1.333		1,575	88.50		1,663.50	1,850
1100	Maximum		3	2.667		4,150	177		4,327	4,825
1200	Induction cooktop, 30" wide		3	2.667		1,600	177		1,777	2,000
1250	Microwave oven, minimum		4	2		119	132		251	330
1300	Maximum		2	4		320	265		585	745
	11 30 13.16 Refrigeration Equipment									
0010	**REFRIGERATION EQUIPMENT**									
2000	Deep freeze, 15 to 23 C.F., minimum	2 Clab	10	1.600	Ea.	650	73		723	825
2050	Maximum		5	3.200		720	146		866	1,000
2200	30 C.F., minimum		8	2		950	91		1,041	1,175
2250	Maximum		3	5.333		950	243		1,193	1,400
5200	Icemaker, automatic, 20 lbs./day	1 Plum	7	1.143		880	80		960	1,075
5350	51 lbs./day	"	2	4		1,100	279		1,379	1,625
5500	Refrigerator, no frost, 10 C.F. to 12 C.F., minimum	2 Clab	10	1.600		560	73		633	730
5600	Maximum		6	2.667		500	122		622	730
5750	14 C.F. to 16 C.F., minimum		9	1.778		680	81		761	865
5800	Maximum		5	3.200		645	146		791	925
5950	18 C.F. to 20 C.F., minimum		8	2		670	91		761	870
6000	Maximum		4	4		670	182		852	1,000
6150	21 C.F. to 29 C.F., minimum		7	2.286		1,600	104		1,704	1,900
6200	Maximum		3	5.333		2,000	243		2,243	2,550
6790	Energy-star qualified, 18 C.F., minimum G	2 Carp	4	4		1,800	225		2,025	2,300
6795	Maximum G		2	8		670	450		1,120	1,400
6797	21.7 C.F., minimum G		4	4		1,550	225		1,775	2,025
6799	Maximum G		4	4		3,200	225		3,425	3,850
	11 30 13.17 Kitchen Cleaning Equipment									
0010	**KITCHEN CLEANING EQUIPMENT**									
2750	Dishwasher, built-in, 2 cycles, minimum	L-1	4	4	Ea.	380	272		652	820
2800	Maximum		2	8		835	545		1,380	1,725
2950	4 or more cycles, minimum		4	4		630	272		902	1,100
2960	Average		4	4		835	272		1,107	1,325
3000	Maximum		2	8		950	545		1,495	1,850
3100	Energy-star qualified, minimum G		4	4		530	272		802	985
3110	Maximum G		2	8		1,200	545		1,745	2,125
	11 30 13.18 Waste Disposal Equipment									
0010	**WASTE DISPOSAL EQUIPMENT**									
1750	Compactor, residential size, 4 to 1 compaction, minimum	1 Carp	5	1.600	Ea.	1,100	90		1,190	1,325
1800	Maximum	"	3	2.667		1,250	150		1,400	1,600
3300	Garbage disposal, sink type, minimum	L-1	10	1.600		99	109		208	271

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11 30 13 – Residential Appliances

		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
11 30 13.18 Waste Disposal Equipment										
3350	Maximum	L-1	10	1.600	Ea.	239	109		348	425
11 30 13.19 Kitchen Ventilation Equipment										
0010	**KITCHEN VENTILATION EQUIPMENT**									
4150	Hood for range, 2 speed, vented, 30" wide, minimum	L-3	5	3.200	Ea.	116	197		313	420
4200	Maximum		3	5.333		835	330		1,165	1,400
4300	42" wide, minimum		5	3.200		157	197		354	465
4330	Custom		5	3.200		129	197		326	435
4350	Maximum		3	5.333		157	330		487	665
4500	For ventless hood, 2 speed, add					54			54	59.50
4650	For vented 1 speed, deduct from maximum					63.50			63.50	69.50
11 30 13.24 Washers										
0010	**WASHERS**									
5000	Residential, 4 cycle, average	1 Plum	3	2.667	Ea.	1,025	186		1,211	1,400
5650	Washing machine, automatic, minimum		3	2.667		700	186		886	1,050
5700	Maximum		1	8		950	560		1,510	1,875
5750	Energy star qualified, front loading, minimum G		3	2.667		1,050	186		1,236	1,425
5760	Maximum G		1	8		1,300	560		1,860	2,250
5764	Top loading, minimum G		3	2.667		550	186		736	885
5766	Maximum G		3	2.667		850	186		1,036	1,225
11 30 13.25 Dryers										
0010	**DRYERS**									
0500	Gas fired residential, 16 lb. capacity, average	1 Plum	3	2.667	Ea.	970	186		1,156	1,350
5770	Electric, front loading, energy-star qualified, minimum G	L-2	3	5.333		700	266		966	1,175
5780	Maximum G	"	2	8		900	400		1,300	1,575
7450	Vent kits for dryers	1 Carp	10	.800		50	45		95	122

11 30 15 – Miscellaneous Residential Appliances

11 30 15.13 Sump Pumps										
0010	**SUMP PUMPS**									
6400	Cellar drainer, pedestal, 1/3 HP, molded PVC base	1 Plum	3	2.667	Ea.	138	186		324	430
6450	Solid brass	"	2	4	"	250	279		529	690
6460	Sump pump, see also Section 22 14 29.16									
11 30 15.23 Water Heaters										
0010	**WATER HEATERS**									
6900	Electric, glass lined, 30 gallon, minimum	L-1	5	3.200	Ea.	720	218		938	1,125
6950	Maximum		3	5.333		1,000	365		1,365	1,650
7100	80 gallon, minimum		2	8		2,000	545		2,545	3,000
7150	Maximum		1	16		2,775	1,100		3,875	4,675
7180	Gas, glass lined, 30 gallon, minimum	2 Plum	5	3.200		1,825	223		2,048	2,325
7220	Maximum		3	5.333		2,525	370		2,895	3,325
7260	50 gallon, minimum		2.50	6.400		710	445		1,155	1,450
7300	Maximum		1.50	10.667		985	745		1,730	2,175
7310	Water heater, see also Section 22 33 30.13									
11 30 15.43 Air Quality										
0010	**AIR QUALITY**									
2450	Dehumidifier, portable, automatic, 15 pint	1 Elec	4	2	Ea.	238	132		370	460
2550	40 pint		3.75	2.133		273	141		414	510
3550	Heater, electric, built-in, 1250 watt, ceiling type, minimum		4	2		112	132		244	320
3600	Maximum		3	2.667		214	177		391	495
3700	Wall type, minimum		4	2		118	132		250	325
3750	Maximum		3	2.667		112	177		289	385
3900	1500 watt wall type, with blower		4	2		188	132		320	405

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11 30 Residential Equipment

11 30 15 – Miscellaneous Residential Appliances

	11 30 15.43 Air Quality	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
3950	3000 watt	1 Elec	3	2.667	Ea.	199	177		376	480
4850	Humidifier, portable, 8 gallons/day					150			150	165
5000	15 gallons/day					228			228	251

11 30 33 – Retractable Stairs

11 30 33.10 Disappearing Stairway

0010	**DISAPPEARING STAIRWAY** No trim included									
0100	Custom grade, pine, 8′-6″ ceiling, minimum	1 Carp	4	2	Ea.	110	113		223	289
0150	Average		3.50	2.286		191	129		320	400
0200	Maximum		3	2.667		271	150		421	520
0500	Heavy duty, pivoted, from 7′-7″ to 12′-10″ floor to floor		3	2.667		490	150		640	765
0600	16′-0″ ceiling		2	4		2,575	225		2,800	3,175
0800	Economy folding, pine, 8′-6″ ceiling		4	2		96.50	113		209.50	274
0900	9′-6″ ceiling		4	2		102	113		215	280
1100	Automatic electric, aluminum, floor to floor height, 8′ to 9′	2 Carp	1	16		3,925	900		4,825	5,675
1400	11′ to 12′		.90	17.778		4,075	1,000		5,075	5,975
1700	14′ to 15′		.70	22.857		8,425	1,275		9,700	11,200

11 32 Unit Kitchens

11 32 13 – Metal Unit Kitchens

11 32 13.10 Commercial Unit Kitchens

0010	**COMMERCIAL UNIT KITCHENS**									
1500	Combination range, refrigerator and sink, 30″ wide, minimum	L-1	2	8	Ea.	1,275	545		1,820	2,200
1550	Maximum		1	16		1,275	1,100		2,375	3,025
1570	60″ wide, average		1.40	11.429		1,650	775		2,425	2,950
1590	72″ wide, average		1.20	13.333		1,725	905		2,630	3,250
1600	Office model, 48″ wide		2	8		2,775	545		3,320	3,850
1620	Refrigerator and sink only		2.40	6.667		2,825	455		3,280	3,800
1640	Combination range, refrigerator, sink, microwave									
1660	Oven and ice maker	L-1	.80	20	Ea.	5,725	1,350		7,075	8,325

11 41 Foodservice Storage Equipment

11 41 13 – Refrigerated Food Storage Cases

11 41 13.10 Refrigerated Food Cases

0010	**REFRIGERATED FOOD CASES**									
0030	Dairy, multi-deck, 12′ long	Q-5	3	5.333	Ea.	12,900	340		13,240	14,600
0100	For rear sliding doors, add					2,000			2,000	2,200
0200	Delicatessen case, service deli, 12′ long, single deck	Q-5	3.90	4.103		13,000	260		13,260	14,700
0300	Multi-deck, 18 S.F. shelf display		3	5.333		8,425	340		8,765	9,775
0400	Freezer, self-contained, chest-type, 30 C.F.		3.90	4.103		5,075	260		5,335	5,950
0500	Glass door, upright, 78 C.F.		3.30	4.848		9,400	305		9,705	10,800
0600	Frozen food, chest type, 12′ long		3.30	4.848		6,925	305		7,230	8,075
0700	Glass door, reach-in, 5 door		3	5.333		10,700	340		11,040	12,300
0800	Island case, 12′ long, single deck		3.30	4.848		8,875	305		9,180	10,200
0900	Multi-deck		3	5.333		10,700	340		11,040	12,300
1000	Meat case, 12′ long, single deck		3.30	4.848		7,525	305		7,830	8,725
1050	Multi-deck		3.10	5.161		10,300	325		10,625	11,800
1100	Produce, 12′ long, single deck		3.30	4.848		6,675	305		6,980	7,775
1200	Multi-deck		3.10	5.161		8,625	325		8,950	9,950

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11 41 13 – Refrigerated Food Storage Cases

11 41 13.20 Refrigerated Food Storage Equipment	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **REFRIGERATED FOOD STORAGE EQUIPMENT**									
2350 Cooler, reach-in, beverage, 6′ long	Q-1	6	2.667	Ea.	2,900	168		3,068	3,450
4300 Freezers, reach-in, 44 C.F.		4	4		4,475	251		4,726	5,300
4500 68 C.F.		3	5.333		5,500	335		5,835	6,550
4600 Freezer, pre-fab, 8′ x 8′ w/refrigeration	2 Carp	.45	35.556		9,325	2,000		11,325	13,300
4620 8′ x 12′		.35	45.714		11,300	2,575		13,875	16,200
4640 8′ x 16′		.25	64		12,600	3,600		16,200	19,200
4660 8′ x 20′		.17	94.118		15,400	5,300		20,700	24,800
4680 Reach-in, 1 compartment	Q-1	4	4		4,000	251		4,251	4,775
4685 Energy star rated G	R-18	7.80	3.333		3,675	194		3,869	4,325
4700 2 compartment	Q-1	3	5.333		5,300	335		5,635	6,350
4705 Energy star rated G	R-18	6.20	4.194		3,900	244		4,144	4,625
4710 3 compartment	Q-1	3	5.333		6,450	335		6,785	7,575
4715 Energy star rated G	R-18	5.60	4.643		5,375	270		5,645	6,325
8320 Refrigerator, reach-in, 1 compartment		7.80	3.333		4,250	194		4,444	4,950
8325 Energy star rated G		7.80	3.333		3,675	194		3,869	4,325
8330 2 compartment		6.20	4.194		3,525	244		3,769	4,225
8335 Energy star rated G		6.20	4.194		3,900	244		4,144	4,625
8340 3 compartment		5.60	4.643		5,000	270		5,270	5,900
8345 Energy star rated G		5.60	4.643		5,375	270		5,645	6,325
8350 Pre-fab, with refrigeration, 8′ x 8′	2 Carp	.45	35.556		6,475	2,000		8,475	10,100
8360 8′ x 12′		.35	45.714		9,925	2,575		12,500	14,700
8370 8′ x 16′		.25	64		10,500	3,600		14,100	17,000
8380 8′ x 20′		.17	94.118		13,500	5,300		18,800	22,700
8390 Pass-thru/roll-in, 1 compartment	R-18	7.80	3.333		4,350	194		4,544	5,075
8400 2 compartment		6.24	4.167		5,575	242		5,817	6,475
8410 3 compartment		5.60	4.643		23,900	270		24,170	26,700
8420 Walk-in, alum, door & floor only, no refrig, 6′ x 6′ x 7′-6″	2 Carp	1.40	11.429		6,100	645		6,745	7,675
8430 10′ x 6′ x 7′-6″		.55	29.091		5,650	1,650		7,300	8,650
8440 12′ x 14′ x 7′-6″		.25	64		11,900	3,600		15,500	18,500
8450 12′ x 20′ x 7′-6″		.17	94.118		15,100	5,300		20,400	24,600
8460 Refrigerated cabinets, mobile					7,700			7,700	8,475
8470 Refrigerator/freezer, reach-in, 1 compartment	R-18	5.60	4.643		2,925	270		3,195	3,600
8480 2 compartment	"	4.80	5.417		5,275	315		5,590	6,275

11 41 13.30 Wine Cellar

0010 **WINE CELLAR**, refrigerated, Redwood interior, carpeted, walk-in type									
0020 6′-8″ high, including racks									
0200 80″ W x 48″ D for 900 bottles	2 Carp	1.50	10.667	Ea.	4,575	600		5,175	5,925
0250 80″ W x 72″ D for 1300 bottles		1.33	12.030		6,375	675		7,050	8,000
0300 80″ W x 94″ D for 1900 bottles		1.17	13.675		7,450	770		8,220	9,350
0400 80″ W x 124″ D for 2500 bottles		1	16		8,625	900		9,525	10,800
0600 Portable cabinets, red oak, reach-in temp. & humidity controlled									
0650 26-5/8″ W x 26-1/2″ D x 68″ H for 235 bottles				Ea.	4,800			4,800	5,275
0660 32″ W x 21-1/2″ D x 73-1/2″ H for 144 bottles					3,350			3,350	3,675
0670 32″ W x 29-1/2″ D x 73-1/2″ H for 288 bottles					5,275			5,275	5,800
0680 39-1/2″ W x 29-1/2″ D x 86-1/2″ H for 440 bottles					4,900			4,900	5,400
0690 52-1/2″ W x 29-1/2″ D x 73-1/2″ H for 468 bottles					5,775			5,775	6,375
0700 52-1/2″ W x 29-1/2″ D x 86-1/2″ H for 572 bottles					6,200			6,200	6,800
0730 Portable, red oak, can be built-in with glass door									
0750 23-7/8″ W x 24″ D x 34-1/2″ H for 50 bottles				Ea.	1,175			1,175	1,300

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11 41 Foodservice Storage Equipment

11 41 33 – Foodservice Shelving

11 41 33.20 Metal Food Storage Shelving	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **METAL FOOD STORAGE SHELVING**									
8600 Stainless steel shelving, louvered 4-tier, 20" x 3'	1 Clab	6	1.333	Ea.	1,225	61		1,286	1,450
8605 20" x 4'		6	1.333		298	61		359	415
8610 20" x 6'		6	1.333		345	61		406	470
8615 24" x 3'		6	1.333		1,900	61		1,961	2,200
8620 24" x 4'		6	1.333		2,375	61		2,436	2,700
8625 24" x 6'		6	1.333		3,225	61		3,286	3,650
8630 Flat 4-tier, 20" x 3'		6	1.333		1,225	61		1,286	1,450
8635 20" x 4'		6	1.333		1,325	61		1,386	1,550
8640 20" x 5'		6	1.333		1,575	61		1,636	1,825
8645 24" x 3'		6	1.333		835	61		896	1,000
8650 24" x 4'		6	1.333		2,150	61		2,211	2,450
8655 24" x 6'		6	1.333		2,650	61		2,711	3,000
8700 Galvanized shelving, louvered 4-tier, 20" x 3'		6	1.333		735	61		796	900
8705 20" x 4'		6	1.333		815	61		876	985
8710 20" x 6'		6	1.333		860	61		921	1,025
8715 24" x 3'		6	1.333		835	61		896	1,000
8720 24" x 4'		6	1.333		880	61		941	1,050
8725 24" x 6'		6	1.333		345	61		406	470
8730 Flat 4-tier, 20" x 3'		6	1.333		585	61		646	730
8735 20" x 4'		6	1.333		635	61		696	790
8740 20" x 6'		6	1.333		915	61		976	1,100
8745 24" x 3'		6	1.333		740	61		801	905
8750 24" x 4'		6	1.333		515	61		576	655
8755 24" x 6'		6	1.333		169	61		230	277
8760 Stainless steel dunnage rack, 24" x 3'		8	1		1,225	45.50		1,270.50	1,425
8765 24" x 4'		8	1		340	45.50		385.50	445
8770 Galvanized dunnage rack, 24" x 3'		8	1		130	45.50		175.50	211
8775 24" x 4'		8	1		179	45.50		224.50	265

11 42 Food Preparation Equipment

11 42 10 – Commercial Food Preparation Equipment

11 42 10.10 Choppers, Mixers and Misc. Equipment

	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **CHOPPERS, MIXERS AND MISC. EQUIPMENT**									
1700 Choppers, 5 pounds	R-18	7	3.714	Ea.	3,200	216		3,416	3,825
1720 16 pounds		5	5.200		2,075	300		2,375	2,750
1740 35 to 40 pounds		4	6.500		3,250	380		3,630	4,125
1840 Coffee brewer, 5 burners	1 Plum	3	2.667		855	186		1,041	1,225
1850 Coffee urn, twin 6 gallon urns		2	4		4,225	279		4,504	5,075
1860 Single, 3 gallon		3	2.667		2,800	186		2,986	3,350
3000 Fast food equipment, total package, minimum	6 Skwk	.08	600		206,500	35,300		241,800	280,500
3100 Maximum	"	.07	686		265,500	40,400		305,900	352,500
3800 Food mixers, bench type, 20 quarts	L-7	7	4		2,600	219		2,819	3,175
3850 40 quarts		5.40	5.185		5,425	283		5,708	6,400
3900 60 quarts		5	5.600		10,900	305		11,205	12,500
4040 80 quarts		3.90	7.179		17,300	390		17,690	19,700
4100 Floor type, 20 quarts		15	1.867		3,475	102		3,577	3,975
4120 60 quarts		14	2		9,850	109		9,959	11,000
4140 80 quarts		12	2.333		13,500	128		13,628	15,100
4160 140 quarts		8.60	3.256		24,300	178		24,478	27,100

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11 42 Food Preparation Equipment

11 42 10 – Commercial Food Preparation Equipment

11 42 10.10 Choppers, Mixers and Misc. Equipment	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
6700 Peelers, small	R-18	8	3.250	Ea.	2.79	189		191.79	284
6720 Large	"	6	4.333		3,850	252		4,102	4,600
6800 Pulper/extractor, close coupled, 5 HP	1 Plum	1.90	4.211		2,500	294		2,794	3,200
8580 Slicer with table	R-18	9	2.889		4,100	168		4,268	4,750

11 43 Food Delivery Carts and Conveyors

11 43 13 – Food Delivery Carts

11 43 13.10 Mobile Carts, Racks and Trays

0010 **MOBILE CARTS, RACKS AND TRAYS**									
1650 Cabinet, heated, 1 compartment, reach-in	R-18	5.60	4.643	Ea.	3,150	270		3,420	3,875
1655 Pass-thru roll-in		5.60	4.643		3,125	270		3,395	3,850
1660 2 compartment, reach-in		4.80	5.417		11,700	315		12,015	13,400
1670 Mobile					2,575			2,575	2,850
2000 Hospital food cart, hot and cold service, 20 tray capacity					15,800			15,800	17,300
6850 Mobile rack w/pan slide					855			855	940
9180 Tray and silver dispenser, mobile	1 Clab	16	.500		4,850	23		4,873	5,375

11 44 Food Cooking Equipment

11 44 13 – Commercial Ranges

11 44 13.10 Cooking Equipment

0010 **COOKING EQUIPMENT**									
0020 Bake oven, gas, one section	Q-1	8	2	Ea.	3,825	126		3,951	4,400
0300 Two sections		7	2.286		6,850	144		6,994	7,750
0600 Three sections		6	2.667		8,225	168		8,393	9,300
0900 Electric convection, single deck	L-7	4	7		9,300	385		9,685	10,800
1300 Broiler, without oven, standard	Q-1	8	2		2,825	126		2,951	3,300
1550 Infrared	L-7	4	7		6,400	385		6,785	7,625
4750 Fryer, with twin baskets, modular model	Q-1	7	2.286		1,300	144		1,444	1,650
5000 Floor model, on 6" legs	"	5	3.200		3,750	201		3,951	4,425
5100 Extra single basket, large					62			62	68
5170 Energy star rated, 50 lb. capacity G	R-18	4	6.500		6,075	380		6,455	7,225
5175 85 lb. capacity G	"	4	6.500		1,825	380		2,205	2,575
5300 Griddle, SS, 24" plate, w/4" legs, elec, 208 V, 3 phase, 3' long	Q-1	7	2.286		4,875	144		5,019	5,575
5550 4' long	"	6	2.667		2,875	168		3,043	3,425
6200 Iced tea brewer	1 Plum	3.44	2.326	Ea.	705	162		867	1,025
6350 Kettle, w/steam jacket, tilting, w/positive lock, SS, 20 gallons	L-7	7	4		12,900	219		13,119	14,500
6600 60 gallons	"	6	4.667		15,900	255		16,155	17,900
6900 Range, restaurant type, 6 burners and 1 standard oven, 36" wide	Q-1	7	2.286		1,250	144		1,394	1,600
6950 Convection		7	2.286		5,450	144		5,594	6,225
7150 2 standard ovens, 24" griddle, 60" wide		6	2.667		4,600	168		4,768	5,300
7200 1 standard, 1 convection oven		6	2.667		13,300	168		13,468	14,900
7450 Heavy duty, single 34" standard oven, open top		5	3.200		7,175	201		7,376	8,200
7500 Convection oven		5	3.200		6,725	201		6,926	7,700
7700 Griddle top		6	2.667		2,675	168		2,843	3,200
7750 Convection oven		6	2.667		7,300	168		7,468	8,275
7760 Induction cooker, electric	L-7	7	4		2,350	219		2,569	2,925
8850 Steamer, electric 27 KW		7	4		31,700	219		31,919	35,200
9100 Electric, 10 KW or gas 100,000 BTU		5	5.600		22,500	305		22,805	25,300
9150 Toaster, conveyor type, 16-22 slices/minute					795			795	875

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11 44 Food Cooking Equipment

11 44 13 – Commercial Ranges

11 44 13.10 Cooking Equipment	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
9160 Pop-up, 2 slot				Ea.	108			108	119
9200 For deluxe models of above equipment, add					75%				
9400 Rule of thumb: Equipment cost based									
9410 on kitchen work area									
9420 Office buildings, minimum	L-7	77	.364	S.F.	119	19.90		138.90	161
9450 Maximum		58	.483		193	26.50		219.50	252
9550 Public eating facilities, minimum		77	.364		158	19.90		177.90	204
9600 Maximum		46	.609		253	33.50		286.50	330
9750 Hospitals, minimum		58	.483		154	26.50		180.50	209
9800 Maximum	↓	39	.718	↓	283	39		322	370

11 46 Food Dispensing Equipment

11 46 16 – Service Line Equipment

11 46 16.10 Commercial Food Dispensing Equipment

0010	**COMMERCIAL FOOD DISPENSING EQUIPMENT**								
1050	Butter pat dispenser	1 Clab	13	.615	Ea.	795	28	823	910
1100	Bread dispenser, counter top		13	.615		206	28	234	269
1900	Cup and glass dispenser, drop in		4	2		620	91	711	820
1920	Disposable cup, drop in		16	.500		780	23	803	895
2650	Dish dispenser, drop in, 12"		11	.727		430	33	463	525
2660	Mobile	↓	10	.800		3,625	36.50	3,661.50	4,025
3300	Food warmer, counter, 1.2 KW					645		645	705
3550	1.6 KW					675		675	740
3600	Well, hot food, built-in, rectangular, 12" x 20"	R-30	10	2.600		335	140	475	580
3610	Circular, 7 qt.		10	2.600		405	140	545	655
3620	Refrigerated, 2 compartments		10	2.600		2,950	140	3,090	3,450
3630	3 compartments		9	2.889		5,375	155	5,530	6,150
3640	4 compartments		8	3.250		5,100	174	5,274	5,850
4720	Frost cold plate	↓	9	2.889		23,500	155	23,655	26,100
5700	Hot chocolate dispenser	1 Plum	4	2		1,200	140	1,340	1,525
5750	Ice dispenser 567 pound	Q-1	6	2.667		6,125	168	6,293	6,975
6250	Jet spray dispenser	R-18	4.50	5.778		1,225	335	1,560	1,850
6300	Juice dispenser, concentrate	"	4.50	5.778		2,025	335	2,360	2,725
6690	Milk dispenser, bulk, 2 flavor	R-30	8	3.250		2,450	174	2,624	2,950
6695	3 flavor	"	8	3.250	↓	3,025	174	3,199	3,575
8800	Serving counter, straight	1 Carp	40	.200	L.F.	2,025	11.25	2,036.25	2,275
8820	Curved section	"	30	.267	"	2,600	15	2,615	2,900
8825	Solid surface, see Section 12 36 61.16								
8860	Sneeze guard with lights, 60" L	1 Clab	16	.500	Ea.	340	23	363	410
8900	Sneeze guard, stainless steel and glass, single sided								
8910	Portable, 48" W				Ea.	405		405	445
8920	Portable, 72" W					465		465	510
8930	Adjustable, 36" W	1 Carp	24	.333		360	18.75	378.75	425
8940	Adjustable, 48" W	"	20	.400		325	22.50	347.50	395
9100	Soft serve ice cream machine, medium	R-18	11	2.364		9,675	137	9,812	10,800
9110	Large	"	9	2.889	↓	25,400	168	25,568	28,200

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11 46 Food Dispensing Equipment

11 46 83 – Ice Machines

11 46 83.10 Commercial Ice Equipment	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **COMMERCIAL ICE EQUIPMENT**									
5800 Ice cube maker, 50 lbs./day	Q-1	6	2.667	Ea.	1,775	168		1,943	2,225
5810 65 lbs./day, energy star rated		6	2.667		3,075	168		3,243	3,625
5900 250 lbs./day		1.20	13.333		2,150	840		2,990	3,600
5950 300 lbs./day, remote condensing		1.20	13.333		2,475	840		3,315	3,975
6050 500 lbs./day		4	4		2,575	251		2,826	3,200
6060 With bin		1.20	13.333		3,875	840		4,715	5,500
6070 Modular, with bin and condenser		1.20	13.333		3,750	840		4,590	5,375
6090 1000 lbs./day, with bin		1	16		5,475	1,000		6,475	7,525
6100 Ice flakers, 300 lbs./day		1.60	10		3,700	630		4,330	4,975
6120 600 lbs./day		.95	16.842		5,525	1,050		6,575	7,650
6130 1000 lbs./day		.75	21.333		5,450	1,350		6,800	8,000
6140 2000 lbs./day		.65	24.615		22,100	1,550		23,650	26,600
6160 Ice storage bin, 500 pound capacity	Q-5	1	16	Ea.	1,000	1,025		2,025	2,600
6180 1000 pound	"	.56	28.571	"	3,075	1,800		4,875	6,100

11 48 Foodservice Cleaning and Disposal Equipment

11 48 13 – Commercial Dishwashers

11 48 13.10 Dishwashers									
0010 **DISHWASHERS**									
2700 Dishwasher, commercial, rack type									
2720 10 to 12 racks/hour	Q-1	3.20	5	Ea.	27,000	315		27,315	30,200
2730 Energy star rated, 35 to 40 racks/hour G		1.30	12.308		6,425	775		7,200	8,225
2740 50 to 60 racks/hour G		1.30	12.308		10,700	775		11,475	13,000
2800 Automatic, 190 to 230 racks/hour	L-6	.35	34.286		25,600	2,350		27,950	31,600
2820 235 to 275 racks/hour		.25	48		33,900	3,300		37,200	42,200
2840 8,750 to 12,500 dishes/hour		.10	120		56,000	8,225		64,225	74,000
2950 Dishwasher hood, canopy type	L-3A	10	1.200	L.F.	565	73.50		638.50	730
2960 Pant leg type	"	2.50	4.800	Ea.	7,950	295		8,245	9,200
5200 Garbage disposal 1.5 HP, 100 GPH	L-1	4.80	3.333		2,200	227		2,427	2,750
5210 3 HP, 120 GPH		4.60	3.478		4,550	237		4,787	5,350
5220 5 HP, 250 GPH		4.50	3.556		4,550	242		4,792	5,375
6750 Pot sink, 3 compartment	1 Plum	7.25	1.103	L.F.	860	77		937	1,050
6760 Pot washer, low temp wash/rinse		1.60	5	Ea.	5,475	350		5,825	6,550
6770 High pressure wash, high temperature rinse		1.20	6.667		16,900	465		17,365	19,300
9170 Trash compactor, small, up to 125 lb. compacted weight	L-4	4	6		1,050	320		1,370	1,625
9175 Large, up to 175 lb. compacted weight	"	3	8		28,700	430		29,130	32,200

11 52 Audio-Visual Equipment

11 52 13 – Projection Screens

11 52 13.10 Projection Screens, Wall or Ceiling Hung									
0010 **PROJECTION SCREENS, WALL OR CEILING HUNG**, matte white									
0100 Manually operated, economy	2 Carp	500	.032	S.F.	6.70	1.80		8.50	10.05
0300 Intermediate		450	.036		8	2		10	11.80
0400 Deluxe		400	.040		10.15	2.25		12.40	14.50
0600 Electric operated, matte white, 25 S.F., economy		5	3.200	Ea.	3,525	180		3,705	4,150
0700 Deluxe		4	4		1,125	225		1,350	1,550
0900 50 S.F., economy		3	5.333		2,400	300		2,700	3,100
1000 Deluxe		2	8		3,650	450		4,100	4,700

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11 52 13 – Projection Screens

11 52 13.10 Projection Screens, Wall or Ceiling Hung	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1200 Heavy duty, electric operated, 200 S.F.	2 Carp	1.50	10.667	Ea.	5,150	600		5,750	6,575
1300 400 S.F.		1	16		10,400	900		11,300	12,800
1500 Rigid acrylic in wall, for rear projection, 1/4" thick	2 Glaz	30	.533	S.F.	88	29		117	140
1600 1/2" thick (maximum size 10' x 20')	"	25	.640	"	78	34.50		112.50	137

11 52 16 – Projectors

11 52 16.10 Movie Equipment

0010	**MOVIE EQUIPMENT**								
0020	Changeover, minimum				Ea.	525		525	580
0100	Maximum					1,175		1,175	1,300
0400	Film transport, incl. platters and autowind, minimum					6,525		6,525	7,175
0500	Maximum					18,600		18,600	20,400
0800	Lamphouses, incl. rectifiers, xenon, 1,000 watt	1 Elec	2	4		8,650	265	8,915	9,900
0900	1,600 watt		2	4		9,225	265	9,490	10,500
1000	2,000 watt		1.50	5.333		9,025	355	9,380	10,500
1100	4,000 watt		1.50	5.333		11,900	355	12,255	13,600
1400	Lenses, anamorphic, minimum					1,425		1,425	1,575
1500	Maximum					3,200		3,200	3,525
1800	Flat 35 mm, minimum					1,225		1,225	1,350
1900	Maximum					1,950		1,950	2,150
2200	Pedestals, for projectors					1,750		1,750	1,925
2300	Console type					12,600		12,600	13,800
2600	Projector mechanisms, incl. soundhead, 35 mm, minimum					12,900		12,900	14,200
2700	Maximum					17,800		17,800	19,600
3000	Projection screens, rigid, in wall, acrylic, 1/4" thick	2 Glaz	195	.082	S.F.	49.50	4.43	53.93	61
3100	1/2" thick	"	130	.123	"	57	6.65	63.65	72.50
3300	Electric operated, heavy duty, 400 S.F.	2 Carp	1	16	Ea.	6,875	900	7,775	8,900
3320	Theater projection screens, matte white, including frames	"	200	.080	S.F.	7.90	4.50	12.40	15.40
3400	Also see Section 11 52 13.10								
3700	Sound systems, incl. amplifier, mono, minimum	1 Elec	.90	8.889	Ea.	3,925	590	4,515	5,175
3800	Dolby/Super Sound, maximum		.40	20		21,100	1,325	22,425	25,200
4100	Dual system, 2 channel, front surround, minimum		.70	11.429		5,400	755	6,155	7,075
4200	Dolby/Super Sound, 4 channel, maximum		.40	20		20,200	1,325	21,525	24,300
4500	Sound heads, 35 mm					6,275		6,275	6,900
4900	Splicer, tape system, minimum					875		875	965
5000	Tape type, maximum					1,575		1,575	1,725
5300	Speakers, recessed behind screen, minimum	1 Elec	2	4		1,975	265	2,240	2,550
5400	Maximum	"	1	8		3,625	530	4,155	4,750
5700	Seating, painted steel, upholstered, minimum	2 Carp	35	.457		176	25.50	201.50	233
5800	Maximum	"	28	.571		570	32	602	675
6100	Rewind tables, minimum					3,125		3,125	3,450
6200	Maximum					5,575		5,575	6,125
7000	For automation, varying sophistication, minimum	1 Elec	1	8	System	2,800	530	3,330	3,850
7100	Maximum	2 Elec	.30	53.333	"	6,500	3,525	10,025	12,400

11 52 16.20 Movie Equipment- Digital

0010	**MOVIE EQUIPMENT- DIGITAL**								
1000	Digital 2K projection system, 98" DMD	1 Elec	2	4	Ea.	54,500	265	54,765	60,500
1100	OEM lens		2	4		6,400	265	6,665	7,450
2000	Pedestal with power distribution		2	4		2,375	265	2,640	3,025
3000	Software		2	4		2,025	265	2,290	2,625

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11 53 03 – Laboratory Test Equipment

11 53 03.13 Test Equipment	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **TEST EQUIPMENT**									
1700 Thermometer, electric, portable				Ea.	293			293	320
1800 Titration unit, four 2000 ml reservoirs				"	6,625			6,625	7,275

11 53 13 – Laboratory Fume Hoods

11 53 13.13 Recirculating Laboratory Fume Hoods

0010 **RECIRCULATING LABORATORY FUME HOODS**									
0600 Fume hood, with countertop & base, not including HVAC									
0610 Simple, minimum	2 Carp	5.40	2.963	L.F.	740	167		907	1,050
0620 Complex, including fixtures		2.40	6.667		9,000	375		9,375	10,500
0630 Special, maximum		1.70	9.412		1,975	530		2,505	2,975
0670 Service fixtures, average				Ea.	875			875	960
0680 For sink assembly with hot and cold water, add	1 Plum	1.40	5.714		575	400		975	1,225
0750 Glove box, fiberglass, bacteriological					23,100			23,100	25,400
0760 Controlled atmosphere					1,475			1,475	1,625
0770 Radioisotope					16,300			16,300	18,000
0780 Carcinogenic					16,300			16,300	18,000

11 53 16 – Laboratory Incubators

11 53 16.13 Incubators

0010 **INCUBATORS**									
1000 Incubators, minimum				Ea.	2,750			2,750	3,025
1010 Maximum				"	2,200			2,200	2,425

11 53 19 – Laboratory Sterilizers

11 53 19.13 Sterilizers

0010 **STERILIZERS**									
0700 Glassware washer, undercounter, minimum	L-1	1.80	8.889	Ea.	7,325	605		7,930	8,975
0710 Maximum	"	1	16		16,100	1,100		17,200	19,300
1850 Utensil washer-sanitizer	1 Plum	2	4		7,675	279		7,954	8,875

11 53 23 – Laboratory Refrigerators

11 53 23.13 Refrigerators

0010 **REFRIGERATORS**									
1200 Blood bank, 28.6 C.F. emergency signal				Ea.	16,300			16,300	18,000
1210 Reach-in, 16.9 C.F.				"	8,450			8,450	9,300

11 53 26 – Laboratory Freezers

11 53 26.10 Freezers

0010 **FREEZERS**									
0012 Ulta low temp to -80 C, 27.5 C.F.				Ea.	27,400			27,400	30,100

11 53 33 – Emergency Safety Appliances

11 53 33.13 Emergency Equipment

0010 **EMERGENCY EQUIPMENT**									
1400 Safety equipment, eye wash, hand held				Ea.	440			440	485
1450 Deluge shower				"	275			275	300

11 53 43 – Service Fittings and Accessories

11 53 43.13 Fittings

0010 **FITTINGS**									
1600 Sink, one piece plastic, flask wash, hose, free standing	1 Plum	1.60	5	Ea.	286	350		636	835
1610 Epoxy resin sink, 25" x 16" x 10"	"	2	4	"	1,550	279		1,829	2,150
1950 Utility table, acid resistant top with drawers	2 Carp	30	.533	L.F.	199	30		229	264
8000 Alternate pricing method: as percent of lab furniture									
8050 Installation, not incl. plumbing & duct work				% Furn.				22%	22%

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11 53 Laboratory Equipment

11 53 43 – Service Fittings and Accessories

	11 53 43.13 Fittings	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
8100	Plumbing, final connections, simple system				% Furn.				10%	10%
8110	Moderately complex system								15%	15%
8120	Complex system								20%	20%
8150	Electrical, simple system								10%	10%
8160	Moderately complex system								20%	20%
8170	Complex system								35%	35%

11 53 53 – Biological Safety Cabinets

11 53 53.10 Pharmacy Cabinets

0010	**PHARMACY CABINETS**, vertical flow									
0100	Class II, type B2, 6′ L	2 Carp	1.50	10.667	Ea.	8,625	600		9,225	10,400

11 57 Vocational Shop Equipment

11 57 10 – Shop Equipment

11 57 10.10 Vocational School Shop Equipment

0010	**VOCATIONAL SCHOOL SHOP EQUIPMENT**									
0020	Benches, work, wood, average	2 Carp	5	3.200	Ea.	410	180		590	720
0100	Metal, average		5	3.200		380	180		560	690
0400	Combination belt & disc sander, 6″		4	4		1,850	225		2,075	2,350
0700	Drill press, floor mounted, 12″, 1/2 HP		4	4		1,325	225		1,550	1,775
0800	Dust collector, not incl. ductwork, 6″ diameter	1 Shee	1.10	7.273		8,275	490		8,765	9,850
0810	Dust collector bag, 20″ diameter	″	5	1.600		870	108		978	1,125
1000	Grinders, double wheel, 1/2 HP	2 Carp	5	3.200		159	180		339	445
1300	Jointer, 4″, 3/4 HP		4	4		1,975	225		2,200	2,475
1600	Kilns, 16 C.F., to 2000°		4	4		6,100	225		6,325	7,025
1900	Lathe, woodworking, 10″, 1/2 HP		4	4		550	225		775	940
2200	Planer, 13″ x 6″		4	4		1,400	225		1,625	1,875
2500	Potter's wheel, motorized		4	4		1,825	225		2,050	2,350
2800	Saws, band, 14″, 3/4 HP		4	4		900	225		1,125	1,325
3100	Metal cutting band saw, 14″		4	4		3,025	225		3,250	3,650
3400	Radial arm saw, 10″, 2 HP		4	4		3,950	225		4,175	4,675
3700	Scroll saw, 24″		4	4		895	225		1,120	1,325
4000	Table saw, 10″, 3 HP		4	4		1,500	225		1,725	1,975
4300	Welder AC arc, 30 amp capacity		4	4		5,475	225		5,700	6,350

11 61 Broadcast, Theater, and Stage Equipment

11 61 23 – Folding and Portable Stages

11 61 23.10 Portable Stages

0010	**PORTABLE STAGES**									
1500	Flooring, portable oak parquet, 3′ x 3′ sections				S.F.	14.80			14.80	16.30
1600	Cart to carry 225 S.F. of flooring				Ea.	445			445	490
5000	Stages, portable with steps, folding legs, stock, 8″ high				SF Stg.	47.50			47.50	52.50
5100	16″ high					59			59	65
5200	32″ high					60.50			60.50	66.50
5300	40″ high					65.50			65.50	72
6000	Telescoping platforms, extruded alum., straight, minimum	4 Carp	157	.204		39	11.50		50.50	59.50
6100	Maximum		77	.416		55.50	23.50		79	96.50
6500	Pie-shaped, minimum		150	.213		84	12		96	110
6600	Maximum		70	.457		94	25.50		119.50	142
6800	For 3/4″ plywood covered deck, deduct					5.55			5.55	6.10

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11 61 Broadcast, Theater, and Stage Equipment

11 61 23 – Folding and Portable Stages

11 61 23.10 Portable Stages	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
7000 Band risers, steel frame, plywood deck, minimum	4 Carp	275	.116	SF Stg.	33.50	6.55		40.05	47
7100 Maximum	"	138	.232		76.50	13.05		89.55	103
7500 Chairs for above, self-storing, minimum	2 Carp	43	.372	Ea.	123	21		144	167
7600 Maximum	"	40	.400	"	218	22.50		240.50	274

11 61 33 – Rigging Systems and Controls

11 61 33.10 Controls

0010 **CONTROLS**									
0050 Control boards with dimmers and breakers, minimum	1 Elec	1	8	Ea.	15,600	530		16,130	18,000
0100 Average		.50	16		1,600	1,050		2,650	3,325
0150 Maximum		.20	40		125,000	2,650		127,650	141,500
8000 Rule of thumb: total stage equipment, minimum	4 Carp	100	.320	SF Stg.	108	18		126	145
8100 Maximum	"	25	1.280	"	605	72		677	770

11 61 43 – Stage Curtains

11 61 43.10 Curtains

0010 **CURTAINS**									
0500 Curtain track, straight, light duty	2 Carp	20	.800	L.F.	31.50	45		76.50	102
0600 Heavy duty		18	.889		245	50		295	345
0700 Curved sections		12	1.333		24.50	75		99.50	139
1000 Curtains, velour, medium weight		600	.027	S.F.	8.75	1.50		10.25	11.90
1150 Silica based yarn, inherently fire retardant		50	.320	"	16.80	18		34.80	45.50

11 62 Musical Equipment

11 62 16 – Carillons

11 62 16.10 Bell Tower Equipment

0010 **BELL TOWER EQUIPMENT**									
0300 Carillon, 4 octave (48 bells), with keyboard				System	1,220,500			1,220,500	1,342,500
0320 2 octave (24 bells)					574,500			574,500	631,500
0340 3 to 4 bell peal, minimum					143,500			143,500	158,000
0360 Maximum					861,500			861,500	947,500
0380 Cast bronze bell, average				Ea.	129,000			129,000	142,000
0400 Electronic, digital, minimum					21,500			21,500	23,700
0410 With keyboard, maximum					107,500			107,500	118,500

11 66 Athletic Equipment

11 66 13 – Exercise Equipment

11 66 13.10 Physical Training Equipment

0010 **PHYSICAL TRAINING EQUIPMENT**									
0020 Abdominal rack, 2 board capacity				Ea.	470			470	520
0050 Abdominal board, upholstered					705			705	775
0200 Bicycle trainer, minimum					900			900	990
0300 Deluxe, electric					1,800			1,800	1,975
0400 Barbell set, chrome plated steel, 25 lb.					174			174	191
0420 100 lb.					169			169	186
0450 200 lb.					360			360	395
0500 Weight plates, cast iron, per lb.				lb.	1.85			1.85	2.04
0520 Storage rack, 10 station				Ea.	850			850	935
0600 Circuit training apparatus, 12 machines minimum	2 Clab	1.25	12.800	Set	25,500	585		26,085	28,900
0700 Average		1	16		14,500	730		15,230	17,000

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11 66 13 – Exercise Equipment

	11 66 13.10 Physical Training Equipment	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0800	Maximum	2 Clab	.75	21.333	Set	14,500	975		15,475	17,400
0820	Dumbbell set, cast iron, with rack and 5 pair					1,350			1,350	1,500
0900	Squat racks	2 Clab	5	3.200	Ea.	800	146		946	1,100
1200	Multi-station gym machine, 5 station					8,000			8,000	8,800
1250	9 station					10,000			10,000	11,000
1280	Rowing machine, hydraulic					2,625			2,625	2,875
1300	Treadmill, manual				Ea.	3,000			3,000	3,300
1320	Motorized					4,125			4,125	4,550
1340	Electronic					3,975			3,975	4,375
1360	Cardio-testing					8,000			8,000	8,800
1400	Treatment/massage tables, minimum					525			525	580
1420	Deluxe, with accessories					810			810	890
4150	Exercise equipment, bicycle trainer					1,200			1,200	1,325
4180	Chinning bar, adjustable, wall mounted	1 Carp	5	1.600		241	90		331	400
4200	Exercise ladder, 16′ x 1′-7″, suspended	L-2	3	5.333		1,400	266		1,666	1,950
4210	High bar, floor plate attached	1 Carp	4	2		350	113		463	555
4240	Parallel bars, adjustable		4	2		1,625	113		1,738	1,975
4270	Uneven parallel bars, adjustable		4	2		4,050	113		4,163	4,625
4280	Wall mounted, adjustable	L-2	1.50	10.667	Set	975	530		1,505	1,875
4300	Rope, ceiling mounted, 18′ long	1 Carp	3.66	2.186	Ea.	208	123		331	410
4330	Side horse, vaulting		5	1.600		1,700	90		1,790	2,000
4360	Treadmill, motorized, deluxe, training type		5	1.600		4,150	90		4,240	4,700
4390	Weight lifting multi-station, minimum	2 Clab	1	16		310	730		1,040	1,425
4450	Maximum	″	.50	32		15,200	1,450		16,650	18,900

11 66 23 – Gymnasium Equipment

11 66 23.13 Basketball Equipment

0010	**BASKETBALL EQUIPMENT**									
1000	Backstops, wall mtd., 6′ extended, fixed, minimum	L-2	1	16	Ea.	2,000	795		2,795	3,400
1100	Maximum		1	16		2,100	795		2,895	3,500
1200	Swing up, minimum		1	16		1,575	795		2,370	2,950
1250	Maximum		1	16		3,675	795		4,470	5,250
1300	Portable, manual, heavy duty, spring operated		1.90	8.421		14,200	420		14,620	16,200
1400	Ceiling suspended, stationary, minimum		.78	20.513		3,925	1,025		4,950	5,825
1450	Fold up, with accessories, maximum		.40	40		6,225	2,000		8,225	9,825
1600	For electrically operated, add	1 Elec	1	8		2,600	530		3,130	3,625
5800	Wall pads, 1-1/2″ thick, standard (not fire rated)	2 Carp	640	.025	S.F.	132	1.41		133.41	147

11 66 23.19 Boxing Ring

0010	**BOXING RING**									
4100	Elevated, 22′ x 22′	L-4	.10	240	Ea.	6,375	12,900		19,275	26,400
4110	For cellular plastic foam padding, add		.10	240		1,275	12,900		14,175	20,800
4120	Floor level, including posts and ropes only, 20′ x 20′		.80	30		5,000	1,600		6,600	7,925
4130	Canvas, 30′ x 30′		5	4.800		1,525	258		1,783	2,075

11 66 23.47 Gym Mats

0010	**GYM MATS**									
5500	2″ thick, naugahyde covered				S.F.	4.39			4.39	4.83
5600	Vinyl/nylon covered					9.05			9.05	9.95
6000	Wrestling mats, 1″ thick, heavy duty					4.94			4.94	5.45

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11 66 Athletic Equipment

11 66 43 – Interior Scoreboards

11 66 43.10 Scoreboards	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **SCOREBOARDS**									
7000 Baseball, minimum	R-3	1.30	15.385	Ea.	4,800	1,025	133	5,958	6,925
7200 Maximum		.05	400		11,400	26,300	3,475	41,175	55,500
7300 Football, minimum		.86	23.256		5,200	1,525	202	6,927	8,200
7400 Maximum		.20	100		14,900	6,575	865	22,340	27,200
7500 Basketball (one side), minimum		2.07	9.662		2,400	635	84	3,119	3,675
7600 Maximum		.30	66.667		6,225	4,400	580	11,205	14,000
7700 Hockey-basketball (four sides), minimum		.25	80		10,300	5,275	695	16,270	20,000
7800 Maximum		.15	133		17,600	8,775	1,150	27,525	33,700

11 66 53 – Gymnasium Dividers

11 66 53.10 Divider Curtains

0010 **DIVIDER CURTAINS**									
4500 Gym divider curtain, mesh top, vinyl bottom, manual	L-4	500	.048	S.F.	9.90	2.58		12.48	14.75
4700 Electric roll up	L-7	400	.070	"	14.50	3.83		18.33	21.50

11 67 Recreational Equipment

11 67 13 – Bowling Alley Equipment

11 67 13.10 Bowling Alleys

0010 **BOWLING ALLEYS** Including alley, pinsetter, scorer,									
0020 Counters and misc. supplies, minimum	4 Carp	.20	160	Lane	42,600	9,000		51,600	60,000
0150 Average		.19	168		52,000	9,475		61,475	71,500
0300 Maximum		.18	178		60,000	10,000		70,000	81,000
0400 Combo table ball rack, add					1,450			1,450	1,575
0600 For automatic scorer, add, minimum					6,325			6,325	6,950
0700 Maximum					10,600			10,600	11,700

11 67 23 – Shooting Range Equipment

11 67 23.10 Shooting Range

0010 **SHOOTING RANGE** Incl. bullet traps, target provisions, controls,									
0100 Separators, ceiling system, etc. Not incl. structural shell									
0200 Commercial	L-9	.64	56.250	Point	40,900	2,900		43,800	49,400
0300 Law enforcement		.28	129		48,700	6,625		55,325	63,500
0400 National Guard armories		.71	50.704		25,600	2,625		28,225	32,100
0500 Reserve training centers		.71	50.704		22,000	2,625		24,625	28,100
0600 Schools and colleges		.32	113		8,775	5,800		14,575	18,400
0700 Major academies		.19	189		56,500	9,775		66,275	77,000
0800 For acoustical treatment, add					10%	10%			
0900 For lighting, add				Point	28%	25%			
1000 For plumbing, add					5%	5%			
1100 For ventilating system, add, minimum					40%	40%			
1200 Add, average					25%	25%			
1300 Add, maximum					35%	35%			

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11 68 13 – Playground Equipment

11 68 13.10 Free-Standing Playground Equipment	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **FREE-STANDING PLAYGROUND EQUIPMENT** See also individual items									
0200 Bike rack, 10′ long, permanent [G]	B-1	12	2	Ea.	550	92.50		642.50	745
0392 Upper body warm-up station		2.60	9.231		4,200	425		4,625	5,250
0394 Bench stepper station		2.60	9.231		3,050	425		3,475	4,000
0396 Standing push up station		2.60	9.231		1,200	425		1,625	1,925
0398 Upper body stretch station		2.60	9.231		2,500	425		2,925	3,350
0400 Horizontal monkey ladder, 14′ long, 6′ high		4	6		1,625	278		1,903	2,225
0590 Parallel bars, 10′ long		4	6		795	278		1,073	1,300
0600 Posts, tether ball set, 2-3/8″ OD		12	2		450	92.50		542.50	635
0800 Poles, multiple purpose, 10′-6″ long		12	2	Pr.	80	92.50		172.50	226
1000 Ground socket for movable posts, 2-3/8″ post		10	2.400		128	111		239	305
1100 3-1/2″ post		10	2.400		345	111		456	545
1300 See-saw, spring, steel, 2 units		6	4	Ea.	635	185		820	975
1400 4 units		4	6		1,125	278		1,403	1,650
1500 6 units		3	8		2,675	370		3,045	3,475
1700 Shelter, fiberglass golf tee, 3 person		4.60	5.217		4,775	241		5,016	5,600
1900 Slides, stainless steel bed, 12′ long, 6′ high		3	8		6,775	370		7,145	8,025
2000 20′ long, 10′ high		2	12		8,875	555		9,430	10,600
2200 Swings, plain seats, 8′ high, 4 seats		2	12		4,225	555		4,780	5,475
2300 8 seats		1.30	18.462		7,300	855		8,155	9,300
2500 12′ high, 4 seats		2	12		1,275	555		1,830	2,225
2600 8 seats		1.30	18.462		2,975	855		3,830	4,550
2800 Whirlers, 8′ diameter		3	8		2,975	370		3,345	3,825
2900 10′ diameter		3	8		7,275	370		7,645	8,550
11 68 13.20 Modular Playground									
0010 **MODULAR PLAYGROUND** Basic components									
0100 Deck, square, steel, 48″ x 48″	B-1	1	24	Ea.	1,200	1,100		2,300	2,975
0110 Recycled polyurethane		1	24		1,200	1,100		2,300	2,975
0120 Triangular, steel, 48″ side		1	24		237	1,100		1,337	1,900
0130 Post, steel, 5″ square		18	1.333	L.F.	51.50	61.50		113	149
0140 Aluminum, 2-3/8″ square		20	1.200		57	55.50		112.50	145
0150 5″ square		18	1.333		48	61.50		109.50	145
0160 Roof, square poly, 54″ side		18	1.333	Ea.	640	61.50		701.50	795
0170 Wheelchair transfer module, for 3′ high deck		3	8	″	1,975	370		2,345	2,725
0180 Guardrail, pipe, 36″ high		60	.400	L.F.	7.55	18.50		26.05	36
0190 Steps, deck-to-deck, three 8″ steps		8	3	Ea.	780	139		919	1,075
0200 Activity panel, crawl through panel		2	12		500	555		1,055	1,375
0210 Alphabet/spelling panel		2	12		99	555		654	935
0360 With guardrails		3	8		2,600	370		2,970	3,400
0370 Crawl tunnel, straight, 56″ long		4	6		1,700	278		1,978	2,275
0380 90°, 4′ long		4	6		1,800	278		2,078	2,400
1200 Slide, tunnel, for 56″ high deck		8	3		4,100	139		4,239	4,700
1210 Straight, poly		8	3		870	139		1,009	1,150
1220 Stainless steel, 54″ high deck		6	4		935	185		1,120	1,300
1230 Curved, poly, 40″ high deck		6	4		1,900	185		2,085	2,375
1240 Spiral slide, 56″-72″ high		5	4.800		7,275	222		7,497	8,325
1300 Ladder, vertical, for 24″-72″ high deck		5	4.800		650	222		872	1,050
1310 Horizontal, 8′ long		5	4.800		940	222		1,162	1,350
1320 Corkscrew climber, 6′ high		3	8		980	370		1,350	1,625
1330 Fire pole for 72″ high deck		6	4		99	185		284	385
1340 Bridge, ring climber, 8′ long		4	6		5,050	278		5,328	5,975
1350 Suspension		4	6	L.F.	72	278		350	495

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11 68 Play Field Equipment and Structures

11 68 16 – Play Structures

11 68 16.10 Handball/Squash Court	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **HANDBALL/SQUASH COURT**, outdoor									
0900 Handball or squash court, outdoor, wood	2 Carp	.50	32	Ea.	5,375	1,800		7,175	8,600
1000 Masonry handball/squash court	D-1	.30	53.333	"	27,300	2,675		29,975	34,100

11 68 16.30 Platform/Paddle Tennis Court

0010 **PLATFORM/PADDLE TENNIS COURT** Complete with lighting, etc.									
0100 Aluminum slat deck with aluminum frame	B-1	.08	300	Court	74,500	13,900		88,400	102,500
0500 Aluminum slat deck with wood frame	C-1	.12	267		91,500	14,300		105,800	122,500
0800 Aluminum deck heater, add	B-1	1.18	20.339		3,225	940		4,165	4,950
0900 Douglas fir planking with wood frame 2" x 6" x 30'	C-1	.12	267		86,000	14,300		100,300	116,500
1000 Plywood deck with steel frame		.12	267		86,000	14,300		100,300	116,500
1100 Steel slat deck with wood frame		.12	267		51,000	14,300		65,300	77,500

11 68 33 – Athletic Field Equipment

11 68 33.13 Football Field Equipment

0010 **FOOTBALL FIELD EQUIPMENT**									
0020 Goal posts, steel, football, double post	B-1	1.50	16	Pr.	5,000	740		5,740	6,600
0100 Deluxe, single post		1.50	16		6,000	740		6,740	7,700
0300 Football, convertible to soccer		1.50	16		4,475	740		5,215	6,025
0500 Soccer, regulation		2	12		3,100	555		3,655	4,225

11 71 Medical Sterilizing Equipment

11 71 10 – Medical Sterilizers & Distillers

11 71 10.10 Sterilizers and Distillers

0010 **STERILIZERS AND DISTILLERS**									
0700 Distiller, water, steam heated, 50 gal. capacity	1 Plum	1.40	5.714	Ea.	39,400	400		39,800	44,000
3010 Portable, top loading, 105-135 degree C, 3 to 30 psi, 50 L chamber					10,200			10,200	11,300
3020 Stainless steel basket, 10.7" diam. x 11.8" H					226			226	248
3025 Stainless steel pail, 10.7" diam. x 10.7" H					335			335	370
3050 85 L chamber					19,000			19,000	20,900
3060 Stainless steel basket, 15.3" diam. x 11.5" H					490			490	535
3065 Stainless steel pail, 15.3" diam. x 11" H					715			715	785
5600 Sterilizers, floor loading, 26" x 62" x 42", single door, steam					143,500			143,500	157,500
5650 Double door, steam					224,000			224,000	246,500
5800 General purpose, 20" x 20" x 38", single door					29,300			29,300	32,200
6000 Portable, counter top, steam, minimum					4,125			4,125	4,525
6020 Maximum					2,200			2,200	2,425
6050 Portable, counter top, gas, 17" x 15" x 32-1/2"					3,650			3,650	4,000
6150 Manual washer/sterilizer, 16" x 16" x 26"	1 Plum	2	4		4,375	279		4,654	5,225
6200 Steam generators, electric 10 kW to 180 kW, freestanding									
6250 Minimum	1 Elec	3	2.667	Ea.	4,075	177		4,252	4,725
6300 Maximum	"	.70	11.429		3,400	755		4,155	4,875
8200 Bed pan washer-sanitizer	1 Plum	2	4		8,725	279		9,004	10,000

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11 72 Examination and Treatment Equipment

11 72 13 – Examination Equipment

11 72 13.13 Examination Equipment	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **EXAMINATION EQUIPMENT**									
0300 Blood pressure unit, mercurial, wall				Ea.	136			136	149
0400 Diagnostic set, wall					2,700			2,700	2,975
4400 Scale, physician's, with height rod					520			520	570
4420 Medical equipment, Xray light box, 14" x 17"					485			485	535

11 72 53 – Treatment Equipment

11 72 53.13 Medical Treatment Equipment

0010 **MEDICAL TREATMENT EQUIPMENT**									
6300 Exam light, portable, 14" flexible arm				Ea.	166			166	183
6500 Surgery table, minor minimum	1 Sswk	.70	11.429	Ea.	13,200	705		13,905	15,600
6520 Maximum	"	.50	16		24,000	990		24,990	27,900
6700 Surgical lights, doctor's office, single arm	2 Elec	2	8		3,650	530		4,180	4,800
6750 Dual arm	"	1	16		5,800	1,050		6,850	7,950

11 73 Patient Care Equipment

11 73 10 – Patient Treatment Equipment

11 73 10.10 Treatment Equipment

0010 **TREATMENT EQUIPMENT**									
0750 Exam room furnishings, average per room				Ea.	4,900			4,900	5,400
1800 Heat therapy unit, humidified, 26" x 78" x 28"				"	3,125			3,125	3,425
2100 Hubbard tank with accessories, stainless steel,									
2110 125 GPM at 45 psi water pressure				Ea.	29,600			29,600	32,600
2150 For electric overhead hoist, add					2,875			2,875	3,175
2900 K-Module for heat therapy, 20 oz. capacity, 75°F to 110°F					530			530	585
3600 Paraffin bath, 126°F, auto controlled					259			259	285
3900 Parallel bars for walking training, 12'-0"					1,850			1,850	2,025
4600 Station, dietary, medium, with ice					655			655	720
4700 Medicine					7,800			7,800	8,575
7000 Tables, physical therapy, walk off, electric	2 Carp	3	5.333		2,075	300		2,375	2,725
7150 Standard, vinyl top with base cabinets, minimum		3	5.333		1,275	300		1,575	1,875
7200 Maximum		2	8		4,975	450		5,425	6,150
7250 Table, hospital, adjustable height					2,800			2,800	3,075
8400 Whirlpool bath, mobile, sst, 18" x 24" x 60"					5,500			5,500	6,050
8450 Fixed, incl. mixing valves	1 Plum	2	4		7,650	279		7,929	8,850

11 73 10.20 Bariatric Equipment

0010 **BARIATRIC EQUIPMENT**									
5000 Patient lift, electric operated, arm style									
5110 400 lb. capacity				Ea.	1,400			1,400	1,525
5120 450 lb. capacity					2,875			2,875	3,175
5130 600 lb. capacity					3,175			3,175	3,475
5140 700 lb. capacity					5,450			5,450	6,000
5150 1,000 lb. capacity					7,425			7,425	8,150
5200 Overhead, 4-post, 1,000 lb. capacity					11,500			11,500	12,700
5300 Overhead, track type, 450 lb. capacity, not including track					3,675			3,675	4,050
5500 For fabric sling, add					505			505	555
5550 For digital scale, add					910			910	1,000

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11 74 Dental Equipment

11 74 10 – Dental Office Equipment

11 74 10.10 Diagnostic and Treatment Equipment	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **DIAGNOSTIC AND TREATMENT EQUIPMENT**									
0020 Central suction system, minimum	1 Plum	1.20	6.667	Ea.	1,650	465		2,115	2,525
0100 Maximum	"	.90	8.889		4,725	620		5,345	6,100
0300 Air compressor, minimum	1 Skwk	.80	10		3,725	590		4,315	4,975
0400 Maximum		.50	16		10,200	940		11,140	12,600
0600 Chair, electric or hydraulic, minimum		.50	16		3,475	940		4,415	5,250
0700 Maximum		.25	32		4,500	1,875		6,375	7,775
0800 Doctor's/assistant's stool, minimum					360			360	395
0850 Maximum					1,000			1,000	1,100
1000 Drill console with accessories, minimum	1 Skwk	1.60	5		4,050	295		4,345	4,900
1100 Maximum		1.60	5		4,875	295		5,170	5,800
2000 Light, ceiling mounted, minimum		8	1		940	59		999	1,125
2100 Maximum		8	1		2,650	59		2,709	3,000
2200 Unit light, minimum	2 Skwk	5.33	3.002		980	177		1,157	1,350
2210 Maximum		5.33	3.002		2,025	177		2,202	2,500
2220 Track light, minimum		3.20	5		2,250	295		2,545	2,925
2230 Maximum		3.20	5		4,100	295		4,395	4,950
2300 Sterilizers, steam portable, minimum					3,500			3,500	3,850
2350 Maximum					6,925			6,925	7,625
2600 Steam, institutional					3,525			3,525	3,875
2650 Dry heat, electric, portable, 3 trays					1,800			1,800	1,975
2700 Ultra-sonic cleaner, portable, minimum					500			500	550
2750 Maximum (institutional)					1,775			1,775	1,950
3000 X-ray unit, wall, minimum	1 Skwk	4	2		3,800	118		3,918	4,350
3010 Maximum		4	2		7,050	118		7,168	7,925
3100 Panoramic unit		.60	13.333		22,400	785		23,185	25,800
3105 Deluxe, minimum	2 Skwk	1.60	10		15,300	590		15,890	17,800
3110 Maximum	"	1.60	10		47,300	590		47,890	53,000
3500 Developers, X-ray, average	1 Plum	5.33	1.501		7,025	105		7,130	7,875
3600 Maximum	"	5.33	1.501		14,300	105		14,405	16,000

11 76 Operating Room Equipment

11 76 10 – Equipment for Operating Rooms

11 76 10.10 Surgical Equipment									
0010 **SURGICAL EQUIPMENT**									
5000 Scrub, surgical, stainless steel, single station, minimum	1 Plum	3	2.667	Ea.	1,475	186		1,661	1,900
5100 Maximum				"	12,400			12,400	13,700
6550 Major surgery table, minimum	1 Sswk	.50	16	Ea.	20,600	990		21,590	24,100
6570 Maximum		.50	16		18,800	990		19,790	22,200
6600 Hydraulic, hand-held control, general surgery		.60	13.333		38,800	825		39,625	44,000
6650 Stationary, universal		.50	16		48,900	990		49,890	55,500
6800 Surgical lights, major operating room, dual head, minimum	2 Elec	1	16		4,675	1,050		5,725	6,725
6850 Maximum		1	16		6,675	1,050		7,725	8,925
6900 Ceiling mount articulation, single arm		1	16		4,450	1,050		5,500	6,475

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11 77 Radiology Equipment

11 77 10 – Equipment for Radiology

11 77 10.10 X-Ray Equipment	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **X-RAY EQUIPMENT**									
8700 X-ray, mobile, minimum				Ea.	15,100			15,100	16,600
8750 Maximum					42,000			42,000	46,200
8900 Stationary, minimum					32,700			32,700	36,000
8950 Maximum					246,500			246,500	271,500
9150 Developing processors, minimum					1,400			1,400	1,550
9200 Maximum					13,700			13,700	15,000

11 78 Mortuary Equipment

11 78 13 – Mortuary Refrigerators

11 78 13.10 Mortuary and Autopsy Equipment

	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **MORTUARY AND AUTOPSY EQUIPMENT**									
0015 Autopsy table, standard	1 Plum	1	8	Ea.	8,775	560		9,335	10,500
0020 Deluxe	"	.60	13.333		3,175	930		4,105	4,900
3200 Mortuary refrigerator, end operated, 2 capacity					4,750			4,750	5,225
3300 6 capacity					13,900			13,900	15,300

11 78 16 – Crematorium Equipment

11 78 16.10 Crematory

	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **CREMATORY**									
1500 Crematory, not including building, 1 place	Q-3	.20	160	Ea.	80,000	10,600		90,600	104,000
1750 2 place	"	.10	320	"	114,000	21,300		135,300	157,000

11 81 Facility Maintenance Equipment

11 81 19 – Vacuum Cleaning Systems

11 81 19.10 Vacuum Cleaning

	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **VACUUM CLEANING**									
0020 Central, 3 inlet, residential	1 Skwk	.90	8.889	Total	1,150	525		1,675	2,050
0200 Commercial		.70	11.429		1,375	675		2,050	2,500
0400 5 inlet system, residential		.50	16		1,825	940		2,765	3,425
0600 7 inlet system, commercial		.40	20		1,200	1,175		2,375	3,075
0800 9 inlet system, residential		.30	26.667		4,200	1,575		5,775	6,975

11 82 Facility Solid Waste Handling Equipment

11 82 19 – Packaged Incinerators

11 82 19.10 Packaged Gas Fired Incinerators

	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **PACKAGED GAS FIRED INCINERATORS**									
4400 Incinerator, gas, not incl. chimney, elec. or pipe, 50 lbs./hr., minimum	Q-3	.80	40	Ea.	46,300	2,650		48,950	55,000
4420 Maximum		.70	45.714		42,400	3,025		45,425	51,000
4440 200 lbs./hr., minimum (batch type)		.60	53.333		70,000	3,550		73,550	82,500
4460 Maximum (with feeder)		.50	64		80,500	4,250		84,750	95,000
4480 400 lbs./hr., minimum (batch type)		.30	107		94,000	7,075		101,075	114,000
4500 Maximum (with feeder)		.25	128		86,500	8,500		95,000	107,500
4520 800 lbs./hr., with feeder, minimum		.20	160		115,500	10,600		126,100	143,000
4540 Maximum		.17	188		207,500	12,500		220,000	247,000
4560 1,200 lbs./hr., with feeder, minimum		.15	213		145,000	14,200		159,200	180,500
4580 Maximum		.11	291		203,500	19,300		222,800	253,000
4600 2,000 lbs./hr., with feeder, minimum		.10	320		386,000	21,300		407,300	456,000

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11 82 19 – Packaged Incinerators

	11 82 19.10 Packaged Gas Fired Incinerators	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4620	Maximum	Q-3	.05	640	Ea.	651,500	42,500		694,000	780,000
4700	For heat recovery system, add, minimum		.25	128		98,000	8,500		106,500	120,500
4710	Add, maximum		.11	291		271,000	19,300		290,300	327,500
4720	For automatic ash conveyer, add		.50	64		38,100	4,250		42,350	48,300

11 82 26 – Facility Waste Compactors

11 82 26.10 Compactors

0010	**COMPACTORS**									
0020	Compactors, 115 volt, 250 lbs./hr., chute fed	L-4	1	24	Ea.	12,300	1,300		13,600	15,500
0100	Hand fed		2.40	10		16,500	535		17,035	18,900
0300	Multi-bag, 230 volt, 600 lbs./hr., chute fed		1	24		16,500	1,300		17,800	20,200
0400	Hand fed		1	24		16,500	1,300		17,800	20,200
0500	Containerized, hand fed, 2 to 6 C.Y. containers, 250 lbs./hr.		1	24		16,300	1,300		17,600	20,000
0550	For chute fed, add per floor		1	24		1,475	1,300		2,775	3,550
1000	Heavy duty industrial compactor, 0.5 C.Y. capacity		1	24		10,900	1,300		12,200	14,000
1050	1.0 C.Y. capacity		1	24		16,700	1,300		18,000	20,300
1100	3.0 C.Y. capacity		.50	48		28,500	2,575		31,075	35,300
1150	5.0 C.Y. capacity		.50	48		36,000	2,575		38,575	43,500
1200	Combination shredder/compactor (5,000 lbs./hr.)		.50	48		70,000	2,575		72,575	81,000
1400	For handling hazardous waste materials, 55 gallon drum packer, std.					21,400			21,400	23,600
1410	55 gallon drum packer w/HEPA filter					25,800			25,800	28,400
1420	55 gallon drum packer w/charcoal & HEPA filter					34,400			34,400	37,800
1430	All of the above made explosion proof, add					2,000			2,000	2,200
5500	Shredder, municipal use, 35 tons/hour					344,000			344,000	378,500
5600	60 tons/hour					733,000			733,000	806,500
5750	Shredder & baler, 50 tons/day					687,000			687,000	756,000
5800	Shredder, industrial, minimum					28,800			28,800	31,700
5850	Maximum					145,000			145,000	159,500
5900	Baler, industrial, minimum					10,900			10,900	12,000
5950	Maximum					633,500			633,500	697,000
6000	Transfer station compactor, with power unit									
6050	and pedestal, not including pit, 50 tons/hour				Ea.	217,500			217,500	239,000

11 82 39 – Medical Waste Disposal Systems

11 82 39.10 Off-Site Disposal

0010	**OFF-SITE DISPOSAL**									
0100	Medical waste disposal, Red Bag system, pick up & treat, 200 lbs./week				Week	213			213	234
0110	Per month				Month	770			770	845
0150	Red bags, 7-10 gal., 1.2 mil, pkg of 500				Ea.	67.50			67.50	74
0200	15 gal., package of 250					66			66	72.50
0250	33 gal., package of 250					74.50			74.50	82
0300	45 gal., package of 100					61			61	67.50

11 82 39.20 Disposal Carts

0010	**DISPOSAL CARTS**									
2010	Medical waste disposal cart, HDPE, w/lid, 28 gal. capacity				Ea.	286			286	315
2020	96 gal. capacity					335			335	370
2030	150 gal. capacity, low profile					485			485	530
2040	200 gal. capacity					1,000			1,000	1,100

11 82 39.30 Medical Waste Sanitizers

0010	**MEDICAL WASTE SANITIZERS**									
2010	Small, hand loaded, 1.5 C.Y., 225 lb. capacity				Ea.	82,000			82,000	90,000
2020	Medium, cart loaded, 6.25 C.Y., 938 lb. capacity					109,500			109,500	120,500
2030	Large, cart loaded, 15 C.Y., 2250 lb. capacity					131,500			131,500	145,000

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

11 82 Facility Solid Waste Handling Equipment

11 82 39 – Medical Waste Disposal Systems

	11 82 39.30 Medical Waste Sanitizers	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
3010	Cart, aluminum, 75 lb. capacity				Ea.	2,175			2,175	2,400
3020	95 lb. capacity					2,375			2,375	2,600
4010	Stainless steel, 173 lb. capacity					3,100			3,100	3,425
4020	232 lb. capacity					3,475			3,475	3,825
4030	Cart lift, hydraulic scissor type					6,150			6,150	6,775
4040	Portable aluminum ramp					1,750			1,750	1,900
4050	Fold-down steel tracks					1,425			1,425	1,550
4060	Pull-out drawer, small					6,625			6,625	7,300
4070	Medium					9,575			9,575	10,500
4080	Large					13,500			13,500	14,900
5000	Medical waste treatment, sanitize, on-site									
5010	Less than 15,000 lbs./month				Lb.	.20			.20	.22
5020	Over 15,000 lbs./month				"	.16			.16	.18

11 91 Religious Equipment

11 91 13 – Baptisteries

11 91 13.10 Baptistry

0010	**BAPTISTRY**									
0150	Fiberglass, 3'-6" deep, x 13'-7" long,									
0160	steps at both ends, incl. plumbing, minimum	L-8	1	20	Ea.	7,275	1,175		8,450	9,750
0200	Maximum	"	.70	28.571		11,900	1,675		13,575	15,500
0250	Add for filter, heater and lights					1,625			1,625	1,800

11 91 23 – Sanctuary Equipment

11 91 23.10 Sanctuary Furnishings

0010	**SANCTUARY FURNISHINGS**									
0020	Altar, wood, custom design, plain	1 Carp	1.40	5.714	Ea.	2,675	320		2,995	3,425
0050	Deluxe	"	.20	40		12,800	2,250		15,050	17,500
0070	Granite or marble, average	2 Marb	.50	32		12,400	1,750		14,150	16,400
0090	Deluxe	"	.20	80		33,800	4,400		38,200	43,800
0100	Arks, prefabricated, plain	2 Carp	.80	20		9,500	1,125		10,625	12,200
0130	Deluxe, maximum	"	.20	80		135,500	4,500		140,000	155,500
0500	Reconciliation room, wood, prefabricated, single, plain	1 Carp	.60	13.333		3,100	750		3,850	4,525
0550	Deluxe		.40	20		7,675	1,125		8,800	10,100
0650	Double, plain		.40	20		5,625	1,125		6,750	7,875
0700	Deluxe		.20	40		17,500	2,250		19,750	22,600
1000	Lecterns, wood, plain		5	1.600		284	90		374	445
1100	Deluxe		2	4		6,300	225		6,525	7,250
2000	Pulpits, hardwood, prefabricated, plain		2	4		1,475	225		1,700	1,950
2100	Deluxe		1.60	5		13,000	282		13,282	14,700
2500	Railing, hardwood, average		25	.320	L.F.	217	18		235	264
3000	Seating, individual, oak, contour, laminated		21	.381	Person	228	21.50		249.50	283
3100	Cushion seat		21	.381		208	21.50		229.50	261
3200	Fully upholstered		21	.381		192	21.50		213.50	243
3300	Combination, self-rising		21	.381		365	21.50		386.50	430
3500	For cherry, add					30%				
5000	Wall cross, aluminum, extruded, 2" x 2" section	1 Carp	34	.235	L.F.	240	13.25		253.25	284
5150	4" x 4" section		29	.276		345	15.55		360.55	405
5300	Bronze, extruded, 1" x 2" section		31	.258		475	14.55		489.55	540
5350	2-1/2" x 2-1/2" section		34	.235		715	13.25		728.25	810
5450	Solid bar stock, 1/2" x 3" section		29	.276		940	15.55		955.55	1,050

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11 91 Religious Equipment

11 91 23 – Sanctuary Equipment

	11 91 23.10 Sanctuary Furnishings	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
5600	Fiberglass, stock	1 Carp	34	.235	L.F.	187	13.25		200.25	226
5700	Stainless steel, 4" deep, channel section		29	.276		760	15.55		775.55	860
5800	4" deep box section		29	.276		1,125	15.55		1,140.55	1,250

11 92 Agricultural Equipment

11 92 16 – Stock Feeders

11 92 16.16 Barns

0010	**BARNS**									
0015	Swine barn, farrowing pens and equipment	B-1	1000	.024	S.F.	13.65	1.11		14.76	16.70
0020	Gestation pens and equipment		800	.030		12	1.39		13.39	15.25
0030	Nursery pens and equipment		1150	.021		10.50	.97		11.47	13
0040	Finishing pens and equipment		1400	.017		8	.79		8.79	10
0120	Poultry barn, cages and equipment		700	.034		17.60	1.59		19.19	21.50
0220	Animal barn stall, feed and water equipment		1000	.024		15.65	1.11		16.76	18.85
0230	Manure floor scraper system		1500	.016		2.93	.74		3.67	4.32
0240	Below slab manure gutter and shuttle stroker		400	.060		10	2.78		12.78	15.15
0250	Exhaust system		1400	.017		1.21	.79		2	2.51
0260	Milking barn, milking equipment		220	.109		88	5.05		93.05	104
0270	Milk storage equipment		450	.053		26.50	2.47		28.97	32.50
0280	Sheep barn, equipment, sheep shear street gates		1000	.024		1,025	1.11		1,026.11	1,125
0290	Gate in frame		1000	.024		104	1.11		105.11	116
0295	Maternity fence with drinking trough		1000	.024		60.50	1.11		61.61	68
0300	Tobacco barn, fruit & tobacco auto. dryer machine/heat pump dryer	Q-20	2.90	6.897	Ea.	6,575	425		7,000	7,875
0310	Tobacco curing generator		4.90	4.082		4,625	253		4,878	5,450
0320	Automatic system controller		6.90	2.899		1,675	179		1,854	2,125
0330	Humidity & temp. transmitters for humidity measurement		6.90	2.899		930	179		1,109	1,300
0340	Handling system for leaf tobacco		5.90	3.390		580	210		790	955

11 97 Security Equipment

11 97 30 – Security Drawers

11 97 30.10 Pass Through Drawer

0010	**PASS THROUGH DRAWER**									
0100	Pass-thru drawer for personal items, 18" x 15" x 24"	1 Skwk	2	4	Ea.	2,750	236		2,986	3,375
0110	Including speakers	"	1.50	5.333	"	3,100	315		3,415	3,875

11 98 Detention Equipment

11 98 21 – Detention Windows

11 98 21.13 Visitor Cubicle Windows

0010	**VISITOR CUBICLE WINDOWS**									
4000	Visitor cubicle, vision panel, no intercom	E-4	2	16	Ea.	3,975	1,000	74	5,049	5,975

11 98 30 – Detention Cell Equipment

11 98 30.10 Cell Equipment

0010	**CELL EQUIPMENT**									
3000	Toilet apparatus including wash basin, average	L-8	1.50	13.333	Ea.	3,550	785		4,335	5,100

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Division Notes

	CREW	DAILY OUTPUT	LABOR-HOURS	UNIT	BARE COSTS MAT.	BARE COSTS LABOR	BARE COSTS EQUIP.	BARE COSTS TOTAL	TOTAL INCL O&P

Estimating Tips

General

- The items in this division are usually priced per square foot or each. Most of these items are purchased by the owner and installed by the contractor. Do not assume the items in Division 12 will be purchased and installed by the contractor. Check the specifications for responsibilities and include receiving, storage, installation, and mechanical and electrical hookups in the appropriate divisions.
- Some items in this division require some type of support system that is not usually furnished with the item. Examples of these systems include blocking for the attachment of casework and heavy drapery rods. The required blocking must be added to the estimate in the appropriate division.

Reference Numbers

Reference numbers are shown at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

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12 05 Common Work Results for Furnishings

12 05 05 – Selective Demolition for Furnishings

12 05 05.10 Selective Demolition, Interiors	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **SELECTIVE DEMOLITION, INTERIORS**									
1100 Casework, wood base cabinets	2 Clab	24	.667	L.F.		30.50		30.50	45.50
1200 Countertop		96	.167			7.60		7.60	11.30
3100 Casework, metal base cabinets		20	.800			36.50		36.50	54.50
3110 Cabinet base trim		400	.040			1.82		1.82	2.72
3120 Countertop, stainless steel or acid proof		80	.200			9.10		9.10	13.60
3122 custom	1 Carp	48	.167	S.F.		9.40		9.40	13.95
3125 Ceramic tile	1 Clab	120	.067	"		3.04		3.04	4.53
3127 Trim	1 Tilf	72	.111	L.F.		5.90		5.90	8.65
3130 Wall cabinets, wood, 84" high	2 Clab	30	.533			24.50		24.50	36
3500 Laboratory casework, tall storage cabinets, 84" high		40	.400			18.25		18.25	27
3510 Wall cabinets, metal		40	.400			18.25		18.25	27
4830 Floor mats, recessed or link mats	1 Clab	300	.027	S.F.		1.22		1.22	1.81
4832 Skate lock tile		200	.040			1.82		1.82	2.72
4834 Duckboard		300	.027			1.22		1.22	1.81
4920 Blinds, interior, horizontal or vertical		150	.053	L.F.		2.43		2.43	3.62
4922 Wood folding panels		35	.229	Pr.		10.40		10.40	15.50
4924 Shades, interior		700	.011	S.F.		.52		.52	.78
4930 Drapery hardware, traverse rods		35	.229	Ea.		10.40		10.40	15.50
4950 Blast curtains, including hardware		25	.320			14.60		14.60	21.50
5200 Fixed seating, per seat	2 Carp	44	.364			20.50		20.50	30.50
6400 Booth, restaurant	2 Clab	80	.200	L.F.		9.10		9.10	13.60
7400 Office systems, furniture, cubicle	"	3000	.005	S.F.		.24		.24	.36

12 21 Window Blinds

12 21 13 – Horizontal Louver Blinds

12 21 13.13 Metal Horizontal Louver Blinds

0010 **METAL HORIZONTAL LOUVER BLINDS**									
0020 Horizontal, 1" aluminum slats, solid color, stock	1 Carp	590	.014	S.F.	5.25	.76		6.01	6.95
0250 2" aluminum slats, solid color, stock	"	590	.014	"	6.70	.76		7.46	8.55

12 21 13.33 Vinyl Horizontal Louver Blinds

0010 **VINYL HORIZONTAL LOUVER BLINDS**									
0100 2" composite, 48" wide, 48" high	1 Carp	30	.267	Ea.	119	15		134	154
0120 72" high		29	.276		161	15.55		176.55	200
0140 96" high		28	.286		219	16.10		235.10	265
0200 60" wide, 60" high		27	.296		246	16.70		262.70	295
0220 72" high		25	.320		283	18		301	335
0240 96" high		24	.333		425	18.75		443.75	495
0300 72" wide, 72" high		25	.320		355	18		373	415
0320 96" high		23	.348		485	19.60		504.60	565
0400 96" wide, 96" high		20	.400		615	22.50		637.50	710
1000 2" faux wood, 48" wide, 48" high		30	.267		80.50	15		95.50	111
1020 72" high		29	.276		104	15.55		119.55	138
1040 96" high		28	.286		124	16.10		140.10	161
1300 72" wide, 72" high		25	.320		222	18		240	271
1320 96" high		23	.348		330	19.60		349.60	395
1400 96" wide, 96" high		20	.400		335	22.50		357.50	405

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12 21 Window Blinds

12 21 16 – Vertical Louver Blinds

12 21 16.13 Metal Vertical Louver Blinds	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **METAL VERTICAL LOUVER BLINDS**									
1500 Vertical, 3" PVC strips, minimum	1 Carp	460	.017	S.F.	.15	.98		1.13	1.63
1600 Maximum		400	.020		5.25	1.13		6.38	7.50
1800 4" aluminum slats, minimum		460	.017		10.05	.98		11.03	12.50
1900 Maximum		400	.020		19	1.13		20.13	22.50

12 22 Curtains and Drapes

12 22 16 – Drapery Track and Accessories

12 22 16.10 Drapery Hardware	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **DRAPERY HARDWARE**									
0030 Standard traverse, per foot, minimum	1 Carp	59	.136	L.F.	8.75	7.65		16.40	21
0100 Maximum		51	.157	"	17.50	8.85		26.35	32.50
4000 Traverse rods, adjustable, 28" to 48"		22	.364	Ea.	70	20.50		90.50	108
4020 48" to 84"		20	.400		89	22.50		111.50	132
4040 66" to 120"		18	.444		108	25		133	156
4060 84" to 156"		16	.500		122	28		150	177
4080 100" to 180"		14	.571		143	32		175	205
4090 156" to 228"		13	.615		171	34.50		205.50	241
4100 228" to 312"		13	.615		198	34.50		232.50	270
4200 Double rods, adjustable, 30" to 48"		9	.889		50	50		100	130
4220 48" to 86"		9	.889		69.50	50		119.50	151
4240 86" to 150"		8	1		77	56.50		133.50	169
4260 100" to 180"		7	1.143		81	64.50		145.50	185
4300 Curtain rod & brackets, adjustable, 30" to 48"		9	.889		18	50		68	94.50
4320 48" to 86"		9	.889		25.50	50		75.50	103
4340 86" to 150"		8	1		31.50	56.50		88	119
4360 100" to 180"		7	1.143		39	64.50		103.50	139
4600 Valance, pinch pleated fabric, 12" deep, up to 54" long, minimum				Ea.	49			49	54
4610 Maximum					122			122	134
4620 Up to 77" long, minimum					85			85	93.50
4630 Maximum					197			197	216
5000 Stationary rods, first 2'					8.20			8.20	9
5020 Each additional foot, add				L.F.	5.10			5.10	5.60

12 22 16.20 Blast Curtains	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **BLAST CURTAINS** per L.F. horizontal opening width, off-white or gray fabric									
0100 Blast curtains, drapery system, complete, including hardware, minimum	1 Carp	10.25	.780	L.F.	330	44		374	430
0120 Average		10.25	.780		295	44		339	390
0140 Maximum		10.25	.780		315	44		359	415

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12 23 Interior Shutters

12 23 13 – Wood Interior Shutters

12 23 13.10 Wood Interior Shutters	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **WOOD INTERIOR SHUTTERS**, louvered									
0200 Two panel, 27" wide, 36" high	1 Carp	5	1.600	Set	212	90		302	370
0300 33" wide, 36" high		5	1.600		274	90		364	435
0500 47" wide, 36" high		5	1.600		365	90		455	540
1000 Four panel, 27" wide, 36" high		5	1.600		282	90		372	445
1100 33" wide, 36" high		5	1.600		360	90		450	530
1300 47" wide, 36" high		5	1.600		480	90		570	665
1400 Plantation shutters, 16" x 48"		5	1.600	Ea.	198	90		288	350
1450 16" x 96"		4	2		325	113		438	525
1460 36" x 96"		3	2.667		715	150		865	1,000
12 23 13.13 Wood Panels									
0010 **WOOD PANELS**									
3000 Wood folding panels with movable louvers, 7" x 20" each	1 Carp	17	.471	Pr.	93.50	26.50		120	143
3300 8" x 28" each		17	.471		93.50	26.50		120	143
3450 9" x 36" each		17	.471		108	26.50		134.50	158
3600 10" x 40" each		17	.471		117	26.50		143.50	169
4000 Fixed louver type, stock units, 8" x 20" each		17	.471		123	26.50		149.50	175
4150 10" x 28" each		17	.471		104	26.50		130.50	155
4300 12" x 36" each		17	.471		123	26.50		149.50	175
4450 18" x 40" each		17	.471		176	26.50		202.50	234
5000 Insert panel type, stock, 7" x 20" each		17	.471		28	26.50		54.50	70.50
5150 8" x 28" each		17	.471		51	26.50		77.50	96
5300 9" x 36" each		17	.471		65	26.50		91.50	111
5450 10" x 40" each		17	.471		69.50	26.50		96	116
5600 Raised panel type, stock, 10" x 24" each		17	.471		117	26.50		143.50	169
5650 12" x 26" each		17	.471		117	26.50		143.50	169
5700 14" x 30" each	1 Carp	17	.471	Pr.	129	26.50		155.50	182
5750 16" x 36" each	"	17	.471		143	26.50		169.50	197
6000 For custom built pine, add					22%				
6500 For custom built hardwood blinds, add					42%				

12 24 Window Shades

12 24 13 – Roller Window Shades

12 24 13.10 Shades	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **SHADES**									
0020 Basswood, roll-up, stain finish, 3/8" slats	1 Carp	300	.027	S.F.	25	1.50		26.50	29.50
0200 7/8" slats		300	.027		61	1.50		62.50	69.50
0300 Vertical side slide, stain finish, 3/8" slats		300	.027		27.50	1.50		29	32
0400 7/8" slats		300	.027		29	1.50		30.50	33.50
0500 For fire retardant finishes, add					16%				
0600 For "B" rated finishes, add					20%				
0900 Mylar, single layer, non-heat reflective	1 Carp	685	.012		5.90	.66		6.56	7.50
0910 Mylar, single layer, heat reflective		685	.012		4.52	.66		5.18	5.95
1000 Double layered, heat reflective		685	.012		7.50	.66		8.16	9.25
1100 Triple layered, heat reflective		685	.012		11.30	.66		11.96	13.40
1200 For metal roller instead of wood, add per				Shade	7.55			7.55	8.30
1300 Vinyl coated cotton, standard	1 Carp	685	.012	S.F.	4.97	.66		5.63	6.45
1400 Lightproof decorator shades		685	.012		10.95	.66		11.61	13.05
1500 Vinyl, lightweight, 4 ga.		685	.012		1.06	.66		1.72	2.15
1600 Heavyweight, 6 ga.		685	.012		3.31	.66		3.97	4.62
1700 Vinyl laminated fiberglass, 6 ga., translucent		685	.012		6.40	.66		7.06	8.05

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12 24 Window Shades

12 24 13 – Roller Window Shades

12 24 13.10 Shades	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1800 Lightproof	1 Carp	685	.012	S.F.	6.95	.66		7.61	8.65
2000 Polyester, room darkening, with continuous cord, GEI									
2010 36" x 72"	1 Carp	38	.211	Ea.	242	11.85		253.85	284
2020 48" x 72"		28	.286		315	16.10		331.10	375
2030 60" x 72"		23	.348		425	19.60		444.60	500
2040 72" x 72"		19	.421		450	23.50		473.50	530
6011 Solar screening, fiberglass G		85	.094	S.F.	8.90	5.30		14.20	17.70

12 32 Manufactured Wood Casework

12 32 23 – Hardwood Casework

12 32 23.10 Manufactured Wood Casework, Stock Units

0010	**MANUFACTURED WOOD CASEWORK, STOCK UNITS**								
0300	Built-in drawer units, pine, 18" deep, 32" high, unfinished								
0400	Minimum	2 Carp	53	.302	L.F.	139	17	156	179
0500	Maximum	"	40	.400	"	164	22.50	186.50	215
0700	Kitchen base cabinets, hardwood, not incl. counter tops,								
0710	24" deep, 35" high, prefinished								
0800	One top drawer, one door below, 12" wide	2 Carp	24.80	.645	Ea.	390	36.50	426.50	480
0840	18" wide		23.30	.687		415	38.50	453.50	515
0880	24" wide		22.30	.717		470	40.50	510.50	575
1000	Four drawers, 12" wide		24.80	.645		735	36.50	771.50	865
1040	18" wide		23.30	.687		770	38.50	808.50	910
1060	24" wide		22.30	.717		815	40.50	855.50	955
1200	Two top drawers, two doors below, 27" wide		22	.727		480	41	521	590
1260	36" wide		20.30	.788		540	44.50	584.50	660
1300	48" wide		18.90	.847		680	47.50	727.50	820
1500	Range or sink base, two doors below, 30" wide		21.40	.748		365	42	407	470
1540	36" wide		20.30	.788		405	44.50	449.50	510
1580	48" wide		18.90	.847		445	47.50	492.50	560
1800	For sink front units, deduct					177		177	195
2000	Corner base cabinets, 36" wide, standard	2 Carp	18	.889		385	50	435	500
2100	Lazy Susan with revolving door	"	16.50	.970		510	54.50	564.50	640
4000	Kitchen wall cabinets, hardwood, 12" deep with two doors								
4050	12" high, 30" wide	2 Carp	24.80	.645	Ea.	222	36.50	258.50	298
4400	15" high, 30" wide		24	.667		330	37.50	367.50	415
4440	36" wide		22.70	.705		155	39.50	194.50	230
4700	24" high, 30" wide		23.30	.687		166	38.50	204.50	241
4720	36" wide		22.70	.705		475	39.50	514.50	585
5000	30" high, one door, 12" wide		22	.727		108	41	149	180
5040	18" wide		20.90	.766		270	43	313	360
5060	24" wide		20.30	.788		315	44.50	359.50	410
5300	Two doors, 27" wide		19.80	.808		181	45.50	226.50	268
5340	36" wide		18.80	.851		385	48	433	495
5380	48" wide		18.40	.870		780	49	829	930
6000	Corner wall, 30" high, 24" wide		18	.889		201	50	251	296
6050	30" wide		17.20	.930		530	52.50	582.50	660
6100	36" wide		16.50	.970		470	54.50	524.50	595
6500	Revolving Lazy Susan		15.20	1.053		146	59.50	205.50	249
7000	Broom cabinet, 84" high, 24" deep, 18" wide		10	1.600		815	90	905	1,025
7500	Oven cabinets, 84" high, 24" deep, 27" wide		8	2		1,050	113	1,163	1,325
7750	Valance board trim		396	.040	L.F.	24.50	2.27	26.77	30.50

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12 32 Manufactured Wood Casework

12 32 23 – Hardwood Casework

	12 32 23.10 Manufactured Wood Casework, Stock Units	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
7780	Toe kick trim	1 Carp	256	.031	L.F.	3.78	1.76		5.54	6.80
7790	Base cabinet corner filler	1 Carp	16	.500	Ea.	53	28		81	100
7800	Cabinet filler, 3" x 24"		20	.400		20.50	22.50		43	56
7810	3" x 30"		20	.400		25.50	22.50		48	61.50
7820	3" x 42"		18	.444		36	25		61	76.50
7830	3" x 80"		16	.500		68.50	28		96.50	117
7850	Cabinet panel		50	.160	S.F.	12	9		21	26.50
9000	For deluxe models of all cabinets, add					40%				
9500	For custom built in place, add					25%	10%			
9558	Rule of thumb, kitchen cabinets not including									
9560	appliances & counter top, minimum	2 Carp	30	.533	L.F.	208	30		238	274
9600	Maximum	"	25	.640	"	460	36		496	565
9610	For metal cabinets, see Section 12 35 70.13									
	12 32 23.30 Manufactured Wood Casework Vanities									
0010	**MANUFACTURED WOOD CASEWORK VANITIES**									
8000	Vanity bases, 2 doors, 30" high, 21" deep, 24" wide	2 Carp	20	.800	Ea.	455	45		500	565
8050	30" wide		16	1		480	56.50		536.50	610
8100	36" wide		13.33	1.200		405	67.50		472.50	545
8150	48" wide		11.43	1.400		530	79		609	695
9000	For deluxe models of all vanities, add to above					40%				
9500	For custom built in place, add to above					25%	10%			
	12 32 23.35 Manufactured Wood Casework Hardware									
0010	**MANUFACTURED WOOD CASEWORK HARDWARE**									
1000	Catches, minimum	1 Carp	235	.034	Ea.	1.63	1.92		3.55	4.64
1040	Maximum	"	80	.100	"	9.40	5.65		15.05	18.75
2000	Door/drawer pulls, handles									
2200	Handles and pulls, projecting, metal, minimum	1 Carp	48	.167	Ea.	1.13	9.40		10.53	15.20
2240	Maximum		36	.222		12	12.50		24.50	32
2300	Wood, minimum		48	.167		6.05	9.40		15.45	20.50
2340	Maximum		36	.222		11.20	12.50		23.70	31
2400	Drawer pulls, antimicrobial copper alloy finish		50	.160		13.75	9		22.75	28.50
2600	Flush, metal, minimum		48	.167		6.05	9.40		15.45	20.50
2640	Maximum		36	.222		11.35	12.50		23.85	31
2900	Drawer knobs, antimicrobial copper alloy finish		50	.160		7.85	9		16.85	22
3000	Drawer tracks/glides, minimum		48	.167	Pr.	10.10	9.40		19.50	25
3040	Maximum		24	.333		29.50	18.75		48.25	60
4000	Cabinet hinges, minimum		160	.050		1.48	2.82		4.30	5.80
4040	Maximum		68	.118		10.60	6.60		17.20	21.50
7000	Appliance pulls, antimicrobial copper alloy finish		50	.160	L.F.	77	9		86	98.50

12 35 Specialty Casework

12 35 39 – Commercial Kitchen Casework

	12 35 39.13 Metal Kitchen Casework									
0010	**METAL KITCHEN CASEWORK**									
3500	Base cabinets, metal, minimum	2 Carp	30	.533	L.F.	108	30		138	163
3600	Maximum		25	.640		273	36		309	355
3700	Wall cabinets, metal, minimum		30	.533		108	30		138	163
3800	Maximum		25	.640		247	36		283	325

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12 35 50 – Educational/Library Casework

	12 35 50.13 Educational Casework	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**EDUCATIONAL CASEWORK**									
5000	School, 24" deep, metal, 84" high units	2 Carp	15	1.067	L.F.	620	60		680	775
5150	Counter height units		20	.800		1,200	45		1,245	1,400
5450	Wood, custom fabricated, 32" high counter		20	.800		275	45		320	365
5600	Add for counter top		56	.286		29	16.10		45.10	56
5800	84" high wall units		15	1.067		680	60		740	835
6000	Laminated plastic finish is same price as wood									

12 35 53 – Laboratory Casework

12 35 53.13 Metal Laboratory Casework

0010	**METAL LABORATORY CASEWORK**									
0020	Cabinets, base, door units, metal	2 Carp	18	.889	L.F.	2,375	50		2,425	2,675
0300	Drawer units		18	.889		1,675	50		1,725	1,900
0700	Tall storage cabinets, open, 7' high		20	.800		284	45		329	375
0900	With glazed doors		20	.800		730	45		775	865
1300	Wall cabinets, metal, 12-1/2" deep, open		20	.800		151	45		196	233
1500	With doors		20	.800		296	45		341	390
6300	Rule of thumb: lab furniture including installation & connection									

12 35 59 – Display Casework

12 35 59.10 Display Cases

0010	**DISPLAY CASES** Free standing, all glass									
0020	Aluminum frame, 42" high x 36" wide x 12" deep	2 Carp	8	2	Ea.	208	113		321	395
0100	70" high x 48" wide x 18" deep	"	6	2.667		1,325	150		1,475	1,675
0500	For wood bases, add					9%				
0600	For hardwood frames, deduct					8%				
0700	For bronze, baked enamel finish, add					10%				
2000	Wall mounted, glass front, aluminum frame									
2010	Non-illuminated, one section 3' x 4' x 1'-4"	2 Carp	5	3.200	Ea.	1,600	180		1,780	2,025
2100	5' x 4' x 1'-4"		5	3.200		1,475	180		1,655	1,900
2200	6' x 4' x 1'-4"		4	4		4,000	225		4,225	4,725
2500	Two sections, 8' x 4' x 1'-4"		2	8		3,000	450		3,450	3,975
2600	10' x 4' x 1'-4"		2	8		6,050	450		6,500	7,350
3000	Three sections, 16' x 4' x 1'-4"		1.50	10.667		5,350	600		5,950	6,775
3500	For fluorescent lights, add				Section	1,225			1,225	1,325
4000	Table exhibit cases, 2' wide, 3' high, 4' long, flat top	2 Carp	5	3.200	Ea.	1,225	180		1,405	1,625
4100	3' wide, 3' high, 4' long, sloping top	"	3	5.333	"	885	300		1,185	1,425

12 35 70 – Healthcare Casework

12 35 70.13 Hospital Casework

0010	**HOSPITAL CASEWORK**									
0500	Base cabinets, laminated plastic	2 Carp	10	1.600	L.F.	400	90		490	575
1000	Stainless steel	"	10	1.600		735	90		825	945
1200	For all drawers, add					41.50			41.50	46
1300	Cabinet base trim, 4" high, enameled steel	2 Carp	200	.080		67	4.50		71.50	80
1400	Stainless steel		200	.080		134	4.50		138.50	154
1450	Countertop, laminated plastic, no backsplash		40	.400		59.50	22.50		82	99
1650	With backsplash		40	.400		74	22.50		96.50	115
1800	For sink cutout, add		12.20	1.311	Ea.		74		74	110
1900	Stainless steel counter top		40	.400	L.F.	193	22.50		215.50	246
2000	For drop-in stainless 43" x 21" sink, add				Ea.	1,475			1,475	1,600
2050	Laminate with antimicrobial finish #4	2 Carp	40	.400	L.F.	39	22.50		61.50	76.50
2500	Wall cabinets, laminated plastic		15	1.067		299	60		359	420

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12 35 Specialty Casework

12 35 70 – Healthcare Casework

	12 35 70.13 Hospital Casework	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2600	Enameled steel	2 Carp	15	1.067	L.F.	365	60		425	495
2700	Stainless steel		15	1.067		730	60		790	895
3000	Hospital cabinets, stainless steel with glass door(s), lockable									
3010	One door, 24" W x 18" D x 60" H	2 Clab	18	.889	Ea.	3,400	40.50		3,440.50	3,800
3020	Two doors, 36" W x 18" D x 60" H		15	1.067		3,925	48.50		3,973.50	4,375
3030	36" W x 24" D x 67" H		15	1.067		5,025	48.50		5,073.50	5,625
3040	48" W x 24" D x 66" H		12	1.333		6,250	61		6,311	6,975
3050	48" W x 24" D x 72" H		12	1.333		5,125	61		5,186	5,725
3060	60" W x 24" D x 72" H		9	1.778		7,750	81		7,831	8,650
	12 35 70.16 Nurse Station Casework									
0010	**NURSE STATION CASEWORK**									
2100	Door type, laminated plastic	2 Carp	10	1.600	L.F.	460	90		550	645
2200	Enameled steel		10	1.600		440	90		530	620
2300	Stainless steel		10	1.600		885	90		975	1,100
2400	For drawer type, add					375			375	415

12 36 Countertops

12 36 16 – Metal Countertops

	12 36 16.10 Stainless Steel Countertops									
0010	**STAINLESS STEEL COUNTERTOPS**									
3200	Stainless steel, custom	1 Carp	24	.333	S.F.	200	18.75		218.75	248
3210	Stainless steel	1 Carp	12	.667	L.F.	400	37.50		437.50	495

12 36 19 – Wood Countertops

	12 36 19.10 Maple Countertops									
0010	**MAPLE COUNTERTOPS**									
2900	Solid, laminated, 1-1/2" thick, no splash	1 Carp	28	.286	L.F.	93.50	16.10		109.60	127
3000	With square splash		28	.286	"	111	16.10		127.10	146
3400	Recessed cutting block with trim, 16" x 20" x 1"		8	1	Ea.	144	56.50		200.50	242

12 36 23 – Plastic Countertops

	12 36 23.13 Plastic-Laminate-Clad Countertops									
0010	**PLASTIC-LAMINATE-CLAD COUNTERTOPS**									
0020	Stock, 24" wide w/backsplash, minimum	1 Carp	30	.267	L.F.	17.65	15		32.65	42
0100	Maximum		25	.320		42.50	18		60.50	74
0300	Custom plastic, 7/8" thick, aluminum molding, no splash		30	.267		39	15		54	65.50
0400	Cove splash		30	.267		50	15		65	77.50
0600	1-1/4" thick, no splash		28	.286		43	16.10		59.10	71.50
0700	Square splash		28	.286		47.50	16.10		63.60	76.50
0900	Square edge, plastic face, 7/8" thick, no splash		30	.267		37	15		52	63.50
1000	With splash		30	.267		57.50	15		72.50	85.50
1200	For stainless channel edge, 7/8" thick, add					4.06			4.06	4.47
1300	1-1/4" thick, add					4.66			4.66	5.15
1500	For solid color suede finish, add					6.10			6.10	6.70
1700	For end splash, add				Ea.	28			28	30.50
1900	For cut outs, standard, add, minimum	1 Carp	32	.250		17.75	14.10		31.85	40.50
2000	Maximum		8	1		9.20	56.50		65.70	94
2100	Postformed, including backsplash and front edge		30	.267	L.F.	13.30	15		28.30	37
2110	Mitred, add		12	.667	Ea.		37.50		37.50	56
2200	Built-in place, 25" wide, plastic laminate		25	.320	L.F.	70	18		88	104

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12 36 Countertops

12 36 33 – Tile Countertops

12 36 33.10 Ceramic Tile Countertops	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **CERAMIC TILE COUNTERTOPS**									
2300 Ceramic tile mosaic	1 Carp	25	.320	L.F.	47	18		65	78.50

12 36 40 – Stone Countertops

12 36 40.10 Natural Stone Countertops

0010 **NATURAL STONE COUNTERTOPS**									
2500 Marble, stock, with splash, 1/2" thick, minimum	1 Bric	17	.471	L.F.	56	26		82	101
2700 3/4" thick, maximum		13	.615		137	34		171	201
2800 Granite, average, 1-1/4" thick, 24" wide, no splash		13.01	.615		179	34		213	248

12 36 53 – Laboratory Countertops

12 36 53.10 Laboratory Countertops and Sinks

0010 **LABORATORY COUNTERTOPS AND SINKS**									
0020 Countertops, epoxy resin, not incl. base cabinets, acid-proof, minimum	2 Carp	82	.195	S.F.	97	11		108	123
0030 Maximum		70	.229		550	12.85		562.85	625
0040 Stainless steel		82	.195		53	11		64	75

12 36 61 – Simulated Stone Countertops

12 36 61.16 Solid Surface Countertops

0010 **SOLID SURFACE COUNTERTOPS**, Acrylic polymer									
0020 Pricing for orders of 100 L.F. or greater									
0100 25" wide, solid colors	2 Carp	28	.571	L.F.	58.50	32		90.50	113
0200 Patterned colors		28	.571		74.50	32		106.50	130
0300 Premium patterned colors		28	.571		99	32		131	157
0400 With silicone attached 4" backsplash, solid colors		27	.593		68.50	33.50		102	125
0500 Patterned colors		27	.593		87	33.50		120.50	145
0600 Premium patterned colors		27	.593		108	33.50		141.50	169
0700 With hard seam attached 4" backsplash, solid colors		23	.696		68.50	39		107.50	134
0800 Patterned colors		23	.696		87	39		126	154
0900 Premium patterned colors		23	.696		108	39		147	178
1000 Pricing for order of 51-99 L.F.									
1100 25" wide, solid colors	2 Carp	24	.667	L.F.	67	37.50		104.50	130
1200 Patterned colors		24	.667		85.50	37.50		123	150
1300 Premium patterned colors		24	.667		114	37.50		151.50	181
1400 With silicone attached 4" backsplash, solid colors		23	.696		79	39		118	145
1500 Patterned colors		23	.696		100	39		139	169
1600 Premium patterned colors		23	.696		125	39		164	196
1700 With hard seam attached 4" backsplash, solid colors		20	.800		79	45		124	154
1800 Patterned colors		20	.800		100	45		145	177
1900 Premium patterned colors		20	.800		125	45		170	204
2000 Pricing for order of 1-50 L.F.									
2100 25" wide, solid colors	2 Carp	20	.800	L.F.	79	45		124	154
2200 Patterned colors		20	.800		100	45		145	177
2300 Premium patterned colors		20	.800		134	45		179	214
2400 With silicone attached 4" backsplash, solid colors		19	.842		92.50	47.50		140	173
2500 Patterned colors		19	.842		117	47.50		164.50	200
2600 Premium patterned colors		19	.842		146	47.50		193.50	232
2700 With hard seam attached 4" backsplash, solid colors		15	1.067		92.50	60		152.50	192
2800 Patterned colors		15	1.067		117	60		177	219
2900 Premium patterned colors		15	1.067		146	60		206	251
3000 Sinks, pricing for order of 100 or greater units									
3100 Single bowl, hard seamed, solid colors, 13" x 17"	1 Carp	3	2.667	Ea.	420	150		570	690
3200 10" x 15"		7	1.143		195	64.50		259.50	310

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

12 36 Countertops

12 36 61 – Simulated Stone Countertops

	12 36 61.16 Solid Surface Countertops	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
3300	Cutouts for sinks	1 Carp	8	1	Ea.		56.50		56.50	84
3400	Sinks, pricing for order of 51-99 units									
3500	Single bowl, hard seamed, solid colors, 13" x 17"	1 Carp	2.55	3.137	Ea.	485	177		662	800
3600	10" x 15"		6	1.333		224	75		299	360
3700	Cutouts for sinks		7	1.143			64.50		64.50	96
3800	Sinks, pricing for order of 1-50 units									
3900	Single bowl, hard seamed, solid colors, 13" x 17"	1 Carp	2	4	Ea.	570	225		795	960
4000	10" x 15"		4.55	1.758		263	99		362	435
4100	Cutouts for sinks		5.25	1.524			86		86	128
4200	Cooktop cutouts, pricing for 100 or greater units		4	2		28.50	113		141.50	200
4300	51-99 units		3.40	2.353		33	132		165	233
4400	1-50 units		3	2.667		38.50	150		188.50	266

12 36 61.17 Solid Surface Vanity Tops

0010	**SOLID SURFACE VANITY TOPS**									
0015	Solid surface, center bowl, 17" x 19"	1 Carp	12	.667	Ea.	300	37.50		337.50	385
0020	19" x 25"		12	.667		305	37.50		342.50	395
0030	19" x 31"		12	.667		360	37.50		397.50	450
0040	19" x 37"		12	.667		420	37.50		457.50	515
0050	22" x 25"		10	.800		305	45		350	405
0060	22" x 31"		10	.800		360	45		405	460
0070	22" x 37"		10	.800		420	45		465	525
0080	22" x 43"		10	.800		475	45		520	590
0090	22" x 49"		10	.800		530	45		575	645
0110	22" x 55"		8	1		600	56.50		656.50	745
0120	22" x 61"		8	1		685	56.50		741.50	835
0220	Double bowl, 22" x 61"		8	1		775	56.50		831.50	935
0230	Double bowl, 22" x 73"		8	1		1,500	56.50		1,556.50	1,725
0240	For aggregate colors, add					35%				
0250	For faucets and fittings, see Section 22 41 39.10									

12 36 61.19 Quartz Agglomerate Countertops

0010	**QUARTZ AGGLOMERATE COUNTERTOPS**									
0100	25" wide, 4" backsplash, color group A, minimum	2 Carp	15	1.067	L.F.	64	60		124	160
0110	Maximum		15	1.067		105	60		165	206
0120	Color group B, minimum		15	1.067		74.50	60		134.50	172
0130	Maximum		15	1.067		118	60		178	220
0140	Color group C, minimum		15	1.067		93	60		153	192
0150	Maximum		15	1.067		167	60		227	273
0160	Color group D, minimum	2 Carp	15	1.067	L.F.	99.50	60		159.50	199
0170	Maximum	"	15	1.067	"	128	60		188	231

12 46 Furnishing Accessories

12 46 13 – Ash Receptacles

12 46 13.10 Ash/Trash Receivers

0010	**ASH/TRASH RECEIVERS**									
1000	Ash urn, cylindrical metal									
1020	8" diameter, 20" high	1 Clab	60	.133	Ea.	56	6.10		62.10	70.50
1060	10" diameter, 26" high	"	60	.133	"	45	6.10		51.10	58
2000	Combination ash/trash urn, metal									
2020	8" diameter, 20" high	1 Clab	60	.133	Ea.	113	6.10		119.10	133
2050	10" diameter, 26" high	"	60	.133	"	90.50	6.10		96.60	109

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12 46 Furnishing Accessories

12 46 19 – Clocks

12 46 19.50 Wall Clocks	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **WALL CLOCKS**									
0080 12" diameter, single face	1 Elec	8	1	Ea.	143	66		209	256
0100 Double face	"	6.20	1.290	"	143	85.50		228.50	285

12 46 33 – Waste Receptacles

12 46 33.13 Trash Receptacles

0010 **TRASH RECEPTACLES**									
4000 Trash receptacle, metal									
4020 8" diameter, 15" high	1 Clab	60	.133	Ea.	55.50	6.10		61.60	70.50
4040 10" diameter, 18" high		60	.133		104	6.10		110.10	124
5040 16" x 8" x 14" high		60	.133		30.50	6.10		36.60	43
5500 Plastic, with lid									
5520 35 gal.	1 Clab	60	.133	Ea.	174	6.10		180.10	200
5540 45 gal.		60	.133		280	6.10		286.10	320
5550 Plastic recycling barrel, w/lid & wheels, 32 gal. G		60	.133		70	6.10		76.10	86
5560 65 gal. G		60	.133		450	6.10		456.10	505
5570 95 gal. G		60	.133		840	6.10		846.10	935

12 48 Rugs and Mats

12 48 13 – Entrance Floor Mats and Frames

12 48 13.13 Entrance Floor Mats

0010 **ENTRANCE FLOOR MATS**									
0020 Recessed, black rubber, 3/8" thick, solid	1 Clab	155	.052	S.F.	3	2.35		5.35	6.80
0050 Perforated		155	.052		25.50	2.35		27.85	31.50
0100 1/2" thick, solid		155	.052		30.50	2.35		32.85	37.50
0150 Perforated		155	.052		10.35	2.35		12.70	14.85
0200 In colors, 3/8" thick, solid		155	.052		29	2.35		31.35	35.50
0250 Perforated		155	.052		27	2.35		29.35	33.50
0300 1/2" thick, solid		155	.052		43	2.35		45.35	50.50
0350 Perforated		155	.052		5.60	2.35		7.95	9.70
1225 Recessed, alum. rail, hinged mat, 7/16" thick									
1250 Carpet insert	1 Clab	360	.022	S.F.	75	1.01		76.01	84
1275 Vinyl insert		360	.022		75	1.01		76.01	84
1300 Abrasive insert		360	.022		75	1.01		76.01	84
1325 Recessed, vinyl rail, hinged mat, 7/16" thick									
1350 Carpet insert	1 Clab	360	.022	S.F.	83	1.01		84.01	93
1375 Vinyl insert		360	.022		83	1.01		84.01	93
1400 Abrasive insert		360	.022		83	1.01		84.01	93
2000 Recycled rubber tire tile, 12" x 12" x 3/8" thick G		125	.064		11.30	2.92		14.22	16.75
2510 Natural cocoa fiber, 1/2" thick G		125	.064		8.40	2.92		11.32	13.60
2520 3/4" thick G		125	.064		7.70	2.92		10.62	12.85
2530 1" thick G		125	.064		8.40	2.92		11.32	13.60
3000 Hospital tacky mats, package of 30 with frame				Ea.	76			76	83.50
3010 4 packages of 30				"	75			75	82.50

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12 51 Office Furniture

12 51 16 – Case Goods

12 51 16.13 Metal Case Goods	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **METAL CASE GOODS**									
0020 Desks, 29" high, double pedestal, 30" x 60", metal, minimum				Ea.	1,425			1,425	1,550
0030 Maximum					1,650			1,650	1,825
0600 Desks, single pedestal, 30" x 60", metal, minimum					1,025			1,025	1,125
0620 Maximum					630			630	690
0720 Desks, secretarial, 30" x 60", metal, minimum					530			530	585
0730 Maximum					590			590	650
0740 Return, 20" x 42", minimum					400			400	440
0750 Maximum					700			700	765
0940 59" x 12" x 23" high, steel, minimum					320			320	350
0960 Maximum					480			480	530
12 51 16.16 Wood Case Goods									
0010 **WOOD CASE GOODS**									
0150 Desk, 29" high, double pedestal, 30" x 60"									
0160 Wood, minimum				Ea.	830			830	910
0180 Maximum				"	1,250			1,250	1,375
0630 Single pedestal, 30" x 60"									
0640 Wood, minimum				Ea.	385			385	425
0650 Maximum					435			435	480
0670 Executive return, 24" x 42", with box, file, wood, minimum					435			435	480
0680 Maximum					1,000			1,000	1,100
0790 Desk, 29" high, secretarial, 30" x 60"									
0800 Wood, minimum				Ea.	435			435	480
0810 Maximum					530			530	585
0820 Return, 20" x 42", minimum					390			390	430
0830 Maximum					585			585	645
0900 Desktop organizer, 72" x 14" x 36" high, wood, minimum					142			142	157
0920 Maximum					430			430	470
1110 Furniture, credenza, 29" high, 18" to 22" x 60" to 72"									
1120 Wood, minimum				Ea.	845			845	930
1140 Maximum				"	845			845	930

12 51 23 – Office Tables

12 51 23.33 Conference Tables									
0010 **CONFERENCE TABLES**									
6050 Boat, 96" x 42", minimum				Ea.	1,300			1,300	1,425
6150 Maximum					2,250			2,250	2,450
6720 Rectangle, 96" x 42", minimum					1,275			1,275	1,400
6740 Maximum					1,850			1,850	2,025

12 52 Seating

12 52 23 – Office Seating

12 52 23.13 Office Chairs									
0010 **OFFICE CHAIRS**									
2000 Standard office chair, executive, minimum				Ea.	169			169	186
2150 Maximum					1,625			1,625	1,800
2200 Management, minimum					95			95	104
2250 Maximum					1,675			1,675	1,850
2280 Task, minimum					128			128	141
2290 Maximum					227			227	250
2300 Arm kit, minimum					34.50			34.50	38

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12 52 Seating

12 52 23 – Office Seating

12 52 23.13 Office Chairs	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2320 Maximum				Ea.	74.50			74.50	82

12 54 Hospitality Furniture

12 54 13 – Hotel and Motel Furniture

12 54 13.10 Hotel Furniture

0010	**HOTEL FURNITURE**								
0020	Standard quality set, minimum				Room	2,675		2,675	2,925
0200	Maximum				"	8,500		8,500	9,350

12 54 16 – Restaurant Furniture

12 54 16.10 Tables, Folding

0010	**TABLES, FOLDING** Laminated plastic tops								
1000	Tubular steel legs with glides								
1020	18" x 60", minimum				Ea.	157		157	172
1040	Maximum					249		249	274
1840	36" x 96", minimum					355		355	390
1860	Maximum					2,925		2,925	3,200
2000	Round, wood stained, plywood top, 60" diameter, minimum				Ea.	125		125	137
2020	Maximum				"	400		400	445

12 54 16.20 Furniture, Restaurant

0010	**FURNITURE, RESTAURANT**								
0020	Bars, built-in, front bar	1 Carp	5	1.600	L.F.	320	90	410	490
0200	Back bar	"	5	1.600	"	234	90	324	390
0300	Booth seating, see Section 12 54 16.70								
2000	Chair, bentwood side chair, metal, minimum				Ea.	113		113	124
2020	Maximum					132		132	146
2600	Upholstered seat & back, arms, minimum					182		182	200
2620	Maximum					555		555	610

12 54 16.70 Booths

0010	**BOOTHS**								
1000	Banquet, upholstered seat and back, custom								
1500	Straight, minimum	2 Carp	40	.400	L.F.	225	22.50	247.50	281
1520	Maximum		36	.444		1,325	25	1,350	1,475
1600	"L" or "U" shape, minimum		35	.457		229	25.50	254.50	291
1620	Maximum		30	.533		405	30	435	495
1800	Upholstered outside finished backs for								
1810	single booths and custom banquets								
1820	Minimum	2 Carp	44	.364	L.F.	31.50	20.50	52	65
1840	Maximum	"	40	.400	"	84.50	22.50	107	127
3000	Fixed seating, one piece plastic chair and								
3010	plastic laminate table top								
3100	Two seat, 24" x 24" table, minimum	F-7	30	1.067	Ea.	905	54.50	959.50	1,075
3120	Maximum		26	1.231		1,275	62.50	1,337.50	1,525
3200	Four seat, 24" x 48" table, minimum		28	1.143		895	58	953	1,075
3220	Maximum		24	1.333		1,525	68	1,593	1,775
5000	Mount in floor, wood fiber core with								
5010	plastic laminate face, single booth								
5050	24" wide	F-7	30	1.067	Ea.	345	54.50	399.50	460
5100	48" wide	"	28	1.143	"	440	58	498	570

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12 55 Detention Furniture

12 55 13 – Detention Bunks

12 55 13.13 Cots	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **COTS**									
2500 Bolted, single, painted steel	E-4	20	1.600	Ea.	355	100	7.40	462.40	550
2700 Stainless steel	"	20	1.600	"	1,025	100	7.40	1,132.40	1,275

12 56 Institutional Furniture

12 56 33 – Classroom Furniture

12 56 33.10 Furniture, School

0010 **FURNITURE, SCHOOL**									
1000 Chair, molded plastic									
1100 Integral tablet arm, minimum				Ea.	25.50			25.50	28
1150 Maximum					264			264	290
2000 Desk, single pedestal, top book compartment, minimum					50			50	55
2020 Maximum					149			149	164
2200 Flip top, minimum					172			172	189
2220 Maximum					169			169	186

12 56 43 – Dormitory Furniture

12 56 43.10 Dormitory Furnishings

0010 **DORMITORY FURNISHINGS**									
0300 Bunkable bed, twin, minimum				Ea.	410			410	455
0320 Maximum					475			475	520
1000 Chest, four drawer, minimum					400			400	440
1020 Maximum					805			805	890
1050 Built-in, minimum	2 Carp	13	1.231	L.F.	139	69.50		208.50	256
1150 Maximum		10	1.600		257	90		347	415
1200 Desk top, built-in, laminated plastic, 24" deep, minimum		50	.320		54	18		72	86.50
1300 Maximum		40	.400		162	22.50		184.50	212
1450 30" deep, minimum		50	.320		69	18		87	103
1550 Maximum		40	.400		300	22.50		322.50	365
1750 Dressing unit, built-in, minimum		12	1.333		209	75		284	340
1850 Maximum		8	2		625	113		738	860

12 56 51 – Library Furniture

12 56 51.10 Library Furnishings

0010 **LIBRARY FURNISHINGS**									
0100 Attendant desk, 36" x 62" x 29" high	1 Carp	16	.500	Ea.	2,375	28		2,403	2,650
0200 Book display, "A" frame display, both sides, 42" x 42" x 60" high		16	.500		1,125	28		1,153	1,300
0220 Table with bulletin board, 42" x 24" x 49" high		16	.500		825	28		853	945
0800 Card catalog, 30 tray unit		16	.500		3,800	28		3,828	4,225
0840 60 tray unit		16	.500		7,700	28		7,728	8,525
0880 72 tray unit	2 Carp	16	1		8,725	56.50		8,781.50	9,650
1000 Carrels, single face, initial unit	1 Carp	16	.500		1,050	28		1,078	1,225
1500 Double face, initial unit	2 Carp	16	1		1,650	56.50		1,706.50	1,900
1710 Carrels, hardwood, 36" x 24", minimum	1 Carp	5	1.600		570	90		660	765
1720 Maximum	"	4	2		1,950	113		2,063	2,300
2700 Card catalog file, 60 trays, complete					10,900			10,900	12,000
2720 Alternate method: each tray					182			182	200
3800 Charging desk, built-in, with counter, plastic laminated top	1 Carp	7	1.143	L.F.	540	64.50		604.50	690
4000 Dictionary stand, stationary	1 Carp	16	.500	Ea.	575	28		603	670
4020 Revolving		16	.500		299	28		327	370
4200 Exhibit case, table style, 60" x 28" x 36"		11	.727		2,925	41		2,966	3,275
6010 Bookshelf, metal, 90" high, 10" shelf, double face		11.50	.696	L.F.	213	39		252	294

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12 56 Institutional Furniture

12 56 51 – Library Furniture

12 56 51.10 Library Furnishings	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
6020 Single face	1 Carp	12	.667	L.F.	119	37.50		156.50	187
6050 For 8″ shelving, subtract from above					10%				
6060 For 12″ shelving, add to above					10%				
6070 For 42″ high with countertop, subtract from above					20%				
6100 Mobile compacted shelving, hand crank, 9′-0″ high									
6110 Double face, including track, 3′ section				Ea.	2,300			2,300	2,550
6150 For electrical operation, add					25%				
6200 Magazine shelving, 82″ high, 12″ deep, single face	1 Carp	11.50	.696	L.F.	203	39		242	282
6210 Double face	″	11.50	.696	″	275	39		314	360
7200 Reading table, laminated top, 60″ x 36″				Ea.	445			445	490

12 56 70 – Healthcare Furniture

12 56 70.10 Furniture, Hospital									
0010 **FURNITURE, HOSPITAL**									
0020 Beds, manual, minimum				Ea.	555			555	610
0100 Maximum					3,075			3,075	3,375
0600 All electric hospital beds, minimum					2,000			2,000	2,200
0700 Maximum					14,300			14,300	15,700
0900 Manual, nursing home beds, minimum					1,475			1,475	1,625
1000 Maximum					2,200			2,200	2,425
1020 Overbed table, laminated top, minimum					345			345	380
1040 Maximum					730			730	805
1100 Patient wall systems, not incl. plumbing, minimum				Room	1,375			1,375	1,500
1200 Maximum				″	2,475			2,475	2,725
2000 Geriatric chairs, minimum				Ea.	485			485	535
2020 Maximum				″	790			790	870

12 61 Fixed Audience Seating

12 61 13 – Upholstered Audience Seating

12 61 13.13 Auditorium Chairs									
0010 **AUDITORIUM CHAIRS**									
2000 All veneer construction	2 Carp	22	.727	Ea.	360	41		401	460
2200 Veneer back, padded seat		22	.727		320	41		361	410
2350 Fully upholstered, spring seat		22	.727		280	41		321	370
2450 For tablet arms, add					93.50			93.50	103
2500 For fire retardancy, CATB-133, add					31.50			31.50	34.50

12 61 13.23 Lecture Hall Seating									
0010 **LECTURE HALL SEATING**									
1000 Pedestal type, minimum	2 Carp	22	.727	Ea.	281	41		322	370
1200 Maximum	″	14.50	1.103	″	595	62		657	745

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12 63 Stadium and Arena Seating

12 63 13 – Stadium and Arena Bench Seating

12 63 13.13 Bleachers	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **BLEACHERS**									
3000 Telescoping, manual to 15 tier, minimum	F-5	65	.492	Seat	98	28		126	150
3100 Maximum		60	.533		211	30.50		241.50	277
3300 16 to 20 tier, minimum		60	.533		213	30.50		243.50	279
3400 Maximum		55	.582		415	33		448	510
3600 21 to 30 tier, minimum		50	.640		279	36.50		315.50	360
3700 Maximum		40	.800		445	45.50		490.50	560
3900 For integral power operation, add, minimum	2 Elec	300	.053		800	3.53		803.53	880
4000 Maximum	"	250	.064		1,475	4.24		1,479.24	1,625
5000 Benches, folding, in wall, 14′ table, 2 benches	L-4	2	12	Set	2,500	645		3,145	3,725

12 67 Pews and Benches

12 67 13 – Pews

12 67 13.13 Sanctuary Pews

0010 **SANCTUARY PEWS**									
1500 Bench type, hardwood, minimum	1 Carp	20	.400	L.F.	135	22.50		157.50	183
1550 Maximum	"	15	.533		650	30		680	760
1570 For kneeler, add					20.50			20.50	22.50

12 92 Interior Planters and Artificial Plants

12 92 33 – Interior Planters

12 92 33.10 Planters

0010 **PLANTERS**									
1000 Fiberglass, hanging, 12″ diameter, 7″ high				Ea.	71			71	78
1500 Rectangular, 48″ long, 16″ high, 15″ wide					350			350	385
1650 60″ long, 30″ high, 28″ wide					885			885	975
2000 Round, 12″ diameter, 13″ high					90			90	99
2050 25″ high					226			226	249
5000 Square, 10″ side, 20″ high					187			187	206
5100 14″ side, 15″ high					85			85	93.50
6000 Metal bowl, 32″ diameter, 8″ high, minimum					515			515	570
6050 Maximum					254			254	279
8750 Wood, fiberglass liner, square									
8780 14″ square, 15″ high, minimum				Ea.	385			385	420
8800 Maximum					470			470	520
9400 Plastic cylinder, molded, 10″ diameter, 10″ high					41.50			41.50	46
9500 11″ diameter, 11″ high				Ea.	79.50			79.50	87

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12 93 13 – Bicycle Racks

12 93 13.10 Bicycle Racks	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **BICYCLE RACKS**									
0020 Single side, grid, 1-5/8" OD stl. pipe, w/1/2" bars, galv, 5 bike cap	2 Clab	10	1.600	Ea.	345	73		418	490
0025 Powder coat finish		10	1.600		380	73		453	530
0030 Single side, grid, 1-5/8" OD stl. pipe, w/1/2" bars, galv, 9 bike cap		8	2		380	91		471	550
0035 Powder coat finish		8	2		600	91		691	795
0040 Single side, grid, 1-5/8" OD stl. pipe, w/1/2" bars, galv, 18 bike cap		4	4		710	182		892	1,050
0045 Powder coat finish		4	4		710	182		892	1,050
0050 S curve, 1-7/8" OD stl. pipe, 11 ga., galv, 5 bike cap		10	1.600		219	73		292	350
0055 Powder coat finish		10	1.600		187	73		260	315
0060 S curve, 1-7/8" OD stl. pipe, 11 ga., galv, 7 bike cap		9	1.778		330	81		411	485
0065 Powder coat finish		9	1.778		289	81		370	440
0070 S curve, 1-7/8" OD stl. pipe, 11 ga., galv, 9 bike cap		8	2		425	91		516	605
0075 Powder coat finish		8	2		340	91		431	510
0080 S curve, 1-7/8" OD stl. pipe, 11 ga., galv, 11 bike cap		6	2.667		540	122		662	775
0085 Powder coat finish		6	2.667		540	122		662	775

12 93 23 – Trash and Litter Receptacles

12 93 23.10 Trash Receptacles

	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **TRASH RECEPTACLES**									
0020 Fiberglass, 2' square, 18" high	2 Clab	30	.533	Ea.	750	24.50		774.50	860
0100 2' square, 2'-6" high		30	.533		1,075	24.50		1,099.50	1,200
0300 Circular, 2' diameter, 18" high		30	.533		750	24.50		774.50	860
0400 2' diameter, 2'-6" high		30	.533		700	24.50		724.50	805
0500 Recycled plastic, var colors, round, 32 gal., 28" x 38" high [G]		5	3.200		880	146		1,026	1,175
0510 32 gal., 31" x 32" high [G]		5	3.200		945	146		1,091	1,275
9110 Plastic, with dome lid, 32 gal. capacity		35	.457		70.50	21		91.50	109
9120 Recycled plastic slats, plastic dome lid, 32 gal. capacity		35	.457		350	21		371	415

12 93 23.20 Trash Closure

	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **TRASH CLOSURE**									
0020 Steel with pullover cover, 2'-3" wide, 4'-7" high, 6'-2" long	2 Clab	5	3.200	Ea.	2,425	146		2,571	2,900
0100 10'-1" long		4	4		3,400	182		3,582	4,025
0300 Wood, 10' wide, 6' high, 10' long		1.20	13.333		2,250	610		2,860	3,375

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Division Notes

	CREW	DAILY OUTPUT	LABOR-HOURS	UNIT	BARE COSTS MAT.	BARE COSTS LABOR	BARE COSTS EQUIP.	BARE COSTS TOTAL	TOTAL INCL O&P

Estimating Tips

General

- The items and systems in this division are usually estimated, purchased, supplied, and installed as a unit by one or more subcontractors. The estimator must ensure that all parties are operating from the same set of specifications and assumptions, and that all necessary items are estimated and will be provided. Many times the complex items and systems are covered, but the more common ones, such as excavation or a crane, are overlooked for the very reason that everyone assumes nobody could miss them. The estimator should be the central focus and be able to ensure that all systems are complete.
- It is important to consider factors such as site conditions, weather, shape and size of building, as well as labor availability as they may impact the overall cost of erecting special structures and systems included in this division.
- Another area where problems can develop in this division is at the interface between systems. The estimator must ensure, for instance, that anchor bolts, nuts, and washers are estimated and included for the air-supported structures and pre-engineered buildings to be bolted to their foundations. Utility supply is a common area where essential items or pieces of equipment can be missed or overlooked because each subcontractor may feel it is another's responsibility. The estimator should also be aware of certain items which may be supplied as part of a package but installed by others, and ensure that the installing contractor's estimate includes the cost of installation. Conversely, the estimator must also ensure that items are not costed by two different subcontractors, resulting in an inflated overall estimate.

13 30 00 Special Structures

- The foundations and floor slab, as well as rough mechanical and electrical, should be estimated, as this work is required for the assembly and erection of the structure. Generally, as noted in the data set, the pre-engineered building comes as a shell. Pricing is based on the size and structural design parameters stated in the reference section. Additional features, such as windows and doors with their related structural framing, must also be included by the estimator. Here again, the estimator must have a clear understanding of the scope of each portion of the work and all the necessary interfaces.

Reference Numbers

Reference numbers are shown at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear. ■

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13 05 05 – Selective Demolition for Special Construction

	13 05 05.10 Selective Demolition, Air Supported Structures		Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	**SELECTIVE DEMOLITION, AIR SUPPORTED STRUCTURES**										
0020	Tank covers, scrim, dbl. layer, vinyl poly w/hdwe., blower & controls										
0050	Round and rectangular	R024119-10	B-2	9000	.004	S.F.		.20		.20	.30
0100	Warehouse structures										
0120	Poly/vinyl fabric, 28 oz., incl. tension cables & inflation system		4 Clab	9000	.004	SF Flr.		.16		.16	.24
0150	Reinforced vinyl, 12 oz., 3,000 S.F.		"	5000	.006			.29		.29	.43
0200	12,000 to 24,000 S.F.		8 Clab	20000	.003			.15		.15	.22
0250	Tedlar vinyl fabric, 28 oz. w/liner, to 3,000 S.F.		4 Clab	5000	.006			.29		.29	.43
0300	12,000 to 24,000 S.F.		8 Clab	20000	.003			.15		.15	.22
0350	Greenhouse/shelter, woven polyethylene with liner										
0400	3,000 S.F.		4 Clab	5000	.006	SF Flr.		.29		.29	.43
0450	12,000 to 24,000 S.F.		8 Clab	20000	.003			.15		.15	.22
0500	Tennis/gymnasium, poly/vinyl fabric, 28 oz., incl. thermal liner		4 Clab	9000	.004			.16		.16	.24
0600	Stadium/convention center, teflon coated fiberglass, incl. thermal liner		9 Clab	40000	.002			.08		.08	.12
0700	Doors, air lock, 15′ long, 10′ x 10′		2 Carp	1.50	10.667	Ea.		600		600	895
0720	15′ x 15′			.80	20			1,125		1,125	1,675
0750	Revolving personnel door, 6′ diam. x 6′-6″ high			1.50	10.667			600		600	895
	13 05 05.20 Selective Demolition, Garden Houses										
0010	**SELECTIVE DEMOLITION, GARDEN HOUSES**	R024119-10									
0020	Prefab, wood, excl. foundation, average		2 Clab	400	.040	SF Flr.		1.82		1.82	2.72
	13 05 05.25 Selective Demolition, Geodesic Domes										
0010	**SELECTIVE DEMOLITION, GEODESIC DOMES**										
0050	Shell only, interlocking plywood panels, 30′ diameter		F-5	3.20	10	Ea.		570		570	845
0060	34′ diameter			2.30	13.913			790		790	1,175
0070	39′ diameter			2	16			910		910	1,350
0080	45′ diameter		F-3	2.20	18.182			1,050	900	1,950	2,550
0090	55′ diameter			2	20			1,150	990	2,140	2,825
0100	60′ diameter			2	20			1,150	990	2,140	2,825
0110	65′ diameter			1.60	25			1,450	1,250	2,700	3,525
	13 05 05.30 Selective Demolition, Greenhouses										
0010	**SELECTIVE DEMOLITION, GREENHOUSES**	R024119-10									
0020	Resi-type, free standing, excl. foundations, 9′ long x 8′ wide		2 Clab	160	.100	SF Flr.		4.56		4.56	6.80
0030	9′ long x 11′ wide			170	.094			4.29		4.29	6.40
0040	9′ long x 14′ wide			220	.073			3.32		3.32	4.94
0050	9′ long x 17′ wide			320	.050			2.28		2.28	3.40
0060	Lean-to type, 4′ wide			64	.250			11.40		11.40	17
0070	7′ wide			120	.133			6.10		6.10	9.05
0080	Geodesic hemisphere, 1/8″ plexiglass glazing, 8′ diam.			4	4	Ea.		182		182	272
0090	24′ diam.			.80	20			910		910	1,350
0100	48′ diam.			.40	40			1,825		1,825	2,725
	13 05 05.35 Selective Demolition, Hangars										
0010	**SELECTIVE DEMOLITION, HANGARS**										
0020	T type hangars, prefab, steel, galv roof & walls, incl doors, excl fndtn		E-2	2550	.022	SF Flr.		1.34	.97	2.31	3.12
0030	Circular type, prefab, steel frame, plastic skin, incl foundation, 80′ diam		"	.50	112	Total		6,850	4,950	11,800	16,000
	13 05 05.45 Selective Demolition, Lightning Protection										
0010	**SELECTIVE DEMOLITION, LIGHTNING PROTECTION**										
0020	Air terminal & base, copper, 3/8″ diam. x 10″, to 75′ H		1 Clab	16	.500	Ea.		23		23	34
0030	1/2″ diam. x 12″, over 75′ H			16	.500			23		23	34
0050	Aluminum, 1/2″ diam. x 12″, to 75′ H			16	.500			23		23	34
0060	5/8″ diam. x 12″, over 75′ H			16	.500			23		23	34
0070	Cable, copper, 220 lb. per thousand feet, to 75′ H			640	.013	L.F.		.57		.57	.85

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13 05 05 – Selective Demolition for Special Construction

	13 05 05.45 Selective Demolition, Lightning Protection	Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&P
0080	375 lb. per thousand feet, over 75′ H	1 Clab	460	.017	L.F.		.79		.79	1.18
0090	Aluminum, 101 lb. per thousand feet, to 75′ H		560	.014			.65		.65	.97
0100	199 lb. per thousand feet, over 75′ H		480	.017			.76		.76	1.13
0110	Arrester, 175 V AC, to ground		16	.500	Ea.		23		23	34
0120	650 V AC, to ground		13	.615	"		28		28	42

13 05 05.50 Selective Demolition, Pre-Engineered Steel Buildings

0010	**SELECTIVE DEMOLITION, PRE-ENGINEERED STEEL BUILDINGS**									
0500	Pre-engd. steel bldgs., rigid frame, clear span & multi post, excl. salvage									
0550	3,500 to 7,500 S.F.	L-10	1000	.024	SF Flr.		1.51	1.98	3.49	4.48
0600	7,501 to 12,500 S.F.		1500	.016			1.01	1.32	2.33	2.99
0650	12,501 S.F. or greater		1650	.015			.92	1.20	2.12	2.72
0700	Pre-engd. steel building components									
0710	Entrance canopy, including frame 4′ x 4′	E-24	8	4	Ea.		246	262	508	665
0720	4′ x 8′	"	7	4.571			281	299	580	760
0730	HM doors, self framing, single leaf	2 Skwk	8	2			118		118	177
0740	Double leaf		5	3.200			188		188	283
0760	Gutter, eave type		600	.027	L.F.		1.57		1.57	2.36
0770	Sash, single slide, double slide or fixed		24	.667	Ea.		39.50		39.50	59
0780	Skylight, fiberglass, to 30 S.F.		16	1			59		59	88.50
0785	Roof vents, circular, 12" to 24" diameter		12	1.333			78.50		78.50	118
0790	Continuous, 10′ long		8	2			118		118	177
0900	Shelters, aluminum frame									
0910	Acrylic glazing, 3′ x 9′ x 8′ high	2 Skwk	2	8	Ea.		470		470	710
0920	9′ x 12′ x 8′ high	"	1.50	10.667	"		630		630	945

13 05 05.60 Selective Demolition, Silos

0010	**SELECTIVE DEMOLITION, SILOS**									
0020	Conc stave, indstrl, conical/sloping bott, excl fndtn, 12′ diam., 35′ H	E-24	.18	178	Ea.		10,900	11,600	22,500	29,500
0030	16′ diam., 45′ H	"	.12	267	"		16,400	17,400	33,800	44,200
0040	25′ diam., 75′ H	E-24	.08	400	Ea.		24,600	26,200	50,800	66,500
0050	Steel, factory fabricated, 30,000 gal. cap, painted or epoxy lined	L-5	2	28	"		1,750	1,050	2,800	3,825

13 05 05.65 Selective Demolition, Sound Control

0010	**SELECTIVE DEMOLITION, SOUND CONTROL** R024119-10									
0120	Acoustical enclosure, 4" thick walls & ceiling panels, 8 lb./S.F.	3 Carp	144	.167	SF Surf		9.40		9.40	13.95
0130	10.5 lb./S.F.		128	.188			10.55		10.55	15.70
0140	Reverb chamber, parallel walls, 4" thick		120	.200			11.25		11.25	16.75
0150	Skewed walls, parallel roof, 4" thick		110	.218			12.30		12.30	18.30
0160	Skewed walls/roof, 4" layer/air space		96	.250			14.10		14.10	21
0170	Sound-absorbing panels, painted metal, 2′-6" x 8′, under 1,000 S.F.		430	.056			3.14		3.14	4.68
0180	Over 1,000 S.F.		480	.050			2.82		2.82	4.19
0190	Flexible transparent curtain, clear	3 Shee	430	.056			3.77		3.77	5.70
0192	50% clear, 50% foam		430	.056			3.77		3.77	5.70
0194	25% clear, 75% foam		430	.056			3.77		3.77	5.70
0196	100% foam		430	.056			3.77		3.77	5.70
0200	Audio-masking sys., incl. speakers, amplfr., signal gnrtr.									
0205	Ceiling mounted, 5,000 S.F.	2 Elec	4800	.003	S.F.		.22		.22	.33
0210	10,000 S.F.		5600	.003			.19		.19	.28
0220	Plenum mounted, 5,000 S.F.		7600	.002			.14		.14	.21
0230	10,000 S.F.		8800	.002			.12		.12	.18

13 05 05.70 Selective Demolition, Special Purpose Rooms

0010	**SELECTIVE DEMOLITION, SPECIAL PURPOSE ROOMS** R024119-10									
0100	Audiometric rooms, under 500 S.F. surface	4 Carp	200	.160	SF Surf		9		9	13.40
0110	Over 500 S.F. surface	"	240	.133	"		7.50		7.50	11.15

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13 05 05 – Selective Demolition for Special Construction

	13 05 05.70 Selective Demolition, Special Purpose Rooms	Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&P
0200	Clean rooms, 12′ x 12′ soft wall, class 100	1 Carp	.30	26.667	Ea.		1,500		1,500	2,225
0210	Class 1,000		.30	26.667			1,500		1,500	2,225
0220	Class 10,000		.35	22.857			1,275		1,275	1,925
0230	Class 100,000		.35	22.857			1,275		1,275	1,925
0300	Darkrooms, shell complete, 8′ high	2 Carp	220	.073	SF Flr.		4.09		4.09	6.10
0310	12′ high		110	.145	″		8.20		8.20	12.20
0350	Darkrooms doors, mini-cylindrical, revolving		4	4	Ea.		225		225	335
0400	Music room, practice modular		140	.114	SF Surf		6.45		6.45	9.60
0500	Refrigeration structures and finishes									
0510	Wall finish, 2 coat Portland cement plaster, 1/2″ thick	1 Clab	200	.040	S.F.		1.82		1.82	2.72
0522	Fiberglass panels, 1/8″ thick		400	.020			.91		.91	1.36
0530	Ceiling finish, polystyrene plastic, 1″ to 2″ thick		500	.016			.73		.73	1.09
0540	4″ thick		450	.018			.81		.81	1.21
0550	Refrigerator, prefab aluminum walk-in, 7′-6″ high, 6′ x 6′ OD	2 Carp	100	.160	SF Flr.		9		9	13.40
0560	10′ x 10′ OD		160	.100			5.65		5.65	8.40
0570	Over 150 S.F.		200	.080			4.50		4.50	6.70
0600	Sauna, prefabricated, including heater & controls, 7′ high, to 30 S.F.		120	.133			7.50		7.50	11.15
0610	To 40 S.F.		140	.114			6.45		6.45	9.60
0620	To 60 S.F.		175	.091			5.15		5.15	7.65
0630	To 100 S.F.		220	.073			4.09		4.09	6.10
0640	To 130 S.F.		250	.064			3.60		3.60	5.35
0650	Steam bath, heater, timer, head, single, to 140 C.F.	1 Plum	2.20	3.636	Ea.		254		254	380
0660	To 300 C.F.		2.20	3.636			254		254	380
0670	Steam bath, comm. size, w/blow-down assembly, to 800 C.F.		1.80	4.444			310		310	465
0680	To 2,500 C.F.		1.60	5			350		350	520
0690	Steam bath, comm. size, multiple, for motels, apts, 500 C.F., 2 baths		2	4			279		279	415
0700	1,000 C.F., 4 baths		1.40	5.714			400		400	595
	13 05 05.75 Selective Demolition, Storage Tanks									
0010	**SELECTIVE DEMOLITION, STORAGE TANKS**									
0500	Steel tank, single wall, above ground, not incl. fdn., pumps or piping									
0510	Single wall, 275 gallon R024119-10	Q-1	3	5.333	Ea.		335		335	500
0520	550 thru 2,000 gallon	B-34P	2	12			725	355	1,080	1,475
0530	5,000 thru 10,000 gallon	B-34Q	2	12			735	1,325	2,060	2,550
0540	15,000 thru 30,000 gallon	B-34S	2	16			1,025	2,050	3,075	3,800
0600	Steel tank, double wall, above ground not incl. fdn., pumps & piping									
0620	500 thru 2,000 gallon	B-34P	2	12	Ea.		725	355	1,080	1,475
	13 05 05.85 Selective Demolition, Swimming Pool Equip									
0010	**SELECTIVE DEMOLITION, SWIMMING POOL EQUIP**									
0020	Diving stand, stainless steel, 3 meter	2 Clab	3	5.333	Ea.		243		243	360
0030	1 meter		5	3.200			146		146	217
0040	Diving board, 16′ long, aluminum		5.40	2.963			135		135	201
0050	Fiberglass		5.40	2.963			135		135	201
0070	Ladders, heavy duty, stainless steel, 2 tread		14	1.143			52		52	77.50
0080	4 tread		12	1.333			61		61	90.50
0090	Lifeguard chair, stainless steel, fixed		5	3.200			146		146	217
0100	Slide, tubular, fiberglass, aluminum handrails & ladder, 5′, straight		4	4			182		182	272
0110	8′, curved		6	2.667			122		122	181
0120	10′, curved		3	5.333			243		243	360
0130	12′ straight, with platform		2.50	6.400			292		292	435
0140	Removable access ramp, stainless steel		4	4			182		182	272
0150	Removable stairs, stainless steel, collapsible		4	4			182		182	272

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13 05 05 – Selective Demolition for Special Construction

13 05 05.90 Selective Demolition, Tension Structures	Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010 **SELECTIVE DEMOLITION, TENSION STRUCTURES**									
0020 Steel/alum. frame, fabric shell, 60′ clear span, 6,000 S.F.	B-41	2000	.022	SF Flr.		1.04	.16	1.20	1.71
0030 12,000 S.F.		2200	.020			.94	.14	1.08	1.56
0040 80′ clear span, 20,800 S.F.		2440	.018			.85	.13	.98	1.41
0050 100′ clear span, 10,000 S.F.	L-5	4350	.013			.80	.48	1.28	1.76
0060 26,000 S.F.		4600	.012			.76	.45	1.21	1.66
0070 36,000 S.F.		5000	.011			.70	.42	1.12	1.53

13 05 05.95 Selective Demo, X-Ray/Radio Freq Protection

	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **SELECTIVE DEMO, X-RAY/RADIO FREQ PROTECTION**									
0020 Shielding lead, lined door frame, excl. hdwe., 1/16″ thick	1 Clab	4.80	1.667	Ea.		76		76	113
0030 Lead sheets, 1/16″ thick R024119-10	2 Clab	270	.059	S.F.		2.70		2.70	4.02
0040 1/8″ thick		240	.067			3.04		3.04	4.53
0050 Lead shielding, 1/4″ thick		270	.059			2.70		2.70	4.02
0060 1/2″ thick		240	.067			3.04		3.04	4.53
0070 Lead glass, 1/4″ thick, 2.0 mm LE, 12″ x 16″	2 Glaz	16	1	Ea.		54		54	80.50
0080 24″ x 36″		8	2			108		108	161
0090 36″ x 60″		4	4			216		216	320
0100 Lead glass window frame, with 1/16″ lead & voice passage, 36″ x 60″		4	4			216		216	320
0110 Lead glass window frame, 24″ x 36″		8	2			108		108	161
0120 Lead gypsum board, 5/8″ thick with 1/16″ lead	2 Clab	320	.050	S.F.		2.28		2.28	3.40
0130 1/8″ lead		280	.057			2.61		2.61	3.88
0140 1/32″ lead		400	.040			1.82		1.82	2.72
0150 Butt joints, 1/8″ lead or thicker, 2″ x 7′ long batten strip		480	.033	Ea.		1.52		1.52	2.26
0160 X-ray protection, average radiography room, up to 300 S.F., 1/16″ lead, min		.50	32	Total		1,450		1,450	2,175
0170 Maximum		.30	53.333			2,425		2,425	3,625
0180 Deep therapy X-ray room, 250 kV cap, up to 300 S.F., 1/4″ lead, min		.20	80			3,650		3,650	5,425
0190 Maximum		.12	133			6,075		6,075	9,050
0880 Radio frequency shielding, prefab or screen-type copper or steel, minimum		360	.044	SF Surf		2.03		2.03	3.02
0890 Average		310	.052			2.35		2.35	3.50
0895 Maximum		290	.055			2.52		2.52	3.75

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13 11 13 – Below-Grade Swimming Pools

	13 11 13.50 Swimming Pools	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**SWIMMING POOLS** Residential in-ground, vinyl lined									
0020	Concrete sides, w/equip, sand bottom	B-52	300	.187	SF Surf	30.50	9.75	1.97	42.22	50
0100	Metal or polystyrene sides R131113-20	B-14	410	.117		76	5.60	.80	82.40	92.50
0200	Add for vermiculite bottom					1.94			1.94	2.13
0500	Gunite bottom and sides, white plaster finish									
0600	12′ x 30′ pool	B-52	145	.386	SF Surf	56.50	20	4.07	80.57	97
0720	16′ x 32′ pool		155	.361		51	18.85	3.81	73.66	88
0750	20′ x 40′ pool		250	.224		45.50	11.70	2.36	59.56	70
0810	Concrete bottom and sides, tile finish									
0820	12′ x 30′ pool	B-52	80	.700	SF Surf	57	36.50	7.40	100.90	125
0830	16′ x 32′ pool		95	.589		47.50	31	6.20	84.70	104
0840	20′ x 40′ pool		130	.431		37.50	22.50	4.54	64.54	80
1100	Motel, gunite with plaster finish, incl. medium									
1150	capacity filtration & chlorination	B-52	115	.487	SF Surf	69.50	25.50	5.15	100.15	120
1200	Municipal, gunite with plaster finish, incl. high									
1250	capacity filtration & chlorination	B-52	100	.560	SF Surf	90	29	5.90	124.90	149
1350	Add for formed gutters				L.F.	133			133	146
1360	Add for stainless steel gutters				″	390			390	430
1600	For water heating system, see Section 23 52 28.10									
1700	Filtration and deck equipment only, as % of total				Total				20%	20%
1800	Automatic vacuum, hand tools, etc., 20′ x 40′ pool				SF Pool				.56	.62
1900	5,000 S.F. pool				″				.11	.12
3000	Painting pools, preparation + 3 coats, 20′ x 40′ pool, epoxy	2 Pord	.33	48.485	Total	1,450	2,325		3,775	5,025
3100	Rubber base paint, 18 gallons	″	.33	48.485		1,175	2,325		3,500	4,725
3500	42′ x 82′ pool, 75 gallons, epoxy paint	3 Pord	.14	171		6,150	8,200		14,350	18,900
3600	Rubber base paint	″	.14	171		4,875	8,200		13,075	17,500

13 11 23 – On-Grade Swimming Pools

13 11 23.50 Swimming Pools

0010	**SWIMMING POOLS** Residential above ground, steel construction									
0100	Round, 15′ diam.	B-80A	3	8	Ea.	910	365	126	1,401	1,675
0120	18′ diam.	″	2.50	9.600	″	970	440	151	1,561	1,900
0140	21′ diam.	B-80A	2	12	Ea.	1,075	545	189	1,809	2,225
0160	24′ diam.		1.80	13.333		1,225	610	210	2,045	2,475
0180	27′ diam.		1.50	16		1,550	730	252	2,532	3,050
0200	30′ diam.		1	24		1,800	1,100	375	3,275	4,025
0220	Oval, 12′ x 24′		2.30	10.435		1,575	475	164	2,214	2,625
0240	15′ x 30′		1.80	13.333		1,775	610	210	2,595	3,075
0260	18′ x 33′		1	24		2,000	1,100	375	3,475	4,250

13 11 46 – Swimming Pool Accessories

13 11 46.50 Swimming Pool Equipment

0010	**SWIMMING POOL EQUIPMENT**									
0020	Diving stand, stainless steel, 3 meter	2 Carp	.40	40	Ea.	20,600	2,250		22,850	26,000
0300	1 meter		2.70	5.926		11,200	335		11,535	12,800
0600	Diving boards, 16′ long, aluminum		2.70	5.926		4,675	335		5,010	5,625
0700	Fiberglass		2.70	5.926		3,650	335		3,985	4,525
0800	14′ long, aluminum		2.70	5.926		4,275	335		4,610	5,200
0850	Fiberglass		2.70	5.926		3,425	335		3,760	4,275
1100	Bulkhead, movable, PVC, 8′-2″ wide	2 Clab	8	2		2,875	91		2,966	3,275
1120	7′-9″ wide		8	2		3,000	91		3,091	3,450
1140	7′-3″ wide		8	2		2,375	91		2,466	2,750
1160	6′-9″ wide		8	2		2,375	91		2,466	2,750
1200	Ladders, heavy duty, stainless steel, 2 tread	2 Carp	7	2.286		1,425	129		1,554	1,775

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

13 11 Swimming Pools

13 11 46 – Swimming Pool Accessories

13 11 46.50 Swimming Pool Equipment	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1500 4 tread	2 Carp	6	2.667	Ea.	1,000	150		1,150	1,325
1800 Lifeguard chair, stainless steel, fixed		2.70	5.926		3,925	335		4,260	4,825
1900 Portable					3,350			3,350	3,675
2100 Lights, underwater, 12 volt, with transformer, 300 watt	1 Elec	1	8		485	530		1,015	1,325
2200 110 volt, 500 watt, standard		1	8		300	530		830	1,125
2400 Low water cutoff type		1	8		325	530		855	1,150
2800 Heaters, see Section 23 52 28.10									
3000 Pool covers, reinforced vinyl	3 Clab	1800	.013	S.F.	1.20	.61		1.81	2.23
3050 Automatic, electric								9.15	10.10
3100 Vinyl, for winter, 400 S.F. max pool surface	3 Clab	3200	.008		.24	.34		.58	.77
3200 With water tubes, 400 S.F. max pool surface	"	3000	.008		.37	.36		.73	.95
3250 Sealed air bubble polyethylene solar blanket, 16 mils					.38			.38	.42
3300 Slides, tubular, fiberglass, aluminum handrails & ladder, 5'-0", straight	2 Carp	1.60	10	Ea.	4,150	565		4,715	5,425
3320 8'-0", curved		3	5.333		8,300	300		8,600	9,575
3400 10'-0", curved		1	16		23,600	900		24,500	27,300
3420 12'-0", straight with platform		1.20	13.333		19,100	750		19,850	22,100
4500 Hydraulic lift, movable pool bottom, single ram									
4520 Under 1,000 S.F. area	L-9	72	.500	S.F.	207	26		233	267
4600 Four ram lift, over 1,000 S.F.	"	109	.330	"	173	17.05		190.05	216
5000 Removable access ramp, stainless steel	2 Clab	2	8	Ea.	6,575	365		6,940	7,800

13 12 Fountains

13 12 13 – Exterior Fountains

13 12 13.10 Outdoor Fountains

0010	**OUTDOOR FOUNTAINS**								
0100	Outdoor fountain, 48" high with bowl and figures	2 Clab	2	8	Ea.	415	365	780	1,000
0200	Commercial, concrete or cast stone, 40-60" H, simple		2	8		1,050	365	1,415	1,700
0220	Average		2	8		2,025	365	2,390	2,775
0240	Ornate		2	8		4,600	365	4,965	5,600
0260	Metal, 72" high		2	8		1,625	365	1,990	2,350
0280	90" high		2	8		2,350	365	2,715	3,150
0300	120" high		2	8		5,625	365	5,990	6,750
0320	Resin or fiberglass, 40-60" H, wall type		2	8		735	365	1,100	1,350
0340	Waterfall type		2	8		1,250	365	1,615	1,925

13 12 23 – Interior Fountains

13 12 23.10 Indoor Fountains

0010	**INDOOR FOUNTAINS**								
0100	Commercial, floor type, resin or fiberglass, lighted, cascade type	2 Clab	2	8	Ea.	460	365	825	1,050
0120	Tiered type		2	8		730	365	1,095	1,350
0140	Waterfall type		2	8		515	365	880	1,100

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

13 17 Tubs and Pools

13 17 33 – Whirlpool Tubs

13 17 33.10 Whirlpool Bath	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **WHIRLPOOL BATH**									
6000 Whirlpool, bath with vented overflow, molded fiberglass									
6100 66" x 36" x 24"	Q-1	1	16	Ea.	1,475	1,000		2,475	3,125

13 18 Ice Rinks

13 18 13 – Ice Rink Floor Systems

13 18 13.50 Ice Skating

0010 **ICE SKATING** Equipment incl. refrigeration, plumbing & cooling									
0020 coils & concrete slab, 85' x 200' rink									
0300 55° system, 5 mos., 100 ton				Total	602,500			602,500	662,500
0700 90° system, 12 mos., 135 ton				"	685,000			685,000	753,500
1200 Subsoil heating system (recycled from compressor), 85' x 200'	Q-7	.27	119	Ea.	44,200	7,925		52,125	60,500
1300 Subsoil insulation, 2 lb. polystyrene with vapor barrier, 85' x 200'	2 Carp	.14	114	"	32,000	6,425		38,425	44,800

13 18 16 – Ice Rink Dasher Boards

13 18 16.50 Ice Rink Dasher Boards

0010 **ICE RINK DASHER BOARDS**									
1000 Dasher boards, 1/2" H.D. polyethylene faced steel frame, 3' acrylic									
1020 screen at sides, 5' acrylic ends, 85' x 200'	F-5	.06	533	Ea.	138,000	30,300		168,300	197,000
1100 Fiberglass & aluminum construction, same sides and ends	"	.06	533	"	154,000	30,300		184,300	214,500

13 21 Controlled Environment Rooms

13 21 13 – Clean Rooms

13 21 13.50 Clean Room Components

0010 **CLEAN ROOM COMPONENTS**									
1100 Clean room, soft wall, 12' x 12', Class 100	1 Carp	.18	44.444	Ea.	16,600	2,500		19,100	22,000
1110 Class 1,000		.18	44.444		17,500	2,500		20,000	22,900
1120 Class 10,000		.21	38.095		15,600	2,150		17,750	20,300
1130 Class 100,000		.21	38.095		12,800	2,150		14,950	17,200
2800 Ceiling grid support, slotted channel struts 4'-0" OC, ea. way				S.F.				5.90	6.50
3000 Ceiling panel, vinyl coated foil on mineral substrate									
3020 Sealed, non-perforated				S.F.				3.72	4.13
4000 Ceiling panel seal, silicone sealant, 150 L.F./gal.	1 Carp	150	.053	L.F.	.28	3		3.28	4.78
4100 Two sided adhesive tape	"	240	.033	"	.13	1.88		2.01	2.93
4200 Clips, one per panel				Ea.	1.01			1.01	1.11
6000 HEPA filter, 2' x 4', 99.97% eff., 3" dp beveled frame (silicone seal)					380			380	420
6040 6" deep skirted frame (channel seal)					520			520	570
6100 99.99% efficient, 3" deep beveled frame (silicone seal)					485			485	530
6140 6" deep skirted frame (channel seal)					560			560	615
6200 99.999% efficient, 3" deep beveled frame (silicone seal)					585			585	645
6240 6" deep skirted frame (channel seal)					675			675	740
7000 Wall panel systems, including channel strut framing									
7020 Polyester coated aluminum, particle board				S.F.				18.20	18.20
7100 Porcelain coated aluminum, particle board								32	32
7400 Wall panel support, slotted channel struts, to 12' high								16.35	16.35

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

13 21 26 – Cold Storage Rooms

13 21 26.50 Refrigeration	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **REFRIGERATION**									
0020 Curbs, 12" high, 4" thick, concrete	2 Carp	58	.276	L.F.	3.31	15.55		18.86	26.50
1000 Doors, see Section 08 34 13.10									
2400 Finishes, 2 coat Portland cement plaster, 1/2" thick	1 Plas	48	.167	S.F.	.80	8.55		9.35	13.65
2500 For galvanized reinforcing mesh, add	1 Lath	335	.024		.61	1.34		1.95	2.62
2700 3/16" thick latex cement	1 Plas	88	.091		1.50	4.67		6.17	8.60
2900 For glass cloth reinforced ceilings, add	"	450	.018		.64	.91		1.55	2.06
3100 Fiberglass panels, 1/8" thick	1 Carp	149.45	.054	S.F.	2.38	3.01		5.39	7.10
3200 Polystyrene, plastic finish ceiling, 1" thick		274	.029		2.84	1.64		4.48	5.55
3400 2" thick		274	.029		3.19	1.64		4.83	5.95
3500 4" thick		219	.037		4.05	2.06		6.11	7.50
3800 Floors, concrete, 4" thick	1 Cefi	93	.086		2.07	4.57		6.64	9
3900 6" thick	"	85	.094		3.24	5		8.24	10.85
4000 Insulation, 1" to 6" thick, cork				B.F.	1.50			1.50	1.65
4100 Urethane					.70			.70	.77
4300 Polystyrene, regular					.73			.73	.80
4400 Bead board					.28			.28	.31
4600 Installation of above, add per layer	2 Carp	657.60	.024	S.F.	.44	1.37		1.81	2.52
4700 Wall and ceiling juncture		298.90	.054	L.F.	1.41	3.01		4.42	6.05
4900 Partitions, galvanized sandwich panels, 4" thick, stock		219.20	.073	S.F.	10.10	4.11		14.21	17.20
5000 Aluminum or fiberglass		219.20	.073	"	6.45	4.11		10.56	13.20
5200 Prefab walk-in, 7'-6" high, aluminum, incl. refrigeration, door & floor									
5210 not incl. partitions, 6' x 6'	2 Carp	54.80	.292	SF Flr.	105	16.45		121.45	141
5500 10' x 10'		82.20	.195		85	10.95		95.95	110
5700 12' x 14'		109.60	.146		76	8.20		84.20	96
5800 12' x 20'		109.60	.146		115	8.20		123.20	139
6100 For 8'-6" high, add					5%				
6300 Rule of thumb for complete units, w/o doors & refrigeration, cooler	2 Carp	146	.110		176	6.15		182.15	202
6400 Freezer		109.60	.146		113	8.20		121.20	136
6600 Shelving, plated or galvanized, steel wire type		360	.044	SF Hor.	8.35	2.50		10.85	12.90
6700 Slat shelf type		375	.043		17.65	2.40		20.05	23
6900 For stainless steel shelving, add					300%				
7000 Vapor barrier, on wood walls	2 Carp	1644	.010	S.F.	.19	.55		.74	1.03
7200 On masonry walls	"	1315	.012	"	.33	.69		1.02	1.38
7500 For air curtain doors, see Section 23 34 33.10									

13 21 48 – Sound-Conditioned Rooms

13 21 48.10 Anechoic Chambers

0010 **ANECHOIC CHAMBERS** Standard units, 7' ceiling heights									
0100 Area for pricing is net inside dimensions									
0300 200 cycles per second cutoff, 25 S.F. floor area				SF Flr.	1,900			1,900	2,100
0700 100 S.F.					1,425			1,425	1,575
0900 For 150 cycles per second cutoff, add to 100 S.F. room								30%	30%
1000 For 100 cycles per second cutoff, add to 100 S.F. room								45%	45%

13 21 48.15 Audiometric Rooms

0010 **AUDIOMETRIC ROOMS**									
0020 Under 500 S.F. surface	4 Carp	98	.327	SF Surf	61.50	18.40		79.90	95
0100 Over 500 S.F. surface	"	120	.267	"	58	15		73	86.50

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13 21 Controlled Environment Rooms

13 21 53 – Darkrooms

13 21 53.50 Darkrooms	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **DARKROOMS**									
0020 Shell, complete except for door, 64 S.F., 8′ high	2 Carp	128	.125	SF Flr.	59	7.05		66.05	75.50
0100 12′ high		64	.250		77	14.10		91.10	106
0500 120 S.F. floor, 8′ high		120	.133		43	7.50		50.50	58
0600 12′ high		60	.267		58	15		73	86.50
0800 240 S.F. floor, 8′ high		120	.133		30	7.50		37.50	44
0900 12′ high		60	.267		43	15		58	69.50
1200 Mini-cylindrical, revolving, unlined, 4′ diameter		3.50	4.571	Ea.	2,550	257		2,807	3,175
1400 5′-6″ diameter		2.50	6.400		4,800	360		5,160	5,800
1600 Add for lead lining, inner cylinder, 1/32″ thick					1,625			1,625	1,775
1700 1/16″ thick					4,325			4,325	4,750
1800 Add for lead lining, inner and outer cylinder, 1/32″ thick					2,975			2,975	3,275
1900 1/16″ thick					6,650			6,650	7,325
2000 For darkroom door, see Section 08 34 36.10									

13 21 56 – Music Rooms

13 21 56.50 Music Rooms

0010 **MUSIC ROOMS**									
0020 Practice room, modular, perforated steel, under 500 S.F.	2 Carp	70	.229	SF Surf	38	12.85		50.85	61
0100 Over 500 S.F.	″	80	.200	″	32	11.25		43.25	52.50

13 24 Special Activity Rooms

13 24 16 – Saunas

13 24 16.50 Saunas and Heaters

0010 **SAUNAS AND HEATERS**									
0020 Prefabricated, incl. heater & controls, 7′ high, 6′ x 4′, C/C	L-7	2.20	12.727	Ea.	6,875	695		7,570	8,575
0050 6′ x 4′, C/P		2	14		4,600	765		5,365	6,200
0400 6′ x 5′, C/C		2	14		5,725	765		6,490	7,425
0450 6′ x 5′, C/P		2	14		5,525	765		6,290	7,225
0600 6′ x 6′, C/C		1.80	15.556		7,325	850		8,175	9,325
0650 6′ x 6′, C/P		1.80	15.556		6,150	850		7,000	8,025
0800 6′ x 9′, C/C		1.60	17.500		7,925	955		8,880	10,200
0850 6′ x 9′, C/P		1.60	17.500		6,225	955		7,180	8,275
1000 8′ x 12′, C/C		1.10	25.455		14,900	1,400		16,300	18,500
1050 8′ x 12′, C/P		1.10	25.455		8,025	1,400		9,425	10,900
1200 8′ x 8′, C/C		1.40	20		10,400	1,100		11,500	13,100
1250 8′ x 8′, C/P		1.40	20		7,600	1,100		8,700	10,000
1400 8′ x 10′, C/C	L-7	1.20	23.333	Ea.	9,675	1,275		10,950	12,600
1450 8′ x 10′, C/P		1.20	23.333		8,825	1,275		10,100	11,600
1600 10′ x 12′, C/C		1	28		15,200	1,525		16,725	19,100
1650 10′ x 12′, C/P		1	28		15,300	1,525		16,825	19,100
1700 Door only, cedar, 2′ x 6′, w/ 1′ x 4′ tempered insulated glass window	2 Carp	3.40	4.706		635	265		900	1,100
1800 Prehung, incl. jambs, pulls & hardware	″	12	1.333		1,000	75		1,075	1,200
2500 Heaters only (incl. above), wall mounted, to 200 C.F.					1,100			1,100	1,200
2750 To 300 C.F.					1,225			1,225	1,350
3000 Floor standing, to 720 C.F., 10,000 watts, w/controls	1 Elec	3	2.667		3,150	177		3,327	3,700
3250 To 1,000 C.F., 16,000 watts	″	3	2.667		4,325	177		4,502	5,000

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

13 24 Special Activity Rooms

13 24 26 – Steam Baths

13 24 26.50 Steam Baths and Components	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **STEAM BATHS AND COMPONENTS**									
0020 Heater, timer & head, single, to 140 C.F.	1 Plum	1.20	6.667	Ea.	2,300	465		2,765	3,225
0500 To 300 C.F.		1.10	7.273		2,600	510		3,110	3,600
1000 Commercial size, with blow-down assembly, to 800 C.F.		.90	8.889		6,550	620		7,170	8,125
1500 To 2,500 C.F.		.80	10		7,750	700		8,450	9,575
2000 Multiple, motels, apts., 2 baths, w/blow-down assm., 500 C.F.	Q-1	1.30	12.308		7,225	775		8,000	9,100
2500 4 baths	"	.70	22.857		10,900	1,425		12,325	14,200
2700 Conversion unit for residential tub, including door					4,425			4,425	4,875

13 28 Athletic and Recreational Special Construction

13 28 33 – Athletic and Recreational Court Walls

13 28 33.50 Sport Court

0010 **SPORT COURT**									
0020 Sport court floors, no. 2 & better maple, 25/32" thick, see 09 64 66.10				SF Flr.					
0300 Squash, regulation court in existing building, minimum				Court	45,200			45,200	49,700
0400 Maximum				"	50,500			50,500	55,500
0450 Rule of thumb for components:									
0470 Walls	3 Carp	.15	160	Court	13,800	9,000		22,800	28,600
0500 Floor	"	.25	96		10,900	5,400		16,300	20,100
0550 Lighting	2 Elec	.60	26.667		2,575	1,775		4,350	5,475
0600 Handball, racquetball court in existing building, minimum	C-1	.20	160		49,700	8,575		58,275	67,500
0800 Maximum	"	.10	320		53,000	17,200		70,200	83,500
0900 Rule of thumb for components: walls	3 Carp	.12	200		15,500	11,300		26,800	33,800
1000 Floor		.25	96		10,900	5,400		16,300	20,100
1100 Ceiling		.33	72.727		5,150	4,100		9,250	11,800
1200 Lighting	2 Elec	.60	26.667		2,750	1,775		4,525	5,650

13 31 Fabric Structures

13 31 13 – Air-Supported Fabric Structures

13 31 13.09 Air Supported Tank Covers

0010 **AIR SUPPORTED TANK COVERS**, vinyl polyester									
0100 Scrim, double layer, with hardware, blower, standby & controls									
0200 Round, 75' diameter	B-2	4500	.009	S.F.	13.30	.41		13.71	15.25
0300 100' diameter		5000	.008		12.10	.37		12.47	13.85
0400 150' diameter		5000	.008		9.55	.37		9.92	11.05
0500 Rectangular, 20' x 20'		4500	.009		25.50	.41		25.91	29
0600 30' x 40'		4500	.009		25.50	.41		25.91	29
0700 50' x 60'		4500	.009		25.50	.41		25.91	29
0800 For single wall construction, deduct, minimum					.90			.90	.99
0900 Maximum					2.58			2.58	2.84
1000 For maximum resistance to atmosphere or cold, add					1.30			1.30	1.43
1100 For average shipping charges, add				Total	2,225			2,225	2,450

13 31 13.13 Single-Walled Air-Supported Structures

0010 **SINGLE-WALLED AIR-SUPPORTED STRUCTURES** R133113-10									
0020 Site preparation, incl. anchor placement and utilities	B-11B	1000	.016	SF Flr.	1.32	.82	.45	2.59	3.16
0030 For concrete, see Section 03 30 53.40									
0050 Warehouse, polyester/vinyl fabric, 28 oz., over 10 yr. life, welded									
0060 Seams, tension cables, primary & auxiliary inflation system,									

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

13 31 13 – Air-Supported Fabric Structures

13 31 13.13 Single-Walled Air-Supported Structures	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0070 airlock, personnel doors and liner									
0100 5,000 S.F.	4 Clab	5000	.006	SF Flr.	29	.29		29.29	32.50
0250 12,000 S.F.	"	6000	.005		19.80	.24		20.04	22.50
0400 24,000 S.F.	8 Clab	12000	.005		14.65	.24		14.89	16.45
0500 50,000 S.F.	"	12500	.005		12.90	.23		13.13	14.55
0700 12 oz. reinforced vinyl fabric, 5 yr. life, sewn seams,									
0710 accordion door, including liner									
0750 3,000 S.F.	4 Clab	3000	.011	SF Flr.	14.35	.49		14.84	16.50
0800 12,000 S.F.	"	6000	.005		12.20	.24		12.44	13.80
0850 24,000 S.F.	8 Clab	12000	.005		10.35	.24		10.59	11.75
0950 Deduct for single layer					1.17			1.17	1.29
1000 Add for welded seams					1.62			1.62	1.78
1050 Add for double layer, welded seams included					3.25			3.25	3.58
1250 Tedlar/vinyl fabric, 28 oz., with liner, over 10 yr. life,									
1260 incl. overhead and personnel doors									
1300 3,000 S.F.	4 Clab	3000	.011	SF Flr.	27	.49		27.49	30
1450 12,000 S.F.	"	6000	.005		18.30	.24		18.54	20.50
1550 24,000 S.F.	8 Clab	12000	.005		14.65	.24		14.89	16.45
1700 Deduct for single layer				SF Flr.	2.16			2.16	2.38
2250 Greenhouse/shelter, woven polyethylene with liner, 2 yr. life,									
2260 sewn seams, including doors									
2300 3,000 S.F.	4 Clab	3000	.011	SF Flr.	17.40	.49		17.89	19.85
2350 12,000 S.F.	"	6000	.005		15.20	.24		15.44	17.05
2450 24,000 S.F.	8 Clab	12000	.005		13.05	.24		13.29	14.70
2550 Deduct for single layer					1.07			1.07	1.18
2600 Tennis/gymnasium, polyester/vinyl fabric, 28 oz., over 10 yr. life,									
2610 including thermal liner, heat and lights									
2650 7,200 S.F.	4 Clab	6000	.005	SF Flr.	25	.24		25.24	28
2750 13,000 S.F.	"	6500	.005		19.80	.22		20.02	22.50
2850 Over 24,000 S.F.	8 Clab	12000	.005		18.10	.24		18.34	20.50
2860 For low temperature conditions, add					1.29			1.29	1.42
2870 For average shipping charges, add				Total	6,050			6,050	6,650
2900 Thermal liner, translucent reinforced vinyl				SF Flr.	1.29			1.29	1.42
2950 Metalized mylar fabric and mesh, double liner				"	2.57			2.57	2.83
3050 Stadium/convention center, teflon coated fiberglass, heavy weight,									
3060 over 20 yr. life, incl. thermal liner and heating system									
3100 Minimum	9 Clab	26000	.003	SF Flr.	63	.13		63.13	69.50
3110 Maximum	"	19000	.004	"	78	.17		78.17	86.50
3400 Doors, air lock, 15′ long, 10′ x 10′	2 Carp	.80	20	Ea.	22,100	1,125		23,225	26,100
3600 15′ x 15′	"	.50	32		34,800	1,800		36,600	41,000
3700 For each added 5′ length, add					6,200			6,200	6,825
3900 Revolving personnel door, 6′ diameter, 6′-6″ high	2 Carp	.80	20		17,400	1,125		18,525	20,800

13 31 23 – Tensioned Fabric Structures

13 31 23.50 Tension Structures

0010 **TENSION STRUCTURES** Rigid steel/alum. frame, vinyl coated poly									
0100 Fabric shell, 60′ clear span, not incl. foundations or floors									
0200 6,000 S.F.	B-41	1000	.044	SF Flr.	18.55	2.07	.32	20.94	24
0300 12,000 S.F.		1100	.040		22	1.89	.29	24.18	27.50
0400 80′ to 99′ clear span, 20,800 S.F.		1220	.036		20.50	1.70	.26	22.46	25.50
0410 100′ to 119′ clear span, 10,000 S.F.	L-5	2175	.026		18.40	1.61	.96	20.97	24
0430 26,000 S.F.		2300	.024		17.05	1.52	.91	19.48	22
0450 36,000 S.F.		2500	.022		17.35	1.40	.84	19.59	22

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13 31 Fabric Structures

13 31 23 – Tensioned Fabric Structures

13 31 23.50 Tension Structures	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0460 120′ to 149′ clear span, 24,000 S.F.	L-5	3000	.019	SF Flr.	17.80	1.16	.70	19.66	22
0470 150′ to 199′ clear span, 30,000 S.F.	↓	6000	.009	↓	19.55	.58	.35	20.48	23
0480 200′ clear span, 40,000 S.F.	E-6	8000	.016	SF Flr.	23.50	.98	.37	24.85	28
0500 For roll-up door, 12′ x 14′, add	L-2	1	16	Ea.	7,050	795		7,845	8,950
0600 6,000 S.F.	B-41	1200	.037	SF Flr.	13.50	1.73	.26	15.49	17.70
0650 12,000 S.F.		1200	.037		15.85	1.73	.26	17.84	20.50
1000 Tension structure, PVC fabric, add		2500	.018		4.15	.83	.13	5.11	5.95
1200 Tension structure, HDPE fabric, add		2500	.018		2.59	.83	.13	3.55	4.23
1300 Tension structure, PTFE fabric, add	↓	2000	.022	↓	7.80	1.04	.16	9	10.25

13 33 Geodesic Structures

13 33 13 – Geodesic Domes

13 33 13.35 Geodesic Domes

0010 **GEODESIC DOMES** Shell only, interlocking plywood panels R133423-30									
0400 30′ diameter	F-5	1.60	20	Ea.	33,500	1,125		34,625	38,500
0500 33′ diameter		1.14	28.070		24,200	1,600		25,800	29,000
0600 40′ diameter	↓	1	32		27,900	1,825		29,725	33,400
0700 45′ diameter	F-3	1.13	35.556		28,800	2,050	1,775	32,625	36,700
0750 56′ diameter		1	40		58,000	2,300	1,975	62,275	69,500
0800 60′ diameter		1	40		63,000	2,300	1,975	67,275	74,500
0850 67′ diameter	↓	.80	50	↓	93,500	2,875	2,475	98,850	110,000
1100 Aluminum panel, with 6″ insulation									
1200 100′ diameter				SF Flr.	25			25	27.50
1300 500′ diameter				″	25.50			25.50	28.50
1600 Aluminum framed, plexiglass closure panels									
1700 40′ diameter				SF Flr.	61.50			61.50	67.50
1800 200′ diameter				″	60.50			60.50	66.50
2100 Aluminum framed, aluminum closure panels									
2200 40′ diameter				SF Flr.	20			20	22
2300 100′ diameter					31			31	34
2400 200′ diameter				↓	20.50			20.50	22.50
2700 Aluminum framed, fiberglass sandwich panel closure									
2800 6′ diameter	2 Carp	150	.107	SF Flr.	28.50	6		34.50	40
2900 28′ diameter	″	350	.046	″	25.50	2.57		28.07	32.50

13 34 Fabricated Engineered Structures

13 34 13 – Glazed Structures

13 34 13.13 Greenhouses

0010 **GREENHOUSES**, Shell only, stock units, not incl. 2′ stub walls,									
0020 foundation, floors, heat or compartments									
0300 Residential type, free standing, 8′-6″ long x 7′-6″ wide	2 Carp	59	.271	SF Flr.	25.50	15.25		40.75	51
0400 10′-6″ wide		85	.188		47	10.60		57.60	67.50
0600 13′-6″ wide	↓	108	.148	↓	49.50	8.35		57.85	67
0700 17′-0″ wide	2 Carp	160	.100	SF Flr.	46	5.65		51.65	59
0900 Lean-to type, 3′-10″ wide		34	.471		46	26.50		72.50	90
1000 6′-10″ wide	↓	58	.276	↓	28	15.55		43.55	54
1500 Commercial, custom, truss frame, incl. equip., plumbing, elec.,									
1550 benches and controls, under 2,000 S.F.				SF Flr.	15.40			15.40	16.90
1700 Over 5,000 S.F.				″	13.75			13.75	15.10

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13 34 13 – Glazed Structures

13 34 13.13 Greenhouses	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2000 Institutional, custom, rigid frame, including compartments and									
2050 multi-controls, under 500 S.F.				SF Flr.	29.50			29.50	32.50
2150 Over 2,000 S.F.				"	15.45			15.45	17
3700 For 1/4" tempered glass, add				SF Surf	2.34			2.34	2.57
3900 Cooling, 1,200 CFM exhaust fan, add				Ea.	350			350	385
4000 7,850 CFM					920			920	1,000
4200 For heaters, 10 MBH, add					265			265	291
4300 60 MBH, add					790			790	870
4500 For benches, 2' x 8', add					204			204	224
4600 4' x 10', add					535			535	590
4800 For ventilation & humidity control w/4 integrated outlets, add				Total	310			310	340
4900 For environmental controls and automation, 8 outputs, 9 stages, add				"	1,425			1,425	1,575
5100 For humidification equipment, add				Ea.	350			350	385
5200 For vinyl shading, add				S.F.	.33			.33	.36
6000 Geodesic hemisphere, 1/8" plexiglass glazing									
6050 8' diameter	2 Carp	2	8	Ea.	5,700	450		6,150	6,950
6150 24' diameter		.35	45.714		17,500	2,575		20,075	23,000
6250 48' diameter		.20	80		36,300	4,500		40,800	46,600

13 34 13.19 Swimming Pool Enclosures

0010 **SWIMMING POOL ENCLOSURES** Translucent, free standing									
0020 not including foundations, heat or light									
0200 Economy	2 Carp	200	.080	SF Hor.	48	4.50		52.50	59.50
0600 Deluxe	"	70	.229		131	12.85		143.85	164
0700 For motorized roof, 40% opening, solid roof, add					26			26	28.50
0800 Skylight type roof, add					16			16	17.60

13 34 16 – Grandstands and Bleachers

13 34 16.13 Grandstands

0010 **GRANDSTANDS** Permanent, municipal, including foundation									
0300 Steel, economy				Seat	24.50			24.50	27
0400 Steel, deluxe					27.50			27.50	30
0900 Composite, steel, wood and plastic, stock design, economy					34.50			34.50	38
1000 Deluxe				Seat	82.50			82.50	90.50

13 34 16.53 Bleachers

0010 **BLEACHERS**									
0020 Bleachers, outdoor, portable, 5 tiers, 42 seats	2 Sswk	120	.133	Seat	93	8.25		101.25	116
0100 5 tiers, 54 seats		80	.200		90	12.35		102.35	118
0200 10 tiers, 104 seats		120	.133		103	8.25		111.25	126
0300 10 tiers, 144 seats		80	.200		83.50	12.35		95.85	111
0500 Permanent bleachers, aluminum seat, steel frame, 24" row									
0600 8 tiers, 80 seats	2 Sswk	60	.267	Seat	108	16.50		124.50	145
0700 8 tiers, 160 seats		48	.333		90	20.50		110.50	131
0925 15 tiers, 154 to 165 seats		60	.267		96	16.50		112.50	132
0975 15 tiers, 214 to 225 seats		60	.267		86	16.50		102.50	120
1050 15 tiers, 274 to 285 seats		60	.267		89	16.50		105.50	124
1200 Seat backs only, 30" row, fiberglass		160	.100		32.50	6.20		38.70	45.50
1300 Steel and wood		160	.100		35	6.20		41.20	48
1400 NOTE: average seating is 1.5' in width									

13 34 19 – Metal Building Systems

13 34 19.50 Pre-Engineered Steel Buildings

0010 **PRE-ENGINEERED STEEL BUILDINGS** R133419-10									
0100 Clear span rigid frame, 26 ga. colored roofing and siding									

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13 34 19.50 Pre-Engineered Steel Buildings	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0150 20′ to 29′ wide, 10′ eave height	E-2	425	.132	SF Flr.	8.25	8.05	5.85	22.15	28
0160 14′ eave height		350	.160		10.05	9.80	7.10	26.95	34
0170 16′ eave height		320	.175		9.40	10.70	7.75	27.85	35.50
0180 20′ eave height		275	.204		10.35	12.45	9	31.80	40.50
0190 24′ eave height		240	.233		12.70	14.30	10.35	37.35	47.50
0200 30′ to 49′ wide, 10′ eave height		535	.105		6.60	6.40	4.64	17.64	22
0300 14′ eave height		450	.124		13.30	7.60	5.50	26.40	32.50
0400 16′ eave height		415	.135		7.60	8.25	6	21.85	27.50
0500 20′ eave height		360	.156		17	9.55	6.90	33.45	41
0600 24′ eave height		320	.175		9.10	10.70	7.75	27.55	35
0700 50′ to 100′ wide, 10′ eave height		770	.073		5.60	4.45	3.22	13.27	16.50
0900 16′ eave height		600	.093		11.35	5.70	4.13	21.18	26
1000 20′ eave height		490	.114		12.30	7	5.05	24.35	30
1100 24′ eave height		435	.129		7.70	7.90	5.70	21.30	27
1200 Clear span tapered beam frame, 26 ga. colored roofing/siding									
1300 30′ to 39′ wide, 10′ eave height	E-2	535	.105	SF Flr.	7.50	6.40	4.64	18.54	23
1400 14′ eave height		450	.124		8.25	7.60	5.50	21.35	27
1500 16′ eave height		415	.135		8.70	8.25	6	22.95	28.50
1600 20′ eave height		360	.156		9.60	9.55	6.90	26.05	32.50
1700 40′ wide, 10′ eave height	E-2	600	.093	SF Flr.	6.65	5.70	4.13	16.48	20.50
1800 14′ eave height		510	.110		7.40	6.70	4.86	18.96	24
1900 16′ eave height		475	.118		7.70	7.20	5.20	20.10	25.50
2000 20′ eave height		415	.135		8.50	8.25	6	22.75	28.50
2100 50′ to 79′ wide, 10′ eave height		770	.073		6.20	4.45	3.22	13.87	17.20
2200 14′ eave height		675	.083		12.20	5.10	3.67	20.97	25
2300 16′ eave height		635	.088		7	5.40	3.91	16.31	20.50
2400 20′ eave height		490	.114		13.10	7	5.05	25.15	30.50
2410 80′ to 100′ wide, 10′ eave height		935	.060		5.50	3.67	2.65	11.82	14.60
2420 14′ eave height		750	.075		6.10	4.57	3.31	13.98	17.35
2430 16′ eave height		685	.082		6.35	5	3.62	14.97	18.65
2440 20′ eave height		560	.100		6.80	6.10	4.43	17.33	21.50
2460 101′ to 120′ wide, 10′ eave height		950	.059		5.05	3.61	2.61	11.27	13.95
2470 14′ eave height		770	.073		5.60	4.45	3.22	13.27	16.55
2480 16′ eave height		675	.083		6	5.10	3.67	14.77	18.40
2490 20′ eave height		560	.100		6.40	6.10	4.43	16.93	21.50
2500 Single post 2-span frame, 26 ga. colored roofing and siding									
2600 80′ wide, 14′ eave height	E-2	740	.076	SF Flr.	5.60	4.63	3.35	13.58	16.95
2700 16′ eave height		695	.081		5.95	4.93	3.57	14.45	18.05
2800 20′ eave height		625	.090		6.50	5.50	3.97	15.97	19.85
2900 24′ eave height		570	.098		7.10	6	4.35	17.45	22
3000 100′ wide, 14′ eave height		835	.067		5.45	4.11	2.97	12.53	15.50
3100 16′ eave height		795	.070		5.05	4.31	3.12	12.48	15.60
3200 20′ eave height		730	.077		6.15	4.70	3.40	14.25	17.70
3300 24′ eave height		670	.084		6.85	5.10	3.70	15.65	19.35
3400 120′ wide, 14′ eave height		870	.064		8.75	3.94	2.85	15.54	18.80
3500 16′ eave height		830	.067		5.65	4.13	2.99	12.77	15.85
3600 20′ eave height		765	.073		6.70	4.48	3.24	14.42	17.75
3700 24′ eave height		705	.079		7.35	4.86	3.52	15.73	19.30
3800 Double post 3-span frame, 26 ga. colored roofing and siding									
3900 150′ wide, 14′ eave height	E-2	925	.061	SF Flr.	4.45	3.71	2.68	10.84	13.50
4000 16′ eave height		890	.063		4.64	3.85	2.79	11.28	14.05
4100 20′ eave height		820	.068		5.05	4.18	3.02	12.25	15.35
4200 24′ eave height		765	.073		5.55	4.48	3.24	13.27	16.50

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	13 34 19.50 Pre-Engineered Steel Buildings	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4300	Triple post 4-span frame, 26 ga. colored roofing and siding									
4400	160′ wide, 14′ eave height	E-2	970	.058	SF Flr.	4.34	3.54	2.56	10.44	13
4500	16′ eave height		930	.060		4.55	3.69	2.67	10.91	13.60
4600	20′ eave height		870	.064		4.47	3.94	2.85	11.26	14.05
4700	24′ eave height	E-2	815	.069	SF Flr.	5.05	4.21	3.04	12.30	15.30
4800	200′ wide, 14′ eave height		1030	.054		3.99	3.33	2.41	9.73	12.15
4900	16′ eave height		995	.056		4.13	3.45	2.49	10.07	12.55
5000	20′ eave height		935	.060		4.56	3.67	2.65	10.88	13.50
5100	24′ eave height		885	.063		5.10	3.88	2.80	11.78	14.60
5200	Accessory items: add to the basic building cost above									
5250	Eave overhang, 2′ wide, 26 ga., with soffit	E-2	360	.156	L.F.	39	9.55	6.90	55.45	65
5300	4′ wide, without soffit		300	.187		37.50	11.45	8.25	57.20	68
5350	With soffit		250	.224		42	13.70	9.90	65.60	78
5400	6′ wide, without soffit		250	.224		37.50	13.70	9.90	61.10	73
5450	With soffit		200	.280		49.50	17.15	12.40	79.05	94
5500	Entrance canopy, incl. frame, 4′ x 4′		25	2.240	Ea.	535	137	99	771	905
5550	4′ x 8′		19	2.947	″	645	181	131	957	1,125
5600	End wall roof overhang, 4′ wide, without soffit		850	.066	L.F.	18.30	4.03	2.92	25.25	29.50
5650	With soffit		500	.112	″	40	6.85	4.96	51.81	60
5700	Doors, HM self-framing, incl. butts, lockset and trim									
5750	Single leaf, 3070 (3′ x 7′), economy	2 Sswk	5	3.200	Opng.	735	198		933	1,100
5800	Deluxe		4	4		735	247		982	1,175
5825	Glazed		4	4		1,050	247		1,297	1,525
5850	3670 (3′-6″ x 7′)		4	4		1,000	247		1,247	1,475
5900	4070 (4′ x 7′)		3	5.333		1,150	330		1,480	1,775
5950	Double leaf, 6070 (6′ x 7′)		2	8		1,425	495		1,920	2,325
6000	Glazed		2	8		2,050	495		2,545	3,000
6050	Framing only, for openings, 3′ x 7′		4	4		228	247		475	630
6100	10′ x 10′		3	5.333		750	330		1,080	1,325
6150	For windows below, 2020 (2′ x 2′)		6	2.667		242	165		407	520
6200	4030 (4′ x 3′)		5	3.200		295	198		493	630
6250	Flashings, 26 ga., corner or eave, painted		240	.067	L.F.	4.75	4.12		8.87	11.60
6300	Galvanized		240	.067		4.81	4.12		8.93	11.65
6350	Rake flashing, painted		240	.067		5.15	4.12		9.27	12
6400	Galvanized		240	.067		5.10	4.12		9.22	12
6450	Ridge flashing, 18″ wide, painted		240	.067		6.85	4.12		10.97	13.85
6500	Galvanized		240	.067		7.40	4.12		11.52	14.50
6550	Gutter, eave type, 26 ga., painted		320	.050		8.60	3.09		11.69	14.20
6650	Valley type, between buildings, painted		120	.133		14.50	8.25		22.75	28.50
6710	Insulation, rated .6 lb. density, unfaced 4″ thick, R13	2 Carp	2300	.007	S.F.	.48	.39		.87	1.11
6720	6″ thick, R19	2 Carp	2300	.007	S.F.	.41	.39		.80	1.03
6730	10″ thick, R30	″	2300	.007	″	1.31	.39		1.70	2.02
6750	Insulation, rated .6 lb. density, poly/scrim/foil (PSF) faced									
6760	4″ thick, R13	2 Carp	2300	.007	S.F.	.67	.39		1.06	1.32
6770	6″ thick, R19		2300	.007		.82	.39		1.21	1.48
6780	9-1/2″ thick, R30		2300	.007		1.02	.39		1.41	1.70
6800	Insulation, rated .6 lb. density, vinyl faced 1-1/2″ thick, R5		2300	.007		.41	.39		.80	1.03
6850	3″ thick, R10		2300	.007		.47	.39		.86	1.10
6900	4″ thick, R13		2300	.007		.53	.39		.92	1.16
6920	6″ thick, R19		2300	.007		.57	.39		.96	1.21
6930	10″ thick, R30		2300	.007		1.80	.39		2.19	2.56
6950	Foil/scrim/kraft (FSK) faced, 1-1/2″ thick, R5		2300	.007		.44	.39		.83	1.06
7000	2″ thick, R6		2300	.007		.56	.39		.95	1.20

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13 34 19 – Metal Building Systems

	13 34 19.50 Pre-Engineered Steel Buildings	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
7050	3" thick, R10	2 Carp	2300	.007	S.F.	.63	.39		1.02	1.27
7100	4" thick, R13		2300	.007		.48	.39		.87	1.11
7110	6" thick, R19		2300	.007		.61	.39		1	1.25
7120	10" thick, R30		2300	.007		.93	.39		1.32	1.60
7150	Metalized polyester/scrim/kraft (PSK) facing, 1-1/2" thk, R5		2300	.007		.68	.39		1.07	1.33
7200	2" thick, R6		2300	.007		.81	.39		1.20	1.47
7250	3" thick, R11		2300	.007		1.04	.39		1.43	1.72
7300	4" thick, R13		2300	.007		1.03	.39		1.42	1.71
7310	6" thick, R19		2300	.007		1.15	.39		1.54	1.85
7320	10" thick, R30		2300	.007		1.56	.39		1.95	2.30
7350	Vinyl/scrim/foil (VSF), 1-1/2" thick, R5		2300	.007		.59	.39		.98	1.23
7400	2" thick, R6		2300	.007		.78	.39		1.17	1.44
7450	3" thick, R10		2300	.007		.76	.39		1.15	1.42
7500	4" thick, R13		2300	.007		.97	.39		1.36	1.65
7510	Vinyl/scrim/vinyl (VSV), 4" thick, R13		2300	.007		.47	.39		.86	1.10
7520	6" thick, R19		2300	.007		.61	.39		1	1.25
7530	9-1/2" thick, R30		2300	.007		1.04	.39		1.43	1.72
7540	Polyprop/scrim/polyester (PSP), 4" thick, R13		2300	.007		.70	.39		1.09	1.35
7550	6" thick, R19		2300	.007		.82	.39		1.21	1.48
7555	10" thick, R30		2300	.007		1.52	.39		1.91	2.25
7560	Polyprop/scrim/kraft/polyester (PSKP), 4" thick, R13		2300	.007		.91	.39		1.30	1.58
7570	6" thick, R19		2300	.007		.95	.39		1.34	1.63
7580	10" thick, R19		2300	.007		1.73	.39		2.12	2.48
7585	Vinyl/scrim/polyester (VSP), 4" thick, R13		2300	.007		.62	.39		1.01	1.26
7590	6" thick, R19	2 Carp	2300	.007	S.F.	.84	.39		1.23	1.50
7600	10" thick, R30	"	2300	.007	"	1.18	.39		1.57	1.88
7635	Insulation installation, over the purlin, second layer, up to 4" thick, add						90%			
7640	Insulation installation, between the purlins, up to 4" thick, add						100%			
7650	Sash, single slide, glazed, with screens, 2020 (2' x 2')	E-1	22	1.091	Opng.	162	66.50	6.70	235.20	286
7700	3030 (3' x 3')		14	1.714		365	105	10.55	480.55	570
7750	4030 (4' x 3')		13	1.846		485	113	11.35	609.35	720
7800	6040 (6' x 4')		12	2		970	122	12.30	1,104.30	1,275
7850	Double slide sash, 3030 (3' x 3')		14	1.714		234	105	10.55	349.55	430
7900	6040 (6' x 4')		12	2		625	122	12.30	759.30	885
7950	Fixed glass, no screens, 3030 (3' x 3')		14	1.714		219	105	10.55	334.55	410
8000	6040 (6' x 4')		12	2		585	122	12.30	719.30	845
8050	Prefinished storm sash, 3030 (3' x 3')		70	.343		123	21	2.11	146.11	169
8100	Siding and roofing, see Sections 07 41 13 & 07 42 13									
8200	Skylight, fiberglass panels, to 30 S.F.	E-1	10	2.400	Ea.	143	146	14.75	303.75	395
8250	Larger sizes, add for excess over 30 S.F.	"	300	.080	S.F.	4.78	4.88	.49	10.15	13.25
8300	Roof vents, turbine ventilator, wind driven									
8350	No damper, includes base, galvanized									
8400	12" diameter	Q-9	10	1.600	Ea.	97.50	97.50		195	254
8450	20" diameter		8	2		275	122		397	485
8500	24" diameter		8	2		435	122		557	660
8600	Continuous, 26 ga., 10' long, 9" wide	2 Sswk	4	4		50	247		297	435
8650	12" wide	"	4	4		50	247		297	435

13 34 23 – Fabricated Structures

13 34 23.10 Comfort Stations

0010	**COMFORT STATIONS** Prefab., stock, w/doors, windows & fixt.									
0100	Not incl. interior finish or electrical									
0300	Mobile, on steel frame, 2 unit				S.F.	195			195	214

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13 34 23 – Fabricated Structures

	13 34 23.10 Comfort Stations	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0350	7 unit				S.F.	310			310	340
0400	Permanent, including concrete slab, 2 unit	B-12J	50	.320		250	17.45	17.15	284.60	320
0500	6 unit	"	43	.372		214	20.50	19.95	254.45	287
0600	Alternate pricing method, mobile, 2 fixture				Fixture	6,675			6,675	7,350
0650	7 fixture					11,600			11,600	12,700
0700	Permanent, 2 unit	B-12J	.70	22.857		20,700	1,250	1,225	23,175	25,900
0750	6 unit	"	.50	32		17,800	1,750	1,725	21,275	24,100

13 34 23.15 Domes

0010	**DOMES**									
1500	Domes, bulk storage, shell only, dual radius hemisphere, arch, steel									
1600	framing, corrugated steel covering, 150' diameter	E-2	550	.102	SF Flr.	33.50	6.25	4.51	44.26	51.50
1700	400' diameter	"	720	.078		27.50	4.76	3.44	35.70	41
1800	Wood framing, wood decking, to 400' diameter	F-4	400	.120		28	6.85	5.65	40.50	47.50
1900	Radial framed wood (2" x 6"), 1/2" thick									
2000	plywood, asphalt shingles, 50' diameter	F-3	2000	.020	SF Flr.	67	1.15	.99	69.14	77
2100	60' diameter		1900	.021		63	1.22	1.04	65.26	72
2200	72' diameter		1800	.022		52	1.28	1.10	54.38	60
2300	116' diameter		1730	.023		33	1.33	1.15	35.48	39.50
2400	150' diameter		1500	.027		35	1.54	1.32	37.86	42

13 34 23.16 Fabricated Control Booths

0010	**FABRICATED CONTROL BOOTHS**									
0100	Guard House, prefab conc. w/bullet resistant doors & windows, roof & wiring									
0110	8' x 8', Level III	L-10	1	24	Ea.	59,500	1,525	1,975	63,000	70,000
0120	8' x 8', Level IV	"	1	24	"	76,500	1,525	1,975	80,000	89,000

13 34 23.25 Garage Costs

0010	**GARAGE COSTS**									
0020	Public parking, average				Car				15,200	16,700
0300	Residential, wood, 12' x 20', one car prefab shell, stock, economy	2 Carp	1	16	Total	6,350	900		7,250	8,350
0350	Custom		.67	23.881		8,950	1,350		10,300	11,900
0400	Two car, 24' x 20', economy		.67	23.881		14,700	1,350		16,050	18,100
0450	Custom		.50	32		20,600	1,800		22,400	25,300

13 34 23.30 Garden House

0010	**GARDEN HOUSE** Prefab wood, no floors or foundations									
0100	6' x 6'	2 Carp	200	.080	SF Flr.	50.50	4.50		55	62
0300	8' x 12'	"	48	.333	"	60.50	18.75		79.25	94.50

13 34 23.45 Kiosks

0010	**KIOSKS**									
0020	Round, advertising type, 5' diameter, 7' high, aluminum wall, illuminated				Ea.	22,500			22,500	24,800
0100	Aluminum wall, non-illuminated					21,800			21,800	23,900
0500	Rectangular, 5' x 9', 7'-6" high, aluminum wall, illuminated					24,800			24,800	27,300
0600	Aluminum wall, non-illuminated					25,500			25,500	28,000

13 34 23.60 Portable Booths

0010	**PORTABLE BOOTHS** Prefab. aluminum with doors, windows, ext. roof									
0100	lights wiring & insulation, 15 S.F. building, OD, painted				S.F.	283			283	310
0300	30 S.F. building					265			265	291
0400	50 S.F. building					194			194	213
0600	80 S.F. building					165			165	181
0700	100 S.F. building					150			150	165
0900	Acoustical booth, 27 Db @ 1,000 Hz, 15 S.F. floor				Ea.	4,375			4,375	4,800
1000	7' x 7'-6", including light & ventilation				"	8,975			8,975	9,875
1200	Ticket booth, galv. steel, not incl. foundations., 4' x 4'				Ea.	4,000			4,000	4,400

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13 34 Fabricated Engineered Structures

13 34 23 – Fabricated Structures

		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
13 34 23.60	**Portable Booths**									
1300	4' x 6'				Ea.	6,700			6,700	7,375
13 34 23.70	**Shelters**									
0010	**SHELTERS**									
0020	Aluminum frame, acrylic glazing, 3' x 9' x 8' high	2 Sswk	1.14	14.035	Ea.	3,700	870		4,570	5,375
0100	9' x 12' x 8' high		.73	21.918		7,275	1,350		8,625	10,100
1000	Gable end shelter, 16' x 32', 8' eave ht, excl. footings, slab, anchors		.68	23.529		13,200	1,450		14,650	16,900
1050	Gable end shelter, 30' x 64', 8' eave ht, excl. footings, slab, anchors		.34	47.059		41,200	2,900		44,100	49,800

13 34 43 – Aircraft Hangars

13 34 43.50	**Hangars**									
0010	**HANGARS** Prefabricated steel T hangars, galv. steel roof &									
0100	walls, incl. electric bi-folding doors									
0110	not including floors or foundations, 4 unit	E-2	1275	.044	SF Flr.	14.20	2.69	1.95	18.84	22
0130	8 unit		1063	.053		12.35	3.23	2.33	17.91	21
0900	With bottom rolling doors, 4 unit		1386	.040		13.20	2.47	1.79	17.46	20.50
1000	8 unit		966	.058		10.95	3.55	2.57	17.07	20
1200	Alternate pricing method:									
1300	Galv. roof and walls, electric bi-folding doors, 4 plane	E-2	1.06	52.830	Plane	17,700	3,225	2,350	23,275	27,000
1500	8 plane		.91	61.538		13,200	3,775	2,725	19,700	23,300
1600	With bottom rolling doors, 4 plane		1.25	44.800		19,200	2,750	1,975	23,925	27,500
1800	8 plane		.97	57.732		13,800	3,525	2,550	19,875	23,400
2000	Circular type, prefab., steel frame, plastic skin, electric									
2010	door, including foundations, 80' diameter									

13 34 53 – Agricultural Structures

13 34 53.50	**Silos**									
0010	**SILOS**									
0500	Steel, factory fab., 30,000 gallon cap., painted, economy	L-5	1	56	Ea.	24,700	3,500	2,100	30,300	34,900
0700	Deluxe		.50	112		39,400	6,975	4,175	50,550	58,500
0800	Epoxy lined, economy		1	56		40,500	3,500	2,100	46,100	52,000
1000	Deluxe		.50	112		51,500	6,975	4,175	62,650	72,000

13 34 56 – Observatories

13 34 56.15	**Domes**									
0010	**DOMES**									
0020	Domes, rev. alum., elec. drive, for astronomy obsv. shell only, stock units									
0600	10'-6" diameter	2 Carp	.25	64	Ea.	46,900	3,600		50,500	57,000
0900	18'-6" diameter		.17	94.118		68,500	5,300		73,800	83,000
1200	24'-6" diameter		.08	200		139,000	11,300		150,300	169,500

13 34 63 – Natural Fiber Construction

13 34 63.50	**Straw Bale Construction**									
0010	**STRAW BALE CONSTRUCTION**									
2020	Straw bales in walls w/modified post and beam frame G	2 Carp	320	.050	S.F.	7.10	2.82		9.92	12

13 36 Towers

13 36 13 – Metal Towers

13 36 13.50	**Control Towers**									
0010	**CONTROL TOWERS**									
0020	Modular 12' x 10', incl. instruments				Ea.	813,000			813,000	894,000
0500	With standard 40' tower				"	1,250,500			1,250,500	1,375,500
1000	Temporary portable control towers, 8' x 12',									

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13 42 Building Modules

13 42 63 – Detention Cell Modules

13 42 63.16 Steel Detention Cell Modules	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **STEEL DETENTION CELL MODULES**									
2000 Cells, prefab., 5′ to 6′ wide, 7′ to 8′ high, 7′ to 8′ deep,									
2010 bar front, cot, not incl. plumbing	E-4	1.50	21.333	Ea.	9,750	1,325	98.50	11,173.50	12,900

13 47 Facility Protection

13 47 13 – Cathodic Protection

13 47 13.16 Cathodic Prot. for Underground Storage Tanks									
0010 **CATHODIC PROTECTION FOR UNDERGROUND STORAGE TANKS**									
1000 Anodes, magnesium type, 9 #	R-15	18.50	2.595	Ea.	44	168	17.65	229.65	320
1010 17 #		13	3.692		90.50	239	25	354.50	480
1020 32 #		10	4.800		133	310	32.50	475.50	640
1030 48 #		7.20	6.667		170	430	45.50	645.50	875
1100 Graphite type w/epoxy cap, 3″ x 60″ (32 #)	R-22	8.40	4.438		157	269		426	575
1110 4″ x 80″ (68 #)		6	6.213		272	375		647	860
1120 6″ x 72″ (80 #)		5.20	7.169		1,650	435		2,085	2,475
1130 6″ x 36″ (45 #)		9.60	3.883		835	235		1,070	1,275
2000 Rectifiers, silicon type, air cooled, 28 V/10 A	R-19	3.50	5.714		2,625	380		3,005	3,450
2010 20 V/20 A		3.50	5.714		2,625	380		3,005	3,475
2100 Oil immersed, 28 V/10 A		3	6.667		2,675	440		3,115	3,575
2110 20 V/20 A		3	6.667		3,525	440		3,965	4,525
3000 Anode backfill, coke breeze	R-22	3850	.010	Lb.	.30	.59		.89	1.20
4000 Cable, HMWPE, No. 8		2.40	15.533	M.L.F.	435	940		1,375	1,875
4010 No. 6		2.40	15.533		625	940		1,565	2,100
4020 No. 4		2.40	15.533		950	940		1,890	2,450
4030 No. 2		2.40	15.533		1,700	940		2,640	3,275
4040 No. 1		2.20	16.945		2,225	1,025		3,250	3,950
4050 No. 1/0		2.20	16.945		2,925	1,025		3,950	4,725
4060 No. 2/0		2.20	16.945		5,425	1,025		6,450	7,475
4070 No. 4/0		2	18.640		9,400	1,125		10,525	12,100
5000 Test station, 7 terminal box, flush curb type w/lockable cover	R-19	12	1.667	Ea.	88	111		199	261
5010 Reference cell, 2″ diam. PVC conduit, cplg., plug, set flush	R-19	4.80	4.167	Ea.	175	276		451	605

13 48 Sound, Vibration, and Seismic Control

13 48 13 – Manufactured Sound and Vibration Control Components

13 48 13.50 Audio Masking									
0010 **AUDIO MASKING**, acoustical enclosure, 4″ thick wall and ceiling									
0020 8 lb./S.F., up to 12′ span	3 Carp	72	.333	SF Surf	33.50	18.75		52.25	65
0300 Better quality panels, 10.5 #/S.F		64	.375		38	21		59	73.50
0400 Reverb-chamber, 4″ thick, parallel walls		60	.400		47.50	22.50		70	86
0600 Skewed wall, parallel roof, 4″ thick panels		55	.436		54.50	24.50		79	96.50
0700 Skewed walls, skewed roof, 4″ layers, 4″ air space		48	.500		61	28		89	109
0900 Sound-absorbing panels, pntd. mtl., 2′-6″ x 8′, under 1,000 S.F.		215	.112		12.65	6.30		18.95	23.50
1100 Over 1,000 S.F.		240	.100		12.20	5.65		17.85	22
1200 Fabric faced		240	.100		9.85	5.65		15.50	19.25
1500 Flexible transparent curtain, clear	3 Shee	215	.112		7.65	7.55		15.20	19.75
1600 50% foam		215	.112		10.65	7.55		18.20	23
1700 75% foam		215	.112		10.65	7.55		18.20	23
1800 100% foam		215	.112		10.65	7.55		18.20	23
3100 Audio masking system, including speakers, amplification									

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13 48 Sound, Vibration, and Seismic Control

13 48 13 – Manufactured Sound and Vibration Control Components

	13 48 13.50 Audio Masking	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
3110	and signal generator									
3200	Ceiling mounted, 5,000 S.F.	2 Elec	2400	.007	S.F.	1.22	.44		1.66	2
3300	10,000 S.F.		2800	.006		.99	.38		1.37	1.65
3400	Plenum mounted, 5,000 S.F.		3800	.004		1.11	.28		1.39	1.63
3500	10,000 S.F.		4400	.004		.74	.24		.98	1.17

13 49 Radiation Protection

13 49 13 – Integrated X-Ray Shielding Assemblies

13 49 13.50 Lead Sheets

0010	**LEAD SHEETS**									
0300	Lead sheets, 1/16" thick	2 Lath	135	.119	S.F.	10.65	6.65		17.30	21.50
0400	1/8" thick		120	.133		24	7.45		31.45	37
0500	Lead shielding, 1/4" thick		135	.119		45	6.65		51.65	59
0550	1/2" thick		120	.133		83.50	7.45		90.95	103
0950	Lead headed nails (average 1 lb. per sheet)				Lb.	9.95			9.95	10.95
1000	Butt joints in 1/8" lead or thicker, 2" batten strip x 7' long	2 Lath	240	.067	Ea.	39	3.73		42.73	48.50
1200	X-ray protection, average radiography or fluoroscopy									
1210	room, up to 300 S.F. floor, 1/16" lead, economy	2 Lath	.25	64	Total	14,900	3,575		18,475	21,600
1500	7'-0" walls, deluxe	"	.15	107	"	17,900	5,975		23,875	28,400
1600	Deep therapy X-ray room, 250 kV capacity,									
1800	up to 300 S.F. floor, 1/4" lead, economy	2 Lath	.08	200	Total	41,700	11,200		52,900	62,500
1900	7'-0" walls, deluxe	"	.06	267	"	51,500	14,900		66,400	78,500

13 49 19 – Lead-Lined Materials

13 49 19.50 Shielding Lead

0010	**SHIELDING LEAD**									
0100	Laminated lead in wood doors, 1/16" thick, no hardware				S.F.	59			59	65
0200	Lead lined door frame, not incl. hardware,									
0210	1/16" thick lead, butt prepared for hardware	1 Lath	2.40	3.333	Ea.	1,025	187		1,212	1,400
0850	Window frame with 1/16" lead and voice passage, 36" x 60"	2 Glaz	2	8		4,825	430		5,255	5,950
0870	24" x 36" frame		4	4		2,600	216		2,816	3,200
0900	Lead gypsum board, 5/8" thick with 1/16" lead		160	.100	S.F.	10.55	5.40		15.95	19.65
0910	1/8" lead		140	.114		20.50	6.15		26.65	31.50
0930	1/32" lead	2 Lath	200	.080		13.60	4.48		18.08	21.50

13 49 21 – Lead Glazing

13 49 21.50 Lead Glazing

0010	**LEAD GLAZING**									
0600	Lead glass, 1/4" thick, 2.0 mm LE, 12" x 16"	2 Glaz	13	1.231	Ea.	515	66.50		581.50	670
0700	24" x 36"		8	2		1,875	108		1,983	2,225
0800	36" x 60"		2	8		4,525	430		4,955	5,625
2000	X-ray viewing panels, clear lead plastic									
2010	7 mm thick, 0.3 mm LE, 2.3 lb./S.F.	H-3	139	.115	S.F.	288	5.60		293.60	325
2020	12 mm thick, 0.5 mm LE, 3.9 lb./S.F.		82	.195		385	9.50		394.50	440
2030	18 mm thick, 0.8 mm LE, 5.9 lb./S.F.		54	.296		470	14.40		484.40	535
2040	22 mm thick, 1.0 mm LE, 7.2 lb./S.F.		44	.364		775	17.70		792.70	880
2050	35 mm thick, 1.5 mm LE, 11.5 lb./S.F.		28	.571		1,025	28		1,053	1,175
2060	46 mm thick, 2.0 mm LE, 15.0 lb./S.F.		21	.762		1,350	37		1,387	1,525

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13 49 Radiation Protection

13 49 23 – Integrated RFI/EMI Shielding Assemblies

	13 49 23.50 Modular Shielding Partitions	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**MODULAR SHIELDING PARTITIONS**									
4000	X-ray barriers, modular, panels mounted within framework for									
4002	attaching to floor, wall or ceiling, upper portion is clear lead									
4005	plastic window panels 48"H, lower portion is opaque leaded									
4008	steel panels 36"H, structural supports not incl.									
4010	1-section barrier, 36"W x 84"H overall									
4020	0.5 mm LE panels	H-3	6.40	2.500	Ea.	10,400	122		10,522	11,700
4030	0.8 mm LE panels		6.40	2.500		11,200	122		11,322	12,600
4040	1.0 mm LE panels		5.33	3.002		15,600	146		15,746	17,300
4050	1.5 mm LE panels		5.33	3.002		18,300	146		18,446	20,400
4060	2-section barrier, 72"W x 84"H overall									
4070	0.5 mm LE panels	H-3	4	4	Ea.	15,800	195		15,995	17,700
4080	0.8 mm LE panels		4	4		16,300	195		16,495	18,200
4090	1.0 mm LE panels		3.56	4.494		17,700	219		17,919	19,800
5000	1.5 mm LE panels		3.20	5		31,700	243		31,943	35,200
5010	3-section barrier, 108"W x 84"H overall									
5020	0.5 mm LE panels	H-3	3.20	5	Ea.	23,700	243		23,943	26,400
5030	0.8 mm LE panels		3.20	5		24,400	243		24,643	27,200
5040	1.0 mm LE panels		2.67	5.993		26,500	292		26,792	29,600
5050	1.5 mm LE panels		2.46	6.504		48,000	315		48,315	53,500
7000	X-ray barriers, mobile, mounted within framework w/casters on									
7005	bottom, clear lead plastic window panels on upper portion,									
7010	opaque on lower, 30"W x 75"H overall, incl. framework									
7020	24"H upper w/0.5 mm LE, 48"H lower w/0.8 mm LE	1 Carp	16	.500	Ea.	5,325	28		5,353	5,925
7030	48"W x 75"H overall, incl. framework									
7040	36"H upper w/0.5 mm LE, 36"H lower w/0.8 mm LE	1 Carp	16	.500	Ea.	7,575	28		7,603	8,375
7050	36"H upper w/1.0 mm LE, 36"H lower w/1.5 mm LE	"	16	.500	"	8,425	28		8,453	9,325
7060	72"W x 75"H overall, incl. framework									
7070	36"H upper w/0.5 mm LE, 36"H lower w/0.8 mm LE	1 Carp	16	.500	Ea.	8,425	28		8,453	9,325
7080	36"H upper w/1.0 mm LE, 36"H lower w/1.5 mm LE	"	16	.500	"	10,600	28		10,628	11,600

13 49 33 – Radio Frequency Shielding

	13 49 33.50 Shielding, Radio Frequency									
0010	**SHIELDING, RADIO FREQUENCY**									
0020	Prefabricated, galvanized steel	2 Carp	375	.043	SF Surf	6.70	2.40		9.10	11
0040	5 oz., copper floor panel		480	.033		5.45	1.88		7.33	8.80
0050	5 oz., copper wall/ceiling panel		155	.103		5.45	5.80		11.25	14.65
0100	12 oz., copper floor panel		470	.034		11.35	1.92		13.27	15.35
0110	12 oz., copper wall/ceiling panel		140	.114		11.35	6.45		17.80	22
0150	Door, copper/wood laminate, 4' x 7'		1.50	10.667	Ea.	10,200	600		10,800	12,100

13 53 Meteorological Instrumentation

13 53 09 – Weather Instrumentation

	13 53 09.50 Weather Station									
0010	**WEATHER STATION**									
0020	Remote recording, solar powered, with rain gauge & display, 400' range				Ea.	905			905	1,000
0100	1 mile range				"	1,750			1,750	1,900

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Estimating Tips

General

- Many products in Division 14 will require some type of support or blocking for installation not included with the item itself. Examples are supports for conveyors or tube systems, attachment points for lifts, and footings for hoists or cranes. Add these supports in the appropriate division.

14 10 00 Dumbwaiters
14 20 00 Elevators

- Dumbwaiters and elevators are estimated and purchased in a method similar to buying a car. The manufacturer has a base unit with standard features. Added to this base unit price will be whatever options the owner or specifications require. Increased load capacity, additional vertical travel, additional stops, higher speed, and cab finish options are items to be considered. When developing an estimate for dumbwaiters and elevators, remember that some items needed by the installers may have to be included as part of the general contract.

  Examples are:

  - ☐ shaftway
  - ☐ rail support brackets
  - ☐ machine room
  - ☐ electrical supply
  - ☐ sill angles
  - ☐ electrical connections
  - ☐ pits
  - ☐ roof penthouses
  - ☐ pit ladders

  Check the job specifications and drawings before pricing.

- Installation of elevators and handicapped lifts in historic structures can require significant additional costs. The associated structural requirements may involve cutting into and repairing finishes, moldings, flooring, etc. The estimator must account for these special conditions.

14 30 00 Escalators and Moving Walks

- Escalators and moving walks are specialty items installed by specialty contractors. There are numerous options associated with these items. For specific options, contact a manufacturer or contractor. In a method similar to estimating dumbwaiters and elevators, you should verify the extent of general contract work and add items as necessary.

14 40 00 Lifts
14 90 00 Other Conveying Equipment

- Products such as correspondence lifts, chutes, and pneumatic tube systems, as well as other items specified in this subdivision, may require trained installers. The general contractor might not have any choice as to who will perform the installation or when it will be performed. Long lead times are often required for these products, making early decisions in scheduling necessary.

Reference Numbers

Reference numbers are shown at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear. ■

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14 11 Manual Dumbwaiters

14 11 10 – Hand Operated Dumbwaiters

14 11 10.20 Manual Dumbwaiters	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **MANUAL DUMBWAITERS**									
0020 2 stop, hand powered, up to 75 lb. capacity	2 Elev	.75	21.333	Ea.	3,200	2,000		5,200	6,475
0100 76 lb. capacity and up		.50	32	"	6,275	3,000		9,275	11,300
0300 For each additional stop, add		.75	21.333	Stop	1,025	2,000		3,025	4,075

14 12 Electric Dumbwaiters

14 12 10 – Dumbwaiters

14 12 10.10 Electric Dumbwaiters									
0010 **ELECTRIC DUMBWAITERS**									
0020 2 stop, up to 75 lb. capacity	2 Elev	.13	123	Ea.	4,225	11,500		15,725	21,700
0100 76 lb. capacity and up		.11	145	"	10,600	13,600		24,200	31,800
0600 For each additional stop, add		.54	29.630	Stop	555	2,775		3,330	4,700

14 21 Electric Traction Elevators

14 21 13 – Electric Traction Freight Elevators

14 21 13.10 Electric Traction Freight Elevators and Options										
0010 **ELECTRIC TRACTION FREIGHT ELEVATORS AND OPTIONS**	R142000-10									
0425 Electric freight, base unit, 4000 lb., 200 fpm, 4 stop, std. fin.	R142000-20	2 Elev	.05	320	Ea.	130,000	29,900		159,900	187,500
0450 For 5000 lb. capacity, add	R142000-30					7,400			7,400	8,125
0500 For 6000 lb. capacity, add	R142000-40					17,300			17,300	19,100
0525 For 7000 lb. capacity, add						23,700			23,700	26,100
0550 For 8000 lb. capacity, add						27,700			27,700	30,500
0575 For 10000 lb. capacity, add						38,600			38,600	42,500
0600 For 12000 lb. capacity, add						46,700			46,700	51,500
0625 For 16000 lb. capacity, add						57,000			57,000	62,500
0650 For 20000 lb. capacity, add						66,000			66,000	72,500
0675 For increased speed, 250 fpm, add						17,200			17,200	18,900
0700 300 fpm, geared electric, add						21,500			21,500	23,700
0725 350 fpm, geared electric, add						26,300			26,300	28,900
0750 400 fpm, geared electric, add						30,800			30,800	33,900
0775 500 fpm, gearless electric, add						42,900			42,900	47,200
0800 600 fpm, gearless electric, add						47,600			47,600	52,500
0825 700 fpm, gearless electric, add						56,500			56,500	62,000
0850 800 fpm, gearless electric, add						62,500			62,500	69,000
0875 For class "B" loading, add						3,500			3,500	3,850
0900 For class "C-1" loading, add						8,600			8,600	9,450
0925 For class "C-2" loading, add						10,100			10,100	11,100
0950 For class "C-3" loading, add						14,100			14,100	15,600
0975 For travel over 40 V.L.F., add		2 Elev	7.25	2.207	V.L.F.	720	206		926	1,100
1000 For number of stops over 4, add		"	.27	59.259	Stop	5,450	5,550		11,000	14,200

14 21 23 – Electric Traction Passenger Elevators

14 21 23.10 Electric Traction Passenger Elevators and Options										
0010 **ELECTRIC TRACTION PASSENGER ELEVATORS AND OPTIONS**	R142000-10									
1625 Electric pass., base unit, 2,000 lb., 200 fpm, 4 stop, std. fin.	R142000-20	2 Elev	.05	320	Ea.	109,500	29,900		139,400	165,000
1650 For 2,500 lb. capacity, add	R142000-30					4,675			4,675	5,150
1675 For 3,000 lb. capacity, add	R142000-40					5,125			5,125	5,650
1700 For 3,500 lb. capacity, add						6,525			6,525	7,175
1725 For 4,000 lb. capacity, add						7,650			7,650	8,425
1750 For 4,500 lb. capacity, add						10,600			10,600	11,600

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14 21 Electric Traction Elevators

14 21 23 – Electric Traction Passenger Elevators

	14 21 23.10 Electric Traction Passenger Elevators and Options	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1775	For 5000 lb. capacity, add				Ea.	13,600			13,600	14,900
1800	For increased speed, 250 fpm, geared electric, add					4,125			4,125	4,550
1825	300 fpm, geared electric, add					7,975			7,975	8,750
1850	350 fpm, geared electric, add					10,200			10,200	11,300
1875	400 fpm, geared electric, add					14,900			14,900	16,400
1900	500 fpm, gearless electric, add					36,000			36,000	39,600
1925	600 fpm, gearless electric, add					58,500			58,500	64,000
1950	700 fpm, gearless electric, add					65,500			65,500	72,000
1975	800 fpm, gearless electric, add					73,000			73,000	80,000
2000	For travel over 40 V.L.F., add	2 Elev	7.25	2.207	V.L.F.	775	206		981	1,150
2025	For number of stops over 4, add		.27	59.259	Stop	3,475	5,550		9,025	12,000
2400	Electric hospital, base unit, 4,000 lb., 200 fpm, 4 stop, std fin.		.05	320	Ea.	101,500	29,900		131,400	156,000
2425	For 4,500 lb. capacity, add					6,500			6,500	7,150
2450	For 5,000 lb. capacity, add					8,500			8,500	9,350
2475	For increased speed, 250 fpm, geared electric, add					4,600			4,600	5,050
2500	300 fpm, geared electric, add					8,800			8,800	9,700
2525	350 fpm, geared electric, add					10,600			10,600	11,700
2550	400 fpm, geared electric, add					15,400			15,400	16,900
2575	500 fpm, gearless electric, add					42,300			42,300	46,500
2600	600 fpm, gearless electric, add					63,500			63,500	70,000
2625	700 fpm, gearless electric, add					70,500			70,500	77,500
2650	800 fpm, gearless electric, add					79,500			79,500	87,000
2675	For travel over 40 V.L.F., add	2 Elev	7.25	2.207	V.L.F.	205	206		411	530
2700	For number of stops over 4, add	"	.27	59.259	Stop	5,175	5,550		10,725	13,900

14 21 33 – Electric Traction Residential Elevators

14 21 33.20 Residential Elevators

0010	**RESIDENTIAL ELEVATORS**									
7000	Residential, cab type, 1 floor, 2 stop, economy model	2 Elev	.20	80	Ea.	12,800	7,475		20,275	25,200
7100	Custom model	"	.10	160	"	17,000	15,000		32,000	40,900
7200	2 floor, 3 stop, economy model	2 Elev	.12	133	Ea.	13,700	12,500		26,200	33,600
7300	Custom model	"	.06	267	"	23,500	24,900		48,400	62,500

14 24 Hydraulic Elevators

14 24 13 – Hydraulic Freight Elevators

14 24 13.10 Hydraulic Freight Elevators and Options

0010	**HYDRAULIC FREIGHT ELEVATORS AND OPTIONS** R142000-10									
1025	Hydraulic freight, base unit, 2,000 lb., 50 fpm, 2 stop, std. fin. R142000-20	2 Elev	.10	160	Ea.	96,000	15,000		111,000	128,000
1050	For 2,500 lb. capacity, add R142000-30					4,550			4,550	5,000
1075	For 3,000 lb. capacity, add R142000-40					6,000			6,000	6,600
1100	For 3,500 lb. capacity, add					9,825			9,825	10,800
1125	For 4,000 lb. capacity, add					11,300			11,300	12,400
1150	For 4,500 lb. capacity, add					13,000			13,000	14,300
1175	For 5,000 lb. capacity, add					17,700			17,700	19,500
1200	For 6,000 lb. capacity, add					20,000			20,000	22,000
1225	For 7,000 lb. capacity, add					30,800			30,800	33,900
1250	For 8,000 lb. capacity, add					37,300			37,300	41,000
1275	For 10,000 lb. capacity, add					39,400			39,400	43,400
1300	For 12,000 lb. capacity, add					48,000			48,000	53,000
1325	For 16,000 lb. capacity, add					64,500			64,500	71,000
1350	For 20,000 lb. capacity, add					71,500			71,500	78,500

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14 24 Hydraulic Elevators

14 24 13 – Hydraulic Freight Elevators

	14 24 13.10 Hydraulic Freight Elevators and Options	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1375	For increased speed, 100 fpm, add				Ea.	1,300			1,300	1,425
1400	125 fpm, add					3,400			3,400	3,750
1425	150 fpm, add					5,350			5,350	5,900
1450	175 fpm, add					7,675			7,675	8,425
1475	For class "B" loading, add					3,050			3,050	3,350
1500	For class "C-1" loading, add					7,675			7,675	8,450
1525	For class "C-2" loading, add					9,225			9,225	10,200
1550	For class "C-3" loading, add					12,700			12,700	13,900
1575	For travel over 20 V.L.F., add	2 Elev	7.25	2.207	V.L.F.	965	206		1,171	1,350
1600	For number of stops over 2, add	"	.27	59.259	Stop	2,575	5,550		8,125	11,100

14 24 23 – Hydraulic Passenger Elevators

14 24 23.10 Hydraulic Passenger Elevators and Options

0010	**HYDRAULIC PASSENGER ELEVATORS AND OPTIONS** R142000-10									
2050	Hyd. pass., base unit, 1,500 lb., 100 fpm, 2 stop, std. fin. R142000-20	2 Elev	.10	160	Ea.	46,900	15,000		61,900	73,500
2075	For 2,000 lb. capacity, add R142000-30					890			890	980
2100	For 2,500 lb. capacity, add R142000-40					3,325			3,325	3,675
2125	For 3,000 lb. capacity, add					4,800			4,800	5,275
2150	For 3,500 lb. capacity, add					8,000			8,000	8,800
2175	For 4,000 lb. capacity, add				Ea.	9,625			9,625	10,600
2200	For 4,500 lb. capacity, add					12,700			12,700	14,000
2225	For 5,000 lb. capacity, add					17,900			17,900	19,700
2250	For increased speed, 125 fpm, add					1,300			1,300	1,425
2275	150 fpm, add					2,875			2,875	3,175
2300	175 fpm, add					5,600			5,600	6,175
2325	200 fpm, add					10,800			10,800	11,900
2350	For travel over 12 V.L.F., add	2 Elev	7.25	2.207	V.L.F.	765	206		971	1,150
2375	For number of stops over 2, add		.27	59.259	Stop	1,175	5,550		6,725	9,475
2725	Hydraulic hospital, base unit, 4,000 lb., 100 fpm, 2 stop, std. fin.		.10	160	Ea.	77,000	15,000		92,000	107,000
2775	For 4,500 lb. capacity, add					8,125			8,125	8,950
2800	For 5,000 lb. capacity, add					11,800			11,800	13,000
2825	For increased speed, 125 fpm, add					2,425			2,425	2,675
2850	150 fpm, add					4,050			4,050	4,450
2875	175 fpm, add					6,825			6,825	7,500
2900	200 fpm, add					10,000			10,000	11,000
2925	For travel over 12 V.L.F., add	2 Elev	7.25	2.207	V.L.F.	445	206		651	795
2950	For number of stops over 2, add	"	.27	59.259	Stop	5,375	5,550		10,925	14,100

14 27 Custom Elevator Cabs and Doors

14 27 13 – Custom Elevator Cab Finishes

14 27 13.10 Cab Finishes

0010	**CAB FINISHES**									
3325	Passenger elevator cab finishes (based on 3,500 lb. cab size)									
3350	Acrylic panel ceiling				Ea.	825			825	910
3375	Aluminum eggcrate ceiling					745			745	820
3400	Stainless steel doors					4,300			4,300	4,725
3425	Carpet flooring					660			660	725
3450	Epoxy flooring					495			495	545
3475	Quarry tile flooring					960			960	1,050
3500	Slate flooring					1,725			1,725	1,900
3525	Textured rubber flooring					695			695	765

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14 27 Custom Elevator Cabs and Doors

14 27 13 – Custom Elevator Cab Finishes

14 27 13.10 Cab Finishes	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
3550 Stainless steel walls				Ea.	4,325			4,325	4,750
3575 Stainless steel returns at door					1,250			1,250	1,375
4450 Hospital elevator cab finishes (based on 3,500 lb. cab size)									
4475 Aluminum eggcrate ceiling				Ea.	755			755	830
4500 Stainless steel doors					4,300			4,300	4,725
4525 Epoxy flooring					495			495	545
4550 Quarry tile flooring					960			960	1,050
4575 Textured rubber flooring				Ea.	690			690	755
4600 Stainless steel walls					4,900			4,900	5,375
4625 Stainless steel returns at door					965			965	1,075

14 28 Elevator Equipment and Controls

14 28 10 – Elevator Equipment and Control Options

14 28 10.10 Elevator Controls and Doors

0010	**ELEVATOR CONTROLS AND DOORS**								
2975	Passenger elevator options								
3000	2 car group automatic controls	2 Elev	.66	24.242	Ea.	3,750	2,275	6,025	7,475
3025	3 car group automatic controls		.44	36.364		5,750	3,400	9,150	11,400
3050	4 car group automatic controls		.33	48.485		10,000	4,525	14,525	17,700
3075	5 car group automatic controls		.26	61.538		15,100	5,750	20,850	25,100
3100	6 car group automatic controls		.22	72.727		23,000	6,800	29,800	35,400
3125	Intercom service		3	5.333		605	500	1,105	1,400
3150	Duplex car selective collective		.66	24.242		4,350	2,275	6,625	8,150
3175	Center opening 1 speed doors		2	8		2,175	750	2,925	3,475
3200	Center opening 2 speed doors		2	8		3,050	750	3,800	4,450
3225	Rear opening doors (opposite front)		2	8		4,650	750	5,400	6,200
3250	Side opening 2 speed doors		2	8		7,975	750	8,725	9,875
3275	Automatic emergency power switching		.66	24.242		1,325	2,275	3,600	4,800
3300	Manual emergency power switching		8	2		560	187	747	890
3625	Hall finishes, stainless steel doors					1,550		1,550	1,700
3650	Stainless steel frames					1,600		1,600	1,775
3675	12 month maintenance contract							4,425	4,425
3700	Signal devices, hall lanterns	2 Elev	8	2		565	187	752	895
3725	Position indicators, up to 3		9.40	1.702		365	159	524	635
3750	Position indicators, per each over 3		32	.500		98.50	47	145.50	178
3775	High speed heavy duty door opener					2,875		2,875	3,175
3800	Variable voltage, O.H. gearless machine, min.	2 Elev	.16	100		36,000	9,350	45,350	53,500
3815	Maximum		.07	229		80,500	21,400	101,900	120,000
3825	Basement installed geared machine		.33	48.485		16,300	4,525	20,825	24,700
3850	Freight elevator options								
3875	Doors, bi-parting	2 Elev	.66	24.242	Ea.	6,875	2,275	9,150	10,900
3900	Power operated door and gate	"	.66	24.242		27,600	2,275	29,875	33,800
3925	Finishes, steel plate floor					1,250		1,250	1,375
3950	14 ga. 1/4" x 4' steel plate walls					2,275		2,275	2,500
3975	12 month maintenance contract							3,400	3,400
4000	Signal devices, hall lanterns	2 Elev	8	2	Ea.	585	187	772	920
4025	Position indicators, up to 3		9.40	1.702		415	159	574	690
4050	Position indicators, per each over 3		32	.500		113	47	160	195
4075	Variable voltage basement installed geared machine		.66	24.242		23,100	2,275	25,375	28,800
4100	Hospital elevator options								
4125	2 car group automatic controls	2 Elev	.66	24.242	Ea.	3,750	2,275	6,025	7,475

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14 28 Elevator Equipment and Controls

14 28 10 – Elevator Equipment and Control Options

14 28 10.10 Elevator Controls and Doors		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4150	3 car group automatic controls	2 Elev	.44	36.364	Ea.	5,725	3,400		9,125	11,300
4175	4 car group automatic controls		.33	48.485		13,600	4,525		18,125	21,700
4200	5 car group automatic controls		.26	61.538		13,600	5,750		19,350	23,500
4225	6 car group automatic controls		.22	72.727		20,800	6,800		27,600	33,000
4250	Intercom service		3	5.333		575	500		1,075	1,375
4275	Duplex car selective collective		.66	24.242		4,400	2,275		6,675	8,200
4300	Center opening 1 speed doors		2	8		2,150	750		2,900	3,450
4325	Center opening 2 speed doors		2	8		2,850	750		3,600	4,225
4350	Rear opening doors (opposite front)		2	8		4,650	750		5,400	6,200
4375	Side opening 2 speed doors		2	8		6,900	750		7,650	8,700
4400	Automatic emergency power switching		.66	24.242		1,300	2,275		3,575	4,775
4425	Manual emergency power switching		8	2		545	187		732	875
4675	Hall finishes, stainless steel doors					1,600			1,600	1,775
4700	Stainless steel frames					1,625			1,625	1,775
4725	12 month maintenance contract								6,125	6,125
4750	Signal devices, hall lanterns	2 Elev	8	2		540	187		727	870
4775	Position indicators, up to 3		9.40	1.702		370	159		529	640
4800	Position indicators, per each over 3		32	.500		99	47		146	179
4825	High speed heavy duty door opener					2,925			2,925	3,200
4850	Variable voltage, O.H. gearless machine, min.	2 Elev	.16	100		37,800	9,350		47,150	55,500
4865	Maximum		.07	229		82,000	21,400		103,400	121,500
4875	Basement installed geared machine		.33	48.485		19,000	4,525		23,525	27,600
5000	Drilling for piston, casing included, 18" diameter	B-48	80	.700	V.L.F.	63.50	36	15.30	114.80	140

14 31 Escalators

14 31 10 – Glass and Steel Escalators

14 31 10.10 Escalators

0010	ESCALATORS									
1000	Glass, 32" wide x 10' floor to floor height	M-1	.07	457	Ea.	93,000	40,600	4,900	138,500	168,000
1010	48" wide x 10' floor to floor height		.07	457		100,500	40,600	4,900	146,000	176,000
1020	32" wide x 15' floor to floor height		.06	533		98,500	47,400	5,700	151,600	185,000
1030	48" wide x 15' floor to floor height		.06	533		104,500	47,400	5,700	157,600	191,000
1040	32" wide x 20' floor to floor height	M-1	.05	653	Ea.	104,500	58,000	7,000	169,500	208,500
1050	48" wide x 20' floor to floor height		.05	653		113,500	58,000	7,000	178,500	218,000
1060	32" wide x 25' floor to floor height		.04	800		116,000	71,000	8,550	195,550	242,500
1070	48" wide x 25' floor to floor height		.04	800		134,000	71,000	8,550	213,550	262,000
1080	Enameled steel, 32" wide x 10' floor to floor height		.07	457		101,000	40,600	4,900	146,500	176,500
1090	48" wide x 10' floor to floor height		.07	457		110,500	40,600	4,900	156,000	187,000
1110	32" wide x 15' floor to floor height		.06	533		108,000	47,400	5,700	161,100	195,500
1120	48" wide x 15' floor to floor height		.06	533		112,000	47,400	5,700	165,100	200,000
1130	32" wide x 20' floor to floor height		.05	653		114,500	58,000	7,000	179,500	219,500
1140	48" wide x 20' floor to floor height		.05	653		124,000	58,000	7,000	189,000	230,000
1150	32" wide x 25' floor to floor height		.04	800		126,500	71,000	8,550	206,050	254,000
1160	48" wide x 25' floor to floor height		.04	800		144,000	71,000	8,550	223,550	273,500
1170	Stainless steel, 32" wide x 10' floor to floor height		.07	457		108,000	40,600	4,900	153,500	184,000
1180	48" wide x 10' floor to floor height		.07	457		116,000	40,600	4,900	161,500	193,000
1500	32" wide x 15' floor to floor height		.06	533		115,000	47,400	5,700	168,100	203,000
1700	48" wide x 15' floor to floor height		.06	533		119,500	47,400	5,700	172,600	208,000
1750	32" wide x 18' floor to floor height		.05	615		144,500	54,500	6,575	205,575	247,500
1775	48" wide x 18' floor to floor height		.05	615		157,000	54,500	6,575	218,075	261,000
2300	32" wide x 25' floor to floor height		.04	800		144,000	71,000	8,550	223,550	273,500

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14 31 Escalators

14 31 10 – Glass and Steel Escalators

14 31 10.10 Escalators	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2500 48" wide x 25' floor to floor height	M-1	.04	800	Ea.	152,000	71,000	8,550	231,550	282,500

14 32 Moving Walks

14 32 10 – Moving Walkways

14 32 10.10 Moving Walks

0010	**MOVING WALKS** R143210-20									
0020	Walk, 27" tread width, minimum	M-1	6.50	4.923	L.F.	1,050	440	52.50	1,542.50	1,875
0100	300' to 500', maximum		4.43	7.223		1,425	640	77.50	2,142.50	2,600
0300	48" tread width walk, minimum		4.43	7.223		2,425	640	77.50	3,142.50	3,700
0400	100' to 350', maximum		3.82	8.377		2,750	745	89.50	3,584.50	4,225
0600	Ramp, 12° incline, 36" tread width, minimum		5.27	6.072		1,925	540	65	2,530	3,000
0700	70' to 90' maximum		3.82	8.377		2,750	745	89.50	3,584.50	4,225
0900	48" tread width, minimum		3.57	8.964		2,850	795	96	3,741	4,425
1000	40' to 70', maximum		2.91	10.997		3,550	975	118	4,643	5,475

14 42 Wheelchair Lifts

14 42 13 – Inclined Wheelchair Lifts

14 42 13.10 Inclined Wheelchair Lifts and Stairclimbers

0010	**INCLINED WHEELCHAIR LIFTS AND STAIRCLIMBERS**									
7700	Stair climber (chair lift), single seat, minimum	2 Elev	1	16	Ea.	4,125	1,500		5,625	6,750
7800	Maximum	2 Elev	.20	80	Ea.	7,125	7,475		14,600	19,000
8700	Stair lift, minimum		1	16		13,800	1,500		15,300	17,300
8900	Maximum		.20	80		19,900	7,475		27,375	33,000

14 42 16 – Vertical Wheelchair Lifts

14 42 16.10 Wheelchair Lifts

0010	**WHEELCHAIR LIFTS**									
8000	Wheelchair lift, minimum	2 Elev	1	16	Ea.	6,500	1,500		8,000	9,375
8500	Maximum	"	.50	32	"	15,700	3,000		18,700	21,700

14 45 Vehicle Lifts

14 45 10 – Hydraulic Vehicle Lifts

14 45 10.10 Hydraulic Lifts

0010	**HYDRAULIC LIFTS**									
2200	Single post, 8,000 lb. capacity	L-4	.40	60	Ea.	5,575	3,225		8,800	11,000
2810	Double post, 6,000 lb. capacity		2.67	8.989		2,775	485		3,260	3,775
2815	9,000 lb. capacity		2.29	10.480		3,650	565		4,215	4,875
2820	15,000 lb. capacity		2	12		7,625	645		8,270	9,350
2822	Four post, 26,000 lb. capacity		1.80	13.333		15,900	715		16,615	18,600
2825	30,000 lb. capacity		1.60	15		72,000	805		72,805	80,500
2830	Ramp style, 4 post, 25,000 lb. capacity		2	12		14,200	645		14,845	16,600
2835	35,000 lb. capacity		1	24		22,700	1,300		24,000	26,900
2840	50,000 lb. capacity		1	24		112,500	1,300		113,800	125,500
2845	75,000 lb. capacity		1	24		110,000	1,300		111,300	123,000
2850	For drive thru tracks, add, minimum					1,275			1,275	1,400
2855	Maximum					2,200			2,200	2,400
2860	Ramp extensions, 3' (set of 2)					520			520	570
2865	Rolling jack platform					1,825			1,825	2,000

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14 45 Vehicle Lifts

14 45 10 – Hydraulic Vehicle Lifts

	14 45 10.10 Hydraulic Lifts	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2870	Electric/hydraulic jacking beam				Ea.	5,250			5,250	5,775
2880	Scissor lift, portable, 6,000 lb. capacity					2,000			2,000	2,200

14 91 Facility Chutes

14 91 33 – Laundry and Linen Chutes

14 91 33.10 Chutes

0011	**CHUTES**, linen, trash or refuse								
0050	Aluminized steel, 16 ga., 18" diameter	2 Shee	3.50	4.571	Floor	1,925	310	2,235	2,600
0100	24" diameter		3.20	5		2,150	340	2,490	2,850
0200	30" diameter		3	5.333		2,475	360	2,835	3,275
0300	36" diameter		2.80	5.714		2,825	385	3,210	3,700
0400	Galvanized steel, 16 ga., 18" diameter		3.50	4.571		1,150	310	1,460	1,750
0500	24" diameter		3.20	5		1,300	340	1,640	1,925
0600	30" diameter		3	5.333		1,450	360	1,810	2,150
0700	36" diameter		2.80	5.714		1,725	385	2,110	2,475
0800	Stainless steel, 18" diameter	2 Shee	3.50	4.571	Floor	3,725	310	4,035	4,575
0900	24" diameter		3.20	5		3,250	340	3,590	4,075
1000	30" diameter		3	5.333		4,250	360	4,610	5,225
1005	36" diameter		2.80	5.714		4,500	385	4,885	5,500
1200	Linen chute bottom collector, aluminized steel		4	4	Ea.	1,625	270	1,895	2,200
1300	Stainless steel		4	4		2,075	270	2,345	2,700
1500	Refuse, bottom hopper, aluminized steel, 18" diameter		3	5.333		1,150	360	1,510	1,825
1600	24" diameter		3	5.333		1,325	360	1,685	2,025
1800	36" diameter		3	5.333		2,525	360	2,885	3,325

14 91 82 – Trash Chutes

14 91 82.10 Trash Chutes and Accessories

0010	**TRASH CHUTES AND ACCESSORIES**								
2900	Package chutes, spiral type, minimum	2 Shee	4.50	3.556	Floor	2,750	240	2,990	3,375
3000	Maximum	"	1.50	10.667	"	7,200	720	7,920	9,000

14 92 Pneumatic Tube Systems

14 92 10 – Conventional, Automatic and Computer Controlled Pneumatic Tube Systems

14 92 10.10 Pneumatic Tube Systems

0010	**PNEUMATIC TUBE SYSTEMS**								
0020	100' long, single tube, 2 stations, stock								
0100	3" diameter	2 Stpi	.12	133	Total	5,625	9,375	15,000	20,200
0300	4" diameter	"	.09	178	"	6,675	12,500	19,175	26,000
0400	Twin tube, two stations or more, conventional system								
0600	2-1/2" round	2 Stpi	62.50	.256	L.F.	37	18	55	67.50
0700	3" round		46	.348		56.50	24.50	81	98.50
0900	4" round		49.60	.323		67	22.50	89.50	108
1000	4" x 7" oval		37.60	.426		84.50	30	114.50	138
1050	Add for blower		2	8	System	6,025	565	6,590	7,475
1110	Plus for each round station, add		7.50	2.133	Ea.	1,850	150	2,000	2,250
1150	Plus for each oval station, add		7.50	2.133	"	1,850	150	2,000	2,250
1200	Alternate pricing method: base cost, economy model		.75	21.333	Total	5,625	1,500	7,125	8,450
1300	Custom model		.25	64	"	12,600	4,500	17,100	20,600
1500	Plus total system length, add, for economy model		93.40	.171	L.F.	8.15	12.05	20.20	27
1600	For custom model		37.60	.426	"	17.90	30	47.90	64

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14 92 10 – Conventional, Automatic and Computer Controlled Pneumatic Tube Systems

14 92 10.10 Pneumatic Tube Systems		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1800	Completely automatic system, 4" round, 15 to 50 stations	2 Stpi	.29	55.172	Station	19,600	3,875		23,475	27,400
2200	51 to 144 stations		.32	50		13,200	3,525		16,725	19,800
2400	6" round or 4" x 7" oval, 15 to 50 stations		.24	66.667		24,100	4,700		28,800	33,500
2800	51 to 144 stations		.23	69.565		17,800	4,900		22,700	26,900

Division Notes

	CREW	DAILY OUTPUT	LABOR-HOURS	UNIT	BARE COSTS MAT.	BARE COSTS LABOR	BARE COSTS EQUIP.	BARE COSTS TOTAL	TOTAL INCL O&P

Estimating Tips

Pipe for fire protection and all uses is located in Subdivisions 21 11 13 and 22 11 13.

The labor adjustment factors listed in Subdivision 22 01 02.20 also apply to Division 21.

Many, but not all, areas in the U.S. require backflow protection in the fire system. Insurance underwriters may have specific requirements for the type of materials to be installed or design requirements based on the hazard to be protected. Local jurisdictions may have requirements not covered by code. It is advisable to be aware of any special conditions.

For your reference, the following is a list of the most applicable Fire Codes and Standards, which may be purchased from the NFPA, 1 Batterymarch Park, Quincy, MA 02169-7471.

- NFPA 1: Uniform Fire Code
- NFPA 10: Portable Fire Extinguishers
- NFPA 11: Low-, Medium-, and High-Expansion Foam
- NFPA 12: Carbon Dioxide Extinguishing Systems (Also companion 12A)
- NFPA 13: Installation of Sprinkler Systems (Also companion 13D, 13E, and 13R)
- NFPA 14: Installation of Standpipe and Hose Systems
- NFPA 15: Water Spray Fixed Systems for Fire Protection
- NFPA 16: Installation of Foam-Water Sprinkler and Foam-Water Spray Systems
- NFPA 17: Dry Chemical Extinguishing Systems (Also companion 17A)
- NFPA 18: Wetting Agents
- NFPA 20: Installation of Stationary Pumps for Fire Protection
- NFPA 22: Water Tanks for Private Fire Protection
- NFPA 24: Installation of Private Fire Service Mains and their Appurtenances
- NFPA 25: Inspection, Testing and Maintenance of Water-Based Fire Protection

Reference Numbers

Reference numbers are shown at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

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Note: Trade Service, in part, has been used as a reference source for some of the material prices used in Division 21.

21 05 Common Work Results for Fire Suppression

21 05 23 – General-Duty Valves for Water-Based Fire-Suppression Piping

21 05 23.50 General-Duty Valves	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **GENERAL-DUTY VALVES**, for water-based fire suppression									
6200 Valves and components									
6500 Check, swing, C.I. body, brass fittings, auto. ball drip									
6520 4" size	Q-12	3	5.333	Ea.	475	330		805	1,000
6800 Check, wafer, butterfly type, C.I. body, bronze fittings									
6820 4" size	Q-12	4	4	Ea.	1,975	247		2,222	2,550

21 11 Facility Fire-Suppression Water-Service Piping

21 11 16 – Facility Fire Hydrants

21 11 16.50 Fire Hydrants for Buildings

0010 **FIRE HYDRANTS FOR BUILDINGS**									
3750 Hydrants, wall, w/caps, single, flush, polished brass									
3800 2-1/2" x 2-1/2"	Q-12	5	3.200	Ea.	236	197		433	555
3840 2-1/2" x 3"	"	5	3.200		540	197		737	890
3900 For polished chrome, add					20%				
3950 Double, flush, polished brass									
4000 2-1/2" x 2-1/2" x 4"	Q-12	5	3.200	Ea.	635	197		832	995
4040 2-1/2" x 2-1/2" x 6"	"	4.60	3.478		915	215		1,130	1,325
4200 For polished chrome, add					10%				
4350 Double, projecting, polished brass									
4400 2-1/2" x 2-1/2" x 4"	Q-12	5	3.200	Ea.	282	197		479	605
4450 2-1/2" x 2-1/2" x 6"	"	4.60	3.478	"	785	215		1,000	1,175
4460 Valve control, dbl. flush/projecting hydrant, cap &									
4470 chain, extension rod & cplg., escutcheon, polished brass	Q-12	8	2	Ea.	335	123		458	555

21 11 19 – Fire-Department Connections

21 11 19.50 Connections for the Fire-Department

0010 **CONNECTIONS FOR THE FIRE-DEPARTMENT**									
0020 For fire pro. cabinets, see Section 10 44 13.53									
7140 Standpipe connections, wall, w/plugs & chains									
7160 Single, flush, brass, 2-1/2" x 2-1/2", Fire Dept Conn.	Q-12	5	3.200	Ea.	177	197		374	490
7180 2-1/2" x 3"	"	5	3.200	"	182	197		379	495
7240 For polished chrome, add					15%				
7280 Double, flush, polished brass									
7300 2-1/2" x 2-1/2" x 4"	Q-12	5	3.200	Ea.	575	197		772	925
7330 2-1/2" x 2-1/2" x 6"	"	4.60	3.478	"	925	215		1,140	1,350
7400 For polished chrome, add					15%				
7440 For sill cock combination, add				Ea.	103			103	113
7900 Three way, flush, polished brass									
7920 2-1/2" (3) x 4"	Q-12	4.80	3.333	Ea.	1,475	206		1,681	1,925
7930 2-1/2" (3) x 6"	"	4.60	3.478		2,450	215		2,665	3,025
8000 For polished chrome, add					9%				
8020 Three way, projecting, polished brass									
8040 2-1/2" (3) x 4"	Q-12	4.80	3.333	Ea.	1,475	206		1,681	1,925

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21 12 13 – Fire-Suppression Hoses and Nozzles

21 12 13.50 Fire Hoses and Nozzles	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **FIRE HOSES AND NOZZLES**									
0200 Adapters, rough brass, straight hose threads									
0220 One piece, female to male, rocker lugs									
0240 1" x 1"				Ea.	60.50			60.50	66.50
0320 2" x 2"					70			70	77
0380 2-1/2" x 2-1/2"					122			122	134
2200 Hose, less couplings									
2260 Synthetic jacket, lined, 300 lb. test, 1-1/2" diameter	Q-12	2600	.006	L.F.	3.31	.38		3.69	4.21
2270 2" diameter		2200	.007		4.63	.45		5.08	5.75
2280 2-1/2" diameter		2200	.007		5.80	.45		6.25	7.05
2290 3" diameter		2200	.007		9.10	.45		9.55	10.65
2360 High strength, 500 lb. test, 1-1/2" diameter		2600	.006		3.62	.38		4	4.55
2380 2-1/2" diameter		2200	.007		6.10	.45		6.55	7.35
5600 Nozzles, brass									
5620 Adjustable fog, 3/4" booster line				Ea.	154			154	170
5630 1" booster line					184			184	202
5640 1-1/2" leader line					120			120	132
5660 2-1/2" direct connection					280			280	310
5680 2-1/2" playpipe nozzle					335			335	370
5780 For chrome plated, add					8%				
5850 Electrical fire, adjustable fog, no shock									
5900 1-1/2"				Ea.	194			194	213
5920 2-1/2"					1,500			1,500	1,650
5980 For polished chrome, add					6%				
6200 Heavy duty, comb. adj. fog and str. stream, with handle									
6210 1" booster line				Ea.	297			297	325

21 12 19 – Fire-Suppression Hose Racks

21 12 19.50 Fire Hose Racks									
0010 **FIRE HOSE RACKS**									
2600 Hose rack, swinging, for 1-1/2" diameter hose,									
2620 Enameled steel, 50' and 75' lengths of hose	Q-12	20	.800	Ea.	132	49.50		181.50	219
2640 100' and 125' lengths of hose	"	20	.800	"	67.50	49.50		117	148

21 12 23 – Fire-Suppression Hose Valves

21 12 23.70 Fire Hose Valves									
0010 **FIRE HOSE VALVES**									
0080 Wheel handle, 300 lb., 1-1/2"	1 Spri	12	.667	Ea.	101	45.50		146.50	179
0090 2-1/2"	"	7	1.143	"	194	78.50		272.50	330
0100 For polished brass, add					35%				
0110 For polished chrome, add					50%				

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21 13 13 – Wet-Pipe Sprinkler Systems

	21 13 13.50 Wet-Pipe Sprinkler System Components	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**WET-PIPE SPRINKLER SYSTEM COMPONENTS**									
2600	Sprinkler heads, not including supply piping									
3700	Standard spray, pendent or upright, brass, 135°F to 286°F									
3730	1/2" NPT, 7/16" orifice	1 Spri	16	.500	Ea.	19.05	34.50		53.55	72
3740	1/2" NPT, K5.6	"	16	.500	"	16.45	34.50		50.95	69
3920	For 360°F, same cost									
3930	For 400°F	1 Spri	16	.500	Ea.	124	34.50		158.50	187
3940	For 500°F	"	16	.500	"	124	34.50		158.50	187
4500	Sidewall, horizontal, brass, 135°F to 286°F									
4520	1/2" NPT, 1/2" orifice	1 Spri	16	.500	Ea.	33.50	34.50		68	87.50
4540	For 360°F, same cost									
4800	Recessed pendent, brass, 135°F to 286°F									
4820	1/2" NPT, K2.8	1 Spri	10	.800	Ea.	57	55		112	145
4830	1/2" NPT, 7/16" orifice		10	.800		25.50	55		80.50	110
4840	1/2" NPT, K5.6		10	.800		19.15	55		74.15	103

21 13 16 – Dry-Pipe Sprinkler Systems

	21 13 16.50 Dry-Pipe Sprinkler System Components									
0010	**DRY-PIPE SPRINKLER SYSTEM COMPONENTS**									
0600	Accelerator	1 Spri	8	1	Ea.	1,075	68.50		1,143.50	1,275
2600	Sprinkler heads, not including supply piping									
2640	Dry, pendent, 1/2" orifice, 3/4" or 1" NPT									
2700	15-1/4" to 18" length	1 Spri	14	.571	Ea.	279	39		318	365
2710	18-1/4" to 21" length		13	.615		291	42		333	385
2720	21-1/4" to 24" length		13	.615		305	42		347	400
2730	24-1/4" to 27" length		13	.615		320	42		362	420

21 13 19 – Preaction Sprinkler Systems

	21 13 19.50 Preaction Sprinkler System Components									
0010	**PREACTION SPRINKLER SYSTEM COMPONENTS**									
3000	Preaction valve cabinet									
3100	Single interlock, pneum. release, panel, 1/2 HP comp. regul. air trim									
3110	1-1/2"	Q-12	3	5.333	Ea.	27,900	330		28,230	31,200
3120	2"		3	5.333		27,900	330		28,230	31,200
3130	2-1/2"		3	5.333		27,900	330		28,230	31,200
3140	3"		3	5.333		27,900	330		28,230	31,200
3150	4"		2	8		29,000	495		29,495	32,600
3160	6"	Q-13	4	8		30,400	520		30,920	34,300
3200	Double interlock, pneum. release, panel, 1/2 HP comp. regul. air trim									
3210	1-1/2"	Q-12	3	5.333	Ea.	28,700	330		29,030	32,100
3220	2"		3	5.333		28,700	330		29,030	32,100
3230	2-1/2"		3	5.333		28,700	330		29,030	32,100
3240	3"		3	5.333		28,800	330		29,130	32,200
3250	4"		2	8		30,200	495		30,695	33,900
3260	6"	Q-13	4	8		31,400	520		31,920	35,400

21 13 26 – Deluge Fire-Suppression Sprinkler Systems

	21 13 26.50 Deluge Fire-Suppression Sprinkler Sys. Comp.									
0010	**DELUGE FIRE-SUPPRESSION SPRINKLER SYSTEM COMPONENTS**									
1400	Deluge system, monitoring panel w/deluge valve & trim	1 Spri	18	.444	Ea.	8,350	30.50		8,380.50	9,250
6200	Valves and components									
7000	Deluge, assembly, incl. trim, pressure									
7020	operated relief, emergency release, gauges									
7040	2" size	Q-12	2	8	Ea.	5,025	495		5,520	6,250

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21 13 Fire-Suppression Sprinkler Systems

21 13 26 – Deluge Fire-Suppression Sprinkler Systems

	21 13 26.50 Deluge Fire-Suppression Sprinkler Sys. Comp.	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
7060	3" size	Q-12	1.50	10.667	Ea.	5,650	660		6,310	7,175

21 13 39 – Foam-Water Systems

21 13 39.50 Foam-Water System Components

0010	**FOAM-WATER SYSTEM COMPONENTS**									
2600	Sprinkler heads, not including supply piping									
3600	Foam-water, pendent or upright, 1/2" NPT	1 Spri	12	.667	Ea.	268	45.50		313.50	365

21 21 Carbon-Dioxide Fire-Extinguishing Systems

21 21 16 – Carbon-Dioxide Fire-Extinguishing Equipment

21 21 16.50 CO2 Fire Extinguishing System

0010	**CO_2 FIRE EXTINGUISHING SYSTEM**									
0042	For detectors and control stations, see Section 28 31 23.50									
0100	Control panel, single zone with batteries (2 zones det., 1 suppr.)	1 Elec	1	8	Ea.	1,375	530		1,905	2,275
0150	Multizone (4) with batteries (8 zones det., 4 suppr.)	"	.50	16		3,325	1,050		4,375	5,250
1000	Dispersion nozzle, CO_2, 3" x 5"	1 Plum	18	.444	↓	172	31		203	237
2000	Extinguisher, CO_2 system, high pressure, 75 lb. cylinder	Q-1	6	2.667	Ea.	1,525	168		1,693	1,925
2100	100 lb. cylinder	"	5	3.200		2,025	201		2,226	2,525
3000	Electro/mechanical release	L-1	4	4		1,150	272		1,422	1,650
3400	Manual pull station	1 Plum	6	1.333		91	93		184	239
4000	Pneumatic damper release	"	8	1	↓	200	70		270	325

21 22 Clean-Agent Fire-Extinguishing Systems

21 22 16 – Clean-Agent Fire-Extinguishing Equipment

21 22 16.50 Clean-Agent Extinguishing Systems

0010	**CLEAN-AGENT EXTINGUISHING SYSTEMS**									
0020	FM200 fire extinguishing system									
1100	Dispersion nozzle FM200, 1-1/2"	1 Plum	14	.571	Ea.	274	40		314	360
2400	Extinguisher, FM200 system, filled, with mounting bracket									
2460	26 lb. container	Q-1	8	2	Ea.	2,275	126		2,401	2,675
2480	44 lb. container		7	2.286		2,950	144		3,094	3,450
2500	63 lb. container		6	2.667		4,175	168		4,343	4,850
2520	101 lb. container		5	3.200		6,025	201		6,226	6,925
2540	196 lb. container	↓	4	4	↓	7,275	251		7,526	8,375
6000	FM200 system, simple nozzle layout, with broad dispersion				C.F.	1.98			1.98	2.18
6010	Extinguisher, FM200 system, filled, with mounting bracket									
6020	Complex nozzle layout and/or including underfloor dispersion				C.F.	3.93			3.93	4.32
6100	20,000 C.F. 2 exits, 8' clng					2.20			2.20	2.42
6200	100,000 C.F. 4 exits, 8' clng					1.99			1.99	2.19
6300	250,000 C.F. 6 exits, 8' clng				↓	1.68			1.68	1.85
7010	HFC-227ea fire extinguishing system									
7100	Cylinders with clean-agent									
7110	Does not include pallet jack/fork lift rental fees									
7120	70 lb. cyl, w/35 lb. agent, no solenoid	Q-12	14	1.143	Ea.	3,300	70.50		3,370.50	3,725
7130	70 lb. cyl w/70 lb. agent, no solenoid		10	1.600		4,325	98.50		4,423.50	4,900
7140	70 lb. cyl w/35 lb. agent, w/solenoid		14	1.143		4,900	70.50		4,970.50	5,500
7150	70 lb. cyl w/70 lb. agent, w/solenoid		10	1.600		5,875	98.50		5,973.50	6,600
7220	250 lb. cyl, w/125 lb. agent, no solenoid		8	2		8,250	123		8,373	9,250
7230	250 lb. cyl, w/250 lb. agent, no solenoid		5	3.200		8,250	197		8,447	9,375
7240	250 lb. cyl, w/125 lb. agent, w/solenoid		8	2		10,000	123		10,123	11,300

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21 22 Clean-Agent Fire-Extinguishing Systems

21 22 16 – Clean-Agent Fire-Extinguishing Equipment

	21 22 16.50 Clean-Agent Extinguishing Systems	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
7250	250 lb. cyl, w/250 lb. agent, w/solenoid	Q-12	5	3.200	Ea.	14,400	197		14,597	16,200
7320	560 lb. cyl, w/300 lb. agent, no solenoid		4	4		14,600	247		14,847	16,400
7330	560 lb. cyl, w/560 lb. agent, no solenoid		2.50	6.400		22,300	395		22,695	25,100
7340	560 lb. cyl, w/300 lb. agent, w/solenoid	Q-12	4	4	Ea.	19,700	247		19,947	22,000
7350	560 lb. cyl, w/560 lb. agent, w/solenoid	"	2.50	6.400		27,700	395		28,095	31,100
7420	1,200 lb. cyl, w/600 lb. agent, no solenoid	Q-13	4	8		27,800	520		28,320	31,300
7430	1,200 lb. cyl, w/1,200 lb. agent, no solenoid		3	10.667		45,500	695		46,195	51,000
7440	1,200 lb. cyl, w/600 lb. agent, w/solenoid		4	8		64,500	520		65,020	72,000
7450	1,200 lb. cyl, w/1,200 lb. agent, w/solenoid		3	10.667		107,500	695		108,195	119,000
7500	Accessories									
7510	Dispersion nozzle	1 Spri	16	.500	Ea.	132	34.50		166.50	196
7520	Agent release panel	1 Elec	4	2		91	132		223	297
7530	Maintenance switch	"	6	1.333		289	88.50		377.50	450
7540	Solenoid valve, 12v dc	1 Spri	8	1		288	68.50		356.50	415
7550	12v ac		8	1		670	68.50		738.50	835
7560	12v dc, explosion proof		8	1		745	68.50		813.50	920

21 31 Centrifugal Fire Pumps

21 31 13 – Electric-Drive, Centrifugal Fire Pumps

21 31 13.50 Electric-Drive Fire Pumps

0010	**ELECTRIC-DRIVE FIRE PUMPS** Including controller, fittings and relief valve									
3100	250 GPM, 55 psi, 15 HP, 3550 RPM, 2" pump	Q-13	.70	45.714	Ea.	17,600	2,975		20,575	23,900
3200	500 GPM, 50 psi, 27 HP, 1770 RPM, 4" pump		.68	47.059		21,800	3,075		24,875	28,600
3350	750 GPM, 50 psi, 44 HP, 1770 RPM, 5" pump		.64	50		31,900	3,275		35,175	40,000
3400	750 GPM, 100 psi, 66 HP, 3550 RPM, 4" pump		.58	55.172		28,300	3,600		31,900	36,500
5000	For jockey pump 1", 3 HP, with control, add	Q-12	2	8		4,150	495		4,645	5,275

21 31 16 – Diesel-Drive, Centrifugal Fire Pumps

21 31 16.50 Diesel-Drive Fire Pumps

0010	**DIESEL-DRIVE FIRE PUMPS** Including controller, fittings and relief valve									
0050	500 GPM, 50 psi, 27 HP, 4" pump	Q-13	.64	50	Ea.	70,500	3,275		73,775	82,500
0200	750 GPM, 50 psi, 44 HP, 5" pump		.60	53.333		75,000	3,475		78,475	87,500
0400	1000 GPM, 100 psi, 89 HP, 4" pump		.56	57.143		80,500	3,725		84,225	94,000
0700	2000 GPM, 100 psi, 167 HP, 6" pump		.34	94.118		85,000	6,150		91,150	102,500
0950	3500 GPM, 100 psi, 300 HP, 10" pump		.24	133		150,000	8,700		158,700	178,000

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Estimating Tips

22 10 00 Plumbing Piping and Pumps

This subdivision is primarily basic pipe and related materials. The pipe may be used by any of the mechanical disciplines, i.e., plumbing, fire protection, heating, and air conditioning.

Note: CPVC plastic piping approved for fire protection is located in 21 11 13.

- The labor adjustment factors listed in Subdivision 22 01 02.20 apply throughout Divisions 21, 22, and 23. CAUTION: the correct percentage may vary for the same items. For example, the percentage add for the basic pipe installation should be based on the maximum height that the installer must install for that particular section. If the pipe is to be located 14' above the floor but it is suspended on threaded rod from beams, the bottom flange of which is 18' high (4' rods), then the height is actually 18' and the add is 20%. The pipe cover, however, does not have to go above the 14' and so the add should be 10%.
- Most pipe is priced first as straight pipe with a joint (coupling, weld, etc.) every 10' and a hanger usually every 10'. There are exceptions with hanger spacing such as for cast iron pipe (5') and plastic pipe (3 per 10'). Following each type of pipe there are several lines listing sizes and the amount to be subtracted to delete couplings and hangers. This is for pipe that is to be buried or supported together on trapeze hangers. The reason that the couplings are deleted is that these runs are usually long, and frequently longer lengths of pipe are used. By deleting the couplings, the estimator is expected to look up and add back the correct reduced number of couplings.
- When preparing an estimate, it may be necessary to approximate the fittings. Fittings usually run between 25% and 50% of the cost of the pipe. The lower percentage is for simpler runs, and the higher number is for complex areas, such as mechanical rooms.
- For historic restoration projects, the systems must be as invisible as possible, and pathways must be sought for pipes, conduit, and ductwork. While installations in accessible spaces (such as basements and attics) are relatively straightforward to estimate, labor costs may be more difficult to determine when delivery systems must be concealed.

22 40 00 Plumbing Fixtures

- Plumbing fixture costs usually require two lines: the fixture itself and its "rough-in, supply, and waste."
- In the Assemblies Section (Plumbing D2010) for the desired fixture, the System Components Group at the center of the page shows the fixture on the first line. The rest of the list (fittings, pipe, tubing, etc.) will total up to what we refer to in the Unit Price section as "Rough-in, supply, waste, and vent." Note that for most fixtures we allow a nominal 5' of tubing to reach from the fixture to a main or riser.
- Remember that gas- and oil-fired units need venting.

Reference Numbers

Reference numbers are shown at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear. ■

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Note: Trade Service, in part, has been used as a reference source for some of the material prices used in Division 22.

22 01 02 – Labor Adjustments

	22 01 02.10 Boilers, General	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**BOILERS, GENERAL**, Prices do not include flue piping, elec. wiring,									
0020	gas or oil piping, boiler base, pad, or tankless unless noted									
0100	Boiler H.P.: 10 KW = 34 lb./steam/hr. = 33,475 BTU/hr.									
0150	To convert SFR to BTU rating: Hot water, 150 x SFR;									
0160	Forced hot water, 180 x SFR; steam, 240 x SFR									
	22 01 02.20 Labor Adjustment Factors									
0010	**LABOR ADJUSTMENT FACTORS** (For Div. 21, 22 and 23) R220102-20									
0100	Labor factors: The below are reasonable suggestions, but									
0110	each project must be evaluated for its own peculiarities, and									
0120	the adjustments be increased or decreased depending on the									
0130	severity of the special conditions.									
1000	Add to labor for elevated installation (Above floor level)									
1080	10′ to 14.5′ high						10%			
1100	15′ to 19.5′ high						20%			
1120	20′ to 24.5′ high						25%			
1140	25′ to 29.5′ high						35%			
1160	30′ to 34.5′ high						40%			
1180	35′ to 39.5′ high						50%			
1200	40′ and higher						55%			
2000	Add to labor for crawl space									
2100	3′ high						40%			
2140	4′ high						30%			
3000	Add to labor for multi-story building									
3010	For new construction (No elevator available)									
3100	Add for floors 3 thru 10						5%			
3110	Add for floors 11 thru 15						10%			
3120	Add for floors 16 thru 20						15%			
3130	Add for floors 21 thru 30						20%			
3140	Add for floors 31 and up						30%			
3170	For existing structure (Elevator available)									
3180	Add for work on floor 3 and above						2%			
4000	Add to labor for working in existing occupied buildings									
4100	Hospital						35%			
4140	Office building						25%			
4180	School						20%			
4220	Factory or warehouse						15%			
4260	Multi dwelling						15%			
5000	Add to labor, miscellaneous									
5100	Cramped shaft						35%			
5140	Congested area						15%			
5180	Excessive heat or cold						30%			
9000	Labor factors: The above are reasonable suggestions, but									
9010	each project should be evaluated for its own peculiarities.									
9100	Other factors to be considered are:									
9140	Movement of material and equipment through finished areas									
9180	Equipment room									
9220	Attic space									
9260	No service road									
9300	Poor unloading/storage area									
9340	Congested site area/heavy traffic									

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22 05 05 – Selective Demolition for Plumbing

22 05 05.10 Plumbing Demolition	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **PLUMBING DEMOLITION** R220105-10									
1020 Fixtures, including 10′ piping									
1100 Bathtubs, cast iron	1 Plum	4	2	Ea.		140		140	208
1120 Fiberglass		6	1.333			93		93	139
1140 Steel		5	1.600			112		112	167
1200 Lavatory, wall hung		10	.800			56		56	83.50
1220 Counter top		8	1			70		70	104
1300 Sink, single compartment		8	1			70		70	104
1320 Double compartment		7	1.143			80		80	119
1400 Water closet, floor mounted		8	1			70		70	104
1420 Wall mounted		7	1.143			80		80	119
1500 Urinal, floor mounted		4	2			140		140	208
1520 Wall mounted		7	1.143			80		80	119
1600 Water fountains, free standing		8	1			70		70	104
1620 Wall or deck mounted		6	1.333			93		93	139
2000 Piping, metal, up thru 1-1/2″ diameter		200	.040	L.F.		2.79		2.79	4.16
2050 2″ thru 3-1/2″ diameter		150	.053			3.72		3.72	5.55
2100 4″ thru 6″ diameter	2 Plum	100	.160			11.15		11.15	16.65
2150 8″ thru 14″ diameter	″	60	.267			18.60		18.60	28
2153 16″ thru 20″ diameter	Q-18	70	.343			22.50	.89	23.39	34.50
2155 24″ thru 26″ diameter		55	.436			28.50	1.13	29.63	43.50
2156 30″ thru 36″ diameter		40	.600			39.50	1.55	41.05	60.50
2160 Plastic pipe with fittings, up thru 1-1/2″ diameter	1 Plum	250	.032			2.23		2.23	3.33
2162 2″ thru 3″ diameter	″	200	.040			2.79		2.79	4.16
2164 4″ thru 6″ diameter	Q-1	200	.080			5.05		5.05	7.50
2166 8″ thru 14″ diameter	″	150	.107			6.70		6.70	10
2168 16″ diameter	Q-1	100	.160	L.F.		10.05		10.05	15
2212 Deduct for salvage, aluminum scrap				Ton	510			510	560
2214 Brass scrap					2,425			2,425	2,675
2216 Copper scrap					4,175			4,175	4,575
2218 Lead scrap					1,025			1,025	1,125
2220 Steel scrap								204	224
2250 Water heater, 40 gal.	1 Plum	6	1.333	Ea.		93		93	139
9470 Water softener	Q-1	2	8	″		505		505	750

22 05 23 – General-Duty Valves for Plumbing Piping

22 05 23.10 Valves, Brass

0010 **VALVES, BRASS**									
0500 Gas cocks, threaded									
0530 1/2″	1 Plum	24	.333	Ea.	34	23.50		57.50	72
0540 3/4″		22	.364		38.50	25.50		64	80.50
0550 1″		19	.421		46	29.50		75.50	94.50
0560 1-1/4″		15	.533		47.50	37		84.50	108

22 05 23.20 Valves, Bronze

0010 **VALVES, BRONZE**									
1020 Angle, 150 lb., rising stem, threaded									
1030 1/8″	1 Plum	24	.333	Ea.	190	23.50		213.50	243
1040 1/4″		24	.333		190	23.50		213.50	243
1050 3/8″		24	.333		188	23.50		211.50	242
1060 1/2″		22	.364		188	25.50		213.50	245
1070 3/4″		20	.400		259	28		287	325
1080 1″		19	.421		360	29.50		389.50	440
1100 1-1/2″		13	.615		605	43		648	730

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	22 05 23.20 Valves, Bronze	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1102	Soldered same price as threaded									
1110	2"	1 Plum	11	.727	Ea.	950	51		1,001	1,125
1300	Ball									
1398	Threaded, 150 psi									
1400	1/4"	1 Plum	24	.333	Ea.	19.55	23.50		43.05	56
1430	3/8"		24	.333		19.55	23.50		43.05	56
1450	1/2"		22	.364		19.55	25.50		45.05	59.50
1460	3/4"		20	.400		31	28		59	75.50
1470	1"		19	.421		46.50	29.50		76	95.50
1480	1-1/4"		15	.533		54	37		91	115
1490	1-1/2"		13	.615		85.50	43		128.50	159
1500	2"		11	.727		131	51		182	220
1522	Solder the same price as threaded									
1750	Check, swing, class 150, regrinding disc, threaded									
1800	1/8"	1 Plum	24	.333	Ea.	85.50	23.50		109	129
1830	1/4"		24	.333		89.50	23.50		113	133
1840	3/8"		24	.333		103	23.50		126.50	149
1850	1/2"		24	.333		86.50	23.50		110	130
1860	3/4"		20	.400		136	28		164	191
1870	1"		19	.421		190	29.50		219.50	253
1880	1-1/4"		15	.533		265	37		302	345
1890	1-1/2"		13	.615		305	43		348	400
1900	2"		11	.727		445	51		496	565
1910	2-1/2"	Q-1	15	1.067		1,075	67		1,142	1,300
2000	For 200 lb., add					5%	10%			
2040	For 300 lb., add					15%	15%			
2850	Gate, N.R.S., soldered, 125 psi									
2900	3/8"	1 Plum	24	.333	Ea.	87	23.50		110.50	131
2920	1/2"		24	.333		87	23.50		110.50	131
2940	3/4"		20	.400		96.50	28		124.50	148
2950	1"		19	.421		139	29.50		168.50	196
2960	1-1/4"		15	.533		212	37		249	290
2970	1-1/2"		13	.615		236	43		279	325
2980	2"		11	.727		335	51		386	440
2990	2-1/2"	Q-1	15	1.067		870	67		937	1,050
3000	3"	"	13	1.231		1,000	77.50		1,077.50	1,225
3850	Rising stem, soldered, 300 psi									
3950	1"	1 Plum	19	.421	Ea.	272	29.50		301.50	345
3980	2"	"	11	.727		730	51		781	880
4000	3"	Q-1	13	1.231		2,400	77.50		2,477.50	2,775
4250	Threaded, class 150									
4310	1/4"	1 Plum	24	.333	Ea.	107	23.50		130.50	152
4320	3/8"		24	.333		107	23.50		130.50	152
4330	1/2"		24	.333		111	23.50		134.50	157
4340	3/4"		20	.400		129	28		157	184
4350	1"		19	.421		146	29.50		175.50	205
4360	1-1/4"		15	.533		198	37		235	274
4370	1-1/2"		13	.615		251	43		294	340
4380	2"		11	.727		335	51		386	445
4390	2-1/2"	Q-1	15	1.067		785	67		852	965
4400	3"	"	13	1.231		1,100	77.50		1,177.50	1,325
4500	For 300 psi, threaded, add					100%	15%			
4540	For chain operated type, add					15%				

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	22 05 23.20 Valves, Bronze	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4850	Globe, class 150, rising stem, threaded									
4920	1/4"	1 Plum	24	.333	Ea.	144	23.50		167.50	194
4940	3/8"		24	.333		142	23.50		165.50	191
4950	1/2"		24	.333		142	23.50		165.50	191
4960	3/4"		20	.400		190	28		218	250
4970	1"		19	.421		298	29.50		327.50	375
4980	1-1/4"		15	.533		400	37		437	495
4990	1-1/2"		13	.615		575	43		618	695
5000	2"		11	.727		865	51		916	1,025
5010	2-1/2"	Q-1	15	1.067		1,725	67		1,792	2,000
5020	3"	"	13	1.231		2,475	77.50		2,552.50	2,850
5120	For 300 lb. threaded, add					50%	15%			
5600	Relief, pressure & temperature, self-closing, ASME, threaded									
5640	3/4"	1 Plum	28	.286	Ea.	280	19.95		299.95	340
5650	1"		24	.333		450	23.50		473.50	530
5660	1-1/4"		20	.400		900	28		928	1,025
5670	1-1/2"		18	.444		1,725	31		1,756	1,950
5680	2"		16	.500		1,875	35		1,910	2,125
5950	Pressure, poppet type, threaded									
6000	1/2"	1 Plum	30	.267	Ea.	100	18.60		118.60	138
6040	3/4"	"	28	.286	"	111	19.95		130.95	152
6400	Pressure, water, ASME, threaded									
6440	3/4"	1 Plum	28	.286	Ea.	59.50	19.95		79.45	95
6450	1"		24	.333		375	23.50		398.50	445
6460	1-1/4"		20	.400		490	28		518	580
6470	1-1/2"		18	.444		820	31		851	950
6480	2"		16	.500		1,175	35		1,210	1,350
6490	2-1/2"		15	.533		4,650	37		4,687	5,175
6900	Reducing, water pressure									
6920	300 psi to 25-75 psi, threaded or sweat									
6940	1/2"	1 Plum	24	.333	Ea.	585	23.50		608.50	680
6950	3/4"		20	.400		615	28		643	720
6960	1"		19	.421		955	29.50		984.50	1,100
6970	1-1/4"		15	.533		1,625	37		1,662	1,825
6980	1-1/2"		13	.615		2,675	43		2,718	3,025
8350	Tempering, water, sweat connections									
8400	1/2"	1 Plum	24	.333	Ea.	159	23.50		182.50	210
8440	3/4"	"	20	.400	"	184	28		212	245
8650	Threaded connections									
8700	1/2"	1 Plum	24	.333	Ea.	176	23.50		199.50	228
8740	3/4"		20	.400		1,100	28		1,128	1,275
8750	1"		19	.421		1,250	29.50		1,279.50	1,425
8760	1-1/4"		15	.533		1,925	37		1,962	2,175
8770	1-1/2"		13	.615		2,100	43		2,143	2,400
8780	2"		11	.727		3,150	51		3,201	3,550
8800	Water heater water & gas safety shut off									
8810	Protection against a leaking water heater									
8814	Shut off valve	1 Plum	16	.500	Ea.	196	35		231	267
8818	Water heater dam		32	.250		52.50	17.45		69.95	84
8822	Gas control wiring harness		32	.250		25.50	17.45		42.95	54
8830	Whole house flood safety shut off									
8834	Connections									
8838	3/4" NPT	1 Plum	12	.667	Ea.	1,050	46.50		1,096.50	1,225

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22 05 23 – General-Duty Valves for Plumbing Piping

		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
22 05 23.20	**Valves, Bronze**									
8842	1" NPT	1 Plum	11	.727	Ea.	1,075	51		1,126	1,250
8846	1-1/4" NPT		10	.800		1,100	56		1,156	1,275
22 05 23.60	**Valves, Plastic**									
0010	**VALVES, PLASTIC**									
1100	Angle, PVC, threaded									
1110	1/4"	1 Plum	26	.308	Ea.	52	21.50		73.50	89
1120	1/2"		26	.308		74	21.50		95.50	114
1130	3/4"		25	.320		88	22.50		110.50	130
1140	1"		23	.348		107	24.50		131.50	153
1150	Ball, PVC, socket or threaded, true union									
1230	1/2"	1 Plum	26	.308	Ea.	39.50	21.50		61	75.50
1240	3/4"		25	.320		47	22.50		69.50	85
1250	1"		23	.348		56	24.50		80.50	97.50
1260	1-1/4"		21	.381		88.50	26.50		115	137
1270	1-1/2"		20	.400		88.50	28		116.50	139
1280	2"		17	.471		141	33		174	204
1360	For PVC, flanged, add					100%	15%			
1650	CPVC, socket or threaded, single union									
1700	1/2"	1 Plum	26	.308	Ea.	61.50	21.50		83	99.50
1720	3/4"		25	.320		77.50	22.50		100	119
1730	1"		23	.348		93	24.50		117.50	138
1750	1-1/4"		21	.381		148	26.50		174.50	203
1760	1-1/2"		20	.400		148	28		176	205
1840	For CPVC, flanged, add					65%	15%			
1880	For true union, socket or threaded, add					50%	5%			
2050	Polypropylene, threaded									
2100	1/4"	1 Plum	26	.308	Ea.	46	21.50		67.50	82.50
2120	3/8"		26	.308		47	21.50		68.50	84
2130	1/2"		26	.308		39.50	21.50		61	75.50
2140	3/4"		25	.320		48	22.50		70.50	86
2150	1"		23	.348		56	24.50		80.50	97.50
2160	1-1/4"		21	.381		74	26.50		100.50	121
2170	1-1/2"		20	.400		92	28		120	143
2180	2"		17	.471		123	33		156	185
4850	Foot valve, PVC, socket or threaded									
4900	1/2"	1 Plum	34	.235	Ea.	64.50	16.40		80.90	95
4930	3/4"		32	.250		72.50	17.45		89.95	106
4940	1"		28	.286		95	19.95		114.95	134
4950	1-1/4"		27	.296		187	20.50		207.50	236
4960	1-1/2"		26	.308		182	21.50		203.50	233
6350	Y sediment strainer, PVC, socket or threaded									
6400	1/2"	1 Plum	26	.308	Ea.	57	21.50		78.50	94.50
6440	3/4"		24	.333		60.50	23.50		84	101
6450	1"		23	.348		71.50	24.50		96	115
6460	1-1/4"		21	.381		172	26.50		198.50	229
6470	1-1/2"		20	.400		148	28		176	205

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22 05 48.10 Seismic Bracing Supports	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **SEISMIC BRACING SUPPORTS** R133113-90									
0020 Clamps									
0030 C-clamp, for mounting on steel beam									
0040 3/8" threaded rod	1 Skwk	160	.050	Ea.	4.35	2.95		7.30	9.20
0050 1/2" threaded rod		160	.050		5.40	2.95		8.35	10.35
0060 5/8" threaded rod		160	.050		7.25	2.95		10.20	12.40
0070 3/4" threaded rod		160	.050		9.50	2.95		12.45	14.85
0100 Brackets									
0110 Beam side or wall malleable iron									
0120 3/8" threaded rod	1 Skwk	48	.167	Ea.	6.10	9.80		15.90	21.50
0130 1/2" threaded rod		48	.167		10.35	9.80		20.15	26
0140 5/8" threaded rod		48	.167		18.50	9.80		28.30	35.50
0150 3/4" threaded rod		48	.167		24.50	9.80		34.30	41.50
0160 7/8" threaded rod		48	.167		16.75	9.80		26.55	33
0170 For concrete installation, add						30%			
0180 Wall, welded steel									
0190 0 size 12" wide 18" deep	1 Skwk	34	.235	Ea.	440	13.85		453.85	505
0200 1 size 18" wide 24" deep		34	.235		520	13.85		533.85	595
0210 2 size 24" wide 30" deep		34	.235		690	13.85		703.85	780
0300 Rod, carbon steel									
0310 Continuous thread									
0320 1/4" thread	1 Skwk	144	.056	L.F.	.43	3.27		3.70	5.40
0330 3/8" thread		144	.056		.46	3.27		3.73	5.40
0340 1/2" thread		144	.056		.72	3.27		3.99	5.70
0350 5/8" thread		144	.056		1.03	3.27		4.30	6.05
0360 3/4" thread		144	.056		1.81	3.27		5.08	6.90
0370 7/8" thread		144	.056		2.27	3.27		5.54	7.40
0380 For galvanized, add					30%				
0400 Channel, steel									
0410 3/4" x 1-1/2"	1 Skwk	80	.100	L.F.	3.80	5.90		9.70	13.05
0420 1-1/2" x 1-1/2"		70	.114		4.45	6.75		11.20	15
0430 1-7/8" x 1-1/2"		60	.133		24.50	7.85		32.35	39
0440 3" x 1-1/2"		50	.160		22	9.40		31.40	38
0450 Spring nuts									
0460 3/8"	1 Skwk	100	.080	Ea.	1.42	4.71		6.13	8.65
0470 1/2"	"	80	.100	"	1.91	5.90		7.81	10.95
0500 Welding, field									
0510 Cleaning and welding plates, bars, or rods									
0520 To existing beams, columns, or trusses									
0530 1" weld	1 Skwk	144	.056	Ea.	.31	3.27		3.58	5.25
0540 2" weld		72	.111		.62	6.55		7.17	10.55
0550 3" weld		54	.148		.94	8.75		9.69	14.15
0560 4" weld		36	.222		1.25	13.10		14.35	21
0570 5" weld		30	.267		1.56	15.70		17.26	25
0580 6" weld		24	.333		1.87	19.65		21.52	31.50
0600 Vibration absorbers									
0610 Hangers, neoprene flex									
0620 10-120 lb. capacity	1 Skwk	8	1	Ea.	24.50	59		83.50	116
0630 75-550 lb. capacity		8	1		41	59		100	134
0640 250-1,100 lb. capacity		6	1.333		86	78.50		164.50	213
0650 1,000-4,000 lb. capacity		6	1.333		135	78.50		213.50	267
0660 Spring flex									

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22 05 48 – Vibration and Seismic Controls for Plumbing Piping and Equipment

	22 05 48.10 Seismic Bracing Supports	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0670	60-450 lb. capacity	1 Skwk	8	1	Ea.	71.50	59		130.50	167
0680	85-450 lb. capacity		8	1		91.50	59		150.50	189
0690	600-900 lb. capacity		8	1		148	59		207	252
0700	1,100-1,300 lb. capacity	1 Skwk	6	1.333	Ea.	182	78.50		260.50	320
0710	Mounts, neoprene									
0720	135-380 lb. capacity	1 Skwk	7	1.143	Ea.	17.95	67.50		85.45	121
0730	250-1,100 lb. capacity		7	1.143		57	67.50		124.50	164
0740	1,000-4,000 lb. capacity		5	1.600		112	94		206	265

22 05 76 – Facility Drainage Piping Cleanouts

22 05 76.10 Cleanouts

0010	**CLEANOUTS**									
0060	Floor type									
0080	Round or square, scoriated nickel bronze top									
0100	2" pipe size	1 Plum	10	.800	Ea.	460	56		516	590
0120	3" pipe size		8	1		485	70		555	640
0140	4" pipe size		6	1.333		650	93		743	855
0980	Round top, recessed for terrazzo									
1000	2" pipe size	1 Plum	9	.889	Ea.	705	62		767	870
1080	3" pipe size		6	1.333		755	93		848	970
1100	4" pipe size		4	2		900	140		1,040	1,200
1120	5" pipe size	Q-1	6	2.667		1,425	168		1,593	1,800

22 05 76.20 Cleanout Tees

0010	**CLEANOUT TEES**									
0100	Cast iron, B&S, with countersunk plug									
0200	2" pipe size	1 Plum	4	2	Ea.	149	140		289	370
0220	3" pipe size		3.60	2.222		229	155		384	485
0240	4" pipe size		3.30	2.424		345	169		514	630
0280	6" pipe size	Q-1	5	3.200		1,000	201		1,201	1,400
0500	For round smooth access cover, same price									
4000	Plastic, tees and adapters. Add plugs									
4010	ABS, DWV									
4020	Cleanout tee, 1-1/2" pipe size	1 Plum	15	.533	Ea.	27.50	37		64.50	85.50
4030	2" pipe size	Q-1	27	.593		37.50	37		74.50	97
4040	3" pipe size		21	.762		56.50	48		104.50	134
4050	4" pipe size		16	1		123	63		186	229
4100	Cleanout plug, 1-1/2" pipe size	1 Plum	32	.250		5.70	17.45		23.15	32.50
4110	2" pipe size	Q-1	56	.286		6.25	17.95		24.20	34
4120	3" pipe size		36	.444		10.15	28		38.15	52.50
4130	4" pipe size		30	.533		17.55	33.50		51.05	69.50
4180	Cleanout adapter fitting, 1-1/2" pipe size	1 Plum	32	.250		8.45	17.45		25.90	35.50
4190	2" pipe size	Q-1	56	.286		11.70	17.95		29.65	40
4200	3" pipe size		36	.444		29.50	28		57.50	74
4210	4" pipe size		30	.533		55.50	33.50		89	111
5000	PVC, DWV									
5010	Cleanout tee, 1-1/2" pipe size	1 Plum	15	.533	Ea.	22.50	37		59.50	80
5020	2" pipe size	Q-1	27	.593		26	37		63	84
5030	3" pipe size		21	.762		50.50	48		98.50	128
5040	4" pipe size		16	1		90	63		153	193
5090	Cleanout plug, 1-1/2" pipe size	1 Plum	32	.250		5.25	17.45		22.70	32
5100	2" pipe size	Q-1	56	.286		5.90	17.95		23.85	33.50
5110	3" pipe size		36	.444		10.50	28		38.50	53
5120	4" pipe size		30	.533		15.55	33.50		49.05	67

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22 05 Common Work Results for Plumbing

22 05 76 – Facility Drainage Piping Cleanouts

22 05 76.20 Cleanout Tees		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
5130	6" pipe size	Q-1	24	.667	Ea.	49.50	42		91.50	117
5170	Cleanout adapter fitting, 1-1/2" pipe size	1 Plum	32	.250		7.05	17.45		24.50	34
5180	2" pipe size	Q-1	56	.286		9.45	17.95		27.40	37.50
5190	3" pipe size		36	.444		25.50	28		53.50	69.50
5200	4" pipe size		30	.533		41.50	33.50		75	96
5210	6" pipe size		24	.667		150	42		192	228

22 07 Plumbing Insulation

22 07 19 – Plumbing Piping Insulation

22 07 19.10 Piping Insulation

0010	**PIPING INSULATION**									
0110	Insulation req'd. is based on the surface size/area to be covered									
0600	Pipe covering (price copper tube one size less than IPS)									
6600	Fiberglass, with all service jacket									
6840	1" wall, 1/2" iron pipe size	G	Q-14	240	.067	L.F.	2.96	3.78	6.74	9.05
6870	1" iron pipe size	G		220	.073		2.32	4.13	6.45	8.85
6900	2" iron pipe size	G		200	.080		2.92	4.54	7.46	10.15
6920	3" iron pipe size	G		180	.089		3	5.05	8.05	11
6940	4" iron pipe size	G		150	.107		3.39	6.05	9.44	13
7320	2" wall, 1/2" iron pipe size	G		220	.073		5.80	4.13	9.93	12.70
7440	6" iron pipe size	G		100	.160		7.30	9.10	16.40	22
7460	8" iron pipe size	G		80	.200		21	11.35	32.35	40.50
7480	10" iron pipe size	G		70	.229		17.05	12.95	30	38.50
7490	12" iron pipe size	G		65	.246		28	13.95	41.95	52.50
7800	For fiberglass with standard canvas jacket, deduct						5%			
7802	For fittings, add 3 L.F. for each fitting									
7804	plus 4 L.F. for each flange of the fitting									
7810	Finishes									
7812	For .016" aluminum jacket, add	G	Q-14	200	.080	S.F.	1.12	4.54	5.66	8.20
7813	For .010" stainless steel, add	G	"	160	.100	"	3.29	5.70	8.99	12.30
7879	Rubber tubing, flexible closed cell foam									
7880	3/8" wall, 1/4" iron pipe size	G	1 Asbe	120	.067	L.F.	.70	4.20	4.90	7.20
7910	1/2" iron pipe size	G		115	.070		.87	4.39	5.26	7.65
7920	3/4" iron pipe size	G		115	.070		.96	4.39	5.35	7.75
7930	1" iron pipe size	G		110	.073		1.09	4.59	5.68	8.20
7950	1-1/2" iron pipe size	G		110	.073		1.53	4.59	6.12	8.70
8100	1/2" wall, 1/4" iron pipe size	G		90	.089		1.14	5.60	6.74	9.80
8130	1/2" iron pipe size	G		89	.090		1.25	5.65	6.90	10.05
8140	3/4" iron pipe size	G		89	.090		.22	5.65	5.87	8.90
8150	1" iron pipe size	G		88	.091		1.56	5.75	7.31	10.45
8170	1-1/2" iron pipe size	G		87	.092		1.97	5.80	7.77	11
8180	2" iron pipe size	G		86	.093		2.52	5.85	8.37	11.70
8200	3" iron pipe size	G		85	.094		3.71	5.95	9.66	13.20
8300	3/4" wall, 1/4" iron pipe size	G		90	.089		.27	5.60	5.87	8.85
8330	1/2" iron pipe size	G		89	.090		1.90	5.65	7.55	10.75
8340	3/4" iron pipe size	G		89	.090		2.28	5.65	7.93	11.15
8350	1" iron pipe size	G		88	.091		.46	5.75	6.21	9.25
8370	1-1/2" iron pipe size	G		87	.092		4.21	5.80	10.01	13.50
8380	2" iron pipe size	G		86	.093		5.10	5.85	10.95	14.60
8400	3" iron pipe size	G		85	.094		5.05	5.95	11	14.65
8444	1" wall, 1/2" iron pipe size	G		86	.093		.57	5.85	6.42	9.60

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22 07 Plumbing Insulation

22 07 19 – Plumbing Piping Insulation

	22 07 19.10 Piping Insulation		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
8445	3/4" iron pipe size	G	1 Asbe	84	.095	L.F.	.70	6		6.70	9.95
8446	1" iron pipe size	G		84	.095		5.10	6		11.10	14.80
8447	1-1/4" iron pipe size	G		82	.098		5.90	6.15		12.05	15.90
8448	1-1/2" iron pipe size	G		82	.098		6.55	6.15		12.70	16.60
8449	2" iron pipe size	G		80	.100		7.85	6.30		14.15	18.30
8450	2-1/2" iron pipe size	G		80	.100		7.90	6.30		14.20	18.35
8456	Rubber insulation tape, 1/8" x 2" x 30'	G				Ea.	25			25	27.50

22 11 Facility Water Distribution

22 11 13 – Facility Water Distribution Piping

22 11 13.14 Pipe, Brass

0010	**PIPE, BRASS**, Plain end									
0900	Field threaded, coupling & clevis hanger assembly 10' OC									
0920	Regular weight									
1120	1/2" diameter	1 Plum	48	.167	L.F.	9.15	11.65		20.80	27.50
1140	3/4" diameter		46	.174		11.85	12.15		24	31
1160	1" diameter		43	.186		6.40	13		19.40	26.50
1180	1-1/4" diameter	Q-1	72	.222		19.35	13.95		33.30	42.50
1200	1-1/2" diameter	Q-1	65	.246	L.F.	25	15.45		40.45	50.50
1220	2" diameter	"	53	.302	"	31	18.95		49.95	62.50

22 11 13.23 Pipe/Tube, Copper

0010	**PIPE/TUBE, COPPER**, Solder joints									
1000	Type K tubing, couplings & clevis hanger assemblies 10' OC									
1100	1/4" diameter	1 Plum	84	.095	L.F.	6.75	6.65		13.40	17.30
1200	1" diameter		66	.121		15.70	8.45		24.15	30
1260	2" diameter		40	.200		39.50	13.95		53.45	64.50
2000	Type L tubing, couplings & clevis hanger assemblies 10' OC									
2100	1/4" diameter	1 Plum	88	.091	L.F.	3.01	6.35		9.36	12.75
2120	3/8" diameter		84	.095		3.85	6.65		10.50	14.15
2140	1/2" diameter		81	.099		4.42	6.90		11.32	15.15
2160	5/8" diameter		79	.101		5.90	7.05		12.95	17.05
2180	3/4" diameter		76	.105		6.45	7.35		13.80	18.05
2200	1" diameter		68	.118		8.35	8.20		16.55	21.50
2220	1-1/4" diameter		58	.138		11.45	9.65		21.10	27
2240	1-1/2" diameter		52	.154		14.75	10.75		25.50	32.50
2260	2" diameter		42	.190		22.50	13.30		35.80	45
2280	2-1/2" diameter	Q-1	62	.258		35	16.20		51.20	62.50
2300	3" diameter		56	.286		47.50	17.95		65.45	79
2320	3-1/2" diameter		43	.372		69	23.50		92.50	111
2340	4" diameter		39	.410		80	26		106	127
2360	5" diameter		34	.471		194	29.50		223.50	257
2380	6" diameter	Q-2	40	.600		262	39		301	345
2400	8" diameter	"	36	.667		410	43.50		453.50	515
2410	For other than full hard temper, add					21%				
2590	For silver solder, add						15%			
4000	Type DWV tubing, couplings & clevis hanger assemblies 10' OC									
4100	1-1/4" diameter	1 Plum	60	.133	L.F.	13.85	9.30		23.15	29
4120	1-1/2" diameter		54	.148		8.55	10.35		18.90	25
4140	2" diameter		44	.182		12.10	12.70		24.80	32.50
4160	3" diameter	Q-1	58	.276		25.50	17.35		42.85	54
4180	4" diameter		40	.400		89.50	25		114.50	136

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	22 11 13.23 Pipe/Tube, Copper	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4200	5" diameter	Q-1	36	.444	L.F.	180	28		208	240
4220	6" diameter	Q-2	42	.571	↓	270	37		307	355
	22 11 13.44 Pipe, Steel									
0010	**PIPE, STEEL**									
0012	The steel pipe in this section does not include fittings such as ells, tees									
0014	For fittings either add a % (usually 25 to 35%) or see									
0015	the Mechanical or Plumbing Costs									
0020	All pipe sizes are to Spec. A-53 unless noted otherwise R221113-50									
0050	Schedule 40, threaded, with couplings, and clevis hanger									
0060	assemblies sized for covering, 10' OC									
0540	Black, 1/4" diameter	1 Plum	66	.121	L.F.	7.95	8.45		16.40	21.50
0550	3/8" diameter		65	.123		10.35	8.60		18.95	24
0560	1/2" diameter		63	.127		2.81	8.85		11.66	16.30
0570	3/4" diameter		61	.131		3.41	9.15		12.56	17.40
0580	1" diameter	↓	53	.151		3.89	10.55		14.44	19.95
0590	1-1/4" diameter	Q-1	89	.180		5.05	11.30		16.35	22.50
0600	1-1/2" diameter		80	.200		5.90	12.55		18.45	25.50
0610	2" diameter		64	.250		7.90	15.70		23.60	32
0620	2-1/2" diameter		50	.320		14.70	20		34.70	46
0630	3" diameter		43	.372		19.20	23.50		42.70	56
0640	3-1/2" diameter		40	.400		28.50	25		53.50	69
0650	4" diameter	↓	36	.444	↓	29	28		57	73
1280	All pipe sizes are to Spec. A-53 unless noted otherwise									
1281	Schedule 40, threaded, with couplings and clevis hanger									
1282	assemblies sized for covering, 10' OC									
1290	Galvanized, 1/4" diameter	1 Plum	66	.121	L.F.	10.95	8.45		19.40	24.50
1300	3/8" diameter		65	.123		14.40	8.60		23	28.50
1310	1/2" diameter		63	.127		3.19	8.85		12.04	16.70
1320	3/4" diameter		61	.131		3.92	9.15		13.07	17.95
1330	1" diameter	↓	53	.151		4.63	10.55		15.18	21
1340	1-1/4" diameter	Q-1	89	.180		6.05	11.30		17.35	23.50
1350	1-1/2" diameter		80	.200		7.10	12.55		19.65	26.50
1360	2" diameter		64	.250		9.55	15.70		25.25	34
1370	2-1/2" diameter		50	.320		16.50	20		36.50	48
1380	3" diameter		43	.372		21.50	23.50		45	59
1390	3-1/2" diameter		40	.400		33.50	25		58.50	74.50
1400	4" diameter	↓	36	.444	↓	33.50	28		61.50	78.50
2000	Welded, sch. 40, on yoke & roll hanger assy's, sized for covering, 10' OC									
2040	Black, 1" diameter	Q-15	93	.172	L.F.	4.65	10.80	.67	16.12	22
2070	2" diameter		61	.262		7.85	16.50	1.02	25.37	34.50
2090	3" diameter		43	.372		16.15	23.50	1.44	41.09	54.50
2110	4" diameter		37	.432		22.50	27	1.68	51.18	67.50
2120	5" diameter	↓	32	.500	↓	25.50	31.50	1.94	58.94	77
2130	6" diameter	Q-16	36	.667	L.F.	27	43.50	1.73	72.23	96.50
2140	8" diameter		29	.828		88.50	54	2.14	144.64	180
2150	10" diameter		24	1		113	65	2.59	180.59	224
2160	12" diameter	↓	19	1.263	↓	141	82.50	3.27	226.77	283

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	22 11 13.48 Pipe, Fittings and Valves, Steel, Grooved-Joint	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**PIPE, FITTINGS AND VALVES, STEEL, GROOVED-JOINT**									
0012	Fittings are ductile iron. Steel fittings noted.									
0020	Pipe includes coupling & clevis type hanger assemblies, 10′ OC									
1000	Schedule 40, black									
1040	3/4″ diameter	1 Plum	71	.113	L.F.	6.10	7.85		13.95	18.45
1050	1″ diameter		63	.127		5.65	8.85		14.50	19.40
1060	1-1/4″ diameter		58	.138		7.25	9.65		16.90	22.50
1070	1-1/2″ diameter		51	.157		8.15	10.95		19.10	25.50
1080	2″ diameter		40	.200		9.65	13.95		23.60	31.50
1090	2-1/2″ diameter	Q-1	57	.281		15.30	17.65		32.95	43.50
1100	3″ diameter		50	.320		18.75	20		38.75	50.50
1110	4″ diameter		45	.356		26.50	22.50		49	63
1120	5″ diameter		37	.432		32	27		59	76
1130	6″ diameter	Q-2	42	.571		36	37		73	95.50
1800	Galvanized									
1840	3/4″ diameter	1 Plum	71	.113	L.F.	6.55	7.85		14.40	18.95
1850	1″ diameter		63	.127		6.55	8.85		15.40	20.50
1860	1-1/4″ diameter		58	.138		8.45	9.65		18.10	23.50
1870	1-1/2″ diameter		51	.157		9.55	10.95		20.50	27
1880	2″ diameter		40	.200		11.75	13.95		25.70	34
1890	2-1/2″ diameter	Q-1	57	.281		17.40	17.65		35.05	45.50
1900	3″ diameter		50	.320		21.50	20		41.50	53.50
1910	4″ diameter		45	.356		30.50	22.50		53	67.50
1920	5″ diameter		37	.432		32	27		59	76
1930	6″ diameter	Q-2	42	.571		42.50	37		79.50	102
3990	Fittings: coupling material required at joints not incl. in fitting price.									
3994	Add 1 selected coupling, material only, per joint for installed price.									
4000	Elbow, 90° or 45°, painted									
4030	3/4″ diameter	1 Plum	50	.160	Ea.	101	11.15		112.15	128
4040	1″ diameter		50	.160		54	11.15		65.15	76
4050	1-1/4″ diameter		40	.200		54	13.95		67.95	80.50
4060	1-1/2″ diameter		33	.242		54	16.90		70.90	84.50
4070	2″ diameter		25	.320		54	22.50		76.50	93
4080	2-1/2″ diameter	Q-1	40	.400	Ea.	54	25		79	97
4090	3″ diameter		33	.485		95	30.50		125.50	150
4100	4″ diameter		25	.640		103	40		143	173
4110	5″ diameter		20	.800		244	50.50		294.50	345
4120	6″ diameter	Q-2	25	.960		287	62.50		349.50	410
4250	For galvanized elbows, add					26%				
4690	Tee, painted									
4700	3/4″ diameter	1 Plum	38	.211	Ea.	108	14.70		122.70	141
4740	1″ diameter		33	.242		83.50	16.90		100.40	117
4750	1-1/4″ diameter		27	.296		83.50	20.50		104	123
4760	1-1/2″ diameter		22	.364		83.50	25.50		109	130
4770	2″ diameter		17	.471		83.50	33		116.50	141
4780	2-1/2″ diameter	Q-1	27	.593		83.50	37		120.50	147
4790	3″ diameter		22	.727		114	45.50		159.50	193
4800	4″ diameter		17	.941		173	59		232	278
4810	5″ diameter		13	1.231		400	77.50		477.50	555
4820	6″ diameter	Q-2	17	1.412		465	92		557	645
4900	For galvanized tees, add					24%				
4906	Couplings, rigid style, painted									

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22 11 13 – Facility Water Distribution Piping

	22 11 13.48 Pipe, Fittings and Valves, Steel, Grooved-Joint	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4908	1" diameter	1 Plum	100	.080	Ea.	42	5.60		47.60	54.50
4909	1-1/4" diameter		100	.080		39	5.60		44.60	51.50
4910	1-1/2" diameter		67	.119		42	8.35		50.35	58.50
4912	2" diameter		50	.160		53.50	11.15		64.65	75.50
4914	2-1/2" diameter	Q-1	80	.200		60.50	12.55		73.05	85.50
4916	3" diameter		67	.239		70.50	15		85.50	100
4918	4" diameter		50	.320		97.50	20		117.50	137
4920	5" diameter		40	.400		125	25		150	176
4922	6" diameter	Q-2	50	.480		165	31.50		196.50	229
4940	Flexible, standard, painted									
4950	3/4" diameter	1 Plum	100	.080	Ea.	31	5.60		36.60	42.50
4960	1" diameter		100	.080		31	5.60		36.60	42.50
4970	1-1/4" diameter		80	.100		40	7		47	54.50
4980	1-1/2" diameter		67	.119		43	8.35		51.35	60
4990	2" diameter		50	.160		46.50	11.15		57.65	67.50
5000	2-1/2" diameter	Q-1	80	.200		54	12.55		66.55	78
5010	3" diameter		67	.239		59	15		74	87.50
5020	3-1/2" diameter		57	.281		84.50	17.65		102.15	120
5030	4" diameter		50	.320		85.50	20		105.50	124
5040	5" diameter		40	.400		128	25		153	179
5050	6" diameter	Q-2	50	.480	Ea.	152	31.50		183.50	214
5200	For galvanized couplings, add				"	33%				
7790	Valves: coupling material required at joints not incl. in valve price.									
7794	Add 1 selected coupling, material only, per joint for installed price.									

22 11 13.64 Pipe, Stainless Steel

0010	**PIPE, STAINLESS STEEL**									
3500	Threaded, couplings and clevis hanger assemblies, 10' OC									
3520	Schedule 40, type 304									
3540	1/4" diameter	1 Plum	54	.148	L.F.	5.65	10.35		16	21.50
3550	3/8" diameter		53	.151		6.50	10.55		17.05	23
3560	1/2" diameter		52	.154		6.20	10.75		16.95	23
3580	1" diameter		45	.178		14.65	12.40		27.05	34.50
3610	2" diameter	Q-1	57	.281		37	17.65		54.65	67.50
3640	4" diameter	Q-2	51	.471		94.50	30.50		125	150
3740	For small quantities, add					10%				
4250	Schedule 40, type 316									
4290	1/4" diameter	1 Plum	54	.148	L.F.	12.65	10.35		23	29.50
4300	3/8" diameter		53	.151		13.80	10.55		24.35	31
4310	1/2" diameter		52	.154		16.05	10.75		26.80	33.50
4320	3/4" diameter		51	.157		18.70	10.95		29.65	37
4330	1" diameter		45	.178		26.50	12.40		38.90	47.50
4360	2" diameter	Q-1	57	.281		55	17.65		72.65	87.50
4390	4" diameter	Q-2	51	.471		156	30.50		186.50	217
4490	For small quantities, add					10%				

22 11 13.74 Pipe, Plastic

0010	**PIPE, PLASTIC**									
1800	PVC, couplings 10' OC, clevis hanger assemblies, 3 per 10'									
1820	Schedule 40									
1860	1/2" diameter	1 Plum	54	.148	L.F.	6.35	10.35		16.70	22.50
1870	3/4" diameter		51	.157		6.90	10.95		17.85	24
1880	1" diameter		46	.174		6.25	12.15		18.40	25
1890	1-1/4" diameter		42	.190		7.55	13.30		20.85	28

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	22 11 13.74 Pipe, Plastic	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1900	1-1/2" diameter	1 Plum	36	.222	L.F.	8.95	15.50		24.45	33
1910	2" diameter	Q-1	59	.271		11.10	17.05		28.15	38
1920	2-1/2" diameter		56	.286		16.70	17.95		34.65	45.50
1930	3" diameter		53	.302		20.50	18.95		39.45	51.50
1940	4" diameter		48	.333		14.60	21		35.60	47
1950	5" diameter		43	.372		30	23.50		53.50	68
1960	6" diameter		39	.410		31.50	26		57.50	73.50
4100	DWV type, schedule 40, couplings 10' OC, clevis hanger assy's, 3 per 10'									
4210	ABS, schedule 40, foam core type									
4212	Plain end black									
4214	1-1/2" diameter	1 Plum	39	.205	L.F.	3.40	14.30		17.70	25
4216	2" diameter	Q-1	62	.258		4.02	16.20		20.22	28.50
4218	3" diameter		56	.286		7.20	17.95		25.15	35
4220	4" diameter		51	.314		10.45	19.70		30.15	41
4222	6" diameter		42	.381		27.50	24		51.50	65.50
4240	To delete coupling & hangers, subtract									
4244	1-1/2" diam. to 6" diam.					43%	48%			
4400	PVC									
4410	1-1/4" diameter	1 Plum	42	.190	L.F.	5.95	13.30		19.25	26.50
4420	1-1/2" diameter	"	36	.222		4.98	15.50		20.48	28.50
4460	2" diameter	Q-1	59	.271		6.25	17.05		23.30	32.50
4470	3" diameter		53	.302		8.30	18.95		27.25	37.50
4480	4" diameter		48	.333		11.55	21		32.55	43.50
4490	6" diameter		39	.410		25.50	26		51.50	66.50
5300	CPVC, socket joint, couplings 10' OC, clevis hanger assemblies, 3 per 10'									
5302	Schedule 40									
5304	1/2" diameter	1 Plum	54	.148	L.F.	6.25	10.35		16.60	22.50
5305	3/4" diameter		51	.157		7.75	10.95		18.70	25
5306	1" diameter		46	.174		11.85	12.15		24	31
5307	1-1/4" diameter		42	.190		8.15	13.30		21.45	29
5308	1-1/2" diameter		36	.222		8	15.50		23.50	32
5309	2" diameter	Q-1	59	.271		19.75	17.05		36.80	47.50
5310	2-1/2" diameter		56	.286		19.55	17.95		37.50	48.50
5311	3" diameter		53	.302		34	18.95		52.95	65.50
5360	CPVC, threaded, couplings 10' OC, clevis hanger assemblies, 3 per 10'									
5380	Schedule 40									
5460	1/2" diameter	1 Plum	54	.148	L.F.	7.45	10.35		17.80	23.50
5470	3/4" diameter		51	.157		9.85	10.95		20.80	27
5480	1" diameter		46	.174		14	12.15		26.15	33.50
5490	1-1/4" diameter		42	.190		9.85	13.30		23.15	30.50
5500	1-1/2" diameter		36	.222		9.45	15.50		24.95	33.50
5510	2" diameter	Q-1	59	.271		21.50	17.05		38.55	49
5520	2-1/2" diameter		56	.286		21.50	17.95		39.45	50.50
5530	3" diameter		53	.302		36.50	18.95		55.45	68.50
7280	PEX, flexible, no couplings or hangers									
7282	Note: For labor costs add 25% to the couplings and fittings labor total.									
7285	For fittings see section 23 83 16.10 7000									
7300	Non-barrier type, hot/cold tubing rolls									
7310	1/4" diameter x 100'				L.F.	.70			.70	.77
7350	3/8" diameter x 100'					.71			.71	.78
7360	1/2" diameter x 100'					1.04			1.04	1.14
7370	1/2" diameter x 500'					.92			.92	1.01
7380	1/2" diameter x 1000'					.80			.80	.88

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22 11 13 – Facility Water Distribution Piping

	22 11 13.74 Pipe, Plastic	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
7400	3/4" diameter x 100'				L.F.	.97			.97	1.07
7410	3/4" diameter x 500'					1.51			1.51	1.66
7420	3/4" diameter x 1000'					1.51			1.51	1.66
7460	1" diameter x 100'					2.60			2.60	2.86
7470	1" diameter x 300'					2.60			2.60	2.86
7480	1" diameter x 500'					2.62			2.62	2.88
7500	1-1/4" diameter x 100'					4.43			4.43	4.87
7510	1-1/4" diameter x 300'					4.43			4.43	4.87
7540	1-1/2" diameter x 100'					6.05			6.05	6.70
7550	1-1/2" diameter x 300'				↓	6.15			6.15	6.80
7596	Most sizes available in red or blue									
7700	Non-barrier type, hot/cold tubing straight lengths									
7710	1/2" diameter x 20'				L.F.	.87			.87	.96
7750	3/4" diameter x 20'					1.38			1.38	1.52
7760	1" diameter x 20'					2.29			2.29	2.52
7770	1-1/4" diameter x 20'					4.13			4.13	4.54
7780	1-1/2" diameter x 20'					6.45			6.45	7.10
7790	2" diameter				↓	11.75			11.75	12.95
7796	Most sizes available in red or blue									

22 11 19 – Domestic Water Piping Specialties

22 11 19.10 Flexible Connectors

0010	**FLEXIBLE CONNECTORS**, Corrugated, 5/8" OD, 3/4" ID								
0050	Gas, seamless brass, steel fittings								
0200	12" long	1 Plum	36	.222	Ea.	20.50	15.50	36	46
0220	18" long		36	.222		25.50	15.50	41	51.50
0240	24" long		34	.235		30.50	16.40	46.90	58
0280	36" long		32	.250		36.50	17.45	53.95	66
0340	60" long	↓	30	.267	↓	55	18.60	73.60	88
2000	Water, copper tubing, dielectric separators								
2100	12" long	1 Plum	36	.222	Ea.	10.25	15.50	25.75	34.50
2260	24" long	1 Plum	34	.235	Ea.	15.25	16.40	31.65	41.50

22 11 19.14 Flexible Metal Hose

0010	**FLEXIBLE METAL HOSE**, Connectors, standard lengths								
0100	Bronze braided, bronze ends								
0120	3/8" diameter x 12"	1 Stpi	26	.308	Ea.	35	21.50	56.50	71
0160	3/4" diameter x 12"		20	.400		45.50	28	73.50	92
0180	1" diameter x 18"		19	.421		63.50	29.50	93	114
0200	1-1/2" diameter x 18"		13	.615		71	43.50	114.50	143
0220	2" diameter x 18"	↓	11	.727	↓	119	51	170	208

22 11 19.26 Pressure Regulators

0010	**PRESSURE REGULATORS**								
3000	Steam, high capacity, bronze body, stainless steel trim								
3020	Threaded, 1/2" diameter	1 Stpi	24	.333	Ea.	3,850	23.50	3,873.50	4,250
3030	3/4" diameter		24	.333		3,925	23.50	3,948.50	4,350
3040	1" diameter		19	.421		2,775	29.50	2,804.50	3,100
3060	1-1/4" diameter		15	.533		4,600	37.50	4,637.50	5,100
3080	1-1/2" diameter		13	.615		5,550	43.50	5,593.50	6,175
3100	2" diameter	↓	11	.727		6,775	51	6,826	7,550
3120	2-1/2" diameter	Q-5	12	1.333		8,450	84.50	8,534.50	9,425
3140	3" diameter	"	11	1.455	↓	9,550	92	9,642	10,600
3500	Flanged connection, iron body, 125 lb. W.S.P.								
3520	3" diameter	Q-5	11	1.455	Ea.	10,600	92	10,692	11,800

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	22 11 19.26 Pressure Regulators	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
3540	4" diameter	Q-5	5	3.200	Ea.	13,400	203		13,603	15,000
	22 11 19.38 Water Supply Meters									
0010	**WATER SUPPLY METERS**									
2000	Domestic/commercial, bronze									
2020	Threaded									
2060	5/8" diameter, to 20 GPM	1 Plum	16	.500	Ea.	148	35		183	215
2080	3/4" diameter, to 30 GPM		14	.571		370	40		410	465
2100	1" diameter, to 50 GPM		12	.667		500	46.50		546.50	620
2300	Threaded/flanged									
2340	1-1/2" diameter, to 100 GPM	1 Plum	8	1	Ea.	1,150	70		1,220	1,350
2360	2" diameter, to 160 GPM	"	6	1.333	"	1,650	93		1,743	1,975
2600	Flanged, compound									
2640	3" diameter, 320 GPM	Q-1	3	5.333	Ea.	1,750	335		2,085	2,425
2660	4" diameter, to 500 GPM		1.50	10.667		2,600	670		3,270	3,875
2680	6" diameter, to 1,000 GPM		1	16		6,675	1,000		7,675	8,825
2700	8" diameter, to 1,800 GPM		.80	20		7,625	1,250		8,875	10,300
	22 11 19.42 Backflow Preventers									
0010	**BACKFLOW PREVENTERS**, Includes valves									
0020	and four test cocks, corrosion resistant, automatic operation									
4000	Reduced pressure principle									
4100	Threaded, bronze, valves are ball									
4120	3/4" pipe size	1 Plum	16	.500	Ea.	560	35		595	665
4140	1" pipe size		14	.571		595	40		635	715
4150	1-1/4" pipe size		12	.667		1,450	46.50		1,496.50	1,675
4160	1-1/2" pipe size		10	.800		1,200	56		1,256	1,400
4180	2" pipe size		7	1.143		1,925	80		2,005	2,225
5000	Flanged, bronze, valves are OS&Y									
5060	2-1/2" pipe size	Q-1	5	3.200	Ea.	6,475	201		6,676	7,425
5080	3" pipe size		4.50	3.556		7,100	223		7,323	8,150
5100	4" pipe size		3	5.333		9,100	335		9,435	10,500
5120	6" pipe size	Q-2	3	8		12,900	520		13,420	14,900
5600	Flanged, iron, valves are OS&Y									
5660	2-1/2" pipe size	Q-1	5	3.200	Ea.	3,225	201		3,426	3,850
5680	3" pipe size		4.50	3.556		3,325	223		3,548	3,975
5700	4" pipe size		3	5.333		4,300	335		4,635	5,225
5720	6" pipe size	Q-2	3	8		6,350	520		6,870	7,775
5740	8" pipe size		2	12		12,600	780		13,380	15,000
5760	10" pipe size		1	24		14,900	1,575		16,475	18,600
	22 11 19.50 Vacuum Breakers									
0010	**VACUUM BREAKERS**									
0013	See also backflow preventers Section 22 11 19.42									
1000	Anti-siphon continuous pressure type									
1010	Max. 150 psi - 210°F									
1020	Bronze body									
1030	1/2" size	1 Stpi	24	.333	Ea.	274	23.50		297.50	335
1040	3/4" size		20	.400		274	28		302	340
1050	1" size		19	.421		280	29.50		309.50	355
1060	1-1/4" size		15	.533		555	37.50		592.50	670
1070	1-1/2" size		13	.615		675	43.50		718.50	805
1080	2" size		11	.727		440	51		491	555
1200	Max. 125 psi with atmospheric vent									
1210	Brass, in-line construction									

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22 11 19 – Domestic Water Piping Specialties

	22 11 19.50 Vacuum Breakers	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1220	1/4" size	1 Stpi	24	.333	Ea.	187	23.50		210.50	240
1230	3/8" size	"	24	.333		187	23.50		210.50	240
1260	For polished chrome finish, add					13%				
2000	Anti-siphon, non-continuous pressure type									
2010	Hot or cold water 125 psi - 210°F									
2020	Bronze body									
2030	1/4" size	1 Stpi	24	.333	Ea.	114	23.50		137.50	160
2040	3/8" size		24	.333		114	23.50		137.50	160
2050	1/2" size		24	.333		128	23.50		151.50	176
2060	3/4" size		20	.400		153	28		181	210
2070	1" size		19	.421		236	29.50		265.50	305
2080	1-1/4" size		15	.533		415	37.50		452.50	510
2090	1-1/2" size		13	.615		460	43.50		503.50	570
2100	2" size		11	.727		755	51		806	905
2110	2-1/2" size		8	1		2,175	70.50		2,245.50	2,475
2120	3" size		6	1.333		2,875	94		2,969	3,325
2150	For polished chrome finish, add					50%				

22 11 19.54 Water Hammer Arresters/Shock Absorbers

0010	**WATER HAMMER ARRESTERS/SHOCK ABSORBERS**									
0490	Copper									
0500	3/4" male IPS for 1 to 11 fixtures	1 Plum	12	.667	Ea.	35.50	46.50		82	109
0600	1" male IPS for 12 to 32 fixtures		8	1		59.50	70		129.50	170
0700	1-1/4" male IPS for 33 to 60 fixtures		8	1		58	70		128	168
0800	1-1/2" male IPS for 61 to 113 fixtures		8	1		84	70		154	197
0900	2" male IPS for 114 to 154 fixtures		8	1		124	70		194	240
1000	2-1/2" male IPS for 155 to 330 fixtures		4	2		355	140		495	600

22 11 19.64 Hydrants

0010	**HYDRANTS**									
0050	Wall type, moderate climate, bronze, encased									
0200	3/4" IPS connection	1 Plum	16	.500	Ea.	1,375	35		1,410	1,550
0300	1" IPS connection		14	.571		2,900	40		2,940	3,225
0500	Anti-siphon type, 3/4" connection		16	.500		1,075	35		1,110	1,225
1000	Non-freeze, bronze, exposed									
1100	3/4" IPS connection, 4" to 9" thick wall	1 Plum	14	.571	Ea.	655	40		695	780
1120	10" to 14" thick wall		12	.667		575	46.50		621.50	700
1140	15" to 19" thick wall		12	.667		730	46.50		776.50	875
1160	20" to 24" thick wall		10	.800		995	56		1,051	1,175
1200	For 1" IPS connection, add					15%	10%			
1240	For 3/4" adapter type vacuum breaker, add				Ea.	116			116	127
1280	For anti-siphon type, add				"	246			246	271
2000	Non-freeze bronze, encased, anti-siphon type									
2100	3/4" IPS connection, 5" to 9" thick wall	1 Plum	14	.571	Ea.	1,650	40		1,690	1,850
2120	10" to 14" thick wall		12	.667		2,150	46.50		2,196.50	2,425
2140	15" to 19" thick wall		12	.667		2,275	46.50		2,321.50	2,575
3000	Ground box type, bronze frame, 3/4" IPS connection									
3080	Non-freeze, all bronze, polished face, set flush									
3100	2' depth of bury	1 Plum	8	1	Ea.	1,500	70		1,570	1,750
3140	4' depth of bury		8	1		1,125	70		1,195	1,325
3180	6' depth of bury		7	1.143		1,300	80		1,380	1,550
3220	8' depth of bury		5	1.600		1,450	112		1,562	1,775
3400	For 1" IPS connection, add					15%	10%			
3550	For 2" IPS connection, add					445%	24%			

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22 11 Facility Water Distribution

22 11 19 – Domestic Water Piping Specialties

	22 11 19.64 Hydrants	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
3600	For tapped drain port in box, add				Ea.	141			141	155
5000	Moderate climate, all bronze, polished face									
5020	and scoriated cover, set flush									
5100	3/4" IPS connection	1 Plum	16	.500	Ea.	1,100	35		1,135	1,250
5120	1" IPS connection	"	14	.571		2,500	40		2,540	2,800
5200	For tapped drain port in box, add					157			157	172

22 11 23 – Domestic Water Pumps

22 11 23.10 General Utility Pumps

0010	**GENERAL UTILITY PUMPS**									
2000	Single stage									
3000	Double suction,									
3190	75 HP, to 2,500 GPM	Q-3	.28	114	Ea.	26,500	7,600		34,100	40,400
3220	100 HP, to 3,000 GPM		.26	123		34,000	8,175		42,175	49,600
3240	150 HP, to 4,000 GPM		.24	133		35,500	8,850		44,350	52,500

22 13 Facility Sanitary Sewerage

22 13 16 – Sanitary Waste and Vent Piping

22 13 16.20 Pipe, Cast Iron

0010	**PIPE, CAST IRON**, Soil, on clevis hanger assemblies, 5' OC									
0020	Single hub, service wt., lead & oakum joints 10' OC									
2120	2" diameter	Q-1	63	.254	L.F.	17.15	15.95		33.10	43
2140	3" diameter		60	.267		22.50	16.75		39.25	49.50
2160	4" diameter		55	.291		29	18.30		47.30	59.50
2180	5" diameter	Q-2	76	.316		31	20.50		51.50	64.50
2200	6" diameter	"	73	.329		49.50	21.50		71	86.50
2220	8" diameter	Q-3	59	.542		79.50	36		115.50	141
2240	10" diameter		54	.593		130	39.50		169.50	202
2260	12" diameter		48	.667		187	44.50		231.50	272
2320	For service weight, double hub, add					10%				
2340	For extra heavy, single hub, add					48%	4%			
2360	For extra heavy, double hub, add					71%	4%			
2400	Lead for caulking (1#/diam. in.)	Q-1	160	.100	Lb.	1.10	6.30		7.40	10.55
2420	Oakum for caulking (1/8#/diam. in.)	"	40	.400	"	4.47	25		29.47	42.50
4000	No hub, couplings 10' OC									
4100	1-1/2" diameter	Q-1	71	.225	L.F.	8.65	14.15		22.80	30.50
4120	2" diameter		67	.239		9.10	15		24.10	32.50
4140	3" diameter		64	.250		11.70	15.70		27.40	36.50
4160	4" diameter		58	.276		15.45	17.35		32.80	43

22 13 16.50 Shower Drains

0010	**SHOWER DRAINS**									
2780	Shower, with strainer, uniform diam. trap, bronze top									
2800	2" and 3" pipe size	Q-1	8	2	Ea.	500	126		626	735
2820	4" pipe size	"	7	2.286		570	144		714	840
2840	For galvanized body, add					300			300	330

22 13 16.60 Traps

0010	**TRAPS**									
0030	Cast iron, service weight									
0050	Running P trap, without vent									
1100	2"	Q-1	16	1	Ea.	225	63		288	340
1140	3"		14	1.143		225	72		297	355

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22 13 16 – Sanitary Waste and Vent Piping

	22 13 16.60 Traps	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1150	4"	Q-1	13	1.231	Ea.	194	77.50		271.50	330
1160	6"	Q-2	17	1.412	↓	860	92		952	1,075
1180	Running trap, single hub, with vent									
2080	3" pipe size, 3" vent	Q-1	14	1.143	Ea.	153	72		225	276
2120	4" pipe size, 4" vent	"	13	1.231		209	77.50		286.50	345
2300	For double hub, vent, add					10%	20%			
3000	P trap, B&S, 2" pipe size	Q-1	16	1		46	63		109	144
3040	3" pipe size	"	14	1.143	↓	68.50	72		140.50	183
3350	Deep seal trap, B&S									
3400	1-1/4" pipe size	Q-1	14	1.143	Ea.	95	72		167	211
3410	1-1/2" pipe size		14	1.143		95	72		167	211
3420	2" pipe size		14	1.143		68.50	72		140.50	183
3440	3" pipe size	↓	12	1.333	↓	84.50	84		168.50	218
4700	Copper, drainage, drum trap									
4800	3" x 5" solid, 1-1/2" pipe size	1 Plum	16	.500	Ea.	540	35		575	645
4840	3" x 6" swivel, 1-1/2" pipe size	"	16	.500	"	1,200	35		1,235	1,375
5100	P trap, standard pattern									
5200	1-1/4" pipe size	1 Plum	18	.444	Ea.	355	31		386	440
5240	1-1/2" pipe size		17	.471		272	33		305	350
5260	2" pipe size	↓	15	.533	↓	420	37		457	515
5280	3" pipe size	1 Plum	11	.727	Ea.	1,200	51		1,251	1,400
5340	With cleanout, swivel joint and slip joint									
5360	1-1/4" pipe size	1 Plum	18	.444	Ea.	185	31		216	250
5400	1-1/2" pipe size	"	17	.471	"	705	33		738	830

22 13 16.80 Vent Flashing and Caps

0010	**VENT FLASHING AND CAPS**									
0120	Vent caps									
0140	Cast iron									
0180	2-1/2" to 3-5/8" pipe	1 Plum	21	.381	Ea.	55.50	26.50		82	101
0190	4" to 4-1/8" pipe	"	19	.421	"	80	29.50		109.50	132
0900	Vent flashing									
1000	Aluminum with lead ring									
1020	1-1/4" pipe	1 Plum	20	.400	Ea.	6	28		34	48
1030	1-1/2" pipe		20	.400		5.70	28		33.70	48
1040	2" pipe		18	.444		5.70	31		36.70	53
1050	3" pipe		17	.471		6.30	33		39.30	56
1060	4" pipe	↓	16	.500	↓	7.60	35		42.60	60.50
1350	Copper with neoprene ring									
1400	1-1/4" pipe	1 Plum	20	.400	Ea.	78.50	28		106.50	128
1430	1-1/2" pipe		20	.400		78.50	28		106.50	128
1440	2" pipe		18	.444		78.50	31		109.50	133
1450	3" pipe		17	.471		94.50	33		127.50	153
1460	4" pipe		16	.500		94.50	35		129.50	156

22 13 19 – Sanitary Waste Piping Specialties

22 13 19.13 Sanitary Drains

0010	**SANITARY DRAINS**									
0400	Deck, auto park, CI, 13" top									
0440	3", 4", 5", and 6" pipe size	Q-1	8	2	Ea.	2,275	126		2,401	2,675
0480	For galvanized body, add				"	1,400			1,400	1,550
2000	Floor, medium duty, CI, deep flange, 7" diam. top									
2040	2" and 3" pipe size	Q-1	12	1.333	Ea.	415	84		499	580
2080	For galvanized body, add				↓	175			175	192

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22 13 19 – Sanitary Waste Piping Specialties

	22 13 19.13 Sanitary Drains	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2120	With polished bronze top				Ea.	475			475	525
2400	Heavy duty, with sediment bucket, CI, 12" diam. loose grate									
2420	2", 3", 4", 5", and 6" pipe size	Q-1	9	1.778	Ea.	1,150	112		1,262	1,450
2460	With polished bronze top				"	1,700			1,700	1,875
2500	Heavy duty, cleanout & trap w/bucket, CI, 15" top									
2540	2", 3", and 4" pipe size	Q-1	6	2.667	Ea.	7,475	168		7,643	8,475
2560	For galvanized body, add				"	3,025			3,025	3,325
2580	With polished bronze top				Ea.	12,100			12,100	13,300

22 13 23 – Sanitary Waste Interceptors

22 13 23.10 Interceptors

0010	**INTERCEPTORS**									
0150	Grease, fabricated steel, 4 GPM, 8 lb. fat capacity	1 Plum	4	2	Ea.	1,850	140		1,990	2,225
0200	7 GPM, 14 lb. fat capacity		4	2		2,475	140		2,615	2,925
1000	10 GPM, 20 lb. fat capacity		4	2		3,025	140		3,165	3,525
1040	15 GPM, 30 lb. fat capacity		4	2		4,325	140		4,465	4,975
1060	20 GPM, 40 lb. fat capacity		3	2.667		5,475	186		5,661	6,300
1120	50 GPM, 100 lb. fat capacity	Q-1	2	8		9,750	505		10,255	11,500
1160	100 GPM, 200 lb. fat capacity	"	2	8		22,800	505		23,305	25,900
1580	For seepage pan, add					7%				
3000	Hair, cast iron, 1-1/4" and 1-1/2" pipe connection	1 Plum	8	1	Ea.	675	70		745	845
3100	For chrome-plated cast iron, add					510			510	560
4000	Oil, fabricated steel, 10 GPM, 2" pipe size	1 Plum	4	2		4,000	140		4,140	4,600
4100	15 GPM, 2" or 3" pipe size		4	2		5,475	140		5,615	6,225
4120	20 GPM, 2" or 3" pipe size		3	2.667		7,225	186		7,411	8,225
4220	100 GPM, 3" pipe size	Q-1	2	8		22,100	505		22,605	25,100
6000	Solids, precious metals recovery, CI, 1-1/4" to 2" pipe	1 Plum	4	2		790	140		930	1,075
6100	Dental lab., large, CI, 1-1/2" to 2" pipe	"	3	2.667		2,750	186		2,936	3,300

22 13 29 – Sanitary Sewerage Pumps

22 13 29.13 Wet-Pit-Mounted, Vertical Sewerage Pumps

0010	**WET-PIT-MOUNTED, VERTICAL SEWERAGE PUMPS**									
0020	Controls incl. alarm/disconnect panel w/wire. Excavation not included									
0260	Simplex, 9 GPM at 60 PSIG, 91 gal. tank				Ea.	4,025			4,025	4,425
0300	Unit with manway, 26" ID, 18" high					4,475			4,475	4,925
0340	26" ID, 36" high					4,400			4,400	4,825
0380	43" ID, 4' high					4,675			4,675	5,125
3000	Indoor residential type installation									
3020	Simplex, 9 GPM at 60 PSIG, 91 gal. HDPE tank				Ea.	4,050			4,050	4,450

22 13 29.14 Sewage Ejector Pumps

0010	**SEWAGE EJECTOR PUMPS**, With operating and level controls									
0100	Simplex system incl. tank, cover, pump 15' head									
0500	37 gal. PE tank, 12 GPM, 1/2 HP, 2" discharge	Q-1	3.20	5	Ea.	555	315		870	1,075
0510	3" discharge		3.10	5.161		590	325		915	1,125
0530	87 GPM, .7 HP, 2" discharge		3.20	5		855	315		1,170	1,400
0540	3" discharge		3.10	5.161		925	325		1,250	1,500
0600	45 gal. coated stl. tank, 12 GPM, 1/2 HP, 2" discharge		3	5.333		995	335		1,330	1,600
0610	3" discharge	Q-1	2.90	5.517	Ea.	1,025	345		1,370	1,675
0630	87 GPM, .7 HP, 2" discharge		3	5.333		1,275	335		1,610	1,900
0640	3" discharge		2.90	5.517		1,350	345		1,695	2,000
0660	134 GPM, 1 HP, 2" discharge		2.80	5.714		1,375	360		1,735	2,050
0680	3" discharge		2.70	5.926		1,450	370		1,820	2,150
0700	70 gal. PE tank, 12 GPM, 1/2 HP, 2" discharge		2.60	6.154		1,075	385		1,460	1,750

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22 13 Facility Sanitary Sewerage

22 13 29 – Sanitary Sewerage Pumps

22 13 29.14 Sewage Ejector Pumps	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0710 3" discharge	Q-1	2.40	6.667	Ea.	1,150	420		1,570	1,900
0730 87 GPM, .7 HP, 2" discharge		2.50	6.400		1,425	400		1,825	2,175
0740 3" discharge		2.30	6.957		1,475	435		1,910	2,275
0760 134 GPM, 1 HP, 2" discharge		2.20	7.273		1,500	455		1,955	2,325
0770 3" discharge		2	8		1,600	505		2,105	2,525

22 14 Facility Storm Drainage

22 14 23 – Storm Drainage Piping Specialties

22 14 23.33 Backwater Valves

0010	**BACKWATER VALVES**, CI Body								
6980	Bronze gate and automatic flapper valves								
7000	3" and 4" pipe size	Q-1	13	1.231	Ea.	2,875	77.50	2,952.50	3,300
7100	5" and 6" pipe size	"	13	1.231	"	4,425	77.50	4,502.50	5,000
7240	Bronze flapper valve, bolted cover								
7260	2" pipe size	Q-1	16	1	Ea.	845	63	908	1,025
7300	4" pipe size	"	13	1.231		1,250	77.50	1,327.50	1,500
7340	6" pipe size	Q-2	17	1.412		2,750	92	2,842	3,150

22 14 26 – Facility Storm Drains

22 14 26.13 Roof Drains

0010	**ROOF DRAINS**								
0140	Cornice, CI, 45° or 90° outlet								
0200	3" and 4" pipe size	Q-1	12	1.333	Ea.	430	84	514	595
0260	For galvanized body, add					138		138	152
0280	For polished bronze dome, add					103		103	113
3860	Roof, flat metal deck, CI body, 12" CI dome								
3890	3" pipe size	Q-1	14	1.143	Ea.	505	72	577	660
3920	6" pipe size	"	10	1.600	"	1,000	101	1,101	1,250
4620	Main, all aluminum, 12" low profile dome								
4640	2", 3" and 4" pipe size	Q-1	14	1.143	Ea.	700	72	772	875

22 14 26.16 Facility Area Drains

0010	**FACILITY AREA DRAINS**								
4980	Scupper floor, oblique strainer, CI								
5000	6" x 7" top, 2", 3" and 4" pipe size	Q-1	16	1	Ea.	455	63	518	595
5100	8" x 12" top, 5" and 6" pipe size	"	14	1.143		880	72	952	1,075
5160	For galvanized body, add					40%			
5200	For polished bronze strainer, add				Ea.	85%			

22 14 26.19 Facility Trench Drains

0010	**FACILITY TRENCH DRAINS**								
5980	Trench, floor, heavy duty, modular, CI, 12" x 12" top								
6000	2", 3", 4", 5" & 6" pipe size	Q-1	8	2	Ea.	1,275	126	1,401	1,575
6100	For unit with polished bronze top	"	8	2	"	1,875	126	2,001	2,225
6600	Trench, floor, for cement concrete encasement								
6610	Not including trenching or concrete								
6640	Polyester polymer concrete								
6650	4" internal width, with grate								
6660	Light duty steel grate	Q-1	120	.133	L.F.	75	8.40	83.40	95
6670	Medium duty steel grate		115	.139		134	8.75	142.75	161
6680	Heavy duty iron grate		110	.145		133	9.15	142.15	160
6700	12" internal width, with grate								
6770	Heavy duty galvanized grate	Q-1	80	.200	L.F.	181	12.55	193.55	218

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22 14 Facility Storm Drainage

22 14 26 – Facility Storm Drains

	22 14 26.19 Facility Trench Drains	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
6800	Fiberglass									
6810	8" internal width, with grate									
6820	Medium duty galvanized grate	Q-1	115	.139	L.F.	122	8.75		130.75	147
6830	Heavy duty iron grate	"	110	.145	"	215	9.15		224.15	251

22 14 29 – Sump Pumps

22 14 29.13 Wet-Pit-Mounted, Vertical Sump Pumps

0010	**WET-PIT-MOUNTED, VERTICAL SUMP PUMPS**									
0400	Molded PVC base, 21 GPM at 15' head, 1/3 HP	1 Plum	5	1.600	Ea.	138	112		250	320
0800	Iron base, 21 GPM at 15' head, 1/3 HP		5	1.600		155	112		267	335
1200	Solid brass, 21 GPM at 15' head, 1/3 HP		5	1.600		250	112		362	440
2000	Sump pump, single stage									
2010	25 GPM, 1 HP, 1-1/2" discharge	Q-1	1.80	8.889	Ea.	4,000	560		4,560	5,225
2020	75 GPM, 1-1/2 HP, 2" discharge		1.50	10.667		4,225	670		4,895	5,650
2030	100 GPM, 2 HP, 2-1/2" discharge		1.30	12.308		4,300	775		5,075	5,875
2040	150 GPM, 3 HP, 3" discharge		1.10	14.545		4,300	915		5,215	6,100
2050	200 GPM, 3 HP, 3" discharge		1	16		4,550	1,000		5,550	6,525
2060	300 GPM, 10 HP, 4" discharge	Q-2	1.20	20		4,925	1,300		6,225	7,350
2070	500 GPM, 15 HP, 5" discharge		1.10	21.818		5,600	1,425		7,025	8,275
2080	800 GPM, 20 HP, 6" discharge		1	24		6,625	1,575		8,200	9,600
2090	1,000 GPM, 30 HP, 6" discharge		.85	28.235		7,250	1,850		9,100	10,700
2100	1,600 GPM, 50 HP, 8" discharge		.72	33.333		11,300	2,175		13,475	15,800
2110	2,000 GPM, 60 HP, 8" discharge	Q-3	.85	37.647		11,600	2,500		14,100	16,500
2202	For general purpose float switch, copper coated float, add	Q-1	5	3.200		120	201		321	430

22 14 29.16 Submersible Sump Pumps

0010	**SUBMERSIBLE SUMP PUMPS**									
7000	Sump pump, automatic									
7100	Plastic, 1-1/4" discharge, 1/4 HP	1 Plum	6.40	1.250	Ea.	173	87.50		260.50	320
7140	1/3 HP		6	1.333		229	93		322	390
7160	1/2 HP		5.40	1.481		249	103		352	430
7180	1-1/2" discharge, 1/2 HP		5.20	1.538		350	107		457	545
7500	Cast iron, 1-1/4" discharge, 1/4 HP		6	1.333		285	93		378	455
7540	1/3 HP		6	1.333		286	93		379	455
7560	1/2 HP		5	1.600		345	112		457	545

22 31 Domestic Water Softeners

22 31 13 – Residential Domestic Water Softeners

22 31 13.10 Residential Water Softeners

0010	**RESIDENTIAL WATER SOFTENERS**									
7350	Water softener, automatic, to 30 grains per gallon	2 Plum	5	3.200	Ea.	575	223		798	965
7400	To 100 grains per gallon	"	4	4	"	945	279		1,224	1,475

22 31 16 – Commercial Domestic Water Softeners

22 31 16.10 Water Softeners

0010	**WATER SOFTENERS**									
5800	Softener systems, automatic, intermediate sizes									
5820	available, may be used in multiples.									
6000	Hardness capacity between regenerations and flow									
6100	150,000 grains, 37 GPM cont., 51 GPM peak	Q-1	1.20	13.333	Ea.	5,825	840		6,665	7,650
6200	300,000 grains, 81 GPM cont., 113 GPM peak		1	16		7,675	1,000		8,675	9,950
6300	750,000 grains, 160 GPM cont., 230 GPM peak		.80	20		11,100	1,250		12,350	14,100
6400	900,000 grains, 185 GPM cont., 270 GPM peak		.70	22.857		17,900	1,425		19,325	21,900

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22 33 Electric Domestic Water Heaters

22 33 13 – Instantaneous Electric Domestic Water Heaters

	22 33 13.10 Hot Water Dispensers	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**HOT WATER DISPENSERS**									
0160	Commercial, 100 cup, 11.3 amp	1 Plum	14	.571	Ea.	455	40		495	560
3180	Household, 60 cup	"	14	.571	"	239	40		279	325

22 33 30 – Residential, Electric Domestic Water Heaters

22 33 30.13 Residential, Small-Capacity Elec. Water Heaters

0010	**RESIDENTIAL, SMALL-CAPACITY ELECTRIC DOMESTIC WATER HEATERS**									
1000	Residential, electric, glass lined tank, 5 yr., 10 gal., single element	1 Plum	2.30	3.478	Ea.	420	243		663	825
1040	20 gallon, single element		2.20	3.636		460	254		714	885
1060	30 gallon, double element		2.20	3.636		800	254		1,054	1,250
1080	40 gallon, double element		2	4		830	279		1,109	1,325
1100	52 gallon, double element		2	4		1,450	279		1,729	2,000
1180	120 gallon, double element	1 Plum	1.40	5.714	Ea.	3,050	400		3,450	3,975

22 33 33 – Light-Commercial Electric Domestic Water Heaters

22 33 33.10 Commercial Electric Water Heaters

0010	**COMMERCIAL ELECTRIC WATER HEATERS**									
4000	Commercial, 100° rise. NOTE: for each size tank, a range of									
4010	heaters between the ones shown is available									
4020	Electric									
4100	5 gal., 3 kW, 12 GPH, 208 volt	1 Plum	2	4	Ea.	4,200	279		4,479	5,025
4120	10 gal., 6 kW, 25 GPH, 208 volt		2	4		4,575	279		4,854	5,450
4130	30 gal., 24 kW, 98 GPH, 208 volt		1.92	4.167		7,325	291		7,616	8,475
4136	40 gal., 36 kW, 148 GPH, 208 volt		1.88	4.255		10,200	297		10,497	11,600
4140	50 gal., 9 kW, 37 GPH, 208 volt		1.80	4.444		6,225	310		6,535	7,325
4160	50 gal., 36 kW, 148 GPH, 208 volt		1.80	4.444		9,700	310		10,010	11,200
4300	200 gal., 15 kW, 61 GPH, 480 volt	Q-1	1.70	9.412		36,500	590		37,090	41,000
4320	200 gal., 120 kW, 490 GPH, 480 volt		1.70	9.412		49,200	590		49,790	55,000
4460	400 gal., 30 kW, 123 GPH, 480 volt		1	16		50,500	1,000		51,500	57,000
5400	Modulating step control for under 90 kW, 2-5 steps	1 Elec	5.30	1.509		910	100		1,010	1,150
5440	For above 90 kW, 1 through 5 steps beyond standard, add		3.20	2.500		245	166		411	515
5460	For above 90 kW, 6 through 10 steps beyond standard, add		2.70	2.963		545	196		741	885
5480	For above 90 kW, 11 through 18 steps beyond standard, add		1.60	5		810	330		1,140	1,375

22 34 Fuel-Fired Domestic Water Heaters

22 34 13 – Instantaneous, Tankless, Gas Domestic Water Heaters

22 34 13.10 Instantaneous, Tankless, Gas Water Heaters

0010	**INSTANTANEOUS, TANKLESS, GAS WATER HEATERS**									
9410	Natural gas/propane, 3.2 GPM G	1 Plum	2	4	Ea.	550	279		829	1,025
9420	6.4 GPM G		1.90	4.211		600	294		894	1,100
9430	8.4 GPM G		1.80	4.444		730	310		1,040	1,275
9440	9.5 GPM G		1.60	5		930	350		1,280	1,550

22 34 30 – Residential Gas Domestic Water Heaters

22 34 30.13 Residential, Atmos, Gas Domestic Wtr Heaters

0010	**RESIDENTIAL, ATMOSPHERIC, GAS DOMESTIC WATER HEATERS**									
2000	Gas fired, foam lined tank, 10 yr., vent not incl.									
2040	30 gallon	1 Plum	2	4	Ea.	2,025	279		2,304	2,650
2100	75 gallon		1.50	5.333		1,275	370		1,645	1,950
2120	100 gallon		1.30	6.154		2,400	430		2,830	3,300
2900	Water heater, safety-drain pan, 26" round		20	.400		19.20	28		47.20	62.50
3000	Tank leak safety, water & gas shut off see 22 05 23.20 8800									

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22 34 Fuel-Fired Domestic Water Heaters

22 34 36 – Commercial Gas Domestic Water Heaters

	22 34 36.13 Commercial, Atmos., Gas Domestic Water Htrs.	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**COMMERCIAL, ATMOSPHERIC, GAS DOMESTIC WATER HEATERS**									
6000	Gas fired, flush jacket, std. controls, vent not incl.									
6040	75 MBH input, 73 GPH	1 Plum	1.40	5.714	Ea.	3,375	400		3,775	4,300
6060	98 MBH input, 95 GPH		1.40	5.714		8,275	400		8,675	9,700
6080	120 MBH input, 110 GPH		1.20	6.667		8,450	465		8,915	9,975
6180	200 MBH input, 192 GPH		.60	13.333		10,700	930		11,630	13,200
6200	250 MBH input, 245 GPH		.50	16		11,600	1,125		12,725	14,500
6900	For low water cutoff, add		8	1		370	70		440	510
6960	For bronze body hot water circulator, add		4	2		2,100	140		2,240	2,500

22 34 46 – Oil-Fired Domestic Water Heaters

22 34 46.10 Residential Oil-Fired Water Heaters

0010	**RESIDENTIAL OIL-FIRED WATER HEATERS**									
3000	Oil fired, glass lined tank, 5 yr., vent not included, 30 gallon	1 Plum	2	4	Ea.	1,525	279		1,804	2,100
3040	50 gallon		1.80	4.444		1,375	310		1,685	2,000
3060	70 gallon		1.50	5.333		2,150	370		2,520	2,900

22 34 46.20 Commercial Oil-Fired Water Heaters

0010	**COMMERCIAL OIL-FIRED WATER HEATERS**									
8000	Oil fired, glass lined, UL listed, std. controls, vent not incl.									
8060	140 gal., 140 MBH input, 134 GPH	Q-1	2.13	7.512	Ea.	22,700	470		23,170	25,600
8080	140 gal., 199 MBH input, 191 GPH		2	8		23,500	505		24,005	26,600
8100	140 gal., 255 MBH input, 247 GPH		1.60	10		24,100	630		24,730	27,500
8160	140 gal., 540 MBH input, 519 GPH		.96	16.667		32,000	1,050		33,050	36,800
8180	140 gal., 720 MBH input, 691 GPH		.92	17.391		32,600	1,100		33,700	37,500
8280	201 gal., 1,250 MBH input, 1,200 GPH	Q-2	1.22	19.672		50,500	1,275		51,775	57,500
8300	201 gal., 1,500 MBH input, 1,441 GPH	"	1.16	20.690		54,500	1,350		55,850	62,000
8900	For low water cutoff, add	1 Plum	8	1		350	70		420	490
8960	For bronze body hot water circulator, add	"	4	2		950	140		1,090	1,250

22 35 Domestic Water Heat Exchangers

22 35 30 – Water Heating by Steam

22 35 30.10 Water Heating Transfer Package

0010	**WATER HEATING TRANSFER PACKAGE**, Complete controls,									
0020	expansion tank, converter, air separator									
1000	Hot water, 180°F enter, 200°F exit, 15# steam									
1010	One pump system, 28 GPM	Q-6	.75	32	Ea.	23,100	2,100		25,200	28,500
1020	35 GPM		.70	34.286		26,400	2,250		28,650	32,400
1040	55 GPM		.65	36.923		29,600	2,425		32,025	36,200
1060	130 GPM		.55	43.636		37,600	2,875		40,475	45,700
1080	255 GPM	Q-6	.40	60	Ea.	49,300	3,950		53,250	60,000
1100	550 GPM	"	.30	80	"	75,500	5,250		80,750	91,000

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22 41 Residential Plumbing Fixtures

22 41 06 – Plumbing Fixtures General

22 41 06.10 Plumbing Fixture Notes	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **PLUMBING FIXTURE NOTES**, Incl. trim fittings unless otherwise noted									
0080 For rough-in, supply, waste, and vent, see add for each type									
0122 For electric water coolers, see Section 22 47 16.10									
0160 For color, unless otherwise noted, add				Ea.	20%				

22 41 13 – Residential Water Closets, Urinals, and Bidets

22 41 13.13 Water Closets

0010 **WATER CLOSETS**									
0032 For automatic flush, see Line 22 42 39.10 0972									
0150 Tank type, vitreous china, incl. seat, supply pipe w/stop, 1.6 gpf or noted									
0200 Wall hung									
0400 Two piece, close coupled	Q-1	5.30	3.019	Ea.	450	190		640	780
0960 For rough-in, supply, waste, vent and carrier	"	2.73	5.861	"	1,675	370		2,045	2,400
0999 Floor mounted									
1100 Two piece, close coupled	Q-1	5.30	3.019	Ea.	199	190		389	500
1102 Economy		5.30	3.019		114	190		304	410
1110 Two piece, close coupled, dual flush		5.30	3.019		284	190		474	595
1140 Two piece, close coupled, 1.28 gpf, ADA G		5.30	3.019		276	190		466	590
1960 For color, add					30%				
1980 For rough-in, supply, waste and vent	Q-1	3.05	5.246	Ea.	370	330		700	900

22 41 16 – Residential Lavatories and Sinks

22 41 16.13 Lavatories

0010 **LAVATORIES**, With trim, white unless noted otherwise									
0500 Vanity top, porcelain enamel on cast iron									
0600 20" x 18"	Q-1	6.40	2.500	Ea.	375	157		532	650
0640 33" x 19" oval		6.40	2.500		815	157		972	1,125
0720 19" round		6.40	2.500		680	157		837	980
0860 For color, add					25%				
1000 Cultured marble, 19" x 17", single bowl	Q-1	6.40	2.500	Ea.	162	157		319	410
1040 25" x 19", single bowl	"	6.40	2.500	"	185	157		342	440
1580 For color, same price									
1900 Stainless steel, self-rimming, 25" x 22", single bowl, ledge	Q-1	6.40	2.500	Ea.	480	157		637	760
1960 17" x 22", single bowl		6.40	2.500		465	157		622	745
2600 Steel, enameled, 20" x 17", single bowl		5.80	2.759		172	173		345	445
2660 19" round	Q-1	5.80	2.759	Ea.	198	173		371	475
2900 Vitreous china, 20" x 16", single bowl		5.40	2.963		248	186		434	550
2960 20" x 17", single bowl		5.40	2.963		147	186		333	440
3020 19" round, single bowl		5.40	2.963		146	186		332	440
3200 22" x 13", single bowl		5.40	2.963		253	186		439	555
3560 For color, add					50%				
3580 Rough-in, supply, waste and vent for all above lavatories	Q-1	2.30	6.957	Ea.	590	435		1,025	1,300
4000 Wall hung									
4040 Porcelain enamel on cast iron, 16" x 14", single bowl	Q-1	8	2	Ea.	525	126		651	765
4180 20" x 18", single bowl		8	2		310	126		436	525
4240 22" x 19", single bowl		8	2		825	126		951	1,100
4580 For color, add					30%				
6000 Vitreous china, 18" x 15", single bowl with backsplash	Q-1	7	2.286	Ea.	196	144		340	430
6500 For color, add					30%				
6960 Rough-in, supply, waste and vent for above lavatories	Q-1	1.66	9.639	Ea.	815	605		1,420	1,800
7000 Pedestal type									
7600 Vitreous china, 27" x 21", white	Q-1	6.60	2.424	Ea.	750	152		902	1,050
7610 27" x 21", colored		6.60	2.424		950	152		1,102	1,275
7620 27" x 21", premium color		6.60	2.424		1,075	152		1,227	1,425

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22 41 16 – Residential Lavatories and Sinks

	22 41 16.13 Lavatories	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
7660	26" x 20", white	Q-1	6.60	2.424	Ea.	730	152		882	1,025
7670	26" x 20", colored		6.60	2.424		925	152		1,077	1,250
7680	26" x 20", premium color		6.60	2.424		1,125	152		1,277	1,450
7700	24" x 20", white		6.60	2.424		500	152		652	780
7710	24" x 20", colored		6.60	2.424		610	152		762	895
7720	24" x 20", premium color		6.60	2.424		670	152		822	960
7760	21" x 18", white		6.60	2.424		300	152		452	555
7770	21" x 18", colored		6.60	2.424		340	152		492	600
7990	Rough-in, supply, waste and vent for pedestal lavatories		1.66	9.639		815	605		1,420	1,800
	22 41 16.16 Sinks									
0010	**SINKS**, With faucets and drain									
2000	Kitchen, counter top style, PE on CI, 24" x 21" single bowl	Q-1	5.60	2.857	Ea.	435	180		615	750
2100	31" x 22" single bowl		5.60	2.857		1,050	180		1,230	1,425
2200	32" x 21" double bowl		4.80	3.333		400	209		609	750
3000	Stainless steel, self rimming, 19" x 18" single bowl		5.60	2.857		650	180		830	980
3100	25" x 22" single bowl		5.60	2.857		720	180		900	1,050
4000	Steel, enameled, with ledge, 24" x 21" single bowl		5.60	2.857		495	180		675	815
4100	32" x 21" double bowl		4.80	3.333		495	209		704	855
4960	For color sinks except stainless steel, add					10%				
4980	For rough-in, supply, waste and vent, counter top sinks	Q-1	2.14	7.477		520	470		990	1,275
5000	Kitchen, raised deck, PE on CI									
5100	32" x 21", dual level, double bowl	Q-1	2.60	6.154	Ea.	500	385		885	1,125
5700	For color, add					20%				
5790	For rough-in, supply, waste & vent, sinks	Q-1	1.85	8.649		520	545		1,065	1,375

22 41 19 – Residential Bathtubs

	22 41 19.10 Baths									
0010	**BATHS**									
0100	Tubs, recessed porcelain enamel on cast iron, with trim									
0180	48" x 42"	Q-1	4	4	Ea.	3,350	251		3,601	4,050
0220	72" x 36"		3	5.333		3,275	335		3,610	4,100
2000	Enameled formed steel, 4'-6" long		5.80	2.759		560	173		733	875
4000	Soaking, acrylic, w/pop-up drain 66" x 36" x 20" deep		5.50	2.909		2,700	183		2,883	3,250
4100	60" x 42" x 20" deep		5	3.200		1,350	201		1,551	1,775
9600	Rough-in, supply, waste and vent, for all above tubs, add		2.07	7.729		590	485		1,075	1,375

22 41 23 – Residential Showers

	22 41 23.20 Showers									
0010	**SHOWERS**									
1500	Stall, with drain only. Add for valve and door/curtain									
3000	Fiberglass, one piece, with 3 walls, 32" x 32" square	Q-1	5.50	2.909	Ea.	375	183		558	685
3100	36" x 36" square		5.50	2.909		420	183		603	735
3250	64" x 65-3/4" x 81-1/2" fold. seat, ADA		3.80	4.211		1,475	265		1,740	2,000
4000	Polypropylene, stall only, w/molded-stone floor, 30" x 30"		2	8		795	505		1,300	1,625
4200	Rough-in, supply, waste and vent for above showers		2.05	7.805		625	490		1,115	1,425
	22 41 23.40 Shower System Components									
0010	**SHOWER SYSTEM COMPONENTS**									
4500	Receptor only									
4510	For tile, 36" x 36"	1 Plum	4	2	Ea.	420	140		560	670
4520	Fiberglass receptor only, 32" x 32"		8	1		112	70		182	227
4530	34" x 34"		7.80	1.026		208	71.50		279.50	335
4540	36" x 36"		7.60	1.053		130	73.50		203.50	254
4600	Rectangular									

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22 41 23 – Residential Showers

	22 41 23.40 Shower System Components	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4620	32" x 48"	1 Plum	7.40	1.081	Ea.	155	75.50		230.50	284
4630	34" x 54"		7.20	1.111		186	77.50		263.50	320
4640	34" x 60"		7	1.143		197	80		277	335
5000	Built-in, head, arm, 2.5 GPM valve		4	2		96.50	140		236.50	315
5200	Head, arm, by-pass, integral stops, handles		3.60	2.222		315	155		470	575

22 41 36 – Residential Laundry Trays

22 41 36.10 Laundry Sinks

0010	**LAUNDRY SINKS**, With trim									
0020	Porcelain enamel on cast iron, black iron frame									
0050	24" x 21", single compartment	Q-1	6	2.667	Ea.	640	168		808	955
0100	26" x 21", single compartment	"	6	2.667	"	700	168		868	1,025
2000	Molded stone, on wall hanger or legs									
2020	22" x 23", single compartment	Q-1	6	2.667	Ea.	183	168		351	450
2100	45" x 21", double compartment	"	5	3.200	"	375	201		576	715
3000	Plastic, on wall hanger or legs									
3020	18" x 23", single compartment	Q-1	6.50	2.462	Ea.	146	155		301	390
3300	40" x 24", double compartment		5.50	2.909		292	183		475	595
5000	Stainless steel, counter top, 22" x 17" single compartment		6	2.667		77.50	168		245.50	335
5200	33" x 22", double compartment		5	3.200		94	201		295	405
9600	Rough-in, supply, waste and vent, for all laundry sinks		2.14	7.477		520	470		990	1,275

22 41 39 – Residential Faucets, Supplies and Trim

22 41 39.10 Faucets and Fittings

0010	**FAUCETS AND FITTINGS**									
0150	Bath, faucets, diverter spout combination, sweat	1 Plum	8	1	Ea.	86	70		156	199
0200	For integral stops, IPS unions, add					115			115	127
0420	Bath, press-bal mix valve w/diverter, spout, shower head, arm/flange	1 Plum	8	1		207	70		277	330
0810	Bidet									
0812	Fitting, over the rim, swivel spray/pop-up drain	1 Plum	8	1	Ea.	239	70		309	365
1000	Kitchen sink faucets, top mount, cast spout		10	.800		83.50	56		139.50	175
1100	For spray, add		24	.333		17.80	23.50		41.30	54
1300	Single control lever handle									
1310	With pull out spray									
1320	Polished chrome	1 Plum	10	.800	Ea.	233	56		289	340
2000	Laundry faucets, shelf type, IPS or copper unions		12	.667		61.50	46.50		108	137
2100	Lavatory faucet, centerset, without drain		10	.800		67	56		123	158
2210	Porcelain cross handles and pop-up drain									
2220	Polished chrome	1 Plum	6.66	1.201	Ea.	222	84		306	370
2230	Polished brass	"	6.66	1.201	"	294	84		378	450
2260	Single lever handle and pop-up drain									
2280	Satin nickel	1 Plum	6.66	1.201	Ea.	370	84		454	530
2290	Polished chrome		6.66	1.201		262	84		346	415
2810	Automatic sensor and operator, with faucet head G		6.15	1.301		615	91		706	810
4000	Shower by-pass valve with union	1 Plum	18	.444	Ea.	57	31		88	110
4200	Shower thermostatic mixing valve, concealed, with shower head trim kit	"	8	1	"	375	70		445	520
4220	Shower pressure balancing mixing valve									
4230	With shower head, arm, flange and diverter tub spout									
4240	Chrome	1 Plum	6.14	1.303	Ea.	435	91		526	615
4250	Satin nickel		6.14	1.303		570	91		661	760
4260	Polished graphite		6.14	1.303		555	91		646	745
5000	Sillcock, compact, brass, IPS or copper to hose		24	.333		15.85	23.50		39.35	52

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22 42 13 – Commercial Water Closets, Urinals, and Bidets

	22 42 13.13 Water Closets		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**WATER CLOSETS**										
3000	Bowl only, with flush valve, seat, 1.6 gpf unless noted										
3100	Wall hung		Q-1	5.80	2.759	Ea.	980	173		1,153	1,325
3200	For rough-in, supply, waste and vent, single WC			2.56	6.250		1,725	395		2,120	2,475
3300	Floor mounted			5.80	2.759		355	173		528	650
3350	With wall outlet			5.80	2.759		575	173		748	890
3360	With floor outlet, 1.28 gpf	G		5.80	2.759		575	173		748	890
3362	With floor outlet, 1.28 gpf, ADA	G		5.80	2.759		595	173		768	915
3370	For rough-in, supply, waste and vent, single WC			2.84	5.634		420	355		775	990
3390	Floor mounted children's size, 10-3/4" high										
3392	With automatic flush sensor, 1.6 gpf		Q-1	6.20	2.581	Ea.	680	162		842	985
3396	With automatic flush sensor, 1.28 gpf			6.20	2.581		625	162		787	930
3400	For rough-in, supply, waste and vent, single WC			2.84	5.634		420	355		775	990

22 42 13.16 Urinals

0010	**URINALS**										
3000	Wall hung, vitreous china, with self-closing valve										
3100	Siphon jet type		Q-1	3	5.333	Ea.	340	335		675	875
3120	Blowout type			3	5.333		580	335		915	1,150
3140	Water saving .5 gpf	G		3	5.333		600	335		935	1,150
3300	Rough-in, supply, waste & vent			2.83	5.654		810	355		1,165	1,425
5000	Stall type, vitreous china, includes valve			2.50	6.400		915	400		1,315	1,600
6980	Rough-in, supply, waste and vent			1.99	8.040		675	505		1,180	1,500
8000	Waterless (no flush) urinal										
8010	Wall hung										
8014	Fiberglass reinforced polyester										
8020	Standard unit	G	Q-1	21.30	.751	Ea.	555	47		602	680
8030	ADA compliant unit	G	Q-1	21.30	.751	Ea.	510	47		557	635
8070	For solid color, add	G					85.50			85.50	94
8080	For 2" brass flange (new const.), add	G	Q-1	96	.167		32	10.45		42.45	50.50
8200	Vitreous china										
8220	ADA compliant unit, 14"	G	Q-1	21.30	.751	Ea.	273	47		320	370
8250	ADA compliant unit, 15.5"		"	21.30	.751		490	47		537	610
8270	For solid color, add	G					85.50			85.50	94
8290	Rough-in, supply, waste & vent	G	Q-1	2.92	5.479		760	345		1,105	1,350
8400	Trap liquid										
8410	1 quart	G				Ea.	23.50			23.50	26
8420	1 gallon	G				"	83.50			83.50	92

22 42 16 – Commercial Lavatories and Sinks

22 42 16.13 Lavatories

0010	**LAVATORIES**, With trim, white unless noted otherwise										
0020	Commercial lavatories same as residential. See Section 22 41 16										

22 42 16.40 Service Sinks

0010	**SERVICE SINKS**										
6650	Service, floor, corner, PE on CI, 28" x 28"		Q-1	4.40	3.636	Ea.	1,500	228		1,728	2,000
6790	For rough-in, supply, waste & vent, floor service sinks			1.64	9.756		2,025	615		2,640	3,150
7000	Service, wall, PE on CI, roll rim, 22" x 18"			4	4		1,025	251		1,276	1,500
7100	24" x 20"			4	4		1,500	251		1,751	2,050
8600	Vitreous china, 22" x 20"			4	4		1,050	251		1,301	1,525
8960	For stainless steel rim guard, front or one side, add						82			82	90.50
8980	For rough-in, supply, waste & vent, wall service sinks		Q-1	1.30	12.308		2,675	775		3,450	4,100

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22 42 23 – Commercial Showers

22 42 23.30 Group Showers	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **GROUP SHOWERS**									
6000 Group, w/pressure balancing valve, rough-in and rigging not included									
6800 Column, 6 heads, no receptors, less partitions	Q-1	3	5.333	Ea.	10,000	335		10,335	11,500
6900 With stainless steel partitions		1	16		13,300	1,000		14,300	16,100
7600 5 heads, no receptors, less partitions		3	5.333		6,875	335		7,210	8,075
7620 4 heads (1 ADA compliant) no receptors, less partitions		3	5.333		6,400	335		6,735	7,525
7700 With stainless steel partitions		1	16		6,900	1,000		7,900	9,075
8000 Wall, 2 heads, no receptors, less partitions		4	4		2,925	251		3,176	3,600
8100 With stainless steel partitions		2	8		6,425	505		6,930	7,800

22 42 33 – Wash Fountains

22 42 33.20 Commercial Wash Fountains

0010 **COMMERCIAL WASH FOUNTAINS**									
1900 Group, foot control									
2000 Precast terrazzo, circular, 36" diam., 5 or 6 persons	Q-2	3	8	Ea.	7,425	520		7,945	8,925
2100 54" diam. for 8 or 10 persons		2.50	9.600		10,800	625		11,425	12,800
2400 Semi-circular, 36" diam. for 3 persons		3	8		6,050	520		6,570	7,425
2500 54" diam. for 4 or 5 persons		2.50	9.600		11,100	625		11,725	13,100
2700 Quarter circle (corner), 54" diam. for 3 persons		3.50	6.857		7,275	445		7,720	8,675
3000 Stainless steel, circular, 36" diameter		3.50	6.857		6,525	445		6,970	7,850
3100 54" diameter		2.80	8.571		8,150	560		8,710	9,775
3400 Semi-circular, 36" diameter		3.50	6.857		5,325	445		5,770	6,550
3500 54" diameter		2.80	8.571		5,700	560		6,260	7,100
5610 Group, infrared control, barrier free									
5614 Precast terrazzo									
5620 Semi-circular 36" diam. for 3 persons	Q-2	3	8	Ea.	7,425	520		7,945	8,950
5630 46" diam. for 4 persons		2.80	8.571		8,075	560		8,635	9,700
5640 Circular, 54" diam. for 8 persons, button control		2.50	9.600		9,675	625		10,300	11,500
5700 Rough-in, supply, waste and vent for above wash fountains	Q-1	1.82	8.791		765	550		1,315	1,675
6200 Duo for small washrooms, stainless steel		2	8		3,275	505		3,780	4,350
6500 Rough-in, supply, waste & vent for duo fountains		2.02	7.921		475	500		975	1,250

22 42 39 – Commercial Faucets, Supplies, and Trim

22 42 39.10 Faucets and Fittings

0010 **FAUCETS AND FITTINGS**									
0840 Flush valves, with vacuum breaker									
0850 Water closet									
0860 Exposed, rear spud	1 Plum	8	1	Ea.	157	70		227	277
0870 Top spud		8	1		205	70		275	330
0880 Concealed, rear spud		8	1		236	70		306	365
0890 Top spud		8	1		222	70		292	350
0900 Wall hung		8	1		235	70		305	360
0920 Urinal									
0930 Exposed, stall	1 Plum	8	1	Ea.	205	70		275	330
0940 Wall (washout)		8	1		166	70		236	287
0950 Pedestal, top spud		8	1		180	70		250	300
0960 Concealed, stall		8	1		175	70		245	297
0970 Wall (washout)		8	1		189	70		259	310
0971 Automatic flush sensor and operator for									
0972 urinals or water closets, standard G	1 Plum	8	1	Ea.	580	70		650	745
0980 High efficiency water saving									
0984 Water closets, 1.28 gpf G	1 Plum	8	1	Ea.	450	70		520	600
0988 Urinals, .5 gpf G	1 Plum	8	1	Ea.	450	70		520	600

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22 42 39 – Commercial Faucets, Supplies, and Trim

	22 42 39.10 Faucets and Fittings	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2790	Faucets for lavatories									
2800	Self-closing, center set	1 Plum	10	.800	Ea.	149	56		205	248
2810	Automatic sensor and operator, with faucet head		6.15	1.301		615	91		706	810
3000	Service sink faucet, cast spout, pail hook, hose end		14	.571		76	40		116	143

	22 42 39.30 Carriers and Supports									
0010	**CARRIERS AND SUPPORTS**, For plumbing fixtures									
0500	Drinking fountain, wall mounted									
0600	Plate type with studs, top back plate	1 Plum	7	1.143	Ea.	73	80		153	200
0700	Top front and back plate		7	1.143		160	80		240	294
0800	Top & bottom, front & back plates, w/bearing jacks		7	1.143		186	80		266	325
3000	Lavatory, concealed arm									
3050	Floor mounted, single									
3100	High back fixture	1 Plum	6	1.333	Ea.	725	93		818	940
3200	Flat slab fixture		6	1.333		850	93		943	1,075
3220	ADA compliant		6	1.333		765	93		858	980
3250	Floor mounted, back to back									
3300	High back fixtures	1 Plum	5	1.600	Ea.	1,025	112		1,137	1,325
3400	Flat slab fixtures		5	1.600		1,275	112		1,387	1,575
3430	ADA compliant		5	1.600		890	112		1,002	1,150
3500	Wall mounted, in stud or masonry									
3600	High back fixture	1 Plum	6	1.333	Ea.	430	93		523	615
3700	Flat slab fixture	"	6	1.333	"	550	93		643	745
4600	Sink, floor mounted									
4650	Exposed arm system									
4700	Single heavy fixture	1 Plum	5	1.600	Ea.	530	112		642	745
4750	Single heavy sink with slab		5	1.600		1,775	112		1,887	2,125
4800	Back to back, standard fixtures		5	1.600		850	112		962	1,100
4850	Back to back, heavy fixtures		5	1.600		1,450	112		1,562	1,775
4900	Back to back, heavy sink with slab		5	1.600		2,100	112		2,212	2,500
4950	Exposed offset arm system									
5000	Single heavy deep fixture	1 Plum	5	1.600	Ea.	1,150	112		1,262	1,450
5100	Plate type system									
5200	With bearing jacks, single fixture	1 Plum	5	1.600	Ea.	1,675	112		1,787	2,025
5300	With exposed arms, single heavy fixture		5	1.600		1,150	112		1,262	1,450
5400	Wall mounted, exposed arms, single heavy fixture		5	1.600		720	112		832	955
6000	Urinal, floor mounted, 2" or 3" coupling, blowout type		6	1.333		775	93		868	990
6100	With fixture or hanger bolts, blowout or washout		6	1.333		550	93		643	750
6200	With bearing plate		6	1.333		615	93		708	820
6300	Wall mounted, plate type system		6	1.333		550	93		643	750
6980	Water closet, siphon jet									
7000	Horizontal, adjustable, caulk									
7040	Single, 4" pipe size	1 Plum	5.33	1.501	Ea.	1,525	105		1,630	1,825
7050	4" pipe size, ADA compliant		5.33	1.501		655	105		760	875
7060	5" pipe size		5.33	1.501		1,125	105		1,230	1,375
7100	Double, 4" pipe size		5	1.600		2,850	112		2,962	3,325
7110	4" pipe size, ADA compliant		5	1.600		1,100	112		1,212	1,375
7120	5" pipe size		5	1.600		1,625	112		1,737	1,975
7160	Horizontal, adjustable, extended, caulk									
7180	Single, 4" pipe size	1 Plum	5.33	1.501	Ea.	1,675	105		1,780	2,000
7200	5" pipe size		5.33	1.501		2,100	105		2,205	2,450
7240	Double, 4" pipe size		5	1.600		2,775	112		2,887	3,225
7260	5" pipe size		5	1.600		2,900	112		3,012	3,375

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22 42 39.30 Carriers and Supports	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
7400 Vertical, adjustable, caulk or thread									
7440 Single, 4" pipe size	1 Plum	5.33	1.501	Ea.	2,050	105		2,155	2,425
7460 5" pipe size		5.33	1.501		1,800	105		1,905	2,150
7480 6" pipe size		5	1.600		1,875	112		1,987	2,225
7520 Double, 4" pipe size		5	1.600		2,550	112		2,662	3,000
7540 5" pipe size		5	1.600		2,325	112		2,437	2,750
7560 6" pipe size		4	2		2,575	140		2,715	3,025
7600 Vertical, adjustable, extended, caulk									
7620 Single, 4" pipe size	1 Plum	5.33	1.501	Ea.	1,225	105		1,330	1,500
7640 5" pipe size		5.33	1.501		1,050	105		1,155	1,325
7680 6" pipe size		5	1.600		2,050	112		2,162	2,425
7720 Double, 4" pipe size		5	1.600		2,325	112		2,437	2,725
7740 5" pipe size		5	1.600		1,250	112		1,362	1,550
7760 6" pipe size		4	2		1,375	140		1,515	1,700
7780 Water closet, blow out									
7800 Vertical offset, caulk or thread									
7820 Single, 4" pipe size	1 Plum	5.33	1.501	Ea.	1,050	105		1,155	1,300
7840 Double, 4" pipe size	"	5	1.600	"	1,800	112		1,912	2,150
7880 Vertical offset, extended, caulk									
7900 Single, 4" pipe size	1 Plum	5.33	1.501	Ea.	1,325	105		1,430	1,600
7920 Double, 4" pipe size	"	5	1.600	"	2,075	112		2,187	2,450
7960 Vertical, for floor mounted back-outlet									
7980 Single, 4" thread, 2" vent	1 Plum	5.33	1.501	Ea.	940	105		1,045	1,175
8000 Double, 4" thread, 2" vent	"	6	1.333	"	2,750	93		2,843	3,175
8040 Vertical, for floor mounted back-outlet, extended									
8060 Single, 4" caulk, 2" vent	1 Plum	6	1.333	Ea.	940	93		1,033	1,175
8080 Double, 4" caulk, 2" vent	"	6	1.333	"	2,625	93		2,718	3,025
8200 Water closet, residential									
8220 Vertical centerline, floor mount									
8240 Single, 3" caulk, 2" or 3" vent	1 Plum	6	1.333	Ea.	840	93		933	1,075
8260 4" caulk, 2" or 4" vent		6	1.333		1,175	93		1,268	1,450
8280 3" copper sweat, 3" vent		6	1.333		825	93		918	1,050
8300 4" copper sweat, 4" vent		6	1.333		1,000	93		1,093	1,250
8400 Vertical offset, floor mount									
8420 Single, 3" or 4" caulk, vent	1 Plum	4	2	Ea.	1,050	140		1,190	1,350
8440 3" or 4" copper sweat, vent		5	1.600		1,050	112		1,162	1,325
8460 Double, 3" or 4" caulk, vent		4	2		1,800	140		1,940	2,175
8480 3" or 4" copper sweat, vent		5	1.600		1,800	112		1,912	2,150
9000 Water cooler (electric), floor mounted									
9100 Plate type with bearing plate, single	1 Plum	6	1.333	Ea.	800	93		893	1,025

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22 45 Emergency Plumbing Fixtures

22 45 13 – Emergency Showers

22 45 13.10 Emergency Showers	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **EMERGENCY SHOWERS**, Rough-in not included									
5000 Shower, single head, drench, ball valve, pull, freestanding	Q-1	4	4	Ea.	430	251		681	850
5200 Horizontal or vertical supply		4	4		710	251		961	1,150
6000 Multi-nozzle, eye/face wash combination		4	4		945	251		1,196	1,425
6400 Multi-nozzle, 12 spray, shower only		4	4		2,300	251		2,551	2,900
6600 For freeze-proof, add		6	2.667		585	168		753	890

22 45 16 – Eyewash Equipment

22 45 16.10 Eyewash Safety Equipment

0010 **EYEWASH SAFETY EQUIPMENT**, Rough-in not included									
1000 Eye wash fountain									
1400 Plastic bowl, pedestal mounted	Q-1	4	4	Ea.	565	251		816	995
1600 Unmounted		4	4		400	251		651	820
1800 Wall mounted		4	4		206	251		457	600
2000 Stainless steel, pedestal mounted		4	4		465	251		716	885
2200 Unmounted		4	4		315	251		566	720
2400 Wall mounted		4	4		291	251		542	695

22 45 19 – Self-Contained Eyewash Equipment

22 45 19.10 Self-Contained Eyewash Safety Equipment

0010 **SELF-CONTAINED EYEWASH SAFETY EQUIPMENT**									
3000 Eye wash, portable, self-contained				Ea.	1,250			1,250	1,375

22 45 26 – Eye/Face Wash Equipment

22 45 26.10 Eye/Face Wash Safety Equipment

0010 **EYE/FACE WASH SAFETY EQUIPMENT**, Rough-in not included									
4000 Eye and face wash, combination fountain									
4200 Stainless steel, pedestal mounted	Q-1	4	4	Ea.	2,025	251		2,276	2,600
4400 Unmounted		4	4		340	251		591	745
4600 Wall mounted		4	4		480	251		731	905

22 47 Drinking Fountains and Water Coolers

22 47 13 – Drinking Fountains

22 47 13.10 Drinking Water Fountains

0010 **DRINKING WATER FOUNTAINS**, For connection to cold water supply									
1000 Wall mounted, non-recessed									
1400 Bronze, with no back	1 Plum	4	2	Ea.	1,375	140		1,515	1,700
1800 Cast aluminum, enameled, for correctional institutions		4	2		1,575	140		1,715	1,950
2000 Fiberglass, 12" back, single bubbler unit		4	2		2,925	140		3,065	3,425
2040 Dual bubbler		3.20	2.500		2,775	175		2,950	3,300
2400 Precast stone, no back		4	2		1,125	140		1,265	1,450
2700 Stainless steel, single bubbler, no back		4	2		870	140		1,010	1,175
2740 With back		4	2		1,125	140		1,265	1,450
2780 Dual handle, ADA compliant		4	2		865	140		1,005	1,150
2820 Dual level, ADA compliant		3.20	2.500		1,875	175		2,050	2,325
3300 Vitreous china									
3340 7" back	1 Plum	4	2	Ea.	885	140		1,025	1,175
3940 For vandal-resistant bottom plate, add					124			124	136
3960 For freeze-proof valve system, add	1 Plum	2	4		1,275	279		1,554	1,825
3980 For rough-in, supply and waste, add	"	2.21	3.620		545	253		798	970
4000 Wall mounted, semi-recessed									
4200 Poly-marble, single bubbler	1 Plum	4	2	Ea.	1,150	140		1,290	1,450

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22 47 13 – Drinking Fountains

	22 47 13.10 Drinking Water Fountains	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4600	Stainless steel, satin finish, single bubbler	1 Plum	4	2	Ea.	1,700	140		1,840	2,075
4900	Vitreous china, single bubbler		4	2		1,300	140		1,440	1,625
5980	For rough-in, supply and waste, add		1.83	4.372		545	305		850	1,050
6000	Wall mounted, fully recessed									
6400	Poly-marble, single bubbler	1 Plum	4	2	Ea.	2,125	140		2,265	2,525
6800	Stainless steel, single bubbler	"	4	2	"	1,625	140		1,765	1,975
7560	For freeze-proof valve system, add	1 Plum	2	4	Ea.	1,625	279		1,904	2,200
7580	For rough-in, supply and waste, add	"	1.83	4.372	"	545	305		850	1,050
7600	Floor mounted, pedestal type									
7700	Aluminum, architectural style, CI base	1 Plum	2	4	Ea.	2,825	279		3,104	3,550
7780	ADA compliant unit		2	4		2,700	279		2,979	3,400
8400	Stainless steel, architectural style		2	4		2,400	279		2,679	3,050
8600	Enameled iron, heavy duty service, 2 bubblers		2	4		3,475	279		3,754	4,250
8660	4 bubblers		2	4		5,025	279		5,304	5,975
8880	For freeze-proof valve system, add		2	4		1,275	279		1,554	1,825
8900	For rough-in, supply and waste, add		1.83	4.372		545	305		850	1,050
9100	Deck mounted									
9500	Stainless steel, circular receptor	1 Plum	4	2	Ea.	545	140		685	810
9760	White enameled steel, 14" x 9" receptor		4	2		480	140		620	735
9860	White enameled cast iron, 24" x 16" receptor		3	2.667		625	186		811	965
9980	For rough-in, supply and waste, add		1.83	4.372		545	305		850	1,050

22 47 16 – Pressure Water Coolers

22 47 16.10 Electric Water Coolers

0010	**ELECTRIC WATER COOLERS**									
0100	Wall mounted, non-recessed									
0140	4 GPH	Q-1	4	4	Ea.	850	251		1,101	1,300
0160	8 GPH, barrier free, sensor operated		4	4		1,750	251		2,001	2,300
0180	8.2 GPH		4	4		1,100	251		1,351	1,600
0600	8 GPH hot and cold water		4	4		1,150	251		1,401	1,650
0640	For stainless steel cabinet, add					112			112	124
1000	Dual height, 8.2 GPH	Q-1	3.80	4.211		2,175	265		2,440	2,800
1040	14.3 GPH	"	3.80	4.211		2,450	265		2,715	3,100
1240	For stainless steel cabinet, add					254			254	280
2600	ADA compliant, 8 GPH	Q-1	4	4		1,150	251		1,401	1,625
3300	Semi-recessed, 8.1 GPH		4	4		1,025	251		1,276	1,500
3320	12 GPH		4	4		1,175	251		1,426	1,650
4600	Floor mounted, flush-to-wall									
4640	4 GPH	1 Plum	3	2.667	Ea.	980	186		1,166	1,350
4680	8.2 GPH		3	2.667		1,025	186		1,211	1,400
4720	14.3 GPH		3	2.667		1,175	186		1,361	1,575
4960	14 GPH hot and cold water		3	2.667		1,250	186		1,436	1,650
4980	For stainless steel cabinet, add					170			170	187
5000	Dual height, 8.2 GPH	1 Plum	2	4		1,450	279		1,729	2,025
5040	14.3 GPH	1 Plum	2	4	Ea.	1,500	279		1,779	2,075
5120	For stainless steel cabinet, add					249			249	274
9800	For supply, waste & vent, all coolers	1 Plum	2.21	3.620		545	253		798	970

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22 51 Swimming Pool Plumbing Systems

22 51 19 – Swimming Pool Water Treatment Equipment

22 51 19.50 Swimming Pool Filtration Equipment	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **SWIMMING POOL FILTRATION EQUIPMENT**									
0900 Filter system, sand or diatomite type, incl. pump, 6,000 gal./hr.	2 Plum	1.80	8.889	Total	2,400	620		3,020	3,575
1020 Add for chlorination system, 800 S.F. pool		3	5.333	Ea.	267	370		637	850
1040 5,000 S.F. pool		3	5.333	"	2,025	370		2,395	2,775

22 52 Fountain Plumbing Systems

22 52 16 – Fountain Pumps

22 52 16.10 Fountain Water Pumps

0010 **FOUNTAIN WATER PUMPS**									
0100 Pump w/controls									
0200 Single phase, 100' cord, 1/2 HP pump	2 Skwk	4.40	3.636	Ea.	1,425	214		1,639	1,900
0300 3/4 HP pump		4.30	3.721		1,500	219		1,719	1,975
0400 1 HP pump		4.20	3.810		1,825	224		2,049	2,325
0500 1-1/2 HP pump		4.10	3.902		2,350	230		2,580	2,925
0600 2 HP pump		4	4		4,825	236		5,061	5,650
0700 Three phase, 200' cord, 5 HP pump		3.90	4.103		6,950	242		7,192	8,000
0800 7-1/2 HP pump		3.80	4.211		13,300	248		13,548	15,100
0900 10 HP pump		3.70	4.324		14,900	255		15,155	16,800
1000 15 HP pump		3.60	4.444		20,800	262		21,062	23,300
2000 DESIGN NOTE: Use two horsepower per surface acre.									

22 52 33 – Fountain Ancillary

22 52 33.10 Fountain Miscellaneous

0010 **FOUNTAIN MISCELLANEOUS**									
1300 Lights w/mounting kits, 200 watt	2 Skwk	18	.889	Ea.	1,225	52.50		1,277.50	1,425
1400 300 watt		18	.889		1,400	52.50		1,452.50	1,625
1500 500 watt		18	.889		1,650	52.50		1,702.50	1,875
1600 Color blender		12	1.333		625	78.50		703.50	805

22 66 Chemical-Waste Systems for Lab. and Healthcare Facilities

22 66 53 – Laboratory Chemical-Waste and Vent Piping

22 66 53.30 Glass Pipe

0010 **GLASS PIPE**, Borosilicate, couplings & clevis hanger assemblies, 10' OC									
0020 Drainage									
1100 1-1/2" diameter	Q-1	52	.308	L.F.	15	19.35		34.35	45.50
1120 2" diameter		44	.364		19.60	23		42.60	55.50
1140 3" diameter		39	.410		26	26		52	67.50
1160 4" diameter	Q-1	30	.533	L.F.	47	33.50		80.50	102
1180 6" diameter	"	26	.615	"	88.50	38.50		127	155

22 66 53.60 Corrosion Resistant Pipe

0010 **CORROSION RESISTANT PIPE**, No couplings or hangers									
0020 Iron alloy, drain, mechanical joint									
1000 1-1/2" diameter	Q-1	70	.229	L.F.	93	14.35		107.35	124
1100 2" diameter		66	.242		96	15.25		111.25	128
1120 3" diameter		60	.267		105	16.75		121.75	140
1140 4" diameter		52	.308		133	19.35		152.35	175
2980 Plastic, epoxy, fiberglass filament wound, B&S joint									
3000 2" diameter	Q-1	62	.258	L.F.	14.80	16.20		31	40.50
3100 3" diameter		51	.314		17.35	19.70		37.05	48.50

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22 66 53 – Laboratory Chemical-Waste and Vent Piping

22 66 53.60 Corrosion Resistant Pipe		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
3120	4" diameter	Q-1	45	.356	L.F.	24.50	22.50		47	60.50
3140	6" diameter	↓	32	.500	↓	35	31.50		66.50	85.50
3980	Polyester, fiberglass filament wound, B&S joint									
4000	2" diameter	Q-1	62	.258	L.F.	16.10	16.20		32.30	41.50
4100	3" diameter		51	.314		21	19.70		40.70	53
4120	4" diameter		45	.356		31	22.50		53.50	67.50
4140	6" diameter	↓	32	.500	↓	45	31.50		76.50	96.50
4980	Polypropylene, acid resistant, fire retardant, Schedule 40									
5000	1-1/2" diameter	Q-1	68	.235	L.F.	14.60	14.80		29.40	38
5100	2" diameter		62	.258		16.75	16.20		32.95	42.50
5120	3" diameter		51	.314		25	19.70		44.70	57
5140	4" diameter	↓	45	.356	↓	32	22.50		54.50	68.50
5980	Proxylene, fire retardant, Schedule 40									
6000	1-1/2" diameter	Q-1	68	.235	L.F.	12.20	14.80		27	35.50
6100	2" diameter		62	.258		13.25	16.20		29.45	38.50
6120	3" diameter		51	.314		38	19.70		57.70	71
6140	4" diameter	↓	45	.356	↓	39	22.50		61.50	76.50

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

Division Notes

	CREW	DAILY OUTPUT	LABOR-HOURS	UNIT	BARE COSTS MAT.	BARE COSTS LABOR	BARE COSTS EQUIP.	BARE COSTS TOTAL	TOTAL INCL O&P

Estimating Tips

The labor adjustment factors listed in Subdivision 22 01 02.20 also apply to Division 23.

23 10 00 Facility Fuel Systems

- The prices in this subdivision for above- and below-ground storage tanks do not include foundations or hold-down slabs, unless noted. The estimator should refer to Divisions 3 and 31 for foundation system pricing. In addition to the foundations, required tank accessories, such as tank gauges, leak detection devices, and additional manholes and piping, must be added to the tank prices.

23 50 00 Central Heating Equipment

- When estimating the cost of an HVAC system, check to see who is responsible for providing and installing the temperature control system. It is possible to overlook controls, assuming that they would be included in the electrical estimate.
- When looking up a boiler, be careful on specified capacity. Some manufacturers rate their products on output while others use input.
- Include HVAC insulation for pipe, boiler, and duct (wrap and liner).
- Be careful when looking up mechanical items to get the correct pressure rating and connection type (thread, weld, flange).

23 70 00 Central HVAC Equipment

- Combination heating and cooling units are sized by the air conditioning requirements. (See Reference No. R236000-20 for the preliminary sizing guide.)
- A ton of air conditioning is nominally 400 CFM.
- Rectangular duct is taken off by the linear foot for each size, but its cost is usually estimated by the pound. Remember that SMACNA standards now base duct on internal pressure.
- Prefabricated duct is estimated and purchased like pipe: straight sections and fittings.
- Note that cranes or other lifting equipment are not included on any lines in Division 23. For example, if a crane is required to lift a heavy piece of pipe into place high above a gym floor, or to put a rooftop unit on the roof of a four-story building, etc., it must be added. Due to the potential for extreme variation—from nothing additional required to a major crane or helicopter—we feel that including a nominal amount for "lifting contingency" would be useless and detract from the accuracy of the estimate. When using equipment rental cost data from RSMeans, do not forget to include the cost of the operator(s).

Reference Numbers

Reference numbers are shown at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear. ■

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Note: Trade Service, in part, has been used as a reference source for some of the material prices used in Division 23.

23 05 02 – HVAC General

	23 05 02.10 Air Conditioning, General	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**AIR CONDITIONING, GENERAL** Prices are for standard efficiencies (SEER 13)									
0020	for upgrade to SEER 14 add					10%				

23 05 05 – Selective Demolition for HVAC

23 05 05.10 HVAC Demolition

0010	**HVAC DEMOLITION**									
0100	Air conditioner, split unit, 3 ton	Q-5	2	8	Ea.		505		505	755
0150	Package unit, 3 ton	Q-6	3	8	"		525		525	785
0298	Boilers									
0300	Electric, up thru 148 kW	Q-19	2	12	Ea.		770		770	1,150
0310	150 thru 518 kW	"	1	24			1,550		1,550	2,300
0320	550 thru 2,000 kW	Q-21	.40	80			5,275		5,275	7,850
0330	2,070 kW and up	"	.30	107			7,025		7,025	10,500
0340	Gas and/or oil, up thru 150 MBH	Q-7	2.20	14.545			975		975	1,450
0350	160 thru 2,000 MBH		.80	40			2,675		2,675	4,000
0360	2,100 thru 4,500 MBH		.50	64			4,275		4,275	6,400
0370	4,600 thru 7,000 MBH		.30	107			7,150		7,150	10,700
0380	7,100 thru 12,000 MBH		.16	200			13,400		13,400	20,000
0390	12,200 thru 25,000 MBH		.12	267			17,900		17,900	26,600
1000	Ductwork, 4" high, 8" wide	1 Clab	200	.040	L.F.		1.82		1.82	2.72
1100	6" high, 8" wide		165	.048			2.21		2.21	3.29
1200	10" high, 12" wide		125	.064			2.92		2.92	4.35
1300	12"-14" high, 16"-18" wide		85	.094			4.29		4.29	6.40
1400	18" high, 24" wide		67	.119			5.45		5.45	8.10
1500	30" high, 36" wide		56	.143			6.50		6.50	9.70
1540	72" wide		50	.160			7.30		7.30	10.85
3000	Mechanical equipment, light items. Unit is weight, not cooling.	Q-5	.90	17.778	Ton		1,125		1,125	1,675
3600	Heavy items	"	1.10	14.545	"		920		920	1,375
5090	Remove refrigerant from system	1 Stpi	40	.200	Lb.		14.05		14.05	21

23 05 23 – General-Duty Valves for HVAC Piping

23 05 23.30 Valves, Iron Body

0010	**VALVES, IRON BODY**									
1020	Butterfly, wafer type, gear actuator, 200 lb.									
1030	2"	1 Plum	14	.571	Ea.	118	40		158	190
1040	2-1/2"	Q-1	9	1.778		120	112		232	299
1050	3"		8	2		124	126		250	325
1060	4"		5	3.200		138	201		339	450
1070	5"	Q-2	5	4.800		155	315		470	635
1080	6"	"	5	4.800		176	315		491	660
1650	Gate, 125 lb., N.R.S.									
2150	Flanged									
2200	2"	1 Plum	5	1.600	Ea.	960	112		1,072	1,225
2240	2-1/2"	Q-1	5	3.200		985	201		1,186	1,375
2260	3"		4.50	3.556		1,100	223		1,323	1,550
2280	4"		3	5.333		1,650	335		1,985	2,325
2300	6"	Q-2	3	8		2,300	520		2,820	3,300
3550	OS&Y, 125 lb., flanged									
3600	2"	1 Plum	5	1.600	Ea.	700	112		812	935
3660	3"	Q-1	4.50	3.556		780	223		1,003	1,200
3680	4"	"	3	5.333		980	335		1,315	1,575
3700	6"	Q-2	3	8		1,875	520		2,395	2,825
3900	For 175 lb., flanged, add					200%	10%			
5450	Swing check, 125 lb., threaded									

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23 05 23 – General-Duty Valves for HVAC Piping

	23 05 23.30 Valves, Iron Body	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
5500	2"	1 Plum	11	.727	Ea.	645	51		696	785
5540	2-1/2"	Q-1	15	1.067		990	67		1,057	1,200
5550	3"		13	1.231		1,075	77.50		1,152.50	1,300
5560	4"		10	1.600		1,700	101		1,801	2,025
5950	Flanged									
6000	2"	1 Plum	5	1.600	Ea.	600	112		712	825
6040	2-1/2"	Q-1	5	3.200		695	201		896	1,075
6050	3"		4.50	3.556		800	223		1,023	1,225
6060	4"		3	5.333		1,275	335		1,610	1,900
6070	6"	Q-2	3	8		2,150	520		2,670	3,150

23 05 23.80 Valves, Steel

0010	**VALVES, STEEL**									
0800	Cast									
1350	Check valve, swing type, 150 lb., flanged									
1370	1"	1 Plum	10	.800	Ea.	880	56		936	1,050
1400	2"	"	8	1		850	70		920	1,050
1440	2-1/2"	Q-1	5	3.200		980	201		1,181	1,375
1450	3"		4.50	3.556		1,025	223		1,248	1,450
1460	4"		3	5.333		1,625	335		1,960	2,300
1540	For 300 lb., flanged, add					50%	15%			
1548	For 600 lb., flanged, add					110%	20%			
1950	Gate valve, 150 lb., flanged									
2000	2"	1 Plum	8	1	Ea.	865	70		935	1,050
2040	2-1/2"	Q-1	5	3.200		1,175	201		1,376	1,600
2050	3"		4.50	3.556		1,225	223		1,448	1,675
2060	4"		3	5.333		1,700	335		2,035	2,375
2070	6"	Q-2	3	8		2,675	520		3,195	3,700
3650	Globe valve, 150 lb., flanged									
3700	2"	1 Plum	8	1	Ea.	1,050	70		1,120	1,275
3740	2-1/2"	Q-1	5	3.200		1,350	201		1,551	1,775
3750	3"		4.50	3.556		1,425	223		1,648	1,875
3760	4"		3	5.333		1,950	335		2,285	2,650
3770	6"	Q-2	3	8		3,075	520		3,595	4,175
5150	Forged									
5650	Check valve, class 800, horizontal									
5698	Threaded									
5700	1/4"	1 Plum	24	.333	Ea.	76.50	23.50		100	119
5720	3/8"		24	.333		76.50	23.50		100	119
5730	1/2"		24	.333		45	23.50		68.50	84
5740	3/4"		20	.400		53.50	28		81.50	101
5750	1"		19	.421		71	29.50		100.50	122
5760	1-1/4"		15	.533		136	37		173	206

23 05 93 – Testing, Adjusting, and Balancing for HVAC

23 05 93.10 Balancing, Air

0010	**BALANCING, AIR** (Subcontractor's quote incl. material and labor)									
0900	Heating and ventilating equipment									
1000	Centrifugal fans, utility sets				Ea.				420	420
1100	Heating and ventilating unit								630	630
1200	In-line fan								630	630
1300	Propeller and wall fan								119	119
1400	Roof exhaust fan								280	280
2000	Air conditioning equipment, central station								910	910

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23 05 Common Work Results for HVAC

23 05 93 – Testing, Adjusting, and Balancing for HVAC

	23 05 93.10 Balancing, Air	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2100	Built-up low pressure unit				Ea.				840	840
2200	Built-up high pressure unit								980	980
2300	Built-up high pressure dual duct								1,550	1,550
2400	Built-up variable volume								1,825	1,825
2500	Multi-zone A.C. and heating unit								630	630
2600	For each zone over one, add								140	140
2700	Package A.C. unit								350	350
2800	Rooftop heating and cooling unit								490	490
3000	Supply, return, exhaust, registers & diffusers, avg. height ceiling								84	84
3100	High ceiling								126	126
3200	Floor height								70	70
3300	Off mixing box								56	56
3500	Induction unit								91	91
3600	Lab fume hood								420	420
3700	Linear supply								210	210
3800	Linear supply high								245	245
4000	Linear return								70	70
4100	Light troffers								84	84
4200	Moduline - master								84	84
4300	Moduline - slaves								42	42
4400	Regenerators								560	560
4500	Taps into ceiling plenums				Ea.				105	105
4600	Variable volume boxes				"				84	84

23 05 93.20 Balancing, Water

0010	**BALANCING, WATER** (Subcontractor's quote incl. material and labor)									
0050	Air cooled condenser				Ea.				256	256
0080	Boiler								515	515
0100	Cabinet unit heater								88	88
0200	Chiller								620	620
0300	Convector								73	73
0400	Converter								365	365
0500	Cooling tower								475	475
0600	Fan coil unit, unit ventilator								132	132
0700	Fin tube and radiant panels								146	146
0800	Main and duct re-heat coils								135	135
0810	Heat exchanger								135	135
0900	Main balancing cocks								110	110
1000	Pumps								320	320
1100	Unit heater								102	102

23 07 HVAC Insulation

23 07 13 – Duct Insulation

23 07 13.10 Duct Thermal Insulation

0010	**DUCT THERMAL INSULATION**									
0110	Insulation req'd. is based on the surface size/area to be covered									
3000	Ductwork									
3020	Blanket type, fiberglass, flexible									
3030	Fire rated for grease and hazardous exhaust ducts									
3060	1-1/2" thick	Q-14	84	.190	S.F.	4.25	10.80		15.05	21
3090	Fire rated for plenums									
3100	1/2" x 24" x 25'	Q-14	1.94	8.247	Roll	191	470		661	925

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23 07 HVAC Insulation

23 07 13 – Duct Insulation

	23 07 13.10 Duct Thermal Insulation		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
3110	1/2" x 24" x 25'		Q-14	98	.163	S.F.	3.81	9.25		13.06	18.40
3120	1/2" x 48" x 25'			1.04	15.385	Roll	375	875		1,250	1,750
3126	1/2" x 48" x 25'			104	.154	S.F.	3.77	8.75		12.52	17.50
3140	FSK vapor barrier wrap, .75 lb. density										
3160	1" thick	G	Q-14	350	.046	S.F.	.22	2.59		2.81	4.21
3170	1-1/2" thick	G		320	.050		.55	2.84		3.39	4.95
3180	2" thick	G		300	.053		.77	3.03		3.80	5.50
3190	3" thick	G		260	.062		1.33	3.49		4.82	6.80
3200	4" thick	G		242	.066		.70	3.75		4.45	6.50
3210	Vinyl jacket, same as FSK										
3280	Unfaced, 1 lb. density										
3310	1" thick	G	Q-14	360	.044	S.F.	.28	2.52		2.80	4.17
3320	1-1/2" thick	G		330	.048		.37	2.75		3.12	4.62
3330	2" thick	G		310	.052		.49	2.93		3.42	5
3400	FSK facing, 1 lb. density										
3420	1-1/2" thick	G	Q-14	310	.052	S.F.	.87	2.93		3.80	5.45
3430	2" thick	G	"	300	.053	"	.73	3.03		3.76	5.45
3450	FSK facing, 1.5 lb. density										
3470	1-1/2" thick	G	Q-14	300	.053	S.F.	1.20	3.03		4.23	5.95
3480	2" thick	G	"	290	.055	"	1.59	3.13		4.72	6.55
3795	Finishes										
3800	Stainless steel woven mesh		Q-14	100	.160	S.F.	1.14	9.10		10.24	15.15
3810	For .010" stainless steel, add			160	.100		3.29	5.70		8.99	12.30
3820	18 oz. fiberglass cloth, pasted on			170	.094		1.16	5.35		6.51	9.45
3900	8 oz. canvas, pasted on			180	.089		.34	5.05		5.39	8.05
3940	For .016" aluminum jacket, add			200	.080		1.12	4.54		5.66	8.20
7878	Contact cement, quart can					Ea.	14.75			14.75	16.20

23 07 16 – HVAC Equipment Insulation

	23 07 16.10 HVAC Equipment Thermal Insulation										
0010	**HVAC EQUIPMENT THERMAL INSULATION**										
0110	Insulation req'd. is based on the surface size/area to be covered										
1000	Boiler, 1-1/2" calcium silicate only	G	Q-14	110	.145	S.F.	5.25	8.25		13.50	18.45
1020	Plus 2" fiberglass	G	"	80	.200	"	7.10	11.35		18.45	25
2000	Breeching, 2" calcium silicate										
2020	Rectangular	G	Q-14	42	.381	S.F.	10.20	21.50		31.70	44
2040	Round	G	"	38.70	.413	"	10.60	23.50		34.10	47.50

23 09 Instrumentation and Control for HVAC

23 09 23 – Direct-Digital Control System for HVAC

	23 09 23.10 Control Components/DDC Systems										
0010	**CONTROL COMPONENTS/DDC SYSTEMS** (Sub's quote incl. M & L)										
0100	Analog inputs										
0110	Sensors (avg. 50' run in 1/2" EMT)										
0120	Duct temperature					Ea.				465	465
0130	Space temperature									665	665
0140	Duct humidity, +/- 3%									595	595
0150	Space humidity, +/- 2%									1,150	1,150
0160	Duct static pressure									680	680
0170	CFM/transducer									920	920
0172	Water temperature									940	940

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23 09 23.10 Control Components/DDC Systems	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0174 Water flow				Ea.				3,450	3,450
0176 Water pressure differential								975	975
0177 Steam flow								2,400	2,400
0178 Steam pressure								1,025	1,025
0180 KW/transducer								1,350	1,350
0182 KWH totalization (not incl. elec. meter pulse xmtr.)								625	625
0190 Space static pressure								1,075	1,075
1000 Analog outputs (avg. 50′ run in 1/2″ EMT)									
1010 P/I transducer				Ea.				635	635
1020 Analog output, matl. in MUX								305	305
1030 Pneumatic (not incl. control device)								645	645
1040 Electric (not incl. control device)								380	380
2000 Status (alarms)									
2100 Digital inputs (avg. 50′ run in 1/2″ EMT)									
2110 Freeze				Ea.				435	435
2120 Fire								395	395
2130 Differential pressure (air)	2 Elec	3	5.333		355	355		710	915
2140 Differential pressure (water)								975	975
2150 Current sensor								435	435
2160 Duct high temperature thermostat								570	570
2170 Duct smoke detector								705	705
2200 Digital output (avg. 50′ run in 1/2″ EMT)									
2210 Start/stop				Ea.				340	340
2220 On/off (maintained contact)				″				585	585
3000 Controller MUX panel, incl. function boards									
3100 48 point				Ea.				5,275	5,275
3110 128 point				″				7,225	7,225
3200 DDC controller (avg. 50′ run in conduit)									
3210 Mechanical room									
3214 16 point controller (incl. 120 volt/1 phase power supply)				Ea.				3,275	3,275
3229 32 point controller (incl. 120 volt/1 phase power supply)				″				5,425	5,425
3230 Includes software programming and checkout									
3260 Space									
3266 VAV terminal box (incl. space temp. sensor)				Ea.				840	840
3280 Host computer (avg. 50′ run in conduit)									
3281 Package complete with PC, keyboard,									
3282 printer, monitor, basic software				Ea.				3,150	3,150
4000 Front end costs									
4100 Computer (P.C.) with software program				Ea.				6,350	6,350
4200 Color graphics software								3,925	3,925
4300 Color graphics slides								490	490
4350 Additional printer								980	980
4400 Communications trunk cable				L.F.				3.80	3.80
4500 Engineering labor (not incl. dftg.)				Point				94	94
4600 Calibration labor								120	120
4700 Start-up, checkout labor								120	120
4800 Programming labor, as req'd									
5000 Communications bus (data transmission cable)									
5010 #18 twisted shielded pair in 1/2″ EMT conduit				C.L.F.				380	380
8000 Applications software									
8050 Basic maintenance manager software (not incl. data base entry)				Ea.				1,950	1,950
8100 Time program				Point				6.85	6.85
8120 Duty cycle								13.65	13.65

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23 09 Instrumentation and Control for HVAC

23 09 23 – Direct-Digital Control System for HVAC

	23 09 23.10 Control Components/DDC Systems	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
8140	Optimum start/stop				Point				41.50	41.50
8160	Demand limiting								20.50	20.50
8180	Enthalpy program								41.50	41.50
8200	Boiler optimization				Ea.				1,225	1,225
8220	Chiller optimization				"				1,625	1,625
8240	Custom applications									
8260	Cost varies with complexity									

23 09 43 – Pneumatic Control System for HVAC

23 09 43.10 Pneumatic Control Systems

0010	**PNEUMATIC CONTROL SYSTEMS**									
0011	Including a nominal 50′ of tubing. Add control panelboard if req'd.									
0100	Heating and ventilating, split system									
0200	Mixed air control, economizer cycle, panel readout, tubing									
0220	Up to 10 tons G	Q-19	.68	35.294	Ea.	5,200	2,275		7,475	9,100
0240	For 10 to 20 tons G		.63	37.915		5,850	2,425		8,275	10,100
0260	For over 20 tons G		.58	41.096		6,350	2,650		9,000	10,900
0300	Heating coil, hot water, 3 way valve,									
0320	Freezestat, limit control on discharge, readout	Q-5	.69	23.088	Ea.	3,875	1,450		5,325	6,425
0500	Cooling coil, chilled water, room									
0520	Thermostat, 3 way valve	Q-5	2	8	Ea.	1,675	505		2,180	2,575
0600	Cooling tower, fan cycle, damper control,									
0620	Control system including water readout in/out at panel	Q-19	.67	35.821	Ea.	6,850	2,300		9,150	11,000
1000	Unit ventilator, day/night operation,									
1100	freezestat, ASHRAE, cycle 2	Q-19	.91	26.374	Ea.	3,650	1,700		5,350	6,550
2000	Compensated hot water from boiler, valve control,									
2100	readout and reset at panel, up to 60 GPM	Q-19	.55	43.956	Ea.	7,425	2,825		10,250	12,400
2120	For 120 GPM		.51	47.059		7,325	3,025		10,350	12,600
2140	For 240 GPM		.49	49.180		8,325	3,150		11,475	13,900
3000	Boiler room combustion air, damper to 5 S.F., controls		1.37	17.582		3,425	1,125		4,550	5,450
3500	Fan coil, heating and cooling valves, 4 pipe control system		3	8		1,625	515		2,140	2,550
3600	Heat exchanger system controls		.86	27.907		3,200	1,800		5,000	6,200
4000	Pneumatic thermostat, including controlling room radiator valve	Q-5	2.43	6.593		995	420		1,415	1,725
4060	Pump control system	Q-19	3	8		1,525	515		2,040	2,450
4500	Air supply for pneumatic control system									
4600	Tank mounted duplex compressor, starter, alternator,									
4620	piping, dryer, PRV station and filter									
4630	1/2 HP	Q-19	.68	35.139	Ea.	13,400	2,250		15,650	18,100
4660	1-1/2 HP		.58	41.739		15,000	2,675		17,675	20,500
4690	5 HP		.42	57.143		38,800	3,675		42,475	48,200

23 13 Facility Fuel-Storage Tanks

23 13 13 – Facility Underground Fuel-Oil, Storage Tanks

23 13 13.09 Single-Wall Steel Fuel-Oil Tanks

0010	**SINGLE-WALL STEEL FUEL-OIL TANKS**									
5000	Tanks, steel ugnd., sti-p3, not incl. hold-down bars									
5500	Excavation, pad, pumps and piping not included									
5510	Single wall, 500 gallon capacity, 7 ga. shell	Q-5	2.70	5.926	Ea.	2,275	375		2,650	3,075
5520	1,000 gallon capacity, 7 ga. shell	"	2.50	6.400		3,300	405		3,705	4,225
5530	2,000 gallon capacity, 1/4" thick shell	Q-7	4.60	6.957		4,750	465		5,215	5,925
5535	2,500 gallon capacity, 7 ga. shell	Q-5	3	5.333		6,400	340		6,740	7,550

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23 13 13 – Facility Underground Fuel-Oil, Storage Tanks

	23 13 13.09 Single-Wall Steel Fuel-Oil Tanks	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
5540	5,000 gallon capacity, 1/4" thick shell	Q-7	3.20	10	Ea.	15,000	670		15,670	17,500
5580	15,000 gallon capacity, 5/16" thick shell		1.70	18.824		12,600	1,250		13,850	15,800
5600	20,000 gallon capacity, 5/16" thick shell		1.50	21.333		30,700	1,425		32,125	35,900
5610	25,000 gallon capacity, 3/8" thick shell		1.30	24.615		35,300	1,650		36,950	41,300
5620	30,000 gallon capacity, 3/8" thick shell		1.10	29.091		39,600	1,950		41,550	46,500
5630	40,000 gallon capacity, 3/8" thick shell		.90	35.556		51,500	2,375		53,875	60,000
5640	50,000 gallon capacity, 3/8" thick shell		.80	40		58,500	2,675		61,175	68,500
	23 13 13.23 Glass-Fiber-Reinfcd-Plastic, Fuel-Oil, Storage									
0010	**GLASS-FIBER-REINFCD-PLASTIC, UNDERGRND. FUEL-OIL, STORAGE**									
0210	Fiberglass, underground, single wall, UL listed, not including									
0220	manway or hold-down strap									
0240	2,000 gallon capacity	Q-7	4.57	7.002	Ea.	9,950	470		10,420	11,600
0245	3,000 gallon capacity		3.90	8.205		10,100	550		10,650	11,900
0250	4,000 gallon capacity		3.55	9.014		13,400	605		14,005	15,700
0255	5,000 gallon capacity		3.20	10		12,300	670		12,970	14,500
0260	6,000 gallon capacity		2.67	11.985		11,500	805		12,305	13,900
0280	10,000 gallon capacity		2	16		18,100	1,075		19,175	21,500
0284	15,000 gallon capacity		1.68	19.048		27,700	1,275		28,975	32,400
0290	20,000 gallon capacity		1.45	22.069		38,600	1,475		40,075	44,600
0500	For manway, fittings and hold-downs, add					20%	15%			
1020	Fiberglass, underground, double wall, UL listed									
1030	includes manways, not incl. hold-down straps									
1040	600 gallon capacity	Q-5	2.42	6.612	Ea.	10,600	420		11,020	12,200
1050	1,000 gallon capacity	"	2.25	7.111		14,500	450		14,950	16,700
1060	2,500 gallon capacity	Q-7	4.16	7.692		20,000	515		20,515	22,800
1070	3,000 gallon capacity		3.90	8.205		22,400	550		22,950	25,500
1080	4,000 gallon capacity		3.64	8.791		23,400	590		23,990	26,700
1090	6,000 gallon capacity		2.42	13.223		29,100	885		29,985	33,300
1100	8,000 gallon capacity		2.08	15.385		37,000	1,025		38,025	42,200
1110	10,000 gallon capacity		1.82	17.582		44,800	1,175		45,975	51,000
1120	12,000 gallon capacity		1.70	18.824		46,500	1,250		47,750	53,000
2210	Fiberglass, underground, single wall, UL listed, including									
2220	hold-down straps, no manways									
2240	2,000 gallon capacity	Q-7	3.55	9.014	Ea.	10,500	605		11,105	12,400
2250	4,000 gallon capacity		2.90	11.034		14,000	740		14,740	16,500
2260	6,000 gallon capacity		2	16		12,500	1,075		13,575	15,400
2280	10,000 gallon capacity		1.60	20		19,200	1,350		20,550	23,100
2284	15,000 gallon capacity		1.39	23.022		28,700	1,550		30,250	33,900
2290	20,000 gallon capacity		1.14	28.070		40,100	1,875		41,975	46,900
3020	Fiberglass, underground, double wall, UL listed									
3030	includes manways and hold-down straps									
3040	600 gallon capacity	Q-5	1.86	8.602	Ea.	11,100	545		11,645	13,000
3050	1,000 gallon capacity	"	1.70	9.412		15,000	595		15,595	17,400
3060	2,500 gallon capacity	Q-7	3.29	9.726		20,500	650		21,150	23,600
3070	3,000 gallon capacity	Q-7	3.13	10.224	Ea.	22,900	685		23,585	26,200
3080	4,000 gallon capacity		2.93	10.922		23,900	730		24,630	27,400
3090	6,000 gallon capacity		1.86	17.204		30,100	1,150		31,250	34,800
3100	8,000 gallon capacity		1.65	19.394		38,000	1,300		39,300	43,700
3110	10,000 gallon capacity		1.48	21.622		45,800	1,450		47,250	52,500
3120	12,000 gallon capacity		1.40	22.857		47,600	1,525		49,125	55,000

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23 13 Facility Fuel-Storage Tanks

23 13 23 – Facility Aboveground Fuel-Oil, Storage Tanks

23 13 23.16 Horizontal, Stl, Abvgrd Fuel-Oil, Storage Tanks	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **HORIZONTAL, STEEL, ABOVEGROUND FUEL-OIL, STORAGE TANKS**									
3000 Steel, storage, aboveground, including cradles, coating,									
3020 fittings, not including foundation, pumps or piping									
3040 Single wall, 275 gallon	Q-5	5	3.200	Ea.	665	203		868	1,025
3060 550 gallon	"	2.70	5.926		6,600	375		6,975	7,825
3080 1,000 gallon	Q-7	5	6.400		11,100	430		11,530	12,800
3100 1,500 gallon		4.75	6.737		16,900	450		17,350	19,300
3120 2,000 gallon		4.60	6.957		16,400	465		16,865	18,700
3140 5,000 gallon		3.20	10		24,200	670		24,870	27,600
3150 10,000 gallon		2	16		36,300	1,075		37,375	41,500
3160 15,000 gallon		1.70	18.824		49,300	1,250		50,550	56,000
3170 20,000 gallon		1.45	22.069		59,000	1,475		60,475	67,000
3180 25,000 gallon		1.30	24.615		107,500	1,650		109,150	121,000
3190 30,000 gallon		1.10	29.091		80,500	1,950		82,450	91,500
3320 Double wall, 500 gallon capacity	Q-5	2.40	6.667		3,375	420		3,795	4,325
3330 2,000 gallon capacity	Q-7	4.15	7.711		6,375	515		6,890	7,800
3340 4,000 gallon capacity		3.60	8.889		13,600	595		14,195	15,900
3350 6,000 gallon capacity		2.40	13.333		38,400	895		39,295	43,500
3360 8,000 gallon capacity		2	16		45,100	1,075		46,175	51,000
3370 10,000 gallon capacity		1.80	17.778		52,500	1,200		53,700	60,000
3380 15,000 gallon capacity		1.50	21.333		73,000	1,425		74,425	82,500
3390 20,000 gallon capacity		1.30	24.615		88,000	1,650		89,650	99,500
3400 25,000 gallon capacity		1.15	27.826		83,500	1,875		85,375	94,500
3410 30,000 gallon capacity		1	32		113,000	2,150		115,150	127,500
23 13 23.26 Horizontal, Conc., Abvgrd Fuel-Oil, Stor. Tanks									
0010 **HORIZONTAL, CONCRETE, ABOVEGROUND FUEL-OIL, STORAGE TANKS**									
0050 Concrete, storage, aboveground, including pad & pump									
0100 500 gallon	F-3	2	20	Ea.	12,700	1,150	990	14,840	16,700
0200 1,000 gallon	"	2	20		17,700	1,150	990	19,840	22,300
0300 2,000 gallon	F-4	2	24		22,800	1,375	1,125	25,300	28,400
0400 4,000 gallon		2	24		29,200	1,375	1,125	31,700	35,400
0500 8,000 gallon		2	24		45,600	1,375	1,125	48,100	53,500
0600 12,000 gallon		2	24		61,000	1,375	1,125	63,500	70,500

23 21 Hydronic Piping and Pumps

23 21 20 – Hydronic HVAC Piping Specialties

23 21 20.10 Air Control									
0010 **AIR CONTROL**									
0030 Air separator, with strainer									
0040 2" diameter	Q-5	6	2.667	Ea.	1,775	169		1,944	2,200
0080 2-1/2" diameter		5	3.200		1,975	203		2,178	2,475
0100 3" diameter		4	4		3,050	253		3,303	3,725
0120 4" diameter		3	5.333		4,300	340		4,640	5,225
0130 5" diameter	Q-6	3.60	6.667		5,475	440		5,915	6,675
0140 6" diameter	"	3.40	7.059		6,550	465		7,015	7,925
23 21 20.18 Automatic Air Vent									
0010 **AUTOMATIC AIR VENT**									
0020 Cast iron body, stainless steel internals, float type									
0060 1/2" NPT inlet, 300 psi	1 Stpi	12	.667	Ea.	181	47		228	269
0220 3/4" NPT inlet, 250 psi	"	10	.800		370	56.50		426.50	490

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23 21 20 – Hydronic HVAC Piping Specialties

	23 21 20.18 Automatic Air Vent	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0340	1-1/2" NPT inlet, 250 psi	Q-5	12	1.333	Ea.	1,150	84.50		1,234.50	1,375
	23 21 20.42 Expansion Joints									
0010	**EXPANSION JOINTS**									
0100	Bellows type, neoprene cover, flanged spool									
0140	6" face to face, 1-1/4" diameter	1 Stpi	11	.727	Ea.	345	51		396	455
0160	1-1/2" diameter	"	10.60	.755		345	53		398	460
0180	2" diameter	Q-5	13.30	1.203		350	76		426	500
0190	2-1/2" diameter		12.40	1.290		365	81.50		446.50	520
0200	3" diameter		11.40	1.404		405	89		494	585
0480	10" face to face, 2" diameter		13	1.231		505	78		583	670
0500	2-1/2" diameter		12	1.333		530	84.50		614.50	710
0520	3" diameter		11	1.455		540	92		632	730
0540	4" diameter		8	2		615	127		742	870
0560	5" diameter		7	2.286		735	145		880	1,025
0580	6" diameter		6	2.667		760	169		929	1,075
	23 21 20.46 Expansion Tanks									
0010	**EXPANSION TANKS**									
1507	Underground fuel-oil storage tanks, see Section 23 13 13									
1512	Tank leak detection systems, see Section 28 33 33.50									
2000	Steel, liquid expansion, ASME, painted, 15 gallon capacity	Q-5	17	.941	Ea.	935	59.50		994.50	1,125
2020	24 gallon capacity		14	1.143		765	72.50		837.50	950
2040	30 gallon capacity		12	1.333		1,125	84.50		1,209.50	1,350
2060	40 gallon capacity		10	1.600		1,300	101		1,401	1,575
2080	60 gallon capacity	Q-5	8	2	Ea.	1,550	127		1,677	1,925
2100	80 gallon capacity		7	2.286		1,675	145		1,820	2,075
2120	100 gallon capacity		6	2.667		2,275	169		2,444	2,750
3000	Steel ASME expansion, rubber diaphragm, 19 gal. cap. accept.		12	1.333		3,550	84.50		3,634.50	4,025
3020	31 gallon capacity		8	2		3,950	127		4,077	4,550
3040	61 gallon capacity		6	2.667		5,925	169		6,094	6,775
3080	119 gallon capacity		4	4		5,975	253		6,228	6,950
3100	158 gallon capacity		3.80	4.211		8,325	267		8,592	9,550
3140	317 gallon capacity		2.80	5.714		12,500	360		12,860	14,300
3180	528 gallon capacity		2.40	6.667		20,400	420		20,820	23,000
	23 21 20.58 Hydronic Heating Control Valves									
0010	**HYDRONIC HEATING CONTROL VALVES**									
0050	Hot water, nonelectric, thermostatic									
0100	Radiator supply, 1/2" diameter	1 Stpi	24	.333	Ea.	37	23.50		60.50	75.50
0120	3/4" diameter		20	.400		41.50	28		69.50	87.50
0140	1" diameter		19	.421		121	29.50		150.50	177
0160	1-1/4" diameter		15	.533		104	37.50		141.50	171
0500	For low pressure steam, add					25%				
	23 21 20.70 Steam Traps									
0010	**STEAM TRAPS**									
0030	Cast iron body, threaded									
0040	Inverted bucket									
0050	1/2" pipe size	1 Stpi	12	.667	Ea.	170	47		217	257
0070	3/4" pipe size		10	.800		296	56.50		352.50	410
0100	1" pipe size		9	.889		455	62.50		517.50	595
0120	1-1/4" pipe size		8	1		690	70.50		760.50	865
1000	Float & thermostatic, 15 psi									
1010	3/4" pipe size	1 Stpi	16	.500	Ea.	202	35		237	275
1020	1" pipe size		15	.533		194	37.50		231.50	270

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		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
23 21 20.70 Steam Traps										
1040	1-1/2" pipe size	1 Stpi	9	.889	Ea.	340	62.50		402.50	470
1060	2" pipe size	↓	6	1.333	↓	975	94		1,069	1,225
23 21 20.76 Strainers, Y Type, Bronze Body										
0010	**STRAINERS, Y TYPE, BRONZE BODY**									
0050	Screwed, 125 lb., 1/4" pipe size	1 Stpi	24	.333	Ea.	48	23.50		71.50	87.50
0070	3/8" pipe size		24	.333		48	23.50		71.50	87.50
0100	1/2" pipe size		20	.400		46.50	28		74.50	93
0140	1" pipe size		17	.471		87.50	33		120.50	146
0160	1-1/2" pipe size		14	.571		187	40		227	266
0180	2" pipe size		13	.615		246	43.50		289.50	335
0182	3" pipe size	↓	12	.667	↓	1,650	47		1,697	1,875
0200	300 lb., 2-1/2" pipe size	Q-5	17	.941	Ea.	930	59.50		989.50	1,125
0220	3" pipe size		16	1		1,350	63.50		1,413.50	1,575
0240	4" pipe size	↓	15	1.067	↓	2,475	67.50		2,542.50	2,825
0500	For 300 lb. rating 1/4" thru 2", add					15%				
1000	Flanged, 150 lb., 1-1/2" pipe size	1 Stpi	11	.727	Ea.	575	51		626	710
1020	2" pipe size	"	8	1		705	70.50		775.50	880
1030	2-1/2" pipe size	Q-5	5	3.200		1,175	203		1,378	1,600
1040	3" pipe size		4.50	3.556		1,450	225		1,675	1,925
1060	4" pipe size	↓	3	5.333		2,250	340		2,590	2,950
1100	6" pipe size	Q-6	3	8		4,325	525		4,850	5,525
1106	8" pipe size	"	2.60	9.231	↓	4,700	605		5,305	6,050
1500	For 300 lb. rating, add					40%				
23 21 20.78 Strainers, Y Type, Iron Body										
0010	**STRAINERS, Y TYPE, IRON BODY**									
0050	Screwed, 250 lb., 1/4" pipe size	1 Stpi	20	.400	Ea.	19.90	28		47.90	64
0070	3/8" pipe size		20	.400		19.90	28		47.90	64
0100	1/2" pipe size		20	.400		19.90	28		47.90	64
0140	1" pipe size		16	.500		30.50	35		65.50	86
0160	1-1/2" pipe size		12	.667		58.50	47		105.50	135
0180	2" pipe size	↓	8	1		87.50	70.50		158	201
0220	3" pipe size	Q-5	11	1.455		390	92		482	565
0240	4" pipe size	"	5	3.200	↓	660	203		863	1,025
0500	For galvanized body, add					50%				
1000	Flanged, 125 lb., 1-1/2" pipe size	1 Stpi	11	.727	Ea.	273	51		324	375
1020	2" pipe size	"	8	1		194	70.50		264.50	320
1040	3" pipe size	Q-5	4.50	3.556		255	225		480	615
1060	4" pipe size	"	3	5.333		420	340		760	970
1080	5" pipe size	Q-6	3.40	7.059		500	465		965	1,250
1100	6" pipe size	"	3	8	↓	845	525		1,370	1,725
1500	For 250 lb. rating, add					20%				
2000	For galvanized body, add					50%				
2500	For steel body, add					40%				
23 21 20.88 Venturi Flow										
0010	**VENTURI FLOW**, Measuring device									
0050	1/2" diameter	1 Stpi	24	.333	Ea.	298	23.50		321.50	365
0120	1" diameter		19	.421		292	29.50		321.50	365
0140	1-1/4" diameter		15	.533		365	37.50		402.50	455
0160	1-1/2" diameter		13	.615		365	43.50		408.50	465
0180	2" diameter	↓	11	.727		390	51		441	505
0220	3" diameter	Q-5	14	1.143	↓	550	72.50		622.50	715
0240	4" diameter	Q-5	11	1.455	Ea.	820	92		912	1,025

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23 21 Hydronic Piping and Pumps

23 21 20 – Hydronic HVAC Piping Specialties

23 21 20.88 Venturi Flow	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0280 6" diameter	Q-6	3.50	6.857	Ea.	1,200	450		1,650	2,000
0500 For meter, add					2,500			2,500	2,725

23 21 23 – Hydronic Pumps

23 21 23.13 In-Line Centrifugal Hydronic Pumps

0010	**IN-LINE CENTRIFUGAL HYDRONIC PUMPS**								
0600	Bronze, sweat connections, 1/40 HP, in line								
0640	3/4" size	Q-1	16	1	Ea.	257	63	320	375
1000	Flange connection, 3/4" to 1-1/2" size								
1040	1/12 HP	Q-1	6	2.667	Ea.	685	168	853	1,000
1060	1/8 HP		6	2.667		1,250	168	1,418	1,625
1100	1/3 HP		6	2.667		1,400	168	1,568	1,800
1140	2" size, 1/6 HP		5	3.200		1,800	201	2,001	2,275
1180	2-1/2" size, 1/4 HP		5	3.200		2,425	201	2,626	2,950
2000	Cast iron, flange connection								
2040	3/4" to 1-1/2" size, in line, 1/12 HP	Q-1	6	2.667	Ea.	430	168	598	725
2100	1/3 HP		6	2.667		880	168	1,048	1,225
2101	Pumps, circulating, 3/4" to 1-1/2" size, 1/3 HP		6	2.667		1,050	168	1,218	1,400
2140	2" size, 1/6 HP		5	3.200		950	201	1,151	1,350
2180	2-1/2" size, 1/4 HP		5	3.200		1,425	201	1,626	1,875
2220	3" size, 1/4 HP		4	4		1,125	251	1,376	1,600
2600	For nonferrous impeller, add					3%			

23 21 29 – Automatic Condensate Pump Units

23 21 29.10 Condensate Removal Pump System

0010	**CONDENSATE REMOVAL PUMP SYSTEM**								
0020	Pump with 1 gal. ABS tank								
0100	115 V								
0120	1/50 HP, 200 GPH G	1 Stpi	12	.667	Ea.	196	47	243	285
0140	1/18 HP, 270 GPH G		10	.800		195	56.50	251.50	299
0160	1/5 HP, 450 GPH G		8	1		455	70.50	525.50	605
0200	230 V								
0240	1/18 HP, 270 GPH	1 Stpi	10	.800	Ea.	217	56.50	273.50	320
0260	1/5 HP, 450 GPH G	"	8	1	"	525	70.50	595.50	680

23 22 Steam and Condensate Piping and Pumps

23 22 13 – Steam and Condensate Heating Piping

23 22 13.23 Aboveground Steam and Condensate Piping

0010	**ABOVEGROUND STEAM AND CONDENSATE HEATING PIPING**								
0020	Condensate meter								
0100	500 lb. per hour	1 Stpi	14	.571	Ea.	4,200	40	4,240	4,650
0140	1500 lb. per hour	"	7	1.143	"	4,900	80.50	4,980.50	5,500

23 22 23 – Steam Condensate Pumps

23 22 23.10 Condensate Return System

0010	**CONDENSATE RETURN SYSTEM**								
2000	Simplex								
2010	With pump, motor, CI receiver, float switch								
2020	3/4 HP, 15 GPM	Q-1	1.80	8.889	Ea.	2,625	560	3,185	3,700
2100	Duplex								
2110	With 2 pumps and motors, CI receiver, float switch, alternator								
2120	3/4 HP, 15 GPM, 15 gal. CI receiver	Q-1	1.40	11.429	Ea.	6,425	720	7,145	8,150

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23 22 Steam and Condensate Piping and Pumps

23 22 23 – Steam Condensate Pumps

23 22 23.10 Condensate Return System	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2130 1 HP, 25 GPM	Q-1	1.20	13.333	Ea.	7,725	840		8,565	9,750
2140 1-1/2 HP, 45 GPM		1	16		9,025	1,000		10,025	11,400
2150 1-1/2 HP, 60 GPM		1	16		10,100	1,000		11,100	12,600

23 31 HVAC Ducts and Casings

23 31 13 – Metal Ducts

23 31 13.13 Rectangular Metal Ducts

0010	**RECTANGULAR METAL DUCTS**								
0020	Fabricated rectangular, includes fittings, joints, supports,								
0021	allowance for flexible connections and field sketches.								
0030	Does not include "as-built dwgs." or insulation.								
0031	NOTE: Fabrication and installation are combined								
0040	as LABOR cost. Approx. 25% fittings assumed.								
0042	Fabrication/Inst. is to commercial quality standards								
0043	(SMACNA or equiv.) for structure, sealing, leak testing, etc.								
0050	Add to labor for elevated installation								
0051	of fabricated ductwork								
0052	10' to 15' high					6%			
0053	15' to 20' high					12%			
0054	20' to 25' high					15%			
0055	25' to 30' high					21%			
0056	30' to 35' high					24%			
0057	35' to 40' high					30%			
0058	Over 40' high					33%			
0072	For duct insulation see Line 23 07 13.10 3000								
0100	Aluminum, alloy 3003-H14, under 100 lb.	Q-10	75	.320	Lb.	3.18	20	23.18	34
0110	100 to 500 lb.		80	.300		1.80	18.90	20.70	30.50
0120	500 to 1,000 lb.		95	.253		2.04	15.95	17.99	26
0140	1,000 to 2,000 lb.		120	.200		1.98	12.60	14.58	21
0150	2,000 to 5,000 lb.		130	.185		1.92	11.65	13.57	19.65
0160	Over 5,000 lb.	Q-10	145	.166	Lb.	1.98	10.45	12.43	17.90
0500	Galvanized steel, under 200 lb.		235	.102		.63	6.45	7.08	10.40
0520	200 to 500 lb.		245	.098		.70	6.20	6.90	10.05
0540	500 to 1,000 lb.		255	.094		.66	5.95	6.61	9.70
0560	1,000 to 2,000 lb.		265	.091		.68	5.70	6.38	9.35
0570	2,000 to 5,000 lb.		275	.087		.56	5.50	6.06	8.90
0580	Over 5,000 lb.		285	.084		.68	5.30	5.98	8.75
1000	Stainless steel, type 304, under 100 lb.		165	.145		5.20	9.15	14.35	19.50
1020	100 to 500 lb.		175	.137		4.17	8.65	12.82	17.65
1030	500 to 1,000 lb.		190	.126		3.03	7.95	10.98	15.35
1040	1,000 to 2,000 lb.		200	.120		2.70	7.55	10.25	14.35
1050	2,000 to 5,000 lb.		225	.107		2.33	6.75	9.08	12.70
1060	Over 5,000 lb.		235	.102		2.93	6.45	9.38	12.90
1100	For medium pressure ductwork, add						15%		
1200	For high pressure ductwork, add						40%		
1210	For welded ductwork, add						85%		
1220	For 30% fittings, add						11%		
1224	For 40% fittings, add						34%		
1228	For 50% fittings, add						56%		
1232	For 60% fittings, add						79%		
1236	For 70% fittings, add						101%		

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23 31 HVAC Ducts and Casings

23 31 13 – Metal Ducts

	23 31 13.13 Rectangular Metal Ducts	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1240	For 80% fittings, add				Lb.		124%			
1244	For 90% fittings, add						147%			
1248	For 100% fittings, add				↓		169%			
1252	Note: Fittings add includes time for detailing and installation.									
	23 31 13.19 Metal Duct Fittings									
0010	**METAL DUCT FITTINGS**									
2000	Fabrics for flexible connections, with metal edge	1 Shee	100	.080	L.F.	4.85	5.40		10.25	13.50
2100	Without metal edge	"	160	.050	"	3.94	3.38		7.32	9.45

23 31 16 – Nonmetal Ducts

	23 31 16.13 Fibrous-Glass Ducts									
0010	**FIBROUS-GLASS DUCTS**									
3490	Rigid fiberglass duct board, foil reinf. kraft facing									
3500	Rectangular, 1" thick, alum. faced, (FRK), std. weight	Q-10	350	.069	SF Surf	.93	4.32		5.25	7.50
	23 31 16.22 Duct Board									
0010	**DUCT BOARD**									
3800	Rigid, resin bonded fibrous glass, FSK									
3810	Temperature, bacteria and fungi resistant									
3820	1" thick	Q-14	150	.107	S.F.	1.81	6.05		7.86	11.25
3830	1-1/2" thick	Q-14	130	.123	S.F.	2.39	7		9.39	13.35
3840	2" thick	"	120	.133	"	4.12	7.55		11.67	16.15

23 33 Air Duct Accessories

23 33 13 – Dampers

	23 33 13.13 Volume-Control Dampers									
0010	**VOLUME-CONTROL DAMPERS**									
5990	Multi-blade dampers, opposed blade, 8" x 6"	1 Shee	24	.333	Ea.	44	22.50		66.50	82
5994	8" x 8"		22	.364		145	24.50		169.50	197
5996	10" x 10"		21	.381		124	25.50		149.50	175
6000	12" x 12"		21	.381		124	25.50		149.50	175
6020	12" x 18"		18	.444		189	30		219	253
6030	14" x 10"		20	.400		129	27		156	183
6031	14" x 14"		17	.471		148	32		180	210
6033	16" x 12"		17	.471		186	32		218	252
6035	16" x 16"		16	.500		148	34		182	213
6037	18" x 16"		15	.533		156	36		192	226
6038	18" x 18"		15	.533		186	36		222	260
6070	20" x 16"		14	.571		224	38.50		262.50	305
6072	20" x 20"		13	.615		186	41.50		227.50	268
6074	22" x 18"		14	.571		107	38.50		145.50	176
6076	24" x 16"		11	.727		233	49		282	330
6078	24" x 20"		8	1		198	67.50		265.50	320
6080	24" x 24"		8	1		214	67.50		281.50	335
6110	26" x 26"		6	1.333		248	90		338	410
6133	30" x 30"	Q-9	6.60	2.424		287	147		434	535
6135	32" x 32"		6.40	2.500		287	152		439	545
6180	48" x 36"		5.60	2.857		530	174		704	845
8000	Multi-blade dampers, parallel blade									
8100	8" x 8"	1 Shee	24	.333	Ea.	136	22.50		158.50	184
8140	16" x 10"		20	.400		142	27		169	197
8200	24" x 16"		11	.727		178	49		227	269

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23 33 Air Duct Accessories

23 33 13 – Dampers

	23 33 13.13 Volume-Control Dampers	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
8260	30" x 18"	1 Shee	7	1.143	Ea.	229	77		306	370
	23 33 13.16 Fire Dampers									
0010	**FIRE DAMPERS**									
3000	Fire damper, curtain type, 1-1/2 hr. rated, vertical, 6" x 6"	1 Shee	24	.333	Ea.	24	22.50		46.50	60.50
3020	8" x 6"		22	.364		32	24.50		56.50	72.50
3240	16" x 14"		18	.444		78	30		108	131
3400	24" x 20"		8	1		67.50	67.50		135	177
	23 33 13.28 Splitter Damper Assembly									
0010	**SPLITTER DAMPER ASSEMBLY**									
7000	Self locking, 1' rod	1 Shee	24	.333	Ea.	33.50	22.50		56	70.50
7020	3' rod	1 Shee	22	.364	Ea.	45	24.50		69.50	87
7040	4' rod		20	.400		50.50	27		77.50	96
7060	6' rod		18	.444		61.50	30		91.50	113

23 33 19 – Duct Silencers

	23 33 19.10 Duct Silencers									
0010	**DUCT SILENCERS**									
9000	Silencers, noise control for air flow, duct				MCFM	94.50			94.50	104

23 33 33 – Duct-Mounting Access Doors

	23 33 33.13 Duct Access Doors									
0010	**DUCT ACCESS DOORS**									
1000	Duct access door, insulated, 6" x 6"	1 Shee	14	.571	Ea.	20.50	38.50		59	80.50
1020	10" x 10"		11	.727		23.50	49		72.50	100
1040	12" x 12"		10	.800		23	54		77	107
1050	12" x 18"		9	.889		40.50	60		100.50	135
1070	18" x 18"		8	1		37	67.50		104.50	143
1074	24" x 18"		8	1		65.50	67.50		133	175

23 33 46 – Flexible Ducts

	23 33 46.10 Flexible Air Ducts									
0010	**FLEXIBLE AIR DUCTS**									
1280	Add to labor for elevated installation									
1282	of prefabricated (purchased) ductwork									
1283	10' to 15' high						10%			
1284	15' to 20' high						20%			
1285	20' to 25' high						25%			
1286	25' to 30' high						35%			
1287	30' to 35' high						40%			
1288	35' to 40' high						50%			
1289	Over 40' high						55%			
1300	Flexible, coated fiberglass fabric on corr. resist. metal helix									
1400	pressure to 12" (WG) UL-181									
1500	Noninsulated, 3" diameter	Q-9	400	.040	L.F.	1.42	2.43		3.85	5.20
1540	5" diameter		320	.050		1.65	3.04		4.69	6.40
1560	6" diameter		280	.057		1.94	3.47		5.41	7.40
1580	7" diameter		240	.067		2.19	4.05		6.24	8.50
1600	8" diameter		200	.080		2.45	4.86		7.31	10.05
1640	10" diameter		160	.100		3.12	6.10		9.22	12.60
1660	12" diameter		120	.133		3.67	8.10		11.77	16.25
1900	Insulated, 1" thick, PE jacket, 3" diameter G		380	.042		2.93	2.56		5.49	7.10
1910	4" diameter G		340	.047		3.44	2.86		6.30	8.10
1920	5" diameter G		300	.053		3.60	3.24		6.84	8.85

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23 33 Air Duct Accessories

23 33 46 – Flexible Ducts

	23 33 46.10 Flexible Air Ducts		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1940	6" diameter	G	Q-9	260	.062	L.F.	3.81	3.74		7.55	9.85
1960	7" diameter	G	Q-9	220	.073	L.F.	4.41	4.42		8.83	11.50
1980	8" diameter	G		180	.089		4.48	5.40		9.88	13.10
2020	10" diameter	G		140	.114		5.40	6.95		12.35	16.40
2040	12" diameter	G		100	.160		6.30	9.75		16.05	21.50

23 33 53 – Duct Liners

23 33 53.10 Duct Liner Board

0010	**DUCT LINER BOARD**										
3340	Board type fiberglass liner, FSK, 1-1/2 lb. density										
3344	1" thick	G	Q-14	150	.107	S.F.	1.08	6.05		7.13	10.45
3345	1-1/2" thick	G		130	.123		1.19	7		8.19	12
3346	2" thick	G		120	.133		1.37	7.55		8.92	13.10
3348	3" thick	G		110	.145		1.78	8.25		10.03	14.60
3350	4" thick	G		100	.160		2.17	9.10		11.27	16.30
3356	3 lb. density, 1" thick	G		150	.107		2.76	6.05		8.81	12.30
3358	1-1/2" thick	G		130	.123		3.49	7		10.49	14.55
3360	2" thick	G		120	.133		4.10	7.55		11.65	16.10
3362	2-1/2" thick	G		110	.145		2.49	8.25		10.74	15.40
3364	3" thick	G		100	.160		2.85	9.10		11.95	17.05
3366	4" thick	G		90	.178		3.57	10.10		13.67	19.40
3370	6 lb. density, 1" thick	G		140	.114		1.94	6.50		8.44	12.05
3374	1-1/2" thick	G		120	.133		2.58	7.55		10.13	14.45
3378	2" thick	G		100	.160		3.26	9.10		12.36	17.50
3490	Board type, fiberglass liner, 3 lb. density										
3680	No finish										
3700	1" thick	G	Q-14	170	.094	S.F.	.77	5.35		6.12	9
3710	1-1/2" thick	G		140	.114		1.15	6.50		7.65	11.15
3720	2" thick	G		130	.123		1.51	7		8.51	12.35
3940	Board type, non-fibrous foam										
3950	Temperature, bacteria and fungi resistant										
3960	1" thick	G	Q-14	150	.107	S.F.	3.05	6.05		9.10	12.60
3970	1-1/2" thick	G		130	.123		5.30	7		12.30	16.55
3980	2" thick	G		120	.133		4.25	7.55		11.80	16.30

23 34 HVAC Fans

23 34 13 – Axial HVAC Fans

23 34 13.10 Axial Flow HVAC Fans

0010	**AXIAL FLOW HVAC FANS**										
0020	Air conditioning and process air handling										
1500	Vaneaxial, low pressure, 2,000 CFM, 1/2 HP		Q-20	3.60	5.556	Ea.	2,450	345		2,795	3,225
1520	4,000 CFM, 1 HP			3.20	6.250		2,550	385		2,935	3,400
1540	8,000 CFM, 2 HP			2.80	7.143		3,450	440		3,890	4,475

23 34 14 – Blower HVAC Fans

23 34 14.10 Blower Type HVAC Fans

0010	**BLOWER TYPE HVAC FANS**										
2500	Ceiling fan, right angle, extra quiet, 0.10" S.P.										
2520	95 CFM		Q-20	20	1	Ea.	283	62		345	405
2540	210 CFM			19	1.053		335	65		400	470
2560	385 CFM			18	1.111		425	69		494	570
2580	885 CFM			16	1.250		835	77.50		912.50	1,025

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23 34 14 – Blower HVAC Fans

	23 34 14.10 Blower Type HVAC Fans	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2600	1,650 CFM	Q-20	13	1.538	Ea.	1,150	95		1,245	1,425
2620	2,960 CFM	↓	11	1.818		1,550	113		1,663	1,875
2640	For wall or roof cap, add	1 Shee	16	.500		283	34		317	360
2660	For straight thru fan, add					10%				
2680	For speed control switch, add	1 Elec	16	.500	↓	154	33		187	219
7500	Utility set, steel construction, pedestal, 1/4" S.P.									
7520	Direct drive, 150 CFM, 1/8 HP	Q-20	6.40	3.125	Ea.	940	193		1,133	1,325
7540	485 CFM, 1/6 HP		5.80	3.448		1,150	213		1,363	1,575
7560	1,950 CFM, 1/2 HP		4.80	4.167		1,375	258		1,633	1,900
7580	2,410 CFM, 3/4 HP		4.40	4.545		2,775	281		3,056	3,500
7600	3,328 CFM, 1-1/2 HP	↓	3	6.667	↓	2,750	415		3,165	3,650
7680	V-belt drive, drive cover, 3 phase									
7700	800 CFM, 1/4 HP	Q-20	6	3.333	Ea.	1,175	206		1,381	1,600
7720	1,300 CFM, 1/3 HP		5	4		1,250	248		1,498	1,750
7740	2,000 CFM, 1 HP		4.60	4.348		1,475	269		1,744	2,025
7760	2,900 CFM, 3/4 HP	↓	4.20	4.762	↓	1,975	295		2,270	2,625

23 34 16 – Centrifugal HVAC Fans

23 34 16.10 Centrifugal Type HVAC Fans

0010	**CENTRIFUGAL TYPE HVAC FANS**									
0200	In-line centrifugal, supply/exhaust booster									
0220	aluminum wheel/hub, disconnect switch, 1/4" S.P.									
0240	500 CFM, 10" diameter connection	Q-20	3	6.667	Ea.	1,625	415		2,040	2,400
0260	1,380 CFM, 12" diameter connection		2	10		1,900	620		2,520	3,025
0280	1,520 CFM, 16" diameter connection		2	10		1,750	620		2,370	2,850
0300	2,560 CFM, 18" diameter connection		1	20		1,950	1,250		3,200	4,000
0320	3,480 CFM, 20" diameter connection		.80	25		2,250	1,550		3,800	4,775
0326	5,080 CFM, 20" diameter connection	↓	.75	26.667	↓	2,425	1,650		4,075	5,125
3500	Centrifugal, airfoil, motor and drive, complete									
3520	1,000 CFM, 1/2 HP	Q-20	2.50	8	Ea.	2,150	495		2,645	3,100
3540	2,000 CFM, 1 HP	"	2	10	"	2,300	620		2,920	3,475
3560	4,000 CFM, 3 HP	Q-20	1.80	11.111	Ea.	3,025	690		3,715	4,350
3580	8,000 CFM, 7-1/2 HP		1.40	14.286		4,600	885		5,485	6,375
3600	12,000 CFM, 10 HP	↓	1	20	↓	6,250	1,250		7,500	8,725
5000	Utility set, centrifugal, V belt drive, motor									
5020	1/4" S.P., 1,200 CFM, 1/4 HP	Q-20	6	3.333	Ea.	2,325	206		2,531	2,875
5040	1,520 CFM, 1/3 HP		5	4		2,675	248		2,923	3,325
5060	1,850 CFM, 1/2 HP		4	5		2,675	310		2,985	3,425
5080	2,180 CFM, 3/4 HP		3	6.667		3,050	415		3,465	4,000
5100	1/2" S.P., 3,600 CFM, 1 HP		2	10		3,050	620		3,670	4,300
5120	4,250 CFM, 1-1/2 HP		1.60	12.500		4,725	775		5,500	6,350
5140	4,800 CFM, 2 HP	↓	1.40	14.286	↓	5,475	885		6,360	7,350
7000	Roof exhauster, centrifugal, aluminum housing, 12" galvanized									
7020	curb, bird screen, back draft damper, 1/4" S.P.									
7100	Direct drive, 320 CFM, 11" sq. damper	Q-20	7	2.857	Ea.	770	177		947	1,100
7120	600 CFM, 11" sq. damper		6	3.333		985	206		1,191	1,375
7140	815 CFM, 13" sq. damper		5	4		985	248		1,233	1,450
7160	1,450 CFM, 13" sq. damper		4.20	4.762		1,350	295		1,645	1,950
7180	2,050 CFM, 16" sq. damper		4	5		2,000	310		2,310	2,650
7200	V-belt drive, 1,650 CFM, 12" sq. damper		6	3.333		1,275	206		1,481	1,700
7220	2,750 CFM, 21" sq. damper		5	4		152	248		400	535
7230	3,500 CFM, 21" sq. damper		4.50	4.444		1,825	275		2,100	2,425
7240	4,910 CFM, 23" sq. damper		4	5		2,075	310		2,385	2,750

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23 34 16 – Centrifugal HVAC Fans

	23 34 16.10 Centrifugal Type HVAC Fans	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
7260	8,525 CFM, 28" sq. damper	Q-20	3	6.667	Ea.	2,850	415		3,265	3,775
7280	13,760 CFM, 35" sq. damper		2	10		3,800	620		4,420	5,100
7300	20,558 CFM, 43" sq. damper		1	20		8,075	1,250		9,325	10,700
7320	For 2 speed winding, add					15%				
7340	For explosion proof motor, add					770			770	850
7360	For belt driven, top discharge, add					15%				
8500	Wall exhausters, centrifugal, auto damper, 1/8" S.P.									
8520	Direct drive, 610 CFM, 1/20 HP	Q-20	14	1.429	Ea.	1,275	88.50		1,363.50	1,525
8540	796 CFM, 1/12 HP		13	1.538		1,525	95		1,620	1,850
8560	822 CFM, 1/6 HP		12	1.667		1,200	103		1,303	1,475
8580	1,320 CFM, 1/4 HP		12	1.667		1,150	103		1,253	1,400
9500	V-belt drive, 3 phase									
9520	2,800 CFM, 1/4 HP	Q-20	9	2.222	Ea.	2,150	138		2,288	2,550
9540	3,740 CFM, 1/2 HP	"	8	2.500	"	2,225	155		2,380	2,675

23 34 23 – HVAC Power Ventilators

23 34 23.10 HVAC Power Circulators and Ventilators

0010	**HVAC POWER CIRCULATORS AND VENTILATORS**									
3000	Paddle blade air circulator, 3 speed switch									
3020	42", 5,000 CFM high, 3,000 CFM low G	1 Elec	2.40	3.333	Ea.	168	221		389	515
3040	52", 6,500 CFM high, 4,000 CFM low G	"	2.20	3.636	"	111	241		352	480
3100	For antique white motor, same cost									
3200	For brass plated motor, same cost									
3300	For light adaptor kit, add G				Ea.	41			41	45
6000	Propeller exhaust, wall shutter									
6020	Direct drive, one speed, 0.075" S.P.									
6100	653 CFM, 1/30 HP	Q-20	10	2	Ea.	300	124		424	515
6120	1,033 CFM, 1/20 HP		9	2.222		260	138		398	495
6140	1,323 CFM, 1/15 HP		8	2.500		490	155		645	770
6300	V-belt drive, 3 phase									
6320	6,175 CFM, 3/4 HP	Q-20	5	4	Ea.	1,125	248		1,373	1,600
6340	7,500 CFM, 3/4 HP		5	4		1,175	248		1,423	1,650
6360	10,100 CFM, 1 HP		4.50	4.444		1,350	275		1,625	1,925
6380	14,300 CFM, 1-1/2 HP		4	5		1,650	310		1,960	2,300
6650	Residential, bath exhaust, grille, back draft damper									
6660	50 CFM	Q-20	24	.833	Ea.	47	51.50		98.50	129
6670	110 CFM		22	.909		94	56.50		150.50	189
6680	Light combination, squirrel cage, 100 watt, 70 CFM		24	.833		120	51.50		171.50	210
6700	Light/heater combination, ceiling mounted									
6710	70 CFM, 1,450 watt	Q-20	24	.833	Ea.	213	51.50		264.50	315
6800	Heater combination, recessed, 70 CFM		24	.833		66.50	51.50		118	151
6820	With 2 infrared bulbs		23	.870		94.50	54		148.50	185
6900	Kitchen exhaust, grille, complete, 160 CFM		22	.909		136	56.50		192.50	235
6910	180 CFM		20	1		103	62		165	207
6920	270 CFM		18	1.111		201	69		270	325
6930	350 CFM		16	1.250		162	77.50		239.50	294
6940	Residential roof jacks and wall caps									
6944	Wall cap with back draft damper									
6946	3" & 4" diam. round duct	1 Shee	11	.727	Ea.	19.40	49		68.40	95.50
6948	6" diam. round duct	"	11	.727	"	53	49		102	133
6958	Roof jack with bird screen and back draft damper									
6960	3" & 4" diam. round duct	1 Shee	11	.727	Ea.	24.50	49		73.50	101
6962	3-1/4" x 10" rectangular duct	1 Shee	10	.800	Ea.	38	54		92	124

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23 34 23 – HVAC Power Ventilators

	23 34 23.10 HVAC Power Circulators and Ventilators	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
6980	Transition									
6982	3-1/4" x 10" to 6" diam. round	1 Shee	20	.400	Ea.	25	27		52	68

23 34 33 – Air Curtains

23 34 33.10 Air Barrier Curtains

0010	**AIR BARRIER CURTAINS**, Incl. motor starters, transformers,									
0050	and door switches									
2450	Conveyor openings or service windows									
3000	Service window, 5' high x 25" wide	2 Shee	5	3.200	Ea.	360	216		576	720
3100	Environmental separation									
3110	Door heights up to 8', low profile, super quiet									
3120	Unheated, variable speed									
3130	36" wide	2 Shee	4	4	Ea.	780	270		1,050	1,250
3134	42" wide		3.80	4.211		810	284		1,094	1,325
3138	48" wide		3.60	4.444		830	300		1,130	1,375
3142	60" wide		3.40	4.706		860	320		1,180	1,425
3146	72" wide	Q-3	4.60	6.957		1,025	460		1,485	1,825
3150	96" wide		4.40	7.273		1,475	485		1,960	2,350
3154	120" wide		4.20	7.619		1,575	505		2,080	2,475
3158	144" wide		4	8		1,950	530		2,480	2,925
3200	Door heights up to 10'									
3210	Unheated									
3230	36" wide	2 Shee	3.80	4.211	Ea.	880	284		1,164	1,400
3234	42" wide		3.60	4.444		905	300		1,205	1,450
3238	48" wide		3.40	4.706		985	320		1,305	1,550
3242	60" wide		3.20	5		1,175	340		1,515	1,800
3246	72" wide	Q-3	4.40	7.273		1,550	485		2,035	2,450
3250	96" wide		4.20	7.619		1,925	505		2,430	2,850
3254	120" wide		4	8		2,350	530		2,880	3,375
3258	144" wide		3.80	8.421		3,025	560		3,585	4,150
3300	Door heights up to 12'									
3310	Unheated									
3334	42" wide	2 Shee	3.40	4.706	Ea.	1,200	320		1,520	1,800
3338	48" wide		3.20	5		1,250	340		1,590	1,900
3342	60" wide		3	5.333		1,225	360		1,585	1,900
3346	72" wide	Q-3	4.20	7.619		2,275	505		2,780	3,250
3350	96" wide		4	8		2,325	530		2,855	3,350
3354	120" wide		3.80	8.421		2,675	560		3,235	3,775
3358	144" wide		3.60	8.889		3,075	590		3,665	4,250
3400	Door heights up to 16'									
3410	Unheated									
3438	48" wide	2 Shee	3	5.333	Ea.	1,500	360		1,860	2,200
3442	60" wide	"	2.80	5.714		1,575	385		1,960	2,300
3446	72" wide	Q-3	3.80	8.421		2,875	560		3,435	4,000
3450	96" wide		3.60	8.889		2,725	590		3,315	3,875
3454	120" wide		3.40	9.412		3,775	625		4,400	5,100
3458	144" wide		3.20	10		3,850	665		4,515	5,225
3470	Heated, electric									
3474	48" wide	2 Shee	2.90	5.517	Ea.	2,625	375		3,000	3,425
3478	60" wide	"	2.70	5.926		2,675	400		3,075	3,550
3482	72" wide	Q-3	3.70	8.649		4,450	575		5,025	5,725
3486	96" wide		3.50	9.143		4,450	605		5,055	5,775
3490	120" wide		3.30	9.697		5,050	645		5,695	6,500

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23 34 HVAC Fans

23 34 33 – Air Curtains

	23 34 33.10 Air Barrier Curtains	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
3494	144" wide	Q-3	3.10	10.323	Ea.	5,925	685		6,610	7,525
	23 34 39.10 Powerfoil									
0010	**POWERFOIL**									
2301	Powerfoil, 8' diameter	R-1A	2.40	6.667	Ea.	8,875	395		9,270	10,300
2302	10'		2.40	6.667		8,975	395		9,370	10,500
2303	12'		2.40	6.667		9,075	395		9,470	10,600
2304	14'		2.40	6.667		9,175	395		9,570	10,700
2305	16'		2	8		9,275	475		9,750	10,900
2306	18'		2	8		9,375	475		9,850	11,000
2307	20'		2	8		9,500	475		9,975	11,100
2308	24'		2	8		9,700	475		10,175	11,400
2400	Powerfoil with Hybrid Airfoil									
2401	12'	R-1A	2	8	Ea.	9,600	475		10,075	11,200
2402	14'		2	8		9,700	475		10,175	11,400
2403	16'		1.75	9.143		9,800	545		10,345	11,600
2404	18'		1.75	9.143		9,900	545		10,445	11,700
2405	20'		1.75	9.143		10,000	545		10,545	11,800
2406	24'		1.75	9.143		10,200	545		10,745	12,100

23 37 Air Outlets and Inlets

23 37 13 – Diffusers, Registers, and Grilles

	23 37 13.10 Diffusers									
0010	**DIFFUSERS**, Aluminum, opposed blade damper unless noted									
0100	Ceiling, linear, also for sidewall									
0500	Perforated, 24" x 24" lay-in panel size, 6" x 6"	1 Shee	16	.500	Ea.	187	34		221	257
0520	8" x 8"		15	.533		96.50	36		132.50	161
0530	9" x 9"		14	.571		199	38.50		237.50	277
0540	10" x 10"		14	.571		199	38.50		237.50	277
0560	12" x 12"		12	.667		208	45		253	296
0590	16" x 16"		11	.727		221	49		270	315
0600	18" x 18"		10	.800		237	54		291	345
0610	20" x 20"		10	.800		254	54		308	360
0620	24" x 24"		9	.889		298	60		358	420
1000	Rectangular, 1 to 4 way blow, 6" x 6"		16	.500		45.50	34		79.50	101
1010	8" x 8"		15	.533		62.50	36		98.50	123
1014	9" x 9"		15	.533		53	36		89	113
1016	10" x 10"		15	.533		92	36		128	156
1020	12" x 6"		15	.533		77	36		113	139
1040	12" x 9"		14	.571		82	38.50		120.50	148
1060	12" x 12"		12	.667		76.50	45		121.50	152
1070	14" x 6"		13	.615		83.50	41.50		125	155
1074	14" x 14"		12	.667		136	45		181	218
1150	18" x 18"		9	.889		131	60		191	236
1160	21" x 21"		8	1		242	67.50		309.50	370
1170	24" x 12"		10	.800		182	54		236	282
1500	Round, butterfly damper, steel, diffuser size, 6" diameter		18	.444		14.90	30		44.90	61.50
1520	8" diameter		16	.500		15.95	34		49.95	68.50
1540	10" diameter		14	.571		19.80	38.50		58.30	80
1560	12" diameter		12	.667		27	45		72	97.50
1580	14" diameter		10	.800		34.50	54		88.50	120
2000	T-bar mounting, 24" x 24" lay-in frame, 6" x 6"		16	.500		72	34		106	131

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23 37 13 – Diffusers, Registers, and Grilles

	23 37 13.10 Diffusers	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2020	8" x 8"	1 Shee	14	.571	Ea.	72.50	38.50		111	138
2040	12" x 12"		12	.667		88.50	45		133.50	166
2060	16" x 16"		11	.727		114	49		163	199
2080	18" x 18"		10	.800		112	54		166	205
6000	For steel diffusers instead of aluminum, deduct					10%				

23 37 13.30 Grilles

0010	**GRILLES**									
0020	Aluminum, unless noted otherwise									
1000	Air return, steel, 6" x 6"	1 Shee	26	.308	Ea.	24	21		45	58
1020	10" x 6"		24	.333		24	22.50		46.50	60.50
1080	16" x 8"		22	.364		35	24.50		59.50	75.50
1100	12" x 12"		22	.364		35	24.50		59.50	75.50
1120	24" x 12"		18	.444		45.50	30		75.50	95
1220	24" x 18"		16	.500		56.50	34		90.50	114
1280	36" x 24"		14	.571		97.50	38.50		136	165
3000	Filter grille with filter, 12" x 12"		24	.333		69.50	22.50		92	111
3020	18" x 12"	1 Shee	20	.400	Ea.	86.50	27		113.50	136
3040	24" x 18"		18	.444		112	30		142	168
3060	24" x 24"		16	.500		135	34		169	199
6000	For steel grilles instead of aluminum in above, deduct					10%				

23 37 13.60 Registers

0010	**REGISTERS**									
0980	Air supply									
1000	Ceiling/wall, O.B. damper, anodized aluminum									
1010	One or two way deflection, adj. curved face bars									
1020	8" x 4"	1 Shee	26	.308	Ea.	32.50	21		53.50	67.50
1120	12" x 12"		18	.444		56.50	30		86.50	107
1240	20" x 6"		18	.444		48	30		78	97.50
1340	24" x 8"		13	.615		64.50	41.50		106	134
1350	24" x 18"		12	.667		119	45		164	199
2700	Above registers in steel instead of aluminum, deduct					10%				
4000	Floor, toe operated damper, enameled steel									
4020	4" x 8"	1 Shee	32	.250	Ea.	20	16.90		36.90	47.50
4100	8" x 10"		22	.364		24.50	24.50		49	64
4140	10" x 10"		20	.400		29.50	27		56.50	73
4220	14" x 14"		16	.500		73	34		107	132
4240	14" x 20"		15	.533		69	36		105	130
4980	Air return									
5000	Ceiling or wall, fixed 45° face blades									
5010	Adjustable O.B. damper, anodized aluminum									
5020	4" x 8"	1 Shee	26	.308	Ea.	30	21		51	64.50
5060	6" x 10"		19	.421		36	28.50		64.50	82.50
5280	24" x 24"		11	.727		165	49		214	255
5300	24" x 36"		8	1		262	67.50		329.50	390
6000	For steel construction instead of aluminum, deduct					10%				

23 37 15 – Air Outlets and Inlets, HVAC Louvers

23 37 15.40 HVAC Louvers

0010	**HVAC LOUVERS**									
0100	Aluminum, extruded, with screen, mill finish									
1002	Brick vent, see also Section 04 05 23.19									
1100	Standard, 4" deep, 8" wide, 5" high	1 Shee	24	.333	Ea.	38.50	22.50		61	76.50
1200	Modular, 4" deep, 7-3/4" wide, 5" high		24	.333		40	22.50		62.50	78

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23 37 15 – Air Outlets and Inlets, HVAC Louvers

23 37 15.40 HVAC Louvers	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1300 Speed brick, 4" deep, 11-5/8" wide, 3-7/8" high	1 Shee	24	.333	Ea.	40	22.50		62.50	78
1400 Fuel oil brick, 4" deep, 8" wide, 5" high	↓	24	.333	↓	68.50	22.50		91	110
2000 Cooling tower and mechanical equip., screens, light weight	1 Shee	40	.200	S.F.	17.15	13.50		30.65	39.50
2020 Standard weight		35	.229		45.50	15.45		60.95	73.50
2500 Dual combination, automatic, intake or exhaust		20	.400		62.50	27		89.50	109
2520 Manual operation		20	.400		46.50	27		73.50	91.50
2540 Electric or pneumatic operation		20	.400	↓	46.50	27		73.50	91.50
2560 Motor, for electric or pneumatic	↓	14	.571	Ea.	535	38.50		573.50	650
3000 Fixed blade, continuous line									
3100 Mullion type, stormproof	1 Shee	28	.286	S.F.	46.50	19.30		65.80	80
3200 Stormproof		28	.286		46.50	19.30		65.80	80
3300 Vertical line	↓	28	.286	↓	55	19.30		74.30	89.50
3500 For damper to use with above, add					50%	30%			
3520 Motor, for damper, electric or pneumatic	1 Shee	14	.571	Ea.	535	38.50		573.50	650
4000 Operating, 45°, manual, electric or pneumatic		24	.333	S.F.	62	22.50		84.50	103
4100 Motor, for electric or pneumatic		14	.571	Ea.	535	38.50		573.50	650
4200 Penthouse, roof		56	.143	S.F.	27.50	9.65		37.15	44.50
4300 Walls		40	.200		64.50	13.50		78	91.50
5000 Thinline, under 4" thick, fixed blade	↓	40	.200	↓	26.50	13.50		40	50
5010 Finishes, applied by mfr. at additional cost, available in colors									
5020 Prime coat only, add				S.F.	3.68			3.68	4.05
5040 Baked enamel finish coating, add					6.80			6.80	7.45
5060 Anodized finish, add					7.35			7.35	8.10
5080 Duranodic finish, add					13.35			13.35	14.70
5100 Fluoropolymer finish coating, add					21			21	23
9980 For small orders (under 10 pieces), add				↓	25%				

23 37 23 – HVAC Gravity Ventilators

23 37 23.10 HVAC Gravity Air Ventilators

0010 **HVAC GRAVITY AIR VENTILATORS**, Includes base									
1280 Rotary ventilators, wind driven, galvanized									
1300 4" neck diameter	Q-9	20	.800	Ea.	69	48.50		117.50	150
1340 6" neck diameter		16	1		69	61		130	168
1400 12" neck diameter		10	1.600		97.50	97.50		195	254
1500 24" neck diameter		8	2		435	122		557	660
1540 36" neck diameter	↓	6	2.667	↓	615	162		777	920
2000 Stationary, gravity, syphon, galvanized									
2160 6" neck diameter, 66 CFM	Q-9	16	1	Ea.	48.50	61		109.50	145
2240 12" neck diameter, 160 CFM	"	10	1.600	"	114	97.50		211.50	272
2340 24" neck diameter, 900 CFM	Q-9	8	2	Ea.	385	122		507	610
2380 36" neck diameter, 2,000 CFM		6	2.667		495	162		657	790
4200 Stationary mushroom, aluminum, 16" orifice diameter		10	1.600		770	97.50		867.50	990
4220 26" orifice diameter		6.15	2.602		1,125	158		1,283	1,500
4230 30" orifice diameter		5.71	2.802		1,650	170		1,820	2,075
4240 38" orifice diameter		5	3.200		2,375	195		2,570	2,925
4250 42" orifice diameter		4.70	3.404		3,150	207		3,357	3,775
4260 50" orifice diameter	↓	4.44	3.604	↓	3,750	219		3,969	4,450
5000 Relief vent									
5500 Rectangular, aluminum, galvanized curb									
5510 intake/exhaust, 0.033" SP									
5580 500 CFM, 12" x 12"	Q-9	8.60	1.860	Ea.	850	113		963	1,100
5600 600 CFM, 12" x 16"		8	2		950	122		1,072	1,225
5640 1,000 CFM, 12" x 24"	↓	6.60	2.424	↓	1,050	147		1,197	1,400

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23 37 Air Outlets and Inlets

23 37 23 – HVAC Gravity Ventilators

23 37 23.10 HVAC Gravity Air Ventilators	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
5680 3,000 CFM, 20" x 42"	Q-9	4	4	Ea.	1,850	243		2,093	2,425
5880 Size is throat area, volume is at 500 fpm									
7000 Note: sizes based on exhaust. Intake, with 0.125" SP									
7100 loss, approximately twice listed capacity.									

23 38 Ventilation Hoods

23 38 13 – Commercial-Kitchen Hoods

23 38 13.10 Hood and Ventilation Equipment

0010	**HOOD AND VENTILATION EQUIPMENT**								
2970	Exhaust hood, sst, gutter on all sides, 4' x 4' x 2'	1 Carp	1.80	4.444	Ea.	2,325	250	2,575	2,925
2980	4' x 4' x 7'	"	1.60	5	"	6,775	282	7,057	7,875

23 41 Particulate Air Filtration

23 41 13 – Panel Air Filters

23 41 13.10 Panel Type Air Filters

0010	**PANEL TYPE AIR FILTERS**								
2950	Mechanical media filtration units								
3000	High efficiency type, with frame, non-supported G				MCFM	32.50		32.50	36
3100	Supported type G				"	47		47	52
5500	Throwaway glass or paper media type, 12" x 36" x 1"				Ea.	2.29		2.29	2.52

23 41 16 – Renewable-Media Air Filters

23 41 16.10 Disposable Media Air Filters

0010	**DISPOSABLE MEDIA AIR FILTERS**								
5000	Renewable disposable roll				C.S.F.	5.10		5.10	5.60

23 41 19 – Washable Air Filters

23 41 19.10 Permanent Air Filters

0010	**PERMANENT AIR FILTERS**								
4500	Permanent washable G				MCFM	24.50		24.50	26.50

23 41 23 – Extended Surface Filters

23 41 23.10 Expanded Surface Filters

0010	**EXPANDED SURFACE FILTERS**								
4000	Medium efficiency, extended surface G				MCFM	5.70		5.70	6.30

23 42 Gas-Phase Air Filtration

23 42 13 – Activated-Carbon Air Filtration

23 42 13.10 Charcoal Type Air Filtration

0010	**CHARCOAL TYPE AIR FILTRATION**								
0050	Activated charcoal type, full flow				MCFM	635		635	700
0060	Full flow, impregnated media 12" deep					219		219	241
0070	HEPA filter & frame for field erection					490		490	540
0080	HEPA filter-diffuser, ceiling install.				↓	320		320	355

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23 43 Electronic Air Cleaners

23 43 13 – Washable Electronic Air Cleaners

23 43 13.10 Electronic Air Cleaners	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **ELECTRONIC AIR CLEANERS**									
2000 Electronic air cleaner, duct mounted									
2150 1,000 CFM	1 Shee	4	2	Ea.	430	135		565	680
2200 1,200 CFM		3.80	2.105		555	142		697	825
2250 1,400 CFM		3.60	2.222		565	150		715	850

23 51 Breechings, Chimneys, and Stacks

23 51 13 – Draft Control Devices

23 51 13.13 Draft-Induction Fans

0010 **DRAFT-INDUCTION FANS**									
1000 Breeching installation									
1800 Hot gas, 600°F, variable pitch pulley and motor									
1860 8" diam. inlet, 1/4 HP, 1 phase, 1,120 CFM	Q-9	4	4	Ea.	3,200	243		3,443	3,900
1900 12" diam. inlet, 3/4 HP, 3 phase, 2,960 CFM		3	5.333		4,375	325		4,700	5,325
1980 24" diam. inlet, 7-1/2 HP, 3 phase, 17,760 CFM		.80	20		12,800	1,225		14,025	15,800
2300 For multi-blade damper at fan inlet, add					20%				

23 51 23 – Gas Vents

23 51 23.10 Gas Chimney Vents

0010 **GAS CHIMNEY VENTS**, Prefab metal, UL listed									
0020 Gas, double wall, galvanized steel									
0080 3" diameter	Q-9	72	.222	V.L.F.	8.45	13.50		21.95	30
0100 4" diameter		68	.235		10.45	14.30		24.75	33
0120 5" diameter		64	.250		11.85	15.20		27.05	36
0140 6" diameter		60	.267		14.10	16.20		30.30	40
0160 7" diameter		56	.286		27	17.35		44.35	55.50
0180 8" diameter	Q-9	52	.308	V.L.F.	29	18.70		47.70	59.50
0200 10" diameter		48	.333		55	20.50		75.50	91
0220 12" diameter		44	.364		65.50	22		87.50	106
0260 16" diameter		40	.400		157	24.50		181.50	210
0300 20" diameter	Q-10	36	.667		228	42		270	315

23 51 26 – All-Fuel Vent Chimneys

23 51 26.30 All-Fuel Vent Chimneys, Double Wall, St. Stl.

0010 **ALL-FUEL VENT CHIMNEYS, DOUBLE WALL, STAINLESS STEEL**									
7780 All fuel, pressure tight, double wall, 4" insulation, UL listed, 1,400°F.									
7790 304 stainless steel liner, aluminized steel outer jacket									
7800 6" diameter	Q-9	60	.267	V.L.F.	58	16.20		74.20	88.50
7804 8" diameter		52	.308		84.50	18.70		103.20	121
7806 10" diameter		48	.333		96.50	20.50		117	137
7808 12" diameter		44	.364		112	22		134	158
7810 14" diameter		42	.381		126	23		149	174
7880 For 316 stainless steel liner, add				L.F.	30%				

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23 52 Heating Boilers

23 52 13 – Electric Boilers

23 52 13.10 Electric Boilers, ASME	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **ELECTRIC BOILERS, ASME**, Standard controls and trim									
1000 Steam, 6 KW, 20.5 MBH	Q-19	1.20	20	Ea.	4,500	1,275		5,775	6,900
1160 60 KW, 205 MBH		1	24		7,150	1,550		8,700	10,200
1220 112 KW, 382 MBH		.75	32		9,900	2,050		11,950	14,000
1280 222 KW, 758 MBH		.55	43.636		24,900	2,800		27,700	31,600
1380 518 KW, 1,768 MBH	Q-21	.36	88.889		32,600	5,850		38,450	44,500
1480 814 KW, 2,778 MBH		.25	128		45,800	8,425		54,225	63,000
1600 2,340 KW, 7,984 MBH		.16	200		103,000	13,200		116,200	132,500
2000 Hot water, 7.5 KW, 25.6 MBH	Q-19	1.30	18.462		5,150	1,175		6,325	7,425
2100 90 KW, 307 MBH		1.10	21.818		6,150	1,400		7,550	8,850
2220 296 KW, 1,010 MBH		.55	43.636		16,200	2,800		19,000	22,100
2500 1,036 KW, 3,536 MBH	Q-21	.34	94.118		36,400	6,200		42,600	49,300
2680 2,400 KW, 8,191 MBH		.25	128		72,500	8,425		80,925	92,500
2820 3,600 KW, 12,283 MBH		.16	200		100,000	13,200		113,200	129,500

23 52 23 – Cast-Iron Boilers

23 52 23.20 Gas-Fired Boilers

0010 **GAS-FIRED BOILERS**, Natural or propane, standard controls, packaged									
1000 Cast iron, with insulated jacket									
2000 Steam, gross output, 81 MBH	Q-7	1.40	22.857	Ea.	3,150	1,525		4,675	5,725
2080 203 MBH		.90	35.556		4,125	2,375		6,500	8,100
2180 400 MBH		.56	56.838		5,800	3,800		9,600	12,100
2240 765 MBH	Q-7	.43	74.419	Ea.	11,600	4,975		16,575	20,200
2320 1,875 MBH		.30	107		29,000	7,150		36,150	42,600
2440 4,720 MBH		.15	208		61,500	13,900		75,400	88,000
2480 6,100 MBH		.13	246		87,000	16,500		103,500	120,000
2540 6,970 MBH		.10	320		96,500	21,400		117,900	138,500
3000 Hot water, gross output, 80 MBH		1.46	21.918		2,850	1,475		4,325	5,350
3140 320 MBH		.80	40		4,225	2,675		6,900	8,650
3260 1,088 MBH		.40	80		14,700	5,350		20,050	24,100
3360 2,856 MBH		.20	160		30,700	10,700		41,400	49,800
3380 3,264 MBH		.18	180		32,600	12,000		44,600	54,000
3480 6,100 MBH		.13	250		119,000	16,700		135,700	156,000
3540 6,970 MBH		.09	360		129,000	24,100		153,100	178,000
7000 For tankless water heater, add					10%				

23 52 23.30 Gas/Oil Fired Boilers

0010 **GAS/OIL FIRED BOILERS**, Combination with burners and controls, packaged									
1000 Cast iron with insulated jacket									
2000 Steam, gross output, 720 MBH	Q-7	.43	74.074	Ea.	16,100	4,950		21,050	25,100
2080 1,600 MBH		.30	107		20,000	7,175		27,175	32,700
2140 2,700 MBH		.19	166		26,200	11,100		37,300	45,400
2280 5,520 MBH		.14	235		99,000	15,800		114,800	132,000
2340 6,390 MBH		.11	296		106,000	19,800		125,800	146,000
2380 6,970 MBH		.09	372		112,000	24,900		136,900	160,500
2900 Hot water, gross output									
2910 200 MBH	Q-6	.62	39.024	Ea.	11,700	2,575		14,275	16,700
2920 300 MBH		.49	49.080		11,700	3,225		14,925	17,700
2930 400 MBH		.41	57.971		13,700	3,800		17,500	20,800
2940 500 MBH		.36	67.039		14,800	4,400		19,200	22,900
3000 584 MBH	Q-7	.44	72.072		14,900	4,825		19,725	23,500
3060 1,460 MBH		.28	113		30,800	7,575		38,375	45,200
3160 4,088 MBH		.16	195		68,500	13,100		81,600	95,000
3300 13,500 MBH, 403.3 BHP		.04	727		212,500	48,700		261,200	306,000

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23 52 Heating Boilers

23 52 23 – Cast-Iron Boilers

23 52 23.40 Oil-Fired Boilers	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **OIL-FIRED BOILERS**, Standard controls, flame retention burner, packaged									
1000 Cast iron, with insulated flush jacket									
2000 Steam, gross output, 109 MBH	Q-7	1.20	26.667	Ea.	2,500	1,775		4,275	5,425
2060 207 MBH		.90	35.556		3,375	2,375		5,750	7,275
2180 1,084 MBH		.38	85.106		11,700	5,700		17,400	21,400
2280 3,000 MBH		.19	170		24,100	11,400		35,500	43,500
2380 5,520 MBH		.14	235		84,500	15,800		100,300	116,500
2460 6,970 MBH		.09	364		108,500	24,300		132,800	156,000
3000 Hot water, same price as steam									
4000 For tankless coil in smaller sizes, add				Ea.	15%				

23 52 26 – Steel Boilers

23 52 26.40 Oil-Fired Boilers

0010 **OIL-FIRED BOILERS**, Standard controls, flame retention burner									
5000 Steel, with insulated flush jacket									
7000 Hot water, gross output, 103 MBH	Q-6	1.60	15	Ea.	2,225	985		3,210	3,925
7120 420 MBH		.70	34.483		5,325	2,275		7,600	9,225
7320 3,150 MBH		.13	185		43,000	12,100		55,100	65,500
7340 For tankless coil in steam or hot water, add					7%				

23 52 28 – Swimming Pool Boilers

23 52 28.10 Swimming Pool Heaters

0010 **SWIMMING POOL HEATERS**, Not including wiring, external									
0020 piping, base or pad									
0160 Gas fired, input, 155 MBH	Q-6	1.50	16	Ea.	1,850	1,050		2,900	3,625
0200 199 MBH		1	24		2,000	1,575		3,575	4,550
0280 500 MBH		.40	60		7,350	3,950		11,300	14,000
0400 1,800 MBH		.14	171		20,800	11,300		32,100	39,700
2000 Electric, 12 KW, 4,800 gallon pool	Q-19	3	8		2,225	515		2,740	3,225
2020 15 KW, 7,200 gallon pool		2.80	8.571		2,350	550		2,900	3,400
2040 24 KW, 9,600 gallon pool		2.40	10		2,675	645		3,320	3,900
2100 57 KW, 24,000 gallon pool		1.20	20		3,975	1,275		5,250	6,300

23 54 Furnaces

23 54 13 – Electric-Resistance Furnaces

23 54 13.10 Electric Furnaces

0010 **ELECTRIC FURNACES**, Hot air, blowers, std. controls									
0011 not including gas, oil or flue piping									
1000 Electric, UL listed									
1070 10.2 MBH	Q-20	4.40	4.545	Ea.	345	281		626	800
1080 17.1 MBH		4.60	4.348		420	269		689	870
1100 34.1 MBH		4.40	4.545		530	281		811	1,000

23 54 16 – Fuel-Fired Furnaces

23 54 16.13 Gas-Fired Furnaces

0010 **GAS-FIRED FURNACES**									
3000 Gas, AGA certified, upflow, direct drive models									
3020 45 MBH input	Q-9	4	4	Ea.	715	243		958	1,150
3040 60 MBH input		3.80	4.211		645	256		901	1,100
3060 75 MBH input		3.60	4.444		880	270		1,150	1,375
3100 100 MBH input		3.20	5		840	305		1,145	1,375

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23 54 Furnaces

23 54 16 – Fuel-Fired Furnaces

23 54 16.16 Oil-Fired Furnaces	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **OIL-FIRED FURNACES**									
6000 Oil, UL listed, atomizing gun type burner									
6020 56 MBH output	Q-9	3.60	4.444	Ea.	3,375	270		3,645	4,125
6030 84 MBH output		3.50	4.571		3,575	278		3,853	4,350
6040 95 MBH output		3.40	4.706		3,600	286		3,886	4,375
6060 134 MBH output		3.20	5		3,500	305		3,805	4,300
6080 151 MBH output		3	5.333		3,900	325		4,225	4,775

23 55 Fuel-Fired Heaters

23 55 13 – Fuel-Fired Duct Heaters

23 55 13.16 Gas-Fired Duct Heaters

0010 **GAS-FIRED DUCT HEATERS**, Includes burner, controls, stainless steel									
0020 heat exchanger. Gas fired, electric ignition									
0030 Indoor installation									
0100 120 MBH output	Q-5	4	4	Ea.	3,200	253		3,453	3,900
0130 200 MBH output		2.70	5.926		4,125	375		4,500	5,100
0140 240 MBH output		2.30	6.957		5,050	440		5,490	6,200
0180 320 MBH output		1.60	10		3,925	635		4,560	5,275
0300 For powered venter and adapter, add					520			520	575
0502 For required flue pipe, see Section 23 51 23.10									
1000 Outdoor installation, with power venter									
1020 75 MBH output	Q-5	4	4	Ea.	3,450	253		3,703	4,150
1060 120 MBH output		4	4		4,250	253		4,503	5,050
1100 187 MBH output		3	5.333		5,600	340		5,940	6,675
1140 300 MBH output		1.80	8.889		6,475	565		7,040	7,950
1180 450 MBH output		1.40	11.429		7,550	725		8,275	9,375

23 55 23 – Gas-Fired Radiant Heaters

23 55 23.10 Infrared Type Heating Units

0010 **INFRARED TYPE HEATING UNITS**									
0020 Gas fired, unvented, electric ignition, 100% shutoff.									
0030 Piping and wiring not included									
0120 45 MBH	Q-5	5	3.200	Ea.	1,350	203		1,553	1,775
0160 60 MBH		4	4		1,250	253		1,503	1,750
0240 120 MBH		2	8		2,125	505		2,630	3,100
1000 Gas fired, vented, electric ignition, tubular									
1020 Piping and wiring not included, 20′ to 80′ lengths									
1030 Single stage, input, 60 MBH	Q-6	4.50	5.333	Ea.	1,425	350		1,775	2,075
1040 80 MBH		3.90	6.154		1,725	405		2,130	2,500
1050 100 MBH		3.40	7.059		1,675	465		2,140	2,550
1060 125 MBH		2.90	8.276		1,675	545		2,220	2,650
1070 150 MBH	Q-6	2.70	8.889	Ea.	2,125	585		2,710	3,200
1080 170 MBH		2.50	9.600		1,675	630		2,305	2,800
1090 200 MBH		2.20	10.909		1,750	715		2,465	3,000
1100 Note: Final pricing may vary due to									
1110 tube length and configuration package selected									
1130 Two stage, input, 60 MBH high, 45 MBH low	Q-6	4.50	5.333	Ea.	2,100	350		2,450	2,850
1140 80 MBH high, 60 MBH low		3.90	6.154		2,100	405		2,505	2,925
1150 100 MBH high, 65 MBH low		3.40	7.059		2,100	465		2,565	3,025
1160 125 MBH high, 95 MBH low		2.90	8.276		2,125	545		2,670	3,125
1170 150 MBH high, 100 MBH low		2.70	8.889		2,125	585		2,710	3,200

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23 55 Fuel-Fired Heaters

23 55 23 – Gas-Fired Radiant Heaters

	23 55 23.10 Infrared Type Heating Units	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1180	170 MBH high, 125 MBH low	Q-6	2.50	9.600	Ea.	2,375	630		3,005	3,550
1190	200 MBH high, 150 MBH low	↓	2.20	10.909	↓	3,150	715		3,865	4,550
1220	Note: Final pricing may vary due to									
1230	tube length and configuration package selected									

23 55 33 – Fuel-Fired Unit Heaters

23 55 33.13 Oil-Fired Unit Heaters

0010	**OIL-FIRED UNIT HEATERS**, Cabinet, grilles, fan, ctrl., burner, no piping									
6000	Oil fired, suspension mounted, 94 MBH output	Q-5	4	4	Ea.	4,725	253		4,978	5,575
6040	140 MBH output		3	5.333		5,025	340		5,365	6,025
6060	184 MBH output	↓	3	5.333	↓	5,425	340		5,765	6,475

23 55 33.16 Gas-Fired Unit Heaters

0010	**GAS-FIRED UNIT HEATERS**, Cabinet, grilles, fan, ctrls., burner, no piping									
0022	thermostat, no piping. For flue see Section 23 51 23.10									
1000	Gas fired, floor mounted									
1100	60 MBH output	Q-5	10	1.600	Ea.	755	101		856	980
1140	100 MBH output		8	2		830	127		957	1,100
1180	180 MBH output		6	2.667		1,200	169		1,369	1,550
2000	Suspension mounted, propeller fan, 20 MBH output		8.50	1.882		775	119		894	1,025
2040	60 MBH output		7	2.286		1,850	145		1,995	2,275
2060	80 MBH output		6	2.667		1,050	169		1,219	1,400
2100	130 MBH output		5	3.200		1,300	203		1,503	1,750
2240	320 MBH output	↓	2	8		2,550	505		3,055	3,550
2500	For powered venter and adapter, add					400			400	440
5000	Wall furnace, 17.5 MBH output	Q-5	6	2.667		640	169		809	955
5020	24 MBH output		5	3.200		640	203		843	1,000
5040	35 MBH output	↓	4	4	↓	680	253		933	1,125

23 56 Solar Energy Heating Equipment

23 56 16 – Packaged Solar Heating Equipment

23 56 16.40 Solar Heating Systems

0010	**SOLAR HEATING SYSTEMS** R235616-60										
0020	System/package prices, not including connecting										
0030	pipe, insulation, or special heating/plumbing fixtures										
0500	Hot water, standard package, low temperature										
0540	1 collector, circulator, fittings, 65 gal. tank	G	Q-1	.50	32	Ea.	5,500	2,000		7,500	9,050
0580	2 collectors, circulator, fittings, 120 gal. tank	G		.40	40		5,475	2,525		8,000	9,775
0620	3 collectors, circulator, fittings, 120 gal. tank	G	↓	.34	47.059	↓	8,800	2,950		11,750	14,100
0700	Medium temperature package										
0720	1 collector, circulator, fittings, 80 gal. tank	G	Q-1	.50	32	Ea.	5,150	2,000		7,150	8,675
0740	2 collectors, circulator, fittings, 120 gal. tank	G		.40	40		8,200	2,525		10,725	12,800
0780	3 collectors, circulator, fittings, 120 gal. tank	G	↓	.30	53.333		8,925	3,350		12,275	14,800
0980	For each additional 120 gal. tank, add	G				↓	1,800			1,800	1,975

23 56 19 – Solar Heating Components

23 56 19.50 Solar Heating Ancillary

0010	**SOLAR HEATING ANCILLARY**										
2300	Circulators, air										
2310	Blowers										
2400	Reversible fan, 20" diameter, 2 speed	G	Q-9	18	.889	Ea.	117	54		171	210
2870	1/12 HP, 30 GPM	G	Q-1	10	1.600	"	360	101		461	545
3000	Collector panels, air with aluminum absorber plate										

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23 56 Solar Energy Heating Equipment

23 56 19 – Solar Heating Components

23 56 19.50 Solar Heating Ancillary		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
3010 Wall or roof mount										
3040 Flat black, plastic glazing										
3080 4′ x 8′	G	Q-9	6	2.667	Ea.	690	162		852	1,000
3200 Flush roof mount, 10′ to 16′ x 22″ wide	G	″	96	.167	L.F.	182	10.15		192.15	216
3300 Collector panels, liquid with copper absorber plate										
3330 Alum. frame, 4′ x 8′, 5/32″ single glazing	G	Q-1	9.50	1.684	Ea.	1,050	106		1,156	1,300
3390 Alum. frame, 4′ x 10′, 5/32″ single glazing	G		6	2.667		1,200	168		1,368	1,575
3450 Flat black, alum. frame, 3.5′ x 7.5′	G		9	1.778		765	112		877	1,000
3500 4′ x 8′	G		5.50	2.909		930	183		1,113	1,300
3520 4′ x 10′	G		10	1.600		1,150	101		1,251	1,425
3540 4′ x 12.5′	G		5	3.200		1,250	201		1,451	1,675
3600 Liquid, full wetted, plastic, alum. frame, 4′ x 10′	G		5	3.200		330	201		531	665
3650 Collector panel mounting, flat roof or ground rack	G		7	2.286		267	144		411	510
3670 Roof clamps	G		70	.229	Set	3.57	14.35		17.92	25.50
3700 Roof strap, teflon	G	1 Plum	205	.039	L.F.	25	2.72		27.72	31.50
3900 Differential controller with two sensors										
3930 Thermostat, hard wired	G	1 Plum	8	1	Ea.	115	70		185	231
4100 Five station with digital read-out	G	″	3	2.667	″	278	186		464	585
4300 Heat exchanger										
4580 Fluid to fluid package includes two circulating pumps										
4590 expansion tank, check valve, relief valve										
4600 controller, high temperature cutoff and sensors	G	Q-1	2.50	6.400	Ea.	785	400		1,185	1,475
4650 Heat transfer fluid										
4700 Propylene glycol, inhibited anti-freeze	G	1 Plum	28	.286	Gal.	24.50	19.95		44.45	56.50
8250 Water storage tank with heat exchanger and electric element										
8300 80 gal. with 2″ x 2 lb. density insulation	G	1 Plum	1.60	5	Ea.	1,800	350		2,150	2,500
8380 120 gal. with 2″ x 2 lb. density insulation	G		1.40	5.714		1,750	400		2,150	2,525
8400 120 gal. with 2″ x 2 lb. density insul., 40 S.F. heat coil	G		1.40	5.714		2,600	400		3,000	3,450

23 57 Heat Exchangers for HVAC

23 57 16 – Steam-to-Water Heat Exchangers

23 57 16.10 Shell/Tube Type Steam-to-Water Heat Exch.

0010 **SHELL AND TUBE TYPE STEAM-TO-WATER HEAT EXCHANGERS**										
0016 Shell & tube type, 2 or 4 pass, 3/4″ OD copper tubes,										
0020 C.I. heads, C.I. tube sheet, steel shell										
0100 Hot water 40°F to 180°F, by steam at 10 psi										
0120 8 GPM		Q-5	6	2.667	Ea.	2,975	169		3,144	3,525
0140 10 GPM			5	3.200		4,475	203		4,678	5,225
0160 40 GPM			4	4		6,925	253		7,178	7,975
0180 64 GPM			2	8		28,000	505		28,505	31,600
0200 96 GPM			1	16		50,500	1,025		51,525	57,000
0220 120 GPM		Q-6	1.50	16		67,500	1,050		68,550	76,000

23 57 19 – Liquid-to-Liquid Heat Exchangers

23 57 19.13 Plate-Type, Liquid-to-Liquid Heat Exchangers

0010 **PLATE-TYPE, LIQUID-TO-LIQUID HEAT EXCHANGERS**										
3000 Plate type,										
3100 400 GPM		Q-6	.80	30	Ea.	51,000	1,975		52,975	59,000
3120 800 GPM		″	.50	48		88,000	3,150		91,150	101,500
3140 1,200 GPM		Q-7	.34	94.118		131,000	6,300		137,300	153,500
3160 1,800 GPM		″	.24	133		173,500	8,925		182,425	204,500

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23 57 Heat Exchangers for HVAC

23 57 19 – Liquid-to-Liquid Heat Exchangers

23 57 19.16 Shell-Type, Liquid-to-Liquid Heat Exchangers	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **SHELL-TYPE, LIQUID-TO-LIQUID HEAT EXCHANGERS**									
1000 Hot water 40°F to 140°F, by water at 200°F									
1020 7 GPM	Q-5	6	2.667	Ea.	13,300	169		13,469	14,900
1040 16 GPM		5	3.200		19,600	203		19,803	21,800
1060 34 GPM	↓	4	4	↓	28,900	253		29,153	32,200
1100 74 GPM	Q-5	1.50	10.667	Ea.	53,000	675		53,675	59,500

23 62 Packaged Compressor and Condenser Units

23 62 13 – Packaged Air-Cooled Refrigerant Compressor and Condenser Units

23 62 13.10 Packaged Air-Cooled Refrig. Condensing Units									
0010 **PACKAGED AIR-COOLED REFRIGERANT CONDENSING UNITS**									
0020 Condensing unit									
0030 Air cooled, compressor, standard controls									
0050 1.5 ton	Q-5	2.50	6.400	Ea.	1,325	405		1,730	2,050
0500 5 ton		.60	26.667		2,325	1,700		4,025	5,075
0600 10 ton	↓	.50	32		3,425	2,025		5,450	6,800
0700 20 ton	Q-6	.40	60	↓	9,550	3,950		13,500	16,400

23 63 Refrigerant Condensers

23 63 13 – Air-Cooled Refrigerant Condensers

23 63 13.10 Air-Cooled Refrig. Condensers									
0010 **AIR-COOLED REFRIG. CONDENSERS**									
0080 Air cooled, belt drive, propeller fan									
0240 50 ton	Q-6	.69	34.985	Ea.	21,200	2,300		23,500	26,700
0280 59 ton		.58	41.308		25,400	2,725		28,125	32,000
0320 73 ton		.47	51.173		33,200	3,350		36,550	41,500
0360 86 ton		.40	60.302		38,400	3,950		42,350	48,200
0380 88 ton	↓	.39	61.697	↓	41,200	4,050		45,250	51,500
1550 Air cooled, direct drive, propeller fan									
1590 1 ton	Q-5	3.80	4.211	Ea.	1,850	267		2,117	2,425
1600 1-1/2 ton		3.60	4.444		2,275	281		2,556	2,925
1620 2 ton		3.20	5		2,425	315		2,740	3,150
1640 5 ton		2	8		4,950	505		5,455	6,200
1660 10 ton		1.40	11.429		7,650	725		8,375	9,475
1690 16 ton		1.10	14.545		10,800	920		11,720	13,200
1720 26 ton	↓	.84	19.002		13,900	1,200		15,100	17,100
1760 41 ton	Q-6	.77	31.008		19,000	2,025		21,025	23,900
1800 63 ton	"	.55	44.037	↓	30,000	2,900		32,900	37,300

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23 64 Packaged Water Chillers

23 64 13 – Absorption Water Chillers

23 64 13.16 Indirect-Fired Absorption Water Chillers	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **INDIRECT-FIRED ABSORPTION WATER CHILLERS**									
0020 Steam or hot water, water cooled									
0050 100 ton	Q-7	.13	240	Ea.	138,500	16,100		154,600	176,500
0400 420 ton	"	.10	323	"	440,500	21,600		462,100	517,000

23 64 16 – Centrifugal Water Chillers

23 64 16.10 Centrifugal Type Water Chillers

0010 **CENTRIFUGAL TYPE WATER CHILLERS**, With standard controls									
0020 Centrifugal liquid chiller, water cooled									
0030 not including water tower									
0100 2,000 ton (twin 1,000 ton units)	Q-7	.07	478	Ea.	896,000	32,000		928,000	1,033,000

23 64 19 – Reciprocating Water Chillers

23 64 19.10 Reciprocating Type Water Chillers

0010 **RECIPROCATING TYPE WATER CHILLERS**, With standard controls									
0494 Water chillers, integral air cooled condenser									
0980 Water cooled, multiple compressor, semi-hermetic, tower not incl.									
1090 45 ton cooling	Q-7	.29	111	Ea.	29,300	7,450		36,750	43,400
1160 100 ton cooling		.18	180		49,800	12,000		61,800	73,000
1180 125 ton cooling		.16	196		63,500	13,100		76,600	89,500
1200 145 ton cooling		.16	203		62,500	13,600		76,100	88,500

23 64 23 – Scroll Water Chillers

23 64 23.10 Scroll Water Chillers

0010 **SCROLL WATER CHILLERS**, With standard controls									
0480 Packaged w/integral air cooled condenser									
0482 10 ton cooling	Q-7	.34	94.118	Ea.	16,000	6,300		22,300	27,000
0490 15 ton cooling		.37	86.486		19,200	5,800		25,000	29,800
0500 20 ton cooling		.34	94.118		24,400	6,300		30,700	36,200
0520 40 ton cooling		.30	108		39,600	7,250		46,850	54,500
0540 70 ton cooling		.27	119		60,500	7,925		68,425	78,500
0590 100 ton cooling		.25	128		74,500	8,575		83,075	95,000
0600 110 ton cooling		.24	133		76,500	8,925		85,425	97,500
0630 130 ton cooling		.24	133		93,000	8,925		101,925	116,000
0670 170 ton cooling		.23	139		114,500	9,325		123,825	140,000
0671 210 ton cooling		.22	145		131,500	9,750		141,250	159,000
0675 250 ton cooling		.21	152		147,000	10,200		157,200	176,500
0676 275 ton cooling		.21	152		168,000	10,200		178,200	200,000
0677 300 ton cooling		.20	160		171,500	10,700		182,200	205,000
0678 330 ton cooling		.20	160		205,000	10,700		215,700	241,500
0679 390 ton cooling		.19	168		235,000	11,300		246,300	275,500
0680 Scroll water cooled, single compressor, hermetic, tower not incl.									
0700 2 ton cooling	Q-5	.57	28.070	Ea.	4,100	1,775		5,875	7,150
0710 5 ton cooling		.57	28.070		4,900	1,775		6,675	8,025
0740 8 ton cooling		.31	52.117		6,750	3,300		10,050	12,400
0760 10 ton cooling	Q-6	.36	67.039		7,775	4,400		12,175	15,100
0800 20 ton cooling	Q-7	.38	83.990		13,800	5,625		19,425	23,600
0820 30 ton cooling	"	.33	96.096		15,500	6,425		21,925	26,700
0900 Scroll water cooled, multiple compressor, hermetic, tower not incl.									
0930 30 ton cooling	Q-7	.36	88.889	Ea.	28,000	5,950		33,950	39,700
0935 35 ton cooling		.31	103		34,300	6,900		41,200	48,100
0940 40 ton cooling		.30	107		35,600	7,150		42,750	49,800
0950 50 ton cooling		.28	114		37,000	7,650		44,650	52,000
0960 60 ton cooling		.25	128		37,500	8,575		46,075	54,000

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23 64 Packaged Water Chillers

23 64 23 – Scroll Water Chillers

23 64 23.10 Scroll Water Chillers		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0962	75 ton cooling	Q-7	.23	139	Ea.	56,500	9,325		65,825	76,000
0964	85 ton cooling		.23	139		58,000	9,325		67,325	78,000
0970	100 ton cooling		.18	178		64,000	11,900		75,900	88,500
0980	115 ton cooling		.17	188		56,500	12,600		69,100	81,000
0990	125 ton cooling		.16	200		59,000	13,400		72,400	85,000
0995	145 ton cooling		.16	200		91,500	13,400		104,900	120,500

23 64 26 – Rotary-Screw Water Chillers

23 64 26.10 Rotary-Screw Type Water Chillers

0010	**ROTARY-SCREW TYPE WATER CHILLERS**, With standard controls									
0110	Screw, liquid chiller, air cooled, insulated evaporator									
0120	130 ton	Q-7	.14	229	Ea.	104,500	15,300		119,800	138,000
0124	160 ton		.13	246		135,000	16,500		151,500	172,500
0128	180 ton		.13	250		151,500	16,700		168,200	192,000
0132	210 ton		.12	258		156,000	17,300		173,300	198,000
0136	270 ton		.12	267		191,000	17,900		208,900	236,500
0140	320 ton		.12	276		213,000	18,500		231,500	261,500
0200	Packaged unit, water cooled, not incl. tower									
0210	80 ton	Q-7	.14	224	Ea.	55,000	15,000		70,000	83,000
0240	200 ton		.13	252		87,500	16,900		104,400	121,000
0270	350 ton		.12	276		168,500	18,500		187,000	213,000
1450	Water cooled, tower not included									
1580	150 ton cooling, screw compressors	Q-7	.13	241	Ea.	80,500	16,100		96,600	113,000
1620	200 ton cooling, screw compressors		.13	250		111,500	16,700		128,200	147,500
1660	291 ton cooling, screw compressors		.12	260		116,500	17,400		133,900	154,000

23 65 Cooling Towers

23 65 13 – Forced-Draft Cooling Towers

23 65 13.10 Forced-Draft Type Cooling Towers

0010	**FORCED-DRAFT TYPE COOLING TOWERS**, Packaged units									
0070	Galvanized steel									
0080	Induced draft, crossflow									
0100	Vertical, belt drive, 61 tons	Q-6	90	.267	TonAC	218	17.50		235.50	266
0150	100 ton		100	.240		210	15.75		225.75	256
0200	115 ton		109	.220		183	14.45		197.45	223
0250	131 ton		120	.200		220	13.15		233.15	262
0260	162 ton		132	.182		178	11.95		189.95	214
1000	For higher capacities, use multiples									
1500	Induced air, double flow									
1900	Vertical, gear drive, 167 ton	Q-6	126	.190	TonAC	172	12.50		184.50	209
2000	297 ton		129	.186		106	12.20		118.20	135
2100	582 ton		132	.182		59	11.95		70.95	83
2150	849 ton		142	.169		79.50	11.10		90.60	104
2200	1,016 ton		150	.160		80.50	10.50		91	104
3000	For higher capacities, use multiples									
3500	For pumps and piping, add	Q-6	38	.632	TonAC	109	41.50		150.50	182
4000	For absorption systems, add				"	75%	75%			
4100	Cooling water chemical feeder	Q-5	3	5.333	Ea.	460	340		800	1,000
5000	Fiberglass tower on galvanized steel support structure									
5010	Draw thru									
5100	100 ton	Q-6	1.40	17.143	Ea.	14,600	1,125		15,725	17,700

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23 65 Cooling Towers

23 65 13 – Forced-Draft Cooling Towers

23 65 13.10 Forced-Draft Type Cooling Towers	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
5120 120 ton	Q-6	1.20	20	Ea.	17,500	1,325		18,825	21,200
5140 140 ton		1	24		17,800	1,575		19,375	22,000
5160 160 ton		.80	30		19,200	1,975		21,175	24,100
5180 180 ton		.65	36.923		22,500	2,425		24,925	28,400
5251 600 ton		.16	150		82,500	9,850		92,350	105,000
5252 1,000 ton		.10	250		137,500	16,400		153,900	175,500
5300 For stainless steel support structure, add					30%				
5360 For higher capacities, use multiples of each size									
6000 Stainless steel									
6010 Induced draft, crossflow, horizontal, belt drive									
6100 57 ton	Q-6	1.50	16	Ea.	29,000	1,050		30,050	33,500
6120 91 ton		.99	24.242		35,600	1,600		37,200	41,600
6140 111 ton		.43	55.814		53,500	3,675		57,175	64,500
6160 126 ton		.22	109		55,500	7,175		62,675	71,500

23 73 Indoor Central-Station Air-Handling Units

23 73 13 – Modular Indoor Central-Station Air-Handling Units

23 73 13.10 Air-Handling Units

0010	**AIR-HANDLING UNITS**, Built-Up								
0100	With cooling/heating coil section, filters, mixing box								
0880	Single zone, horizontal/vertical								
0890	Constant volume								
0900	1,600 CFM	Q-5	1.20	13.333	Ea.	5,650	845	6,495	7,450
0920	5,000 CFM	Q-6	1.40	17.143		16,400	1,125	17,525	19,700
0940	11,500 CFM	"	1	24		40,900	1,575	42,475	47,400
0970	22,000 CFM	Q-6	.60	40	Ea.	82,500	2,625	85,125	94,500
1000	40,000 CFM	"	.30	80	"	105,000	5,250	110,250	123,500

23 73 39 – Indoor, Direct Gas-Fired Heating and Ventilating Units

23 73 39.10 Make-Up Air Unit

0010	**MAKE-UP AIR UNIT**								
0020	Indoor suspension, natural/LP gas, direct fired,								
0032	standard control. For flue see Section 23 51 23.10								
0040	70°F temperature rise, MBH is input								
0100	75 MBH input	Q-6	3.60	6.667	Ea.	4,000	440	4,440	5,050
0160	150 MBH input		3	8		5,500	525	6,025	6,825
0220	225 MBH input		2.40	10		6,175	655	6,830	7,775
0300	400 MBH input		1.60	15		15,300	985	16,285	18,300
0600	For discharge louver assembly, add					5%			
0700	For filters, add					10%			
0800	For air shut-off damper section, add					30%			

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

23 74 Packaged Outdoor HVAC Equipment

23 74 33 – Dedicated Outdoor-Air Units

	23 74 33.10 Rooftop Air Conditioners		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**ROOFTOP AIR CONDITIONERS**, Standard controls, curb, economizer										
1000	Single zone, electric cool, gas heat										
1100	3 ton cooling, 60 MBH heating	R236000-20	Q-5	.70	22.857	Ea.	1,800	1,450		3,250	4,125
1120	4 ton cooling, 95 MBH heating			.61	26.403		3,425	1,675		5,100	6,250
1140	5 ton cooling, 112 MBH heating			.56	28.521		4,200	1,800		6,000	7,325
1145	6 ton cooling, 140 MBH heating			.52	30.769		5,250	1,950		7,200	8,675
1150	7.5 ton cooling, 170 MBH heating			.50	32.258		6,425	2,050		8,475	10,100
1156	8.5 ton cooling, 170 MBH heating			.46	34.783		7,275	2,200		9,475	11,300
1160	10 ton cooling, 200 MBH heating		Q-6	.67	35.982		7,925	2,375		10,300	12,300
1170	12.5 ton cooling, 230 MBH heating			.63	37.975		8,975	2,500		11,475	13,600
1190	17.5 ton cooling, 330 MBH heating			.52	45.889		12,900	3,025		15,925	18,700
1200	20 ton cooling, 360 MBH heating		Q-7	.67	47.976		15,500	3,200		18,700	21,800
1210	25 ton cooling, 450 MBH heating			.56	57.554		36,300	3,850		40,150	45,700
1220	30 ton cooling, 540 MBH heating			.47	68.376		36,600	4,575		41,175	47,100
1240	40 ton cooling, 675 MBH heating			.35	91.168		44,700	6,100		50,800	58,000
2000	Multizone, electric cool, gas heat, economizer										
2100	15 ton cooling, 360 MBH heating		Q-7	.61	52.545	Ea.	70,000	3,525		73,525	82,500
2120	20 ton cooling, 360 MBH heating			.53	60.038		63,000	4,025		67,025	75,500
2200	40 ton cooling, 540 MBH heating			.28	114		109,500	7,625		117,125	132,000
2210	50 ton cooling, 540 MBH heating		Q-7	.23	142	Ea.	140,000	9,525		149,525	168,000
2220	70 ton cooling, 1,500 MBH heating			.16	199		149,000	13,300		162,300	183,500
2240	80 ton cooling, 1,500 MBH heating			.14	229		170,000	15,300		185,300	210,000
2260	90 ton cooling, 1,500 MBH heating			.13	256		201,500	17,100		218,600	247,000
2280	105 ton cooling, 1,500 MBH heating			.11	291		224,000	19,500		243,500	275,500
2400	For hot water heat coil, deduct						5%				
2500	For steam heat coil, deduct						2%				
2600	For electric heat, deduct						3%	5%			

23 81 Decentralized Unitary HVAC Equipment

23 81 13 – Packaged Terminal Air-Conditioners

23 81 13.10 Packaged Cabinet Type Air-Conditioners

0010	**PACKAGED CABINET TYPE AIR-CONDITIONERS**, Cabinet, wall sleeve,									
0100	louver, electric heat, thermostat, manual changeover, 208 V									
0200	6,000 BTUH cooling, 8,800 BTU heat	Q-5	6	2.667	Ea.	950	169		1,119	1,300
0220	9,000 BTUH cooling, 13,900 BTU heat		5	3.200		2,550	203		2,753	3,100
0240	12,000 BTUH cooling, 13,900 BTU heat		4	4		2,700	253		2,953	3,325
0260	15,000 BTUH cooling, 13,900 BTU heat		3	5.333		2,975	340		3,315	3,775
0500	For hot water coil, increase heat by 10%, add					5%	10%			
1000	For steam, increase heat output by 30%, add					8%	10%			

23 81 19 – Self-Contained Air-Conditioners

23 81 19.20 Self-Contained Single Package

0010	**SELF-CONTAINED SINGLE PACKAGE**									
0100	Air cooled, for free blow or duct, not incl. remote condenser									
0110	Constant volume									
0200	3 ton cooling	Q-5	1	16	Ea.	4,100	1,025		5,125	6,000
0220	5 ton cooling	Q-6	1.20	20		4,800	1,325		6,125	7,225
0240	10 ton cooling	Q-7	1	32		8,450	2,150		10,600	12,500
0260	20 ton cooling		.90	35.556		13,600	2,375		15,975	18,600
0280	30 ton cooling		.80	40		27,500	2,675		30,175	34,200
0340	60 ton cooling	Q-8	.40	80		60,500	5,350	155	66,005	75,000

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23 81 19 – Self-Contained Air-Conditioners

	23 81 19.20 Self-Contained Single Package	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0490	For duct mounting, no price change									
0500	For steam heating coils, add				Ea.	10%	10%			
1000	Water cooled for free blow or duct, not including tower									
1010	Constant volume									
1100	3 ton cooling	Q-6	1	24	Ea.	3,800	1,575		5,375	6,525
1120	5 ton cooling	"	1	24		4,975	1,575		6,550	7,825
1140	10 ton cooling	Q-7	.90	35.556		8,850	2,375		11,225	13,300
1160	20 ton cooling	Q-7	.80	40	Ea.	27,200	2,675		29,875	33,900
1180	30 ton cooling	"	.70	45.714	"	36,000	3,050		39,050	44,200

23 81 23 – Computer-Room Air-Conditioners

23 81 23.10 Computer Room Units

0010	**COMPUTER ROOM UNITS**									
1000	Air cooled, includes remote condenser but not									
1020	interconnecting tubing or refrigerant									
1080	3 ton	Q-5	.50	32	Ea.	30,000	2,025		32,025	36,000
1120	5 ton		.45	35.556		32,000	2,250		34,250	38,600
1160	6 ton		.30	53.333		57,500	3,375		60,875	68,500
1200	8 ton		.27	59.259		60,000	3,750		63,750	71,500
1240	10 ton		.25	64		62,500	4,050		66,550	75,000
1280	15 ton		.22	72.727		69,000	4,600		73,600	82,500
1290	18 ton		.20	80		76,000	5,075		81,075	91,000
1300	20 ton	Q-6	.26	92.308		82,500	6,050		88,550	99,500
1320	22 ton		.24	100		83,500	6,575		90,075	101,500
1360	30 ton		.21	114		102,500	7,500		110,000	124,000
2200	Chilled water, for connection to									
2220	existing chiller system of adequate capacity									
2260	5 ton	Q-5	.74	21.622	Ea.	21,700	1,375		23,075	26,000

23 81 43 – Air-Source Unitary Heat Pumps

23 81 43.10 Air-Source Heat Pumps

0010	**AIR-SOURCE HEAT PUMPS**, Not including interconnecting tubing									
1000	Air to air, split system, not including curbs, pads, fan coil and ductwork									
1012	Outside condensing unit only, for fan coil see Section 23 82 19.10									
1020	2 ton cooling, 8.5 MBH heat @ 0°F	Q-5	2	8	Ea.	1,625	505		2,130	2,550
1060	5 ton cooling, 27 MBH heat @ 0°F		.50	32		2,500	2,025		4,525	5,775
1080	7.5 ton cooling, 33 MBH heat @ 0°F		.45	35.556		3,725	2,250		5,975	7,450
1100	10 ton cooling, 50 MBH heat @ 0°F	Q-6	.64	37.500		6,150	2,475		8,625	10,500
1120	15 ton cooling, 64 MBH heat @ 0°F		.50	48		10,700	3,150		13,850	16,500
1130	20 ton cooling, 85 MBH heat @ 0°F		.35	68.571		19,500	4,500		24,000	28,200
1140	25 ton cooling, 119 MBH heat @ 0°F		.25	96		22,400	6,300		28,700	34,000
1500	Single package, not including curbs, pads, or plenums									
1520	2 ton cooling, 6.5 MBH heat @ 0°F	Q-5	1.50	10.667	Ea.	3,400	675		4,075	4,750
1580	4 ton cooling, 13 MBH heat @ 0°F		.96	16.667		4,525	1,050		5,575	6,550
1640	7.5 ton cooling, 35 MBH heat @ 0°F		.40	40		7,875	2,525		10,400	12,400

23 81 46 – Water-Source Unitary Heat Pumps

23 81 46.10 Water Source Heat Pumps

0010	**WATER SOURCE HEAT PUMPS**, Not incl. connecting tubing or water source									
2000	Water source to air, single package									
2100	1 ton cooling, 13 MBH heat @ 75°F	Q-5	2	8	Ea.	2,125	505		2,630	3,075
2140	2 ton cooling, 19 MBH heat @ 75°F		1.70	9.412		2,350	595		2,945	3,475
2220	5 ton cooling, 29 MBH heat @ 75°F		.90	17.778		3,425	1,125		4,550	5,450
3960	For supplementary heat coil, add					10%				

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23 81 Decentralized Unitary HVAC Equipment

23 81 46 – Water-Source Unitary Heat Pumps

	23 81 46.10 Water Source Heat Pumps	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4000	For increase in capacity thru use									
4020	of solar collector, size boiler at 60%									

23 82 Convection Heating and Cooling Units

23 82 16 – Air Coils

23 82 16.10 Flanged Coils

0010	**FLANGED COILS**									
0500	Chilled water cooling, 6 rows, 24" x 48"	Q-5	3.20	5	Ea.	5,225	315		5,540	6,225
1000	Direct expansion cooling, 6 rows, 24" x 48"		2.80	5.714		6,050	360		6,410	7,225
1500	Hot water heating, 1 row, 24" x 48"		4	4		2,075	253		2,328	2,675
2000	Steam heating, 1 row, 24" x 48"		3.06	5.229		2,950	330		3,280	3,750

23 82 16.20 Duct Heaters

0010	**DUCT HEATERS**, Electric, 480 V, 3 Ph.									
0020	Finned tubular insert, 500°F									
0100	8" wide x 6" high, 4.0 kW	Q-20	16	1.250	Ea.	920	77.50		997.50	1,125
0120	12" high, 8.0 kW		15	1.333		1,525	82.50		1,607.50	1,800
0140	18" high, 12.0 kW		14	1.429		2,150	88.50		2,238.50	2,475
0160	24" high, 16.0 kW		13	1.538		2,750	95		2,845	3,175
0180	30" high, 20.0 kW		12	1.667		3,350	103		3,453	3,850
0300	12" wide x 6" high, 6.7 kW		15	1.333		975	82.50		1,057.50	1,200
0360	24" high, 26.7 kW		12	1.667		2,850	103		2,953	3,275
0700	24" wide x 6" high, 17.8 kW		13	1.538		1,175	95		1,270	1,450
0760	24" high, 71.1 kW		10	2		3,550	124		3,674	4,075
8000	To obtain BTU multiply kW by 3413									

23 82 19 – Fan Coil Units

23 82 19.10 Fan Coil Air Conditioning

0010	**FAN COIL AIR CONDITIONING**									
0030	Fan coil AC, cabinet mounted, filters and controls									
0100	Chilled water, 1/2 ton cooling	Q-5	8	2	Ea.	750	127		877	1,025
0120	1 ton cooling		6	2.667		860	169		1,029	1,200
0140	1-1/2 ton cooling		5.50	2.909		905	184		1,089	1,275
0150	2 ton cooling		5.25	3.048		1,225	193		1,418	1,650
0180	3 ton cooling		4	4		2,625	253		2,878	3,250
0262	For hot water coil, add					40%	10%			
0320	1 ton cooling	Q-5	6	2.667	Ea.	2,000	169		2,169	2,450
0940	Direct expansion, for use w/air cooled condensing unit, 1-1/2 ton cooling	Q-5	5	3.200	Ea.	770	203		973	1,150
1000	5 ton cooling	"	3	5.333		1,375	340		1,715	2,025
1040	10 ton cooling	Q-6	2.60	9.231		2,400	605		3,005	3,550
1060	20 ton cooling	"	.70	34.286		4,750	2,250		7,000	8,575
1500	For hot water coil, add					40%	10%			

23 82 19.20 Heating and Ventilating Units

0010	**HEATING AND VENTILATING UNITS**, Classroom units									
0020	Includes filter, heating/cooling coils, standard controls									
0080	750 CFM, 2 tons cooling	Q-6	2	12	Ea.	5,425	790		6,215	7,125
0120	1,250 CFM, 3 tons cooling		1.40	17.143		6,450	1,125		7,575	8,775
0140	1,500 CFM, 4 tons cooling		.80	30		6,900	1,975		8,875	10,600
0500	For electric heat, add					35%				
1000	For no cooling, deduct					25%	10%			

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

23 82 29 – Radiators

23 82 29.10 Hydronic Heating	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **HYDRONIC HEATING**, Terminal units, not incl. main supply pipe									
1000 Radiation									
1100 Panel, baseboard, C.I., including supports, no covers	Q-5	46	.348	L.F.	53.50	22		75.50	92
3000 Radiators, cast iron									
3100 Free standing or wall hung, 6 tube, 25" high	Q-5	96	.167	Section	70.50	10.55		81.05	93.50
3200 4 tube, 19" high	"	96	.167	"	49	10.55		59.55	70
3250 Adj. brackets, 2 per wall radiator up to 30 sections	1 Stpi	32	.250	Ea.	51	17.60		68.60	82.50
9500 To convert SFR to BTU rating: Hot water, 150 x SFR									
9510 Forced hot water, 180 x SFR; steam, 240 x SFR									

23 82 33 – Convectors

23 82 33.10 Convector Units

0010 **CONVECTOR UNITS**, Terminal units, not incl. main supply pipe									
2204 Convector, multifin, 2 pipe w/cabinet									
2210 17" H x 24" L	Q-5	10	1.600	Ea.	109	101		210	271
2214 17" H x 36" L		8.60	1.860		163	118		281	355
2218 17" H x 48" L		7.40	2.162		218	137		355	445
2222 21" H x 24" L		9	1.778		122	113		235	300
2226 21" H x 36" L		8.20	1.951		183	124		307	385
2228 21" H x 48" L		6.80	2.353		243	149		392	490
2240 For knob operated damper, add					140%				
2241 For metal trim strips, add	Q-5	64	.250	Ea.	6.55	15.85		22.40	30.50
2243 For snap-on inlet grille, add					10%	10%			
2245 For hinged access door, add	Q-5	64	.250	Ea.	39	15.85		54.85	66.50
2246 For air chamber, auto-venting, add	Q-5	58	.276	Ea.	8.50	17.45		25.95	35.50

23 82 36 – Finned-Tube Radiation Heaters

23 82 36.10 Finned Tube Radiation

0010 **FINNED TUBE RADIATION**, Terminal units, not incl. main supply pipe									
1150 Fin tube, wall hung, 14" slope top cover, with damper									
1200 1-1/4" copper tube, 4-1/4" alum. fin	Q-5	38	.421	L.F.	48.50	26.50		75	93
1250 1-1/4" steel tube, 4-1/4" steel fin	"	36	.444	"	42.50	28		70.50	88.50
1500 Note: fin tube may also require corners, caps, etc.									

23 82 39 – Unit Heaters

23 82 39.16 Propeller Unit Heaters

0010 **PROPELLER UNIT HEATERS**									
3950 Unit heaters, propeller, 115 V 2 psi steam, 60°F entering air									
4000 Horizontal, 12 MBH	Q-5	12	1.333	Ea.	425	84.50		509.50	595
4060 43.9 MBH		8	2		530	127		657	775
4140 96.8 MBH		6	2.667		990	169		1,159	1,350
4180 157.6 MBH		4	4		1,275	253		1,528	1,775
4240 286.9 MBH		2	8		1,800	505		2,305	2,725
4260 364 MBH		1.80	8.889		2,425	565		2,990	3,500
4270 404 MBH		1.60	10		2,650	635		3,285	3,875
4300 Vertical diffuser same price									
4310 Vertical flow, 40 MBH	Q-5	11	1.455	Ea.	690	92		782	895
4314 58.5 MBH		8	2		800	127		927	1,075
4326 131 MBH		4	4		1,175	253		1,428	1,650
4346 297 MBH		1.80	8.889		2,000	565		2,565	3,050
4354 420 MBH (460 V)	Q-6	1.80	13.333		2,575	875		3,450	4,125
4358 500 MBH (460 V)		1.71	14.035		3,275	920		4,195	4,975
4362 570 MBH (460 V)		1.40	17.143		4,075	1,125		5,200	6,150

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

23 82 Convection Heating and Cooling Units

23 82 39 – Unit Heaters

23 82 39.16 Propeller Unit Heaters		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4366	620 MBH (460 V)	Q-6	1.30	18.462	Ea.	4,350	1,200		5,550	6,600
4370	960 MBH (460 V)	↓	1.10	21.818	↓	8,300	1,425		9,725	11,300

23 83 Radiant Heating Units

23 83 16 – Radiant-Heating Hydronic Piping

23 83 16.10 Radiant Floor Heating

0010	**RADIANT FLOOR HEATING**									
0100	Tubing, PEX (cross-linked polyethylene)									
0110	Oxygen barrier type for systems with ferrous materials									
0120	1/2"	Q-5	800	.020	L.F.	1.09	1.27		2.36	3.09
0130	3/4"		535	.030		1.54	1.89		3.43	4.51
0140	1"	↓	400	.040	↓	2.41	2.53		4.94	6.45
0200	Non barrier type for ferrous free systems									
0210	1/2"	Q-5	800	.020	L.F.	.60	1.27		1.87	2.55
0220	3/4"	Q-5	535	.030	L.F.	1.10	1.89		2.99	4.03
0230	1"	"	400	.040	"	1.88	2.53		4.41	5.85
1000	Manifolds									
1110	Brass									
1120	With supply and return valves, flow meter, thermometer,									
1122	auto air vent and drain/fill valve.									
1130	1", 2 circuit	Q-5	14	1.143	Ea.	355	72.50		427.50	500
1140	1", 3 circuit		13.50	1.185		405	75		480	555
1150	1", 4 circuit		13	1.231		440	78		518	595
1154	1", 5 circuit		12.50	1.280		520	81		601	695
1158	1", 6 circuit		12	1.333		570	84.50		654.50	750
1162	1", 7 circuit		11.50	1.391		620	88		708	815
1166	1", 8 circuit		11	1.455		690	92		782	890
1172	1", 9 circuit		10.50	1.524		740	96.50		836.50	960
1174	1", 10 circuit		10	1.600		795	101		896	1,025
1178	1", 11 circuit		9.50	1.684		830	107		937	1,075
1182	1", 12 circuit	↓	9	1.778	↓	915	113		1,028	1,175
1610	Copper manifold header (cut to size)									
1620	1" header, 12 circuit 1/2" sweat outlets	Q-5	3.33	4.805	Ea.	128	305		433	595
1630	1-1/4" header, 12 circuit 1/2" sweat outlets		3.20	5		148	315		463	635
1640	1-1/4" header, 12 circuit 3/4" sweat outlets		3	5.333		160	340		500	680
1650	1-1/2" header, 12 circuit 3/4" sweat outlets		3.10	5.161		192	325		517	695
1660	2" header, 12 circuit 3/4" sweat outlets	↓	2.90	5.517	↓	282	350		632	830
3000	Valves									
3110	Thermostatic zone valve actuator with end switch	Q-5	40	.400	Ea.	53	25.50		78.50	96
3114	Thermostatic zone valve actuator	"	36	.444	"	100	28		128	152
3120	Motorized straight zone valve with operator complete									
3130	3/4"	Q-5	35	.457	Ea.	164	29		193	223
3140	1"		32	.500		177	31.50		208.50	242
3150	1-1/4"	↓	29.60	.541	↓	226	34		260	299
3500	4 way mixing valve, manual, brass									
3530	1"	Q-5	13.30	1.203	Ea.	234	76		310	370
3540	1-1/4"		11.40	1.404		254	89		343	410
3550	1-1/2"		11	1.455		325	92		417	490
3560	2"		10.60	1.509		460	95.50		555.50	650
3800	Mixing valve motor, 4 way for valves, 1" and 1-1/4"		34	.471		385	30		415	470
3810	Mixing valve motor, 4 way for valves, 1-1/2" and 2"	↓	30	.533	↓	445	34		479	540

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

23 83 16 – Radiant-Heating Hydronic Piping

	23 83 16.10 Radiant Floor Heating	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
5000	Radiant floor heating, zone control panel									
5120	4 zone actuator valve control, expandable	Q-5	20	.800	Ea.	150	50.50		200.50	241
5130	6 zone actuator valve control, expandable		18	.889		279	56.50		335.50	390
6070	Thermal track, straight panel for long continuous runs, 5.333 S.F.		40	.400		36.50	25.50		62	78.50
6080	Thermal track, utility panel, for direction reverse at run end, 5.333 S.F.		40	.400		36.50	25.50		62	78.50
6090	Combination panel, for direction reverse plus straight run, 5.333 S.F.		40	.400		36.50	25.50		62	78.50
7000	PEX tubing fittings									
7100	Compression type									
7116	Coupling									
7120	1/2" x 1/2"	1 Stpi	27	.296	Ea.	7	21		28	38.50
7124	3/4" x 3/4"	"	23	.348	"	16.85	24.50		41.35	55
7130	Adapter									
7132	1/2" x female sweat 1/2"	1 Stpi	27	.296	Ea.	4.54	21		25.54	36
7134	1/2" x female sweat 3/4"		26	.308		5.10	21.50		26.60	38
7136	5/8" x female sweat 3/4"		24	.333		7.30	23.50		30.80	43
7140	Elbow									
7142	1/2" x female sweat 1/2"	1 Stpi	27	.296	Ea.	6.95	21		27.95	38.50
7144	1/2" x female sweat 3/4"		26	.308		8.10	21.50		29.60	41.50
7146	5/8" x female sweat 3/4"		24	.333		9.10	23.50		32.60	45
7200	Insert type									
7206	PEX x male NPT									
7210	1/2" x 1/2"	1 Stpi	29	.276	Ea.	3.23	19.40		22.63	32.50
7220	3/4" x 3/4"		27	.296		4.76	21		25.76	36.50
7230	1" x 1"		26	.308		8.05	21.50		29.55	41.50
7300	PEX coupling									
7310	1/2" x 1/2"	1 Stpi	30	.267	Ea.	1.22	18.75		19.97	29.50
7320	3/4" x 3/4"		29	.276		1.85	19.40		21.25	31
7330	1" x 1"		28	.286		2.86	20		22.86	33
7400	PEX stainless crimp ring									
7410	1/2" x 1/2"	1 Stpi	86	.093	Ea.	.58	6.55		7.13	10.40
7420	3/4" x 3/4"		84	.095		.79	6.70		7.49	10.85
7430	1" x 1"		82	.098		1.14	6.85		7.99	11.50

23 83 33 – Electric Radiant Heaters

23 83 33.10 Electric Heating

0010	**ELECTRIC HEATING**, not incl. conduit or feed wiring									
1100	Rule of thumb: Baseboard units, including control	1 Elec	4.40	1.818	kW	132	120		252	325
1300	Baseboard heaters, 2' long, 350 watt		8	1	Ea.	32.50	66		98.50	135
1400	3' long, 750 watt		8	1	"	37.50	66		103.50	140
1600	4' long, 1,000 watt	1 Elec	6.70	1.194	Ea.	45.50	79		124.50	167
1800	5' long, 935 watt		5.70	1.404		54.50	93		147.50	198
2000	6' long, 1,500 watt		5	1.600		62.50	106		168.50	226
2400	8' long, 2,000 watt		4	2		76	132		208	281
2950	Wall heaters with fan, 120 to 277 volt									
3170	1,000 watt	1 Elec	6	1.333	Ea.	370	88.50		458.50	535
3180	1,250 watt		5	1.600		126	106		232	296
3190	1,500 watt		4	2		400	132		532	635
3600	Thermostats, integral		16	.500		32.50	33		65.50	85
3800	Line voltage, 1 pole		8	1		34.50	66		100.50	137

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23 84 13 – Humidifiers

23 84 13.10 Humidifier Units	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **HUMIDIFIER UNITS**									
0520 Steam, room or duct, filter, regulators, auto. controls, 220 V									
0540 11 lb./hr.	Q-5	6	2.667	Ea.	2,825	169		2,994	3,375
0560 22 lb./hr.		5	3.200		3,125	203		3,328	3,750
0580 33 lb./hr.		4	4		3,200	253		3,453	3,900
0600 50 lb./hr.		4	4		3,575	253		3,828	4,300
0620 100 lb./hr.	↓	3	5.333	↓	5,275	340		5,615	6,300

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Estimating Tips

26 05 00 Common Work Results for Electrical

- Conduit should be taken off in three main categories—power distribution, branch power, and branch lighting—so the estimator can concentrate on systems and components, therefore making it easier to ensure all items have been accounted for.
- For cost modifications for elevated conduit installation, add the percentages to labor according to the height of installation and only to the quantities exceeding the different height levels, not to the total conduit quantities. Refer to subdivision 26 01 02.20 for labor adjustment factors.
- Remember that aluminum wiring of equal ampacity is larger in diameter than copper and may require larger conduit.
- If more than three wires at a time are being pulled, deduct percentages from the labor hours of that grouping of wires.
- When taking off grounding systems, identify separately the type and size of wire, and list each unique type of ground connection.
- The estimator should take the weights of materials into consideration when completing a takeoff. Topics to consider include: How will the materials be supported? What methods of support are available? How high will the support structure have to reach? Will the final support structure be able to withstand the total burden? Is the support material included or separate from the fixture, equipment, and material specified?
- Do not overlook the costs for equipment used in the installation. If scaffolding or highlifts are available in the field, contractors may use them in lieu of the proposed ladders and rolling staging.

26 20 00 Low-Voltage Electrical Transmission

- Supports and concrete pads may be shown on drawings for the larger equipment, or the support system may be only a piece of plywood for the back of a panelboard. In either case, they must be included in the costs.

26 40 00 Electrical and Cathodic Protection

- When taking off cathodic protection systems, identify the type and size of cable, and list each unique type of anode connection.

26 50 00 Lighting

- Fixtures should be taken off room by room using the fixture schedule, specifications, and the ceiling plan. For large concentrations of lighting fixtures in the same area, deduct the percentages from labor hours.

Reference Numbers

Reference numbers are shown at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear. ■

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Note: The following companies, in part, have been used as a reference source for some of the material prices used in Division 26:

Electriflex

Trade Service

26 01 02 – Labor Adjustment

26 01 02.20 Labor Adjustment Factors	Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010 **LABOR ADJUSTMENT FACTORS** (For Div. 26, 27 and 28) R260519-90									
0100 Subtract from labor for Economy of Scale for Wire									
0110 4-5 wires						25%			
0120 6-10 wires						30%			
0130 11-15 wires						35%			
0140 over 15 wires						40%			
0150 Labor adjustment factors (For Div. 26, 27, 28 and 48)									
0200 Labor factors: The below are reasonable suggestions, but									
0210 each project must be evaluated for its own peculiarities, and									
0220 the adjustments be increased or decreased depending on the									
0230 severity of the special conditions.									
1000 Add to labor for elevated installation (above floor level)									
1010 10′ to 14.5′ high						10%			
1020 15′ to 19.5′ high						20%			
1030 20′ to 24.5′ high						25%			
1040 25′ to 29.5′ high						35%			
1050 30′ to 34.5′ high						40%			
1060 35′ to 39.5′ high						50%			
1070 40′ and higher						55%			
2000 Add to labor for crawl space									
2010 3′ high						40%			
2020 4′ high						30%			
3000 Add to labor for multi-story building									
3100 For new construction (No elevator available)									
3110 Add for floors 3 thru 10						5%			
3120 Add for floors 11 thru 15						10%			
3130 Add for floors 16 thru 20						15%			
3140 Add for floors 21 thru 30						20%			
3150 Add for floors 31 and up						30%			
3200 For existing structure (Elevator available)									
3210 Add for work on floor 3 and above						2%			
4000 Add to labor for working in existing occupied buildings									
4010 Hospital						35%			
4020 Office building						25%			
4030 School						20%			
4040 Factory or warehouse						15%			
4050 Multi-dwelling						15%			
5000 Add to labor, miscellaneous									
5010 Cramped shaft						35%			
5020 Congested area						15%			
5030 Excessive heat or cold						30%			
6000 Labor factors: the above are reasonable suggestions, but									
6100 each project should be evaluated for its own peculiarities									
6200 Other factors to be considered are:									
6210 Movement of material and equipment through finished areas						10%			
6220 Equipment room min security direct access w/authorization						15%			
6230 Attic space						25%			
6240 No service road						25%			
6250 Poor unloading/storage area, no hydraulic lifts or jacks						20%			
6260 Congested site area/heavy traffic						20%			
7000 Correctional facilities (no compounding division 1 adjustment factors)									
7010 Minimum security w/facilities escort						30%			
7020 Medium security w/facilities and correctional officer escort						40%			

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26 01 Operation and Maintenance of Electrical Systems

26 01 02 – Labor Adjustment

26 01 02.20 Labor Adjustment Factors	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
7030 Max security w/facilities & correctional officer escort (no inmate contact)						50%			

26 05 Common Work Results for Electrical

26 05 05 – Selective Demolition for Electrical

26 05 05.10 Electrical Demolition

0010	**ELECTRICAL DEMOLITION**								
0020	Electrical demolition, conduit to 10′ high, incl. fittings & hangers								
0100	Rigid galvanized steel, 1/2″ to 1″ diameter	1 Elec	242	.033	L.F.		2.19	2.19	3.25
0120	1-1/4″ to 2″	″	200	.040			2.65	2.65	3.94
0140	2-1/2″ to 3-1/2″	2 Elec	302	.053			3.51	3.51	5.20
0160	4″ to 6″	″	160	.100			6.60	6.60	9.85
0200	Electric metallic tubing (EMT), 1/2″ to 1″	1 Elec	394	.020			1.34	1.34	2
0220	1-1/4″ to 1-1/2″		326	.025			1.62	1.62	2.41
0240	2″ to 3″		236	.034			2.24	2.24	3.34
0260	3-1/2″ to 4″	2 Elec	310	.052			3.42	3.42	5.10
0270	Armored cable (BX) avg. 50′ runs								
0280	#14, 2 wire	1 Elec	690	.012	L.F.		.77	.77	1.14
0290	#14, 3 wire		571	.014			.93	.93	1.38
0300	#12, 2 wire		605	.013			.88	.88	1.30
0310	#12, 3 wire		514	.016			1.03	1.03	1.53
0320	#10, 2 wire		514	.016			1.03	1.03	1.53
0330	#10, 3 wire		425	.019			1.25	1.25	1.85
0340	#8, 3 wire		342	.023			1.55	1.55	2.30
0350	Non metallic sheathed cable (Romex)								
0360	#14, 2 wire	1 Elec	720	.011	L.F.		.74	.74	1.09
0370	#14, 3 wire		657	.012			.81	.81	1.20
0380	#12, 2 wire		629	.013			.84	.84	1.25
0390	#10, 3 wire		450	.018			1.18	1.18	1.75
0400	Wiremold raceway, including fittings & hangers								
0420	No. 3000	1 Elec	250	.032	L.F.		2.12	2.12	3.15
0440	No. 4000		217	.037			2.44	2.44	3.63
0460	No. 6000		166	.048			3.19	3.19	4.74
0462	Plugmold with receptacle		114	.070			4.65	4.65	6.90
0465	Telephone/power pole		12	.667	Ea.		44	44	65.50
0470	Non-metallic, straight section		480	.017	L.F.		1.10	1.10	1.64
0500	Channels, steel, including fittings & hangers								
0520	3/4″ x 1-1/2″	1 Elec	308	.026	L.F.		1.72	1.72	2.56
0540	1-1/2″ x 1-1/2″	1 Elec	269	.030	L.F.		1.97	1.97	2.93
0560	1-1/2″ x 1-7/8″	″	229	.035	″		2.31	2.31	3.44
0600	Copper bus duct, indoor, 3 phase								
0610	Including hangers & supports								
0620	225 amp	2 Elec	135	.119	L.F.		7.85	7.85	11.65
0640	400 amp		106	.151			10	10	14.85
0660	600 amp		86	.186			12.30	12.30	18.30
0680	1,000 amp		60	.267			17.65	17.65	26
0700	1,600 amp		40	.400			26.50	26.50	39.50
0720	3,000 amp		10	1.600			106	106	157
1300	Transformer, dry type, 1 phase, incl. removal of								
1320	supports, wire & conduit terminations								
1340	1 kVA	1 Elec	7.70	1.039	Ea.		69	69	102
1420	75 kVA	2 Elec	2.50	6.400	″		425	425	630

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	26 05 05.10 Electrical Demolition	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1440	3 phase to 600 V, primary									
1460	3 kVA	1 Elec	3.87	2.067	Ea.		137		137	203
1520	75 kVA	2 Elec	2.69	5.948			395		395	585
1550	300 kVA	R-3	1.80	11.111			730	96.50	826.50	1,200
1570	750 kVA		1.10	18.182			1,200	158	1,358	1,950
1571	750 kVA		700	.029	kVA		1.88	.25	2.13	3.07
1800	Wire, THW-THWN-THHN, removed from									
1810	in place conduit, to 10′ high									
1830	#14	1 Elec	65	.123	C.L.F.		8.15		8.15	12.10
1840	#12		55	.145			9.65		9.65	14.30
1850	#10		45.50	.176			11.65		11.65	17.30
1860	#8		40.40	.198			13.10		13.10	19.50
1870	#6		32.60	.245			16.25		16.25	24
1880	#4	2 Elec	53	.302			20		20	29.50
1890	#3		50	.320			21		21	31.50
1900	#2		44.60	.359			24		24	35.50
1910	1/0		33.20	.482			32		32	47.50
1920	2/0		29.20	.548			36.50		36.50	54
1930	3/0		25	.640			42.50		42.50	63
1940	4/0		22	.727			48		48	71.50
1950	250 kcmil		20	.800			53		53	78.50
1960	300 kcmil		19	.842			56		56	83
1970	350 kcmil		18	.889			59		59	87.50
1980	400 kcmil		17	.941			62.50		62.50	92.50
1990	500 kcmil		16.20	.988			65.50		65.50	97
2000	Interior fluorescent fixtures, incl. supports									
2010	& whips, to 10′ high									
2100	Recessed drop-in 2′ x 2′, 2 lamp	2 Elec	35	.457	Ea.		30.50		30.50	45
2110	2′ x 2′, 4 lamp		30	.533			35.50		35.50	52.50
2120	2′ x 4′, 2 lamp		33	.485			32		32	47.50
2140	2′ x 4′, 4 lamp		30	.533			35.50		35.50	52.50
2160	4′ x 4′, 4 lamp		20	.800			53		53	78.50
2180	Surface mount, acrylic lens & hinged frame									
2200	1′ x 4′, 2 lamp	2 Elec	44	.364	Ea.		24		24	36
2210	6″ x 4′, 2 lamp		44	.364			24		24	36
2220	2′ x 2′, 2 lamp		44	.364			24		24	36
2260	2′ x 4′, 4 lamp		33	.485			32		32	47.50
2280	4′ x 4′, 4 lamp		23	.696			46		46	68.50
2281	4′ x 4′, 6 lamp		23	.696			46		46	68.50
2300	Strip fixtures, surface mount									
2320	4′ long, 1 lamp	2 Elec	53	.302	Ea.		20		20	29.50
2340	4′ long, 2 lamp		50	.320			21		21	31.50
2360	8′ long, 1 lamp		42	.381			25		25	37.50
2380	8′ long, 2 lamp		40	.400			26.50		26.50	39.50
2400	Pendant mount, industrial, incl. removal									
2410	of chain or rod hangers, to 10′ high									
2420	4′ long, 2 lamp	2 Elec	35	.457	Ea.		30.50		30.50	45
2421	4′ long, 4 lamp		35	.457			30.50		30.50	45
2440	8′ long, 2 lamp		27	.593			39		39	58.50

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26 05 13 – Medium-Voltage Cables

	26 05 13.16 Medium-Voltage, Single Cable	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**MEDIUM-VOLTAGE, SINGLE CABLE** Splicing & terminations not included									
0040	Copper, XLP shielding, 5 kV, #6	2 Elec	4.40	3.636	C.L.F.	181	241		422	560
0050	#4		4.40	3.636		234	241		475	620
0100	#2		4	4		250	265		515	670
0200	#1		4	4		355	265		620	785
0400	1/0		3.80	4.211		400	279		679	855
0600	2/0		3.60	4.444		430	294		724	905
0800	4/0		3.20	5		655	330		985	1,200
1000	250 kcmil	3 Elec	4.50	5.333		780	355		1,135	1,375
1200	350 kcmil		3.90	6.154		1,025	405		1,430	1,725
1400	500 kcmil		3.60	6.667		1,075	440		1,515	1,850
1600	15 kV, ungrounded neutral, #1	2 Elec	4	4		385	265		650	820
1800	1/0	"	3.80	4.211		460	279		739	925
2000	2/0	2 Elec	3.60	4.444	C.L.F.	525	294		819	1,025
2200	4/0	"	3.20	5		700	330		1,030	1,250
2400	250 kcmil	3 Elec	4.50	5.333		775	355		1,130	1,375
2600	350 kcmil		3.90	6.154		980	405		1,385	1,675
2800	500 kcmil		3.60	6.667		1,100	440		1,540	1,850

26 05 19 – Low-Voltage Electrical Power Conductors and Cables

26 05 19.20 Armored Cable

0010	**ARMORED CABLE**									
0050	600 volt, copper (BX), #14, 2 conductor, solid	1 Elec	2.40	3.333	C.L.F.	39.50	221		260.50	375
0100	3 conductor, solid		2.20	3.636		74	241		315	440
0150	#12, 2 conductor, solid		2.30	3.478		45	230		275	390
0200	3 conductor, solid		2	4		76	265		341	480
0250	#10, 2 conductor, solid		2	4		77.50	265		342.50	480
0300	3 conductor, solid		1.60	5		124	330		454	625
0340	#8, 2 conductor, stranded		1.50	5.333		173	355		528	715
0350	3 conductor, stranded		1.30	6.154		173	405		578	795
0400	3 conductor with PVC jacket, in cable tray, #6		3.10	2.581		345	171		516	630
0450	#4	2 Elec	5.40	2.963		640	196		836	990
0500	#2		4.60	3.478		740	230		970	1,150
0550	#1		4	4		975	265		1,240	1,475
0600	1/0		3.60	4.444		1,100	294		1,394	1,625
0650	2/0		3.40	4.706		1,025	310		1,335	1,625
0700	3/0		3.20	5		1,775	330		2,105	2,450
0750	4/0		3	5.333		2,125	355		2,480	2,850
0800	250 kcmil	3 Elec	3.60	6.667		2,625	440		3,065	3,550
0850	350 kcmil		3.30	7.273		3,300	480		3,780	4,375
0900	500 kcmil		3	8		4,575	530		5,105	5,800
1050	5 kV, copper, 3 conductor with PVC jacket,									
1060	non-shielded, in cable tray, #4	2 Elec	380	.042	L.F.	6.30	2.79		9.09	11.05
1100	#2		360	.044		14.25	2.94		17.19	20
1200	#1		300	.053		15.35	3.53		18.88	22
1400	1/0		290	.055		21	3.65		24.65	28.50
1600	2/0		260	.062		22	4.07		26.07	30
2000	4/0		240	.067		30	4.41		34.41	39.50
2100	250 kcmil	3 Elec	330	.073		33.50	4.81		38.31	43.50
2150	350 kcmil		315	.076		45	5.05		50.05	57
2200	500 kcmil		270	.089		55	5.90		60.90	69.50
2400	15 kV, copper, 3 conductor with PVC jacket galv., steel armored									
2500	grounded neutral, in cable tray, #2	2 Elec	300	.053	L.F.	23	3.53		26.53	31

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	26 05 19.20 Armored Cable	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2600	#1	2 Elec	280	.057	L.F.	24.50	3.78		28.28	32.50
2800	1/0		260	.062		28	4.07		32.07	36.50
2900	2/0		220	.073		37.50	4.81		42.31	48
3000	4/0		190	.084		42.50	5.55		48.05	55
3100	250 kcmil	3 Elec	270	.089		47	5.90		52.90	61
3150	350 kcmil		240	.100		55.50	6.60		62.10	71
3200	500 kcmil		210	.114		74.50	7.55		82.05	93.50
3400	15 kV, copper, 3 conductor with PVC jacket,									
3450	ungrounded neutral, in cable tray, #2	2 Elec	260	.062	L.F.	25	4.07		29.07	33.50
3500	#1		230	.070		27.50	4.61		32.11	37.50
3600	1/0		200	.080		31.50	5.30		36.80	42.50
3700	2/0		190	.084		38.50	5.55		44.05	51
3800	4/0		160	.100		46.50	6.60		53.10	61.50
4000	250 kcmil	3 Elec	210	.114		54.50	7.55		62.05	71.50
4050	350 kcmil		195	.123		71.50	8.15		79.65	90.50
4100	500 kcmil		180	.133		87	8.85		95.85	109
9010	600 volt, copper (MC) steel clad, #14, 2 wire	R-1A	8.16	1.961	C.L.F.	64.50	117		181.50	245
9020	3 wire		7.21	2.219		83.50	132		215.50	289
9030	4 wire		6.69	2.392		213	142		355	445
9040	#12, 2 wire		7.21	2.219		80	132		212	285
9050	3 wire		6.69	2.392		127	142		269	350
9070	#10, 2 wire		6.04	2.649		178	158		336	430
9080	3 wire		5.65	2.832		190	169		359	460
9100	#8, 2 wire, stranded		3.94	4.061		150	242		392	525
9110	3 wire, stranded		3.40	4.706		193	280		473	625
9200	600 volt, copper (MC) aluminum clad, #14, 2 wire		8.16	1.961		44.50	117		161.50	223
9210	3 wire		7.21	2.219		90	132		222	296
9220	4 wire		6.69	2.392		107	142		249	330
9230	#12, 2 wire		7.21	2.219		43	132		175	244
9240	3 wire		6.69	2.392		77	142		219	297
9250	4 wire		6.04	2.649		177	158		335	430
9260	#10, 2 wire		6.04	2.649		96	158		254	340
9270	3 wire		5.65	2.832		138	169		307	405
9280	4 wire		5.23	3.059		320	182		502	620
	26 05 19.35 Cable Terminations									
0010	**CABLE TERMINATIONS**									
0015	Wire connectors, screw type, #22 to #14	1 Elec	260	.031	Ea.	.05	2.04		2.09	3.09
0020	#18 to #12		240	.033		.14	2.21		2.35	3.43
0035	#16 to #10		230	.035		.19	2.30		2.49	3.63
0040	#14 to #8		210	.038		.46	2.52		2.98	4.26
0045	#12 to #6		180	.044		.48	2.94		3.42	4.90
0050	Terminal lugs, solderless, #16 to #10		50	.160		.35	10.60		10.95	16.15
0100	#8 to #4		30	.267		.70	17.65		18.35	27
0150	#2 to #1		22	.364		.75	24		24.75	37
0200	1/0 to 2/0		16	.500		1.27	33		34.27	50.50
0250	3/0		12	.667		7.30	44		51.30	73.50
0300	4/0		11	.727		34	48		82	109
0350	250 kcmil		9	.889		2.79	59		61.79	90.50
0400	350 kcmil		7	1.143		3.24	75.50		78.74	116
0450	500 kcmil		6	1.333		8	88.50		96.50	140
1600	Crimp 1 hole lugs, copper or aluminum, 600 volt									
1620	#14	1 Elec	60	.133	Ea.	.60	8.85		9.45	13.75

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	26 05 19.35 Cable Terminations	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1630	#12	1 Elec	50	.160	Ea.	1.11	10.60		11.71	16.95
1640	#10		45	.178		1.11	11.75		12.86	18.70
1780	#8		36	.222		1.67	14.70		16.37	24
1800	#6		30	.267		2.05	17.65		19.70	28.50
2000	#4		27	.296		2.73	19.60		22.33	32
2200	#2		24	.333		3.15	22		25.15	36.50
2400	#1		20	.400		4.45	26.50		30.95	44.50
2500	1/0		17.50	.457		5.20	30.50		35.70	51
2600	2/0		15	.533		7.40	35.50		42.90	60.50
2800	3/0		12	.667		6.15	44		50.15	72.50
3000	4/0		11	.727		7.30	48		55.30	79.50
3200	250 kcmil		9	.889		8.35	59		67.35	96.50
3400	300 kcmil		8	1		7.45	66		73.45	107
3500	350 kcmil		7	1.143		10.90	75.50		86.40	124
3600	400 kcmil		6.50	1.231		11.65	81.50		93.15	134
3800	500 kcmil		6	1.333		14.20	88.50		102.70	147

	26 05 19.50 Mineral Insulated Cable									
0010	**MINERAL INSULATED CABLE** 600 volt									
0100	1 conductor, #12	1 Elec	1.60	5	C.L.F.	475	330		805	1,000
0200	#10		1.60	5		710	330		1,040	1,275
0400	#8		1.50	5.333		800	355		1,155	1,400
0500	#6		1.40	5.714		955	380		1,335	1,600
0600	#4	2 Elec	2.40	6.667		1,275	440		1,715	2,050
0800	#2		2.20	7.273		1,825	480		2,305	2,725
0900	#1		2.10	7.619		2,100	505		2,605	3,050
1000	1/0		2	8		2,450	530		2,980	3,450
1100	2/0		1.90	8.421		2,925	555		3,480	4,050
1200	3/0		1.80	8.889		3,500	590		4,090	4,725
1400	4/0	2 Elec	1.60	10	C.L.F.	4,050	660		4,710	5,425
1410	250 kcmil	3 Elec	2.40	10		4,550	660		5,210	6,000
1420	350 kcmil		1.95	12.308		5,350	815		6,165	7,100
1430	500 kcmil		1.95	12.308		6,700	815		7,515	8,575

	26 05 19.55 Non-Metallic Sheathed Cable									
0010	**NON-METALLIC SHEATHED CABLE** 600 volt									
0100	Copper with ground wire (Romex)									
0150	#14, 2 conductor	1 Elec	2.70	2.963	C.L.F.	22.50	196		218.50	315
0200	3 conductor		2.40	3.333		31.50	221		252.50	365
0220	4 conductor		2.20	3.636		53.50	241		294.50	420
0250	#12, 2 conductor		2.50	3.200		29	212		241	345
0300	3 conductor		2.20	3.636		47	241		288	410
0320	4 conductor		2	4		78	265		343	480
0350	#10, 2 conductor		2.20	3.636		56.50	241		297.50	420
0400	3 conductor		1.80	4.444		77.50	294		371.50	520
0430	#8, 2 conductor		1.60	5		101	330		431	600
0450	3 conductor		1.50	5.333		144	355		499	685
0500	#6, 3 conductor		1.40	5.714		390	380		770	990
0550	SE type SER aluminum cable, 3 RHW and									
0600	1 bare neutral, 3 #8 & 1 #8	1 Elec	1.60	5	C.L.F.	72	330		402	570
0650	3 #6 & 1 #6	"	1.40	5.714		75	380		455	645
0700	3 #4 & 1 #6	2 Elec	2.40	6.667		82.50	440		522.50	745
0750	3 #2 & 1 #4		2.20	7.273		128	480		608	855
0800	3 #1/0 & 1 #2		2	8		174	530		704	975

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26 05 19 – Low-Voltage Electrical Power Conductors and Cables

			Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
26 05 19.55	**Non-Metallic Sheathed Cable**										
0850	3 #2/0 & 1 #1		2 Elec	1.80	8.889	C.L.F.	206	590		796	1,100
0900	3 #4/0 & 1 #2/0		↓	1.60	10	↓	305	660		965	1,325
26 05 19.90	**Wire**										
0010	**WIRE**, normal installation conditions in wireway, conduit, cable tray										
0020	600 volt, copper type THW, solid, #14	R260519-92	1 Elec	13	.615	C.L.F.	13.95	40.50		54.45	76
0030	#12			11	.727		16.95	48		64.95	90
0040	#10			10	.800		34.50	53		87.50	117
0050	Stranded, #14	R260533-22		13	.615		16.55	40.50		57.05	78.50
0100	#12			11	.727		23	48		71	96.50
0120	#10			10	.800		34.50	53		87.50	117
0140	#8			8	1		52.50	66		118.50	157
0160	#6			6.50	1.231		75	81.50		156.50	204
0180	#4		2 Elec	10.60	1.509		141	100		241	305
0200	#3			10	1.600		170	106		276	345
0220	#2			9	1.778		214	118		332	410
0240	#1			8	2		248	132		380	470
0260	1/0			6.60	2.424		298	160		458	570
0280	2/0			5.80	2.759		410	183		593	720
0300	3/0			5	3.200		495	212		707	855
0350	4/0			4.40	3.636		590	241		831	1,000
0400	250 kcmil		3 Elec	6	4		715	265		980	1,175
0420	300 kcmil			5.70	4.211		940	279		1,219	1,450
0450	350 kcmil			5.40	4.444		1,075	294		1,369	1,625
0480	400 kcmil			5.10	4.706		1,225	310		1,535	1,825
0490	500 kcmil			4.80	5		1,550	330		1,880	2,200
0540	600 volt, aluminum type THHN, stranded, #6		1 Elec	8	1		15	66		81	115
0560	#4		2 Elec	13	1.231		20.50	81.50		102	144
0580	#2			10.60	1.509		27	100		127	179
0600	#1			9	1.778		39	118		157	218
0620	1/0			8	2		43.50	132		175.50	245
0640	2/0			7.20	2.222		51	147		198	275
0680	3/0			6.60	2.424		62.50	160		222.50	310
0700	4/0			6.20	2.581		72	171		243	335
0720	250 kcmil		3 Elec	8.70	2.759		85.50	183		268.50	365
0740	300 kcmil			8.10	2.963		112	196		308	415
0760	350 kcmil			7.50	3.200		120	212		332	445
0780	400 kcmil			6.90	3.478		135	230		365	490
0800	500 kcmil			6	4		142	265		407	550
0850	600 kcmil			5.70	4.211		194	279		473	630
0880	700 kcmil			5.10	4.706		214	310		524	700
0900	750 kcmil			4.80	5		230	330		560	745
0910	1,000 kcmil			3.78	6.349		340	420		760	1,000
0920	600 volt, copper type THWN-THHN, solid, #14		1 Elec	13	.615		8.40	40.50		48.90	70
0940	#12			11	.727		12.95	48		60.95	86
0960	#10			10	.800		20.50	53		73.50	101
1000	Stranded, #14			13	.615		9.30	40.50		49.80	71
1200	#12			11	.727		35	48		83	110
1250	#10			10	.800		31	53		84	113
1300	#8			8	1		34.50	66		100.50	137
1350	#6		↓	6.50	1.231		55	81.50		136.50	182
1400	#4		2 Elec	10.60	1.509	↓	89.50	100		189.50	248

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26 05 23 – Control-Voltage Electrical Power Cables

26 05 23.10 Control Cable	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **CONTROL CABLE**									
0020 600 volt, copper, #14 THWN wire with PVC jacket, 2 wires	1 Elec	9	.889	C.L.F.	48	59		107	141
0030 3 wires		8	1		61	66		127	166
0100 4 wires		7	1.143		131	75.50		206.50	256
0150 5 wires		6.50	1.231		186	81.50		267.50	325
0200 6 wires		6	1.333		92	88.50		180.50	232
0300 8 wires		5.30	1.509		217	100		317	385
0400 10 wires		4.80	1.667		185	110		295	365
0500 12 wires		4.30	1.860		197	123		320	400
0600 14 wires		3.80	2.105		250	139		389	480
0700 16 wires		3.50	2.286		315	151		466	570
0800 18 wires		3.30	2.424		350	160		510	625
0810 19 wires		3.10	2.581		252	171		423	530
0900 20 wires		3	2.667		269	177		446	560
1000 22 wires		2.80	2.857		395	189		584	715

26 05 26 – Grounding and Bonding for Electrical Systems

26 05 26.80 Grounding

0010 **GROUNDING**									
0030 Rod, copper clad, 8′ long, 1/2″ diameter	1 Elec	5.50	1.455	Ea.	18	96.50		114.50	163
0050 3/4″ diameter		5.30	1.509		30	100		130	182
0080 10′ long, 1/2″ diameter		4.80	1.667		22	110		132	188
0100 3/4″ diameter		4.40	1.818		60.50	120		180.50	246
0130 15′ long, 3/4″ diameter		4	2		65	132		197	269
0390 Bare copper wire, stranded, #8		11	.727	C.L.F.	34	48		82	109
0400 #6		10	.800		55	53		108	139
0600 #2	2 Elec	10	1.600		141	106		247	310
0800 3/0		6.60	2.424		267	160		427	530
1000 4/0		5.70	2.807		385	186		571	700
1200 250 kcmil	3 Elec	7.20	3.333		495	221		716	875
1800 Water pipe ground clamps, heavy duty									
2000 Bronze, 1/2″ to 1″ diameter	1 Elec	8	1	Ea.	29.50	66		95.50	131
2100 1-1/4″ to 2″ diameter		8	1		33	66		99	135
2200 2-1/2″ to 3″ diameter		6	1.333		64.50	88.50		153	202
2800 Brazed connections, #6 wire		12	.667		18.60	44		62.60	86
3000 #2 wire		10	.800		25	53		78	106
3100 3/0 wire		8	1		37	66		103	140
3200 4/0 wire		7	1.143		42.50	75.50		118	159
3400 250 kcmil wire		5	1.600		49.50	106		155.50	212
3600 500 kcmil wire		4	2		61	132		193	265

26 05 33 – Raceway and Boxes for Electrical Systems

26 05 33.13 Conduit

0010 **CONDUIT** To 10′ high, includes 2 terminations, 2 elbows,	R260533-22								
0020 11 beam clamps, and 11 couplings per 100 L.F.									
0300 Aluminum, 1/2″ diameter	1 Elec	100	.080	L.F.	2.10	5.30		7.40	10.15
0500 3/4″ diameter		90	.089		2.95	5.90		8.85	12
0700 1″ diameter		80	.100		3.32	6.60		9.92	13.50
1000 1-1/4″ diameter		70	.114		4.38	7.55		11.93	16.05
1030 1-1/2″ diameter		65	.123		5.30	8.15		13.45	17.95
1050 2″ diameter		60	.133		6.90	8.85		15.75	20.50
1070 2-1/2″ diameter		50	.160		9.90	10.60		20.50	26.50
1100 3″ diameter	2 Elec	90	.178		13.70	11.75		25.45	32.50

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26 05 33 – Raceway and Boxes for Electrical Systems

	26 05 33.13 Conduit	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1130	3-1/2" diameter	2 Elec	80	.200	L.F.	17.75	13.25		31	39.50
1140	4" diameter		70	.229		21	15.15		36.15	45.50
1750	Rigid galvanized steel, 1/2" diameter	1 Elec	90	.089		3.24	5.90		9.14	12.30
1770	3/4" diameter		80	.100		3.50	6.60		10.10	13.70
1800	1" diameter		65	.123		5.05	8.15		13.20	17.65
1830	1-1/4" diameter		60	.133		7.25	8.85		16.10	21
1850	1-1/2" diameter		55	.145		8.25	9.65		17.90	23.50
1870	2" diameter		45	.178		10	11.75		21.75	28.50
1900	2-1/2" diameter		35	.229		18.35	15.15		33.50	42.50
1930	3" diameter	2 Elec	50	.320		21	21		42	54.50
1950	3-1/2" diameter		44	.364		26.50	24		50.50	65.50
1970	4" diameter		40	.400		29	26.50		55.50	71
2500	Steel, intermediate conduit (IMC), 1/2" diameter	1 Elec	100	.080		2.34	5.30		7.64	10.40
2530	3/4" diameter		90	.089		2.86	5.90		8.76	11.90
2550	1" diameter		70	.114		3.93	7.55		11.48	15.60
2570	1-1/4" diameter		65	.123		5.45	8.15		13.60	18.10
2600	1-1/2" diameter		60	.133		6.70	8.85		15.55	20.50
2630	2" diameter		50	.160		7.95	10.60		18.55	24.50
2650	2-1/2" diameter		40	.200		14.65	13.25		27.90	36
2670	3" diameter	2 Elec	60	.267		19.85	17.65		37.50	48
2700	3-1/2" diameter		54	.296		24	19.60		43.60	55.50
2730	4" diameter		50	.320		27	21		48	61
5000	Electric metallic tubing (EMT), 1/2" diameter	1 Elec	170	.047		.82	3.12		3.94	5.55
5020	3/4" diameter		130	.062		1.23	4.07		5.30	7.40
5040	1" diameter		115	.070		2.07	4.61		6.68	9.10
5060	1-1/4" diameter		100	.080		3.39	5.30		8.69	11.60
5080	1-1/2" diameter		90	.089		4.11	5.90		10.01	13.25
5100	2" diameter		80	.100		4.82	6.60		11.42	15.15
5120	2-1/2" diameter		60	.133		6.80	8.85		15.65	20.50
5140	3" diameter	2 Elec	100	.160		8.60	10.60		19.20	25
5160	3-1/2" diameter	2 Elec	90	.178	L.F.	11.10	11.75		22.85	30
5180	4" diameter	"	80	.200	"	11.65	13.25		24.90	32.50
9900	Add to labor for higher elevated installation									
9905	10' to 14.5' high, add						10%			
9910	15' to 20' high, add						20%			
9920	20' to 25' high, add						25%			
9930	25' to 30' high, add						35%			
9940	30' to 35' high, add						40%			
9950	35' to 40' high, add						50%			
9960	Over 40' high, add						55%			

26 05 33.16 Boxes for Electrical Systems

0010	**BOXES FOR ELECTRICAL SYSTEMS**									
0020	Pressed steel, octagon, 4"	1 Elec	20	.400	Ea.	1.32	26.50		27.82	41
0060	Covers, blank		64	.125		.68	8.30		8.98	13.05
0100	Extension rings		40	.200		2.19	13.25		15.44	22
0150	Square, 4"		20	.400		2.06	26.50		28.56	42
0200	Extension rings		40	.200		2.65	13.25		15.90	22.50
0250	Covers, blank		64	.125		1.19	8.30		9.49	13.60
0300	Plaster rings		64	.125		1.71	8.30		10.01	14.20
0650	Switchbox		27	.296		4.77	19.60		24.37	34.50
1100	Concrete, floor, 1 gang		5.30	1.509		126	100		226	288
2000	Poke-thru fitting, fire rated, for 3-3/4" floor		6.80	1.176		170	78		248	305

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	26 05 33.16 Boxes for Electrical Systems	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2040	For 7" floor	1 Elec	6.80	1.176	Ea.	227	78		305	365
2100	Pedestal, 15 amp, duplex receptacle & blank plate		5.25	1.524		184	101		285	350
2120	Duplex receptacle and telephone plate		5.25	1.524		184	101		285	350
2140	Pedestal, 20 amp, duplex recept. & phone plate		5	1.600		185	106		291	360
2200	Abandonment plate		32	.250		52	16.55		68.55	82
	26 05 33.18 Pull Boxes									
0010	**PULL BOXES**									
0100	Steel, pull box, NEMA 1, type SC, 6" W x 6" H x 4" D	1 Elec	8	1	Ea.	9.70	66		75.70	109
0200	8" W x 8" H x 4" D		8	1		13.25	66		79.25	113
0300	10" W x 12" H x 6" D		5.30	1.509		32	100		132	185
0400	16" W x 20" H x 8" D		4	2		84	132		216	290
0500	20" W x 24" H x 8" D		3.20	2.500		98	166		264	355
0600	24" W x 36" H x 8" D		2.70	2.963		152	196		348	460
0650	Pull box, hinged, NEMA 1, 6" W x 6" H x 4" D		8	1		12.85	66		78.85	113
0800	12" W x 16" H x 6" D		4.70	1.702		80	113		193	256
1000	20" W x 20" H x 6" D		3.60	2.222		271	147		418	520
1200	20" W x 20" H x 8" D	1 Elec	3.20	2.500	Ea.	170	166		336	430
1400	24" W x 36" H x 8" D		2.70	2.963		249	196		445	565
1600	24" W x 42" H x 8" D		2	4		365	265		630	800
2100	Pull box, NEMA 3R, type SC, raintight & weatherproof									
2150	6" L x 6" W x 6" D	1 Elec	10	.800	Ea.	19.65	53		72.65	100
2200	8" L x 6" W x 6" D		8	1		33	66		99	135
2250	10" L x 6" W x 6" D		7	1.143		32.50	75.50		108	148
2300	12" L x 12" W x 6" D		5	1.600		47	106		153	209
2350	16" L x 16" W x 6" D		4.50	1.778		92	118		210	276
2400	20" L x 20" W x 6" D		4	2		89	132		221	295
2450	24" L x 18" W x 8" D		3	2.667		147	177		324	425
2500	24" L x 24" W x 10" D		2.50	3.200		181	212		393	515
2550	30" L x 24" W x 12" D		2	4		860	265		1,125	1,350
2600	36" L x 36" W x 12" D		1.50	5.333		460	355		815	1,025
2800	Cast iron, pull boxes for surface mounting									
3000	NEMA 4, watertight & dust tight									
3050	6" L x 6" W x 6" D	1 Elec	4	2	Ea.	282	132		414	505
3100	8" L x 6" W x 6" D		3.20	2.500		470	166		636	760
3150	10" L x 6" W x 6" D		2.50	3.200		485	212		697	850
3200	12" L x 12" W x 6" D		2.30	3.478		710	230		940	1,125
3250	16" L x 16" W x 6" D		1.30	6.154		805	405		1,210	1,500
3300	20" L x 20" W x 6" D		.80	10		980	660		1,640	2,050
3350	24" L x 18" W x 8" D		.70	11.429		2,575	755		3,330	3,950
3400	24" L x 24" W x 10" D		.50	16		4,800	1,050		5,850	6,850
3450	30" L x 24" W x 12" D		.40	20		6,300	1,325		7,625	8,925
3500	36" L x 36" W x 12" D		.20	40		2,375	2,650		5,025	6,525
6000	J.I.C. wiring boxes, NEMA 12, dust tight & drip tight									
6050	6" L x 8" W x 4" D	1 Elec	10	.800	Ea.	78.50	53		131.50	165
6100	8" L x 10" W x 4" D		8	1		96.50	66		162.50	205
6150	12" L x 14" W x 6" D		5.30	1.509		162	100		262	325
6200	14" L x 16" W x 6" D		4.70	1.702		187	113		300	370
6250	16" L x 20" W x 6" D		4.40	1.818		251	120		371	455
6300	24" L x 30" W x 6" D		3.20	2.500		370	166		536	650
6350	24" L x 30" W x 8" D		2.90	2.759		375	183		558	685
6400	24" L x 36" W x 8" D		2.70	2.963		420	196		616	750
6450	24" L x 42" W x 8" D		2.30	3.478		480	230		710	865

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26 05 33 – Raceway and Boxes for Electrical Systems

	26 05 33.18 Pull Boxes	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
6500	24" L x 48" W x 8" D	1 Elec	2	4	Ea.	525	265		790	970
	26 05 33.23 Wireway									
0010	**WIREWAY** to 10' high									
0100	NEMA 1, screw cover w/fittings and supports, 2-1/2" x 2-1/2"	1 Elec	45	.178	L.F.	15.85	11.75		27.60	35
0200	4" x 4"	"	40	.200		19.75	13.25		33	41
0400	6" x 6"	2 Elec	60	.267		24	17.65		41.65	52
0600	8" x 8"	"	40	.400		23	26.50		49.50	64.50
4475	NEMA 3R, screw cover w/fittings and supports, 4" x 4"	1 Elec	36	.222		17.60	14.70		32.30	41.50
4480	6" x 6"	2 Elec	55	.291		19.55	19.25		38.80	50
4485	8" x 8"		36	.444		42	29.50		71.50	90
4490	12" x 12"		18	.889		92.50	59		151.50	190

26 05 36 – Cable Trays for Electrical Systems

	26 05 36.10 Cable Tray Ladder Type									
0010	**CABLE TRAY LADDER TYPE** w/ftngs. & supports, 4" dp., to 15' elev.									
0160	Galvanized steel tray									
0170	4" rung spacing, 6" wide	2 Elec	98	.163	L.F.	16.95	10.80		27.75	34.50
0200	12" wide		86	.186		20.50	12.30		32.80	41
0400	18" wide		82	.195		23.50	12.90		36.40	45
0600	24" wide		78	.205		27.50	13.60		41.10	50
3200	Aluminum tray, 4" deep, 6" rung spacing, 6" wide		134	.119		18.90	7.90		26.80	33
3220	12" wide		124	.129		21	8.55		29.55	36
3230	18" wide		114	.140		23.50	9.30		32.80	40
3240	24" wide		106	.151		27.50	10		37.50	45

26 05 39 – Underfloor Raceways for Electrical Systems

	26 05 39.30 Conduit In Concrete Slab									
0010	**CONDUIT IN CONCRETE SLAB** Including terminations,									
0020	fittings and supports									
3230	PVC, schedule 40, 1/2" diameter	1 Elec	270	.030	L.F.	.62	1.96		2.58	3.61
3250	3/4" diameter		230	.035		.67	2.30		2.97	4.15
3270	1" diameter		200	.040		.87	2.65		3.52	4.89
3300	1-1/4" diameter		170	.047		1.31	3.12		4.43	6.05
3330	1-1/2" diameter		140	.057		1.52	3.78		5.30	7.25
3350	2" diameter		120	.067		1.86	4.41		6.27	8.60
4350	Rigid galvanized steel, 1/2" diameter		200	.040		2.85	2.65		5.50	7.10
4400	3/4" diameter		170	.047		2.94	3.12		6.06	7.85
4450	1" diameter		130	.062		4.45	4.07		8.52	10.95
4500	1-1/4" diameter		110	.073		6.45	4.81		11.26	14.20
4600	1-1/2" diameter		100	.080		7.20	5.30		12.50	15.80
4800	2" diameter		90	.089		8.85	5.90		14.75	18.50
	26 05 39.40 Conduit In Trench									
0010	**CONDUIT IN TRENCH** Includes terminations and fittings									
0020	Does not include excavation or backfill, see Section 31 23 16									
0200	Rigid galvanized steel, 2" diameter	1 Elec	150	.053	L.F.	8.50	3.53		12.03	14.60
0400	2-1/2" diameter	"	100	.080		16.55	5.30		21.85	26
0600	3" diameter	2 Elec	160	.100		19	6.60		25.60	31
0800	3-1/2" diameter		140	.114		25.50	7.55		33.05	39.50
1000	4" diameter		100	.160		26.50	10.60		37.10	45.50
1200	5" diameter		80	.200		54	13.25		67.25	79
1400	6" diameter		60	.267		73	17.65		90.65	107

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26 05 43.10 Trench Duct	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **TRENCH DUCT** Steel with cover									
0020 Standard adjustable, depths to 4"									
0100 Straight, single compartment, 9" wide	2 Elec	40	.400	L.F.	430	26.50		456.50	510
0200 12" wide		32	.500		570	33		603	675
0400 18" wide		26	.615		540	40.50		580.50	655
0600 24" wide		22	.727		640	48		688	775
0800 30" wide		20	.800		248	53		301	350
1000 36" wide		16	1		275	66		341	400
1200 Horizontal elbow, 9" wide		5.40	2.963	Ea.	450	196		646	785
1400 12" wide		4.60	3.478		470	230		700	855
1600 18" wide		4	4		635	265		900	1,100
1800 24" wide		3.20	5		895	330		1,225	1,475
2000 30" wide		2.60	6.154		1,325	405		1,730	2,050
2200 36" wide		2.40	6.667		1,575	440		2,015	2,375
2400 Vertical elbow, 9" wide		5.40	2.963		200	196		396	510
2600 12" wide		4.60	3.478		170	230		400	525
2800 18" wide		4	4		195	265		460	610
3000 24" wide		3.20	5		242	330		572	755
3200 30" wide		2.60	6.154		267	405		672	900
3400 36" wide		2.40	6.667		294	440		734	980
3600 Cross, 9" wide		4	4		735	265		1,000	1,200
3800 12" wide		3.20	5		775	330		1,105	1,350
4000 18" wide		2.60	6.154		930	405		1,335	1,625
4200 24" wide		2.20	7.273		1,150	480		1,630	2,000
4400 30" wide		2	8		1,625	530		2,155	2,550
4600 36" wide		1.80	8.889		2,025	590		2,615	3,100
4800 End closure, 9" wide		14.40	1.111		48.50	73.50		122	163
5000 12" wide		12	1.333		55.50	88.50		144	192
5200 18" wide		10	1.600		85	106		191	251
5400 24" wide	2 Elec	8	2	Ea.	112	132		244	320
5600 30" wide		6.60	2.424		174	160		334	430
5800 36" wide		5.80	2.759		167	183		350	455
6000 Tees, 9" wide		4	4		470	265		735	915
6200 12" wide		3.60	4.444		550	294		844	1,050
6400 18" wide		3.20	5		700	330		1,030	1,250
6600 24" wide		3	5.333		1,000	355		1,355	1,625
6800 30" wide		2.60	6.154		1,325	405		1,730	2,050
7000 36" wide		2	8		1,725	530		2,255	2,675
7200 Riser, and cabinet connector, 9" wide		5.40	2.963		206	196		402	520
7400 12" wide		4.60	3.478		241	230		471	605
7600 18" wide		4	4		255	265		520	675
7800 24" wide		3.20	5		360	330		690	885
8000 30" wide		2.60	6.154		410	405		815	1,050
8200 36" wide		2	8		480	530		1,010	1,300
8400 Insert assembly, cell to conduit adapter, 1-1/4"	1 Elec	16	.500		75	33		108	132
26 05 43.20 Underfloor Duct									
0010 **UNDERFLOOR DUCT**									
0100 Duct, 1-3/8" x 3-1/8" blank, standard	2 Elec	160	.100	L.F.	13.95	6.60		20.55	25
0200 1-3/8" x 7-1/4" blank, super duct		120	.133		32.50	8.85		41.35	49
0400 7/8" or 1-3/8" insert type, 24" OC, 1-3/8" x 3-1/8", std.		140	.114		22	7.55		29.55	35.50
0600 1-3/8" x 7-1/4", super duct		100	.160		38	10.60		48.60	58
0800 Junction box, single duct, 1 level, 3-1/8"	1 Elec	4	2	Ea.	485	132		617	730

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26 05 43 – Underground Ducts and Raceways for Electrical Systems

	26 05 43.20 Underfloor Duct	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1000	Junction box, single duct, 1 level, 7-1/4"	1 Elec	2.70	2.963	Ea.	565	196		761	910
1200	1 level, 2 duct, 3-1/8"		3.20	2.500		645	166		811	955
1400	Junction box, 1 level, 2 duct, 7-1/4"		2.30	3.478		1,600	230		1,830	2,100
1580	Junction box, 1 level, one 3-1/8" + one 7-1/4" x same		2.30	3.478		1,100	230		1,330	1,550
1600	Triple duct, 3-1/8"		2.30	3.478		1,100	230		1,330	1,550
1800	Insert to conduit adapter, 3/4" & 1"		32	.250		39.50	16.55		56.05	68
2000	Support, single cell		27	.296		59	19.60		78.60	94
2200	Super duct		16	.500		59.50	33		92.50	115
2400	Double cell		16	.500		60	33		93	115
2600	Triple cell		11	.727		67.50	48		115.50	146
2800	Vertical elbow, standard duct		10	.800		107	53		160	196
3000	Super duct		8	1		107	66		173	216
3200	Cabinet connector, standard duct		32	.250		85.50	16.55		102.05	119
3400	Super duct		27	.296		83.50	19.60		103.10	121
3600	Conduit adapter, 1" to 1-1/4"		32	.250		79.50	16.55		96.05	112
3800	2" to 1-1/4"		27	.296		95.50	19.60		115.10	134
4000	Outlet, low tension (tele, computer, etc.)		8	1		113	66		179	223
4200	High tension, receptacle (120 volt)		8	1		114	66		180	225

26 05 83 – Wiring Connections

26 05 83.10 Motor Connections

0010	**MOTOR CONNECTIONS**									
0020	Flexible conduit and fittings, 115 volt, 1 phase, up to 1 HP motor	1 Elec	8	1	Ea.	5.20	66		71.20	104
0110	230 volt, 3 phase, 3 HP motor		6.78	1.180		6.50	78		84.50	123
0112	5 HP motor		5.47	1.463		5.45	97		102.45	150
0114	7-1/2 HP motor		4.61	1.735		9.25	115		124.25	181
0120	10 HP motor		4.20	1.905		18.05	126		144.05	207
0200	25 HP motor		2.70	2.963		26.50	196		222.50	320
0400	50 HP motor		2.20	3.636		52	241		293	415
0600	100 HP motor		1.50	5.333		117	355		472	655

26 05 90 – Residential Applications

26 05 90.10 Residential Wiring

0010	**RESIDENTIAL WIRING**									
0020	20' avg. runs and #14/2 wiring incl. unless otherwise noted									
1000	Service & panel, includes 24' SE-AL cable, service eye, meter,									
1010	Socket, panel board, main bkr., ground rod, 15 or 20 amp									
1020	1-pole circuit breakers, and misc. hardware									
1100	100 amp, with 10 branch breakers	1 Elec	1.19	6.723	Ea.	415	445		860	1,125
1110	With PVC conduit and wire		.92	8.696		460	575		1,035	1,350
1120	With RGS conduit and wire		.73	10.959		655	725		1,380	1,800
1150	150 amp, with 14 branch breakers		1.03	7.767		585	515		1,100	1,400
1170	With PVC conduit and wire		.82	9.756		660	645		1,305	1,675
1180	With RGS conduit and wire		.67	11.940		1,050	790		1,840	2,350
1200	200 amp, with 18 branch breakers	2 Elec	1.80	8.889		1,250	590		1,840	2,250
1220	With PVC conduit and wire		1.46	10.959		1,350	725		2,075	2,550
1230	With RGS conduit and wire		1.24	12.903		1,800	855		2,655	3,275
1800	Lightning surge suppressor	1 Elec	32	.250		97.50	16.55		114.05	132
2000	Switch devices									
2100	Single pole, 15 amp, ivory, with a 1-gang box, cover plate,									
2110	Type NM (Romex) cable	1 Elec	17.10	.468	Ea.	7.85	31		38.85	54.50
2120	Type MC cable		14.30	.559		21.50	37		58.50	79
2130	EMT & wire		5.71	1.401		37	93		130	179
2150	3-way, #14/3, type NM cable		14.55	.550		9.95	36.50		46.45	65

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26 05 90.10 Residential Wiring	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2170 Type MC cable	1 Elec	12.31	.650	Ea.	29	43		72	96
2180 EMT & wire		5	1.600		40.50	106		146.50	202
2200 4-way, #14/3, type NM cable		14.55	.550		17.15	36.50		53.65	73
2220 Type MC cable		12.31	.650		36	43		79	104
2230 EMT & wire		5	1.600		47.50	106		153.50	210
2250 S.P., 20 amp, #12/2, type NM cable		13.33	.600		12.30	39.50		51.80	72.50
2270 Type MC cable		11.43	.700		26	46.50		72.50	97.50
2280 EMT & wire		4.85	1.649		45	109		154	212
2290 S.P. rotary dimmer, 600 W, no wiring		17	.471		33.50	31		64.50	83.50
2300 S.P. rotary dimmer, 600 W, type NM cable		14.55	.550		38	36.50		74.50	96
2320 Type MC cable		12.31	.650		52	43		95	121
2330 EMT & wire		5	1.600		70	106		176	234
2350 3-way rotary dimmer, type NM cable		13.33	.600		25.50	39.50		65	87
2370 Type MC cable		11.43	.700		39.50	46.50		86	113
2380 EMT & wire		4.85	1.649		58	109		167	226
2400 Interval timer wall switch, 20 amp, 1-30 min., #12/2									
2410 Type NM cable	1 Elec	14.55	.550	Ea.	69	36.50		105.50	130
2420 Type MC cable		12.31	.650		75	43		118	147
2430 EMT & wire		5	1.600		102	106		208	269
2500 Decorator style									
2510 S.P., 15 amp, type NM cable	1 Elec	17.10	.468	Ea.	13.40	31		44.40	61
2520 Type MC cable		14.30	.559		27.50	37		64.50	85
2530 EMT & wire		5.71	1.401		43	93		136	185
2550 3-way, #14/3, type NM cable		14.55	.550		15.50	36.50		52	71
2570 Type MC cable		12.31	.650		34.50	43		77.50	102
2580 EMT & wire		5	1.600		46	106		152	208
2600 4-way, #14/3, type NM cable		14.55	.550		22.50	36.50		59	79
2620 Type MC cable		12.31	.650		41.50	43		84.50	110
2630 EMT & wire		5	1.600		53	106		159	216
2650 S.P., 20 amp, #12/2, type NM cable		13.33	.600		17.80	39.50		57.30	78.50
2670 Type MC cable		11.43	.700		31.50	46.50		78	104
2680 EMT & wire		4.85	1.649		50.50	109		159.50	218
2700 S.P., slide dimmer, type NM cable		17.10	.468		39.50	31		70.50	89
2720 Type MC cable		14.30	.559		53	37		90	114
2730 EMT & wire		5.71	1.401		71.50	93		164.50	217
2750 S.P., touch dimmer, type NM cable		17.10	.468		32	31		63	81.50
2770 Type MC cable		14.30	.559		46	37		83	106
2780 EMT & wire		5.71	1.401		64.50	93		157.50	209
2800 3-way touch dimmer, type NM cable		13.33	.600		44.50	39.50		84	108
2820 Type MC cable		11.43	.700		58.50	46.50		105	134
2830 EMT & wire		4.85	1.649		76.50	109		185.50	247
3000 Combination devices									
3100 S.P. switch/15 amp recpt., ivory, 1-gang box, plate									
3110 Type NM cable	1 Elec	11.43	.700	Ea.	21	46.50		67.50	92.50
3120 Type MC cable		10	.800		35	53		88	117
3130 EMT & wire		4.40	1.818		53.50	120		173.50	238
3150 S.P. switch/pilot light, type NM cable		11.43	.700		22.50	46.50		69	94
3170 Type MC cable		10	.800		36.50	53		89.50	119
3180 EMT & wire		4.43	1.806		55	120		175	239
3190 2-S.P. switches, 2-#14/2, no wiring		14	.571		5.40	38		43.40	62
3200 2-S.P. switches, 2-#14/2, type NM cables		10	.800		23.50	53		76.50	104
3220 Type MC cable		8.89	.900		40.50	59.50		100	133
3230 EMT & wire		4.10	1.951		59.50	129		188.50	258

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26 05 90.10 Residential Wiring	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
3250 3-way switch/15 amp recpt., #14/3, type NM cable	1 Elec	10	.800	Ea.	29.50	53		82.50	111
3270 Type MC cable		8.89	.900		48.50	59.50		108	142
3280 EMT & wire		4.10	1.951		60	129		189	258
3300 2-3 way switches, 2-#14/3, type NM cables		8.89	.900		36.50	59.50		96	129
3320 Type MC cable		8	1		64	66		130	169
3330 EMT & wire		4	2		69	132		201	273
3350 S.P. switch/20 amp recpt., #12/2, type NM cable		10	.800		35	53		88	117
3370 Type MC cable		8.89	.900		41	59.50		100.50	134
3380 EMT & wire		4.10	1.951		67.50	129		196.50	267
3400 Decorator style									
3410 S.P. switch/15 amp recpt., type NM cable	1 Elec	11.43	.700	Ea.	27	46.50		73.50	98.50
3420 Type MC cable		10	.800		40.50	53		93.50	123
3430 EMT & wire		4.40	1.818		59	120		179	244
3450 S.P. switch/pilot light, type NM cable		11.43	.700		28.50	46.50		75	100
3470 Type MC cable		10	.800		42	53		95	125
3480 EMT & wire		4.40	1.818		60.50	120		180.50	246
3500 2-S.P. switches, 2-#14/2, type NM cables		10	.800		29	53		82	111
3520 Type MC cable		8.89	.900		46	59.50		105.50	140
3530 EMT & wire		4.10	1.951		65	129		194	264
3550 3-way/15 amp recpt., #14/3, type NM cable		10	.800		35.50	53		88.50	118
3570 Type MC cable		8.89	.900		54.50	59.50		114	148
3580 EMT & wire		4.10	1.951		65.50	129		194.50	264
3650 2-3 way switches, 2-#14/3, type NM cables		8.89	.900		42	59.50		101.50	135
3670 Type MC cable		8	1		69.50	66		135.50	175
3680 EMT & wire		4	2		74.50	132		206.50	279
3700 S.P. switch/20 amp recpt., #12/2, type NM cable		10	.800		40.50	53		93.50	123
3720 Type MC cable		8.89	.900		46.50	59.50		106	140
3730 EMT & wire		4.10	1.951		73	129		202	273
4000 Receptacle devices									
4010 Duplex outlet, 15 amp recpt., ivory, 1-gang box, plate									
4015 Type NM cable	1 Elec	14.55	.550	Ea.	8.45	36.50		44.95	63.50
4020 Type MC cable		12.31	.650		22.50	43		65.50	88.50
4030 EMT & wire		5.33	1.501		38	99.50		137.50	190
4050 With #12/2, type NM cable		12.31	.650		9.75	43		52.75	74.50
4070 Type MC cable		10.67	.750		23.50	49.50		73	99.50
4080 EMT & wire		4.71	1.699		42.50	112		154.50	214
4100 20 amp recpt., #12/2, type NM cable		12.31	.650		21.50	43		64.50	87.50
4120 Type MC cable		10.67	.750		35	49.50		84.50	113
4130 EMT & wire		4.71	1.699		54	112		166	227
4140 For GFI see Section 26 05 90.10 line 4300 below									
4150 Decorator style, 15 amp recpt., type NM cable	1 Elec	14.55	.550	Ea.	14	36.50		50.50	69.50
4170 Type MC cable		12.31	.650		28	43		71	94.50
4180 EMT & wire		5.33	1.501		43.50	99.50		143	196
4200 With #12/2, type NM cable		12.31	.650		15.25	43		58.25	81
4220 Type MC cable		10.67	.750		29	49.50		78.50	106
4230 EMT & wire		4.71	1.699		48	112		160	220
4250 20 amp recpt., #12/2, type NM cable		12.31	.650		27	43		70	93.50
4270 Type MC cable		10.67	.750		40.50	49.50		90	119
4280 EMT & wire		4.71	1.699		59.50	112		171.50	233
4300 GFI, 15 amp recpt., type NM cable		12.31	.650		25.50	43		68.50	92
4320 Type MC cable		10.67	.750		39.50	49.50		89	118
4330 EMT & wire		4.71	1.699		55	112		167	228
4350 GFI with #12/2, type NM cable		10.67	.750		27	49.50		76.50	104

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26 05 90.10 Residential Wiring	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4370 Type MC cable	1 Elec	9.20	.870	Ea.	40.50	57.50		98	130
4380 EMT & wire		4.21	1.900		59.50	126		185.50	253
4400 20 amp recpt., #12/2, type NM cable		10.67	.750		38.50	49.50		88	116
4420 Type MC cable		9.20	.870		52	57.50		109.50	143
4430 EMT & wire		4.21	1.900		71	126		197	265
4500 Weather-proof cover for above receptacles, add		32	.250		4.02	16.55		20.57	29
4550 Air conditioner outlet, 20 amp-240 volt recpt.									
4560 30′ of #12/2, 2 pole circuit breaker									
4570 Type NM cable	1 Elec	10	.800	Ea.	68.50	53		121.50	154
4580 Type MC cable		9	.889		84	59		143	180
4590 EMT & wire		4	2		103	132		235	310
4600 Decorator style, type NM cable		10	.800		75	53		128	161
4620 Type MC cable		9	.889		90.50	59		149.50	187
4630 EMT & wire		4	2		110	132		242	320
4650 Dryer outlet, 30 amp-240 volt recpt., 20′ of #10/3									
4660 2 pole circuit breaker									
4670 Type NM cable	1 Elec	6.41	1.248	Ea.	59	82.50		141.50	188
4680 Type MC cable		5.71	1.401		64.50	93		157.50	209
4690 EMT & wire		3.48	2.299		96	152		248	330
4700 Range outlet, 50 amp-240 volt recpt., 30′ of #8/3									
4710 Type NM cable	1 Elec	4.21	1.900	Ea.	93.50	126		219.50	290
4720 Type MC cable		4	2		112	132		244	320
4730 EMT & wire		2.96	2.703		128	179		307	405
4750 Central vacuum outlet, type NM cable		6.40	1.250		67	83		150	197
4770 Type MC cable		5.71	1.401		80	93		173	226
4780 EMT & wire		3.48	2.299		109	152		261	345
4800 30 amp-110 volt locking recpt., #10/2 circ. bkr.									
4810 Type NM cable	1 Elec	6.20	1.290	Ea.	80.50	85.50		166	216
4820 Type MC cable		5.40	1.481		90.50	98		188.50	246
4830 EMT & wire		3.20	2.500		137	166		303	395
4900 Low voltage outlets									
4910 Telephone recpt., 20′ of 4/C phone wire	1 Elec	26	.308	Ea.	8.25	20.50		28.75	39.50
4920 TV recpt., 20′ of RG59U coax wire, F type connector	"	16	.500	"	15.80	33		48.80	66.50
4950 Door bell chime, transformer, 2 buttons, 60′ of bellwire									
4970 Economy model	1 Elec	11.50	.696	Ea.	56	46		102	130
4980 Custom model		11.50	.696		102	46		148	181
4990 Luxury model, 3 buttons		9.50	.842		192	56		248	295
6000 Lighting outlets									
6050 Wire only (for fixture), type NM cable	1 Elec	32	.250	Ea.	7.10	16.55		23.65	32.50
6070 Type MC cable		24	.333		11.85	22		33.85	46
6080 EMT & wire		10	.800		26.50	53		79.50	108
6100 Box (4") and wire (for fixture), type NM cable		25	.320		16.40	21		37.40	49.50
6120 Type MC cable		20	.400		21	26.50		47.50	63
6130 EMT & wire		11	.727		36	48		84	111
6200 Fixtures (use with line 6050 or 6100 above)									
6210 Canopy style, economy grade	1 Elec	40	.200	Ea.	22	13.25		35.25	44
6220 Custom grade		40	.200		57	13.25		70.25	82
6250 Dining room chandelier, economy grade		19	.421		87	28		115	137
6260 Custom grade		19	.421		345	28		373	420
6270 Luxury grade		15	.533		3,050	35.50		3,085.50	3,400
6310 Kitchen fixture (fluorescent), economy grade		30	.267		81.50	17.65		99.15	116
6320 Custom grade		25	.320		220	21		241	274
6350 Outdoor, wall mounted, economy grade		30	.267		33	17.65		50.65	62.50

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26 05 90.10 Residential Wiring	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
6360 Custom grade	1 Elec	30	.267	Ea.	125	17.65		142.65	163
6370 Luxury grade		25	.320		248	21		269	305
6410 Outdoor PAR floodlights, 1 lamp, 150 watt		20	.400		21	26.50		47.50	62.50
6420 2 lamp, 150 watt each		20	.400		28.50	26.50		55	71
6425 Motion sensing, 2 lamp, 150 watt each		20	.400		106	26.50		132.50	156
6430 For infrared security sensor, add		32	.250		114	16.55		130.55	150
6450 Outdoor, quartz-halogen, 300 watt flood		20	.400		43	26.50		69.50	87
6600 Recessed downlight, round, pre-wired, 50 or 75 watt trim		30	.267		48	17.65		65.65	78.50
6610 With shower light trim		30	.267		74.50	17.65		92.15	108
6620 With wall washer trim		28	.286		75	18.90		93.90	111
6630 With eye-ball trim		28	.286		29.50	18.90		48.40	60.50
6700 Porcelain lamp holder		40	.200		2.78	13.25		16.03	23
6710 With pull switch		40	.200		12.15	13.25		25.40	33
6750 Fluorescent strip, 2-20 watt tube, wrap around diffuser, 24"		24	.333		46.50	22		68.50	84.50
6760 1-34 watt tube, 48"		24	.333		117	22		139	162
6770 2-34 watt tubes, 48"		20	.400		134	26.50		160.50	187
6800 Bathroom heat lamp, 1-250 watt		28	.286		33.50	18.90		52.40	65
6810 2-250 watt lamps		28	.286		60	18.90		78.90	94
6820 For timer switch, see Section 26 05 90.10 line 2400									
6900 Outdoor post lamp, incl. post, fixture, 35' of #14/2									
6910 Type NM cable	1 Elec	3.50	2.286	Ea.	385	151		536	650
6920 Photo-eye, add		27	.296		15.20	19.60		34.80	45.50
6950 Clock dial time switch, 24 hr., w/enclosure, type NM cable		11.43	.700		74	46.50		120.50	150
6970 Type MC cable		11	.727		87.50	48		135.50	168
6980 EMT & wire		4.85	1.649		103	109		212	275
7000 Alarm systems									
7050 Smoke detectors, box, #14/3, type NM cable	1 Elec	14.55	.550	Ea.	30.50	36.50		67	87.50
7070 Type MC cable	1 Elec	12.31	.650	Ea.	42	43		85	110
7080 EMT & wire	"	5	1.600		53.50	106		159.50	216
7090 For relay output to security system, add					9.75			9.75	10.75
8000 Residential equipment									
8050 Disposal hook-up, incl. switch, outlet box, 3' of flex									
8060 20 amp-1 pole circ. bkr., and 25' of #12/2									
8070 Type NM cable	1 Elec	10	.800	Ea.	25.50	53		78.50	107
8080 Type MC cable		8	1		40	66		106	143
8090 EMT & wire		5	1.600		63.50	106		169.50	227
8100 Trash compactor or dishwasher hook-up, incl. outlet box,									
8110 3' of flex, 15 amp-1 pole circ. bkr., and 25' of #14/2									
8120 Type NM cable	1 Elec	10	.800	Ea.	21.50	53		74.50	103
8130 Type MC cable		8	1		37.50	66		103.50	140
8140 EMT & wire		5	1.600		57	106		163	220
8150 Hot water sink dispenser hook-up, use line 8100									
8200 Vent/exhaust fan hook-up, type NM cable	1 Elec	32	.250	Ea.	7.10	16.55		23.65	32.50
8220 Type MC cable		24	.333		11.85	22		33.85	46
8230 EMT & wire		10	.800		26.50	53		79.50	108
8250 Bathroom vent fan, 50 CFM (use with above hook-up)									
8260 Economy model	1 Elec	15	.533	Ea.	18.60	35.50		54.10	73
8270 Low noise model		15	.533		50	35.50		85.50	108
8280 Custom model		12	.667		115	44		159	193
8300 Bathroom or kitchen vent fan, 110 CFM									
8310 Economy model	1 Elec	15	.533	Ea.	67.50	35.50		103	127
8320 Low noise model	"	15	.533	"	108	35.50		143.50	172
8350 Paddle fan, variable speed (w/o lights)									

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26 05 90 – Residential Applications

	26 05 90.10 Residential Wiring	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
8360	Economy model (AC motor)	1 Elec	10	.800	Ea.	141	53		194	234
8362	With light kit		10	.800		182	53		235	279
8370	Custom model (AC motor)		10	.800		345	53		398	460
8372	With light kit		10	.800		385	53		438	505
8380	Luxury model (DC motor)		8	1		277	66		343	405
8382	With light kit		8	1		320	66		386	450
8390	Remote speed switch for above, add		12	.667		43.50	44		87.50	114
8500	Whole house exhaust fan, ceiling mount, 36", variable speed									
8510	Remote switch, incl. shutters, 20 amp-1 pole circ. bkr.									
8520	30' of #12/2, type NM cable	1 Elec	4	2	Ea.	1,550	132		1,682	1,900
8530	Type MC cable	1 Elec	3.50	2.286	Ea.	1,575	151		1,726	1,950
8540	EMT & wire	"	3	2.667	"	1,600	177		1,777	2,000
8600	Whirlpool tub hook-up, incl. timer switch, outlet box									
8610	3' of flex, 20 amp-1 pole GFI circ. bkr.									
8620	30' of #12/2, type NM cable	1 Elec	5	1.600	Ea.	247	106		353	430
8630	Type MC cable		4.20	1.905		257	126		383	470
8640	EMT & wire		3.40	2.353		276	156		432	535
8650	Hot water heater hook-up, incl. 1-2 pole circ. bkr., box;									
8660	3' of flex, 20' of #10/2, type NM cable	1 Elec	5	1.600	Ea.	31	106		137	191
8670	Type MC cable		4.20	1.905		44	126		170	236
8680	EMT & wire		3.40	2.353		58	156		214	296
9000	Heating/air conditioning									
9050	Furnace/boiler hook-up, incl. firestat, local on-off switch									
9060	Emergency switch, and 40' of type NM cable	1 Elec	4	2	Ea.	67.50	132		199.50	271
9070	Type MC cable		3.50	2.286		84.50	151		235.50	320
9080	EMT & wire		1.50	5.333		117	355		472	655
9100	Air conditioner hook-up, incl. local 60 amp disc. switch									
9110	3' sealtite, 40 amp, 2 pole circuit breaker									
9130	40' of #8/2, type NM cable	1 Elec	3.50	2.286	Ea.	158	151		309	400
9140	Type MC cable		3	2.667		186	177		363	465
9150	EMT & wire		1.30	6.154		221	405		626	850
9200	Heat pump hook-up, 1-40 & 1-100 amp 2 pole circ. bkr.									
9210	Local disconnect switch, 3' sealtite									
9220	40' of #8/2 & 30' of #3/2									
9230	Type NM cable	1 Elec	1.30	6.154	Ea.	500	405		905	1,150
9240	Type MC cable		1.08	7.407		510	490		1,000	1,300
9250	EMT & wire		.94	8.511		655	565		1,220	1,550
9500	Thermostat hook-up, using low voltage wire									
9520	Heating only, 25' of #18-3	1 Elec	24	.333	Ea.	9.75	22		31.75	43.50
9530	Heating/cooling, 25' of #18-4	"	20	.400	"	10.55	26.50		37.05	51

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26 09 13 – Electrical Power Monitoring

26 09 13.10 Switchboard Instruments		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **SWITCHBOARD INSTRUMENTS** 3 phase, 4 wire										
0100 AC indicating, ammeter & switch		1 Elec	8	1	Ea.	4,675	66		4,741	5,225
0200 Voltmeter & switch			8	1		3,775	66		3,841	4,250
0300 Wattmeter			8	1		3,625	66		3,691	4,075
0400 AC recording, ammeter		1 Elec	4	2	Ea.	6,450	132		6,582	7,300
0500 Voltmeter			4	2		6,450	132		6,582	7,300
0600 Ground fault protection, zero sequence			2.70	2.963		5,700	196		5,896	6,550
0700 Ground return path			2.70	2.963		5,700	196		5,896	6,550
0800 3 current transformers, 5 to 800 amp			2	4		2,650	265		2,915	3,325
0900 1,000 to 1,500 amp			1.30	6.154		3,800	405		4,205	4,800
1200 2,000 to 4,000 amp			1	8		4,500	530		5,030	5,725
1300 Fused potential transformer, maximum 600 volt			8	1		995	66		1,061	1,200
26 09 13.30 Smart Metering										
0010 **SMART METERING**, In panel										
0100 Single phase, 120/208 volt, 100 amp	G	1 Elec	8.78	.911	Ea.	410	60.50		470.50	540
0120 200 amp	G		8.78	.911		390	60.50		450.50	520
0200 277 volt, 100 amp	G		8.78	.911		410	60.50		470.50	540
0220 200 amp	G		8.78	.911		460	60.50		520.50	600
1100 Three phase, 120/208 volt, 100 amp	G		4.69	1.706		880	113		993	1,125
1120 200 amp	G		4.69	1.706		850	113		963	1,100
1130 400 amp	G		4.69	1.706		960	113		1,073	1,225
1140 800 amp	G		4.69	1.706		1,125	113		1,238	1,400
1150 1,600 amp	G		4.69	1.706		1,125	113		1,238	1,400
1200 277/480 volt, 100 amp	G		4.69	1.706		965	113		1,078	1,250
1220 200 amp	G		4.69	1.706		965	113		1,078	1,250
1230 400 amp	G		4.69	1.706		965	113		1,078	1,250
1240 800 amp	G		4.69	1.706		1,225	113		1,338	1,525
1250 1,600 amp	G		4.69	1.706		1,225	113		1,338	1,525
2000 Data recorder, 8 meters	G		10.97	.729		2,300	48.50		2,348.50	2,600
2100 16 meters	G		8.53	.938		3,025	62		3,087	3,425
3000 Software package, per meter, basic	G		-			193			193	212
3100 Premium	G					510			510	560

26 09 23 – Lighting Control Devices

26 09 23.10 Energy Saving Lighting Devices										
0010 **ENERGY SAVING LIGHTING DEVICES**										
0100 Occupancy sensors, passive infrared ceiling mounted	G	1 Elec	7	1.143	Ea.	77.50	75.50		153	197
0110 Ultrasonic ceiling mounted	G		7	1.143		73.50	75.50		149	193
0120 Dual technology ceiling mounted	G		6.50	1.231		125	81.50		206.50	259
0150 Automatic wall switches	G		24	.333		90	22		112	132
0160 Daylighting sensor, manual control, ceiling mounted	G		7	1.143		83	75.50		158.50	203
0170 Remote and dimming control with remote controller	G		6.50	1.231		192	81.50		273.50	330
0200 Passive infrared ceiling mounted			6.50	1.231		37.50	81.50		119	163
0400 Remote power pack	G	1 Elec	10	.800	Ea.	37.50	53		90.50	120
0450 Photoelectric control, S.P.S.T. 120 V	G		8	1		19.85	66		85.85	121
0500 S.P.S.T. 208 V/277 V	G		8	1		23	66		89	124
0550 D.P.S.T. 120 V	G		6	1.333		182	88.50		270.50	330
0600 D.P.S.T. 208 V/277 V	G		6	1.333		207	88.50		295.50	360
0650 S.P.D.T. 208 V/277 V	G		6	1.333		201	88.50		289.50	350
0660 Daylight level sensor, wall mounted, on/off or dimming	G		8	1		135	66		201	248

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26 12 Medium-Voltage Transformers

26 12 19 – Pad-Mounted, Liquid-Filled, Medium-Voltage Transformers

26 12 19.10 Transformer, Oil-Filled	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **TRANSFORMER, OIL-FILLED** primary delta or Y,									
0050 Pad mounted 5 kV or 15 kV, with taps, 277/480 V secondary, 3 phase									
0100 150 kVA	R-3	.65	30.769	Ea.	11,000	2,025	267	13,292	15,400
0200 300 kVA		.45	44.444		13,000	2,925	385	16,310	19,100
0300 500 kVA		.40	50		16,000	3,300	435	19,735	23,000
0400 750 kVA		.38	52.632		38,700	3,475	455	42,630	48,200
0500 1,000 kVA		.26	76.923		45,900	5,075	665	51,640	59,000
0600 1,500 kVA		.23	86.957		33,000	5,725	755	39,480	45,600
0700 2,000 kVA		.20	100		69,000	6,575	865	76,440	86,500
0800 3,750 kVA		.16	125		133,000	8,225	1,075	142,300	159,500
0990 5000 kVA	R-21	.25	131		128,000	8,675	335	137,010	154,000

26 22 Low-Voltage Transformers

26 22 13 – Low-Voltage Distribution Transformers

26 22 13.10 Transformer, Dry-Type	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **TRANSFORMER, DRY-TYPE**									
0050 Single phase, 240/480 volt primary, 120/240 volt secondary									
0100 1 kVA	1 Elec	2	4	Ea.	430	265		695	865
0300 2 kVA		1.60	5		600	330		930	1,150
0500 3 kVA		1.40	5.714		685	380		1,065	1,325
0700 5 kVA		1.20	6.667		825	440		1,265	1,575
0900 7.5 kVA	2 Elec	2.20	7.273		1,225	480		1,705	2,075
1100 10 kVA		1.60	10		1,550	660		2,210	2,700
1300 15 kVA		1.20	13.333		2,275	885		3,160	3,825
1500 25 kVA		1	16		3,250	1,050		4,300	5,150
1700 37.5 kVA		.80	20		3,725	1,325		5,050	6,050
1900 50 kVA		.70	22.857		4,500	1,525		6,025	7,200
2100 75 kVA		.65	24.615		8,500	1,625		10,125	11,800
2190 480 V primary, 120/240 V secondary, nonvent., 15 kVA		1.20	13.333		2,725	885		3,610	4,300
2200 25 kVA	2 Elec	.90	17.778	Ea.	2,875	1,175		4,050	4,900
2210 37 kVA		.75	21.333		11,200	1,400		12,600	14,500
2220 50 kVA		.65	24.615		14,400	1,625		16,025	18,200
2300 3 phase, 480 volt primary, 120/208 volt secondary									
2310 Ventilated, 3 kVA	1 Elec	1	8	Ea.	1,225	530		1,755	2,125
2700 6 kVA		.80	10		2,275	660		2,935	3,475
2900 9 kVA		.70	11.429		2,625	755		3,380	4,000
3100 15 kVA	2 Elec	1.10	14.545		2,325	965		3,290	3,975
3300 30 kVA		.90	17.778		6,175	1,175		7,350	8,525
3500 45 kVA		.80	20		8,050	1,325		9,375	10,800
3700 75 kVA		.70	22.857		4,950	1,525		6,475	7,700
3900 112.5 kVA	R-3	.90	22.222		5,650	1,475	193	7,318	8,600
4100 150 kVA		.85	23.529		8,700	1,550	204	10,454	12,100
4300 225 kVA		.65	30.769		10,300	2,025	267	12,592	14,700
4500 300 kVA		.55	36.364		41,400	2,400	315	44,115	49,500
4700 500 kVA		.45	44.444		18,900	2,925	385	22,210	25,600
4800 750 kVA		.35	57.143		29,400	3,750	495	33,645	38,500

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26 24 13 – Switchboards

	26 24 13.10 Incoming Switchboards	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**INCOMING SWITCHBOARDS** main service section									
0100	Aluminum bus bars, not including CT's or PT's									
0200	No main disconnect, includes CT compartment									
0300	120/208 volt, 4 wire, 600 amp	2 Elec	1	16	Ea.	4,825	1,050		5,875	6,900
0400	800 amp		.88	18.182		4,825	1,200		6,025	7,125
0500	1,000 amp		.80	20		5,800	1,325		7,125	8,375
0600	1,200 amp		.72	22.222		5,800	1,475		7,275	8,575
0700	1,600 amp		.66	24.242		5,800	1,600		7,400	8,775
0800	2,000 amp		.62	25.806		6,350	1,700		8,050	9,550
1000	3,000 amp		.56	28.571		8,400	1,900		10,300	12,000
2000	Fused switch & CT compartment									
2100	120/208 volt, 4 wire, 400 amp	2 Elec	1.12	14.286	Ea.	2,850	945		3,795	4,525
2200	600 amp		.94	17.021		3,375	1,125		4,500	5,375
2300	800 amp		.84	19.048		13,100	1,250		14,350	16,300
2400	1,200 amp		.68	23.529		17,000	1,550		18,550	21,000
2900	Pressure switch & CT compartment									
3000	120/208 volt, 4 wire, 800 amp	2 Elec	.80	20	Ea.	11,700	1,325		13,025	14,900
3100	1,200 amp		.66	24.242		23,100	1,600		24,700	27,800
3200	1,600 amp		.62	25.806		24,600	1,700		26,300	29,600
3300	2,000 amp	2 Elec	.56	28.571	Ea.	25,700	1,900		27,600	31,100
4400	Circuit breaker, molded case & CT compartment									
4600	3 pole, 4 wire, 600 amp	2 Elec	.94	17.021	Ea.	12,500	1,125		13,625	15,400
4800	800 amp		.84	19.048		19,000	1,250		20,250	22,800
5000	1,200 amp		.68	23.529		16,500	1,550		18,050	20,500
5100	Copper bus bars, not incl. CT's or PT's, add, minimum					15%				

26 24 13.30 Distribution Switchboards Section

0010	**DISTRIBUTION SWITCHBOARDS SECTION**									
0100	Aluminum bus bars, not including breakers									
0195	120/208 or 277/480 volt, 4 wire, 400 amp	2 Elec	1.10	14.545	Ea.	1,625	965		2,590	3,225
0200	600 amp		1	16		1,550	1,050		2,600	3,275
0300	800 amp		.88	18.182		1,950	1,200		3,150	3,950
0400	1,000 amp		.80	20		2,475	1,325		3,800	4,700
0500	1,200 amp		.72	22.222		2,950	1,475		4,425	5,400
0600	1,600 amp		.66	24.242		4,600	1,600		6,200	7,425
0700	2,000 amp		.62	25.806		5,825	1,700		7,525	8,950
0800	2,500 amp		.60	26.667		6,150	1,775		7,925	9,400
0900	3,000 amp		.56	28.571		8,375	1,900		10,275	12,000
0950	4,000 amp		.52	30.769		7,825	2,025		9,850	11,700

26 24 13.40 Switchboards Feeder Section

0010	**SWITCHBOARDS FEEDER SECTION** group mounted devices									
0030	Circuit breakers									
0160	FA frame, 15 to 60 amp, 240 volt, 1 pole	1 Elec	8	1	Ea.	133	66		199	245
0280	FA frame, 70 to 100 amp, 240 volt, 1 pole		7	1.143		227	75.50		302.50	360
0420	KA frame, 70 to 225 amp		3.20	2.500		1,400	166		1,566	1,800
0430	LA frame, 125 to 400 amp		2.30	3.478		4,300	230		4,530	5,075
0460	MA frame, 450 to 600 amp		1.60	5		5,850	330		6,180	6,925
0470	700 to 800 amp		1.30	6.154		5,925	405		6,330	7,125
0480	MAL frame, 1,000 amp		1	8		7,875	530		8,405	9,450
0490	PA frame, 1,200 amp		.80	10		16,000	660		16,660	18,600
0500	Branch circuit, fusible switch, 600 volt, double 30/30 amp		4	2		870	132		1,002	1,150
0550	60/60 amp		3.20	2.500		895	166		1,061	1,225
0600	100/100 amp		2.70	2.963		1,150	196		1,346	1,550

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26 24 13 – Switchboards

	26 24 13.40 Switchboards Feeder Section	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0650	Single, 30 amp	1 Elec	5.30	1.509	Ea.	820	100		920	1,050
0700	60 amp		4.70	1.702		865	113		978	1,125
0750	100 amp		4	2		1,525	132		1,657	1,875
0800	200 amp		2.70	2.963		1,250	196		1,446	1,675
0850	400 amp		2.30	3.478		2,275	230		2,505	2,850
0900	600 amp		1.80	4.444		2,800	294		3,094	3,500
0950	800 amp		1.30	6.154		4,725	405		5,130	5,800
1000	1,200 amp		.80	10		5,375	660		6,035	6,875

26 24 16 – Panelboards

26 24 16.20 Panelboard and Load Center Circuit Breakers

0010	**PANELBOARD AND LOAD CENTER CIRCUIT BREAKERS**									
0050	Bolt-on, 10,000 amp I.C., 120 volt, 1 pole									
0100	15-50 amp	1 Elec	10	.800	Ea.	27	53		80	109
0200	60 amp		8	1		23.50	66		89.50	125
0300	70 amp		8	1		47.50	66		113.50	151
0350	240 volt, 2 pole									
0400	15-50 amp	1 Elec	8	1	Ea.	63.50	66		129.50	169
0500	60 amp		7.50	1.067		63	70.50		133.50	174
0600	80-100 amp		5	1.600		154	106		260	325
0700	3 pole, 15-60 amp		6.20	1.290		193	85.50		278.50	340
0800	70 amp		5	1.600		246	106		352	430
0900	80-100 amp		3.60	2.222		287	147		434	535
1000	22,000 amp I.C., 240 volt, 2 pole, 70-225 amp		2.70	2.963		117	196		313	420
1100	3 pole, 70-225 amp		2.30	3.478		385	230		615	760
1200	14,000 amp I.C., 277 volts, 1 pole, 15-30 amp		8	1		108	66		174	217
1300	22,000 amp I.C., 480 volts, 2 pole, 70-225 amp		2.70	2.963		130	196		326	435
1400	3 pole, 70-225 amp		2.30	3.478		1,275	230		1,505	1,750

26 24 16.30 Panelboards Commercial Applications

0010	**PANELBOARDS COMMERCIAL APPLICATIONS**									
0050	NQ, w/20 amp 1 pole bolt-on circuit breakers									
0100	3 wire, 120/240 volts, 100 amp main lugs									
0150	10 circuits	1 Elec	1	8	Ea.	1,250	530		1,780	2,150
0200	14 circuits		.88	9.091		1,400	600		2,000	2,425
0250	18 circuits		.75	10.667		850	705		1,555	1,975
0300	20 circuits		.65	12.308		1,650	815		2,465	3,025
0350	225 amp main lugs, 24 circuits	2 Elec	1.20	13.333		1,875	885		2,760	3,350
0400	30 circuits		.90	17.778		1,200	1,175		2,375	3,075
0450	36 circuits		.80	20		2,500	1,325		3,825	4,725
0500	38 circuits		.72	22.222		2,675	1,475		4,150	5,125
0550	42 circuits		.66	24.242		1,450	1,600		3,050	3,975
0600	4 wire, 120/208 volts, 100 amp main lugs, 12 circuits	1 Elec	1	8		1,350	530		1,880	2,250
0650	16 circuits		.75	10.667		945	705		1,650	2,100
0700	20 circuits		.65	12.308		1,725	815		2,540	3,100
0750	24 circuits		.60	13.333		1,175	885		2,060	2,600
0800	30 circuits		.53	15.094		1,175	1,000		2,175	2,775
0850	225 amp main lugs, 32 circuits	2 Elec	.90	17.778	Ea.	1,325	1,175		2,500	3,200
0900	34 circuits		.84	19.048		2,500	1,250		3,750	4,625
0950	36 circuits		.80	20		2,575	1,325		3,900	4,800
1000	42 circuits		.68	23.529		1,600	1,550		3,150	4,075
1010	400 amp main lugs, 42 circs		.68	23.529		1,600	1,550		3,150	4,075
1200	NF, w/20 amp, 1 pole bolt-on circuit breakers									
1250	4 wire, 277/480 volts, 100 amp main lugs, 12 circuits	1 Elec	.88	9.091	Ea.	1,825	600		2,425	2,900

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26 24 16 – Panelboards

26 24 16.30 Panelboards Commercial Applications	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1300 20 circuits	1 Elec	.60	13.333	Ea.	2,825	885		3,710	4,400
1350 225 amp main lugs, 24 circuits	2 Elec	.90	17.778		3,300	1,175		4,475	5,375
1400 30 circuits		.80	20		2,625	1,325		3,950	4,850
1448 32 circuits		4.90	3.265		4,600	216		4,816	5,375
1450 36 circuits		.72	22.222		4,600	1,475		6,075	7,225
1600 NQ panel, w/20 amp, 1 pole, circuit breakers									
1650 3 wire, 120/240 volt with main circuit breaker									
1700 100 amp main, 12 circuits	1 Elec	.80	10	Ea.	1,600	660		2,260	2,725
1750 20 circuits	"	.60	13.333		2,025	885		2,910	3,525
1800 225 amp main, 30 circuits	2 Elec	.68	23.529		2,850	1,550		4,400	5,450
1801 225 amp main, 32 circuits		5	3.200		2,850	212		3,062	3,450
1850 42 circuits		.52	30.769		3,575	2,025		5,600	6,950
1900 400 amp main, 30 circuits		.54	29.630		6,750	1,950		8,700	10,300
1950 42 circuits		.50	32		7,375	2,125		9,500	11,300
2000 4 wire, 120/208 volts with main circuit breaker									
2050 100 amp main, 24 circuits	1 Elec	.47	17.021	Ea.	2,275	1,125		3,400	4,175
2100 30 circuits	"	.40	20		3,550	1,325		4,875	5,875
2200 225 amp main, 32 circuits	2 Elec	.72	22.222		3,825	1,475		5,300	6,375
2250 42 circuits		.56	28.571		4,475	1,900		6,375	7,725
2300 400 amp main, 42 circuits		.48	33.333		6,050	2,200		8,250	9,950
2350 600 amp main, 42 circuits		.40	40		9,700	2,650		12,350	14,600
2400 NF, with 20 amp, 1 pole circuit breaker									
2450 4 wire, 277/480 volts with main circuit breaker									
2500 100 amp main, 24 circuits	1 Elec	.42	19.048	Ea.	3,800	1,250		5,050	6,050
2550 30 circuits	"	.38	21.053		7,825	1,400		9,225	10,700
2600 225 amp main, 30 circuits	2 Elec	.72	22.222		9,850	1,475		11,325	13,000
2650 42 circuits	"	.56	28.571		11,900	1,900		13,800	15,800

26 24 19 – Motor-Control Centers

26 24 19.40 Motor Starters and Controls

0010 **MOTOR STARTERS AND CONTROLS**									
0050 Magnetic, FVNR, with enclosure and heaters, 480 volt									
0080 2 HP, size 00	1 Elec	3.50	2.286	Ea.	120	151		271	355
0100 5 HP, size 0		2.30	3.478		355	230		585	730
0200 10 HP, size 1		1.60	5		169	330		499	675
0300 25 HP, size 2	2 Elec	2.20	7.273		335	480		815	1,075
0400 50 HP, size 3		1.80	8.889		555	590		1,145	1,475
0500 100 HP, size 4		1.20	13.333		1,250	885		2,135	2,675
0600 200 HP, size 5		.90	17.778		2,975	1,175		4,150	5,000
0700 Combination, with motor circuit protectors, 5 HP, size 0	1 Elec	1.80	4.444		1,450	294		1,744	2,000
0800 10 HP, size 1	"	1.30	6.154		1,500	405		1,905	2,250
0900 25 HP, size 2	2 Elec	2	8		2,075	530		2,605	3,075
1000 50 HP, size 3		1.32	12.121		3,025	800		3,825	4,525
1200 100 HP, size 4		.80	20		6,650	1,325		7,975	9,300
1400 Combination, with fused switch, 5 HP, size 0	1 Elec	1.80	4.444		1,225	294		1,519	1,775
1600 10 HP, size 1	"	1.30	6.154		1,325	405		1,730	2,050
1800 25 HP, size 2	2 Elec	2	8		2,025	530		2,555	3,000
2000 50 HP, size 3		1.32	12.121		3,625	800		4,425	5,175
2200 100 HP, size 4		.80	20		7,200	1,325		8,525	9,900

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26 25 13.40 Copper Bus Duct	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **COPPER BUS DUCT** 10′ long									
0050 Indoor 3 pole 4 wire, plug-in, straight section, 225 amp	2 Elec	40	.400	L.F.	230	26.50		256.50	293
1000 400 amp		32	.500		188	33		221	256
1500 600 amp		26	.615		440	40.50		480.50	545
2400 800 amp		20	.800		640	53		693	785
2450 1,000 amp		18	.889		315	59		374	435
2500 1,350 amp		16	1		420	66		486	560
2510 1,600 amp		12	1.333		1,650	88.50		1,738.50	1,950
2520 2,000 amp		10	1.600		2,025	106		2,131	2,400
2550 Feeder, 600 amp		28	.571		209	38		247	286
2600 800 amp		22	.727		780	48		828	925
2700 1,000 amp		20	.800		920	53		973	1,100
2800 1,350 amp		18	.889		390	59		449	520
2900 1,600 amp		14	1.143		1,500	75.50		1,575.50	1,750
3000 2,000 amp		12	1.333		1,825	88.50		1,913.50	2,150
3100 Elbows, 225 amp		4	4	Ea.	2,150	265		2,415	2,750
3200 400 amp		3.60	4.444		2,625	294		2,919	3,325
3300 600 amp		3.20	5		2,800	330		3,130	3,575
3400 800 amp		2.80	5.714		3,700	380		4,080	4,625
3500 1,000 amp		2.60	6.154		3,950	405		4,355	4,950
3600 1,350 amp		2.40	6.667		5,300	440		5,740	6,500
3700 1,600 amp		2.20	7.273		5,875	480		6,355	7,200
3800 2,000 amp		1.80	8.889		6,975	590		7,565	8,550
4000 End box, 225 amp		34	.471		78	31		109	132
4100 400 amp		32	.500		194	33		227	263
4200 600 amp		28	.571		194	38		232	270
4300 800 amp		26	.615		194	40.50		234.50	275
4400 1,000 amp		24	.667		115	44		159	192
4500 1,350 amp		22	.727		181	48		229	272
4600 1,600 amp		20	.800		181	53		234	279
4700 2,000 amp		18	.889		222	59		281	335
4800 Cable tap box end, 225 amp		3.20	5		2,450	330		2,780	3,175
5000 400 amp		2.60	6.154		2,950	405		3,355	3,850
5100 600 amp		2.20	7.273		4,300	480		4,780	5,475
5200 800 amp		2	8		4,525	530		5,055	5,750
5300 1,000 amp		1.60	10		4,575	660		5,235	6,025
5400 1,350 amp		1.40	11.429		2,375	755		3,130	3,725
5500 1,600 amp		1.20	13.333		2,650	885		3,535	4,200
5600 2,000 amp		1	16		2,875	1,050		3,925	4,750
5700 Switchboard stub, 225 amp		5.40	2.963		1,225	196		1,421	1,625
5800 400 amp		4.60	3.478		1,350	230		1,580	1,825
5900 600 amp		4	4		1,425	265		1,690	1,975
6000 800 amp		3.20	5		1,725	330		2,055	2,400
6100 1,000 amp		3	5.333		2,000	355		2,355	2,725
6200 1,350 amp		2.60	6.154		2,425	405		2,830	3,250
6300 1,600 amp		2.40	6.667		2,725	440		3,165	3,650
6400 2,000 amp		2	8		3,300	530		3,830	4,425
6490 Tee fittings, 225 amp		2.40	6.667		3,475	440		3,915	4,475
6500 400 amp		2	8		3,475	530		4,005	4,600
6600 600 amp		1.80	8.889		3,475	590		4,065	4,700
6700 800 amp		1.60	10		2,400	660		3,060	3,625
6800 1,350 amp		1.20	13.333		3,075	885		3,960	4,700
7000 1,600 amp		1	16		3,525	1,050		4,575	5,450

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26 25 Low-Voltage Enclosed Bus Assemblies

26 25 13 – Low-Voltage Busways

	26 25 13.40 Copper Bus Duct	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
7100	2,000 amp	2 Elec	.80	20	Ea.	4,175	1,325		5,500	6,550
7200	Plug-in fusible switches w/3 fuses, 600 volt, 3 pole, 30 amp	1 Elec	4	2		850	132		982	1,125
7300	60 amp		3.60	2.222		955	147		1,102	1,275
7400	100 amp		2.70	2.963		1,725	196		1,921	2,175
7500	200 amp	2 Elec	3.20	5		2,900	330		3,230	3,700
7600	400 amp		1.40	11.429		7,625	755		8,380	9,525
7700	600 amp		.90	17.778		7,450	1,175		8,625	9,950
7800	800 amp		.66	24.242		12,300	1,600		13,900	16,000
7900	1,200 amp		.50	32		23,100	2,125		25,225	28,700
8000	Plug-in circuit breakers, molded case, 15 to 50 amp	1 Elec	4.40	1.818		805	120		925	1,075
8100	70 to 100 amp	"	3.10	2.581		890	171		1,061	1,225
8200	150 to 225 amp	2 Elec	3.40	4.706		2,425	310		2,735	3,150
8300	250 to 400 amp		1.40	11.429		4,250	755		5,005	5,800
8400	500 to 600 amp		1	16		5,725	1,050		6,775	7,875
8500	700 to 800 amp		.64	25		7,075	1,650		8,725	10,200
8600	900 to 1,000 amp		.56	28.571		10,100	1,900		12,000	13,900
8700	1,200 amp		.44	36.364		12,200	2,400		14,600	17,000

26 27 Low-Voltage Distribution Equipment

26 27 16 – Electrical Cabinets and Enclosures

26 27 16.10 Cabinets

0010	**CABINETS**									
7000	Cabinets, current transformer									
7050	Single door, 24" H x 24" W x 10" D	1 Elec	1.60	5	Ea.	143	330		473	650
7100	30" H x 24" W x 10" D		1.30	6.154		159	405		564	780
7150	36" H x 24" W x 10" D		1.10	7.273		500	480		980	1,275
7200	30" H x 30" W x 10" D		1	8		270	530		800	1,075
7250	36" H x 30" W x 10" D		.90	8.889		345	590		935	1,250
7300	36" H x 36" W x 10" D		.80	10		375	660		1,035	1,400
7500	Double door, 48" H x 36" W x 10" D		.60	13.333		670	885		1,555	2,025
7550	24" H x 24" W x 12" D		1	8		200	530		730	1,000

26 27 23 – Indoor Service Poles

26 27 23.40 Surface Raceway

0010	**SURFACE RACEWAY**									
0090	Metal, straight section									
0100	No. 500	1 Elec	100	.080	L.F.	1.22	5.30		6.52	9.20
0110	No. 700		100	.080		1.35	5.30		6.65	9.35
0400	No. 1500, small pancake		90	.089		2.62	5.90		8.52	11.65
0600	No. 2000, base & cover, blank		90	.089		2.68	5.90		8.58	11.70
0800	No. 3000, base & cover, blank		75	.107		5.15	7.05		12.20	16.15
1000	No. 4000, base & cover, blank		65	.123		8.20	8.15		16.35	21
1200	No. 6000, base & cover, blank		50	.160		13.70	10.60		24.30	31
2400	Fittings, elbows, No. 500		40	.200	Ea.	2.24	13.25		15.49	22
2800	Elbow cover, No. 2000		40	.200		4.32	13.25		17.57	24.50
2880	Tee, No. 500		42	.190		4.28	12.60		16.88	23.50
2900	No. 2000	1 Elec	27	.296	Ea.	14.40	19.60		34	45
3000	Switch box, No. 500		16	.500		12.85	33		45.85	63
3400	Telephone outlet, No. 1500		16	.500		18.20	33		51.20	69
3600	Junction box, No. 1500		16	.500		11.50	33		44.50	61.50
3800	Plugmold wired sections, No. 2000									

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26 27 Low-Voltage Distribution Equipment

26 27 23 – Indoor Service Poles

	26 27 23.40 Surface Raceway	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4000	1 circuit, 6 outlets, 3′ long	1 Elec	8	1	Ea.	43.50	66		109.50	146
4100	2 circuits, 8 outlets, 6′ long	"	5.30	1.509	"	76	100		176	233

26 27 26 – Wiring Devices

26 27 26.10 Low Voltage Switching

0010	**LOW VOLTAGE SWITCHING**									
3600	Relays, 120 V or 277 V standard	1 Elec	12	.667	Ea.	45.50	44		89.50	116
3800	Flush switch, standard		40	.200		16.65	13.25		29.90	38
4000	Interchangeable		40	.200		21.50	13.25		34.75	43.50
4100	Surface switch, standard		40	.200		9.65	13.25		22.90	30.50
4200	Transformer 115 V to 25 V		12	.667		145	44		189	225
4400	Master control, 12 circuit, manual		4	2		148	132		280	360
4500	25 circuit, motorized		4	2		188	132		320	405
4600	Rectifier, silicon		12	.667		59	44		103	130
4800	Switchplates, 1 gang, 1, 2 or 3 switch, plastic		80	.100		5.75	6.60		12.35	16.20
5000	Stainless steel		80	.100		12.80	6.60		19.40	24
5400	2 gang, 3 switch, stainless steel		53	.151		26.50	10		36.50	44.50
5500	4 switch, plastic		53	.151		11.85	10		21.85	28
5800	3 gang, 9 switch, stainless steel		32	.250		80	16.55		96.55	113

26 27 26.20 Wiring Devices Elements

0010	**WIRING DEVICES ELEMENTS**									
0200	Toggle switch, quiet type, single pole, 15 amp	1 Elec	40	.200	Ea.	2.15	13.25		15.40	22
0600	3 way, 15 amp		23	.348		1.56	23		24.56	35.50
0900	4 way, 15 amp		15	.533		12.95	35.50		48.45	67
1650	Dimmer switch, 120 volt, incandescent, 600 watt, 1 pole G		16	.500		25.50	33		58.50	77
2460	Receptacle, duplex, 120 volt, grounded, 15 amp		40	.200		1.48	13.25		14.73	21.50
2470	20 amp		27	.296		13.10	19.60		32.70	43.50
2490	Dryer, 30 amp		15	.533		4.77	35.50		40.27	58
2500	Range, 50 amp		11	.727		11.60	48		59.60	84.50
2600	Wall plates, stainless steel, 1 gang		80	.100		1.49	6.60		8.09	11.50
2800	2 gang		53	.151		14.80	10		24.80	31
3200	Lampholder, keyless		26	.308		23	20.50		43.50	56
3400	Pullchain with receptacle		22	.364		24.50	24		48.50	62.50

26 27 73 – Door Chimes

26 27 73.10 Doorbell System

0010	**DOORBELL SYSTEM**, incl. transformer, button & signal									
0100	6" bell	1 Elec	4	2	Ea.	165	132		297	380
0200	Buzzer	"	4	2	"	132	132		264	345

26 28 Low-Voltage Circuit Protective Devices

26 28 16 – Enclosed Switches and Circuit Breakers

26 28 16.10 Circuit Breakers

0010	**CIRCUIT BREAKERS** (in enclosure)									
0100	Enclosed (NEMA 1), 600 volt, 3 pole, 30 amp	1 Elec	3.20	2.500	Ea.	645	166		811	955
0200	60 amp		2.80	2.857		645	189		834	990
0400	100 amp		2.30	3.478		760	230		990	1,175
0500	200 amp		1.50	5.333		1,150	355		1,505	1,800
0600	225 amp		1.50	5.333		1,150	355		1,505	1,800
0700	400 amp	2 Elec	1.60	10		4,525	660		5,185	5,975
0800	600 amp		1.20	13.333		7,150	885		8,035	9,150
1000	800 amp		.94	17.021		9,225	1,125		10,350	11,800

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26 28 Low-Voltage Circuit Protective Devices

26 28 16 – Enclosed Switches and Circuit Breakers

26 28 16.20 Safety Switches	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **SAFETY SWITCHES**									
0100 General duty 240 volt, 3 pole NEMA 1, fusible, 30 amp	1 Elec	3.20	2.500	Ea.	65	166		231	320
0200 60 amp		2.30	3.478		110	230		340	460
0300 100 amp		1.90	4.211		188	279		467	620
0400 200 amp		1.30	6.154		410	405		815	1,050
0500 400 amp	2 Elec	1.80	8.889		995	590		1,585	1,975
0600 600 amp	"	1.20	13.333		1,850	885		2,735	3,325
2900 Heavy duty, 240 volt, 3 pole NEMA 1 fusible									
2910 30 amp	1 Elec	3.20	2.500	Ea.	107	166		273	365
3000 60 amp		2.30	3.478		178	230		408	535
3300 100 amp		1.90	4.211		274	279		553	715
3500 200 amp		1.30	6.154		470	405		875	1,125
3700 400 amp	2 Elec	1.80	8.889		1,125	590		1,715	2,100
3900 600 amp	"	1.20	13.333		2,225	885		3,110	3,725

26 29 Low-Voltage Controllers

26 29 13 – Enclosed Controllers

26 29 13.20 Control Stations	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **CONTROL STATIONS**									
0050 NEMA 1, heavy duty, stop/start	1 Elec	8	1	Ea.	330	66		396	465
0100 Stop/start, pilot light		6.20	1.290		340	85.50		425.50	500
0200 Hand/off/automatic		6.20	1.290		355	85.50		440.50	515
0400 Stop/start/reverse		5.30	1.509		440	100		540	635

26 32 Packaged Generator Assemblies

26 32 13 – Engine Generators

26 32 13.13 Diesel-Engine-Driven Generator Sets	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **DIESEL-ENGINE-DRIVEN GENERATOR SETS**									
2000 Diesel engine, including battery, charger,									
2010 muffler & day tank, 30 kW	R-3	.55	36.364	Ea.	14,400	2,400	315	17,115	19,700
2100 50 kW		.42	47.619		17,100	3,125	415	20,640	23,900
2200 75 kW		.35	57.143		26,800	3,750	495	31,045	35,600
2300 100 kW		.31	64.516		30,900	4,250	560	35,710	40,900
2400 125 kW		.29	68.966		27,500	4,550	600	32,650	37,700
2500 150 kW		.26	76.923		24,300	5,075	665	30,040	35,000
2501 Generator set, dsl eng in alum encl, incl btry, chgr, muf & day tank,150 kW		.26	76.923		40,700	5,075	665	46,440	53,000
2600 175 kW		.25	80		33,700	5,275	695	39,670	45,700
2700 200 kW		.24	83.333		57,000	5,475	725	63,200	71,500
2800 250 kW		.23	86.957		45,900	5,725	755	52,380	60,000
2900 300 kW		.22	90.909		51,500	5,975	790	58,265	66,500
3000 350 kW		.20	100		63,000	6,575	865	70,440	80,500
3100 400 kW		.19	105		76,000	6,925	915	83,840	95,000
3200 500 kW		.18	111		86,000	7,325	965	94,290	106,500

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26 32 Packaged Generator Assemblies

26 32 13 – Engine Generators

26 32 13.16 Gas-Engine-Driven Generator Sets	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **GAS-ENGINE-DRIVEN GENERATOR SETS**									
0020 Gas or gasoline operated, includes battery,									
0050 charger & muffler									
0200 7.5 kW	R-3	.83	24.096	Ea.	7,100	1,575	209	8,884	10,400
0300 11.5 kW		.71	28.169		10,100	1,850	244	12,194	14,100
0400 20 kW		.63	31.746		10,600	2,100	275	12,975	15,100
0500 35 kW		.55	36.364		15,600	2,400	315	18,315	21,100
0600 80 kW	R-13	.40	105		23,600	6,700	1,400	31,700	37,500
0700 100 kW		.33	127		27,600	8,125	1,700	37,425	44,400
0800 125 kW		.28	150		29,000	9,575	2,000	40,575	48,300
0900 185 kW		.25	168		68,500	10,700	2,250	81,450	94,000

26 33 Battery Equipment

26 33 43 – Battery Chargers

26 33 43.55 Electric Vehicle Charging		Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **ELECTRIC VEHICLE CHARGING**										
0020 Level 2, wall mounted										
2200 Heavy duty	G	R-1A	15.36	1.042	Ea.	800	62		862	970
2210 with RFID	G		12.29	1.302		4,525	77.50		4,602.50	5,100
2300 Free standing, single connector	G		10.24	1.563		3,400	93		3,493	3,875
2310 with RFID	G		8.78	1.822		4,675	109		4,784	5,300
2320 Double connector	G		7.68	2.083		4,375	124		4,499	4,975
2330 with RFID	G		6.83	2.343		8,750	140		8,890	9,825

26 35 Power Filters and Conditioners

26 35 13 – Capacitors

26 35 13.10 Capacitors Indoor	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **CAPACITORS INDOOR**									
0020 240 volts, single & 3 phase, 0.5 kVAR	1 Elec	2.70	2.963	Ea.	615	196		811	965
0100 1.0 kVAR		2.70	2.963		740	196		936	1,100
0150 2.5 kVAR		2	4		835	265		1,100	1,300
0200 5.0 kVAR		1.80	4.444		800	294		1,094	1,325
0250 7.5 kVAR		1.60	5		1,525	330		1,855	2,200
0300 10 kVAR		1.50	5.333		1,775	355		2,130	2,475
0350 15 kVAR		1.30	6.154		1,350	405		1,755	2,075
0400 20 kVAR		1.10	7.273		2,750	480		3,230	3,775
0450 25 kVAR		1	8		3,175	530		3,705	4,275
1000 480 volts, single & 3 phase, 1 kVAR		2.70	2.963		560	196		756	905
1050 2 kVAR		2.70	2.963		645	196		841	995
1100 5 kVAR		2	4		810	265		1,075	1,275
1150 7.5 kVAR		2	4		875	265		1,140	1,350
1200 10 kVAR		2	4		1,225	265		1,490	1,750
1250 15 kVAR		2	4		1,450	265		1,715	2,000
1300 20 kVAR		1.60	5		1,600	330		1,930	2,250
1350 30 kVAR		1.50	5.333		1,425	355		1,780	2,075
1400 40 kVAR		1.20	6.667		2,400	440		2,840	3,275
1450 50 kVAR		1.10	7.273		2,800	480		3,280	3,800

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26 51 13 – Interior Lighting Fixtures, Lamps, and Ballasts

	26 51 13.50 Interior Lighting Fixtures		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**INTERIOR LIGHTING FIXTURES** Including lamps, mounting										
0030	hardware and connections										
0100	Fluorescent, C.W. lamps, troffer, recess mounted in grid, RS										
0130	Grid ceiling mount										
0200	Acrylic lens, 1′ W x 4′ L, two 40 watt		1 Elec	5.70	1.404	Ea.	55	93		148	198
0210	1′ W x 4′ L, three 40 watt			5.40	1.481		62	98		160	215
0300	2′ W x 2′ L, two U40 watt			5.70	1.404		145	93		238	297
0400	2′ W x 4′ L, two 40 watt			5.30	1.509		57.50	100		157.50	213
0500	2′ W x 4′ L, three 40 watt			5	1.600		63.50	106		169.50	227
0600	2′ W x 4′ L, four 40 watt			4.70	1.702		66.50	113		179.50	240
0700	4′ W x 4′ L, four 40 watt		2 Elec	6.40	2.500		305	166		471	580
0800	4′ W x 4′ L, six 40 watt			6.20	2.581		320	171		491	605
0900	4′ W x 4′ L, eight 40 watt			5.80	2.759		360	183		543	665
0910	Acrylic lens, 1′ W x 4′ L, two 32 watt T8	G	1 Elec	5.70	1.404		111	93		204	261
0930	2′ W x 2′ L, two U32 watt T8	G	1 Elec	5.70	1.404	Ea.	147	93		240	300
0940	2′ W x 4′ L, two 32 watt T8	G		5.30	1.509		102	100		202	261
0950	2′ W x 4′ L, three 32 watt T8	G		5	1.600		93.50	106		199.50	260
0960	2′ W x 4′ L, four 32 watt T8	G		4.70	1.702		156	113		269	340
1000	Surface mounted, RS										
1030	Acrylic lens with hinged & latched door frame										
1100	1′ W x 4′ L, two 40 watt		1 Elec	7	1.143	Ea.	71.50	75.50		147	191
1110	1′ W x 4′ L, three 40 watt			6.70	1.194		74	79		153	199
1200	2′ W x 2′ L, two U40 watt			7	1.143		77	75.50		152.50	197
1300	2′ W x 4′ L, two 40 watt			6.20	1.290		87.50	85.50		173	223
1400	2′ W x 4′ L, three 40 watt			5.70	1.404		87	93		180	234
1500	2′ W x 4′ L, four 40 watt			5.30	1.509		89	100		189	247
1501	2′ W x 4′ L, six 40 watt T8			5.20	1.538		89	102		191	249
1600	4′ W x 4′ L, four 40 watt		2 Elec	7.20	2.222		440	147		587	705
1700	4′ W x 4′ L, six 40 watt			6.60	2.424		480	160		640	765
1800	4′ W x 4′ L, eight 40 watt			6.20	2.581		495	171		666	800
1900	2′ W x 8′ L, four 40 watt			6.40	2.500		176	166		342	440
2000	2′ W x 8′ L, eight 40 watt			6.20	2.581		189	171		360	460
2100	Strip fixture										
2130	Surface mounted										
2200	4′ long, one 40 watt, RS		1 Elec	8.50	.941	Ea.	108	62.50		170.50	212
2300	4′ long, two 40 watt, RS			8	1		143	66		209	256
2400	4′ long, one 40 watt, SL			8	1		55	66		121	159
2500	4′ long, two 40 watt, SL			7	1.143		143	75.50		218.50	269
2600	8′ long, one 75 watt, SL		2 Elec	13.40	1.194		106	79		185	234
2700	8′ long, two 75 watt, SL		″	12.40	1.290		118	85.50		203.50	256
2800	4′ long, two 60 watt, HO		1 Elec	6.70	1.194		114	79		193	242
2900	8′ long, two 110 watt, HO		2 Elec	10.60	1.509		111	100		211	271
2950	High bay pendent mounted, 16″ W x 4′ L, four 54 watt, T5HO	G		8.90	1.798		284	119		403	485
2952	2′ W x 4′ L, six 54 watt, T5HO	G		8.50	1.882		310	125		435	525
2954	2′ W x 4′ L, six 32 watt, T8	G		8.50	1.882		180	125		305	385
3000	Strip, pendent mounted, industrial, white porcelain enamel										
3100	4′ long, two 40 watt, RS		1 Elec	5.70	1.404	Ea.	54	93		147	198
3200	4′ long, two 60 watt, HO		″	5	1.600		83.50	106		189.50	249
3300	8′ long, two 75 watt, SL		2 Elec	8.80	1.818		102	120		222	291
3400	8′ long, two 110 watt, HO		″	8	2		131	132		263	340
3470	Troffer, air handling, 2′ W x 4′ L with four 32 watt T8	G	1 Elec	4	2		121	132		253	330
3480	2′ W x 2′ L with two U32 watt T8	G		5.50	1.455		104	96.50		200.50	257
3490	Air connector insulated, 5″ diameter			20	.400		70.50	26.50		97	117

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26 51 13 – Interior Lighting Fixtures, Lamps, and Ballasts

	26 51 13.50 Interior Lighting Fixtures		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
3500	6" diameter		1 Elec	20	.400	Ea.	69.50	26.50		96	116
3510	Troffer parabolic lay-in, 1' W x 4' L with one 32 W T8	G		5.70	1.404		120	93		213	269
3520	1' W x 4' L with two 32 W T8	G		5.30	1.509		87.50	100		187.50	245
3525	2' W x 2' L with two U32 W T8	G		5.70	1.404		125	93		218	275
3530	2' W x 4' L with three 32 W T8	G		5	1.600		133	106		239	305
3531	Intr fxtr, fluor, troffer prismatic lay-in, 2' W x 4'l w/three 32 W T8			5	1.600		152	106		258	325
4450	Incandescent, high hat can, round alzak reflector, prewired										
4470	100 watt		1 Elec	8	1	Ea.	69	66		135	175
4480	150 watt			8	1		105	66		171	215
4500	300 watt			6.70	1.194		244	79		323	385
4600	Square glass lens with metal trim, prewired										
4630	100 watt		1 Elec	6.70	1.194	Ea.	55.50	79		134.50	178
4680	150 watt			6.70	1.194		99	79		178	226
4700	200 watt			6.70	1.194		99	79		178	226
4800	300 watt			5.70	1.404		148	93		241	300
4900	Ceiling/wall, surface mounted, metal cylinder, 75 watt			10	.800		47.50	53		100.50	131
4920	150 watt			10	.800		87	53		140	174
5200	Ceiling, surface mounted, opal glass drum										
5300	8", one 60 watt lamp		1 Elec	10	.800	Ea.	66	53		119	151
5400	10", two 60 watt lamps			8	1		73.50	66		139.50	179
5500	12", four 60 watt lamps			6.70	1.194		102	79		181	230
6010	Vapor tight, incandescent, ceiling mounted, 200 watt			6.20	1.290		71	85.50		156.50	205
6100	Fluorescent, surface mounted, 2 lamps, 4' L, RS, 40 watt			3.20	2.500		121	166		287	380
6850	Vandalproof, surface mounted, fluorescent, two 32 watt T8	G		3.20	2.500		271	166		437	545
6860	Incandescent, one 150 watt			8	1		101	66		167	210
7500	Ballast replacement, by weight of ballast, to 15' high										
7520	Indoor fluorescent, less than 2 lb.		1 Elec	10	.800	Ea.	27.50	53		80.50	109
7540	Two 40W, watt reducer, 2 to 5 lb.			9.40	.851		69.50	56.50		126	160
7560	Two F96 slimline, over 5 lb.			8	1		110	66		176	220
7580	Vaportite ballast, less than 2 lb.			9.40	.851		27.50	56.50		84	114
7600	2 lb. to 5 lb.			8.90	.899		69.50	59.50		129	165
7620	Over 5 lb.			7.60	1.053		110	69.50		179.50	225
7630	Electronic ballast for two tubes			8	1		38	66		104	141
7640	Dimmable ballast one-lamp	G		8	1		107	66		173	216
7650	Dimmable ballast two-lamp	G		7.60	1.053		112	69.50		181.50	227

26 51 13.55 Interior LED Fixtures

0010	**INTERIOR LED FIXTURES** Incl. lamps and mounting hardware										
0100	Downlight, recess mounted, 7.5" diameter, 25 watt	G	1 Elec	8	1	Ea.	350	66		416	485
0120	10" diameter, 36 watt	G		8	1		370	66		436	505
0160	cylinder, 10 watts	G		8	1		63	66		129	168
0180	20 watts	G		8	1		89	66		155	197
1000	Troffer, recess mounted, 2' x 4', 3,200 lumens	G		5.30	1.509		143	100		243	305
1010	4,800 lumens	G		5	1.600		141	106		247	310
1020	6,400 lumens	G		4.70	1.702		192	113		305	380
1100	Troffer retrofit lamp, 38 watt	G		21	.381		61	25		86	105
1110	60 watt	G		20	.400		125	26.50		151.50	177
1120	100 watt	G		18	.444		144	29.50		173.50	202
1200	Troffer, volumetric recess mounted, 2' x 2'	G		5.70	1.404		420	93		513	600
2000	Strip, surface mounted, one light bar 4' long, 3,500 K	G		8.50	.941		315	62.50		377.50	440
2010	5,000 K	G		8	1		272	66		338	400
2020	Two light bar 4' long, 5,000 K	G		7	1.143		425	75.50		500.50	580
3000	Linear, suspended mounted, one light bar 4' long, 37 watt	G		6.70	1.194		183	79		262	320

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26 51 Interior Lighting

26 51 13 – Interior Lighting Fixtures, Lamps, and Ballasts

26 51 13.55 Interior LED Fixtures		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
3010 One light bar 8′ long, 74 watt	G	2 Elec	12.20	1.311	Ea.	300	87		387	460
3020 Two light bar 4′ long, 74 watt	G	1 Elec	5.70	1.404		385	93		478	565
3030 Two light bar 8′ long, 148 watt	G	2 Elec	8.80	1.818		370	120		490	585
4000 High bay, surface mounted, round, 150 watts	G		5.41	2.959		475	196		671	810
4010 2 bars, 164 watts	G		5.41	2.959		390	196		586	715
4020 3 bars, 246 watts	G		5.01	3.197		520	212		732	890
4030 4 bars, 328 watts	G		4.60	3.478		565	230		795	960
4040 5 bars, 410 watts	G	3 Elec	4.20	5.716		770	380		1,150	1,400
4050 6 bars, 492 watts	G		3.80	6.324		1,025	420		1,445	1,750
4060 7 bars, 574 watts	G		3.39	7.075		1,025	470		1,495	1,825
4070 8 bars, 656 watts	G		2.99	8.029		1,350	530		1,880	2,275
5000 Track, lighthead, 6 watt	G	1 Elec	32	.250		56	16.55		72.55	86
5010 9 watt	G	"	32	.250		63.50	16.55		80.05	94.50
6000 Garage, surface mounted, 103 watts	G	2 Elec	6.50	2.462		1,000	163		1,163	1,350
6100 pendent mounted, 80 watts	G		6.50	2.462		740	163		903	1,050
6200 95 watts	G		6.50	2.462		835	163		998	1,150
6300 125 watts	G		6.50	2.462		850	163		1,013	1,175

26 52 Safety Lighting

26 52 13 – Emergency and Exit Lighting

26 52 13.10 Emergency Lighting and Battery Units										
0010 **EMERGENCY LIGHTING AND BATTERY UNITS**										
0300 Emergency light units, battery operated										
0350 Twin sealed beam light, 25 W, 6 V each										
0500 Lead battery operated		1 Elec	4	2	Ea.	143	132		275	355
0700 Nickel cadmium battery operated			4	2		350	132		482	580
0900 Self-contained fluorescent lamp pack			10	.800		235	53		288	340

26 52 13.16 Exit Signs										
0010 **EXIT SIGNS**										
0080 Exit light ceiling or wall mount, incandescent, single face		1 Elec	8	1	Ea.	60.50	66		126.50	165
0100 Double face			6.70	1.194		60.50	79		139.50	184
0200 LED standard, single face	G		8	1		47.50	66		113.50	151
0220 Double face	G		6.70	1.194		51	79		130	173
0230 LED vandal-resistant, single face	G		7.27	1.100		310	73		383	450
0240 LED w/battery unit, single face	G		4.40	1.818		335	120		455	545
0260 Double face	G		4	2		405	132		537	640
0262 LED w/battery unit, vandal-resistant, single face	G		4.40	1.818		350	120		470	565
0270 Combination emergency light units and exit sign			4	2		149	132		281	360

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26 54 Classified Location Lighting

26 54 13 – Incandescent Classified Location Lighting

26 54 13.20 Explosion Proof	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **EXPLOSION PROOF**, incl. lamps, mounting hardware and connections									
6510 Incandescent, ceiling mounted, 200 watt	1 Elec	4	2	Ea.	1,925	132		2,057	2,300
6600 Fluorescent, RS, 4′ long, ceiling mounted, two 40 watt	″	2.70	2.963	″	5,575	196		5,771	6,450

26 55 Special Purpose Lighting

26 55 33 – Hazard Warning Lighting

26 55 33.10 Warning Beacons

0010 **WARNING BEACONS**									
0015 Surface mount with colored or clear lens									
0100 Rotating beacon									
0110 120V, 40 watt halogen	1 Elec	3.50	2.286	Ea.	235	151		386	485
0120 24V, 20 watt halogen	″	3.50	2.286	″	275	151		426	525
0200 Steady beacon									
0210 120V, 40 watt halogen	1 Elec	3.50	2.286	Ea.	267	151		418	520
0220 24V, 20 watt		3.50	2.286		275	151		426	525
0230 12V DC, incandescent		3.50	2.286		109	151		260	345
0300 Flashing beacon									
0310 120V, 40 watt halogen	1 Elec	3.50	2.286	Ea.	229	151		380	475
0320 24V, 20 watt halogen	″	3.50	2.286	″	254	151		405	505
0410 12V DC with two 6V lantern batteries	1 Elec	7	1.143	Ea.	238	75.50		313.50	375

26 55 61 – Theatrical Lighting

26 55 61.10 Lights

0010 **LIGHTS**									
2000 Lights, border, quartz, reflector, vented,									
2100 colored or white	1 Elec	20	.400	L.F.	191	26.50		217.50	250
2500 Spotlight, follow spot, with transformer, 2,100 watt	″	4	2	Ea.	4,450	132		4,582	5,075
2600 For no transformer, deduct					1,000			1,000	1,100
3000 Stationary spot, fresnel quartz, 6″ lens	1 Elec	4	2		960	132		1,092	1,250
3100 8″ lens		4	2		255	132		387	480
3500 Ellipsoidal quartz, 1,000 watt, 6″ lens		4	2		375	132		507	610
3600 12″ lens		4	2		665	132		797	930
4000 Strobe light, 1 to 15 flashes per second, quartz		3	2.667		910	177		1,087	1,250
4500 Color wheel, portable, five hole, motorized		4	2		233	132		365	455

26 56 Exterior Lighting

26 56 13 – Lighting Poles and Standards

26 56 13.10 Lighting Poles

0010 **LIGHTING POLES**									
2800 Light poles, anchor base									
2820 not including concrete bases									
2840 Aluminum pole, 8′ high	1 Elec	4	2	Ea.	475	132		607	720
3000 20′ high	R-3	2.90	6.897		875	455	60	1,390	1,700
3200 30′ high		2.60	7.692		1,625	505	66.50	2,196.50	2,600
3400 35′ high		2.30	8.696		2,125	575	75.50	2,775.50	3,275
3600 40′ high		2	10		2,500	660	86.50	3,246.50	3,850
3800 Bracket arms, 1 arm	1 Elec	8	1		450	66		516	595
4000 2 arms		8	1		890	66		956	1,075
4200 3 arms		5.30	1.509		425	100		525	620
4400 4 arms		4.80	1.667		570	110		680	790

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26 56 13 – Lighting Poles and Standards

	26 56 13.10 Lighting Poles	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4500	Steel pole, galvanized, 8′ high	1 Elec	3.80	2.105	Ea.	750	139		889	1,025
4600	20′ high	R-3	2.60	7.692		1,125	505	66.50	1,696.50	2,050
4800	30′ high		2.30	8.696		1,325	575	75.50	1,975.50	2,375
5000	35′ high		2.20	9.091		1,425	600	79	2,104	2,550
5200	40′ high		1.70	11.765		1,575	775	102	2,452	2,975
5400	Bracket arms, 1 arm	1 Elec	8	1		335	66		401	470
5600	2 arms		8	1		620	66		686	780
5800	3 arms		5.30	1.509		700	100		800	920
6000	4 arms		5.30	1.509		855	100		955	1,100
6462	20′ high	R-3	2.90	6.897		1,125	455	60	1,640	1,975
6463	30′ high	R-3	2.30	8.696	Ea.	1,325	575	75.50	1,975.50	2,375
6464	35′ high	"	2.40	8.333		1,425	550	72.50	2,047.50	2,475
6470	Light pole conc base, max 6′ buried, 2′ exposed, 18″ diam., average cost	C-6	6	8		231	380	9.30	620.30	825

26 56 19 – LED Exterior Lighting

26 56 19.55 Roadway LED Luminaire

0010	**ROADWAY LED LUMINAIRE**									
0100	LED fixture, 72 LEDs, 120 V AC or 12 V DC, equal to 60 watt	G	1 Elec	2.70	2.963	Ea.	575	196	771	925
0110	108 LEDs, 120 V AC or 12 V DC, equal to 90 watt	G		2.70	2.963		770	196	966	1,125
0120	144 LEDs, 120 V AC or 12 V DC, equal to 120 watt	G		2.70	2.963		945	196	1,141	1,350
0130	252 LEDs, 120 V AC or 12 V DC, equal to 210 watt	G	2 Elec	4.40	3.636		1,300	241	1,541	1,800
0140	Replaces high pressure sodium fixture, 75 watt	G	1 Elec	2.70	2.963		410	196	606	740
0150	125 watt	G		2.70	2.963		470	196	666	805
0160	150 watt	G		2.70	2.963		550	196	746	895
0170	175 watt	G		2.70	2.963		810	196	1,006	1,175
0180	200 watt	G		2.70	2.963		770	196	966	1,150
0190	250 watt	G	2 Elec	4.40	3.636		885	241	1,126	1,325
0200	320 watt	G	"	4.40	3.636		965	241	1,206	1,400

26 56 19.60 Parking LED Lighting

0010	**PARKING LED LIGHTING**									
0100	Round pole mounting, 88 lamp watts	G	1 Elec	2	4	Ea.	1,300	265	1,565	1,825

26 56 21 – HID Exterior Lighting

26 56 21.20 Roadway Luminaire

0010	**ROADWAY LUMINAIRE**									
2650	Roadway area luminaire, low pressure sodium, 135 watt		1 Elec	2	4	Ea.	755	265	1,020	1,225
2700	180 watt		"	2	4		915	265	1,180	1,400
2750	Metal halide, 400 watt		2 Elec	4.40	3.636		665	241	906	1,100
2760	1,000 watt			4	4		805	265	1,070	1,275
2780	High pressure sodium, 400 watt			4.40	3.636		800	241	1,041	1,250
2790	1,000 watt			4	4		910	265	1,175	1,400

26 56 23 – Area Lighting

26 56 23.10 Exterior Fixtures

0010	**EXTERIOR FIXTURES** With lamps									
0200	Wall mounted, incandescent, 100 watt		1 Elec	8	1	Ea.	67	66	133	172
0400	Quartz, 500 watt			5.30	1.509		123	100	223	284
1100	Wall pack, low pressure sodium, 35 watt			4	2		182	132	314	400
1150	55 watt			4	2		214	132	346	435

26 56 23.55 Exterior LED Fixtures

0010	**EXTERIOR LED FIXTURES**									
0100	Wall mounted, indoor/outdoor, 12 watt	G	1 Elec	10	.800	Ea.	320	53	373	430
0110	32 watt	G		10	.800		410	53	463	530

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26 56 Exterior Lighting

26 56 23 – Area Lighting

26 56 23.55 Exterior LED Fixtures		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0120 66 watt	G	1 Elec	10	.800	Ea.	335	53		388	450
0200 outdoor, 110 watt	G	1 Elec	10	.800	Ea.	1,100	53		1,153	1,300
0210 220 watt	G		10	.800		284	53		337	390
0300 modular, type IV, 120 V, 50 lamp watts	G		9	.889		1,550	59		1,609	1,800
0310 101 lamp watts	G		9	.889		1,225	59		1,284	1,450
0320 126 lamp watts	G		9	.889		1,525	59		1,584	1,775
0330 202 lamp watts	G		9	.889		1,750	59		1,809	2,025
0340 240 V, 50 lamp watts	G		8	1		1,325	66		1,391	1,550
0350 101 lamp watts	G		8	1		1,275	66		1,341	1,500
0360 126 lamp watts	G		8	1		1,125	66		1,191	1,325
0370 202 lamp watts	G		8	1		1,775	66		1,841	2,050
0400 wall pack, glass, 13 lamp watts	G		4	2		420	132		552	655
0410 poly w/photocell, 26 lamp watts	G		4	2		235	132		367	455
0420 50 lamp watts	G		4	2		745	132		877	1,025
0430 replacement, 40 watts	G		4	2		73	132		205	277
0440 60 watts	G		4	2		169	132		301	385

26 56 36 – Flood Lighting

26 56 36.20 Floodlights

0010	**FLOODLIGHTS** with ballast and lamp,									
1400	Pole mounted, pole not included									
1950	Metal halide, 175 watt		1 Elec	2.70	2.963	Ea.	195	196	391	505
2000	400 watt		2 Elec	4.40	3.636		360	241	601	760
2200	1,000 watt		"	4	4		1,050	265	1,315	1,550
2340	High pressure sodium, 70 watt		1 Elec	2.70	2.963		265	196	461	585
2400	400 watt		2 Elec	4.40	3.636		500	241	741	910
2600	1,000 watt		"	4	4		1,300	265	1,565	1,825

26 56 36.55 LED Floodlights

0010	**LED FLOODLIGHTS** with ballast and lamp,									
0020	Pole mounted, pole not included									
0100	11 watt	G	1 Elec	4	2	Ea.	315	132	447	540
0110	46 watt	G		4	2		241	132	373	460
0120	90 watt	G		4	2		2,175	132	2,307	2,600
0130	288 watt	G		4	2		740	132	872	1,000

26 61 Lighting Systems and Accessories

26 61 23 – Lamps Applications

26 61 23.10 Lamps

0010	**LAMPS**									
0080	Fluorescent, rapid start, cool white, 2' long, 20 watt		1 Elec	1	8	C	292	530	822	1,100
0100	4' long, 40 watt			.90	8.889		300	590	890	1,200
0200	Slimline, 4' long, 40 watt			.90	8.889		1,025	590	1,615	2,000
0210	4' long, 30 watt energy saver	G		.90	8.889		1,025	590	1,615	2,000
0400	High output, 4' long, 60 watt		1 Elec	.90	8.889	C	610	590	1,200	1,550
0410	8' long, 95 watt energy saver	G		.80	10		1,025	660	1,685	2,125
0500	8' long, 110 watt			.80	10		1,025	660	1,685	2,125
0512	2' long, T5, 14 watt energy saver	G		1	8		270	530	800	1,075
0514	3' long, T5, 21 watt energy saver	G		.90	8.889		445	590	1,035	1,350
0516	4' long, T5, 28 watt energy saver	G		.90	8.889		445	590	1,035	1,350
0517	4' long, T5, 54 watt energy saver	G		.90	8.889		465	590	1,055	1,375
0560	Twin tube compact lamp	G		.90	8.889		340	590	930	1,250

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26 61 23 – Lamps Applications

	26 61 23.10 Lamps		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0570	Double twin tube compact lamp	G	1 Elec	.80	10	C	745	660		1,405	1,800
0600	Mercury vapor, mogul base, deluxe white, 100 watt			.30	26.667		15,400	1,775		17,175	19,500
0700	250 watt			.30	26.667		11,700	1,775		13,475	15,400
0800	400 watt			.30	26.667		11,300	1,775		13,075	15,000
0900	1,000 watt			.20	40		8,475	2,650		11,125	13,300
1000	Metal halide, mogul base, 175 watt			.30	26.667		1,300	1,775		3,075	4,075
1200	400 watt			.30	26.667		2,550	1,775		4,325	5,425
1300	1,000 watt			.20	40		3,525	2,650		6,175	7,800
1350	High pressure sodium, 70 watt			.30	26.667		1,825	1,775		3,600	4,625
1380	250 watt			.30	26.667		1,850	1,775		3,625	4,650
1400	400 watt			.30	26.667		1,650	1,775		3,425	4,450
1450	1,000 watt			.20	40		4,525	2,650		7,175	8,925
3000	Guards, fluorescent lamp, 4' long			100	.080	Ea.	17.85	5.30		23.15	27.50
3200	8' long			90	.089	"	35.50	5.90		41.40	48.50

26 61 23.55 LED Lamps

0010	**LED LAMPS**										
0100	LED lamp, interior, shape A60, equal to 60 W	G	1 Elec	160	.050	Ea.	21	3.31		24.31	28
0110	7 W LED decorative c, ca, f, g shape			160	.050		6.70	3.31		10.01	12.25
0120	12V mini lamp LED			160	.050		6	3.31		9.31	11.50
0200	Globe frosted A60, equal to 60 W	G		160	.050		6.50	3.31		9.81	12.05
0205	LED lamp, interior, globe			160	.050		11.50	3.31		14.81	17.55
0210	2.2 W LED LMP			160	.050		72	3.31		75.31	84.50
0220	2.2 W LED replacement decorative lamp			160	.050		9.75	3.31		13.06	15.60
0230	3.5 W LED replacement decorative lamp			160	.050		8.55	3.31		11.86	14.30
0240	4.5 W 120V LED replacement decorative lamp			160	.050		11.80	3.31		15.11	17.85
0250	4.5 W 120V LED, 2700k replacement decorative lamp			160	.050		14.45	3.31		17.76	21
0260	4.9 W 120V LED, 2700k replacement decorative lamp candelabra base			160	.050		10.95	3.31		14.26	16.95
0270	4.9 W 120V LED, 3000k replacement decorative lamp candelabra base			160	.050		5.60	3.31		8.91	11.05
0280	5 W LED PAR 20 parabolic reflector lamp FL			140	.057		65.50	3.78		69.28	77.50
0300	Globe earth, equal to 100 W	G	1 Elec	140	.057	Ea.	5.65	3.78		9.43	11.80
0305	7 W LED reflector lamp 3000k DIM			140	.057		5.25	3.78		9.03	11.35
0310	10 W omni LED warm white light bulb E26 medium base 120 volt card			140	.057		22	3.78		25.78	30
0315	7 W LED reflector lamp WFL 2700k DIM			140	.057		5.30	3.78		9.08	11.40
0320	9 W omni LED warm white light bulb E26 medium base 120 volt card			140	.057		11.55	3.78		15.33	18.35
0500	8 W LED, A19 lamp, equal to 40 W			140	.057		6.45	3.78		10.23	12.65
0505	9 W LED, A19 lamp, 5000K dimmable, equal to 60 W			140	.057		8.05	3.78		11.83	14.45
0510	10.5 W LED, A19 lamp, dimmable, equal to 60 W			140	.057		9.15	3.78		12.93	15.65
0515	10 W LED, A19 lamp, frosted, dimmable, equal to 60 W			140	.057		3.82	3.78		7.60	9.80
0520	10 W LED, A19 lamp, omni-directional, dimmable, equal to 60 W			140	.057		8.45	3.78		12.23	14.90
0525	12 W LED, A19 lamp, dimmable, equal to 75 W			140	.057		7.80	3.78		11.58	14.20
1100	MR16, 3 W, replacement of halogen lamp 25 W	G		130	.062		21	4.07		25.07	29
1200	6 W replacement of halogen lamp 45 W	G		130	.062		22	4.07		26.07	30.50
2100	10 W, PAR20, equal to 60 W	G		130	.062		29.50	4.07		33.57	38
2200	15 W, PAR30, equal to 100 W	G		130	.062		55.50	4.07		59.57	67
2210	50 W LED lamp			130	.062		735	4.07		739.07	815
2220	11 Watt reflector dimmable warm white LED light bulb with medium base			130	.062		45.50	4.07		49.57	56
2221	12 W A-Line LED lamp DIM			130	.062		85	4.07		89.07	99.50
2225	13 Watt reflector LED warm white e26 with medium base 120 volt box			130	.062		42.50	4.07		46.57	53
2226	13 W br30 LED lamp			130	.062		74	4.07		78.07	87.50
2227	15 W 120V br30 inc LED lamp, 2700k			130	.062		69	4.07		73.07	82
2228	15 W 120V br30 inc LED lamp, 4000k			130	.062		65.50	4.07		69.57	78
2230	3 Watt dimmable warm white decorative LED lamp with medium base			160	.050		13.35	3.31		16.66	19.60

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26 61 23 – Lamps Applications

26 61 23.55 LED Lamps		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2240	.43 W night light LED daylight bulb E12 candelabra base 120 volt 2 pack	1 Elec	160	.050	Ea.	5.15	3.31		8.46	10.55
2250	15 W omni-directional LED warm white e26 medium base 120 volt box		160	.050		44	3.31		47.31	53
2251	11 W omni-directional LED warm white e26 medium base 120 volt box		160	.050		31	3.31		34.31	39.50
2252	10 W omni-directional LED warm white e26 medium base 120 volt box		160	.050		30.50	3.31		33.81	38.50
2253	7 W omni A19 LED warm white e26 medium base 120 volt box		160	.050		20.50	3.31		23.81	27.50
2255	8 PAR 20 parabolic reflector 2700 LED lamp		160	.050		20.50	3.31		23.81	27.50
2256	8 PAR 20 parabolic reflector 3000 LED lamp		160	.050		20.50	3.31		23.81	27.50
2260	12 W PAR 38 120V LED 15 degree directional lamp		160	.050		221	3.31		224.31	248
2270	12 W PAR 38 120V LED 25 degree directional lamp		160	.050		34	3.31		37.31	42.50
2280	12 W PAR 38 120V LED 40 degree directional lamp		160	.050		221	3.31		224.31	248
2285	16 W PAR 38 120V 2700k LED parabolic reflector lamp		160	.050		33.50	3.31		36.81	41.50
2290	16 W PAR 38 120V 3000k LED parabolic reflector lamp	1 Elec	160	.050	Ea.	25	3.31		28.31	32.50
3000	15 W PAR 30 LED daylight E26 medium base 120V box		160	.050		65.50	3.31		68.81	77
3100	17 W LED 3000k PAR 38 100 W replacement		160	.050		51	3.31		54.31	61
3110	17 W LED PAR 38 100 W replacement		160	.050		38	3.31		41.31	47
3120	17 W LED PAR 38 100 W replacement parabolic reflector		160	.050		40	3.31		43.31	49
3130	24 W LED T8 PW straight fluorescent lamp		8.89	.900		315	59.50		374.50	435
3135	Linear fluorescent LED lamp 120V		8.89	.900		145	59.50		204.50	248
3200	30 W LED 2700K recessed 8055E PAR 38 high power		160	.050		86.50	3.31		89.81	100
3210	30 W LED 4200K 120 degree 8055E PAR 38 high power		160	.050		93.50	3.31		96.81	108
3220	30 W LED 5700K 8055E PAR 38 high power		160	.050		84	3.31		87.31	97
3230	50 W LED 2700K 8045M PAR 38 277V high power		160	.050		370	3.31		373.31	415
3240	50 W LED 4200K 8045M PAR 38 277V high power retro fit		160	.050		93.50	3.31		96.81	108
3250	50 W LED 5700K 8045M PAR 38 277V high power retro fit		160	.050		370	3.31		373.31	415
8000	10 W LED PAR 30/fl 10 pk		160	.050		105	3.31		108.31	120
8010	Gen 3 PAR 30 15 W short neck power LED 120 VAC E26 80 +cri 300k dimm		160	.050		14.10	3.31		17.41	20.50
8020	12 PAR 30 2700K parabolic reflector LED lamp		160	.050		45.50	3.31		48.81	55.50
8030	12 PAR 30 3000K parabolic reflector LED lamp		160	.050		35	3.31		38.31	43.50
8040	3500K LED advantage T8 9 W 800LM 2ft linear 2 BD frosted		69	.116		9.60	7.70		17.30	22
8050	3500K LED litespan T8 9 W 900LM 2ft linear frosted		69	.116		14.40	7.70		22.10	27.50
8060	4000K LED advantage T8 9 W 800LM 2ft linear 2BD frosted		69	.116		13.70	7.70		21.40	26.50
8070	4000K LED litespan T8 9 W 900LM 2ft linear frosted		69	.116		15.05	7.70		22.75	28
8080	5000K LED advantage T8 9 W 800LM 2ft linear 2BD frosted		69	.116		9.60	7.70		17.30	22
8090	5000K LED litespan T8 9 W 900LM 2ft linear frosted		69	.116		11.95	7.70		19.65	24.50
8100	3500K LED advantage T8 18 W 1600LM 4ft linear 2 BD frosted		69	.116		11.30	7.70		19	24
8105	18 W LED 4ft T8 4000K frost 1600L linear lamp		69	.116		20	7.70		27.70	33.50
8108	18 W LED 48 inch T8 4100K 1890LM linear lamp		69	.116		62	7.70		69.70	80
8110	3500K LED advantage T8 18 W 1800LM 4ft linear 2 BD frosted		69	.116		32	7.70		39.70	47
8120	4000K LED advantage T8 18 W 1600LM 4ft linear 2 BD frosted		69	.116		22	7.70		29.70	35.50
8130	4000K LED litespan T8 18 W 1800LM 4ft linear frosted		69	.116		30	7.70		37.70	45
8140	5000K LED advantage T8 18 W 1600LM 4ft linear 2BD frosted		69	.116		14.40	7.70		22.10	27.50
8150	5000K LED litespan T8 18 W 1800LM 4ft linear 2BD frosted		69	.116		23	7.70		30.70	37
8200	16.5 T8 3000 IF-6U U-shape fluorescent LED lamp		65	.123		23.50	8.15		31.65	37.50
8210	16.5 T8 3500 IF-6U U-shape fluorescent LED lamp		65	.123		24	8.15		32.15	38.50
8220	16.5 T8 4000 IF-6U U-shape fluorescent LED lamp	1 Elec	65	.123	Ea.	21.50	8.15		29.65	35.50
8230	16.5 T8 5000 IF-6U U-shape fluorescent LED lamp		65	.123		23.50	8.15		31.65	37.50
8240	18 W 6 inch T8 4100K U-shape frosted fluorescent LED lamp		60	.133		13.05	8.85		21.90	27.50
8250	18 W 6 inch T8 5000K U-shape frosted fluorescent LED lamp		60	.133		13.05	8.85		21.90	27.50
8260	Circular 12 W linear fluorescent LED 2700K MOD lamp		62.40	.128		330	8.50		338.50	375
8270	Circular 12 W linear fluorescent LED 3000K MOD lamp		62.40	.128		330	8.50		338.50	375
8280	Circular 12 W linear fluorescent LED 3500K MOD lamp		62.40	.128		298	8.50		306.50	340
8290	Circular 18 W linear fluorescent LED 3000K MOD lamp		62.40	.128		405	8.50		413.50	460
8300	Circular 18 W linear fluorescent LED 3500K MOD lamp		62.40	.128		450	8.50		458.50	510

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26 61 Lighting Systems and Accessories

26 61 23 – Lamps Applications

26 61 23.55 LED Lamps		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
8310	Circular 18 W linear fluorescent LED 5000K MOD lamp	1 Elec	62.40	.128	Ea.	405	8.50		413.50	460
8320	Circular 18 W linear fluorescent LED 4100K MOD lamp	↓	62.40	.128	↓	430	8.50		438.50	490

26 71 Electrical Machines

26 71 13 – Motors Applications

26 71 13.20 Motors										
0010	**MOTORS** 230/460 V, 60 HZ									
0050	Dripproof, premium efficiency, 1.15 service factor									
0060	1,800 RPM, 1/4 HP	1 Elec	5.33	1.501	Ea.	196	99.50		295.50	365
0070	1/3 HP		5.33	1.501		159	99.50		258.50	325
0080	1/2 HP		5.33	1.501		162	99.50		261.50	325
0090	3/4 HP		5.33	1.501		249	99.50		348.50	420
0100	1 HP		4.50	1.778		278	118		396	480
0250	5 HP		4.50	1.778		615	118		733	855
0350	10 HP		4	2		1,025	132		1,157	1,325
0450	20 HP	2 Elec	5.20	3.077		1,850	204		2,054	2,350

26 71 13.40 Motors Explosion Proof										
0010	**MOTORS EXPLOSION PROOF**, 208-230/460 V, 60 HZ									
0020	1,800 RPM, 1/4 HP	1 Elec	5	1.600	Ea.	630	106		736	850
0030	1/3 HP		5	1.600		500	106		606	705
0040	1/2 HP		5	1.600		940	106		1,046	1,175
0050	3/4 HP		5.33	1.501		885	99.50		984.50	1,125
0060	1 HP		4.20	1.905		560	126		686	800
0090	5 HP		4.20	1.905		890	126		1,016	1,150
0110	10 HP		3.70	2.162		1,300	143		1,443	1,650
0130	20 HP	2 Elec	5	3.200		2,125	212		2,337	2,650
2000	3,600 RPM, 1/4 HP	1 Elec	5	1.600		420	106		526	620
2010	1/3 HP		5	1.600		445	106		551	645
2020	1/2 HP		5	1.600		630	106		736	845
2030	3/4 HP		5	1.600		645	106		751	865
2040	1 HP		4.20	1.905		605	126		731	850
2070	5 HP		4.20	1.905		975	126		1,101	1,250
2090	10 HP		3.70	2.162		1,275	143		1,418	1,625
2110	20 HP	2 Elec	5	3.200		2,150	212		2,362	2,675

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Estimating Tips

27 20 00 Data Communications
27 30 00 Voice Communications
27 40 00 Audio-Video Communications

- When estimating material costs for special systems, it is always prudent to obtain manufacturers' quotations for equipment prices and special installation requirements that may affect the total cost.
- For cost modifications for elevated tray installation, add the percentages to labor according to the height of the installation and only to the quantities exceeding the different height levels, not to the total tray quantities. Refer to subdivision 26 01 02.20 for labor adjustment factors.
- Do not overlook the costs for equipment used in the installation. If scissor lifts and boom lifts are available in the field, contractors may use them in lieu of the proposed ladders and rolling staging.

Reference Numbers

Reference numbers are shown at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear. ■

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27 13 Communications Backbone Cabling

27 13 23 – Communications Optical Fiber Backbone Cabling

27 13 23.13 Communications Optical Fiber	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **COMMUNICATIONS OPTICAL FIBER**									
0040 Specialized tools & techniques cause installation costs to vary.									
0070 Fiber optic, cable, bulk simplex, single mode	1 Elec	8	1	C.L.F.	22.50	66		88.50	124
0080 Multi mode		8	1		29.50	66		95.50	131
0090 4 strand, single mode		7.34	1.090		38	72		110	149
0095 Multi mode		7.34	1.090		50.50	72		122.50	163
0100 12 strand, single mode		6.67	1.199		72.50	79.50		152	198
0105 Multi mode		6.67	1.199		96.50	79.50		176	224
0150 Jumper				Ea.	47			47	52
0200 Pigtail					34			34	37.50
0300 Connector	1 Elec	24	.333		28	22		50	63.50
0350 Finger splice		32	.250		41.50	16.55		58.05	70
0400 Transceiver (low cost bi-directional)		8	1		490	66		556	635
0450 Rack housing, 4 rack spaces, 12 panels (144 fibers)		2	4		1,200	265		1,465	1,700
0500 Patch panel, 12 ports		6	1.333		350	88.50		438.50	515
0600 Cable connector panel, 6 fiber		40	.200		61.50	13.25		74.75	87
1000 Cable, 62.5 microns, direct burial, 4 fiber	R-15	1200	.040	L.F.	.85	2.59	.27	3.71	5.10
1020 Indoor, 2 fiber	R-19	1000	.020		.54	1.33		1.87	2.56
1040 Outdoor, aerial/duct	"	1670	.012		.71	.79		1.50	1.96
1060 50 microns, direct burial, 8 fiber	R-22	4000	.009		1.42	.56		1.98	2.40
1080 12 fiber		4000	.009		1.68	.56		2.24	2.69
1100 Indoor, 12 fiber		759	.049		1.53	2.98		4.51	6.10
1120 Connectors, 62.5 micron cable, transmission	R-19	40	.500	Ea.	16.45	33		49.45	67.50
1140 Cable splice		40	.500		19.20	33		52.20	70.50
1160 125 micron cable, transmission		16	1.250		17.30	83		100.30	142
1180 Receiver, 1.2 mile range		20	1		375	66.50		441.50	515
1200 1.9 mile range		20	1		250	66.50		316.50	375
1220 6.2 mile range		5	4		415	265		680	850
1240 Transmitter, 1.2 mile range		20	1		415	66.50		481.50	560
1260 1.9 mile range		20	1		315	66.50		381.50	445
1280 6.2 mile range		5	4		1,300	265		1,565	1,825
1300 Modem, 1.2 mile range		5	4		221	265		486	640
1320 6.2 mile range	R-19	5	4	Ea.	415	265		680	855
1340 1.9 mile range, 12 channel		5	4		2,325	265		2,590	2,950
1360 Repeater, 1.2 mile range		10	2		375	133		508	610
1380 1.9 mile range		10	2		550	133		683	800
1400 6.2 mile range		5	4		1,000	265		1,265	1,500
1420 1.2 mile range, digital		5	4		510	265		775	955

27 41 Audio-Video Systems

27 41 33 – Master Antenna Television Systems

27 41 33.10 TV Systems

0010 **TV SYSTEMS,** not including rough-in wires, cables & conduits									
0100 Master TV antenna system									
0200 VHF reception & distribution, 12 outlets	1 Elec	6	1.333	Outlet	135	88.50		223.50	280
0400 30 outlets		10	.800		259	53		312	365
0600 100 outlets		13	.615		300	40.50		340.50	390
0800 VHF & UHF reception & distribution, 12 outlets		6	1.333		248	88.50		336.50	405
1000 30 outlets		10	.800		168	53		221	263
1200 100 outlets		13	.615		173	40.50		213.50	251
1400 School and deluxe systems, 12 outlets		2.40	3.333		325	221		546	690

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27 41 Audio-Video Systems

27 41 33 – Master Antenna Television Systems

27 41 33.10 TV Systems		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1600	30 outlets	1 Elec	4	2	Outlet	286	132		418	510
1800	80 outlets	↓	5.30	1.509	↓	275	100		375	455

27 51 Distributed Audio-Video Communications Systems

27 51 16 – Public Address Systems

27 51 16.10 Public Address System

0010	**PUBLIC ADDRESS SYSTEM**									
0100	Conventional, office	1 Elec	5.33	1.501	Speaker	265	99.50		364.50	440
0200	Industrial	"	2.70	2.963	"	239	196		435	555

27 51 19 – Sound Masking Systems

27 51 19.10 Sound System

0010	**SOUND SYSTEM**, not including rough-in wires, cables & conduits									
0100	Components, projector outlet	1 Elec	8	1	Ea.	77.50	66		143.50	184
0200	Microphone		4	2		124	132		256	335
0400	Speakers, ceiling or wall		8	1		142	66		208	255
0600	Trumpets		4	2		299	132		431	525
0800	Privacy switch		8	1		54	66		120	158
1000	Monitor panel		4	2		1,200	132		1,332	1,500
1200	Antenna, AM/FM		4	2		151	132		283	365
1400	Volume control		8	1		68	66		134	173
1600	Amplifier, 250 W		1	8		1,775	530		2,305	2,725
1800	Cabinets		1	8		1,175	530		1,705	2,050
2000	Intercom, 30 station capacity, master station	2 Elec	2	8		1,775	530		2,305	2,725
2200	Remote station	1 Elec	8	1		475	66		541	625
2400	Intercom outlets		8	1		112	66		178	222
2600	Handset		4	2		174	132		306	390
2800	Emergency call system, 12 zones, annunciator		1.30	6.154		1,300	405		1,705	2,050
3000	Bell		5.30	1.509		94.50	100		194.50	253
3200	Light or relay		8	1		67.50	66		133.50	173
3400	Transformer		4	2		262	132		394	485
3600	House telephone, talking station		1.60	5		560	330		890	1,100
3800	Press to talk, release to listen	↓	5.30	1.509		237	100		337	410
4000	System-on button					78.50			78.50	86
4200	Door release	1 Elec	4	2		140	132		272	350
4400	Combination speaker and microphone		8	1		238	66		304	360
4600	Termination box		3.20	2.500		75	166		241	330
4800	Amplifier or power supply		5.30	1.509	↓	860	100		960	1,100
5000	Vestibule door unit		16	.500	Name	165	33		198	231
5200	Strip cabinet		27	.296	Ea.	299	19.60		318.60	360
5400	Directory	↓	16	.500	"	160	33		193	225

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27 52 Healthcare Communications and Monitoring Systems

27 52 23 – Nurse Call/Code Blue Systems

27 52 23.10 Nurse Call Systems		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**NURSE CALL SYSTEMS**									
0100	Single bedside call station	1 Elec	8	1	Ea.	490	66		556	635
0200	Ceiling speaker station		8	1		137	66		203	249
0400	Emergency call station		8	1		101	66		167	210
0600	Pillow speaker		8	1		211	66		277	330
0800	Double bedside call station		4	2		240	132		372	460
1000	Duty station		4	2		415	132		547	650
1200	Standard call button		8	1		186	66		252	305
1400	Lights, corridor, dome or zone indicator		8	1		92	66		158	200
1600	Master control station for 20 stations	2 Elec	.65	24.615	Total	3,025	1,625		4,650	5,750

27 53 Distributed Systems

27 53 13 – Clock Systems

27 53 13.50 Clock Equipments										
0010	**CLOCK EQUIPMENTS**, not including wires & conduits									
0100	Time system components, master controller	1 Elec	.33	24.242	Ea.	1,525	1,600		3,125	4,050
0200	Program bell		8	1		94	66		160	203
0400	Combination clock & speaker		3.20	2.500		201	166		367	470
0600	Frequency generator		2	4		3,125	265		3,390	3,825
0800	Job time automatic stamp recorder	1 Elec	4	2	Ea.	555	132		687	805
1600	Master time clock system, clocks & bells, 20 room	4 Elec	.20	160		6,275	10,600		16,875	22,600
1800	50 room	"	.08	400		13,400	26,500		39,900	54,000
1900	Time clock	1 Elec	3.20	2.500		395	166		561	680
2000	100 cards in & out, 1 color					9.80			9.80	10.80
2200	2 colors					9.80			9.80	10.80
2800	Metal rack for 25 cards	1 Elec	7	1.143		38	75.50		113.50	154

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Estimating Tips

- When estimating material costs for electronic safety and security systems, it is always prudent to obtain manufacturers' quotations for equipment prices and special installation requirements that may affect the total cost.
- Fire alarm systems consist of control panels, annunciator panels, batteries with rack, charger, and fire alarm actuating and indicating devices. Some fire alarm systems include speakers, telephone lines, door closer controls, and other components. Be careful not to overlook the costs related to installation for these items. Also be aware of costs for integrated automation instrumentation and terminal devices, control equipment, control wiring, and programming. Insurance underwriters may have specific requirements for the type of materials to be installed or design requirements based on the hazard to be protected. Local jurisdictions may have requirements not covered by code. It is advisable to be aware of any special conditions.
- Security equipment includes items such as CCTV, access control, and other detection and identification systems to perform alert and alarm functions. Be sure to consider the costs related to installation for this security equipment, such as for integrated automation instrumentation and terminal devices, control equipment, control wiring, and programming.

Reference Numbers

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28 15 Access Control Hardware Devices

28 15 11 – Integrated Credential Readers and Field Entry Management

28 15 11.11 Standard Card Readers	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **STANDARD CARD READERS**									
0015 Card key access									
0020 Computerized system, processor, proximity reader and cards									
0030 Does not include door hardware, lockset or wiring									
0040 Card key system for 1 door				Ea.	1,675			1,675	1,850
0060 Card key system for 2 doors					2,400			2,400	2,650
0080 Card key system for 4 doors					2,625			2,625	2,875
0100 Processor for card key access system					1,250			1,250	1,375
0160 Magnetic lock for electric access, 600 pound holding force					192			192	211
0170 Magnetic lock for electric access, 1200 pound holding force					192			192	211
0200 Proximity card reader					199			199	219
28 15 11.15 Biometric Identity Devices									
0010 **BIOMETRIC IDENTITY DEVICES**									
0220 Hand geometry scanner, mem of 512 users, excl. striker/power	1 Elec	3	2.667	Ea.	3,075	177		3,252	3,625
0230 Memory upgrade for, adds 9,700 user profiles		8	1		550	66		616	705
0240 Adds 32,500 user profiles		8	1		735	66		801	905
0250 Prison type, memory of 256 users, excl. striker/power		3	2.667		3,525	177		3,702	4,125
0260 Memory upgrade for, adds 3,300 user profiles		8	1		515	66		581	670
0270 Adds 9,700 user profiles		8	1		635	66		701	800
0280 Adds 27,900 user profiles		8	1		970	66		1,036	1,175
0290 All weather, mem of 512 users, excl. striker/power		3	2.667		5,575	177		5,752	6,375
0300 Facial & fingerprint scanner, combination unit, excl. striker/power		3	2.667		1,175	177		1,352	1,550
0310 Access for, for initial setup, excl. striker/power		3	2.667		1,750	177		1,927	2,175

28 18 Security Access Detection Equipment

28 18 11 – Security Access Metal Detectors

28 18 11.13 Security Access Metal Detectors									
0010 **SECURITY ACCESS METAL DETECTORS**									
0240 Metal detector, hand-held, wand type, unit only				Ea.	129			129	138
0250 Metal detector, walk through portal type, single zone	1 Elec	2	4		1,100	265		1,365	1,600
0260 Multi-zone	"	2	4		2,350	265		2,615	2,975

28 18 13 – Security Access X-Ray Equipment

28 18 13.16 Security Access X-Ray Equipment									
0010 **SECURITY ACCESS X-RAY EQUIPMENT**									
0290 X-ray machine, desk top, for mail/small packages/letters	1 Elec	4	2	Ea.	3,425	132		3,557	3,975
0300 Conveyor type, incl. monitor		2	4		18,800	265		19,065	21,000
0310 Includes additional features		2	4		33,400	265		33,665	37,100
0320 X-ray machine, large unit, for airports, incl. monitor	2 Elec	1	16		46,900	1,050		47,950	53,000
0330 Full console	"	.50	32		80,500	2,125		82,625	91,500

28 18 15 – Security Access Explosive Detection Equipment

28 18 15.23 Security Access Explosive Detection Equipment									
0010 **SECURITY ACCESS EXPLOSIVE DETECTION EQUIPMENT**									
0270 Explosives detector, walk through portal type	1 Elec	2	4	Ea.	175,000	265		175,265	193,000
0280 Hand-held, battery operated				"				25,500	28,100

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28 23 Video Management System

28 23 13 – Video Management System Interfaces

	28 23 13.10 Closed Circuit Television System	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**CLOSED CIRCUIT TELEVISION SYSTEM**									
2000	Surveillance, one station (camera & monitor)	2 Elec	2.60	6.154	Total	600	405		1,005	1,275
2200	For additional camera stations, add	1 Elec	2.70	2.963	Ea.	187	196		383	500
2400	Industrial quality, one station (camera & monitor)	2 Elec	2.60	6.154	Total	1,550	405		1,955	2,300
2600	For additional camera stations, add	1 Elec	2.70	2.963	Ea.	700	196		896	1,050
2610	For low light, add		2.70	2.963		500	196		696	840
2620	For very low light, add		2.70	2.963		2,700	196		2,896	3,250
2800	For weatherproof camera station, add		1.30	6.154		480	405		885	1,125
3000	For pan and tilt, add		1.30	6.154		1,475	405		1,880	2,200
3200	For zoom lens - remote control, add		2	4		1,675	265		1,940	2,250
3400	Extended zoom lens		2	4		4,700	265		4,965	5,575
3410	For automatic iris for low light, add		2	4		955	265		1,220	1,450
3600	Educational TV studio, basic 3 camera system, black & white,									
3800	electrical & electronic equip. only	4 Elec	.80	40	Total	7,725	2,650		10,375	12,400
4000	Full console		.28	114		23,700	7,575		31,275	37,300
4100	As above, but color system		.28	114		47,100	7,575		54,675	63,000
4120	Full console		.12	267		177,500	17,700		195,200	221,000
4200	For film chain, black & white, add	1 Elec	1	8	Ea.	11,600	530		12,130	13,600
4250	Color, add	"	.25	32	"	8,350	2,125		10,475	12,300
4400	For video recorders, add	1 Elec	1	8	Ea.	2,275	530		2,805	3,275
4600	Premium	4 Elec	.40	80	"	15,000	5,300		20,300	24,400

28 23 23 – Video Surveillance Systems Infrastructure

28 23 23.50 Video Surveillance Equipments

0010	**VIDEO SURVEILLANCE EQUIPMENTS**									
0200	Video cameras, wireless, hidden in exit signs, clocks, etc., incl. receiver	1 Elec	3	2.667	Ea.	149	177		326	425
0210	Accessories for video recorder, single camera		3	2.667		178	177		355	460
0220	For multiple cameras		3	2.667		1,600	177		1,777	2,000
0230	Video cameras, wireless, for under vehicle searching, complete		2	4		14,200	265		14,465	16,000
0234	Master monitor station, 3 doors x 5 color monitor with tilt feature		2	4		1,025	265		1,290	1,525

28 31 Intrusion Detection

28 31 16 – Intrusion Detection Systems Infrastructure

28 31 16.50 Intrusion Detection

0010	**INTRUSION DETECTION**, not including wires & conduits									
0100	Burglar alarm, battery operated, mechanical trigger	1 Elec	4	2	Ea.	284	132		416	505
0200	Electrical trigger		4	2		340	132		472	565
0400	For outside key control, add		8	1		87.50	66		153.50	195
0600	For remote signaling circuitry, add		8	1		144	66		210	258
0800	Card reader, flush type, standard		2.70	2.963		680	196		876	1,050
1000	Multi-code		2.70	2.963		1,225	196		1,421	1,650
1200	Door switches, hinge switch		5.30	1.509		66.50	100		166.50	222
1400	Magnetic switch		5.30	1.509		125	100		225	286
1600	Exit control locks, horn alarm		4	2		237	132		369	460
1800	Flashing light alarm		4	2		239	132		371	460
2000	Indicating panels, 1 channel		2.70	2.963		218	196		414	530
2200	10 channel	2 Elec	3.20	5		1,150	330		1,480	1,775
2400	20 channel		2	8		2,450	530		2,980	3,475
2600	40 channel		1.14	14.035		4,550	930		5,480	6,375
2800	Ultrasonic motion detector, 12 V	1 Elec	2.30	3.478		164	230		394	520
3000	Infrared photoelectric detector	"	4	2		120	132		252	330

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28 42 Gas Detection and Alarm

28 42 15 – Gas Detection Sensors

	28 42 15.50 Tank Leak Detection Systems	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**TANK LEAK DETECTION SYSTEMS** Liquid and vapor									
0100	For hydrocarbons and hazardous liquids/vapors									
0120	Controller, data acquisition, incl. printer, modem, RS232 port									
0140	24 channel, for use with all probes				Ea.	4,725			4,725	5,200
0160	9 channel, for external monitoring				Ea.	1,675			1,675	1,850
0200	Probes									
0210	Well monitoring									
0220	Liquid phase detection				Ea.	765			765	840
0230	Hydrocarbon vapor, fixed position					770			770	850
0240	Hydrocarbon vapor, float mounted					705			705	775
0250	Both liquid and vapor hydrocarbon					770			770	850
0300	Secondary containment, liquid phase									
0310	Pipe trench/manway sump				Ea.	795			795	870
0320	Double wall pipe and manual sump					665			665	730
0330	Double wall fiberglass annular space					475			475	525
0340	Double wall steel tank annular space					287			287	315
0500	Accessories									
0510	Modem, non-dedicated phone line				Ea.	370			370	405
0600	Monitoring, internal									
0610	Automatic tank gauge, incl. overfill				Ea.	1,425			1,425	1,575
0620	Product line				"	1,500			1,500	1,625
0700	Monitoring, special									
0710	Cathodic protection				Ea.	810			810	890
0720	Annular space chemical monitor				"	1,100			1,100	1,200

28 46 Fire Detection and Alarm

28 46 11 – Fire Sensors and Detectors

28 46 11.21 Carbon-Monoxide Detection Sensors

0010	**CARBON-MONOXIDE DETECTION SENSORS**									
8400	Smoke and carbon monoxide alarm battery operated photoelectric low profile	1 Elec	24	.333	Ea.	57.50	22		79.50	96.50
8410	low profile photoelectric battery powered		24	.333		45	22		67	82.50
8420	photoelectric low profile sealed lithium		24	.333		79	22		101	120
8430	Photoelectric low profile sealed lithium smoke and CO with voice combo		24	.333		55	22		77	93.50
8500	Carbon monoxide sensor, wall mount 1Mod 1 relay output smoke & heat		24	.333		460	22		482	545
8700	Carbon monoxide detector, battery operated, wall mounted		16	.500		45	33		78	98.50
8710	Hardwired, wall and ceiling mounted		8	1		77.50	66		143.50	184
8720	Duct mounted		8	1		340	66		406	475

28 46 11.27 Other Sensors

0010	**OTHER SENSORS**									
5200	Smoke detector, ceiling type	1 Elec	6.20	1.290	Ea.	143	85.50		228.50	284
5240	Smoke detector, addressable type		6	1.333		226	88.50		314.50	380
5400	Duct type		3.20	2.500		310	166		476	590
5420	Duct addressable type		3.20	2.500		190	166		356	455
8300	Smoke alarm with integrated strobe light 120 V, 16DB 60 fpm flash rate	1 Elec	16	.500	Ea.	133	33		166	195
8310	Photoelectric smoke detector with strobe 120 V, 90 DB ceiling mount		12	.667		237	44		281	325
8320	120 V, 90 DB wall mount		12	.667		229	44		273	320
8440	Fire alarm beam detector, motorized reflective, infrared optical beam	2 Elec	1.60	10		725	660		1,385	1,775
8450	Fire alarm beam detector, motorized reflective, IR/UV optical beam	"	1.60	10		1,025	660		1,685	2,100

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28 46 Fire Detection and Alarm

28 46 11 – Fire Sensors and Detectors

28 46 11.50 Fire and Heat Detectors	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **FIRE & HEAT DETECTORS**									
5000 Detector, rate of rise	1 Elec	8	1	Ea.	31	66		97	133

28 46 20 – Fire Alarm

28 46 20.50 Alarm Panels and Devices	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **ALARM PANELS AND DEVICES**, not including wires & conduits									
2200 Intercom remote station	1 Elec	8	1	Ea.	94.50	66		160.50	203
2400 Intercom outlet		8	1		66	66		132	171
2600 Sound system, intercom handset		8	1		490	66		556	635
3600 4 zone	2 Elec	2	8		460	530		990	1,300
3700 5 zone		1.50	10.667		780	705		1,485	1,900
3800 8 zone		1	16		575	1,050		1,625	2,200
3900 10 zone		1.25	12.800		890	845		1,735	2,225
4000 12 zone		.67	23.988		2,700	1,600		4,300	5,325
4020 Alarm device, tamper, flow	1 Elec	8	1		217	66		283	340
4025 Fire alarm, loop expander card		16	.500		555	33		588	660
4050 Actuating device		8	1		345	66		411	480
4200 Battery and rack		4	2		490	132		622	735
4400 Automatic charger		8	1		555	66		621	710
4600 Signal bell		8	1		50.50	66		116.50	155
4610 Fire alarm signal bell 10" red 20-24 V P		8	1		168	66		234	284
4800 Trouble buzzer or manual station		8	1		80	66		146	187
5425 Duct smoke and heat detector 2 wire		8	1		148	66		214	262
5430 Fire alarm duct detector controller		3	2.667		186	177		363	465
5435 Fire alarm duct detector sensor kit		8	1		77	66		143	183
5440 Remote test station for smoke detector duct type		5.30	1.509		49.50	100		149.50	204
5460 Remote fire alarm indicator light		5.30	1.509		26	100		126	178
5600 Strobe and horn		5.30	1.509		120	100		220	281
5610 Strobe and horn (ADA type)		5.30	1.509		143	100		243	305
5620 Visual alarm (ADA type)		6.70	1.194		109	79		188	237
5800 electric bell		6.70	1.194		53	79		132	176
6000 Door holder, electro-magnetic		4	2		106	132		238	315
6200 Combination holder and closer		3.20	2.500		165	166		331	430
6600 Drill switch		8	1		510	66		576	660
6800 Master box		2.70	2.963		6,175	196		6,371	7,100
7000 Break glass station		8	1		64	66		130	169
7800 Remote annunciator, 8 zone lamp		1.80	4.444		325	294		619	795
8000 12 zone lamp	2 Elec	2.60	6.154		485	405		890	1,125
8200 16 zone lamp	"	2.20	7.273		380	480		860	1,125

28 47 Mass Notification

28 47 12 – Notification Systems

28 47 12.10 Mass Notification System	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **MASS NOTIFICATION SYSTEM**									
0100 Wireless command center, 10,000 devices	2 Elec	1.33	12.030	Ea.	3,000	795		3,795	4,475
0200 Option, email notification					2,100			2,100	2,325
0210 Remote device supervision & monitor					2,625			2,625	2,900
0300 Antenna VHF or UHF, for medium range	1 Elec	4	2		95	132		227	300
0310 For high-power transmitter		2	4		1,100	265		1,365	1,600
0400 Transmitter, 25 watt		4	2		1,725	132		1,857	2,100
0410 40 watt		2.66	3.008		2,000	199		2,199	2,500

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28 47 12 – Notification Systems

28 47 12.10 Mass Notification System		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0420	100 watt	1 Elec	1.33	6.015	Ea.	6,475	400		6,875	7,725
0500	Wireless receiver/control module for speaker		8	1		285	66		351	415
0600	Desktop paging controller, stand alone		4	2		895	132		1,027	1,175

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Estimating Tips

31 05 00 Common Work Results for Earthwork

- Estimating the actual cost of performing earthwork requires careful consideration of the variables involved. This includes items such as type of soil, whether water will be encountered, dewatering, whether banks need bracing, disposal of excavated earth, and length of haul to fill or spoil sites, etc. If the project has large quantities of cut or fill, consider raising or lowering the site to reduce costs, while paying close attention to the effect on site drainage and utilities.
- If the project has large quantities of fill, creating a borrow pit on the site can significantly lower the costs.
- It is very important to consider what time of year the project is scheduled for completion. Bad weather can create large cost overruns from dewatering, site repair, and lost productivity from cold weather.

Reference Numbers

Reference numbers are shown at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear. ■

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31 05 Common Work Results for Earthwork

31 05 13 – Soils for Earthwork

31 05 13.10 Borrow		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **BORROW**	R312316-40									
0020 Spread, 200 HP dozer, no compaction, 2 mile RT haul										
0200 Common borrow		B-15	600	.047	C.Y.	12.55	2.52	4.81	19.88	23
0700 Screened loam			600	.047		34	2.52	4.81	41.33	46.50
0800 Topsoil, weed free			600	.047		20.50	2.52	4.81	27.83	31.50
0900 For 5 mile haul, add		B-34B	200	.040			2.12	3.84	5.96	7.40

31 05 16 – Aggregates for Earthwork

31 05 16.10 Borrow

0010 **BORROW**	R312316-40									
0020 Spread, with 200 HP dozer, no compaction, 2 mile RT haul										
0100 Bank run gravel		B-15	600	.047	L.C.Y.	27.50	2.52	4.81	34.83	39
0300 Crushed stone (1.40 tons per C.Y.), 1-1/2"			600	.047		20.50	2.52	4.81	27.83	31.50
0320 3/4"			600	.047		20.50	2.52	4.81	27.83	31.50
0340 1/2"			600	.047		18.55	2.52	4.81	25.88	29.50
0360 3/8"			600	.047		23	2.52	4.81	30.33	34
0400 Sand, washed, concrete			600	.047		18.75	2.52	4.81	26.08	29.50
0500 Dead or bank sand			600	.047		13.70	2.52	4.81	21.03	24
0600 Select structural fill		B-15	600	.047	L.C.Y.	16.25	2.52	4.81	23.58	27
0900 For 5 mile haul, add		B-34B	200	.040	"		2.12	3.84	5.96	7.40

31 05 23 – Cement and Concrete for Earthwork

31 05 23.30 Plant Mixed Bituminous Concrete

0010 **PLANT MIXED BITUMINOUS CONCRETE**										
0020 Asphaltic concrete plant mix (145 lb./C.F.)					Ton	68			68	75
0040 Asphaltic concrete less than 300 tons add trucking costs										
0200 All weather patching mix, hot					Ton	64.50			64.50	71
0250 Cold patch						85			85	93.50
0300 Berm mix						69.50			69.50	76.50

31 06 Schedules for Earthwork

31 06 60 – Schedules for Special Foundations and Load Bearing Elements

31 06 60.14 Piling Special Costs

0010 **PILING SPECIAL COSTS**										
0011 Piling special costs, pile caps, see Section 03 30 53.40										
0500 Cutoffs, concrete piles, plain		1 Pile	5.50	1.455	Ea.		84.50		84.50	131
0600 With steel thin shell, add			38	.211			12.25		12.25	18.95
0700 Steel pile or "H" piles			19	.421			24.50		24.50	38
0800 Wood piles			38	.211			12.25		12.25	18.95
0900 Pre-augering up to 30' deep, average soil, 24" diameter		B-43	180	.267	L.F.		13.40	4.37	17.77	25
0920 36" diameter			115	.417			21	6.85	27.85	39
0960 48" diameter			70	.686			34.50	11.25	45.75	64
0980 60" diameter			50	.960			48.50	15.70	64.20	89.50
1000 Testing, any type piles, test load is twice the design load										
1050 50 ton design load, 100 ton test					Ea.				14,000	15,500
1100 100 ton design load, 200 ton test									20,000	22,000
1150 150 ton design load, 300 ton test									26,000	28,500
1200 200 ton design load, 400 ton test									28,000	31,000
1250 400 ton design load, 800 ton test									32,000	35,000
1500 Wet conditions, soft damp ground										
1600 Requiring mats for crane, add									40%	40%
1700 Barge mounted driving rig, add									30%	30%

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31 06 Schedules for Earthwork

31 06 60 – Schedules for Special Foundations and Load Bearing Elements

31 06 60.15 Mobilization	Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010 **MOBILIZATION**									
0020 Set up & remove, air compressor, 600 CFM	A-5	3.30	5.455	Ea.		252	26	278	405
0100 1,200 CFM	"	2.20	8.182			375	38.50	413.50	605
0200 Crane, with pile leads and pile hammer, 75 ton	B-19	.60	107			6,325	3,500	9,825	13,500
0300 150 ton	"	.36	178			10,500	5,850	16,350	22,500
0500 Drill rig, for caissons, to 36", minimum	B-43	2	24	Ea.		1,200	395	1,595	2,225
0520 Maximum		.50	96			4,825	1,575	6,400	8,925
0600 Up to 84"		1	48			2,425	785	3,210	4,475
0800 Auxiliary boiler, for steam small	A-5	1.66	10.843			500	51	551	800
0900 Large	"	.83	21.687			1,000	102	1,102	1,625
1100 Rule of thumb: complete pile driving set up, small	B-19	.45	142			8,425	4,675	13,100	18,000
1200 Large	"	.27	237			14,000	7,800	21,800	30,000
1500 Mobilization, barge, by tug boat	B-83	25	.640	Mile		34	30	64	83.50

31 11 Clearing and Grubbing

31 11 10 – Clearing and Grubbing Land

31 11 10.10 Clear and Grub Site

	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **CLEAR AND GRUB SITE**									
0020 Cut & chip light trees to 6" diam.	B-7	1	48	Acre		2,325	1,800	4,125	5,425
0150 Grub stumps and remove	B-30	2	12			665	1,250	1,915	2,400
0200 Cut & chip medium trees to 12" diam.	B-7	.70	68.571			3,325	2,550	5,875	7,750
0250 Grub stumps and remove	B-30	1	24			1,325	2,525	3,850	4,750
0300 Cut & chip heavy trees to 24" diam.	B-7	.30	160			7,750	5,975	13,725	18,100
0350 Grub stumps and remove	B-30	.50	48			2,675	5,050	7,725	9,525
0400 If burning is allowed, deduct cut & chip								40%	40%
3000 Chipping stumps, to 18" deep, 12" diam.	B-86	20	.400	Ea.		24	13	37	50.50
3040 18" diameter		16	.500			30	16.25	46.25	63
3080 24" diameter		14	.571			34.50	18.55	53.05	72
3100 30" diameter		12	.667			40.50	21.50	62	84
3120 36" diameter		10	.800			48.50	26	74.50	101
3160 48" diameter		8	1			60.50	32.50	93	126
5000 Tree thinning, feller buncher, conifer									
5080 Up to 8" diameter	B-93	240	.033	Ea.		2.01	4.65	6.66	8.10
5120 12" diameter		160	.050			3.02	7	10.02	12.20
5240 Hardwood, up to 4" diameter		240	.033			2.01	4.65	6.66	8.10
5280 8" diameter		180	.044			2.68	6.20	8.88	10.85
5320 12" diameter		120	.067			4.03	9.30	13.33	16.25
7000 Tree removal, congested area, aerial lift truck									
7040 8" diameter	B-85	7	5.714	Ea.		286	169	455	610
7080 12" diameter		6	6.667			335	198	533	710
7120 18" diameter		5	8			400	237	637	855
7160 24" diameter		4	10			500	296	796	1,075
7240 36" diameter		3	13.333			665	395	1,060	1,425
7280 48" diameter		2	20			1,000	595	1,595	2,150

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31 13 13 – Selective Tree and Shrub Removal

31 13 13.10 Selective Clearing	Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010 **SELECTIVE CLEARING**									
0020 Clearing brush with brush saw	A-1C	.25	32	Acre		1,450	194	1,644	2,400
0100 By hand	1 Clab	.12	66.667			3,050		3,050	4,525
0300 With dozer, ball and chain, light clearing	B-11A	2	8			425	675	1,100	1,375
0400 Medium clearing		1.50	10.667			565	900	1,465	1,825
0500 With dozer and brush rake, light		10	1.600			85	135	220	274
0550 Medium brush to 4" diameter		8	2			106	169	275	345
0600 Heavy brush to 4" diameter		6.40	2.500			133	211	344	430
1000 Brush mowing, tractor w/rotary mower, no removal									
1020 Light density	B-84	2	4	Acre		242	112	354	485
1040 Medium density		1.50	5.333			320	149	469	645
1080 Heavy density		1	8			485	223	708	965
31 13 13.20 Selective Tree Removal									
0010 **SELECTIVE TREE REMOVAL**									
0011 With tractor, large tract, firm									
0020 level terrain, no boulders, less than 12" diam. trees									
0300 300 HP dozer, up to 400 trees/acre, up to 25% hardwoods	B-10M	.75	16	Acre		890	2,175	3,065	3,725
0340 25% to 50% hardwoods		.60	20			1,100	2,725	3,825	4,650
0370 75% to 100% hardwoods		.45	26.667			1,475	3,625	5,100	6,200
0400 500 trees/acre, up to 25% hardwoods		.60	20			1,100	2,725	3,825	4,650
0440 25% to 50% hardwoods		.48	25			1,375	3,400	4,775	5,825
0470 75% to 100% hardwoods		.36	33.333			1,850	4,525	6,375	7,725
0500 More than 600 trees/acre, up to 25% hardwoods		.52	23.077			1,275	3,125	4,400	5,350
0540 25% to 50% hardwoods		.42	28.571			1,575	3,875	5,450	6,625
0570 75% to 100% hardwoods		.31	38.710			2,150	5,250	7,400	9,000
0900 Large tract clearing per tree									
1500 300 HP dozer, to 12" diameter, softwood	B-10M	320	.038	Ea.		2.08	5.10	7.18	8.70
1550 Hardwood		100	.120			6.65	16.30	22.95	28
1600 12" to 24" diameter, softwood		200	.060			3.33	8.15	11.48	13.90
1650 Hardwood		80	.150			8.30	20.50	28.80	35
1700 24" to 36" diameter, softwood		100	.120			6.65	16.30	22.95	28
1750 Hardwood		50	.240			13.30	32.50	45.80	56
1800 36" to 48" diameter, softwood		70	.171			9.50	23.50	33	39.50
1850 Hardwood		35	.343			19	46.50	65.50	80
2000 Stump removal on site by hydraulic backhoe, 1-1/2 C.Y.									
2040 4" to 6" diameter	B-17	60	.533	Ea.		27	12	39	53
2050 8" to 12" diameter	B-30	33	.727			40.50	76.50	117	144
2100 14" to 24" diameter		25	.960			53.50	101	154.50	191
2150 26" to 36" diameter		16	1.500			83.50	158	241.50	297
3000 Remove selective trees, on site using chain saws and chipper,									
3050 not incl. stumps, up to 6" diameter	B-7	18	2.667	Ea.		129	99.50	228.50	300
3100 8" to 12" diameter		12	4			194	149	343	450
3150 14" to 24" diameter		10	4.800			232	179	411	540
3200 26" to 36" diameter		8	6			290	224	514	675
3300 Machine load, 2 mile haul to dump, 12" diam. tree	A-3B	8	2			113	176	289	365

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31 14 Earth Stripping and Stockpiling

31 14 13 – Soil Stripping and Stockpiling

31 14 13.23 Topsoil Stripping and Stockpiling	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **TOPSOIL STRIPPING AND STOCKPILING**									
0020 200 HP dozer, ideal conditions	B-10B	2300	.005	C.Y.		.29	.59	.88	1.07
0100 Adverse conditions	"	1150	.010			.58	1.17	1.75	2.15
0200 300 HP dozer, ideal conditions	B-10M	3000	.004			.22	.54	.76	.93
0300 Adverse conditions	"	1650	.007			.40	.99	1.39	1.69
0400 400 HP dozer, ideal conditions	B-10X	3900	.003			.17	.64	.81	.95
0500 Adverse conditions	"	2000	.006			.33	1.24	1.57	1.86
0600 Clay, dry and soft, 200 HP dozer, ideal conditions	B-10B	1600	.008			.42	.84	1.26	1.55
0700 Adverse conditions	"	800	.015			.83	1.69	2.52	3.09
1000 Medium hard, 300 HP dozer, ideal conditions	B-10M	2000	.006			.33	.82	1.15	1.40
1100 Adverse conditions	"	1100	.011			.61	1.48	2.09	2.53
1200 Very hard, 400 HP dozer, ideal conditions	B-10X	2600	.005			.26	.95	1.21	1.43
1300 Adverse conditions	"	1340	.009			.50	1.85	2.35	2.77
1400 Loam or topsoil, remove and stockpile on site									
1420 6" deep, 200' haul	B-10B	865	.014	C.Y.		.77	1.56	2.33	2.85
1430 300' haul		520	.023			1.28	2.59	3.87	4.75
1440 500' haul		225	.053			2.96	6	8.96	11
1450 Alternate method: 6" deep, 200' haul		5090	.002	S.Y.		.13	.26	.39	.48
1460 500' haul		1325	.009	"		.50	1.02	1.52	1.87
1500 Loam or topsoil, remove/stockpile on site									
1510 By hand, 6" deep, 50' haul, less than 100 S.Y.	B-1	100	.240	S.Y.		11.10		11.10	16.55
1520 By skid steer, 6" deep, 100' haul, 101-500 S.Y.	B-62	500	.048			2.37	.53	2.90	4.11
1530 100' haul, 501-900 S.Y.	"	900	.027			1.32	.29	1.61	2.28
1540 200' haul, 901-1,100 S.Y.	B-63	1000	.040			1.92	.26	2.18	3.14
1550 By dozer, 200' haul, 1,101-4,000 S.Y.	B-10B	4000	.003	S.Y.		.17	.34	.51	.62

31 22 Grading

31 22 13 – Rough Grading

31 22 13.20 Rough Grading Sites									
0010 **ROUGH GRADING SITES**									
0100 Rough grade sites 400 S.F. or less, hand labor	B-1	2	12	Ea.		555		555	825
0120 410-1,000 S.F.	"	1	24			1,100		1,100	1,650
0130 1,100-3,000 S.F., skid steer & labor	B-62	1.50	16			790	175	965	1,375
0140 3,100-5,000 S.F.	"	1	24			1,175	263	1,438	2,075
0150 5,100-8,000 S.F.	B-63	1	40			1,925	263	2,188	3,150
0160 8,100-10,000 S.F.	"	.75	53.333			2,550	350	2,900	4,175
0170 8,100-10,000 S.F., dozer	B-10L	1	12			665	535	1,200	1,575
0200 Rough grade open sites 10,000-20,000 S.F., grader	B-11L	1.80	8.889			470	430	900	1,175
0210 20,100-25,000 S.F.		1.40	11.429			605	550	1,155	1,500
0220 25,100-30,000 S.F.		1.20	13.333			705	640	1,345	1,750
0230 30,100-35,000 S.F.		1	16			850	770	1,620	2,100
0240 35,100-40,000 S.F.		.90	17.778			940	855	1,795	2,350
0250 40,100-45,000 S.F.		.80	20			1,050	965	2,015	2,625
0260 45,100-50,000 S.F.		.72	22.222			1,175	1,075	2,250	2,925
0270 50,100-75,000 S.F.		.50	32			1,700	1,550	3,250	4,225
0280 75,100-100,000 S.F.		.36	44.444			2,350	2,150	4,500	5,850

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31 22 Grading

31 22 16 – Fine Grading

31 22 16.10 Finish Grading	Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010 **FINISH GRADING**									
0012 Finish grading area to be paved with grader, small area	B-11L	400	.040	S.Y.		2.12	1.93	4.05	5.30
0100 Large area		2000	.008			.42	.39	.81	1.05
1100 Fine grade for slab on grade, machine		1040	.015			.82	.74	1.56	2.02
1150 Hand grading	B-18	700	.034			1.59	.20	1.79	2.58
3500 Finish grading lagoon bottoms	B-11L	4	4	M.S.F.		212	193	405	525

31 23 Excavation and Fill

31 23 16 – Excavation

31 23 16.13 Excavating, Trench

	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **EXCAVATING, TRENCH**									
0011 Or continuous footing									
0020 Common earth with no sheeting or dewatering included									
0050 1' to 4' deep, 3/8 C.Y. excavator	B-11C	150	.107	B.C.Y.		5.65	2.19	7.84	10.80
0060 1/2 C.Y. excavator	B-11M	200	.080			4.24	2.01	6.25	8.50
0090 4' to 6' deep, 1/2 C.Y. excavator	"	200	.080			4.24	2.01	6.25	8.50
0100 5/8 C.Y. excavator	B-12Q	250	.064			3.49	2.92	6.41	8.40
0110 3/4 C.Y. excavator	B-12F	300	.053			2.91	2.91	5.82	7.55
0300 1/2 C.Y. excavator, truck mounted	B-12J	200	.080	B.C.Y.		4.36	4.29	8.65	11.20
0500 6' to 10' deep, 3/4 C.Y. excavator	B-12F	225	.071			3.88	3.88	7.76	10
0510 1 C.Y. excavator	B-12A	400	.040			2.18	2.28	4.46	5.75
0600 1 C.Y. excavator, truck mounted	B-12K	400	.040			2.18	3.72	5.90	7.35
0610 1-1/2 C.Y. excavator	B-12B	600	.027			1.45	1.65	3.10	3.97
0900 10' to 14' deep, 3/4 C.Y. excavator	B-12F	200	.080			4.36	4.37	8.73	11.30
0910 1 C.Y. excavator	B-12A	360	.044			2.42	2.53	4.95	6.40
1000 1-1/2 C.Y. excavator	B-12B	540	.030			1.61	1.83	3.44	4.41
1300 14' to 20' deep, 1 C.Y. excavator	B-12A	320	.050			2.73	2.85	5.58	7.20
1310 1-1/2 C.Y. excavator	B-12B	480	.033			1.82	2.06	3.88	4.97
1320 2-1/2 C.Y. excavator	B-12S	765	.021			1.14	1.75	2.89	3.63
1340 20' to 24' deep, 1 C.Y. excavator	B-12A	288	.056			3.03	3.17	6.20	8
1342 1-1/2 C.Y. excavator	B-12B	432	.037			2.02	2.29	4.31	5.50
1344 2-1/2 C.Y. excavator	B-12S	685	.023			1.27	1.96	3.23	4.05
1352 4' to 6' deep, 1/2 C.Y. excavator w/trench box	B-13H	188	.085			4.64	5.20	9.84	12.65
1354 5/8 C.Y. excavator	"	235	.068			3.71	4.17	7.88	10.10
1356 3/4 C.Y. excavator	B-13G	282	.057			3.09	3.54	6.63	8.50
1362 6' to 10' deep, 3/4 C.Y. excavator w/trench box	"	212	.075			4.11	4.70	8.81	11.30
1370 1 C.Y. excavator	B-13D	376	.043			2.32	2.75	5.07	6.50
1371 1-1/2 C.Y. excavator	B-13E	564	.028			1.55	1.97	3.52	4.47
1374 10' to 14' deep, 3/4 C.Y. excavator w/trench box	B-13G	188	.085			4.64	5.30	9.94	12.75
1375 1 C.Y. excavator	B-13D	338	.047			2.58	3.06	5.64	7.20
1376 1-1/2 C.Y. excavator	B-13E	508	.032			1.72	2.19	3.91	4.97
1381 14' to 20' deep, 1 C.Y. excavator w/trench box	B-13D	301	.053			2.90	3.44	6.34	8.10
1382 1-1/2 C.Y. excavator	B-13E	451	.035			1.93	2.47	4.40	5.60
1383 2-1/2 C.Y. excavator	B-13J	720	.022			1.21	2.03	3.24	4.04
1386 20' to 24' deep, 1 C.Y. excavator w/trench box	B-13D	271	.059			3.22	3.82	7.04	9
1387 1-1/2 C.Y. excavator	B-13E	406	.039			2.15	2.74	4.89	6.20
1388 2-1/2 C.Y. excavator	B-13J	645	.025			1.35	2.27	3.62	4.51
1391 Shoring by S.F./day trench wall protected loose mat., 4' W	B-6	3200	.008	SF Wall	.90	.37	.10	1.37	1.65
1392 Rent shoring per week per S.F. wall protected, loose mat., 4' W					2.50			2.50	2.75
1395 Hydraulic shoring, S.F. trench wall protected stable mat., 4' W	2 Clab	2700	.006		.23	.27		.50	.66

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31 23 16.13 Excavating, Trench	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1397 semi-stable material, 4' W	2 Clab	2400	.007	SF Wall	.35	.30		.65	.83
1398 Rent hydraulic shoring per day/S.F. wall, stable mat., 4' W					.37			.37	.40
1399 semi-stable material					.48			.48	.53
1400 By hand with pick and shovel 2' to 6' deep, light soil	1 Clab	8	1	B.C.Y.		45.50		45.50	68
1500 Heavy soil	1 Clab	4	2	B.C.Y.		91		91	136
1700 For tamping backfilled trenches, air tamp, add	A-1G	100	.080	E.C.Y.		3.65	.83	4.48	6.35
1900 Vibrating plate, add	B-18	180	.133	"		6.15	.76	6.91	10.05
2100 Trim sides and bottom for concrete pours, common earth		1500	.016	S.F.		.74	.09	.83	1.20
2300 Hardpan		600	.040	"		1.85	.23	2.08	3.01
2400 Pier and spread footing excavation, add to above				B.C.Y.				30%	30%
3000 Backfill trench, F.E. loader, wheel mtd., 1 C.Y. bucket									
3020 Minimal haul	B-10R	400	.030	L.C.Y.		1.66	.81	2.47	3.37
3040 100' haul	"	200	.060			3.33	1.62	4.95	6.75
3080 2-1/4 C.Y. bucket, minimum haul	B-10T	600	.020			1.11	1.07	2.18	2.83
3090 100' haul	"	300	.040			2.22	2.14	4.36	5.65
5020 Loam & sandy clay with no sheeting or dewatering included									
5050 1' to 4' deep, 3/8 C.Y. tractor loader/backhoe	B-11C	162	.099	B.C.Y.		5.25	2.03	7.28	10.05
5060 1/2 C.Y. excavator	B-11M	216	.074			3.93	1.86	5.79	7.90
5080 4' to 6' deep, 1/2 C.Y. excavator	"	216	.074			3.93	1.86	5.79	7.90
5090 5/8 C.Y. excavator	B-12Q	276	.058			3.16	2.64	5.80	7.60
5100 3/4 C.Y. excavator	B-12F	324	.049			2.69	2.70	5.39	7
5130 1/2 C.Y. excavator, truck mounted	B-12J	216	.074			4.04	3.97	8.01	10.35
5140 6' to 10' deep, 3/4 C.Y. excavator	B-12F	243	.066			3.59	3.60	7.19	9.30
5150 1 C.Y. excavator	B-12A	432	.037			2.02	2.11	4.13	5.30
5160 1 C.Y. excavator, truck mounted	B-12K	432	.037			2.02	3.45	5.47	6.80
5170 1-1/2 C.Y. excavator	B-12B	648	.025			1.35	1.53	2.88	3.68
5190 10' to 14' deep, 3/4 C.Y. excavator	B-12F	216	.074			4.04	4.05	8.09	10.45
5200 1 C.Y. excavator	B-12A	389	.041			2.24	2.34	4.58	5.90
5210 1-1/2 C.Y. excavator	B-12B	583	.027			1.50	1.70	3.20	4.10
5250 14' to 20' deep, 1 C.Y. excavator	B-12A	346	.046			2.52	2.64	5.16	6.65
5260 1-1/2 C.Y. excavator	B-12B	518	.031			1.68	1.91	3.59	4.61
5270 2-1/2 C.Y. excavator	B-12S	826	.019			1.06	1.62	2.68	3.36
5300 20' to 24' deep, 1 C.Y. excavator	B-12A	311	.051			2.80	2.93	5.73	7.40
5310 1-1/2 C.Y. excavator	B-12B	467	.034			1.87	2.12	3.99	5.10
5320 2-1/2 C.Y. excavator	B-12S	740	.022			1.18	1.81	2.99	3.74
5352 4' to 6' deep, 1/2 C.Y. excavator w/trench box	B-13H	205	.078			4.25	4.79	9.04	11.60
5354 5/8 C.Y. excavator	"	257	.062			3.39	3.82	7.21	9.25
5356 3/4 C.Y. excavator	B-13G	308	.052			2.83	3.24	6.07	7.75
5362 6' to 10' deep, 3/4 C.Y. excavator w/trench box	"	231	.069			3.77	4.32	8.09	10.35
5364 1 C.Y. excavator	B-13D	410	.039			2.13	2.53	4.66	5.95
5366 1-1/2 C.Y. excavator	B-13E	616	.026	B.C.Y.		1.42	1.81	3.23	4.10
5370 10' to 14' deep, 3/4 C.Y. excavator w/trench box	B-13G	205	.078			4.25	4.87	9.12	11.70
5372 1 C.Y. excavator	B-13D	370	.043			2.36	2.80	5.16	6.60
5374 1-1/2 C.Y. excavator	B-13E	554	.029			1.57	2.01	3.58	4.55
5382 14' to 20' deep, 1 C.Y. excavator w/trench box	B-13D	329	.049			2.65	3.15	5.80	7.40
5384 1-1/2 C.Y. excavator	B-13E	492	.033			1.77	2.26	4.03	5.15
5386 2-1/2 C.Y. excavator	B-13J	780	.021			1.12	1.88	3	3.72
5392 20' to 24' deep, 1 C.Y. excavator w/trench box	B-13D	295	.054			2.96	3.51	6.47	8.25
5394 1-1/2 C.Y. excavator	B-13E	444	.036			1.96	2.50	4.46	5.65
5396 2-1/2 C.Y. excavator	B-13J	695	.023			1.25	2.11	3.36	4.19
6020 Sand & gravel with no sheeting or dewatering included									
6050 1' to 4' deep, 3/8 C.Y. excavator	B-11C	165	.097	B.C.Y.		5.15	1.99	7.14	9.85
6060 1/2 C.Y. excavator	B-11M	220	.073			3.85	1.83	5.68	7.75

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31 23 16.13 Excavating, Trench		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
6080	4' to 6' deep, 1/2 C.Y. excavator	B-11M	220	.073	B.C.Y.		3.85	1.83	5.68	7.75
6090	5/8 C.Y. excavator	B-12Q	275	.058			3.17	2.65	5.82	7.65
6100	3/4 C.Y. excavator	B-12F	330	.048			2.64	2.65	5.29	6.85
6130	1/2 C.Y. excavator, truck mounted	B-12J	220	.073			3.96	3.90	7.86	10.20
6140	6' to 10' deep, 3/4 C.Y. excavator	B-12F	248	.065			3.52	3.52	7.04	9.15
6150	1 C.Y. excavator	B-12A	440	.036			1.98	2.07	4.05	5.25
6160	1 C.Y. excavator, truck mounted	B-12K	440	.036			1.98	3.38	5.36	6.65
6170	1-1/2 C.Y. excavator	B-12B	660	.024			1.32	1.50	2.82	3.62
6190	10' to 14' deep, 3/4 C.Y. excavator	B-12F	220	.073			3.96	3.97	7.93	10.25
6200	1 C.Y. excavator	B-12A	396	.040			2.20	2.30	4.50	5.80
6210	1-1/2 C.Y. excavator	B-12B	594	.027			1.47	1.66	3.13	4.02
6250	14' to 20' deep, 1 C.Y. excavator	B-12A	352	.045			2.48	2.59	5.07	6.55
6260	1-1/2 C.Y. excavator	B-12B	528	.030			1.65	1.87	3.52	4.52
6270	2-1/2 C.Y. excavator	B-12S	840	.019			1.04	1.60	2.64	3.31
6300	20' to 24' deep, 1 C.Y. excavator	B-12A	317	.050			2.75	2.88	5.63	7.25
6310	1-1/2 C.Y. excavator	B-12B	475	.034			1.84	2.08	3.92	5
6320	2-1/2 C.Y. excavator	B-12S	755	.021			1.15	1.78	2.93	3.67
6352	4' to 6' deep, 1/2 C.Y. excavator w/trench box	B-13H	209	.077			4.17	4.69	8.86	11.35
6354	5/8 C.Y. excavator	"	261	.061			3.34	3.76	7.10	9.10
6356	3/4 C.Y. excavator	B-13G	314	.051			2.78	3.18	5.96	7.60
6362	6' to 10' deep, 3/4 C.Y. excavator w/trench box	"	236	.068			3.69	4.23	7.92	10.15
6364	1 C.Y. excavator	B-13D	418	.038			2.09	2.48	4.57	5.85
6366	1-1/2 C.Y. excavator	B-13E	627	.026			1.39	1.77	3.16	4.02
6370	10' to 14' deep, 3/4 C.Y. excavator w/trench box	B-13G	209	.077			4.17	4.77	8.94	11.45
6372	1 C.Y. excavator	B-13D	376	.043	B.C.Y.		2.32	2.75	5.07	6.50
6374	1-1/2 C.Y. excavator	B-13E	564	.028			1.55	1.97	3.52	4.47
6382	14' to 20' deep, 1 C.Y. excavator w/trench box	B-13D	334	.048			2.61	3.10	5.71	7.30
6384	1-1/2 C.Y. excavator	B-13E	502	.032			1.74	2.22	3.96	5.05
6386	2-1/2 C.Y. excavator	B-13J	790	.020			1.10	1.85	2.95	3.68
6392	20' to 24' deep, 1 C.Y. excavator w/trench box	B-13D	301	.053			2.90	3.44	6.34	8.10
6394	1-1/2 C.Y. excavator	B-13E	452	.035			1.93	2.46	4.39	5.60
6396	2-1/2 C.Y. excavator	B-13J	710	.023			1.23	2.06	3.29	4.10
7020	Dense hard clay with no sheeting or dewatering included									
7050	1' to 4' deep, 3/8 C.Y. excavator	B-11C	132	.121	B.C.Y.		6.40	2.49	8.89	12.30
7060	1/2 C.Y. excavator	B-11M	176	.091			4.82	2.29	7.11	9.65
7080	4' to 6' deep, 1/2 C.Y. excavator	"	176	.091			4.82	2.29	7.11	9.65
7090	5/8 C.Y. excavator	B-12Q	220	.073			3.96	3.31	7.27	9.55
7100	3/4 C.Y. excavator	B-12F	264	.061			3.30	3.31	6.61	8.55
7130	1/2 C.Y. excavator, truck mounted	B-12J	176	.091			4.95	4.87	9.82	12.75
7140	6' to 10' deep, 3/4 C.Y. excavator	B-12F	198	.081			4.40	4.41	8.81	11.40
7150	1 C.Y. excavator	B-12A	352	.045			2.48	2.59	5.07	6.55
7160	1 C.Y. excavator, truck mounted	B-12K	352	.045			2.48	4.23	6.71	8.35
7170	1-1/2 C.Y. excavator	B-12B	528	.030			1.65	1.87	3.52	4.52
7190	10' to 14' deep, 3/4 C.Y. excavator	B-12F	176	.091			4.95	4.97	9.92	12.85
7200	1 C.Y. excavator	B-12A	317	.050			2.75	2.88	5.63	7.25
7210	1-1/2 C.Y. excavator	B-12B	475	.034			1.84	2.08	3.92	5
7250	14' to 20' deep, 1 C.Y. excavator	B-12A	282	.057			3.09	3.23	6.32	8.15
7260	1-1/2 C.Y. excavator	B-12B	422	.038			2.07	2.34	4.41	5.65
7270	2-1/2 C.Y. excavator	B-12S	675	.024			1.29	1.99	3.28	4.10
7300	20' to 24' deep, 1 C.Y. excavator	B-12A	254	.063			3.43	3.59	7.02	9.05
7310	1-1/2 C.Y. excavator	B-12B	380	.042			2.29	2.60	4.89	6.30
7320	2-1/2 C.Y. excavator	B-12S	605	.026			1.44	2.22	3.66	4.59

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31 23 16.14 Excavating, Utility Trench	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **EXCAVATING, UTILITY TRENCH**									
0011 Common earth									
0050 Trenching with chain trencher, 12 HP, operator walking									
0100 4" wide trench, 12" deep	B-53	800	.010	L.F.		.57	.24	.81	1.11
0150 18" deep		750	.011			.61	.26	.87	1.18
0200 24" deep		700	.011			.65	.27	.92	1.27
0300 6" wide trench, 12" deep		650	.012			.70	.30	1	1.36
0350 18" deep		600	.013			.76	.32	1.08	1.48
0400 24" deep		550	.015			.83	.35	1.18	1.61
0450 36" deep	B-53	450	.018	L.F.		1.01	.43	1.44	1.98
0600 8" wide trench, 12" deep		475	.017			.96	.40	1.36	1.87
0650 18" deep		400	.020			1.14	.48	1.62	2.23
0700 24" deep		350	.023			1.30	.55	1.85	2.54
0750 36" deep		300	.027			1.52	.64	2.16	2.96
1000 Backfill by hand including compaction, add									
1050 4" wide trench, 12" deep	A-1G	800	.010	L.F.		.46	.10	.56	.79
1100 18" deep		530	.015			.69	.16	.85	1.19
1150 24" deep		400	.020			.91	.21	1.12	1.59
1300 6" wide trench, 12" deep		540	.015			.68	.15	.83	1.18
1350 18" deep		405	.020			.90	.20	1.10	1.56
1400 24" deep		270	.030			1.35	.31	1.66	2.35
1450 36" deep		180	.044			2.03	.46	2.49	3.52
1600 8" wide trench, 12" deep		400	.020			.91	.21	1.12	1.59
1650 18" deep		265	.030			1.38	.31	1.69	2.39
1700 24" deep		200	.040			1.82	.41	2.23	3.17
1750 36" deep		135	.059			2.70	.61	3.31	4.69
2000 Chain trencher, 40 HP operator riding									
2050 6" wide trench and backfill, 12" deep	B-54	1200	.007	L.F.		.38	.33	.71	.94
2100 18" deep		1000	.008			.46	.40	.86	1.12
2150 24" deep		975	.008			.47	.41	.88	1.15
2200 36" deep		900	.009			.51	.45	.96	1.24
2250 48" deep		750	.011			.61	.54	1.15	1.49
2300 60" deep		650	.012			.70	.62	1.32	1.72
2400 8" wide trench and backfill, 12" deep		1000	.008			.46	.40	.86	1.12
2450 18" deep		950	.008			.48	.42	.90	1.18
2500 24" deep		900	.009			.51	.45	.96	1.24
2550 36" deep		800	.010			.57	.50	1.07	1.40
2600 48" deep		650	.012			.70	.62	1.32	1.72
2700 12" wide trench and backfill, 12" deep		975	.008			.47	.41	.88	1.15
2750 18" deep		860	.009			.53	.47	1	1.30
2800 24" deep		800	.010			.57	.50	1.07	1.40
2850 36" deep		725	.011			.63	.55	1.18	1.55
3000 16" wide trench and backfill, 12" deep		835	.010			.55	.48	1.03	1.34
3050 18" deep		750	.011			.61	.54	1.15	1.49
3100 24" deep		700	.011			.65	.57	1.22	1.60
3200 Compaction with vibratory plate, add								35%	35%
5100 Hand excavate and trim for pipe bells after trench excavation									
5200 8" pipe	1 Clab	155	.052	L.F.		2.35		2.35	3.50
5300 18" pipe	"	130	.062	"		2.81		2.81	4.18

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31 23 16.16 Structural Excavation for Minor Structures	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **STRUCTURAL EXCAVATION FOR MINOR STRUCTURES** R312316-40									
0015 Hand, pits to 6′ deep, sandy soil	1 Clab	8	1	B.C.Y.		45.50		45.50	68
0100 Heavy soil or clay		4	2			91		91	136
0300 Pits 6′ to 12′ deep, sandy soil		5	1.600			73		73	109
0500 Heavy soil or clay		3	2.667			122		122	181
0700 Pits 12′ to 18′ deep, sandy soil		4	2			91		91	136
0900 Heavy soil or clay		2	4			182		182	272
1100 Hand loading trucks from stock pile, sandy soil		12	.667			30.50		30.50	45.50
1300 Heavy soil or clay		8	1			45.50		45.50	68
1500 For wet or muck hand excavation, add to above								50%	50%
6000 Machine excavation, for spread and mat footings, elevator pits,									
6001 and small building foundations									
6030 Common earth, hydraulic backhoe, 1/2 C.Y. bucket	B-12E	55	.291	B.C.Y.		15.85	11.90	27.75	36.50
6035 3/4 C.Y. bucket	B-12F	90	.178			9.70	9.70	19.40	25
6040 1 C.Y. bucket	B-12A	108	.148			8.05	8.45	16.50	21.50
6050 1-1/2 C.Y. bucket	B-12B	144	.111			6.05	6.85	12.90	16.55
6060 2 C.Y. bucket	B-12C	200	.080			4.36	4.85	9.21	11.85
6070 Sand and gravel, 3/4 C.Y. bucket	B-12F	100	.160			8.70	8.75	17.45	22.50
6080 1 C.Y. bucket	B-12A	120	.133			7.25	7.60	14.85	19.15
6090 1-1/2 C.Y. bucket	B-12B	160	.100			5.45	6.20	11.65	14.90
6100 2 C.Y. bucket	B-12C	220	.073			3.96	4.41	8.37	10.75
6110 Clay, till, or blasted rock, 3/4 C.Y. bucket	B-12F	80	.200			10.90	10.95	21.85	28.50
6120 1 C.Y. bucket	B-12A	95	.168			9.20	9.60	18.80	24
6130 1-1/2 C.Y. bucket	B-12B	130	.123			6.70	7.60	14.30	18.35
6140 2 C.Y. bucket	B-12C	175	.091			4.98	5.55	10.53	13.50
6230 Sandy clay & loam, hydraulic backhoe, 1/2 C.Y. bucket	B-12E	60	.267			14.55	10.90	25.45	33.50
6235 3/4 C.Y. bucket	B-12F	98	.163			8.90	8.90	17.80	23
6240 1 C.Y. bucket	B-12A	116	.138			7.50	7.85	15.35	19.85
6250 1-1/2 C.Y. bucket	B-12B	156	.103			5.60	6.35	11.95	15.25
9010 For mobilization or demobilization, see Section 01 54 36.50									
9020 For dewatering, see Section 31 23 19.20									
9022 For larger structures, see Bulk Excavation, Section 31 23 16.42									
9024 For loading onto trucks, add								15%	15%
9026 For hauling, see Section 31 23 23.20									
9030 For sheeting or soldier bms/lagging, see Section 31 52 16.10									
9040 For trench excavation of strip ftgs, see Section 31 23 16.13									
31 23 16.26 Rock Removal									
0010 **ROCK REMOVAL**									
0015 Drilling only rock, 2″ hole for rock bolts	B-47	316	.076	L.F.		3.80	5.20	9	11.35
0800 2-1/2″ hole for pre-splitting		250	.096			4.81	6.55	11.36	14.35
4600 Quarry operations, 2-1/2″ to 3-1/2″ diameter		240	.100			5	6.80	11.80	14.95
31 23 16.30 Drilling and Blasting Rock									
0010 **DRILLING AND BLASTING ROCK**									
0020 Rock, open face, under 1,500 C.Y.	B-47	225	.107	B.C.Y.	4.51	5.35	7.30	17.16	21
0100 Over 1,500 C.Y.		300	.080		4.51	4.01	5.45	13.97	16.90
0200 Areas where blasting mats are required, under 1,500 C.Y.		175	.137		4.51	6.85	9.35	20.71	25.50
0250 Over 1,500 C.Y.		250	.096		4.51	4.81	6.55	15.87	19.30
0300 Bulk drilling and blasting, can vary greatly, average								9.65	12.20
0500 Pits, average								25.50	31.50
1300 Deep hole method, up to 1,500 C.Y.	B-47	50	.480		4.51	24	33	61.51	77
1400 Over 1,500 C.Y.		66	.364		4.51	18.20	25	47.71	59.50
1900 Restricted areas, up to 1,500 C.Y.		13	1.846		4.51	92.50	126	223.01	282

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	31 23 16.30 Drilling and Blasting Rock	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2000	Over 1,500 C.Y.	B-47	20	1.200	B.C.Y.	4.51	60	82	146.51	184
2200	Trenches, up to 1,500 C.Y.		22	1.091		13.10	54.50	74.50	142.10	178
2300	Over 1,500 C.Y.		26	.923		13.10	46	63	122.10	153
2500	Pier holes, up to 1,500 C.Y.		22	1.091		4.51	54.50	74.50	133.51	168
2600	Over 1,500 C.Y.		31	.774		4.51	39	53	96.51	120
2800	Boulders under 1/2 C.Y., loaded on truck, no hauling	B-100	80	.150			8.30	11.65	19.95	25.50
2900	Boulders, drilled, blasted	B-47	100	.240		4.51	12	16.40	32.91	41
3100	Jackhammer operators with foreman compressor, air tools	B-9	1	40	Day		1,850	330	2,180	3,125
3300	Track drill, compressor, operator and foreman	B-47	1	24	"		1,200	1,650	2,850	3,600
3500	Blasting caps				Ea.	6.40			6.40	7.05
3700	Explosives					.53			.53	.58
3800	Blasting mats, for purchase, no mobilization, 10′ x 15′ x 12″					1,225			1,225	1,350
3900	Blasting mats, rent, for first day					197			197	217
4000	Per added day					66			66	72.50
4200	Preblast survey for 6 room house, individual lot, minimum	A-6	2.40	6.667			375	15.20	390.20	575
4300	Maximum	"	1.35	11.852			670	27	697	1,025
4500	City block within zone of influence, minimum	A-8	25200	.001	S.F.		.08		.08	.11
4600	Maximum	"	15100	.002	"		.13		.13	.19

31 23 16.42 Excavating, Bulk Bank Measure

0010	**EXCAVATING, BULK BANK MEASURE** R312316-40									
0011	Common earth piled									
0020	For loading onto trucks, add								15%	15%
0050	For mobilization and demobilization, see Section 01 54 36.50 R312316-45									
0100	For hauling, see Section 31 23 23.20									
0200	Excavator, hydraulic, crawler mtd., 1 C.Y. cap. = 100 C.Y./hr.	B-12A	800	.020	B.C.Y.		1.09	1.14	2.23	2.87
0250	1-1/2 C.Y. cap. = 125 C.Y./hr.	B-12B	1000	.016			.87	.99	1.86	2.39
0260	2 C.Y. cap. = 165 C.Y./hr.	B-12C	1320	.012			.66	.73	1.39	1.79
0300	3 C.Y. cap. = 260 C.Y./hr.	B-12D	2080	.008			.42	1.08	1.50	1.81
0305	3-1/2 C.Y. cap. = 300 C.Y./hr.	"	2400	.007			.36	.94	1.30	1.57
0310	Wheel mounted, 1/2 C.Y. cap. = 40 C.Y./hr.	B-12E	320	.050			2.73	2.04	4.77	6.30
0360	3/4 C.Y. cap. = 60 C.Y./hr.	B-12F	480	.033			1.82	1.82	3.64	4.70
0500	Clamshell, 1/2 C.Y. cap. = 20 C.Y./hr.	B-12G	160	.100			5.45	5.40	10.85	14.05
0550	1 C.Y. cap. = 35 C.Y./hr.	B-12H	280	.057			3.11	4.37	7.48	9.45
0950	Dragline, 1/2 C.Y. cap. = 30 C.Y./hr.	B-12I	240	.067			3.63	4.44	8.07	10.30
1000	3/4 C.Y. cap. = 35 C.Y./hr.	"	280	.057			3.11	3.81	6.92	8.85
1050	1-1/2 C.Y. cap. = 65 C.Y./hr.	B-12P	520	.031			1.68	2.50	4.18	5.25
1200	Front end loader, track mtd., 1-1/2 C.Y. cap. = 70 C.Y./hr.	B-10N	560	.021			1.19	1.05	2.24	2.93
1250	2-1/2 C.Y. cap. = 95 C.Y./hr.	B-10O	760	.016			.88	1.23	2.11	2.65
1300	3 C.Y. cap. = 130 C.Y./hr.	B-10P	1040	.012			.64	1.14	1.78	2.20
1350	5 C.Y. cap. = 160 C.Y./hr.	B-10Q	1280	.009			.52	1.15	1.67	2.03
1500	Wheel mounted, 3/4 C.Y. cap. = 45 C.Y./hr.	B-10R	360	.033			1.85	.90	2.75	3.74
1550	1-1/2 C.Y. cap. = 80 C.Y./hr.	B-10S	640	.019			1.04	.69	1.73	2.31
1600	2-1/4 C.Y. cap. = 100 C.Y./hr.	B-10T	800	.015			.83	.80	1.63	2.12
1650	5 C.Y. cap. = 185 C.Y./hr.	B-10U	1480	.008			.45	.78	1.23	1.53
1800	Hydraulic excavator, truck mtd. 1/2 C.Y. = 30 C.Y./hr.	B-12J	240	.067			3.63	3.57	7.20	9.35
1850	48″ bucket, 1 C.Y. = 45 C.Y./hr.	B-12K	360	.044			2.42	4.14	6.56	8.15
3700	Shovel, 1/2 C.Y. cap. = 55 C.Y./hr.	B-12L	440	.036			1.98	2.04	4.02	5.20
3750	3/4 C.Y. cap. = 85 C.Y./hr.	B-12M	680	.024			1.28	1.64	2.92	3.71
3800	1 C.Y. cap. = 120 C.Y./hr.	B-12N	960	.017			.91	1.28	2.19	2.76
3850	1-1/2 C.Y. cap. = 160 C.Y./hr.	B-12O	1280	.013			.68	1.06	1.74	2.17
3900	3 C.Y. cap. = 250 C.Y./hr.	B-12T	2000	.008			.44	1.07	1.51	1.83
4000	For soft soil or sand, deduct								15%	15%

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31 23 16 – Excavation

	31 23 16.42 Excavating, Bulk Bank Measure	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4100	For heavy soil or stiff clay, add				B.C.Y.				60%	60%
4200	For wet excavation with clamshell or dragline, add								100%	100%
4250	All other equipment, add								50%	50%
4400	Clamshell in sheeting or cofferdam, minimum	B-12H	160	.100	B.C.Y.		5.45	7.65	13.10	16.50
4450	Maximum	"	60	.267	"		14.55	20.50	35.05	44
5000	Excavating, bulk bank measure, sandy clay & loam piled									
5020	For loading onto trucks, add								15%	15%
5100	Excavator, hydraulic, crawler mtd., 1 C.Y. cap. = 120 C.Y./hr.	B-12A	960	.017	B.C.Y.		.91	.95	1.86	2.40
5150	1-1/2 C.Y. cap. = 150 C.Y./hr.	B-12B	1200	.013			.73	.82	1.55	1.99
5300	2 C.Y. cap. = 195 C.Y./hr.	B-12C	1560	.010			.56	.62	1.18	1.51
5400	3 C.Y. cap. = 300 C.Y./hr.	B-12D	2400	.007			.36	.94	1.30	1.57
5500	3-1/2 C.Y. cap. = 350 C.Y./hr.	"	2800	.006			.31	.80	1.11	1.34
5610	Wheel mounted, 1/2 C.Y. cap. = 44 C.Y./hr.	B-12E	352	.045			2.48	1.86	4.34	5.75
5660	3/4 C.Y. cap. = 66 C.Y./hr.	B-12F	528	.030			1.65	1.66	3.31	4.28
8000	For hauling excavated material, see Section 31 23 23.20									

31 23 16.46 Excavating, Bulk, Dozer

0010	**EXCAVATING, BULK, DOZER**									
0011	Open site									
2000	80 HP, 50' haul, sand & gravel	B-10L	460	.026	B.C.Y.		1.45	1.16	2.61	3.43
2010	Sandy clay & loam		440	.027			1.51	1.22	2.73	3.59
2020	Common earth		400	.030			1.66	1.34	3	3.95
2040	Clay		250	.048			2.66	2.14	4.80	6.30
2200	150' haul, sand & gravel		230	.052			2.89	2.33	5.22	6.85
2210	Sandy clay & loam		220	.055			3.03	2.43	5.46	7.20
2220	Common earth		200	.060			3.33	2.68	6.01	7.90
2240	Clay		125	.096			5.35	4.29	9.64	12.60
2400	300' haul, sand & gravel		120	.100			5.55	4.46	10.01	13.15
2410	Sandy clay & loam		115	.104			5.80	4.66	10.46	13.70
2420	Common earth		100	.120			6.65	5.35	12	15.80
2440	Clay		65	.185			10.25	8.25	18.50	24.50
3000	105 HP, 50' haul, sand & gravel	B-10W	700	.017			.95	.94	1.89	2.45
3010	Sandy clay & loam		680	.018			.98	.97	1.95	2.53
3020	Common earth		610	.020			1.09	1.08	2.17	2.81
3040	Clay		385	.031			1.73	1.71	3.44	4.46
3200	150' haul, sand & gravel		310	.039			2.15	2.13	4.28	5.55
3210	Sandy clay & loam		300	.040			2.22	2.20	4.42	5.70
3220	Common earth		270	.044			2.47	2.44	4.91	6.35
3240	Clay		170	.071			3.92	3.88	7.80	10.10
3300	300' haul, sand & gravel		140	.086			4.75	4.71	9.46	12.25
3310	Sandy clay & loam		135	.089			4.93	4.89	9.82	12.75
3320	Common earth		120	.100			5.55	5.50	11.05	14.30
3340	Clay	B-10W	100	.120	B.C.Y.		6.65	6.60	13.25	17.15
4000	200 HP, 50' haul, sand & gravel	B-10B	1400	.009			.48	.96	1.44	1.77
4010	Sandy clay & loam		1360	.009			.49	.99	1.48	1.82
4020	Common earth		1230	.010			.54	1.10	1.64	2.02
4040	Clay		770	.016			.86	1.75	2.61	3.22
4200	150' haul, sand & gravel		595	.020			1.12	2.27	3.39	4.15
4210	Sandy clay & loam		580	.021			1.15	2.33	3.48	4.27
4220	Common earth		516	.023			1.29	2.61	3.90	4.79
4240	Clay		325	.037			2.05	4.15	6.20	7.60
4400	300' haul, sand & gravel		310	.039			2.15	4.35	6.50	8
4410	Sandy clay & loam		300	.040			2.22	4.50	6.72	8.25

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31 23 16.46 Excavating, Bulk, Dozer		Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&P
4420	Common earth	B-10B	270	.044	B.C.Y.		2.47	4.99	7.46	9.15
4440	Clay		170	.071			3.92	7.95	11.87	14.60
5000	300 HP, 50' haul, sand & gravel	B-10M	1900	.006			.35	.86	1.21	1.46
5010	Sandy clay & loam		1850	.006			.36	.88	1.24	1.51
5020	Common earth		1650	.007			.40	.99	1.39	1.69
5040	Clay		1025	.012			.65	1.59	2.24	2.72
5200	150' haul, sand & gravel		920	.013			.72	1.77	2.49	3.03
5210	Sandy clay & loam		895	.013			.74	1.82	2.56	3.12
5220	Common earth		800	.015			.83	2.04	2.87	3.48
5240	Clay		500	.024			1.33	3.26	4.59	5.55
5400	300' haul, sand & gravel		470	.026			1.42	3.47	4.89	5.95
5410	Sandy clay & loam		455	.026			1.46	3.59	5.05	6.10
5420	Common earth		410	.029			1.62	3.98	5.60	6.80
5440	Clay		250	.048			2.66	6.55	9.21	11.15
5500	460 HP, 50' haul, sand & gravel	B-10X	1930	.006			.34	1.28	1.62	1.92
5506	Sandy clay & loam		1880	.006			.35	1.32	1.67	1.98
5510	Common earth		1680	.007			.40	1.48	1.88	2.21
5520	Clay		1050	.011			.63	2.36	2.99	3.54
5530	150' haul, sand & gravel		1290	.009			.52	1.92	2.44	2.88
5535	Sandy clay & loam		1250	.010			.53	1.98	2.51	2.97
5540	Common earth		1120	.011			.59	2.21	2.80	3.31
5550	Clay		700	.017			.95	3.54	4.49	5.30
5560	300' haul, sand & gravel		660	.018			1.01	3.76	4.77	5.65
5565	Sandy clay & loam		640	.019			1.04	3.87	4.91	5.80
5570	Common earth		575	.021			1.16	4.31	5.47	6.45
5580	Clay		350	.034			1.90	7.10	9	10.65
6000	700 HP, 50' haul, sand & gravel	B-10V	3500	.003			.19	1.14	1.33	1.53
6006	Sandy clay & loam	"	3400	.004			.20	1.17	1.37	1.58
6010	Common earth	B-10V	3035	.004	B.C.Y.		.22	1.31	1.53	1.77
6020	Clay		1925	.006			.35	2.06	2.41	2.78
6030	150' haul, sand & gravel		2025	.006			.33	1.96	2.29	2.65
6035	Sandy clay & loam		1960	.006			.34	2.03	2.37	2.74
6040	Common earth		1750	.007			.38	2.27	2.65	3.07
6050	Clay		1100	.011			.61	3.61	4.22	4.87
6060	300' haul, sand & gravel		1030	.012			.65	3.86	4.51	5.20
6065	Sandy clay & loam		1005	.012			.66	3.96	4.62	5.35
6070	Common earth		900	.013			.74	4.42	5.16	5.95
6080	Clay		550	.022			1.21	7.25	8.46	9.75

31 23 16.50 Excavation, Bulk, Scrapers										
0010	**EXCAVATION, BULK, SCRAPERS** R312316-40									
0100	Elev. scraper 11 C.Y., sand & gravel 1,500' haul, 1/4 dozer	B-33F	690	.020	B.C.Y.		1.14	2.02	3.16	3.93
0150	3,000' haul		610	.023			1.29	2.29	3.58	4.44
0200	5,000' haul		505	.028			1.56	2.77	4.33	5.35
0300	Common earth, 1,500' haul		600	.023			1.31	2.33	3.64	4.51
0350	3,000' haul		530	.026			1.48	2.64	4.12	5.10
0400	5,000' haul		440	.032			1.79	3.18	4.97	6.15
0410	Sandy clay & loam, 1,500' haul		648	.022			1.21	2.16	3.37	4.18
0420	3,000' haul		572	.024			1.37	2.44	3.81	4.74
0430	5,000' haul		475	.029			1.66	2.94	4.60	5.70
0500	Clay, 1,500' haul		375	.037			2.10	3.73	5.83	7.20
0550	3,000' haul		330	.042			2.38	4.23	6.61	8.20
0600	5,000' haul		275	.051			2.86	5.10	7.96	9.85

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31 23 16.50 Excavation, Bulk, Scrapers	Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&P
1000 Self propelled scraper, 14 C.Y., 1/4 push dozer									
1050 Sand and gravel, 1,500' haul	B-33D	920	.015	B.C.Y.		.85	2.72	3.57	4.2
1100 3,000' haul		805	.017			.98	3.11	4.09	4.8
1200 5,000' haul		645	.022			1.22	3.88	5.10	6.1
1300 Common earth, 1,500' haul		800	.018			.98	3.13	4.11	4.9
1350 3,000' haul		700	.020			1.12	3.58	4.70	5.6
1400 5,000' haul		560	.025			1.40	4.47	5.87	7
1420 Sandy clay & loam, 1,500' haul		864	.016			.91	2.90	3.81	4.5
1430 3,000' haul		786	.018			1	3.19	4.19	5
1440 5,000' haul		605	.023			1.30	4.14	5.44	6.5
1500 Clay, 1,500' haul		500	.028			1.57	5	6.57	7.8
1550 3,000' haul		440	.032			1.79	5.70	7.49	8.9
1600 5,000' haul		350	.040			2.25	7.15	9.40	11.2
2000 21 C.Y., 1/4 push dozer, sand & gravel, 1,500' haul	B-33E	1180	.012			.67	2.18	2.85	3.3
2100 3,000' haul	"	910	.015			.86	2.83	3.69	4.4
2200 5,000' haul	B-33E	750	.019	B.C.Y.		1.05	3.43	4.48	5.3
2300 Common earth, 1,500' haul		1030	.014			.76	2.50	3.26	3.8
2350 3,000' haul		790	.018			1	3.26	4.26	5.0
2400 5,000' haul		650	.022			1.21	3.96	5.17	6.1
2420 Sandy clay & loam, 1,500' haul		1112	.013			.71	2.31	3.02	3.5
2430 3,000' haul		854	.016			.92	3.01	3.93	4.6
2440 5,000' haul		702	.020			1.12	3.66	4.78	5.7
2500 Clay, 1,500' haul		645	.022			1.22	3.99	5.21	6.2
2550 3,000' haul		495	.028			1.59	5.20	6.79	8.0
2600 5,000' haul		405	.035			1.94	6.35	8.29	9.9
2700 Towed, 10 C.Y., 1/4 push dozer, sand & gravel, 1,500' haul	B-33B	560	.025			1.40	3.94	5.34	6.4
2720 3,000' haul		450	.031			1.75	4.90	6.65	8
2730 5,000' haul		365	.038			2.15	6.05	8.20	9.8
2750 Common earth, 1,500' haul		420	.033			1.87	5.25	7.12	8.6
2770 3,000' haul		400	.035			1.97	5.50	7.47	9
2780 5,000' haul		310	.045			2.54	7.10	9.64	11.6
2785 Sandy clay & loam, 1,500' haul		454	.031			1.73	4.86	6.59	7.9
2790 3,000' haul		432	.032			1.82	5.10	6.92	8.3
2795 5,000' haul		340	.041			2.31	6.50	8.81	10.6
2800 Clay, 1,500' haul		315	.044			2.50	7	9.50	11.4
2820 3,000' haul		300	.047			2.62	7.35	9.97	12
2840 5,000' haul		225	.062			3.50	9.80	13.30	16
2900 15 C.Y., 1/4 push dozer, sand & gravel, 1,500' haul	B-33C	800	.018			.98	2.78	3.76	4.5
2920 3,000' haul		640	.022			1.23	3.47	4.70	5.6
2940 5,000' haul		520	.027			1.51	4.28	5.79	6.9
2960 Common earth, 1,500' haul		600	.023			1.31	3.71	5.02	6.0
2980 3,000' haul		560	.025			1.40	3.97	5.37	6.4
3000 5,000' haul		440	.032			1.79	5.05	6.84	8.2
3005 Sandy clay & loam, 1,500' haul		648	.022			1.21	3.43	4.64	5.6
3010 3,000' haul		605	.023			1.30	3.68	4.98	5.9
3015 5,000' haul		475	.029			1.66	4.68	6.34	7.6
3020 Clay, 1,500' haul		450	.031			1.75	4.94	6.69	8.0
3040 3,000' haul		420	.033			1.87	5.30	7.17	8.6
3060 5,000' haul		320	.044			2.46	6.95	9.41	11.3

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31 23 19 – Dewatering

	31 23 19.20 Dewatering Systems	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**DEWATERING SYSTEMS**									
0020	Excavate drainage trench, 2′ wide, 2′ deep	B-11C	90	.178	C.Y.		9.40	3.65	13.05	18
0100	2′ wide, 3′ deep, with backhoe loader	"	135	.119	"		6.30	2.44	8.74	12.05
0200	Excavate sump pits by hand, light soil	1 Clab	7.10	1.127	C.Y.		51.50		51.50	76.50
0300	Heavy soil	"	3.50	2.286	"		104		104	155
0500	Pumping 8 hrs., attended 2 hrs./day, incl. 20 L.F.									
0550	of suction hose & 100 L.F. discharge hose									
0600	2″ diaphragm pump used for 8 hrs.	B-10H	4	3	Day		166	18.25	184.25	268
0650	4″ diaphragm pump used for 8 hrs.	B-10I	4	3			166	46.50	212.50	299
0800	8 hrs. attended, 2″ diaphragm pump	B-10H	1	12			665	73	738	1,075
0900	3″ centrifugal pump	B-10J	1	12			665	97	762	1,100
1000	4″ diaphragm pump	B-10I	1	12			665	186	851	1,200
1100	6″ centrifugal pump	B-10K	1	12			665	455	1,120	1,500
1300	CMP, incl. excavation 3′ deep, 12″ diameter	B-6	115	.209	L.F.	12.55	10.30	2.86	25.71	32.50
1400	18″ diameter		100	.240	"	19.55	11.85	3.29	34.69	43
1600	Sump hole construction, incl. excavation and gravel, pit		1250	.019	C.F.	1.08	.95	.26	2.29	2.89
1700	With 12″ gravel collar, 12″ pipe, corrugated, 16 ga.		70	.343	L.F.	22.50	16.95	4.70	44.15	55
1800	15″ pipe, corrugated, 16 ga.		55	.436		29.50	21.50	6	57	71
1900	18″ pipe, corrugated, 16 ga.		50	.480		34.50	23.50	6.60	64.60	81
2000	24″ pipe, corrugated, 14 ga.		40	.600		41	29.50	8.20	78.70	98.50
2200	Wood lining, up to 4′ x 4′, add		300	.080	SFCA	15.30	3.95	1.10	20.35	24
9950	See Section 31 23 19.40 for wellpoints									
9960	See Section 31 23 19.30 for deep well systems									

31 23 19.30 Wells

0010	**WELLS**									
0011	For dewatering 10′ to 20′ deep, 2′ diameter									
0020	with steel casing, minimum	B-6	165	.145	V.L.F.	36	7.20	1.99	45.19	53
0050	Average		98	.245		44	12.10	3.36	59.46	70
0100	Maximum		49	.490		50	24	6.70	80.70	98.50
0300	For dewatering pumps see 01 54 33 in Reference Section									
0500	For domestic water wells, see Section 33 21 13.10									

31 23 19.40 Wellpoints

0010	**WELLPOINTS** R312319-90									
0011	For equipment rental, see 01 54 33 in Reference Section									
0100	Installation and removal of single stage system									
0110	Labor only, 0.75 labor-hours per L.F.	1 Clab	10.70	.748	LF Hdr		34		34	51
0200	2.0 labor-hours per L.F.	"	4	2	"		91		91	136
0400	Pump operation, 4 @ 6 hr. shifts									
0410	Per 24 hr. day	4 Eqlt	1.27	25.197	Day		1,425		1,425	2,125
0500	Per 168 hr. week, 160 hr. straight, 8 hr. double time	"	.18	178	Week		10,100		10,100	15,100
0550	Per 4.3 week month	4 Eqlt	.04	800	Month		45,600		45,600	68,000
0600	Complete installation, operation, equipment rental, fuel &									
0610	removal of system with 2″ wellpoints 5′ OC									
0700	100′ long header, 6″ diameter, first month	4 Eqlt	3.23	9.907	LF Hdr	154	565		719	1,000
0800	Thereafter, per month		4.13	7.748		123	440		563	790
1000	200′ long header, 8″ diameter, first month		6	5.333		147	305		452	610
1100	Thereafter, per month		8.39	3.814		69	217		286	400
1300	500′ long header, 8″ diameter, first month		10.63	3.010		54	172		226	315
1400	Thereafter, per month		20.91	1.530		38.50	87		125.50	173
1600	1,000′ long header, 10″ diameter, first month		11.62	2.754		46	157		203	285
1700	Thereafter, per month		41.81	.765		23	43.50		66.50	90.50
1900	Note: above figures include pumping 168 hrs. per week,									

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31 23 19 – Dewatering

	31 23 19.40 Wellpoints	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1910	the pump operator, and one stand-by pump.									

31 23 23 – Fill

31 23 23.13 Backfill

0010	**BACKFILL** R312323-30									
0015	By hand, no compaction, light soil	1 Clab	14	.571	L.C.Y.		26		26	39
0100	Heavy soil		11	.727	"		33		33	49.5
0300	Compaction in 6" layers, hand tamp, add to above		20.60	.388	E.C.Y.		17.70		17.70	26.5
0400	Roller compaction operator walking, add	B-10A	100	.120			6.65	1.37	8.02	11.4
0500	Air tamp, add	B-9D	190	.211			9.70	1.87	11.57	16.4
0600	Vibrating plate, add	A-1D	60	.133			6.10	1.88	7.98	11.1
0800	Compaction in 12" layers, hand tamp, add to above	1 Clab	34	.235			10.75		10.75	16
0900	Roller compaction operator walking, add	B-10A	150	.080			4.44	.91	5.35	7.6
1000	Air tamp, add	B-9	285	.140			6.45	1.16	7.61	10.9
1100	Vibrating plate, add	A-1E	90	.089			4.05	1.52	5.57	7.7
1300	Dozer backfilling, bulk, up to 300' haul, no compaction	B-10B	1200	.010	L.C.Y.		.55	1.12	1.67	2.0
1400	Air tamped, add	B-11B	80	.200	E.C.Y.		10.25	5.60	15.85	21.5
1600	Compacting backfill, 6" to 12" lifts, vibrating roller	B-10C	800	.015			.83	2.52	3.35	4.0
1700	Sheepsfoot roller	B-10D	750	.016			.89	2.37	3.26	3.9
1900	Dozer backfilling, trench, up to 300' haul, no compaction	B-10B	900	.013	L.C.Y.		.74	1.50	2.24	2.7
2000	Air tamped, add	B-11B	80	.200	E.C.Y.		10.25	5.60	15.85	21.5
2200	Compacting backfill, 6" to 12" lifts, vibrating roller	B-10C	700	.017			.95	2.88	3.83	4.5
2300	Sheepsfoot roller	B-10D	650	.018			1.02	2.74	3.76	4.5
2350	Spreading in 8" layers, small dozer	B-10B	1060	.011	L.C.Y.		.63	1.27	1.90	2.3

31 23 23.14 Backfill, Structural

0010	**BACKFILL, STRUCTURAL**									
0011	Dozer or F.E. loader									
0020	From existing stockpile, no compaction									
1000	55 HP wheeled loader, 50' haul, common earth	B-11C	200	.080	L.C.Y.		4.24	1.64	5.88	8.1
2000	80 HP, 50' haul, sand & gravel	B-10L	1100	.011			.61	.49	1.10	1.4
2010	Sandy clay & loam		1070	.011			.62	.50	1.12	1.4
2020	Common earth		975	.012			.68	.55	1.23	1.6
2040	Clay		850	.014			.78	.63	1.41	1.8
2400	300' haul, sand & gravel		370	.032			1.80	1.45	3.25	4.2
2410	Sandy clay & loam		360	.033			1.85	1.49	3.34	4.3
2420	Common earth		330	.036			2.02	1.62	3.64	4.7
2440	Clay		290	.041			2.30	1.85	4.15	5.4
3000	105 HP, 50' haul, sand & gravel	B-10W	1350	.009			.49	.49	.98	1.2
3010	Sandy clay & loam		1325	.009			.50	.50	1	1.3
3020	Common earth		1225	.010			.54	.54	1.08	1.4
3040	Clay		1100	.011			.61	.60	1.21	1.5
3300	300' haul, sand & gravel		465	.026			1.43	1.42	2.85	3.6
3310	Sandy clay & loam		455	.026			1.46	1.45	2.91	3.7
3320	Common earth		415	.029			1.60	1.59	3.19	4.1
3340	Clay		370	.032			1.80	1.78	3.58	4.6
4000	200 HP, 50' haul, sand & gravel	B-10B	2500	.005			.27	.54	.81	.9
4010	Sandy clay & loam		2435	.005			.27	.55	.82	1.0
4020	Common earth		2200	.005			.30	.61	.91	1.1
4040	Clay		1950	.006			.34	.69	1.03	1.2
4400	300' haul, sand & gravel		805	.015			.83	1.68	2.51	3.0
4410	Sandy clay & loam		790	.015			.84	1.71	2.55	3.1
4420	Common earth		735	.016			.91	1.83	2.74	3.3
4440	Clay		660	.018			1.01	2.04	3.05	3.7

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31 23 23 – Fill

	31 23 23.14 Backfill, Structural	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
5000	300 HP, 50' haul, sand & gravel	B-10M	3170	.004	L.C.Y.		.21	.51	.72	.88
5010	Sandy clay & loam		3110	.004			.21	.52	.73	.90
5020	Common earth		2900	.004			.23	.56	.79	.96
5040	Clay		2700	.004			.25	.60	.85	1.03
5400	300' haul, sand & gravel		1500	.008			.44	1.09	1.53	1.86
5410	Sandy clay & loam		1470	.008			.45	1.11	1.56	1.89
5420	Common earth		1350	.009			.49	1.21	1.70	2.06
5440	Clay		1225	.010			.54	1.33	1.87	2.27
6010	For trench backfill, see Sections 31 23 16.13 and 31 23 16.14									
6100	For compaction, see Section 31 23 23.24									

31 23 23.16 Fill By Borrow and Utility Bedding

0010	**FILL BY BORROW AND UTILITY BEDDING**									
0015	Fill by borrow, load, 1 mile haul, spread with dozer									
0020	for embankments	B-15	1200	.023	L.C.Y.	12.55	1.26	2.40	16.21	18.30
0035	Select fill for shoulders & embankments	"	1200	.023	"	16.25	1.26	2.40	19.91	22.50
0040	Fill,for hauling over 1 mile,add to above per C.Y., see Section 31 23 23.20				Mile				1.41	1.73
0049	Utility bedding, for pipe & conduit, not incl. compaction									
0050	Crushed or screened bank run gravel	B-6	150	.160	L.C.Y.	31	7.90	2.19	41.09	48
0100	Crushed stone 3/4" to 1/2"		150	.160		20.50	7.90	2.19	30.59	36.50
0200	Sand, dead or bank		150	.160		13.70	7.90	2.19	23.79	29.50
0500	Compacting bedding in trench	A-1D	90	.089	E.C.Y.		4.05	1.25	5.30	7.45
0600	If material source exceeds 2 miles, add for extra mileage.									
0610	See Section 31 23 23.20 for hauling mileage add.									

31 23 23.17 General Fill

0010	**GENERAL FILL**									
0011	Spread dumped material, no compaction									
0020	By dozer	B-10B	1000	.012	L.C.Y.		.67	1.35	2.02	2.47
0100	By hand	1 Clab	12	.667	"		30.50		30.50	45.50
0500	Gravel fill, compacted, under floor slabs, 4" deep	B-37	10000	.005	S.F.	.33	.23	.03	.59	.73
0600	6" deep		8600	.006		.49	.27	.03	.79	.97
0700	9" deep		7200	.007		.81	.32	.04	1.17	1.40
0800	12" deep		6000	.008		1.14	.38	.04	1.56	1.87
1000	Alternate pricing method, 4" deep		120	.400	E.C.Y.	24.50	19.15	2.20	45.85	58
1100	6" deep		160	.300		24.50	14.35	1.65	40.50	50.50
1200	9" deep		200	.240		24.50	11.50	1.32	37.32	45.50
1300	12" deep		220	.218		24.50	10.45	1.20	36.15	44
1500	For fill under exterior paving, see Section 32 11 23.23									

31 23 23.20 Hauling

0010	**HAULING**									
0011	Excavated or borrow, loose cubic yards									
0012	no loading equipment, including hauling, waiting, loading/dumping									
0013	time per cycle (wait, load, travel, unload or dump & return)									
0014	8 C.Y. truck, 15 MPH avg., cycle 0.5 miles, 10 min. wait/ld./uld.	B-34A	320	.025	L.C.Y.		1.33	1.23	2.56	3.33
0016	cycle 1 mile		272	.029			1.56	1.44	3	3.92
0018	cycle 2 miles		208	.038			2.04	1.88	3.92	5.10
0020	cycle 4 miles		144	.056			2.95	2.72	5.67	7.40
0022	cycle 6 miles		112	.071			3.79	3.50	7.29	9.50
0024	cycle 8 miles		88	.091			4.82	4.45	9.27	12.10
0026	20 MPH avg., cycle 0.5 mile		336	.024			1.26	1.17	2.43	3.17
0028	cycle 1 mile		296	.027			1.43	1.32	2.75	3.60
0030	cycle 2 miles	B-34A	240	.033	L.C.Y.		1.77	1.63	3.40	4.44
0032	cycle 4 miles		176	.045			2.41	2.23	4.64	6.05

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31 23 23.20 Hauling		Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&P
0034	cycle 6 miles	B-34A	136	.059	L.C.Y.		3.12	2.88	6	7.85
0036	cycle 8 miles		112	.071			3.79	3.50	7.29	9.50
0044	25 MPH avg., cycle 4 miles		192	.042			2.21	2.04	4.25	5.55
0046	cycle 6 miles		160	.050			2.65	2.45	5.10	6.65
0048	cycle 8 miles		128	.063			3.32	3.06	6.38	8.30
0050	30 MPH avg., cycle 4 miles		216	.037			1.96	1.81	3.77	4.94
0052	cycle 6 miles		176	.045			2.41	2.23	4.64	6.05
0054	cycle 8 miles		144	.056			2.95	2.72	5.67	7.40
0114	15 MPH avg., cycle 0.5 mile, 15 min. wait/ld./uld.		224	.036			1.89	1.75	3.64	4.76
0116	cycle 1 mile		200	.040			2.12	1.96	4.08	5.35
0118	cycle 2 miles		168	.048			2.53	2.33	4.86	6.35
0120	cycle 4 miles		120	.067			3.54	3.27	6.81	8.90
0122	cycle 6 miles		96	.083			4.42	4.08	8.50	11.10
0124	cycle 8 miles		80	.100			5.30	4.90	10.20	13.35
0126	20 MPH avg., cycle 0.5 mile		232	.034			1.83	1.69	3.52	4.59
0128	cycle 1 mile		208	.038			2.04	1.88	3.92	5.10
0130	cycle 2 miles		184	.043			2.31	2.13	4.44	5.80
0132	cycle 4 miles		144	.056			2.95	2.72	5.67	7.40
0134	cycle 6 miles		112	.071			3.79	3.50	7.29	9.50
0136	cycle 8 miles		96	.083			4.42	4.08	8.50	11.10
0144	25 MPH avg., cycle 4 miles		152	.053			2.79	2.58	5.37	7
0146	cycle 6 miles		128	.063			3.32	3.06	6.38	8.30
0148	cycle 8 miles		112	.071			3.79	3.50	7.29	9.50
0150	30 MPH avg., cycle 4 miles		168	.048			2.53	2.33	4.86	6.35
0152	cycle 6 miles		144	.056			2.95	2.72	5.67	7.40
0154	cycle 8 miles		120	.067			3.54	3.27	6.81	8.90
0214	15 MPH avg., cycle 0.5 mile, 20 min. wait/ld./uld.		176	.045			2.41	2.23	4.64	6.05
0216	cycle 1 mile		160	.050			2.65	2.45	5.10	6.65
0218	cycle 2 miles		136	.059			3.12	2.88	6	7.85
0220	cycle 4 miles		104	.077			4.08	3.77	7.85	10.25
0222	cycle 6 miles		88	.091			4.82	4.45	9.27	12.10
0224	cycle 8 miles		72	.111			5.90	5.45	11.35	14.80
0226	20 MPH avg., cycle 0.5 mile		176	.045			2.41	2.23	4.64	6.05
0228	cycle 1 mile		168	.048			2.53	2.33	4.86	6.35
0230	cycle 2 miles		144	.056			2.95	2.72	5.67	7.40
0232	cycle 4 miles		120	.067			3.54	3.27	6.81	8.90
0234	cycle 6 miles	B-34A	96	.083	L.C.Y.		4.42	4.08	8.50	11.10
0236	cycle 8 miles		88	.091			4.82	4.45	9.27	12.10
0244	25 MPH avg., cycle 4 miles		128	.063			3.32	3.06	6.38	8.30
0246	cycle 6 miles		112	.071			3.79	3.50	7.29	9.50
0248	cycle 8 miles		96	.083			4.42	4.08	8.50	11.10
0250	30 MPH avg., cycle 4 miles		136	.059			3.12	2.88	6	7.85
0252	cycle 6 miles		120	.067			3.54	3.27	6.81	8.90
0254	cycle 8 miles		104	.077			4.08	3.77	7.85	10.25
0314	15 MPH avg., cycle 0.5 mile, 25 min. wait/ld./uld.		144	.056			2.95	2.72	5.67	7.40
0316	cycle 1 mile		128	.063			3.32	3.06	6.38	8.30
0318	cycle 2 miles		112	.071			3.79	3.50	7.29	9.50
0320	cycle 4 miles		96	.083			4.42	4.08	8.50	11.10
0322	cycle 6 miles		80	.100			5.30	4.90	10.20	13.35
0324	cycle 8 miles		64	.125			6.65	6.15	12.80	16.65
0326	20 MPH avg., cycle 0.5 mile		144	.056			2.95	2.72	5.67	7.40
0328	cycle 1 mile		136	.059			3.12	2.88	6	7.85
0330	cycle 2 miles		120	.067			3.54	3.27	6.81	8.90

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31 23 23.20 Hauling		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0332	cycle 4 miles	B-34A	104	.077	L.C.Y.		4.08	3.77	7.85	10.25
0334	cycle 6 miles		88	.091			4.82	4.45	9.27	12.10
0336	cycle 8 miles		80	.100			5.30	4.90	10.20	13.35
0344	25 MPH avg., cycle 4 miles		112	.071			3.79	3.50	7.29	9.50
0346	cycle 6 miles		96	.083			4.42	4.08	8.50	11.10
0348	cycle 8 miles		88	.091			4.82	4.45	9.27	12.10
0350	30 MPH avg., cycle 4 miles		112	.071			3.79	3.50	7.29	9.50
0352	cycle 6 miles		104	.077			4.08	3.77	7.85	10.25
0354	cycle 8 miles		96	.083			4.42	4.08	8.50	11.10
0414	15 MPH avg., cycle 0.5 mile, 30 min. wait/ld./uld.		120	.067			3.54	3.27	6.81	8.90
0416	cycle 1 mile		112	.071			3.79	3.50	7.29	9.50
0418	cycle 2 miles		96	.083			4.42	4.08	8.50	11.10
0420	cycle 4 miles		80	.100			5.30	4.90	10.20	13.35
0422	cycle 6 miles		72	.111			5.90	5.45	11.35	14.80
0424	cycle 8 miles		64	.125			6.65	6.15	12.80	16.65
0426	20 MPH avg., cycle 0.5 mile		120	.067			3.54	3.27	6.81	8.90
0428	cycle 1 mile		112	.071			3.79	3.50	7.29	9.50
0430	cycle 2 miles		104	.077			4.08	3.77	7.85	10.25
0432	cycle 4 miles		88	.091			4.82	4.45	9.27	12.10
0434	cycle 6 miles		80	.100			5.30	4.90	10.20	13.35
0436	cycle 8 miles		72	.111			5.90	5.45	11.35	14.80
0444	25 MPH avg., cycle 4 miles	B-34A	96	.083	L.C.Y.		4.42	4.08	8.50	11.10
0446	cycle 6 miles		88	.091			4.82	4.45	9.27	12.10
0448	cycle 8 miles		80	.100			5.30	4.90	10.20	13.35
0450	30 MPH avg., cycle 4 miles		96	.083			4.42	4.08	8.50	11.10
0452	cycle 6 miles		88	.091			4.82	4.45	9.27	12.10
0454	cycle 8 miles		80	.100			5.30	4.90	10.20	13.35
0514	15 MPH avg., cycle 0.5 mile, 35 min. wait/ld./uld.		104	.077			4.08	3.77	7.85	10.25
0516	cycle 1 mile		96	.083			4.42	4.08	8.50	11.10
0518	cycle 2 miles		88	.091			4.82	4.45	9.27	12.10
0520	cycle 4 miles		72	.111			5.90	5.45	11.35	14.80
0522	cycle 6 miles		64	.125			6.65	6.15	12.80	16.65
0524	cycle 8 miles		56	.143			7.60	7	14.60	19
0526	20 MPH avg., cycle 0.5 mile		104	.077			4.08	3.77	7.85	10.25
0528	cycle 1 mile		96	.083			4.42	4.08	8.50	11.10
0530	cycle 2 miles		96	.083			4.42	4.08	8.50	11.10
0532	cycle 4 miles		80	.100			5.30	4.90	10.20	13.35
0534	cycle 6 miles		72	.111			5.90	5.45	11.35	14.80
0536	cycle 8 miles		64	.125			6.65	6.15	12.80	16.65
0544	25 MPH avg., cycle 4 miles		88	.091			4.82	4.45	9.27	12.10
0546	cycle 6 miles		80	.100			5.30	4.90	10.20	13.35
0548	cycle 8 miles		72	.111			5.90	5.45	11.35	14.80
0550	30 MPH avg., cycle 4 miles		88	.091			4.82	4.45	9.27	12.10
0552	cycle 6 miles		80	.100			5.30	4.90	10.20	13.35
0554	cycle 8 miles		72	.111			5.90	5.45	11.35	14.80
1014	12 C.Y. truck, cycle 0.5 mile, 15 MPH avg., 15 min. wait/ld./uld.	B-34B	336	.024			1.26	2.28	3.54	4.40
1016	cycle 1 mile		300	.027			1.41	2.56	3.97	4.92
1018	cycle 2 miles		252	.032			1.68	3.05	4.73	5.85
1020	cycle 4 miles		180	.044			2.36	4.26	6.62	8.20
1022	cycle 6 miles		144	.056			2.95	5.35	8.30	10.25
1024	cycle 8 miles		120	.067			3.54	6.40	9.94	12.35
1025	cycle 10 miles		96	.083			4.42	8	12.42	15.40
1026	20 MPH avg., cycle 0.5 mile		348	.023			1.22	2.21	3.43	4.25

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31 23 23.20 Hauling		Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&P
1028	cycle 1 mile	B-34B	312	.026	L.C.Y.		1.36	2.46	3.82	4.74
1030	cycle 2 miles		276	.029			1.54	2.78	4.32	5.35
1032	cycle 4 miles		216	.037			1.96	3.55	5.51	6.85
1034	cycle 6 miles		168	.048			2.53	4.57	7.10	8.80
1036	cycle 8 miles		144	.056			2.95	5.35	8.30	10.25
1038	cycle 10 miles		120	.067			3.54	6.40	9.94	12.35
1040	25 MPH avg., cycle 4 miles	B-34B	228	.035	L.C.Y.		1.86	3.37	5.23	6.50
1042	cycle 6 miles		192	.042			2.21	4	6.21	7.70
1044	cycle 8 miles		168	.048			2.53	4.57	7.10	8.80
1046	cycle 10 miles		144	.056			2.95	5.35	8.30	10.25
1050	30 MPH avg., cycle 4 miles		252	.032			1.68	3.05	4.73	5.85
1052	cycle 6 miles		216	.037			1.96	3.55	5.51	6.85
1054	cycle 8 miles		180	.044			2.36	4.26	6.62	8.20
1056	cycle 10 miles		156	.051			2.72	4.92	7.64	9.45
1060	35 MPH avg., cycle 4 miles		264	.030			1.61	2.91	4.52	5.60
1062	cycle 6 miles		228	.035			1.86	3.37	5.23	6.50
1064	cycle 8 miles		204	.039			2.08	3.76	5.84	7.25
1066	cycle 10 miles		180	.044			2.36	4.26	6.62	8.20
1068	cycle 20 miles		120	.067			3.54	6.40	9.94	12.35
1069	cycle 30 miles		84	.095			5.05	9.15	14.20	17.60
1070	cycle 40 miles		72	.111			5.90	10.65	16.55	20.50
1072	40 MPH avg., cycle 6 miles		240	.033			1.77	3.20	4.97	6.15
1074	cycle 8 miles		216	.037			1.96	3.55	5.51	6.85
1076	cycle 10 miles		192	.042			2.21	4	6.21	7.70
1078	cycle 20 miles		120	.067			3.54	6.40	9.94	12.35
1080	cycle 30 miles		96	.083			4.42	8	12.42	15.40
1082	cycle 40 miles		72	.111			5.90	10.65	16.55	20.50
1084	cycle 50 miles		60	.133			7.05	12.80	19.85	24.50
1094	45 MPH avg., cycle 8 miles		216	.037			1.96	3.55	5.51	6.85
1096	cycle 10 miles		204	.039			2.08	3.76	5.84	7.25
1098	cycle 20 miles		132	.061			3.22	5.80	9.02	11.20
1100	cycle 30 miles		108	.074			3.93	7.10	11.03	13.65
1102	cycle 40 miles		84	.095			5.05	9.15	14.20	17.60
1104	cycle 50 miles		72	.111			5.90	10.65	16.55	20.50
1106	50 MPH avg., cycle 10 miles		216	.037			1.96	3.55	5.51	6.85
1108	cycle 20 miles		144	.056			2.95	5.35	8.30	10.25
1110	cycle 30 miles		108	.074			3.93	7.10	11.03	13.65
1112	cycle 40 miles		84	.095			5.05	9.15	14.20	17.60
1114	cycle 50 miles		72	.111			5.90	10.65	16.55	20.50
1214	15 MPH avg., cycle 0.5 mile, 20 min. wait/ld./uld.		264	.030			1.61	2.91	4.52	5.60
1216	cycle 1 mile		240	.033			1.77	3.20	4.97	6.15
1218	cycle 2 miles		204	.039			2.08	3.76	5.84	7.25
1220	cycle 4 miles		156	.051			2.72	4.92	7.64	9.45
1222	cycle 6 miles		132	.061			3.22	5.80	9.02	11.20
1224	cycle 8 miles		108	.074			3.93	7.10	11.03	13.65
1225	cycle 10 miles	B-34B	96	.083	L.C.Y.		4.42	8	12.42	15.40
1226	20 MPH avg., cycle 0.5 mile		264	.030			1.61	2.91	4.52	5.60
1228	cycle 1 mile		252	.032			1.68	3.05	4.73	5.85
1230	cycle 2 miles		216	.037			1.96	3.55	5.51	6.85
1232	cycle 4 miles		180	.044			2.36	4.26	6.62	8.20
1234	cycle 6 miles		144	.056			2.95	5.35	8.30	10.25
1236	cycle 8 miles		132	.061			3.22	5.80	9.02	11.20
1238	cycle 10 miles		108	.074			3.93	7.10	11.03	13.65

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31 23 23.20 Hauling		Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&P
1240	25 MPH avg., cycle 4 miles	B-34B	192	.042	L.C.Y.		2.21	4	6.21	7.70
1242	cycle 6 miles		168	.048			2.53	4.57	7.10	8.80
1244	cycle 8 miles		144	.056			2.95	5.35	8.30	10.25
1246	cycle 10 miles		132	.061			3.22	5.80	9.02	11.20
1250	30 MPH avg., cycle 4 miles		204	.039			2.08	3.76	5.84	7.25
1252	cycle 6 miles		180	.044			2.36	4.26	6.62	8.20
1254	cycle 8 miles		156	.051			2.72	4.92	7.64	9.45
1256	cycle 10 miles		144	.056			2.95	5.35	8.30	10.25
1260	35 MPH avg., cycle 4 miles		216	.037			1.96	3.55	5.51	6.85
1262	cycle 6 miles		192	.042			2.21	4	6.21	7.70
1264	cycle 8 miles		168	.048			2.53	4.57	7.10	8.80
1266	cycle 10 miles		156	.051			2.72	4.92	7.64	9.45
1268	cycle 20 miles		108	.074			3.93	7.10	11.03	13.65
1269	cycle 30 miles		72	.111			5.90	10.65	16.55	20.50
1270	cycle 40 miles		60	.133			7.05	12.80	19.85	24.50
1272	40 MPH avg., cycle 6 miles		192	.042			2.21	4	6.21	7.70
1274	cycle 8 miles		180	.044			2.36	4.26	6.62	8.20
1276	cycle 10 miles		156	.051			2.72	4.92	7.64	9.45
1278	cycle 20 miles		108	.074			3.93	7.10	11.03	13.65
1280	cycle 30 miles		84	.095			5.05	9.15	14.20	17.60
1282	cycle 40 miles		72	.111			5.90	10.65	16.55	20.50
1284	cycle 50 miles		60	.133			7.05	12.80	19.85	24.50
1294	45 MPH avg., cycle 8 miles		180	.044			2.36	4.26	6.62	8.20
1296	cycle 10 miles		168	.048			2.53	4.57	7.10	8.80
1298	cycle 20 miles		120	.067			3.54	6.40	9.94	12.35
1300	cycle 30 miles		96	.083			4.42	8	12.42	15.40
1302	cycle 40 miles		72	.111			5.90	10.65	16.55	20.50
1304	cycle 50 miles		60	.133			7.05	12.80	19.85	24.50
1306	50 MPH avg., cycle 10 miles		180	.044			2.36	4.26	6.62	8.20
1308	cycle 20 miles		132	.061			3.22	5.80	9.02	11.20
1310	cycle 30 miles		96	.083			4.42	8	12.42	15.40
1312	cycle 40 miles	B-34B	84	.095	L.C.Y.		5.05	9.15	14.20	17.60
1314	cycle 50 miles		72	.111			5.90	10.65	16.55	20.50
1414	15 MPH avg., cycle 0.5 mile, 25 min. wait/ld./uld.		204	.039			2.08	3.76	5.84	7.25
1416	cycle 1 mile		192	.042			2.21	4	6.21	7.70
1418	cycle 2 miles		168	.048			2.53	4.57	7.10	8.80
1420	cycle 4 miles		132	.061			3.22	5.80	9.02	11.20
1422	cycle 6 miles		120	.067			3.54	6.40	9.94	12.35
1424	cycle 8 miles		96	.083			4.42	8	12.42	15.40
1425	cycle 10 miles		84	.095			5.05	9.15	14.20	17.60
1426	20 MPH avg., cycle 0.5 mile		216	.037			1.96	3.55	5.51	6.85
1428	cycle 1 mile		204	.039			2.08	3.76	5.84	7.25
1430	cycle 2 miles		180	.044			2.36	4.26	6.62	8.20
1432	cycle 4 miles		156	.051			2.72	4.92	7.64	9.45
1434	cycle 6 miles		132	.061			3.22	5.80	9.02	11.20
1436	cycle 8 miles		120	.067			3.54	6.40	9.94	12.35
1438	cycle 10 miles		96	.083			4.42	8	12.42	15.40
1440	25 MPH avg., cycle 4 miles		168	.048			2.53	4.57	7.10	8.80
1442	cycle 6 miles		144	.056			2.95	5.35	8.30	10.25
1444	cycle 8 miles		132	.061			3.22	5.80	9.02	11.20
1446	cycle 10 miles		108	.074			3.93	7.10	11.03	13.65
1450	30 MPH avg., cycle 4 miles		168	.048			2.53	4.57	7.10	8.80
1452	cycle 6 miles		156	.051			2.72	4.92	7.64	9.45

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31 23 23.20 Hauling		Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&P
1454	cycle 8 miles	B-34B	132	.061	L.C.Y.		3.22	5.80	9.02	11.2
1456	cycle 10 miles		120	.067			3.54	6.40	9.94	12.3
1460	35 MPH avg., cycle 4 miles		180	.044			2.36	4.26	6.62	8.2
1462	cycle 6 miles		156	.051			2.72	4.92	7.64	9.4
1464	cycle 8 miles		144	.056			2.95	5.35	8.30	10.2
1466	cycle 10 miles		132	.061			3.22	5.80	9.02	11.2
1468	cycle 20 miles		96	.083			4.42	8	12.42	15.4
1469	cycle 30 miles		72	.111			5.90	10.65	16.55	20.5
1470	cycle 40 miles		60	.133			7.05	12.80	19.85	24.5
1472	40 MPH avg., cycle 6 miles		168	.048			2.53	4.57	7.10	8.8
1474	cycle 8 miles		156	.051			2.72	4.92	7.64	9.4
1476	cycle 10 miles		144	.056			2.95	5.35	8.30	10.2
1478	cycle 20 miles		96	.083			4.42	8	12.42	15.4
1480	cycle 30 miles		84	.095			5.05	9.15	14.20	17.6
1482	cycle 40 miles		60	.133			7.05	12.80	19.85	24.5
1484	cycle 50 miles		60	.133			7.05	12.80	19.85	24.5
1494	45 MPH avg., cycle 8 miles		156	.051			2.72	4.92	7.64	9.4
1496	cycle 10 miles	B-34B	144	.056	L.C.Y.		2.95	5.35	8.30	10.2
1498	cycle 20 miles		108	.074			3.93	7.10	11.03	13.6
1500	cycle 30 miles		84	.095			5.05	9.15	14.20	17.6
1502	cycle 40 miles		72	.111			5.90	10.65	16.55	20.5
1504	cycle 50 miles		60	.133			7.05	12.80	19.85	24.5
1506	50 MPH avg., cycle 10 miles		156	.051			2.72	4.92	7.64	9.4
1508	cycle 20 miles		120	.067			3.54	6.40	9.94	12.3
1510	cycle 30 miles		96	.083			4.42	8	12.42	15.4
1512	cycle 40 miles		72	.111			5.90	10.65	16.55	20.5
1514	cycle 50 miles		60	.133			7.05	12.80	19.85	24.5
1614	15 MPH avg., cycle 0.5 mile, 30 min. wait/ld./uld.		180	.044			2.36	4.26	6.62	8.20
1616	cycle 1 mile		168	.048			2.53	4.57	7.10	8.80
1618	cycle 2 miles		144	.056			2.95	5.35	8.30	10.25
1620	cycle 4 miles		120	.067			3.54	6.40	9.94	12.35
1622	cycle 6 miles		108	.074			3.93	7.10	11.03	13.65
1624	cycle 8 miles		84	.095			5.05	9.15	14.20	17.60
1625	cycle 10 miles		84	.095			5.05	9.15	14.20	17.60
1626	20 MPH avg., cycle 0.5 mile		180	.044			2.36	4.26	6.62	8.20
1628	cycle 1 mile		168	.048			2.53	4.57	7.10	8.80
1630	cycle 2 miles		156	.051			2.72	4.92	7.64	9.45
1632	cycle 4 miles		132	.061			3.22	5.80	9.02	11.20
1634	cycle 6 miles		120	.067			3.54	6.40	9.94	12.35
1636	cycle 8 miles		108	.074			3.93	7.10	11.03	13.65
1638	cycle 10 miles		96	.083			4.42	8	12.42	15.40
1640	25 MPH avg., cycle 4 miles		144	.056			2.95	5.35	8.30	10.25
1642	cycle 6 miles		132	.061			3.22	5.80	9.02	11.20
1644	cycle 8 miles		108	.074			3.93	7.10	11.03	13.65
1646	cycle 10 miles		108	.074			3.93	7.10	11.03	13.65
1650	30 MPH avg., cycle 4 miles		144	.056			2.95	5.35	8.30	10.25
1652	cycle 6 miles		132	.061			3.22	5.80	9.02	11.20
1654	cycle 8 miles		120	.067			3.54	6.40	9.94	12.35
1656	cycle 10 miles		108	.074			3.93	7.10	11.03	13.65
1660	35 MPH avg., cycle 4 miles		156	.051			2.72	4.92	7.64	9.45
1662	cycle 6 miles		144	.056			2.95	5.35	8.30	10.25
1664	cycle 8 miles		132	.061			3.22	5.80	9.02	11.20
1666	cycle 10 miles		120	.067			3.54	6.40	9.94	12.35

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31 23 23.20 Hauling		Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&P
1668	cycle 20 miles	B-34B	84	.095	L.C.Y.		5.05	9.15	14.20	17.60
1669	cycle 30 miles		72	.111			5.90	10.65	16.55	20.50
1670	cycle 40 miles		60	.133			7.05	12.80	19.85	24.50
1672	40 MPH avg., cycle 6 miles	B-34B	144	.056	L.C.Y.		2.95	5.35	8.30	10.25
1674	cycle 8 miles		132	.061			3.22	5.80	9.02	11.20
1676	cycle 10 miles		120	.067			3.54	6.40	9.94	12.35
1678	cycle 20 miles		96	.083			4.42	8	12.42	15.40
1680	cycle 30 miles		72	.111			5.90	10.65	16.55	20.50
1682	cycle 40 miles		60	.133			7.05	12.80	19.85	24.50
1684	cycle 50 miles		48	.167			8.85	16	24.85	31
1694	45 MPH avg., cycle 8 miles		144	.056			2.95	5.35	8.30	10.25
1696	cycle 10 miles		132	.061			3.22	5.80	9.02	11.20
1698	cycle 20 miles		96	.083			4.42	8	12.42	15.40
1700	cycle 30 miles		84	.095			5.05	9.15	14.20	17.60
1702	cycle 40 miles		60	.133			7.05	12.80	19.85	24.50
1704	cycle 50 miles		60	.133			7.05	12.80	19.85	24.50
1706	50 MPH avg., cycle 10 miles		132	.061			3.22	5.80	9.02	11.20
1708	cycle 20 miles		108	.074			3.93	7.10	11.03	13.65
1710	cycle 30 miles		84	.095			5.05	9.15	14.20	17.60
1712	cycle 40 miles		72	.111			5.90	10.65	16.55	20.50
1714	cycle 50 miles		60	.133			7.05	12.80	19.85	24.50
2000	Hauling, 8 C.Y. truck, small project cost per hour	B-34A	8	1	Hr.		53	49	102	134
2100	12 C.Y. truck	B-34B	8	1			53	96	149	186
2150	16.5 C.Y. truck	B-34C	8	1			53	82	135	170
2175	18 C.Y. 8 wheel truck	B-34I	8	1			53	95	148	185
2200	20 C.Y. truck	B-34D	8	1			53	84	137	172
2300	Grading at dump, or embankment if required, by dozer	B-10B	1000	.012	L.C.Y.		.67	1.35	2.02	2.47
2310	Spotter at fill or cut, if required	1 Clab	8	1	Hr.		45.50		45.50	68
9014	18 C.Y. truck, 8 wheels,15 min. wait/ld./uld.,15 MPH, cycle 0.5 mi.	B-34I	504	.016	L.C.Y.		.84	1.51	2.35	2.92
9016	cycle 1 mile		450	.018			.94	1.69	2.63	3.27
9018	cycle 2 miles		378	.021			1.12	2.02	3.14	3.90
9020	cycle 4 miles		270	.030			1.57	2.82	4.39	5.45
9022	cycle 6 miles		216	.037			1.96	3.53	5.49	6.80
9024	cycle 8 miles		180	.044			2.36	4.23	6.59	8.15
9025	cycle 10 miles		144	.056			2.95	5.30	8.25	10.20
9026	20 MPH avg., cycle 0.5 mile		522	.015			.81	1.46	2.27	2.82
9028	cycle 1 mile		468	.017			.91	1.63	2.54	3.14
9030	cycle 2 miles		414	.019			1.03	1.84	2.87	3.55
9032	cycle 4 miles		324	.025			1.31	2.35	3.66	4.55
9034	cycle 6 miles		252	.032			1.68	3.02	4.70	5.85
9036	cycle 8 miles		216	.037			1.96	3.53	5.49	6.80
9038	cycle 10 miles	B-34I	180	.044	L.C.Y.		2.36	4.23	6.59	8.15
9040	25 MPH avg., cycle 4 miles		342	.023			1.24	2.23	3.47	4.30
9042	cycle 6 miles		288	.028			1.47	2.64	4.11	5.10
9044	cycle 8 miles		252	.032			1.68	3.02	4.70	5.85
9046	cycle 10 miles		216	.037			1.96	3.53	5.49	6.80
9050	30 MPH avg., cycle 4 miles		378	.021			1.12	2.02	3.14	3.90
9052	cycle 6 miles		324	.025			1.31	2.35	3.66	4.55
9054	cycle 8 miles		270	.030			1.57	2.82	4.39	5.45
9056	cycle 10 miles		234	.034			1.81	3.26	5.07	6.30
9060	35 MPH avg., cycle 4 miles		396	.020			1.07	1.92	2.99	3.72
9062	cycle 6 miles		342	.023			1.24	2.23	3.47	4.30
9064	cycle 8 miles		288	.028			1.47	2.64	4.11	5.10

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31 23 23.20 Hauling		Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&P
9066	cycle 10 miles	B-34I	270	.030	L.C.Y.		1.57	2.82	4.39	5.45
9068	cycle 20 miles		162	.049			2.62	4.70	7.32	9.05
9070	cycle 30 miles		126	.063			3.37	6.05	9.42	11.70
9072	cycle 40 miles		90	.089			4.72	8.45	13.17	16.35
9074	40 MPH avg., cycle 6 miles		360	.022			1.18	2.12	3.30	4.09
9076	cycle 8 miles		324	.025			1.31	2.35	3.66	4.55
9078	cycle 10 miles		288	.028			1.47	2.64	4.11	5.10
9080	cycle 20 miles		180	.044			2.36	4.23	6.59	8.15
9082	cycle 30 miles		144	.056			2.95	5.30	8.25	10.20
9084	cycle 40 miles		108	.074			3.93	7.05	10.98	13.60
9086	cycle 50 miles		90	.089			4.72	8.45	13.17	16.35
9094	45 MPH avg., cycle 8 miles		324	.025			1.31	2.35	3.66	4.55
9096	cycle 10 miles		306	.026			1.39	2.49	3.88	4.81
9098	cycle 20 miles		198	.040			2.14	3.85	5.99	7.45
9100	cycle 30 miles		144	.056			2.95	5.30	8.25	10.20
9102	cycle 40 miles		126	.063			3.37	6.05	9.42	11.70
9104	cycle 50 miles		108	.074			3.93	7.05	10.98	13.60
9106	50 MPH avg., cycle 10 miles		324	.025			1.31	2.35	3.66	4.55
9108	cycle 20 miles		216	.037			1.96	3.53	5.49	6.80
9110	cycle 30 miles		162	.049			2.62	4.70	7.32	9.05
9112	cycle 40 miles		126	.063			3.37	6.05	9.42	11.70
9114	cycle 50 miles		108	.074			3.93	7.05	10.98	13.60
9214	20 min. wait/ld./uld.,15 MPH, cycle 0.5 mi.		396	.020			1.07	1.92	2.99	3.72
9216	cycle 1 mile		360	.022			1.18	2.12	3.30	4.09
9218	cycle 2 miles		306	.026			1.39	2.49	3.88	4.81
9220	cycle 4 miles		234	.034			1.81	3.26	5.07	6.30
9222	cycle 6 miles		198	.040			2.14	3.85	5.99	7.45
9224	cycle 8 miles	B-34I	162	.049	L.C.Y.		2.62	4.70	7.32	9.05
9225	cycle 10 miles		144	.056			2.95	5.30	8.25	10.20
9226	20 MPH avg., cycle 0.5 mile		396	.020			1.07	1.92	2.99	3.72
9228	cycle 1 mile		378	.021			1.12	2.02	3.14	3.90
9230	cycle 2 miles		324	.025			1.31	2.35	3.66	4.55
9232	cycle 4 miles		270	.030			1.57	2.82	4.39	5.45
9234	cycle 6 miles		216	.037			1.96	3.53	5.49	6.80
9236	cycle 8 miles		198	.040			2.14	3.85	5.99	7.45
9238	cycle 10 miles		162	.049			2.62	4.70	7.32	9.05
9240	25 MPH avg., cycle 4 miles		288	.028			1.47	2.64	4.11	5.10
9242	cycle 6 miles		252	.032			1.68	3.02	4.70	5.85
9244	cycle 8 miles		216	.037			1.96	3.53	5.49	6.80
9246	cycle 10 miles		198	.040			2.14	3.85	5.99	7.45
9250	30 MPH avg., cycle 4 miles		306	.026			1.39	2.49	3.88	4.81
9252	cycle 6 miles		270	.030			1.57	2.82	4.39	5.45
9254	cycle 8 miles		234	.034			1.81	3.26	5.07	6.30
9256	cycle 10 miles		216	.037			1.96	3.53	5.49	6.80
9260	35 MPH avg., cycle 4 miles		324	.025			1.31	2.35	3.66	4.55
9262	cycle 6 miles		288	.028			1.47	2.64	4.11	5.10
9264	cycle 8 miles		252	.032			1.68	3.02	4.70	5.85
9266	cycle 10 miles		234	.034			1.81	3.26	5.07	6.30
9268	cycle 20 miles		162	.049			2.62	4.70	7.32	9.05
9270	cycle 30 miles		108	.074			3.93	7.05	10.98	13.60
9272	cycle 40 miles		90	.089			4.72	8.45	13.17	16.35
9274	40 MPH avg., cycle 6 miles		288	.028			1.47	2.64	4.11	5.10
9276	cycle 8 miles		270	.030			1.57	2.82	4.39	5.45

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31 23 23.20 Hauling		Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&P
9278	cycle 10 miles	B-34I	234	.034	L.C.Y.		1.81	3.26	5.07	6.30
9280	cycle 20 miles		162	.049			2.62	4.70	7.32	9.05
9282	cycle 30 miles		126	.063			3.37	6.05	9.42	11.70
9284	cycle 40 miles		108	.074			3.93	7.05	10.98	13.60
9286	cycle 50 miles		90	.089			4.72	8.45	13.17	16.35
9294	45 MPH avg., cycle 8 miles		270	.030			1.57	2.82	4.39	5.45
9296	cycle 10 miles		252	.032			1.68	3.02	4.70	5.85
9298	cycle 20 miles		180	.044			2.36	4.23	6.59	8.15
9300	cycle 30 miles		144	.056			2.95	5.30	8.25	10.20
9302	cycle 40 miles		108	.074			3.93	7.05	10.98	13.60
9304	cycle 50 miles		90	.089			4.72	8.45	13.17	16.35
9306	50 MPH avg., cycle 10 miles		270	.030			1.57	2.82	4.39	5.45
9308	cycle 20 miles		198	.040			2.14	3.85	5.99	7.45
9310	cycle 30 miles	B-34I	144	.056	L.C.Y.		2.95	5.30	8.25	10.20
9312	cycle 40 miles		126	.063			3.37	6.05	9.42	11.70
9314	cycle 50 miles		108	.074			3.93	7.05	10.98	13.60
9414	25 min. wait/ld./uld.,15 MPH, cycle 0.5 mi.		306	.026			1.39	2.49	3.88	4.81
9416	cycle 1 mile		288	.028			1.47	2.64	4.11	5.10
9418	cycle 2 miles		252	.032			1.68	3.02	4.70	5.85
9420	cycle 4 miles		198	.040			2.14	3.85	5.99	7.45
9422	cycle 6 miles		180	.044			2.36	4.23	6.59	8.15
9424	cycle 8 miles		144	.056			2.95	5.30	8.25	10.20
9425	cycle 10 miles		126	.063			3.37	6.05	9.42	11.70
9426	20 MPH avg., cycle 0.5 mile		324	.025			1.31	2.35	3.66	4.55
9428	cycle 1 mile		306	.026			1.39	2.49	3.88	4.81
9430	cycle 2 miles		270	.030			1.57	2.82	4.39	5.45
9432	cycle 4 miles		234	.034			1.81	3.26	5.07	6.30
9434	cycle 6 miles		198	.040			2.14	3.85	5.99	7.45
9436	cycle 8 miles		180	.044			2.36	4.23	6.59	8.15
9438	cycle 10 miles		144	.056			2.95	5.30	8.25	10.20
9440	25 MPH avg., cycle 4 miles		252	.032			1.68	3.02	4.70	5.85
9442	cycle 6 miles		216	.037			1.96	3.53	5.49	6.80
9444	cycle 8 miles		198	.040			2.14	3.85	5.99	7.45
9446	cycle 10 miles		180	.044			2.36	4.23	6.59	8.15
9450	30 MPH avg., cycle 4 miles		252	.032			1.68	3.02	4.70	5.85
9452	cycle 6 miles		234	.034			1.81	3.26	5.07	6.30
9454	cycle 8 miles		198	.040			2.14	3.85	5.99	7.45
9456	cycle 10 miles		180	.044			2.36	4.23	6.59	8.15
9460	35 MPH avg., cycle 4 miles		270	.030			1.57	2.82	4.39	5.45
9462	cycle 6 miles		234	.034			1.81	3.26	5.07	6.30
9464	cycle 8 miles		216	.037			1.96	3.53	5.49	6.80
9466	cycle 10 miles		198	.040			2.14	3.85	5.99	7.45
9468	cycle 20 miles		144	.056			2.95	5.30	8.25	10.20
9470	cycle 30 miles		108	.074			3.93	7.05	10.98	13.60
9472	cycle 40 miles		90	.089			4.72	8.45	13.17	16.35
9474	40 MPH avg., cycle 6 miles		252	.032			1.68	3.02	4.70	5.85
9476	cycle 8 miles		234	.034			1.81	3.26	5.07	6.30
9478	cycle 10 miles		216	.037			1.96	3.53	5.49	6.80
9480	cycle 20 miles		144	.056			2.95	5.30	8.25	10.20
9482	cycle 30 miles		126	.063			3.37	6.05	9.42	11.70
9484	cycle 40 miles		90	.089			4.72	8.45	13.17	16.35
9486	cycle 50 miles		90	.089			4.72	8.45	13.17	16.35
9494	45 MPH avg., cycle 8 miles	B-34I	234	.034	L.C.Y.		1.81	3.26	5.07	6.30

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31 23 23.20 Hauling		Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&P
9496	cycle 10 miles	B-34I	216	.037	L.C.Y.		1.96	3.53	5.49	6.8
9498	cycle 20 miles		162	.049			2.62	4.70	7.32	9.0
9500	cycle 30 miles		126	.063			3.37	6.05	9.42	11.7
9502	cycle 40 miles		108	.074			3.93	7.05	10.98	13.6
9504	cycle 50 miles		90	.089			4.72	8.45	13.17	16.3
9506	50 MPH avg., cycle 10 miles		234	.034			1.81	3.26	5.07	6.3
9508	cycle 20 miles		180	.044			2.36	4.23	6.59	8.1
9510	cycle 30 miles		144	.056			2.95	5.30	8.25	10.2
9512	cycle 40 miles		108	.074			3.93	7.05	10.98	13.6
9514	cycle 50 miles		90	.089			4.72	8.45	13.17	16.3
9614	30 min. wait/ld./uld.,15 MPH, cycle 0.5 mi.		270	.030			1.57	2.82	4.39	5.4
9616	cycle 1 mile		252	.032			1.68	3.02	4.70	5.8
9618	cycle 2 miles		216	.037			1.96	3.53	5.49	6.8
9620	cycle 4 miles		180	.044			2.36	4.23	6.59	8.1
9622	cycle 6 miles		162	.049			2.62	4.70	7.32	9.0
9624	cycle 8 miles		126	.063			3.37	6.05	9.42	11.7
9625	cycle 10 miles		126	.063			3.37	6.05	9.42	11.7
9626	20 MPH avg., cycle 0.5 mile		270	.030			1.57	2.82	4.39	5.4
9628	cycle 1 mile		252	.032			1.68	3.02	4.70	5.8
9630	cycle 2 miles		234	.034			1.81	3.26	5.07	6.3
9632	cycle 4 miles		198	.040			2.14	3.85	5.99	7.4
9634	cycle 6 miles		180	.044			2.36	4.23	6.59	8.1
9636	cycle 8 miles		162	.049			2.62	4.70	7.32	9.0
9638	cycle 10 miles		144	.056			2.95	5.30	8.25	10.2
9640	25 MPH avg., cycle 4 miles		216	.037			1.96	3.53	5.49	6.8
9642	cycle 6 miles		198	.040			2.14	3.85	5.99	7.4
9644	cycle 8 miles		180	.044			2.36	4.23	6.59	8.1
9646	cycle 10 miles		162	.049			2.62	4.70	7.32	9.0
9650	30 MPH avg., cycle 4 miles		216	.037			1.96	3.53	5.49	6.8
9652	cycle 6 miles		198	.040			2.14	3.85	5.99	7.4
9654	cycle 8 miles		180	.044			2.36	4.23	6.59	8.1
9656	cycle 10 miles		162	.049			2.62	4.70	7.32	9.0
9660	35 MPH avg., cycle 4 miles		234	.034			1.81	3.26	5.07	6.3
9662	cycle 6 miles		216	.037			1.96	3.53	5.49	6.8
9664	cycle 8 miles		198	.040			2.14	3.85	5.99	7.4
9666	cycle 10 miles		180	.044			2.36	4.23	6.59	8.1
9668	cycle 20 miles		126	.063			3.37	6.05	9.42	11.7
9670	cycle 30 miles		108	.074			3.93	7.05	10.98	13.6
9672	cycle 40 miles	B-34I	90	.089	L.C.Y.		4.72	8.45	13.17	16.35
9674	40 MPH avg., cycle 6 miles		216	.037			1.96	3.53	5.49	6.8
9676	cycle 8 miles		198	.040			2.14	3.85	5.99	7.4
9678	cycle 10 miles		180	.044			2.36	4.23	6.59	8.1
9680	cycle 20 miles		144	.056			2.95	5.30	8.25	10.2
9682	cycle 30 miles		108	.074			3.93	7.05	10.98	13.6
9684	cycle 40 miles		90	.089			4.72	8.45	13.17	16.35
9686	cycle 50 miles		72	.111			5.90	10.60	16.50	20.5
9694	45 MPH avg., cycle 8 miles		216	.037			1.96	3.53	5.49	6.8
9696	cycle 10 miles		198	.040			2.14	3.85	5.99	7.4
9698	cycle 20 miles		144	.056			2.95	5.30	8.25	10.2
9700	cycle 30 miles		126	.063			3.37	6.05	9.42	11.7
9702	cycle 40 miles		108	.074			3.93	7.05	10.98	13.6
9704	cycle 50 miles		90	.089			4.72	8.45	13.17	16.35
9706	50 MPH avg., cycle 10 miles		198	.040			2.14	3.85	5.99	7.4

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31 23 Excavation and Fill

31 23 23 – Fill

	31 23 23.20 Hauling	Crew	Daily Output	Labor-Hours	Unit	Material	2022 Bare Costs Labor	Equipment	Total	Total Incl O&P
9708	cycle 20 miles	B-34I	162	.049	L.C.Y.		2.62	4.70	7.32	9.05
9710	cycle 30 miles		126	.063			3.37	6.05	9.42	11.70
9712	cycle 40 miles		108	.074			3.93	7.05	10.98	13.60
9714	cycle 50 miles		90	.089			4.72	8.45	13.17	16.35

31 23 23.24 Compaction, Structural

0010	**COMPACTION, STRUCTURAL** R312323-30									
0020	Steel wheel tandem roller, 5 tons	B-10E	8	1.500	Hr.		83	33	116	160
0100	10 tons	B-10F	8	1.500	"		83	42.50	125.50	171
0300	Sheepsfoot or wobbly wheel roller, 8" lifts, common fill	B-10G	1300	.009	E.C.Y.		.51	.56	1.07	1.38
0400	Select fill	"	1500	.008			.44	.49	.93	1.20
0600	Vibratory plate, 8" lifts, common fill	A-1D	200	.040			1.82	.56	2.38	3.34
0700	Select fill	"	216	.037			1.69	.52	2.21	3.08

31 25 Erosion and Sedimentation Controls

31 25 14 – Stabilization Measures for Erosion and Sedimentation Control

31 25 14.16 Rolled Erosion Control Mats and Blankets

0010	**ROLLED EROSION CONTROL MATS AND BLANKETS**										
0020	Jute mesh, 100 S.Y. per roll, 4' wide, stapled	G	B-80A	2400	.010	S.Y.	.99	.46	.16	1.61	1.94
0070	Paper biodegradable mesh	G	B-1	2500	.010		.20	.44		.64	.88
0080	Paper mulch	G	B-64	20000	.001		.11	.04	.03	.18	.21
0100	Plastic netting, stapled, 2" x 1" mesh, 20 mil	G	B-1	2500	.010		1.76	.44		2.20	2.60
0200	Polypropylene mesh, stapled, 6.5 oz./S.Y.	G		2500	.010		1.76	.44		2.20	2.60
0300	Tobacco netting, or jute mesh #2, stapled	G		2500	.010		.25	.44		.69	.94
0600	Straw in polymeric netting, biodegradable log		A-2	1000	.024	L.F.	2.25	1.13	.34	3.72	4.54
0705	Sediment Log, Filter Sock, 9"		A-2	1000	.024	L.F.	2.26	1.13	.34	3.73	4.55
0710	Sediment Log, Filter Sock, 12"		"	1000	.024		3.04	1.13	.34	4.51	5.40
1000	Silt fence, install and remove	G	B-62	650	.037		.53	1.82	.40	2.75	3.74
1250	Straw bale, install and remove			450	.053		1.89	2.63	.58	5.10	6.65
1275	Straw bale, synthetic, install and remove			450	.053		3.83	2.63	.58	7.04	8.80
1625	Erosion control, Silt Sac, for Catch Basin, Single 2ft x 2ft			24	1		45	49.50	10.95	105.45	135
2000	Snow fence, install and remove			650	.037		.57	1.82	.40	2.79	3.79

31 31 Soil Treatment

31 31 16 – Termite Control

31 31 16.13 Chemical Termite Control

0010	**CHEMICAL TERMITE CONTROL**									
0020	Slab and walls, residential	1 Skwk	1200	.007	SF Flr.	.35	.39		.74	.98
0100	Commercial, minimum		2496	.003		.40	.19		.59	.72
0200	Maximum		1645	.005		.60	.29		.89	1.09
0400	Insecticides for termite control, minimum		14	.571	Gal.	2.45	33.50		35.95	53
0500	Maximum		11	.727	"	4.91	43		47.91	70

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31 32 Soil Stabilization

31 32 13 – Soil Mixing Stabilization

31 32 13.30 Calcium Chloride	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **CALCIUM CHLORIDE**									
0020 Calcium chloride, delivered, 100 lb. bags, truckload lots				Ton	660			660	725
0030 Solution, 4 lb. flake per gallon, tank truck delivery				Gal.	1.58			1.58	1.74

31 33 Rock Stabilization

31 33 13 – Rock Bolting and Grouting

31 33 13.10 Rock Bolting

0010 **ROCK BOLTING**									
2020 Hollow core, prestressable anchor, 1" diameter, 5' long	2 Skwk	32	.500	Ea.	182	29.50		211.50	244
2025 10' long		24	.667		305	39.50		344.50	395
2060 2" diameter, 5' long		32	.500		675	29.50		704.50	785
2065 10' long		24	.667		1,200	39.50		1,239.50	1,375
2100 Super high-tensile, 3/4" diameter, 5' long		32	.500		48.50	29.50		78	97
2105 10' long		24	.667		121	39.50		160.50	193
2160 2" diameter, 5' long		32	.500		375	29.50		404.50	460
2165 10' long		24	.667		675	39.50		714.50	805
4400 Drill hole for rock bolt, 1-3/4" diam., 5' long (for 3/4" bolt)	B-56	17	.941			48.50	93.50	142	175
4405 10' long		9	1.778			91	177	268	330
4420 2" diameter, 5' long (for 1" bolt)		13	1.231			63	123	186	229
4425 10' long		7	2.286			117	228	345	425
4460 3-1/2" diameter, 5' long (for 2" bolt)		10	1.600			82	159	241	297
4465 10' long	B-56	5	3.200	Ea.		164	320	484	595

31 36 Gabions

31 36 13 – Gabion Boxes

31 36 13.10 Gabion Box Systems

0010 **GABION BOX SYSTEMS**									
0400 Gabions, galvanized steel mesh mats or boxes, stone filled, 6" deep	B-13	200	.280	S.Y.	17.95	13.90	10.45	42.30	52
0500 9" deep		163	.344		32.50	17.05	12.85	62.40	75.50
0600 12" deep		153	.366		36	18.15	13.70	67.85	81.50
0700 18" deep		102	.549		75.50	27.50	20.50	123.50	146
0800 36" deep		60	.933		84.50	46.50	35	166	201

31 37 Riprap

31 37 13 – Machined Riprap

31 37 13.10 Riprap and Rock Lining

0010 **RIPRAP AND ROCK LINING**									
0011 Random, broken stone									
0100 Machine placed for slope protection	B-12G	62	.258	L.C.Y.	37	14.05	13.95	65	77
0110 3/8 to 1/4 C.Y. pieces, grouted	B-13	80	.700	S.Y.	73.50	34.50	26	134	162
0200 18" minimum thickness, not grouted	"	53	1.057	"	23	52.50	39.50	115	147
0300 Dumped, 50 lb. average	B-11A	800	.020	Ton	28.50	1.06	1.69	31.25	35
0350 100 lb. average		700	.023		28.50	1.21	1.93	31.64	35.50
0370 300 lb. average		600	.027		28.50	1.41	2.25	32.16	36

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31 41 Shoring

31 41 13 – Timber Shoring

31 41 13.10 Building Shoring		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **BUILDING SHORING**										
0020 Shoring, existing building, with timber, no salvage allowance		B-51	2.20	21.818	M.B.F.	1,375	1,025	154	2,554	3,200
1000 On cribbing with 35 ton screw jacks, per box and jack		"	3.60	13.333	Ea.	64.50	625	94.50	784	1,100
1100 Masonry openings in walls, see Section 02 41 19.16										

31 41 16 – Sheet Piling

31 41 16.10 Sheet Piling Systems

0010 **SHEET PILING SYSTEMS**										
0020 Sheet piling, 50,000 psi steel, not incl. wales, 22 psf, left in place		B-40	10.81	5.920	Ton	1,825	350	335	2,510	2,900
0100 Drive, extract & salvage	R314116-40		6	10.667		510	630	605	1,745	2,200
0300 20′ deep excavation, 27 psf, left in place			12.95	4.942		1,825	293	280	2,398	2,750
0400 Drive, extract & salvage	R314116-45		6.55	9.771		510	580	555	1,645	2,050
0600 25′ deep excavation, 38 psf, left in place			19	3.368		1,825	200	191	2,216	2,525
0700 Drive, extract & salvage			10.50	6.095		510	360	345	1,215	1,500
0900 40′ deep excavation, 38 psf, left in place			21.20	3.019		1,825	179	171	2,175	2,450
1000 Drive, extract & salvage			12.25	5.224		510	310	296	1,116	1,350
1200 15′ deep excavation, 22 psf, left in place			983	.065	S.F.	21	3.86	3.69	28.55	33.50
1300 Drive, extract & salvage		B-40	545	.117	S.F.	5.70	6.95	6.65	19.30	24
1500 20′ deep excavation, 27 psf, left in place			960	.067		26.50	3.95	3.78	34.23	39.50
1600 Drive, extract & salvage			485	.132		7.40	7.80	7.50	22.70	28.50
1800 25′ deep excavation, 38 psf, left in place			1000	.064		39	3.79	3.63	46.42	53
1900 Drive, extract & salvage			553	.116		10.15	6.85	6.55	23.55	29
2100 Rent steel sheet piling and wales, first month					Ton	320			320	350
2200 Per added month						32			32	35
2300 Rental piling left in place, add to rental						1,175			1,175	1,300
2500 Wales, connections & struts, 2/3 salvage						510			510	560
2700 High strength piling, 60,000 psi, add						182			182	201
2800 65,000 psi, add						273			273	300
3000 Tie rod, not upset, 1-1/2″ to 4″ diameter with turnbuckle						2,275			2,275	2,500
3100 No turnbuckle						1,625			1,625	1,775
3300 Upset, 1-3/4″ to 4″ diameter with turnbuckle						2,400			2,400	2,650
3400 No turnbuckle						2,025			2,025	2,250
3600 Lightweight, 18″ to 28″ wide, 7 ga., 9.22 psf, and										
3610 9 ga., 8.6 psf, minimum					Lb.	.69			.69	.76
3700 Average						.88			.88	.97
3750 Maximum						.97			.97	1.07
3900 Wood, solid sheeting, incl. wales, braces and spacers,	R314116-40									
3910 drive, extract & salvage, 8′ deep excavation		B-31	330	.121	S.F.	2.95	5.85	.80	9.60	12.85
4000 10′ deep, 50 S.F./hr. in & 150 S.F./hr. out			300	.133		3.03	6.40	.88	10.31	13.85
4100 12′ deep, 45 S.F./hr. in & 135 S.F./hr. out			270	.148		3.12	7.15	.98	11.25	15.10
4200 14′ deep, 42 S.F./hr. in & 126 S.F./hr. out			250	.160		3.22	7.70	1.06	11.98	16.15
4300 16′ deep, 40 S.F./hr. in & 120 S.F./hr. out			240	.167		3.32	8	1.10	12.42	16.80
4400 18′ deep, 38 S.F./hr. in & 114 S.F./hr. out			230	.174		3.43	8.35	1.15	12.93	17.50
4500 20′ deep, 35 S.F./hr. in & 105 S.F./hr. out			210	.190		3.54	9.15	1.26	13.95	18.90
4520 Left in place, 8′ deep, 55 S.F./hr.			440	.091		5.30	4.38	.60	10.28	13
4540 10′ deep, 50 S.F./hr.			400	.100		5.60	4.81	.66	11.07	14.05
4560 12′ deep, 45 S.F./hr.			360	.111		5.90	5.35	.73	11.98	15.25
4565 14′ deep, 42 S.F./hr.			335	.119		6.25	5.75	.79	12.79	16.25
4570 16′ deep, 40 S.F./hr.			320	.125		6.65	6	.83	13.48	17.15
4580 18′ deep, 38 S.F./hr.			305	.131		7.10	6.30	.87	14.27	18.15
4590 20′ deep, 35 S.F./hr.			280	.143		7.60	6.90	.94	15.44	19.65
4700 Alternate pricing, left in place, 8′ deep			1.76	22.727	M.B.F.	1,200	1,100	150	2,450	3,100
4800 Drive, extract and salvage, 8′ deep		B-31	1.32	30.303	M.B.F.	1,050	1,450	200	2,700	3,575

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31 41 Shoring

31 41 16 – Sheet Piling

	31 41 16.10 Sheet Piling Systems	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
5000	For treated lumber add cost of treatment to lumber									

31 43 Concrete Raising

31 43 13 – Pressure Grouting

31 43 13.13 Concrete Pressure Grouting

0010	**CONCRETE PRESSURE GROUTING**									
0020	Grouting, pressure, cement & sand, 1:1 mix, minimum	B-61	124	.323	Bag	24	15.55	2.59	42.14	52.5
0100	Maximum		51	.784	"	24	38	6.30	68.30	90
0200	Cement and sand, 1:1 mix, minimum		250	.160	C.F.	48	7.70	1.29	56.99	66
0300	Maximum		100	.400		72.50	19.30	3.22	95.02	112
0400	Epoxy cement grout, minimum		137	.292		935	14.10	2.35	951.45	1,050
0500	Maximum		57	.702		935	34	5.65	974.65	1,075
0700	Alternate pricing method: (Add for materials)									
0710	5 person crew and equipment	B-61	1	40	Day		1,925	320	2,245	3,225

31 45 Vibroflotation and Densification

31 45 13 – Vibroflotation

31 45 13.10 Vibroflotation Densification

0010	**VIBROFLOTATION DENSIFICATION** R314513-90									
0900	Vibroflotation compacted sand cylinder, minimum	B-60	750	.075	V.L.F.		3.95	3.27	7.22	9.5
0950	Maximum		325	.172			9.10	7.55	16.65	22
1100	Vibro replacement compacted stone cylinder, minimum		500	.112			5.90	4.91	10.81	14.2
1150	Maximum		250	.224			11.85	9.80	21.65	28.5
1300	Mobilization and demobilization, minimum		.47	119	Total		6,300	5,225	11,525	15,100
1400	Maximum		.14	400	"		21,200	17,500	38,700	51,000

31 46 Needle Beams

31 46 13 – Cantilever Needle Beams

31 46 13.10 Needle Beams

0010	**NEEDLE BEAMS**									
0011	Incl. wood shoring 10′ x 10′ opening									
0400	Block, concrete, 8″ thick	B-9	7.10	5.634	Ea.	67	259	47	373	51
0420	12″ thick		6.70	5.970		84	275	49.50	408.50	55
0800	Brick, 4″ thick with 8″ backup block		5.70	7.018		84	325	58.50	467.50	63
1000	Brick, solid, 8″ thick		6.20	6.452		67	297	53.50	417.50	57
1040	12″ thick		4.90	8.163		84	375	68	527	72
1080	16″ thick		4.50	8.889		117	410	74	601	82
2000	Add for additional floors of shoring	B-1	6	4		67	185		252	35

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31 48 Underpinning

31 48 13 – Underpinning Piers

31 48 13.10 Underpinning Foundations	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **UNDERPINNING FOUNDATIONS**									
0011 Including excavation,									
0020 forming, reinforcing, concrete and equipment									
0100 5′ to 16′ below grade, 100 to 500 C.Y.	B-52	2.30	24.348	C.Y.	345	1,275	257	1,877	2,525
0200 Over 500 C.Y.		2.50	22.400		315	1,175	236	1,726	2,325
0400 16′ to 25′ below grade, 100 to 500 C.Y.		2	28		380	1,450	295	2,125	2,925
0500 Over 500 C.Y.		2.10	26.667		360	1,400	281	2,041	2,775
0700 26′ to 40′ below grade, 100 to 500 C.Y.		1.60	35		415	1,825	370	2,610	3,575
0800 Over 500 C.Y.		1.80	31.111		380	1,625	330	2,335	3,175
0900 For under 50 C.Y., add					10%	40%			
1000 For 50 C.Y. to 100 C.Y., add					5%	20%			

31 52 Cofferdams

31 52 16 – Timber Cofferdams

31 52 16.10 Cofferdams	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **COFFERDAMS**									
0011 Incl. mobilization and temporary sheeting									
0080 Soldier beams & lagging H-piles with 3″ wood sheeting									
0090 horizontal between piles, including removal of wales & braces									
0100 No hydrostatic head, 15′ deep, 1 line of braces, minimum	B-50	545	.206	S.F.	13.75	11.55	4.96	30.26	38
0200 Maximum		495	.226		15.25	12.70	5.45	33.40	42
0400 15′ to 22′ deep with 2 lines of braces, 10″ H, minimum		360	.311		16.15	17.50	7.50	41.15	52.50
0500 Maximum		330	.339		18.30	19.10	8.20	45.60	58
0700 23′ to 35′ deep with 3 lines of braces, 12″ H, minimum		325	.345		21	19.40	8.30	48.70	62
0800 Maximum		295	.380		23	21.50	9.15	53.65	67.50
1000 36′ to 45′ deep with 4 lines of braces, 14″ H, minimum		290	.386		23.50	21.50	9.35	54.35	69.50
1100 Maximum		265	.423		25	24	10.20	59.20	75
1300 No hydrostatic head, left in place, 15′ deep, 1 line of braces, min.		635	.176		18.30	9.90	4.26	32.46	40
1400 Maximum		575	.195		19.65	10.95	4.70	35.30	43.50
1600 15′ to 22′ deep with 2 lines of braces, minimum		455	.246		27.50	13.85	5.95	47.30	57.50
1700 Maximum		415	.270		30.50	15.20	6.50	52.20	63.50
1900 23′ to 35′ deep with 3 lines of braces, minimum		420	.267		32.50	15	6.45	53.95	66
2000 Maximum		380	.295		36	16.55	7.10	59.65	73.50
2200 36′ to 45′ deep with 4 lines of braces, minimum		385	.291		39.50	16.35	7.05	62.90	76
2300 Maximum		350	.320		46	18	7.75	71.75	86.50
2350 Lagging only, 3″ thick wood between piles 8′ OC, minimum	B-46	400	.120		3.05	6.25	.13	9.43	13.05
2370 Maximum		250	.192		4.58	10.05	.20	14.83	20.50
2400 Open sheeting no bracing, for trenches to 10′ deep, min.		1736	.028		1.37	1.44	.03	2.84	3.74
2450 Maximum		1510	.032		1.53	1.66	.03	3.22	4.25
2500 Tie-back method, add to open sheeting, add, minimum				S.F.				20%	20%
2550 Maximum				″				60%	60%
2700 Tie-backs only, based on tie-backs total length, minimum	B-46	86.80	.553	L.F.	19.65	29	.58	49.23	66
2750 Maximum		38.50	1.247	″	34.50	65	1.31	100.81	138
3500 Tie-backs only, typical average, 25′ long		2	24	Ea.	865	1,250	25	2,140	2,875
3600 35′ long		1.58	30.380	″	1,150	1,575	32	2,757	3,725
6000 See also Section 31 41 16.10									

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31 56 Slurry Walls

31 56 23 – Lean Concrete Slurry Walls

31 56 23.20 Slurry Trench	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **SLURRY TRENCH**									
0011 Excavated slurry trench in wet soils									
0020 backfilled with 3,000 psi concrete, no reinforcing steel									
0050 Minimum	C-7	333	.216	C.F.	11.80	10.65	7.10	29.55	36
0100 Maximum		200	.360	"	19.80	17.75	11.85	49.40	61.
0200 Alternate pricing method, minimum		150	.480	S.F.	23.50	23.50	15.80	62.80	78.
0300 Maximum		120	.600		35.50	29.50	19.75	84.75	105
0500 Reinforced slurry trench, minimum	B-48	177	.316		17.70	16.20	6.90	40.80	51
0600 Maximum	"	69	.812		59	41.50	17.75	118.25	147
0800 Haul for disposal, 2 mile haul, excavated material, add	B-34B	99	.081	C.Y.		4.29	7.75	12.04	14.
0900 Haul bentonite castings for disposal, add	"	40	.200	"		10.60	19.20	29.80	37

31 62 Driven Piles

31 62 13 – Concrete Piles

31 62 13.23 Prestressed Concrete Piles

0010 **PRESTRESSED CONCRETE PILES**, 200 piles									
0020 Unless specified otherwise, not incl. pile caps or mobilization									
2200 Precast, prestressed, 50′ long, cylinder, 12″ diam., 2-3/8″ wall	B-19	720	.089	V.L.F.	35	5.25	2.92	43.17	50
2300 14″ diameter, 2-1/2″ wall		680	.094		36.50	5.55	3.09	45.14	52.5
2500 16″ diameter, 3″ wall		640	.100		49.50	5.90	3.29	58.69	67
2600 18″ diameter, 3-1/2″ wall	B-19A	600	.107		62.50	6.30	5	73.80	83.5
2800 20″ diameter, 4″ wall		560	.114		54.50	6.75	5.35	66.60	76
2900 24″ diameter, 5″ wall		520	.123		77.50	7.30	5.80	90.60	103
3100 Precast, prestressed, 40′ long, 10″ thick, square	B-19	700	.091		13.95	5.40	3	22.35	27
3200 12″ thick, square		680	.094		25	5.55	3.09	33.64	39.5
3400 14″ thick, square		600	.107		28	6.30	3.51	37.81	44.5
3500 Octagonal		640	.100		27.50	5.90	3.29	36.69	43
3700 16″ thick, square		560	.114		29.50	6.75	3.76	40.01	47
3800 Octagonal		600	.107		33	6.30	3.51	42.81	50
4000 18″ thick, square	B-19A	520	.123	V.L.F.	51	7.30	5.80	64.10	73.5
4100 Octagonal	B-19	560	.114		44	6.75	3.76	54.51	63
4300 20″ thick, square	B-19A	480	.133		47	7.90	6.25	61.15	70.50
4400 Octagonal	B-19	520	.123		49.50	7.30	4.04	60.84	70
4600 24″ thick, square	B-19A	440	.145		67.50	8.60	6.85	82.95	94.50
4700 Octagonal	B-19	480	.133		58.50	7.90	4.38	70.78	81
4730 Precast, prestressed, 60′ long, 10″ thick, square		700	.091		14.65	5.40	3	23.05	27.50
4740 12″ thick, square (60′ long)		680	.094		26	5.55	3.09	34.64	40.50
4750 Mobilization for 10,000 L.F. pile job, add		3300	.019			1.15	.64	1.79	2.45
4800 25,000 L.F. pile job, add		8500	.008			.45	.25	.70	.95

31 62 16 – Steel Piles

31 62 16.13 Steel Piles

0010 **STEEL PILES**									
0100 Step tapered, round, concrete filled									
0110 8″ tip, 12″ butt, 60 ton capacity, 30′ depth	B-19	760	.084	V.L.F.	17.05	4.99	2.77	24.81	29.50
0120 60′ depth with extension		740	.086		36.50	5.10	2.84	44.44	51
0130 80′ depth with extensions		700	.091		56.50	5.40	3	64.90	73.50
0250 "H" Sections, 50′ long, HP8 x 36		640	.100		17.05	5.90	3.29	26.24	31.50
0400 HP10 x 42		610	.105		20	6.20	3.45	29.65	35
0500 HP10 x 57		610	.105		26	6.20	3.45	35.65	41.50
0700 HP12 x 53		590	.108		27	6.40	3.56	36.96	43.50

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31 62 16 – Steel Piles

31 62 16.13 Steel Piles	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0800 HP12 x 74	B-19A	590	.108	V.L.F.	33	6.40	5.10	44.50	52
1000 HP14 x 73		540	.119		35	7	5.55	47.55	55.50
1100 HP14 x 89		540	.119		45	7	5.55	57.55	66.50
1300 HP14 x 102		510	.125		51	7.45	5.90	64.35	74.50
1400 HP14 x 117		510	.125		59	7.45	5.90	72.35	83
1600 Splice on standard points, not in leads, 8" or 10"	1 Sswl	5	1.600	Ea.	113	99		212	277
1700 12" or 14"		4	2		159	124		283	365
1900 Heavy duty points, not in leads, 10" wide		4	2		180	124		304	390
2100 14" wide		3.50	2.286		222	142		364	465

31 62 19 – Timber Piles

31 62 19.10 Wood Piles

0010 **WOOD PILES**									
0011 Friction or end bearing, not including									
0050 mobilization or demobilization									
0100 ACZA treated piles, 1.0 lb/C.F., up to 30' long, 12" butts, 8" points	B-19	625	.102	V.L.F.	14.50	6.05	3.36	23.91	29
0200 30' to 39' long, 12" butts, 8" points		700	.091		15.30	5.40	3	23.70	28.50
0300 40' to 49' long, 12" butts, 7" points		720	.089		16.10	5.25	2.92	24.27	29
0400 50' to 59' long, 13" butts, 7" points		800	.080		22.50	4.74	2.63	29.87	35
0500 60' to 69' long, 13" butts, 7" points	B-19	840	.076	V.L.F.	26	4.51	2.50	33.01	38
0600 70' to 80' long, 13" butts, 6" points	"	840	.076	"	26	4.51	2.50	33.01	38.50
0800 ACZA Treated piles, 1.5 lb./C.F.									
0810 friction or end bearing, ASTM class B									
1000 Up to 30' long, 12" butts, 8" points	B-19	625	.102	V.L.F.	17.20	6.05	3.36	26.61	32
1100 30' to 39' long, 12" butts, 8" points		700	.091		17.80	5.40	3	26.20	31
1200 40' to 49' long, 12" butts, 7" points		720	.089		24.50	5.25	2.92	32.67	38.50
1300 50' to 59' long, 13" butts, 7" points		800	.080		26.50	4.74	2.63	33.87	39
1400 60' to 69' long, 13" butts, 6" points	B-19A	840	.076		24	4.51	3.58	32.09	37.50
1500 70' to 80' long, 13" butts, 6" points	"	840	.076		25	4.51	3.58	33.09	38.50
1600 ACZA treated piles, 2.5 lb./C.F.									
1610 8" butts, 10' long	B-19	400	.160	V.L.F.	7.75	9.50	5.25	22.50	29
1620 11' to 16' long		500	.128		7.75	7.60	4.21	19.56	24.50
1630 17' to 20' long		575	.111		7.75	6.60	3.66	18.01	22.50
1640 10" butts, 10' to 16' long		500	.128		22.50	7.60	4.21	34.31	41
1650 17' to 20' long		575	.111		22.50	6.60	3.66	32.76	39
1660 21' to 40' long		700	.091		22.50	5.40	3	30.90	36.50
1670 12" butts, 10' to 20' long		575	.111		28	6.60	3.66	38.26	44.50
1680 21' to 35' long		650	.098		28	5.85	3.24	37.09	43.50
1690 36' to 40' long		700	.091		28.50	5.40	3	36.90	43
1695 14" butts, to 40' long		700	.091		16.05	5.40	3	24.45	29
1700 Boot for pile tip, minimum	1 Pile	27	.296	Ea.	45.50	17.25		62.75	76.50
1800 Maximum		21	.381		136	22		158	185
2000 Point for pile tip, minimum		20	.400		45.50	23.50		69	86
2100 Maximum		15	.533		163	31		194	228
2300 Splice for piles over 50' long, minimum	B-46	35	1.371		57	71.50	1.44	129.94	173
2400 Maximum		20	2.400		74.50	125	2.52	202.02	276
2600 Concrete encasement with wire mesh and tube		331	.145	V.L.F.	74.50	7.55	.15	82.20	93.50
2700 Mobilization for 10,000 L.F. pile job, add	B-19	3300	.019			1.15	.64	1.79	2.45
2800 25,000 L.F. pile job, add	"	8500	.008			.45	.25	.70	.95

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31 62 Driven Piles

31 62 23 – Composite Piles

31 62 23.13 Concrete-Filled Steel Piles	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **CONCRETE-FILLED STEEL PILES** no mobilization or demobilization									
2600 Pipe piles, 50′ L, 8″ diam., 29 lb./L.F., no concrete	B-19	500	.128	V.L.F.	18.70	7.60	4.21	30.51	36.50
2700 Concrete filled		460	.139		23.50	8.25	4.57	36.32	43.50
2900 10″ diameter, 34 lb./L.F., no concrete		500	.128		22.50	7.60	4.21	34.31	41
3000 Concrete filled		450	.142		28.50	8.40	4.67	41.57	49
3200 12″ diameter, 44 lb./L.F., no concrete	B-19	475	.135	V.L.F.	35	8	4.43	47.43	55.50
3300 Concrete filled		415	.154		34.50	9.15	5.05	48.70	57.50
3500 14″ diameter, 46 lb./L.F., no concrete		430	.149		31.50	8.80	4.89	45.19	53.50
3600 Concrete filled		355	.180		37.50	10.70	5.90	54.10	64.50
3800 16″ diameter, 52 lb./L.F., no concrete		385	.166		38.50	9.85	5.45	53.80	63
3900 Concrete filled		335	.191		51.50	11.30	6.30	69.10	80.50
4100 18″ diameter, 59 lb./L.F., no concrete		355	.180		44	10.70	5.90	60.60	71.50
4200 Concrete filled		310	.206		58.50	12.25	6.80	77.55	90.50
4400 Splices for pipe piles, stl., not in leads, 8″ diameter	1 Sswl	5	1.600	Ea.	79.50	99		178.50	241
4410 10″ diameter		4.75	1.684		78.50	104		182.50	247
4430 12″ diameter		4.50	1.778		98.50	110		208.50	278
4500 14″ diameter		4.25	1.882		150	117		267	345
4600 16″ diameter		4	2		157	124		281	365
4650 18″ diameter		3.75	2.133		175	132		307	395
4710 Steel pipe pile backing rings, w/spacer, 8″ diameter		12	.667		8.25	41.50		49.75	72.50
4720 10″ diameter		12	.667		10.85	41.50		52.35	75.50
4730 12″ diameter		10	.800		13.05	49.50		62.55	91
4740 14″ diameter		9	.889		16.70	55		71.70	103
4750 16″ diameter		8	1		19.75	62		81.75	117
4760 18″ diameter		6	1.333		21.50	82.50		104	151
4800 Points, standard, 8″ diameter		4.61	1.735		90.50	108		198.50	266
4840 10″ diameter		4.45	1.798		119	111		230	305
4880 12″ diameter		4.25	1.882		148	117		265	345
4900 14″ diameter		4.05	1.975		198	122		320	405
5000 16″ diameter		3.37	2.374		280	147		427	535
5050 18″ diameter		3.50	2.286		370	142		512	625
5200 Points, heavy duty, 10″ diameter		2.90	2.759		227	171		398	515
5240 12″ diameter		2.95	2.712		280	168		448	570
5260 14″ diameter		2.95	2.712		277	168		445	565
5280 16″ diameter		2.95	2.712		330	168		498	625
5290 18″ diameter		2.80	2.857		395	177		572	710
5500 For reinforcing steel, add		1150	.007	Lb.	.71	.43		1.14	1.44
5700 For thick wall sections, add				″	.62			.62	.68

31 63 Bored Piles

31 63 26 – Drilled Caissons

31 63 26.13 Fixed End Caisson Piles

0010 **FIXED END CAISSON PILES** R316326-60									
0015 Including excavation, concrete, 50 lb. reinforcing									
0020 per C.Y., not incl. mobilization, boulder removal, disposal									
0100 Open style, machine drilled, to 50′ deep, in stable ground, no									
0110 casings or ground water, 18″ diam., 0.065 C.Y./L.F.	B-43	200	.240	V.L.F.	12.70	12.05	3.93	28.68	36
0200 24″ diameter, 0.116 C.Y./L.F.		190	.253		22.50	12.70	4.14	39.34	48.50
0300 30″ diameter, 0.182 C.Y./L.F.		150	.320		35.50	16.10	5.25	56.85	69
0400 36″ diameter, 0.262 C.Y./L.F.		125	.384		51	19.30	6.30	76.60	92.50

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31 63 26 – Drilled Caissons

	31 63 26.13 Fixed End Caisson Piles	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0500	48" diameter, 0.465 C.Y./L.F.	B-43	100	.480	V.L.F.	91	24	7.85	122.85	145
0600	60" diameter, 0.727 C.Y./L.F.		90	.533		142	27	8.75	177.75	207
0700	72" diameter, 1.05 C.Y./L.F.		80	.600		206	30	9.80	245.80	282
0800	84" diameter, 1.43 C.Y./L.F.		75	.640		280	32	10.50	322.50	370
1000	For bell excavation and concrete, add									
1020	4' bell diameter, 24" shaft, 0.444 C.Y.	B-43	20	2.400	Ea.	71	121	39.50	231.50	300
1040	6' bell diameter, 30" shaft, 1.57 C.Y.		5.70	8.421		250	425	138	813	1,050
1060	8' bell diameter, 36" shaft, 3.72 C.Y.		2.40	20		595	1,000	325	1,920	2,500
1080	9' bell diameter, 48" shaft, 4.48 C.Y.		2	24		715	1,200	395	2,310	3,025
1100	10' bell diameter, 60" shaft, 5.24 C.Y.		1.70	28.235		835	1,425	460	2,720	3,550
1120	12' bell diameter, 72" shaft, 8.74 C.Y.		1	48		1,400	2,425	785	4,610	6,000
1140	14' bell diameter, 84" shaft, 13.6 C.Y.		.70	68.571		2,175	3,450	1,125	6,750	8,725
1200	Open style, machine drilled, to 50' deep, in wet ground, pulled									
1300	casing and pumping, 18" diameter, 0.065 C.Y./L.F.	B-48	160	.350	V.L.F.	12.70	17.95	7.65	38.30	49
1400	24" diameter, 0.116 C.Y./L.F.		125	.448		22.50	23	9.80	55.30	70
1500	30" diameter, 0.182 C.Y./L.F.		85	.659		35.50	34	14.40	83.90	105
1600	36" diameter, 0.262 C.Y./L.F.		60	.933		51	48	20.50	119.50	150
1700	48" diameter, 0.465 C.Y./L.F.	B-49	55	1.600		91	86	60.50	237.50	296
1800	60" diameter, 0.727 C.Y./L.F.		35	2.514		142	135	94.50	371.50	465
1900	72" diameter, 1.05 C.Y./L.F.		30	2.933		206	158	111	475	585
2000	84" diameter, 1.43 C.Y./L.F.		25	3.520		280	190	133	603	740
2100	For bell excavation and concrete, add									
2120	4' bell diameter, 24" shaft, 0.444 C.Y.	B-48	19.80	2.828	Ea.	71	145	62	278	360
2140	6' bell diameter, 30" shaft, 1.57 C.Y.		5.70	9.825		250	505	215	970	1,250
2160	8' bell diameter, 36" shaft, 3.72 C.Y.		2.40	23.333		595	1,200	510	2,305	2,975
2180	9' bell diameter, 48" shaft, 4.48 C.Y.	B-49	3.30	26.667		715	1,425	1,000	3,140	4,025
2200	10' bell diameter, 60" shaft, 5.24 C.Y.		2.80	31.429		835	1,700	1,175	3,710	4,775
2220	12' bell diameter, 72" shaft, 8.74 C.Y.		1.60	55		1,400	2,975	2,075	6,450	8,250
2240	14' bell diameter, 84" shaft, 13.6 C.Y.		1	88		2,175	4,750	3,325	10,250	13,100
2300	Open style, machine drilled, to 50' deep, in soft rocks and									
2400	medium hard shales, 18" diameter, 0.065 C.Y./L.F.	B-49	50	1.760	V.L.F.	12.70	95	66.50	174.20	229
2500	24" diameter, 0.116 C.Y./L.F.		30	2.933		22.50	158	111	291.50	385
2600	30" diameter, 0.182 C.Y./L.F.		20	4.400		35.50	237	166	438.50	575
2700	36" diameter, 0.262 C.Y./L.F.		15	5.867		51	315	221	587	775
2800	48" diameter, 0.465 C.Y./L.F.		10	8.800		91	475	330	896	1,175
2900	60" diameter, 0.727 C.Y./L.F.		7	12.571		142	675	475	1,292	1,700
3000	72" diameter, 1.05 C.Y./L.F.		6	14.667		206	790	555	1,551	2,000
3100	84" diameter, 1.43 C.Y./L.F.		5	17.600		280	950	665	1,895	2,475
3200	For bell excavation and concrete, add									
3220	4' bell diameter, 24" shaft, 0.444 C.Y.	B-49	10.90	8.073	Ea.	71	435	305	811	1,075
3240	6' bell diameter, 30" shaft, 1.57 C.Y.		3.10	28.387		250	1,525	1,075	2,850	3,750
3260	8' bell diameter, 36" shaft, 3.72 C.Y.		1.30	67.692		595	3,650	2,550	6,795	8,925
3280	9' bell diameter, 48" shaft, 4.48 C.Y.		1.10	80		715	4,300	3,025	8,040	10,600
3300	10' bell diameter, 60" shaft, 5.24 C.Y.		.90	97.778		835	5,275	3,675	9,785	12,900
3320	12' bell diameter, 72" shaft, 8.74 C.Y.		.60	147		1,400	7,900	5,525	14,825	19,500
3340	14' bell diameter, 84" shaft, 13.6 C.Y.		.40	220		2,175	11,900	8,300	22,375	29,300
3600	For rock excavation, sockets, add, minimum		120	.733	C.F.		39.50	27.50	67	90
3650	Average		95	.926			50	35	85	114
3700	Maximum		48	1.833			99	69	168	224
3900	For 50' to 100' deep, add				V.L.F.				7%	7%
4000	For 100' to 150' deep, add								25%	25%
4100	For 150' to 200' deep, add								30%	30%
4200	For casings left in place, add				Lb.	1.34			1.34	1.47

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31 63 26 – Drilled Caissons

	31 63 26.13 Fixed End Caisson Piles	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4300	For other than 50 lb. reinf. per C.Y., add or deduct				Lb.	1.26			1.26	1.3
4400	For steel I-beam cores, add	B-49	8.30	10.602	Ton	2,625	570	400	3,595	4,175
4500	Load and haul excess excavation, 2 miles	B-34B	178	.045	L.C.Y.		2.38	4.31	6.69	8.3
4600	For mobilization, 50 mile radius, rig to 36"	B-43	2	24	Ea.		1,200	395	1,595	2,225
4650	Rig to 84"	B-48	1.75	32			1,650	700	2,350	3,225
4700	For low headroom, add								50%	50%
4750	For difficult access, add								25%	25%
5000	Bottom inspection	1 Skwk	1.20	6.667			395		395	590

31 63 26.16 Concrete Caissons for Marine Construction

0010	**CONCRETE CAISSONS FOR MARINE CONSTRUCTION**									
0100	Caissons, incl. mobilization and demobilization, up to 50 miles									
0200	Uncased shafts, 30 to 80 tons cap., 17" diam., 10' depth	B-44	88	.727	V.L.F.	32	42.50	24	98.50	126
0300	25' depth	B-44	165	.388	V.L.F.	23	22.50	12.90	58.40	73.5
0400	80 to 150 ton capacity, 22" diameter, 10' depth		80	.800		40	46.50	26.50	113	145
0500	20' depth		130	.492		32	28.50	16.35	76.85	96.5
0700	Cased shafts, 10 to 30 ton capacity, 10-5/8" diam., 20' depth		175	.366		23	21.50	12.15	56.65	71
0800	30' depth		240	.267		21.50	15.50	8.85	45.85	57
0850	30 to 60 ton capacity, 12" diameter, 20' depth		160	.400		32	23.50	13.30	68.80	85
0900	40' depth		230	.278		24.50	16.20	9.25	49.95	61.5
1000	80 to 100 ton capacity, 16" diameter, 20' depth		160	.400		45.50	23.50	13.30	82.30	100
1100	40' depth		230	.278		42.50	16.20	9.25	67.95	81.5
1200	110 to 140 ton capacity, 17-5/8" diameter, 20' depth		160	.400		49	23.50	13.30	85.80	104
1300	40' depth		230	.278		45.50	16.20	9.25	70.95	84.5
1400	140 to 175 ton capacity, 19" diameter, 20' depth		130	.492		53	28.50	16.35	97.85	120
1500	40' depth		210	.305		49	17.75	10.15	76.90	92
1700	Over 30' long, L.F. cost tends to be lower									
1900	Maximum depth is about 90'									

31 63 29 – Drilled Concrete Piers and Shafts

31 63 29.13 Uncased Drilled Concrete Piers

0010	**UNCASED DRILLED CONCRETE PIERS**									
0020	Unless specified otherwise, not incl. pile caps or mobilization									
0050	Cast in place augered piles, no casing or reinforcing									
0060	8" diameter	B-43	540	.089	V.L.F.	4.10	4.47	1.46	10.03	12.7
0065	10" diameter		480	.100		6.50	5.05	1.64	13.19	16.4
0070	12" diameter		420	.114		9.20	5.75	1.87	16.82	20.5
0075	14" diameter		360	.133		12.40	6.70	2.18	21.28	26
0080	16" diameter		300	.160		16.70	8.05	2.62	27.37	33
0085	18" diameter		240	.200		20.50	10.05	3.27	33.82	41
0100	Cast in place, thin wall shell pile, straight sided,									
0110	not incl. reinforcing, 8" diam., 16 ga., 5.8 lb./L.F.	B-19	700	.091	V.L.F.	9.25	5.40	3	17.65	21.5
0200	10" diameter, 16 ga. corrugated, 7.3 lb./L.F.		650	.098		12.10	5.85	3.24	21.19	26
0300	12" diameter, 16 ga. corrugated, 8.7 lb./L.F.		600	.107		15.70	6.30	3.51	25.51	31
0400	14" diameter, 16 ga. corrugated, 10.0 lb./L.F.		550	.116		18.45	6.90	3.82	29.17	35
0500	16" diameter, 16 ga. corrugated, 11.6 lb./L.F.		500	.128		22.50	7.60	4.21	34.31	41
0800	Cast in place friction pile, 50' long, fluted,									
0810	tapered steel, 4,000 psi concrete, no reinforcing									
0900	12" diameter, 7 ga.	B-19	600	.107	V.L.F.	28.50	6.30	3.51	38.31	44.5
1000	14" diameter, 7 ga.	"	560	.114	"	31	6.75	3.76	41.51	48.5
1100	16" diameter, 7 ga.	B-19	520	.123	V.L.F.	36.50	7.30	4.04	47.84	55.5
1200	18" diameter, 7 ga.	"	480	.133	"	42.50	7.90	4.38	54.78	64
1300	End bearing, fluted, constant diameter,									
1320	4,000 psi concrete, no reinforcing									

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31 63 29 – Drilled Concrete Piers and Shafts

31 63 29.13 Uncased Drilled Concrete Piers		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1340	12" diameter, 7 ga.	B-19	600	.107	V.L.F.	30	6.30	3.51	39.81	46.50
1360	14" diameter, 7 ga.		560	.114		37.50	6.75	3.76	48.01	55.50
1380	16" diameter, 7 ga.		520	.123		43	7.30	4.04	54.34	63
1400	18" diameter, 7 ga.		480	.133		47.50	7.90	4.38	59.78	69.50
31 63 29.20 Cast In Place Piles, Adds										
0010	**CAST IN PLACE PILES, ADDS**									
1500	For reinforcing steel, add				Lb.	1.45			1.45	1.60
1700	For ball or pedestal end, add	B-19	11	5.818	C.Y.	145	345	191	681	895
1900	For lengths above 60', concrete, add	"	11	5.818	"	152	345	191	688	900
2000	For steel thin shell, pipe only				Lb.	1.48			1.48	1.63

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Division Notes

	CREW	DAILY OUTPUT	LABOR-HOURS	UNIT	BARE COSTS MAT.	BARE COSTS LABOR	BARE COSTS EQUIP.	BARE COSTS TOTAL	TOTAL INCL O&P

Estimating Tips

32 01 00 Operations and Maintenance of Exterior Improvements

- Recycling of asphalt pavement is becoming very popular and is an alternative to removal and replacement. It can be a good value engineering proposal if removed pavement can be recycled, either at the project site or at another site that is reasonably close to the project site. Sections on repair of flexible and rigid pavement are included.

32 10 00 Bases, Ballasts, and Paving

- When estimating paving, keep in mind the project schedule. Also note that prices for asphalt and concrete are generally higher in the cold seasons. Lines for pavement markings, including tactile warning systems and fence lines, are included.

32 90 00 Planting

- The timing of planting and guarantee specifications often dictate the costs for establishing tree and shrub growth and a stand of grass or ground cover. Establish the work performance schedule to coincide with the local planting season. Maintenance and growth guarantees can add 20–100% to the total landscaping cost and can be contractually cumbersome. The cost to replace trees and shrubs can be as high as 5% of the total cost, depending on the planting zone, soil conditions, and time of year.

Reference Numbers

Reference numbers are shown at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear. ■

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32 01 11 – Paving Cleaning

	32 01 11.51 Rubber and Paint Removal From Paving	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**RUBBER AND PAINT REMOVAL FROM PAVING**									
0015	Does not include traffic control costs									
0020	See other items in Section 32 17 23.13									
0100	Remove permanent painted traffic lines and markings	B-78A	500	.016	C.L.F.		.91	3.25	4.16	4.9
0200	Temporary traffic line tape	2 Clab	1500	.011	L.F.		.49		.49	.7
0300	Thermoplastic traffic lines and markings	B-79A	500	.024	C.L.F.		1.37	4.91	6.28	7.4
0400	Painted pavement markings	B-78B	500	.036	S.F.		1.69	.89	2.58	3.4
1000	Prepare and clean, 25,000 S.Y.	B-91A	7.36	2.174	Mile		110	84.50	194.50	257

32 01 13 – Flexible Paving Surface Treatment

32 01 13.61 Slurry Seal (Latex Modified)

0010	**SLURRY SEAL (LATEX MODIFIED)**									
0011	Chip seal, slurry seal, and microsurfacing, see section 32 12 36									
3780	Rubberized asphalt (latex) seal	B-45	5000	.003	S.Y.	1.42	.18	.17	1.77	2.0
5400	Thermoplastic coal-tar, Type I, small or irregular area	B-90	2400	.027		3	1.35	.96	5.31	6.3
5450	Roadway or large area		8000	.008		3	.40	.29	3.69	4.2
5500	Type II, small or irregular area		2400	.027		3.83	1.35	.96	6.14	7.3
6000	Gravel surfacing on asphalt, screened and rolled	B-11L	160	.100	C.Y.	16.25	5.30	4.82	26.37	31
7000	For subbase treatment, see Section 31 32 13									

32 01 13.64 Sand Seal

0010	**SAND SEAL**									
2080	Sand sealing, sharp sand, asphalt emulsion, small area	B-91	10000	.006	S.Y.	1.56	.35	.24	2.15	2.5
2120	Roadway or large area	B-91	18000	.004	S.Y.	1.34	.19	.14	1.67	1.9

32 01 13.66 Fog Seal

0010	**FOG SEAL**									
0012	Sealcoating, 2 coat coal tar pitch emulsion over 10,000 S.Y.	B-45	5000	.003	S.Y.	.89	.18	.17	1.24	1.4
0030	1,000 to 10,000 S.Y.	"	3000	.005		.89	.30	.29	1.48	1.7
0100	Under 1,000 S.Y.	B-1	1050	.023		.89	1.06		1.95	2.5
0300	Petroleum resistant, over 10,000 S.Y.	B-45	5000	.003		1.24	.18	.17	1.59	1.8
0320	1,000 to 10,000 S.Y.	"	3000	.005		1.24	.30	.29	1.83	2.1
0400	Under 1,000 S.Y.	B-1	1050	.023		1.24	1.06		2.30	2.9
0600	Non-skid pavement renewal, over 10,000 S.Y.	B-45	5000	.003		1.30	.18	.17	1.65	1.8
0620	1,000 to 10,000 S.Y.	"	3000	.005		1.30	.30	.29	1.89	2.1
0700	Under 1,000 S.Y.	B-1	1050	.023		1.30	1.06		2.36	3
0800	Prepare and clean surface for above	A-2	8545	.003			.13	.04	.17	.2
1000	Hand seal asphalt curbing	B-1	4420	.005	L.F.	.68	.25		.93	1.1
1900	Asphalt surface treatment, single course, small area									
1901	0.30 gal./S.Y. asphalt material, 20 lb./S.Y. aggregate	B-91	5000	.013	S.Y.	1.33	.69	.49	2.51	3.0
1910	Roadway or large area		10000	.006	"	1.22	.35	.24	1.81	2.1
1920	Bituminous surface treatment, 12' wide roadway, single course		7	9.143	Mile	7,400	495	350	8,245	9,275
1950	Asphalt surface treatment, dbl. course for small area		3000	.021	S.Y.	2.66	1.16	.81	4.63	5.5
1960	Roadway or large area		6000	.011		2.39	.58	.41	3.38	3.9
1980	Asphalt surface treatment, single course, for shoulders		7500	.009		1.30	.46	.33	2.09	2.4

32 01 19 – Rigid Paving Surface Treatment

32 01 19.61 Sealing of Joints In Rigid Paving

0010	**SEALING OF JOINTS IN RIGID PAVING**									
1000	Sealing, concrete pavement, preformed elastomeric	B-77	500	.080	L.F.	3.79	3.76	1.62	9.17	11.
2000	Waterproofing, membrane, tar and fabric, small area	B-63	233	.172	S.Y.	16.80	8.20	1.13	26.13	32
2500	Large area		1435	.028		14.10	1.33	.18	15.61	17.
3000	Preformed rubberized asphalt, small area		100	.400		20.50	19.15	2.63	42.28	54
3500	Large area		367	.109		18.75	5.20	.72	24.67	29

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32 06 Schedules for Exterior Improvements

32 06 10 – Schedules for Bases, Ballasts, and Paving

32 06 10.10 Sidewalks, Driveways and Patios	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **SIDEWALKS, DRIVEWAYS AND PATIOS** No base									
0020 Asphaltic concrete, 2" thick	B-37	720	.067	S.Y.	7.20	3.19	.37	10.76	13.10
0100 2-1/2" thick	"	660	.073	"	9.15	3.48	.40	13.03	15.70
0300 Concrete, 3,000 psi, CIP, 6 x 6 - W1.4 x W1.4 mesh,									
0310 broomed finish, no base, 4" thick	B-24	600	.040	S.F.	2.88	2.07		4.95	6.25
0350 5" thick	"	545	.044	"	3.54	2.28		5.82	7.25
0400 6" thick	B-24	510	.047	S.F.	4.13	2.43		6.56	8.15
0450 For bank run gravel base, 4" thick, add	B-18	2500	.010		.64	.44	.05	1.13	1.42
0520 8" thick, add	"	1600	.015		1.28	.69	.09	2.06	2.53
0550 Exposed aggregate finish, add to above, minimum	B-24	1875	.013		.09	.66		.75	1.08
0600 Maximum	"	455	.053		.30	2.73		3.03	4.36
1000 Crushed stone, 1" thick, white marble	2 Clab	1700	.009		.56	.43		.99	1.25
1050 Bluestone	"	1700	.009		.20	.43		.63	.86
1700 Redwood, prefabricated, 4' x 4' sections	2 Carp	316	.051		13.10	2.85		15.95	18.65
1750 Redwood planks, 1" thick, on sleepers	"	240	.067		13.10	3.75		16.85	20
2250 Stone dust, 4" thick	B-62	900	.027	S.Y.	6.25	1.32	.29	7.86	9.20
32 06 10.20 Steps									
0010 **STEPS**									
0011 Incl. excav., borrow & concrete base as required									
0100 Brick steps	B-24	35	.686	LF Riser	27.50	35.50		63	83
0200 Railroad ties	2 Clab	25	.640		4.33	29		33.33	48.50
0300 Bluestone treads, 12" x 2" or 12" x 1-1/2"	B-24	30	.800		54	41.50		95.50	120
0500 Concrete, cast in place, see Section 03 30 53.40									
0600 Precast concrete, see Section 03 41 23.50									
4025 Steel edge strips, incl. stakes, 1/4" x 5"	B-1	390	.062	L.F.	5.60	2.85		8.45	10.45
4050 Edging, landscape timber or railroad ties, 6" x 8"	2 Carp	170	.094	"	3.25	5.30		8.55	11.50

32 11 Base Courses

32 11 23 – Aggregate Base Courses

32 11 23.23 Base Course Drainage Layers	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **BASE COURSE DRAINAGE LAYERS**									
0011 For Soil Stabilization, see Section 31 32									
0012 For roadways and large areas									
0050 Crushed 3/4" stone base, compacted, 3" deep	B-36C	5200	.008	S.Y.	1.99	.43	.71	3.13	3.61
0100 6" deep		5000	.008		3.98	.45	.74	5.17	5.85
0200 9" deep		4600	.009		5.95	.49	.80	7.24	8.15
0300 12" deep		4200	.010		7.95	.54	.88	9.37	10.50
0301 Crushed 1-1/2" stone base, compacted to 4" deep	B-36B	6000	.011		5.50	.58	.73	6.81	7.70
0302 6" deep		5400	.012		8.25	.64	.81	9.70	10.90
0303 8" deep		4500	.014		11	.77	.97	12.74	14.30
0304 12" deep		3800	.017		16.50	.91	1.15	18.56	21
0350 Bank run gravel, spread and compacted									
0370 6" deep	B-32	6000	.005	S.Y.	5.30	.30	.41	6.01	6.75
0390 9" deep		4900	.007		7.95	.37	.50	8.82	9.85
0400 12" deep		4200	.008		10.65	.43	.59	11.67	13
6000 Stabilization fabric, polypropylene, 6 oz./S.Y.	B-6	10000	.002	S.Y.	2.71	.12	.03	2.86	3.20
6900 For small and irregular areas, add						50%	50%		
7000 Prepare and roll sub-base, small areas to 2,500 S.Y.	B-32A	1500	.016	S.Y.		.89	.85	1.74	2.25
8000 Large areas over 2,500 S.Y.	"	3500	.007			.38	.36	.74	.97
8050 For roadways	B-32	4000	.008			.45	.61	1.06	1.35

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32 11 Base Courses

32 11 26 – Asphaltic Base Courses

	32 11 26.19 Bituminous-Stabilized Base Courses	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**BITUMINOUS-STABILIZED BASE COURSES**									
0020	For roadways and large paved areas									
0700	Liquid application to gravel base, asphalt emulsion	B-45	6000	.003	Gal.	6.10	.15	.14	6.39	7.1
0800	Prime and seal, cut back asphalt		6000	.003	"	7.20	.15	.14	7.49	8.3
1000	Macadam penetration crushed stone, 2 gal./S.Y., 4" thick		6000	.003	S.Y.	12.25	.15	.14	12.54	13.8
1100	6" thick, 3 gal./S.Y.		4000	.004		18.35	.23	.21	18.79	20.5
1200	8" thick, 4 gal./S.Y.		3000	.005		24.50	.30	.29	25.09	28
8900	For small and irregular areas, add						50%	50%		

32 12 Flexible Paving

32 12 16 – Asphalt Paving

32 12 16.13 Plant-Mix Asphalt Paving

0010	**PLANT-MIX ASPHALT PAVING**									
0020	For highways and large paved areas, excludes hauling									
0025	See Section 31 23 23.20 for hauling costs									
0080	Binder course, 1-1/2" thick	B-25	7725	.011	S.Y.	5.55	.57	.38	6.50	7.4
0120	2" thick		6345	.014		7.40	.69	.46	8.55	9.7
0130	2-1/2" thick		5620	.016		9.25	.78	.52	10.55	11.9
0160	3" thick		4905	.018		11.10	.89	.59	12.58	14.2
0170	3-1/2" thick		4520	.019		12.95	.97	.64	14.56	16.4
0200	4" thick		4140	.021		14.80	1.06	.70	16.56	18.6
0300	Wearing course, 1" thick	B-25B	10575	.009		3.68	.46	.31	4.45	5.0
0340	1-1/2" thick		7725	.012		6.20	.63	.42	7.25	8.2
0380	2" thick		6345	.015		8.30	.77	.51	9.58	10.8
0420	2-1/2" thick		5480	.018		10.25	.89	.59	11.73	13.2
0460	3" thick		4900	.020		12.20	.99	.66	13.85	15.6
0470	3-1/2" thick		4520	.021		14.30	1.08	.72	16.10	18.1
0480	4" thick		4140	.023		16.35	1.18	.78	18.31	20.5
0600	Porous pavement, 1-1/2" open graded friction course	B-25	7725	.011		18.85	.57	.38	19.80	22
0800	Alternate method of figuring paving costs									
0810	Binder course, 1-1/2" thick	B-25	630	.140	Ton	68	6.95	4.62	79.57	90.5
0811	2" thick	"	690	.128	"	68	6.35	4.22	78.57	89
0812	3" thick	B-25	800	.110	Ton	68	5.50	3.64	77.14	87
0813	4" thick	"	900	.098		68	4.87	3.23	76.10	86
0850	Wearing course, 1" thick	B-25B	575	.167		75.50	8.45	5.65	89.60	102
0851	1-1/2" thick		630	.152		75.50	7.75	5.15	88.40	100
0852	2" thick		690	.139		75.50	7.05	4.71	87.26	98.5
0853	2-1/2" thick		765	.125		75.50	6.35	4.25	86.10	97
0854	3" thick		800	.120		75.50	6.10	4.06	85.66	96.5
1000	Pavement replacement over trench, 2" thick	1 B-17	90	.533	S.Y.	7.65	26.50	21	55.15	71.5
1050	4" thick		70	.686		15.15	34.50	27	76.65	97
1080	6" thick		55	.873		24	44	34.50	102.50	129

32 12 16.14 Asphaltic Concrete Paving

0011	**ASPHALTIC CONCRETE PAVING**, parking lots & driveways									
0015	No asphalt hauling included									
0018	Use 6.05 C.Y. per inch per M.S.F. for hauling									
0020	6" stone base, 2" binder course, 1" topping	B-25C	9000	.005	S.F.	2.02	.27	.28	2.57	2.9
0025	2" binder course, 2" topping		9000	.005		2.48	.27	.28	3.03	3.4
0030	3" binder course, 2" topping		9000	.005		2.89	.27	.28	3.44	3.8
0035	4" binder course, 2" topping		9000	.005		3.30	.27	.28	3.85	4.3

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32 12 16 – Asphalt Paving

32 12 16.14 Asphaltic Concrete Paving	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0040 1-1/2" binder course, 1" topping	B-25C	9000	.005	S.F.	1.81	.27	.28	2.36	2.70
0042 3" binder course, 1" topping		9000	.005		2.43	.27	.28	2.98	3.39
0045 3" binder course, 3" topping		9000	.005		3.35	.27	.28	3.90	4.40
0050 4" binder course, 3" topping		9000	.005		3.76	.27	.28	4.31	4.85
0055 4" binder course, 4" topping		9000	.005		4.21	.27	.28	4.76	5.35
0300 Binder course, 1-1/2" thick		35000	.001		.62	.07	.07	.76	.86
0400 2" thick		25000	.002		.80	.10	.10	1	1.14
0500 3" thick		15000	.003		1.24	.16	.17	1.57	1.79
0600 4" thick		10800	.004		1.62	.23	.24	2.09	2.38
0800 Sand finish course, 3/4" thick		41000	.001		.33	.06	.06	.45	.52
0900 1" thick		34000	.001		.40	.07	.07	.54	.63
1000 Fill pot holes, hot mix, 2" thick	B-16	4200	.008		.80	.37	.18	1.35	1.62
1100 4" thick		3500	.009		1.17	.44	.22	1.83	2.17
1120 6" thick		3100	.010		1.57	.50	.25	2.32	2.73
1140 Cold patch, 2" thick	B-51	3000	.016		1.06	.75	.11	1.92	2.40
1160 4" thick		2700	.018		2.02	.83	.13	2.98	3.61
1180 6" thick		1900	.025		3.15	1.18	.18	4.51	5.40

32 12 36 – Seal Coats

32 12 36.13 Chip Seal

0010 **CHIP SEAL**									
0011 Excludes crack repair and flush coat									
1000 Fine - PMCRS-2h (20lbs/sy, 1/4" (No.10), .30gal/sy app. rate)									
1010 Small, irregular areas	B-91	5000	.013	S.Y.	1.25	.69	.49	2.43	2.95
1020 Parking Lot	B-91D	15000	.007		1.25	.36	.23	1.84	2.18
1030 Roadway	"	30000	.003		1.25	.18	.12	1.55	1.78
1090 For Each .5% Latex Additive, Add					.29			.29	.32
1100 Medium Fine - PMCRS-2h (25lbs/sy, 5/16" (No.8), .35gal/sy app. rate)									
1110 Small, irregular areas	B-91	4000	.016	S.Y.	1.55	.87	.61	3.03	3.67
1120 Parking Lot	B-91D	12000	.009		1.55	.46	.29	2.30	2.71
1130 Roadway	"	24000	.004		1.55	.23	.15	1.93	2.21
1190 For Each .5% Latex Additive, Add					.36			.36	.40
1200 Medium - PMCRS-2h (30lbs/sy, 3/8" (No.6), .40gal/sy app. rate)									
1210 Small, irregular areas	B-91	3330	.019	S.Y.	1.60	1.04	.73	3.37	4.12
1220 Parking Lot	B-91D	10000	.010		1.60	.55	.35	2.50	2.96
1230 Roadway	"	20000	.005		1.60	.27	.18	2.05	2.36
1290 For Each .5% Latex Additive, Add					.43			.43	.48
1300 Course - PMCRS-2h (30lbs/sy, 1/2" (No.4), .40gal/sy app. rate)									
1310 Small, irregular areas	B-91	2500	.026	S.Y.	1.56	1.39	.98	3.93	4.84
1320 Parking Lot	B-91D	7500	.014		1.56	.73	.47	2.76	3.31
1330 Roadway	"	15000	.007		1.56	.36	.23	2.15	2.51
1390 For Each .5% Latex Additive, Add					.43			.43	.48
1400 Double - PMCRS-2h (Course Base with Fine Top)									
1410 Small, irregular areas	B-91	2000	.032	S.Y.	2.66	1.73	1.22	5.61	6.85
1420 Parking Lot	B-91D	6000	.017		2.66	.91	.58	4.15	4.92
1430 Roadway	"	12000	.009		2.66	.46	.29	3.41	3.92
1490 For Each .5% Latex Additive, Add					.72			.72	.79

32 12 36.14 Flush Coat

0010 **FLUSH COAT**									
0011 Fog Seal with Sand Cover (.18gal/sy, 6lbs/sy)									
1010 Small, irregular areas	B-91	2000	.032	S.Y.	1.14	1.73	1.22	4.09	5.15
1020 Parking lot		6000	.011		1.14	.58	.41	2.13	2.56
1030 Roadway		12000	.005		1.14	.29	.20	1.63	1.90

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32 12 Flexible Paving

32 12 36 – Seal Coats

32 12 36.33 Slurry Seal	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **SLURRY SEAL**									
0011 Includes sweeping and cleaning of area									
1000 Type I-PMCQS-1h-EAS (12lbs/sy, 1/8", 20% asphalt emulsion)									
1010 Small, irregular areas	B-90	8000	.008	S.Y.	1.98	.40	.29	2.67	3.1
1020 Parking Lot		25000	.003		1.98	.13	.09	2.20	2.4
1030 Roadway		50000	.001		1.98	.06	.05	2.09	2.3
1090 For Each .5% Latex Additive, Add				S.Y.	.19			.19	.2
1100 Type II-PMCQS-1h-EAS (15lbs/sy, 1/4", 18% asphalt emulsion)									
1110 Small, irregular areas	B-90	6000	.011	S.Y.	2.20	.54	.38	3.12	3.6
1120 Parking lot		20000	.003		2.20	.16	.11	2.47	2.7
1130 Roadway		40000	.002		2.20	.08	.06	2.34	2.6
1190 For Each .5% Latex Additive, Add					.23			.23	.2
1200 Type III-PMCQS-1h-EAS (25lbs/sy, 3/8", 15% asphalt emulsion)									
1210 Small, irregular areas	B-90	4000	.016	S.Y.	3.03	.81	.57	4.41	5.1
1220 Parking lot		12000	.005		3.03	.27	.19	3.49	3.9
1230 Roadway		24000	.003		3.03	.13	.10	3.26	3.6
1290 For Each .5% Latex Additive, Add					.37			.37	.4

32 12 36.36 Microsurfacing

0010 **MICROSURFACING**									
1100 Type II-MSE (20lbs/sy, 1/4", 18% microsurfacing emulsion)									
1110 Small, irregular areas	B-90	5000	.013	S.Y.	1.99	.65	.46	3.10	3.6
1120 Parking lot		15000	.004		1.99	.22	.15	2.36	2.6
1130 Roadway		30000	.002		1.99	.11	.08	2.18	2.4
1200 Type IIIa-MSE (32lbs/sy, 3/8", 15% microsurfacing emulsion)									
1210 Small, irregular areas	B-90	3000	.021	S.Y.	2.75	1.08	.76	4.59	5.4
1220 Parking lot		9000	.007		2.75	.36	.25	3.36	3.8
1230 Roadway		18000	.004		2.75	.18	.13	3.06	3.4

32 13 Rigid Paving

32 13 13 – Concrete Paving

32 13 13.25 Concrete Pavement, Highways

0010 **CONCRETE PAVEMENT, HIGHWAYS**									
0015 Including joints, finishing and curing									
0020 Fixed form, 12' pass, unreinforced, 6" thick	B-26	3000	.029	S.Y.	27	1.48	1.12	29.60	33.5
0100 8" thick		2750	.032		37	1.62	1.22	39.84	44.5
0110 8" thick, small area		1375	.064		37	3.23	2.44	42.67	48.5
0200 9" thick		2500	.035		42	1.78	1.34	45.12	50.5
0300 10" thick		2100	.042		46	2.12	1.60	49.72	55.5
0310 10" thick, small area		1050	.084		46	4.23	3.19	53.42	60.5
0400 12" thick		1800	.049		53	2.47	1.86	57.33	63.5
0410 Conc. pavement, w/jt., fnsh.& curing, fix form, 24' pass, unreinforced, 6"T		6000	.015		25.50	.74	.56	26.80	29.5
0430 8" thick		5500	.016		35	.81	.61	36.42	40.5
0440 9" thick		5000	.018		40	.89	.67	41.56	46
0450 10" thick		4200	.021		44	1.06	.80	45.86	51
0460 12" thick		3600	.024		50.50	1.24	.93	52.67	58.5
0470 15" thick	B-26	3000	.029	S.Y.	67	1.48	1.12	69.60	77
0500 Fixed form 12' pass, 15" thick	"	1500	.059	"	67	2.96	2.23	72.19	81
0510 For small irregular areas, add				%	10%	100%	100%		
0520 Welded wire fabric, sheets for rigid paving 2.33 lb./S.Y.	2 Rodm	389	.041	S.Y.	2	2.50		4.50	5.9
0530 Reinforcing steel for rigid paving 12 lb./S.Y.		666	.024		9.15	1.46		10.61	12.3

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32 13 Rigid Paving

32 13 13 – Concrete Paving

	32 13 13.25 Concrete Pavement, Highways	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0540	Reinforcing steel for rigid paving 18 lb./S.Y.	2 Rodm	444	.036	S.Y.	13.75	2.19		15.94	18.35
0620	Slip form, 12′ pass, unreinforced, 6″ thick	B-26A	5600	.016		25.50	.79	.63	26.92	30.50
0624	8″ thick		5300	.017		35.50	.84	.66	37	41
0626	9″ thick		4820	.018		40	.92	.73	41.65	46.50
0628	10″ thick		4050	.022		44.50	1.10	.87	46.47	51
0630	12″ thick		3470	.025		51	1.28	1.01	53.29	59
0632	15″ thick		2890	.030		64.50	1.54	1.21	67.25	74.50
0640	Slip form, 24′ pass, unreinforced, 6″ thick		11200	.008		25.50	.40	.31	26.21	29
0644	8″ thick		10600	.008		34	.42	.33	34.75	38.50
0646	9″ thick		9640	.009		39	.46	.36	39.82	44
0648	10″ thick		8100	.011		43	.55	.43	43.98	49
0650	12″ thick		6940	.013		49.50	.64	.51	50.65	56
0652	15″ thick		5780	.015		62.50	.77	.61	63.88	70.50
0700	Finishing, broom finish small areas	2 Cefi	120	.133			7.10		7.10	10.35
1000	Curing, with sprayed membrane by hand	2 Clab	1500	.011		1.22	.49		1.71	2.06
1650	For integral coloring, see Section 03 05 13.20									

32 14 Unit Paving

32 14 13 – Precast Concrete Unit Paving

32 14 13.13 Interlocking Precast Concrete Unit Paving

0010	**INTERLOCKING PRECAST CONCRETE UNIT PAVING**									
0020	"V" blocks for retaining soil	D-1	205	.078	S.F.	11.60	3.91		15.51	18.65

32 14 13.16 Precast Concrete Unit Paving Slabs

0010	**PRECAST CONCRETE UNIT PAVING SLABS**									
0710	Precast concrete patio blocks, 2-3/8″ thick, colors, 8″ x 16″	D-1	265	.060	S.F.	12.45	3.03		15.48	18.25
0750	Exposed local aggregate, natural	2 Bric	250	.064		9.10	3.54		12.64	15.30
0800	Colors		250	.064		11.20	3.54		14.74	17.60
0850	Exposed granite or limestone aggregate		250	.064		9.40	3.54		12.94	15.65
0900	Exposed white tumblestone aggregate		250	.064		12.45	3.54		15.99	19

32 14 13.18 Precast Concrete Plantable Pavers

0010	**PRECAST CONCRETE PLANTABLE PAVERS** (50% grass)									
0015	Subgrade preparation and grass planting not included									
0100	Precast concrete plantable pavers with topsoil, 24″ x 16″	B-63	800	.050	S.F.	4.04	2.39	.33	6.76	8.35
0200	Less than 600 S.F. or irregular area	″	500	.080	″	4.04	3.83	.53	8.40	10.75
0300	3/4″ crushed stone base for plantable pavers, 6″ depth	B-62	1000	.024	S.Y.	3.09	1.19	.26	4.54	5.45
0400	8″ depth		900	.027		4.12	1.32	.29	5.73	6.80
0500	10″ depth		800	.030		5.15	1.48	.33	6.96	8.20
0600	12″ depth		700	.034		6.20	1.69	.38	8.27	9.75
0700	Hydro seeding plantable pavers	B-81A	20	.800	M.S.F.	33	38.50	35	106.50	133
0800	Apply fertilizer and seed to plantable pavers	1 Clab	8	1	″	50	45.50		95.50	123

32 14 16 – Brick Unit Paving

32 14 16.10 Brick Paving

0010	**BRICK PAVING**									
0012	4″ x 8″ x 1-1/2″, without joints (4.5 bricks/S.F.)	D-1	110	.145	S.F.	4.37	7.30		11.67	15.75
0100	Grouted, 3/8″ joint (3.9 bricks/S.F.)		90	.178		3.98	8.90		12.88	17.80
0200	4″ x 8″ x 2-1/4″, without joints (4.5 bricks/S.F.)		110	.145		4.59	7.30		11.89	16
0300	Grouted, 3/8″ joint (3.9 bricks/S.F.)		90	.178		3.98	8.90		12.88	17.80
0455	Pervious brick paving, 4″ x 8″ x 3-1/4″, without joints (4.5 bricks/S.F.)		110	.145		2.86	7.30		10.16	14.10
0500	Bedding, asphalt, 3/4″ thick	B-25	5130	.017		.68	.85	.57	2.10	2.64
0540	Course washed sand bed, 1″ thick	B-18	5000	.005		.53	.22	.03	.78	.94

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32 14 Unit Paving

32 14 16 – Brick Unit Paving

32 14 16.10 Brick Paving	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0580 Mortar, 1" thick	D-1	300	.053	S.F.	.74	2.67		3.41	4.8
0620 2" thick		200	.080		1.47	4.01		5.48	7.6
1500 Brick on 1" thick sand bed laid flat, 4.5/S.F.		100	.160		3.81	8		11.81	16.2
2000 Brick pavers, laid on edge, 7.2/S.F.		70	.229		7.55	11.45		19	25.5
2500 For 4" thick concrete bed and joints, add		595	.027		1.86	1.35		3.21	4.0
2800 For steam cleaning, add	A-1H	950	.008		.12	.38	.08	.58	.7

32 14 23 – Asphalt Unit Paving

32 14 23.10 Asphalt Blocks

0010 **ASPHALT BLOCKS**									
0020 Rectangular, 6" x 12" x 1-1/4", w/bed & neopr. adhesive	D-1	135	.119	S.F.	10.95	5.95		16.90	21
0100 3" thick		130	.123		15.30	6.15		21.45	26
0300 Hexagonal tile, 8" wide, 1-1/4" thick		135	.119		10.95	5.95		16.90	21
0400 2" thick		130	.123		15.30	6.15		21.45	26
0500 Square, 8" x 8", 1-1/4" thick		135	.119		10.95	5.95		16.90	21
0600 2" thick		130	.123		15.30	6.15		21.45	26
0900 For exposed aggregate (ground finish), add					.66			.66	.7
0910 For colors, add					.66			.66	.7
7010 Non-Vegetative Surface, Rubber, 1/2" Thick	D-1	130	.123		3.68	6.15		9.83	13.3

32 14 40 – Stone Paving

32 14 40.10 Stone Pavers

0010 **STONE PAVERS**									
1100 Flagging, bluestone, irregular, 1" thick,	D-1	81	.198	S.F.	10.65	9.90		20.55	26.5
1150 Snapped random rectangular, 1" thick	"	92	.174	"	16.10	8.70		24.80	31
1200 1-1/2" thick	D-1	85	.188	S.F.	19.35	9.45		28.80	35.5
1250 2" thick		83	.193		22.50	9.65		32.15	39.5
1300 Slate, natural cleft, irregular, 3/4" thick		92	.174		9.30	8.70		18	23.5
1350 Random rectangular, gauged, 1/2" thick		105	.152		20	7.65		27.65	33.5
1400 Random rectangular, butt joint, gauged, 1/4" thick		150	.107		21.50	5.35		26.85	32
1500 For interior setting, add								25%	25%
1550 Granite blocks, 3-1/2" x 3-1/2" x 3-1/2"	D-1	92	.174	S.F.	27	8.70		35.70	42.5
1600 4" to 12" long, 3" to 5" wide, 3" to 5" thick		98	.163		22.50	8.20		30.70	37
1650 6" to 15" long, 3" to 6" wide, 3" to 5" thick		105	.152		11.95	7.65		19.60	24.5

32 16 Curbs, Gutters, Sidewalks, and Driveways

32 16 13 – Curbs and Gutters

32 16 13.13 Cast-in-Place Concrete Curbs and Gutters

0010 **CAST-IN-PLACE CONCRETE CURBS AND GUTTERS**									
0290 Forms only, no concrete									
0300 Concrete, wood forms, 6" x 18", straight	C-2	500	.096	L.F.	4.18	5.25		9.43	12.4
0400 6" x 18", radius	"	200	.240	"	4.37	13.15		17.52	24.5
0402 Forms and concrete complete									
0404 Concrete, wood forms, 6" x 18", straight & concrete	C-2A	500	.096	L.F.	8.65	5.20		13.85	17.2
0406 6" x 18", radius		200	.240		8.85	13.05		21.90	29
0410 Steel forms, 6" x 18", straight		700	.069		9	3.73		12.73	15.4
0411 6" x 18", radius		400	.120		8.85	6.50		15.35	19.4
0415 Machine formed, 6" x 18", straight	B-69A	2000	.024		6.50	1.19	.63	8.32	9.6
0416 6" x 18", radius	"	900	.053		6.60	2.65	1.41	10.66	12.7
0421 Curb and gutter, straight									
0422 with 6" high curb and 6" thick gutter, wood forms									
0430 24" wide, 0.055 C.Y./L.F.	C-2A	375	.128	L.F.	24	6.95		30.95	36.5

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32 16 13 – Curbs and Gutters

	32 16 13.13 Cast-in-Place Concrete Curbs and Gutters	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0435	30" wide, 0.066 C.Y./L.F.	C-2A	340	.141	L.F.	26	7.65		33.65	40.50
0440	Steel forms, 24" wide, straight		700	.069		12.25	3.73		15.98	19.05
0441	Radius		500	.096		10.90	5.20		16.10	19.75
0442	30" wide, straight		700	.069		14.40	3.73		18.13	21.50
0443	Radius		500	.096		12.35	5.20		17.55	21.50
0445	Machine formed, 24" wide, straight	B-69A	2000	.024		8.95	1.19	.63	10.77	12.25
0446	Radius		900	.053		8.95	2.65	1.41	13.01	15.30
0447	30" wide, straight		2000	.024		10.35	1.19	.63	12.17	13.85
0448	Radius		900	.053		10.35	2.65	1.41	14.41	16.90
	32 16 13.23 Precast Concrete Curbs and Gutters									
0010	**PRECAST CONCRETE CURBS AND GUTTERS**									
0550	Precast, 6" x 18", straight	B-29	700	.080	L.F.	11.10	3.97	1.23	16.30	19.50
0600	6" x 18", radius	B-29	325	.172	L.F.	11.85	8.55	2.64	23.04	28.50
	32 16 13.33 Asphalt Curbs									
0010	**ASPHALT CURBS**									
0012	Curbs, asphaltic, machine formed, 8" wide, 6" high, 40 L.F./ton	B-27	1000	.032	L.F.	2.07	1.48	.70	4.25	5.25
0100	8" wide, 8" high, 30 L.F./ton		900	.036		2.77	1.64	.78	5.19	6.35
0150	Asphaltic berm, 12" W, 3" to 6" H, 35 L.F./ton, before pavement		700	.046		.05	2.11	1	3.16	4.30
0200	12" W, 1-1/2" to 4" H, 60 L.F./ton, laid with pavement	B-2	1050	.038		.03	1.75		1.78	2.64
	32 16 13.43 Stone Curbs									
0010	**STONE CURBS**									
1000	Granite, split face, straight, 5" x 16"	D-13	275	.175	L.F.	13.85	9.35	2.08	25.28	31.50
1100	6" x 18"	"	250	.192		18.20	10.30	2.29	30.79	38
1300	Radius curbing, 6" x 18", over 10' radius	B-29	260	.215		22.50	10.70	3.30	36.50	44
1400	Corners, 2' radius	"	80	.700	Ea.	75	34.50	10.70	120.20	146
1600	Edging, 4-1/2" x 12", straight	D-13	300	.160	L.F.	6.95	8.60	1.91	17.46	22.50
1800	Curb inlets (guttermouth) straight	B-29	41	1.366	Ea.	166	68	21	255	305
2000	Indian granite (Belgian block)									
2100	Jumbo, 10-1/2" x 7-1/2" x 4", grey	D-1	150	.107	L.F.	10.10	5.35		15.45	19.15
2150	Pink		150	.107		13.55	5.35		18.90	23
2200	Regular, 9" x 4-1/2" x 4-1/2", grey		160	.100		7.25	5		12.25	15.55
2250	Pink		160	.100		11.05	5		16.05	19.70
2300	Cubes, 4" x 4" x 4", grey		175	.091		6.15	4.58		10.73	13.65
2350	Pink		175	.091		7.35	4.58		11.93	15
2400	6" x 6" x 6", pink		155	.103		17.35	5.15		22.50	27
2500	Alternate pricing method for Indian granite									
2550	Jumbo, 10-1/2" x 7-1/2" x 4" (30 lb.), grey				Ton	575			575	635
2600	Pink					785			785	865
2650	Regular, 9" x 4-1/2" x 4-1/2" (20 lb.), grey					510			510	565
2700	Pink					770			770	850
2750	Cubes, 4" x 4" x 4" (5 lb.), grey					745			745	820
2800	Pink					945			945	1,050
2850	6" x 6" x 6" (25 lb.), pink					675			675	740
2900	For pallets, add					22			22	24

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32 17 13 – Parking Bumpers

32 17 13.13 Metal Parking Bumpers	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **METAL PARKING BUMPERS**									
0015 Bumper rails for garages, 12 ga. rail, 6" wide, with steel									
0020 posts 12'-6" OC, minimum	E-4	190	.168	L.F.	21	10.50	.78	32.28	40
0030 Average	"	165	.194	"	26	12.10	.89	38.99	48.50
0100 Maximum	E-4	140	.229	L.F.	31.50	14.25	1.05	46.80	57.50
0300 12" channel rail, minimum		160	.200		26	12.45	.92	39.37	49
0400 Maximum		120	.267		39.50	16.65	1.23	57.38	70
1300 Pipe bollards, conc. filled/paint, 8' L x 4' D hole, 6" diam.	B-6	20	1.200	Ea.	470	59.50	16.45	545.95	620
1400 8" diam.		15	1.600		515	79	22	616	705
1500 12" diam.		12	2		600	99	27.50	726.50	835
2030 Folding with individual padlocks	B-2	50	.800		128	37		165	196
8000 Parking lot control, see Section 11 12 13.10									
8890 Security bollards, SS, lighted, hyd, incl. controls, Single Unit	L-7	.08	337	Ea.	22,200	18,400		40,600	52,000
8900 Security bollards, SS, lighted, hyd., incl. controls, group of 3		.06	509		45,900	27,800		73,700	92,000
8910 Group of 5		.04	683		80,500	37,300		117,800	144,000

32 17 13.16 Plastic Parking Bumpers

0010 **PLASTIC PARKING BUMPERS**									
1200 Thermoplastic, 6" x 10" x 6'-0"	B-2	120	.333	Ea.	51	15.35		66.35	79

32 17 13.19 Precast Concrete Parking Bumpers

0010 **PRECAST CONCRETE PARKING BUMPERS**									
1000 Wheel stops, precast concrete incl. dowels, 6" x 10" x 6'-0"	B-2	120	.333	Ea.	46	15.35		61.35	73.50
1100 8" x 13" x 6'-0"	"	120	.333	"	90	15.35		105.35	122

32 17 13.26 Wood Parking Bumpers

0010 **WOOD PARKING BUMPERS**									
0020 Parking barriers, timber w/saddles, treated type									
0100 4" x 4" for cars	B-2	520	.077	L.F.	5.20	3.54		8.74	11
0200 6" x 6" for trucks		520	.077	"	11	3.54		14.54	17.35
0600 Flexible fixed stanchion, 2' high, 3" diameter		100	.400	Ea.	35.50	18.40		53.90	66.50

32 17 23 – Pavement Markings

32 17 23.13 Painted Pavement Markings

0010 **PAINTED PAVEMENT MARKINGS**									
0020 Acrylic waterborne, white or yellow, 4" wide, less than 3,000 L.F.	B-78	20000	.002	L.F.	.14	.11	.03	.28	.35
0200 6" wide, less than 3,000 L.F.		11000	.004		.21	.20	.05	.46	.59
0500 8" wide, less than 3,000 L.F.		10000	.005		.27	.22	.06	.55	.69
0600 12" wide, less than 3,000 L.F.		4000	.012		.41	.56	.14	1.11	1.44
0620 Arrows or gore lines		2300	.021	S.F.	.26	.98	.24	1.48	2.01
0640 Temporary paint, white or yellow, less than 3,000 L.F.		15000	.003	L.F.	.16	.15	.04	.35	.43
0660 Removal	1 Clab	300	.027			1.22		1.22	1.81
0680 Temporary tape	2 Clab	1500	.011		.53	.49		1.02	1.30
0710 Thermoplastic, white or yellow, 4" wide, less than 6,000 L.F.	B-79	15000	.003		.92	.13	.09	1.14	1.30
0730 6" wide, less than 6,000 L.F.		14000	.003		1.38	.13	.10	1.61	1.83
0740 8" wide, less than 6,000 L.F.		12000	.003		1.84	.16	.11	2.11	2.38
0750 12" wide, less than 6,000 L.F.		6000	.007		2.71	.31	.23	3.25	3.71
0760 Arrows	B-79	660	.061	S.F.	2.76	2.85	2.08	7.69	9.55
0770 Gore lines		2500	.016		2.76	.75	.55	4.06	4.76
0780 Letters		660	.061		.92	2.85	2.08	5.85	7.55
1000 Airport painted markings									
1050 Traffic safety flashing truck for airport painting	A-2B	1	8	Day		405	340	745	975
1100 Painting, white or yellow, taxiway markings	B-78	4000	.012	S.F.	.44	.56	.14	1.14	1.47
1110 with 12 lb. beads per 100 S.F.		4000	.012		.52	.56	.14	1.22	1.56
1200 Runway markings		3500	.014		.44	.64	.16	1.24	1.61

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32 17 Paving Specialties

32 17 23 – Pavement Markings

	32 17 23.13 Painted Pavement Markings	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1210	with 12 lb. beads per 100 S.F.	B-78	3500	.014	S.F.	.52	.64	.16	1.32	1.70
1300	Pavement location or direction signs		2500	.019		.44	.90	.22	1.56	2.07
1310	with 12 lb. beads per 100 S.F.		2500	.019		.52	.90	.22	1.64	2.16
1350	Mobilization airport pavement painting		4	12	Ea.		560	140	700	990
1400	Paint markings or pavement signs removal daytime	B-78B	400	.045	S.F.		2.11	1.11	3.22	4.36
1500	Removal nighttime		335	.054	"		2.52	1.32	3.84	5.20
1600	Mobilization pavement paint removal		4	4.500	Ea.		211	111	322	435
	32 17 23.14 Pavement Parking Markings									
0010	**PAVEMENT PARKING MARKINGS**									
0790	Layout of pavement marking	A-2	25000	.001	L.F.		.05	.01	.06	.08
0800	Lines on pvmt., parking stall, paint, white, 4" wide	B-78B	400	.045	Stall	6	2.11	1.11	9.22	10.95
0825	Parking stall, small quantities	2 Pord	80	.200		11.95	9.55		21.50	27.50
0830	Lines on pvmt., parking stall, thermoplastic, white, 4" wide	B-79	300	.133		21	6.25	4.57	31.82	37.50
1000	Street letters and numbers	B-78B	1600	.011	S.F.	.83	.53	.28	1.64	2
	32 17 26.10 Tactile Warning Surfacing									
0010	**TACTILE WARNING SURFACING**									
0100	Detectable warning pad, ADA	2 Clab	400	.040	S.F.	25.50	1.82		27.32	30.50

32 18 Athletic and Recreational Surfacing

32 18 13 – Synthetic Grass Surfacing

	32 18 13.10 Artificial Grass Surfacing									
0010	**ARTIFICIAL GRASS SURFACING**									
0015	Not including asphalt base or drainage,									
0020	but including cushion pad, over 50,000 S.F.									
0200	1/2" pile and 5/16" cushion pad, standard	C-17	3200	.025	S.F.	7.30	1.48		8.78	10.25
0300	Deluxe		2560	.031		7	1.85		8.85	10.50
0500	1/2" pile and 5/8" cushion pad, standard		2844	.028		6.70	1.67		8.37	9.90
0600	Deluxe		2327	.034		6.80	2.04		8.84	10.55
0800	For asphaltic concrete base, 2-1/2" thick,									
0900	with 6" crushed stone sub-base, add	B-25	12000	.007	S.F.	1.88	.37	.24	2.49	2.88

32 18 16 – Synthetic Resilient Surfacing

	32 18 16.13 Playground Protective Surfacing									
0010	**PLAYGROUND PROTECTIVE SURFACING**									
0100	Resilient rubber surface, 4" thick, black	2 Skwk	300	.053	S.F.	14.25	3.14		17.39	20.50
0150	2" thick topping, colors	"	2800	.006		6.95	.34		7.29	8.15
0200	Wood chip mulch, 6" deep	1 Clab	300	.027		1.06	1.22		2.28	2.98
	32 18 16.16 Epoxy Acrylic Coatings									
0010	**EPOXY ACRYLIC COATINGS**									
0100	Surface Prep, Sand blasting to SSPC-SP6, 2.0#/S.F. sand	E-11A	1200	.027	S.F.	.38	1.34	.56	2.28	3.10
0150	Layout and line striping by others									
0200	Painting epoxy, Foundation/Prime coat, large area (100 S.F. per Gal)	E-11B	2400	.010	S.F.	.35	.48	.23	1.06	1.39
0210	Epoxy intermediate coat		2800	.009		.35	.41	.20	.96	1.25
0220	Epoxy top coat		2800	.009		.35	.41	.20	.96	1.25
0300	Painting epoxy, Foundation/Prime coat, small areas (100 S.F. per Gal)		1400	.017		.35	.82	.39	1.56	2.10
0310	Epoxy intermediate coat		1500	.016		.35	.76	.37	1.48	1.98
0320	Epoxy top coat		1500	.016		.35	.76	.37	1.48	1.98
0330	Adhesive Promoter		1400	.017		.27	.82	.39	1.48	2.01
0340	Sealer Concentrate		2400	.010		.15	.48	.23	.86	1.16
0400	Install debris tarp for construction work under 600 S.F.	2 Clab	2100	.008		.58	.35		.93	1.16
0410	600 S.F. or more	"	2400	.007		.49	.30		.79	.99

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32 18 Athletic and Recreational Surfacing

32 18 23 – Athletic Surfacing

32 18 23.33 Running Track Surfacing	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **RUNNING TRACK SURFACING**									
0020 Running track, asphalt concrete pavement, 2-1/2"	B-37	300	.160	S.Y.	13.85	7.65	.88	22.38	27.50
0102 Surface, latex rubber system, 1/2" thick, black	B-20	115	.209		62.50	10.60		73.10	85
0152 Colors		115	.209		76.50	10.60		87.10	100
0302 Urethane rubber system, 1/2" thick, black		110	.218		48.50	11.05		59.55	69.50
0402 Color coating		110	.218		59.50	11.05		70.55	82
32 18 23.53 Tennis Court Surfacing									
0010 **TENNIS COURT SURFACING**									
0020 Tennis court, asphalt, incl. base, 2-1/2" thick, one court	B-37	450	.107	S.Y.	37.50	5.10	.59	43.19	49
0200 Two courts		675	.071		22	3.40	.39	25.79	29.50
0300 Clay courts		360	.133		49	6.40	.73	56.13	64.50
0400 Pulverized natural greenstone with 4" base, fast dry		250	.192		35.50	9.20	1.05	45.75	54
0800 Rubber-acrylic base resilient pavement		600	.080		72.50	3.83	.44	76.77	85.50
1000 Colored sealer, acrylic emulsion, 3 coats	2 Clab	800	.020		7.95	.91		8.86	10.05
1100 3 coats, 2 colors	"	900	.018		11.05	.81		11.86	13.35
1200 For preparing old courts, add	1 Clab	825	.010			.44		.44	.6[illegible]
1400 Posts for nets, 3-1/2" diameter with eye bolts	B-1	3.40	7.059	Pair	279	325		604	790
1500 With pulley & reel	"	3.40	7.059	Pr.	950	325		1,275	1,525
1700 Net, 42' long, nylon thread with binder	B-1	50	.480	Ea.	210	22		232	264
1800 All metal	"	6.50	3.692	"	196	171		367	470
2000 Paint markings on asphalt, 2 coats	1 Pord	1.78	4.494	Court	250	215		465	595
2200 Complete court with fence, etc., asphaltic conc., minimum	B-37	.20	240		36,700	11,500	1,325	49,525	59,000
2300 Maximum		.16	300		74,500	14,300	1,650	90,450	105,000
2800 Clay courts, minimum		.20	240		40,600	11,500	1,325	53,425	63,500
2900 Maximum		.16	300		67,500	14,300	1,650	83,450	97,500

32 31 Fences and Gates

32 31 13 – Chain Link Fences and Gates

32 31 13.20 Fence, Chain Link Industrial	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **FENCE, CHAIN LINK INDUSTRIAL**									
0011 Schedule 40, including concrete									
0020 3 strands barb wire, 2" post @ 10' OC, set in concrete, 6' H									
0200 9 ga. wire, galv. steel, in concrete	B-80C	240	.100	L.F.	21.50	4.72	1.62	27.84	32.50
0250 Vinyl coated fabric		240	.100		.90	4.72	1.62	7.24	9.80
0300 Aluminized steel		240	.100		25.50	4.72	1.62	31.84	37.50
0301 Fence, wrought iron		240	.100		46.50	4.72	1.62	52.84	60.50
0303 Fence, commercial 4' high		240	.100		35.50	4.72	1.62	41.84	48
0304 Fence, commercial 6' high		240	.100		63	4.72	1.62	69.34	78.50
0500 6 ga. wire, galv. steel		240	.100		27.50	4.72	1.62	33.84	39
0600 Aluminized steel		240	.100		37	4.72	1.62	43.34	49.50
0800 6 ga. wire, 6' high but omit barbed wire, galv. steel		250	.096		24.50	4.53	1.56	30.59	35.50
0900 Aluminized steel, in concrete		250	.096		33.50	4.53	1.56	39.59	45
0920 8' H, 6 ga. wire, 2-1/2" line post, galv. steel, in concrete		180	.133		38.50	6.30	2.16	46.96	54.50
0940 Aluminized steel, in concrete		180	.133		47	6.30	2.16	55.46	64
1100 Add for corner posts, 3" diam., galv. steel, in concrete		40	.600	Ea.	96	28.50	9.70	134.20	159
1200 Aluminized steel, in concrete		40	.600		107	28.50	9.70	145.20	171
1300 Add for braces, galv. steel		80	.300		53	14.15	4.86	72.01	84.50
1350 Aluminized steel		80	.300		56	14.15	4.86	75.01	88.50
1400 Gate for 6' high fence, 1-5/8" frame, 3' wide, galv. steel		10	2.400		225	113	39	377	460
1500 Aluminized steel, in concrete		10	2.400		242	113	39	394	480

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32 31 13 – Chain Link Fences and Gates

	32 31 13.20 Fence, Chain Link Industrial	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2000	5'-0" high fence, 9 ga., no barbed wire, 2" line post, in concrete									
2010	10' OC, 1-5/8" top rail, in concrete									
2100	Galvanized steel, in concrete	B-80C	300	.080	L.F.	22.50	3.78	1.30	27.58	31.50
2200	Aluminized steel, in concrete		300	.080	"	22	3.78	1.30	27.08	31.50
2400	Gate, 4' wide, 5' high, 2" frame, galv. steel, in concrete		10	2.400	Ea.	247	113	39	399	485
2500	Aluminized steel, in concrete	B-80C	10	2.400	Ea.	198	113	39	350	430
3100	Overhead slide gate, chain link, 6' high, to 18' wide, in concrete	"	38	.632	L.F.	105	30	10.25	145.25	172
3110	Cantilever type, in concrete	B-80	48	.667		205	33.50	11.30	249.80	287
3120	8' high, in concrete		24	1.333		197	67	22.50	286.50	340
3130	10' high, in concrete		18	1.778		228	89	30	347	415
5000	Double swing gates, incl. posts & hardware, in concrete									
5010	5' high, 12' opening, in concrete	B-80C	3.40	7.059	Opng.	670	335	114	1,119	1,350
5020	20' opening, in concrete		2.80	8.571		775	405	139	1,319	1,625
5060	6' high, 12' opening, in concrete		3.20	7.500		490	355	122	967	1,200
5070	20' opening, in concrete		2.60	9.231		1,075	435	150	1,660	2,025
5080	8' high, 12' opening, in concrete	B-80	2.13	15.002		515	750	254	1,519	1,975
5090	20' opening, in concrete		1.45	22.069		810	1,100	375	2,285	2,950
5100	10' high, 12' opening, in concrete		1.31	24.427		935	1,225	415	2,575	3,300
5110	20' opening, in concrete		1.03	31.068		1,200	1,550	525	3,275	4,225
5120	12' high, 12' opening, in concrete		1.05	30.476		1,550	1,525	515	3,590	4,550
5130	20' opening, in concrete		.85	37.647		1,450	1,900	635	3,985	5,125
5190	For aluminized steel, add					20%				

32 31 13.25 Fence, Chain Link Residential

0010	**FENCE, CHAIN LINK RESIDENTIAL**									
0011	Schedule 20, 11 ga. wire, 1-5/8" post									
0020	10' OC, 1-3/8" top rail, 2" corner post, galv. stl. 3' high	B-80C	500	.048	L.F.	7.45	2.27	.78	10.50	12.45
0050	4' high		400	.060		8.40	2.83	.97	12.20	14.55
0100	6' high		200	.120		10.85	5.65	1.94	18.44	22.50
0150	Add for gate 3' wide, 1-3/8" frame, 3' high		12	2	Ea.	95	94.50	32.50	222	281
0170	4' high		10	2.400		102	113	39	254	325
0190	6' high		10	2.400		112	113	39	264	335
0200	Add for gate 4' wide, 1-3/8" frame, 3' high		9	2.667		107	126	43	276	355
0220	4' high		9	2.667		115	126	43	284	365
0240	6' high		8	3		124	142	48.50	314.50	400
0350	Aluminized steel, 11 ga. wire, 3' high		500	.048	L.F.	9.30	2.27	.78	12.35	14.45
0380	4' high		400	.060		9.30	2.83	.97	13.10	15.55
0400	6' high		200	.120		12.10	5.65	1.94	19.69	24
0450	Add for gate 3' wide, 1-3/8" frame, 3' high		12	2	Ea.	118	94.50	32.50	245	305
0470	4' high		10	2.400		108	113	39	260	330
0490	6' high		10	2.400		143	113	39	295	370
0500	Add for gate 4' wide, 1-3/8" frame, 3' high		10	2.400		122	113	39	274	345
0520	4' high		9	2.667		131	126	43	300	380
0540	6' high	B-80C	8	3	Ea.	139	142	48.50	329.50	415
0620	Vinyl covered, 9 ga. wire, 3' high		500	.048	L.F.	8.05	2.27	.78	11.10	13.10
0640	4' high		400	.060		8.85	2.83	.97	12.65	15.05
0660	6' high		200	.120		9.75	5.65	1.94	17.34	21.50
0720	Add for gate 3' wide, 1-3/8" frame, 3' high		12	2	Ea.	114	94.50	32.50	241	300
0740	4' high		10	2.400		122	113	39	274	345
0760	6' high		10	2.400		141	113	39	293	365
0780	Add for gate 4' wide, 1-3/8" frame, 3' high		10	2.400		106	113	39	258	330
0800	4' high		9	2.667		119	126	43	288	365
0820	6' high		8	3		152	142	48.50	342.50	430

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32 31 13 – Chain Link Fences and Gates

		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
32 31 13.25	**Fence, Chain Link Residential**									
7076	Fence, for small jobs 100 L.F. fence or less w/or w/o gate, add				L.F.	20%				
32 31 13.26	**Tennis Court Fences and Gates**									
0010	**TENNIS COURT FENCES AND GATES**									
0860	Tennis courts, 11 ga. wire, 2-1/2" post set									
0870	in concrete, 10' OC, 1-5/8" top rail									
0900	10' high	B-80	190	.168	L.F.	24	8.45	2.85	35.30	42
0920	12' high		170	.188	"	25	9.45	3.19	37.64	45
1000	Add for gate 4' wide, 1-5/8" frame 7' high		10	3.200	Ea.	248	160	54	462	570
1040	Aluminized steel, 11 ga. wire 10' high		190	.168	L.F.	21.50	8.45	2.85	32.80	39.[illegible]
1100	12' high		170	.188	"	28	9.45	3.19	40.64	48
1140	Add for gate 4' wide, 1-5/8" frame, 7' high		10	3.200	Ea.	258	160	54	472	585
1250	Vinyl covered, 9 ga. wire, 10' high		190	.168	L.F.	23	8.45	2.85	34.30	41
1300	12' high		170	.188	"	27	9.45	3.19	39.64	47
1310	Fence, CL, tennis court, transom gate, single, galv., 4' x 7'	B-80A	8.72	2.752	Ea.	420	126	43.50	589.50	695
1400	Add for gate 4' wide, 1-5/8" frame, 7' high	B-80	10	3.200	"	350	160	54	564	685
32 31 13.33	**Chain Link Backstops**									
0010	**CHAIN LINK BACKSTOPS**									
0015	Backstops, baseball, prefabricated, 30' wide, 12' high & 1 overhang	B-1	1	24	Ea.	2,900	1,100		4,000	4,850
0100	40' wide, 12' high & 2 overhangs	"	.75	32		7,675	1,475		9,150	10,600
0300	Basketball, steel, single goal	B-13	3.04	18.421		1,900	915	690	3,505	4,175
0400	Double goal	"	1.92	29.167		2,575	1,450	1,100	5,125	6,200
0600	Tennis, wire mesh with pair of ends	B-1	2.48	9.677	Set	2,850	450		3,300	3,800
0700	Enclosed court	"	1.30	18.462	Ea.	9,775	855		10,630	12,100
32 31 13.53	**High-Security Chain Link Fences, Gates and Sys.**									
0010	**HIGH-SECURITY CHAIN LINK FENCES, GATES AND SYSTEMS**									
0100	Fence, chain link, security, 7' H, standard FE-7, incl. excavation & posts	B-80C	480	.050	L.F.	55.50	2.36	.81	58.67	65.[illegible]
0200	Fence, barbed wire, security, 7' H, with 3 wire barbed wire arm	"	400	.060	"	5.45	2.83	.97	9.25	11.[illegible]
0300	Complete systems, including material and installation									
0310	Taunt wire fence detection system				M.L.F.				25,100	27,600
0410	Microwave fence detection system								41,300	45,400
0510	Passive magnetic fence detection system								19,500	21,400
0610	Infrared fence detection system								12,900	14,400
0710	Strain relief fence detection system								25,100	27,600
0810	Electro-shock fence detection system								35,900	39,500
0910	Photo-electric fence detection system								16,300	18,000
32 31 13.80	**Residential Chain Link Gate**									
0010	**RESIDENTIAL CHAIN LINK GATE**									
0110	Residential 4' gate, single incl. hardware and concrete	B-80C	10	2.400	Ea.	214	113	39	366	450
0120	5'		10	2.400		225	113	39	377	460
0130	6'		10	2.400		233	113	39	385	470
0510	Residential 4' gate, double incl. hardware and concrete		10	2.400		320	113	39	472	565
0520	5'		10	2.400		340	113	39	492	580
0530	6'		10	2.400		380	113	39	532	625
32 31 13.82	**Internal Chain Link Gate**									
0010	**INTERNAL CHAIN LINK GATE**									
0110	Internal 6' gate, single incl. post flange, hardware and concrete	B-80C	10	2.400	Ea.	375	113	39	527	625
0120	8'		10	2.400		425	113	39	577	675
0130	10'		10	2.400		595	113	39	747	860
0510	Internal 6' gate, double incl. post flange, hardware and concrete		10	2.400		625	113	39	777	900
0520	8'		10	2.400		710	113	39	862	990
0530	10'		10	2.400		920	113	39	1,072	1,200

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32 31 13 – Chain Link Fences and Gates

	32 31 13.84 Industrial Chain Link Gate	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**INDUSTRIAL CHAIN LINK GATE**									
0110	Industrial 8′ gate, single incl. hardware and concrete	B-80C	10	2.400	Ea.	640	113	39	792	915
0120	10′		10	2.400		725	113	39	877	1,000
0510	Industrial 8′ gate, double incl. hardware and concrete		10	2.400		930	113	39	1,082	1,225
0520	10′		10	2.400		1,050	113	39	1,202	1,350

32 31 13.88 Chain Link Transom

0010	**CHAIN LINK TRANSOM**									
0110	Add for, single transom, 3′ wide, incl. components & hardware	B-80C	10	2.400	Ea.	128	113	39	280	355
0120	Add for, double transom, 6′ wide, incl. components & hardware	"	10	2.400	"	137	113	39	289	365

32 31 19 – Decorative Metal Fences and Gates

32 31 19.10 Decorative Fence

0010	**DECORATIVE FENCE**									
5300	Tubular picket, steel, 6′ sections, 1-9/16″ posts, 4′ high	B-80C	300	.080	L.F.	41.50	3.78	1.30	46.58	52.50
5400	2″ posts, 5′ high		240	.100		47	4.72	1.62	53.34	61
5600	2″ posts, 6′ high		200	.120		57	5.65	1.94	64.59	73.50
5700	Staggered picket, 1-9/16″ posts, 4′ high		300	.080		48.50	3.78	1.30	53.58	60.50
5800	2″ posts, 5′ high		240	.100		48.50	4.72	1.62	54.84	62.50
5900	2″ posts, 6′ high	B-80C	200	.120	L.F.	63.50	5.65	1.94	71.09	80.50
6200	Gates, 4′ high, 3′ wide	B-1	10	2.400	Ea.	360	111		471	565
6300	5′ high, 3′ wide		10	2.400		265	111		376	455
6400	6′ high, 3′ wide		10	2.400		400	111		511	605
6500	4′ wide		10	2.400		355	111		466	555

32 31 26 – Wire Fences and Gates

32 31 26.10 Fences, Misc. Metal

0010	**FENCES, MISC. METAL**									
0012	Chicken wire, posts @ 4′, 1″ mesh, 4′ high	B-80C	410	.059	L.F.	4.66	2.76	.95	8.37	10.30
0100	2″ mesh, 6′ high		350	.069		4.04	3.24	1.11	8.39	10.50
0200	Galv. steel, 12 ga., 2″ x 4″ mesh, posts 5′ OC, 3′ high		300	.080		3.01	3.78	1.30	8.09	10.40
0300	5′ high		300	.080		3.56	3.78	1.30	8.64	11
0400	14 ga., 1″ x 2″ mesh, 3′ high		300	.080		3.34	3.78	1.30	8.42	10.75
0500	5′ high		300	.080		4.68	3.78	1.30	9.76	12.25
1000	Kennel fencing, 1-1/2″ mesh, 6′ long, 3′-6″ wide, 6′-2″ high	2 Clab	4	4	Ea.	545	182		727	865
1050	12′ long		4	4		770	182		952	1,125
1200	Top covers, 1-1/2″ mesh, 6′ long		15	1.067		158	48.50		206.50	246
1250	12′ long		12	1.333		236	61		297	350
1300	For kennel doors, see Section 08 31 13.40									
4492	Security fence, prison grade, barbed wire, set in concrete, 10′ high	B-80	22	1.455	L.F.	69.50	73	24.50	167	213
4494	Security fence, prison grade, razor wire, set in concrete, 10′ high		18	1.778		71	89	30	190	245
4500	Security fence, prison grade, set in concrete, 12′ high		25	1.280		60	64	21.50	145.50	186
4600	16′ high		20	1.600		94	80	27	201	253
4990	Security fence, prison grade, set in concrete, 10′ high		25	1.280		60	64	21.50	145.50	186

32 31 26.20 Wire Fencing, General

0010	**WIRE FENCING, GENERAL**									
0015	Barbed wire, galvanized, domestic steel, hi-tensile 15-1/2 ga.				M.L.F.	102			102	112
0020	Standard, 12-3/4 ga.					182			182	200
0210	Barbless wire, 2-strand galvanized, 12-1/2 ga.					182			182	200
0500	Helical razor ribbon, stainless steel, 18″ diam. x 18″ spacing				C.L.F.	181			181	199
0600	Hardware cloth galv., 1/4″ mesh, 23 ga., 2′ wide				C.S.F.	75.50			75.50	83
0700	3′ wide					37			37	41
0900	1/2″ mesh, 19 ga., 2′ wide					52			52	57.50

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32 31 26 – Wire Fences and Gates

32 31 26.20 Wire Fencing, General	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1000 4′ wide				C.S.F.	45			45	49.50
1200 Chain link fabric, steel, 2″ mesh, 6 ga., galvanized					257			257	283
1300 9 ga., galvanized					154			154	169
1350 Vinyl coated					98.50			98.50	109
1360 Aluminized					153			153	169
1400 2-1/4″ mesh, 11-1/2 ga., galvanized				C.S.F.	71			71	78
1600 1-3/4″ mesh (tennis courts), 11-1/2 ga. (core), vinyl coated					68			68	74.50
1700 9 ga., galvanized					162			162	178
2100 Welded wire fabric, galvanized, 1″ x 2″, 14 ga.	2 Carp	1600	.010	S.F.	.65	.56		1.21	1.56
2200 2″ x 4″, 12-1/2 ga.				C.S.F.	18.50			18.50	20.50

32 31 29 – Wood Fences and Gates

32 31 29.20 Fence, Wood Rail

	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0010 **FENCE, WOOD RAIL**									
0012 Picket, No. 2 cedar, Gothic, 2 rail, 3′ high	B-1	160	.150	L.F.	10.95	6.95		17.90	22.50
0050 Gate, 3′-6″ wide	B-80C	9	2.667	Ea.	124	126	43	293	375
0400 3 rail, 4′ high		150	.160	L.F.	14.25	7.55	2.59	24.39	30
0410 8′ high	B-1	50	.480	Ea.	26	22		48	62
0500 Gate, 3′-6″ wide	B-80C	9	2.667	Ea.	93.50	126	43	262.50	340
0600 Open rail, rustic, No. 1 cedar, 2 rail, 3′ high		160	.150	L.F.	15.30	7.10	2.43	24.83	30
0650 Gate, 3′ wide		9	2.667	Ea.	118	126	43	287	365
0700 3 rail, 4′ high		150	.160	L.F.	11.90	7.55	2.59	22.04	27
0900 Gate, 3′ wide		9	2.667	Ea.	146	126	43	315	395
1200 Stockade, No. 2 cedar, treated wood rails, 6′ high		160	.150	L.F.	11.70	7.10	2.43	21.23	26
1250 Gate, 3′ wide		9	2.667	Ea.	167	126	43	336	420
1300 No. 1 cedar, 3-1/4″ cedar rails, 6′ high		160	.150	L.F.	30	7.10	2.43	39.53	46
1500 Gate, 3′ wide		9	2.667	Ea.	470	126	43	639	750
1520 Open rail, split, No. 1 cedar, 2 rail, 3′ high		160	.150	L.F.	8.60	7.10	2.43	18.13	22.50
1540 3 rail, 4′ high		150	.160		11.05	7.55	2.59	21.19	26.50
3300 Board, shadow box, 1″ x 6″, treated pine, 6′ high		160	.150		27.50	7.10	2.43	37.03	43.50
3400 No. 1 cedar, 6′ high		150	.160		27.50	7.55	2.59	37.64	44.50
3900 Basket weave, No. 1 cedar, 6′ high		160	.150		49.50	7.10	2.43	59.03	67.50
3950 Gate, 3′-6″ wide	B-1	8	3	Ea.	370	139		509	615
4000 Treated pine, 6′ high		150	.160	L.F.	23	7.40		30.40	36
4200 Gate, 3′-6″ wide		9	2.667	Ea.	254	123		377	465
5000 Fence rail, redwood, 2″ x 4″, merch. grade, 8′		2400	.010	L.F.	1.50	.46		1.96	2.34
5050 Select grade, 8′		2400	.010	″	12	.46		12.46	13.90
6000 Fence post, select redwood, earth packed & treated, 4″ x 4″ x 6′		96	.250	Ea.	17.40	11.55		28.95	36.50
6010 4″ x 4″ x 8′		96	.250		26	11.55		37.55	46
6020 Set in concrete, 4″ x 4″ x 6′		50	.480		26	22		48	62
6030 4″ x 4″ x 8′		50	.480		26	22		48	62
6040 Wood post, 4′ high, set in concrete, incl. concrete		50	.480		17.95	22		39.95	53
6050 Earth packed		96	.250		23.50	11.55		35.05	42.50
6060 6′ high, set in concrete, incl. concrete	B-1	50	.480	Ea.	23	22		45	58.50
6070 Earth packed	″	96	.250	″	14.55	11.55		26.10	33

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32 32 13 – Cast-in-Place Concrete Retaining Walls

32 32 13.10 Retaining Walls, Cast Concrete	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **RETAINING WALLS, CAST CONCRETE**									
1800 Concrete gravity wall with vertical face including excavation & backfill									
1850 No reinforcing									
1900 6′ high, level embankment	C-17C	36	2.306	L.F.	116	137	25.50	278.50	360
2000 33° slope embankment		32	2.594		136	154	28.50	318.50	410
2200 8′ high, no surcharge		27	3.074		145	183	34	362	470
2300 33° slope embankment		24	3.458		175	206	38	419	545
2500 10′ high, level embankment		19	4.368		207	260	48	515	670
2600 33° slope embankment		18	4.611		287	274	51	612	780
2800 Reinforced concrete cantilever, incl. excavation, backfill & reinf.									
2900 6′ high, 33° slope embankment	C-17C	35	2.371	L.F.	106	141	26	273	360
3000 8′ high, 33° slope embankment		29	2.862		123	170	31.50	324.50	425
3100 10′ high, 33° slope embankment		20	4.150		159	247	45.50	451.50	595
3200 20′ high, 500 lb./L.F. surcharge		7.50	11.067		480	660	122	1,262	1,650
3500 Concrete cribbing, incl. excavation and backfill									
3700 12′ high, open face	B-13	210	.267	S.F.	53	13.25	9.95	76.20	89
3900 Closed face	"	210	.267	"	50	13.25	9.95	73.20	85.50
4100 Concrete filled slurry trench, see Section 31 56 23.20									

32 32 23 – Segmental Retaining Walls

32 32 23.13 Segmental Conc. Unit Masonry Retaining Walls

0010 **SEGMENTAL CONC. UNIT MASONRY RETAINING WALLS**									
7100 Segmental retaining wall system, incl. pins and void fill									
7120 base and backfill not included									
7140 Large unit, 8″ high x 18″ wide x 20″ deep, 3 plane split	B-62	300	.080	S.F.	18.35	3.95	.88	23.18	27
7150 Straight split		300	.080		18.30	3.95	.88	23.13	27
7160 Medium, lt. wt., 8″ high x 18″ wide x 12″ deep, 3 plane split		400	.060		9.50	2.96	.66	13.12	15.60
7170 Straight split		400	.060		13.15	2.96	.66	16.77	19.60
7180 Small unit, 4″ x 18″ x 10″ deep, 3 plane split		400	.060		20.50	2.96	.66	24.12	27.50
7190 Straight split		400	.060		15.80	2.96	.66	19.42	22.50
7200 Cap unit, 3 plane split		300	.080		18.55	3.95	.88	23.38	27.50
7210 Cap unit, straight split		300	.080		18.55	3.95	.88	23.38	27.50
7250 Geo-grid soil reinforcement 4′ x 50′	2 Clab	22500	.001		.66	.03		.69	.78
7255 Geo-grid soil reinforcement 6′ x 150′	2 Clab	22500	.001	S.F.	.74	.03		.77	.86

32 32 26 – Metal Crib Retaining Walls

32 32 26.10 Metal Bin Retaining Walls

0010 **METAL BIN RETAINING WALLS**									
0011 Aluminized steel bin, excavation									
0020 and backfill not included, 10′ wide									
0100 4′ high, 5.5′ deep	B-13	650	.086	S.F.	34.50	4.28	3.22	42	48
0200 8′ high, 5.5′ deep		615	.091		40	4.52	3.40	47.92	54.50
0300 10′ high, 7.7′ deep		580	.097		44.50	4.79	3.61	52.90	60
0400 12′ high, 7.7′ deep		530	.106		48	5.25	3.95	57.20	65
0500 16′ high, 7.7′ deep		515	.109		50.50	5.40	4.06	59.96	68.50
0600 16′ high, 9.9′ deep		500	.112		56.50	5.55	4.19	66.24	75
0700 20′ high, 9.9′ deep		470	.119		63.50	5.90	4.45	73.85	83.50
0800 20′ high, 12.1′ deep		460	.122		55.50	6.05	4.55	66.10	75
0900 24′ high, 12.1′ deep		455	.123		59	6.10	4.60	69.70	78.50
1000 24′ high, 14.3′ deep		450	.124		83.50	6.20	4.65	94.35	106
1100 28′ high, 14.3′ deep		440	.127		86.50	6.30	4.76	97.56	110
1300 For plain galvanized bin type walls, deduct					10%				

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32 32 Retaining Walls

32 32 29 – Timber Retaining Walls

32 32 29.10 Landscape Timber Retaining Walls	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **LANDSCAPE TIMBER RETAINING WALLS**									
0100 Treated timbers, 6" x 6"	1 Clab	265	.030	L.F.	2.68	1.38		4.06	5
0110 6" x 8'	"	200	.040	"	7	1.82		8.82	10.40
0120 Drilling holes in timbers for fastening, 1/2"	1 Carp	450	.018	Inch		1		1	1.49
0130 5/8"	"	450	.018	"		1		1	1.49
0140 Reinforcing rods for fastening, 1/2"	1 Clab	312	.026	L.F.	.53	1.17		1.70	2.33
0150 5/8"	"	312	.026	"	.83	1.17		2	2.66
0160 Reinforcing fabric	2 Clab	2500	.006	S.Y.	1.87	.29		2.16	2.49
0170 Gravel backfill		28	.571	C.Y.	25	26		51	66.50
0180 Perforated pipe, 4" diameter with silt sock		1200	.013	L.F.	1.46	.61		2.07	2.52
0190 Galvanized 60d common nails	1 Clab	625	.013	Ea.	.15	.58		.73	1.03
0200 20d common nails	"	3800	.002	"	.03	.10		.13	.18

32 32 36 – Gabion Retaining Walls

32 32 36.10 Stone Gabion Retaining Walls

0010 **STONE GABION RETAINING WALLS**									
4300 Stone filled gabions, not incl. excavation,									
4310 Stone, delivered, 3' wide									
4350 Galvanized, 6' high, 33° slope embankment	B-13	49	1.143	L.F.	69	56.50	42.50	168	208
4500 Highway surcharge	"	27	2.074	"	118	103	77.50	298.50	370
4600 9' high, up to 33° slope embankment	B-13	24	2.333	L.F.	155	116	87	358	440
4700 Highway surcharge		16	3.500		206	174	131	511	630
4900 12' high, up to 33° slope embankment		14	4		241	199	149	589	725
5000 Highway surcharge		11	5.091		294	253	190	737	910
5950 For PVC coating, add					12%				

32 32 53 – Stone Retaining Walls

32 32 53.10 Retaining Walls, Stone

0010 **RETAINING WALLS, STONE**									
0015 Including excavation, concrete footing and									
0020 stone 3' below grade. Price is exposed face area.									
0200 Decorative random stone, to 6' high, 1'-6" thick, dry set	D-1	35	.457	S.F.	86	23		109	129
0300 Mortar set		40	.400		88.50	20		108.50	128
0500 Cut stone, to 6' high, 1'-6" thick, dry set		35	.457		89	23		112	133
0600 Mortar set		40	.400		89.50	20		109.50	129
0800 Random stone, 6' to 10' high, 2' thick, dry set		45	.356		91.50	17.80		109.30	128
0900 Mortar set		50	.320		109	16.05		125.05	144
1100 Cut stone, 6' to 10' high, 2' thick, dry set		45	.356		91.50	17.80		109.30	128
1200 Mortar set		50	.320		109	16.05		125.05	144

32 33 Site Furnishings

32 33 33 – Site Manufactured Planters

32 33 33.10 Planters

0010 **PLANTERS**									
0012 Concrete, sandblasted, precast, 48" diameter, 24" high	2 Clab	15	1.067	Ea.	520	48.50		568.50	645
0100 Fluted, precast, 7' diameter, 36" high		10	1.600		1,600	73		1,673	1,850
0300 Fiberglass, circular, 36" diameter, 24" high		15	1.067		385	48.50		433.50	495
0320 36" diameter, 27" high		12	1.333		515	61		576	655
0330 33" high		15	1.067		680	48.50		728.50	825
0335 24" diameter, 36" high		15	1.067		350	48.50		398.50	460
0340 60" diameter, 39" high		8	2		995	91		1,086	1,225

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32 33 Site Furnishings

32 33 33 – Site Manufactured Planters

32 33 33.10 Planters	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0400 60″ diameter, 24″ high	2 Clab	10	1.600	Ea.	865	73		938	1,050
0600 Square, 24″ side, 36″ high		15	1.067		475	48.50		523.50	600
0610 24″ side, 27″ high		12	1.333		520	61		581	660
0620 24″ side, 16″ high		20	.800		248	36.50		284.50	325
0700 48″ side, 36″ high		15	1.067		780	48.50		828.50	935
0900 Planter/bench, 72″ square, 36″ high		5	3.200		495	146		641	760
1000 96″ square, 27″ high		5	3.200		2,625	146		2,771	3,100
1200 Wood, square, 48″ side, 24″ high		15	1.067		1,100	48.50		1,148.50	1,275
1300 Circular, 48″ diameter, 30″ high		10	1.600		805	73		878	995
1500 72″ diameter, 30″ high	2 Clab	10	1.600	Ea.	1,425	73		1,498	1,650
1600 Planter/bench, 72″	″	5	3.200	″	3,700	146		3,846	4,300

32 33 43 – Site Seating and Tables

32 33 43.13 Site Seating

0010 **SITE SEATING**									
0012 Seating, benches, park, precast conc., w/backs, wood rails, 4′ long	2 Clab	5	3.200	Ea.	820	146		966	1,125
0100 8′ long		4	4		845	182		1,027	1,200
0300 Fiberglass, without back, one piece, 4′ long		10	1.600		690	73		763	870
0400 8′ long		7	2.286		505	104		609	710
0500 Steel barstock pedestals w/backs, 2″ x 3″ wood rails, 4′ long		10	1.600		1,400	73		1,473	1,650
0510 8′ long		7	2.286		520	104		624	725
0515 Powder coated steel, 4″ x 4″ plastic slats, 6′ long		8	2		630	91		721	825
0520 3″ x 8″ wood plank, 4′ long		10	1.600		1,775	73		1,848	2,050
0530 8′ long		7	2.286		840	104		944	1,075
0540 Backless, 4″ x 4″ wood plank, 4′ square		10	1.600		1,450	73		1,523	1,675
0550 8′ long		7	2.286		1,475	104		1,579	1,775
0560 Powder coated steel, with back and 2 anti-vagrant dividers, 6′ long		8	2		1,375	91		1,466	1,650
0600 Aluminum pedestals, with backs, aluminum slats, 8′ long		8	2		1,525	91		1,616	1,800
0610 15′ long		5	3.200		1,150	146		1,296	1,500
0620 Portable, aluminum slats, 8′ long		8	2		515	91		606	700
0630 15′ long		5	3.200		745	146		891	1,025
0800 Cast iron pedestals, back & arms, wood slats, 4′ long		8	2		505	91		596	690
0820 8′ long		5	3.200		1,300	146		1,446	1,650
0840 Backless, wood slats, 4′ long		8	2		1,350	91		1,441	1,600
0860 8′ long		5	3.200		1,475	146		1,621	1,850
1700 Steel frame, fir seat, 10′ long		10	1.600		460	73		533	620
2000 Benches, park, with back, galv. stl. frame, 4″ x 4″ plastic slats, 6′ long		7	2.286		630	104		734	845

32 34 Fabricated Bridges

32 34 13 – Fabricated Pedestrian Bridges

32 34 13.10 Bridges, Pedestrian

0010 **BRIDGES, PEDESTRIAN**									
0011 Spans over streams, roadways, etc.									
0020 including erection, not including foundations									
0050 Precast concrete, complete in place, 8′ wide, 60′ span	E-2	215	.260	S.F.	184	15.95	11.55	211.50	239
0100 100′ span		185	.303		201	18.55	13.40	232.95	264
0150 120′ span		160	.350		219	21.50	15.50	256	290
0200 150′ span		145	.386		227	23.50	17.10	267.60	305
0300 Steel, trussed or arch spans, compl. in place, 8′ wide, 40′ span	E-2	320	.175	S.F.	161	10.70	7.75	179.45	202
0400 50′ span		395	.142		144	8.70	6.30	159	178
0500 60′ span		465	.120		144	7.40	5.35	156.75	175

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32 34 Fabricated Bridges

32 34 13 – Fabricated Pedestrian Bridges

32 34 13.10 Bridges, Pedestrian	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0600 80′ span	E-2	570	.098	S.F.	172	6	4.35	182.35	20
0700 100′ span		465	.120		241	7.40	5.35	253.75	28
0800 120′ span		365	.153		305	9.40	6.80	321.20	35
0900 150′ span		310	.181		325	11.05	8	344.05	38
1000 160′ span		255	.220		325	13.45	9.75	348.20	38
1100 10′ wide, 80′ span		640	.088		161	5.35	3.88	170.23	18
1200 120′ span		415	.135		208	8.25	6	222.25	24
1300 150′ span		445	.126		234	7.70	5.55	247.25	27
1400 200′ span		205	.273		249	16.75	12.10	277.85	31
1600 Wood, laminated type, complete in place, 80′ span	C-12	203	.236		135	13.25	9.75	158	17
1700 130′ span	"	153	.314		141	17.60	12.95	171.55	19

32 35 Screening Devices

32 35 16 – Sound Barriers

32 35 16.10 Traffic Barriers, Highway Sound Barriers

0010	**TRAFFIC BARRIERS, HIGHWAY SOUND BARRIERS**								
0020	Highway sound barriers, not including footing								
0100	Precast concrete, concrete columns @ 30′ OC, 8″ T, 8′ H	C-12	400	.120	L.F.	168	6.70	4.96	179.66	20
0110	12′ H		265	.181		253	10.15	7.50	270.65	30
0120	16′ H		200	.240		335	13.45	9.90	358.35	40
0130	20′ H		160	.300		420	16.80	12.40	449.20	50
0400	Lt. wt. composite panel, cementitious face, st. posts @ 12′ OC, 8′ H	B-80B	190	.168		182	8.15	3	193.15	21
0410	12′ H		125	.256		273	12.40	4.56	289.96	32
0420	16′ H		95	.337		365	16.30	6	387.30	43
0430	20′ H		75	.427		455	20.50	7.60	483.10	54

32 84 Planting Irrigation

32 84 23 – Underground Sprinklers

32 84 23.10 Sprinkler Irrigation System

0010	**SPRINKLER IRRIGATION SYSTEM**								
0011	For lawns								
0800	Residential system, custom, 1″ supply	B-20	2000	.012	S.F.	.32	.61	.93	1.2
0900	1-1/2″ supply	"	1800	.013	"	.47	.68	1.15	1.5
1020	Pop up spray head w/risers, hi-pop, full circle pattern, 4″	2 Skwk	76	.211	Ea.	6.45	12.40	18.85	25.5
1030	1/2 circle pattern, 4″		76	.211		6.45	12.40	18.85	25.5
1040	6″, full circle pattern		76	.211		23	12.40	35.40	43.5
1050	1/2 circle pattern, 6″		76	.211		11.35	12.40	23.75	31
1060	12″, full circle pattern		76	.211		20	12.40	32.40	40.5
1070	1/2 circle pattern, 12″	2 Skwk	76	.211	Ea.	19.70	12.40	32.10	40
1080	Pop up bubbler head w/risers, hi-pop bubbler head, 4″		76	.211		4.13	12.40	16.53	23
1110	Impact full/part circle sprinklers, 28′-54′ @ 25-60 psi		37	.432		26	25.50	51.50	67
1120	Spaced 37′-49′ @ 25-50 psi		37	.432		22	25.50	47.50	62.5
1130	Spaced 43′-61′ @ 30-60 psi		37	.432		73	25.50	98.50	119
1140	Spaced 54′-78′ @ 40-80 psi		37	.432		124	25.50	149.50	176
1145	Impact rotor pop-up full/part commercial circle sprinklers								
1150	Spaced 42′-65′ @ 35-80 psi	2 Skwk	25	.640	Ea.	22	37.50	59.50	80.5
1160	Spaced 48′-76′ @ 45-85 psi	"	25	.640	"	21.50	37.50	59	80.5
1165	Impact rotor pop-up part. circle comm., 53′-75′, 55-100 psi, w/accessories								
1180	Sprinkler, premium, pop-up rotator, 50′-100′	2 Skwk	25	.640	Ea.	109	37.50	146.50	177

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32 84 Planting Irrigation

32 84 23 – Underground Sprinklers

	32 84 23.10 Sprinkler Irrigation System	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1250	Plastic case, 2 nozzle, metal cover	2 Skwk	25	.640	Ea.	132	37.50		169.50	202
1260	Rubber cover		25	.640		115	37.50		152.50	184
1270	Iron case, 2 nozzle, metal cover		22	.727		166	43		209	248
1280	Rubber cover		22	.727		165	43		208	246
1282	Impact rotor pop-up full circle commercial, 39′-99′, 30-100 psi									
1284	Plastic case, metal cover	2 Skwk	25	.640	Ea.	106	37.50		143.50	173
1286	Rubber cover		25	.640		154	37.50		191.50	226
1288	Iron case, metal cover		22	.727		204	43		247	289
1290	Rubber cover		22	.727		207	43		250	292
1292	Plastic case, 2 nozzle, metal cover		22	.727		152	43		195	232
1294	Rubber cover		22	.727		155	43		198	236
1296	Iron case, 2 nozzle, metal cover		20	.800		178	47		225	267
1298	Rubber cover		20	.800		211	47		258	305
1305	Electric remote control valve, plastic, 3/4″		18	.889		23	52.50		75.50	104
1310	1″		18	.889		25	52.50		77.50	106
1320	1-1/2″		18	.889		107	52.50		159.50	196
1330	2″		18	.889		132	52.50		184.50	224
1335	Quick coupling valves, brass, locking cover									
1340	Inlet coupling valve, 3/4″	2 Skwk	18.75	.853	Ea.	26.50	50.50		77	105
1350	1″		18.75	.853		32	50.50		82.50	111
1360	Controller valve boxes, 6″ round boxes		18.75	.853		6	50.50		56.50	82
1370	10″ round boxes		14.25	1.123		12.40	66		78.40	113
1380	12″ square box		9.75	1.641		47.50	96.50		144	198
1388	Electromech. control, 14 day 3-60 min., auto start to 23/day									
1390	4 station	2 Skwk	1.04	15.385	Ea.	77	905		982	1,425
1400	7 station	″	.64	25	″	200	1,475		1,675	2,425
1410	12 station	2 Skwk	.40	40	Ea.	228	2,350		2,578	3,800
1420	Dual programs, 18 station		.24	66.667		435	3,925		4,360	6,375
1430	23 station		.16	100		350	5,900		6,250	9,250
1435	Backflow preventer, bronze, 0-175 psi, w/valves, test cocks									
1440	3/4″	2 Skwk	6	2.667	Ea.	101	157		258	350
1450	1″		6	2.667		70.50	157		227.50	315
1460	1-1/2″		6	2.667		320	157		477	585
1470	2″		6	2.667		465	157		622	750
1475	Pressure vacuum breaker, brass, 15-150 psi									
1480	3/4″	2 Skwk	6	2.667	Ea.	56	157		213	298
1490	1″		6	2.667		70.50	157		227.50	315
1500	1-1/2″		6	2.667		96	157		253	340
1510	2″		6	2.667		179	157		336	435

32 91 Planting Preparation

32 91 13 – Soil Preparation

32 91 13.16 Mulching

0010	**MULCHING**									
0100	Aged barks, 3″ deep, hand spread	1 Clab	100	.080	S.Y.	4.38	3.65		8.03	10.25
0150	Skid steer loader	B-63	13.50	2.963	M.S.F.	485	142	19.50	646.50	770
0160	Skid steer loader	″	1500	.027	S.Y.	4.38	1.28	.18	5.84	6.90
0200	Hay, 1″ deep, hand spread	1 Clab	475	.017	″	.38	.77		1.15	1.56
0250	Power mulcher, small	B-64	180	.089	M.S.F.	42	4.27	3.21	49.48	56.50
0350	Large	B-65	530	.030	″	42	1.45	1.80	45.25	50.50
0400	Humus peat, 1″ deep, hand spread	1 Clab	700	.011	S.Y.	3.38	.52		3.90	4.50

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32 91 13 – Soil Preparation

	32 91 13.16 Mulching	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0450	Push spreader	1 Clab	2500	.003	S.Y.	3.38	.15		3.53	3.94
0550	Tractor spreader	B-66	700	.011	M.S.F.	375	.65	.38	376.03	415
0600	Oat straw, 1" deep, hand spread	1 Clab	475	.017	S.Y.	.60	.77		1.37	1.80
0650	Power mulcher, small	B-64	180	.089	M.S.F.	66.50	4.27	3.21	73.98	83.50
0700	Large	B-65	530	.030	"	66.50	1.45	1.80	69.75	77.50
0750	Add for asphaltic emulsion	B-45	1770	.009	Gal.	5.60	.51	.48	6.59	7.50
0800	Peat moss, 1" deep, hand spread	1 Clab	900	.009	S.Y.	4.94	.41		5.35	6.05
0850	Push spreader	"	2500	.003	"	4.94	.15		5.09	5.65
0950	Tractor spreader	B-66	700	.011	M.S.F.	550	.65	.38	551.03	605
1000	Polyethylene film, 6 mil	2 Clab	2000	.008	S.Y.	.66	.36		1.02	1.27
1100	Redwood nuggets, 3" deep, hand spread	1 Clab	150	.053	"	3.47	2.43		5.90	7.45
1150	Skid steer loader	B-63	13.50	2.963	M.S.F.	385	142	19.50	546.50	660
1200	Stone mulch, hand spread, ceramic chips, economy	1 Clab	125	.064	S.Y.	7.40	2.92		10.32	12.50
1250	Deluxe	"	95	.084	"	11.90	3.84		15.74	18.80
1300	Granite chips	B-1	20	1.200	C.Y.	66.50	55.50		122	156
1400	Marble chips		10	2.400		223	111		334	410
1600	Pea gravel		28	.857		121	39.50		160.50	192
1700	Quartz		10	2.400		189	111		300	375
1800	Tar paper, 15 lb. felt	1 Clab	800	.010	S.Y.	.40	.46		.86	1.12
1900	Wood chips, 2" deep, hand spread	"	220	.036	"	1.78	1.66		3.44	4.43
1950	Skid steer loader	B-63	20.30	1.970	M.S.F.	198	94.50	12.95	305.45	370

32 91 13.26 Planting Beds

0010	**PLANTING BEDS**									
0100	Backfill planting pit, by hand, on site topsoil	2 Clab	18	.889	C.Y.		40.50		40.50	60.50
0200	Prepared planting mix, by hand	"	24	.667			30.50		30.50	45.50
0300	Skid steer loader, on site topsoil	B-62	340	.071			3.49	.77	4.26	6.05
0400	Prepared planting mix	"	410	.059			2.89	.64	3.53	5
1000	Excavate planting pit, by hand, sandy soil	2 Clab	16	1			45.50		45.50	68
1100	Heavy soil or clay	"	8	2			91		91	136
1200	1/2 C.Y. backhoe, sandy soil	B-11C	150	.107			5.65	2.19	7.84	10.80
1300	Heavy soil or clay	"	115	.139			7.35	2.86	10.21	14.10
2000	Mix planting soil, incl. loam, manure, peat, by hand	2 Clab	60	.267		35.50	12.15		47.65	57
2100	Skid steer loader	B-62	150	.160		35.50	7.90	1.75	45.15	52.50
3000	Pile sod, skid steer loader	"	2800	.009	S.Y.		.42	.09	.51	.73
3100	By hand	2 Clab	400	.040			1.82		1.82	2.72
4000	Remove sod, F.E. loader	B-10S	2000	.006			.33	.22	.55	.74
4100	Sod cutter	B-12K	3200	.005			.27	.47	.74	.92
4200	By hand	2 Clab	240	.067			3.04		3.04	4.53

32 91 19 – Landscape Grading

32 91 19.13 Topsoil Placement and Grading

0010	**TOPSOIL PLACEMENT AND GRADING**									
0400	Spread from pile to rough finish grade, F.E. loader, 1-1/2 C.Y.	B-10S	200	.060	C.Y.		3.33	2.22	5.55	7.40
0500	Up to 200' radius, by hand	1 Clab	14	.571			26		26	39
0600	Top dress by hand, 1 C.Y. for 600 S.F.	"	11.50	.696		34	31.50		65.50	84.50
0700	Furnish and place, truck dumped, screened, 4" deep	B-10S	1300	.009	S.Y.	4.25	.51	.34	5.10	5.80
0800	6" deep	"	820	.015	"	5.45	.81	.54	6.80	7.80

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32 92 Turf and Grasses

32 92 19 – Seeding

32 92 19.13 Mechanical Seeding	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **MECHANICAL SEEDING**									
0020 Mechanical seeding, 215 lb./acre	B-66	1.50	5.333	Acre	565	305	179	1,049	1,275
0100 44 lb./M.S.Y.	"	2500	.003	S.Y.	.23	.18	.11	.52	.64
0101 44 lb./M.S.Y.	1 Clab	13950	.001	S.F.	.03	.03		.06	.07
0300 Fine grading and seeding incl. lime, fertilizer & seed,									
0310 with equipment	B-14	1000	.048	S.Y.	.45	2.30	.33	3.08	4.28
0400 Fertilizer hand push spreader, 35 lb./M.S.F.	1 Clab	200	.040	M.S.F.	24	1.82		25.82	29
0600 Limestone hand push spreader, 50 lb./M.S.F.		180	.044		7.15	2.03		9.18	10.85
0800 Grass seed hand push spreader, 4.5 lb./M.S.F.		180	.044		25.50	2.03		27.53	31
1000 Hydro or air seeding for large areas, incl. seed and fertilizer	B-81	8900	.003	S.Y.	.58	.14	.11	.83	.98
1100 With wood fiber mulch added	"	8900	.003	"	2.12	.14	.11	2.37	2.67
1300 Seed only, over 100 lb., field seed, minimum				Lb.	2.42			2.42	2.66
1400 Maximum					1.61			1.61	1.77
1500 Lawn seed, minimum					1.29			1.29	1.42
1600 Maximum					2.89			2.89	3.18
1800 Aerial operations, seeding only, field seed	B-58	50	.480	Acre	785	23.50	103	911.50	1,025
1900 Lawn seed		50	.480		420	23.50	103	546.50	610
2100 Seed and liquid fertilizer, field seed		50	.480		860	23.50	103	986.50	1,100
2200 Lawn seed		50	.480		490	23.50	103	616.50	690

32 92 23 – Sodding

32 92 23.10 Sodding Systems									
0010 **SODDING SYSTEMS**									
0020 Sodding, 1" deep, bluegrass sod, on level ground, over 8 M.S.F.	B-63	22	1.818	M.S.F.	570	87	11.95	668.95	770
0200 4 M.S.F.		17	2.353		335	113	15.50	463.50	550
0300 1,000 S.F.		13.50	2.963		570	142	19.50	731.50	860
0500 Sloped ground, over 8 M.S.F.		6	6.667		570	320	44	934	1,150
0600 4 M.S.F.		5	8		335	385	52.50	772.50	995
0700 1,000 S.F.		4	10		570	480	66	1,116	1,425
1000 Bent grass sod, on level ground, over 6 M.S.F.		20	2		570	96	13.15	679.15	785
1100 3 M.S.F.		18	2.222		850	106	14.60	970.60	1,100
1200 Sodding 1,000 S.F. or less		14	2.857		850	137	18.80	1,005.80	1,150
1500 Sloped ground, over 6 M.S.F.		15	2.667		570	128	17.55	715.55	835
1600 3 M.S.F.		13.50	2.963		850	142	19.50	1,011.50	1,175
1700 1,000 S.F.		12	3.333		850	160	22	1,032	1,200

32 93 Plants

32 93 10 – General Planting Costs

32 93 10.12 Travel									
0010 **TRAVEL** add to all nursery items									
0015 10 to 20 miles one way, add				All	5%				
0100 30 to 50 miles one way, add				"	10%				

32 93 13 – Ground Covers

32 93 13.10 Ground Cover Plants									
0010 **GROUND COVER PLANTS**									
0012 Plants, pachysandra, in prepared beds	B-1	15	1.600	C	120	74		194	242
0200 Vinca minor, 1 yr., bare root, in prepared beds		12	2	"	110	92.50		202.50	259
0600 Stone chips, in 50 lb. bags, Georgia marble		520	.046	Bag	4.58	2.14		6.72	8.25
0700 Onyx gemstone		260	.092		44.50	4.27		48.77	55
0800 Quartz		260	.092		19	4.27		23.27	27.50
0900 Pea gravel, truckload lots		28	.857	Ton	17.35	39.50		56.85	78

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32 93 33 – Shrubs

32 93 33.10 Shrubs and Trees	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **SHRUBS AND TREES**									
0011 Evergreen, in prepared beds, B&B									
0100 Arborvitae pyramidal, 4′-5′	B-17	30	1.067	Ea.	113	53.50	24	190.50	232
0150 Globe, 12″-15″	B-1	96	.250		16.55	11.55		28.10	35.5
0300 Cedar, blue, 8′-10′	B-17	18	1.778		215	89.50	40	344.50	415
0500 Hemlock, Canadian, 2-1/2′-3′	B-1	36	.667		19.95	31		50.95	68
0550 Holly, Savannah, 8′-10′ H		9.68	2.479		275	115		390	475
0600 Juniper, andorra, 18″-24″		80	.300		60	13.90		73.90	86.5
0620 Wiltoni, 15″-18″		80	.300		27.50	13.90		41.40	51
0640 Skyrocket, 4-1/2′-5′	B-17	55	.582		161	29.50	13.10	203.60	235
0660 Blue pfitzer, 2′-2-1/2′	B-1	44	.545		39.50	25		64.50	81
0680 Ketleerie, 2-1/2′-3′		50	.480		64	22		86	103
0700 Pine, black, 2-1/2′-3′		50	.480		56	22		78	94.5
0720 Mugo, 18″-24″		60	.400		53	18.50		71.50	85.5
0740 White, 4′-5′	B-17	75	.427		56	21.50	9.60	87.10	104
0800 Spruce, blue, 18″-24″	B-1	60	.400		71	18.50		89.50	106
0840 Norway, 4′-5′	B-17	75	.427		80	21.50	9.60	111.10	131
0900 Yew, denisforma, 12″-15″	B-1	60	.400		39.50	18.50		58	71
1000 Capitata, 18″-24″		30	.800		35	37		72	93.5
1100 Hicksi, 2′-2-1/2′		30	.800		105	37		142	170

32 93 33.20 Shrubs

0010 **SHRUBS**									
0011 Broadleaf Evergreen, planted in prepared beds									
0100 Andromeda, 15″-18″, cont	B-1	96	.250	Ea.	38.50	11.55		50.05	59.5
0200 Azalea, 15″-18″, cont		96	.250		26.50	11.55		38.05	46.5
0300 Barberry, 9″-12″, cont		130	.185		22.50	8.55		31.05	37
0400 Boxwood, 15″-18″, B&B		96	.250		60	11.55		71.55	83
0500 Euonymus, emerald gaiety, 12″-15″, cont		115	.209		27.50	9.65		37.15	44.5
0600 Holly, 15″-18″, B&B		96	.250		62	11.55		73.55	85
0900 Mount laurel, 18″-24″, B&B		80	.300		64.50	13.90		78.40	91.5
1000 Paxistema, 9″-12″ H		130	.185		28.50	8.55		37.05	44
1100 Rhododendron, 18″-24″, cont	B-1	48	.500	Ea.	59	23		82	99.5
1200 Rosemary, 1 gal. cont		600	.040		26	1.85		27.85	31.5
2000 Deciduous, planted in prepared beds, amelanchier, 2′-3′, B&B		57	.421		117	19.50		136.50	158
2100 Azalea, 15″-18″, B&B		96	.250		29	11.55		40.55	49
2300 Bayberry, 2′-3′, B&B		57	.421		40	19.50		59.50	73
2600 Cotoneaster, 15″-18″, B&B		80	.300		30	13.90		43.90	53.5
2800 Dogwood, 3′-4′, B&B	B-17	40	.800		35	40.50	18	93.50	118
2900 Euonymus, alatus compacta, 15″-18″, cont	B-1	80	.300		34.50	13.90		48.40	58.5
3200 Forsythia, 2′-3′, cont	″	60	.400		15.85	18.50		34.35	45
3300 Hibiscus, 3′-4′, B&B	B-17	75	.427		56	21.50	9.60	87.10	104
3400 Honeysuckle, 3′-4′, B&B	B-1	60	.400		79.50	18.50		98	115
3500 Hydrangea, 2′-3′, B&B	″	57	.421		29	19.50		48.50	61
3600 Lilac, 3′-4′, B&B	B-17	40	.800		50	40.50	18	108.50	135
3900 Privet, bare root, 18″-24″	B-1	80	.300		34.50	13.90		48.40	58.5
4100 Quince, 2′-3′, B&B	″	57	.421		38.50	19.50		58	71.5
4200 Russian olive, 3′-4′, B&B	B-17	75	.427		32	21.50	9.60	63.10	77.5
4400 Spirea, 3′-4′, B&B	B-1	70	.343		35	15.85		50.85	62
4500 Viburnum, 3′-4′, B&B	B-17	40	.800		71	40.50	18	129.50	158

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32 93 Plants

32 93 43 – Trees

32 93 43.20 Trees		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **TREES**										
0011 Deciduous, in prep. beds, balled & burlapped (B&B)										
0100 Ash, 2" caliper	G	B-17	8	4	Ea.	222	201	90	513	645
0200 Beech, 5'-6'	G		50	.640		244	32	14.40	290.40	330
0300 Birch, 6'-8', 3 stems	G		20	1.600		105	80.50	36	221.50	276
0500 Crabapple, 6'-8'	G		20	1.600		90	80.50	36	206.50	259
0600 Dogwood, 4'-5'	G		40	.800		80	40.50	18	138.50	168
0700 Eastern redbud, 4'-5'	G		40	.800		108	40.50	18	166.50	199
0800 Elm, 8'-10'	G		20	1.600		420	80.50	36	536.50	625
0900 Ginkgo, 6'-7'	G		24	1.333		99.50	67	30	196.50	242
1000 Hawthorn, 8'-10', 1" caliper	G		20	1.600		645	80.50	36	761.50	870
1100 Honeylocust, 10'-12', 1-1/2" caliper	G		10	3.200		595	161	72	828	975
1300 Larch, 8'	G		32	1		90	50.50	22.50	163	199
1400 Linden, 8'-10', 1" caliper	G		20	1.600		105	80.50	36	221.50	276
1500 Magnolia, 4'-5'	G		20	1.600		100	80.50	36	216.50	270
1600 Maple, red, 8'-10', 1-1/2" caliper	G		10	3.200		105	161	72	338	435
1700 Mountain ash, 8'-10', 1" caliper	G		16	2		227	101	45	373	450
1800 Oak, 2-1/2"-3" caliper	G		6	5.333		285	268	120	673	845
2100 Planetree, 9'-11', 1-1/4" caliper	G	B-17	10	3.200	Ea.	340	161	72	573	695
2200 Plum, 6'-8', 1" caliper	G		20	1.600		148	80.50	36	264.50	320
2300 Poplar, 9'-11', 1-1/4" caliper	G		10	3.200		96	161	72	329	425
2500 Sumac, 2'-3'	G		75	.427		70	21.50	9.60	101.10	120
2700 Tulip, 5'-6'	G		40	.800		54.50	40.50	18	113	140
2800 Willow, 6'-8', 1" caliper	G		20	1.600		105	80.50	36	221.50	276

32 94 Planting Accessories

32 94 13 – Landscape Edging

32 94 13.20 Edging

0010 **EDGING**									
0050 Aluminum alloy, including stakes, 1/8" x 4", mill finish	B-1	390	.062	L.F.	3.54	2.85		6.39	8.15
0051 Black paint		390	.062		4.11	2.85		6.96	8.75
0052 Black anodized		390	.062		4.74	2.85		7.59	9.45
0100 Brick, set horizontally, 1-1/2 bricks per L.F.	D-1	370	.043		1.77	2.17		3.94	5.20
0150 Set vertically, 3 bricks per L.F.	"	135	.119		4.20	5.95		10.15	13.50
0200 Corrugated aluminum, roll, 4" wide	1 Carp	650	.012		3.54	.69		4.23	4.92
0250 6" wide	"	550	.015		4.43	.82		5.25	6.10
0600 Railroad ties, 6" x 8"	2 Carp	170	.094		3.25	5.30		8.55	11.50
0650 7" x 9"		136	.118		3.61	6.60		10.21	13.80
0750 Redwood 2" x 4"		330	.048		6.25	2.73		8.98	10.90
0800 Steel edge strips, incl. stakes, 1/4" x 5"	B-1	390	.062		5.60	2.85		8.45	10.45
0850 3/16" x 4"	"	390	.062		4.44	2.85		7.29	9.10

32 94 50 – Tree Guying

32 94 50.10 Tree Guying Systems

0010 **TREE GUYING SYSTEMS**									
0015 Tree guying including stakes, guy wire and wrap									
0100 Less than 3" caliper, 2 stakes	2 Clab	35	.457	Ea.	15.10	21		36.10	47.50
0200 3" to 4" caliper, 3 stakes	"	21	.762	"	21.50	34.50		56	75.50
1000 Including arrowhead anchor, cable, turnbuckles and wrap									
1100 Less than 3" caliper, 3" anchors	2 Clab	20	.800	Ea.	45.50	36.50		82	105
1200 3" to 6" caliper, 4" anchors		15	1.067		36	48.50		84.50	113

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

32 94 Planting Accessories

32 94 50 – Tree Guying

32 94 50.10 Tree Guying Systems		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1300	6" caliper, 6" anchors	2 Clab	12	1.333	Ea.	45	61		106	140
1400	8" caliper, 8" anchors	↓	9	1.778	↓	147	81		228	283

32 96 Transplanting

32 96 23 – Plant and Bulb Transplanting

32 96 23.23 Planting										
0010	**PLANTING**									
0012	Moving shrubs on site, 12" ball	B-62	28	.857	Ea.		42.50	9.40	51.90	73.50
0100	24" ball	"	22	1.091	"		54	11.95	65.95	93
32 96 23.43 Moving Trees										
0010	**MOVING TREES**, On site									
0300	Moving trees on site, 36" ball	B-6	3.75	6.400	Ea.		315	87.50	402.50	565
0400	60" ball	"	1	24	"		1,175	330	1,505	2,125

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Estimating Tips

33 10 00 Water Utilities
33 30 00 Sanitary Sewerage Utilities
33 40 00 Storm Drainage Utilities

- Never assume that the water, sewer, and drainage lines will go in at the early stages of the project. Consider the site access needs before dividing the site in half with open trenches, loose pipe, and machinery obstructions. Always inspect the site to establish that the site drawings are complete. Check off all existing utilities on your drawings as you locate them. Be especially careful with underground utilities because appurtenances are sometimes buried during regrading or repaving operations. If you find any discrepancies, mark up the site plan for further research. Differing site conditions can be very costly if discovered later in the project.
- See also Section 33 01 00 for restoration of pipe where removal/replacement may be undesirable. Use of new types of piping materials can reduce the overall project cost. Owners/design engineers should consider the installing contractor as a valuable source of current information on utility products and local conditions that could lead to significant cost savings.

Reference Numbers

Reference numbers are shown at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear. ■

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Note: Trade Service, in part, has been used as a reference source for some of the material prices used in Division 33

33 01 10 – Operation and Maintenance of Water Utilities

33 01 10.10 Corrosion Resistance	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&
0010 **CORROSION RESISTANCE**									
0012 Wrap & coat, add to pipe, 4" diameter				L.F.	2.81			2.81	3.
0040 6" diameter					4.21			4.21	4.
0060 8" diameter					5.35			5.35	5.
0100 12" diameter					7.05			7.05	7.
0200 24" diameter					15.80			15.80	17.
0500 Coating, bituminous, per diameter inch, 1 coat, add					.20			.20	.
0540 3 coat					.66			.66	.
0560 Coal tar epoxy, per diameter inch, 1 coat, add					.27			.27	.
0600 3 coat					.74			.74	.

33 01 30 – Operation and Maintenance of Sewer Utilities

33 01 30.72 Cured-In-Place Pipe Lining

0010 **CURED-IN-PLACE PIPE LINING**									
0011 Not incl. bypass or cleaning									
0020 Less than 10,000 L.F., urban, 6" to 10"	C-17E	130	.615	L.F.	10.10	36.50	.29	46.89	66.
0200 24" to 36"		90	.889		16.40	52.50	.42	69.32	97.
0300 48" to 72"		80	1		25.50	59.50	.47	85.47	118

33 01 30.75 Cured-In-place Pipe Lining

0010 **CURED-IN-PLACE PIPE LINING**									
0050 Bypass, Sewer	C-17E	500	.160	L.F.		9.50	.08	9.58	14.
0090 Mobilize - (Any Size) 1 Mob per Job.		1	80	Job		4,750	37.50	4,787.50	7,175
0091 Relocate - (°12") (8hrs, 3 per day)		3	26.667	Ea.		1,575	12.55	1,587.55	2,400
0092 Relocate - (12" to 24") (8hrs, 2 per day)		2	40			2,375	18.80	2,393.80	3,575
0093 Relocate - (24" to 42") (8hrs, 1.5 per day)		1.50	53.333			3,175	25	3,200	4,775
0094 Relocate - (42") (8hrs, 1.5 per day)		1	80			4,750	37.50	4,787.50	7,175
0095 Additional Travel, $2.00 per Mile		3362.50	.024	Mile		1.41	.01	1.42	2.
0096 Demobilize - (Any Size) 1 Demob per Job.		1	80	Job		4,750	37.50	4,787.50	7,175
0097 Refrigeration Truck (12", Cost per Each Location)		3	26.667	Ea.		1,575	12.55	1,587.55	2,400
0098 Refrigeration Truck (12"-24", Each Pipe / Location)		3	26.667			1,575	12.55	1,587.55	2,400
0099 Refrigeration Truck (24"-42", Each Pipe / Location)		1.50	53.333			3,175	25	3,200	4,775
0100 Refrigeration Truck (42", Each Pipe / Location)		1	80			4,750	37.50	4,787.50	7,175
1210 12", 6mm, Epoxy, 250k, 2ft		6	13.333	L.F.	54.50	790	6.25	850.75	1,250
1211 12", 6mm, Epoxy, 250k, 4ft	C-17E	12	6.667	L.F.	54.50	395	3.13	452.63	660
1212 12", 6mm, Epoxy, 250k, 10ft		30	2.667		54.50	158	1.25	213.75	298
1213 12", 6mm, Epoxy, 250k, 20ft		60	1.333		54.50	79	.63	134.13	180
1216 12", 6mm, Epoxy, 250k, 300ft		900	.089		54.50	5.25	.04	59.79	68
1217 12", 6mm, Epoxy, 250k, 328ft		1000	.080		54.50	4.74	.04	59.28	67
1218 12", 6mm, Epoxy, 250k, Transitions, add					20%				
1219 12", 6mm, Epoxy, 250k, 45 and 90 deg, add					50%				
1230 12", 5mm, Epoxy, 400k, 2ft	C-17E	6	13.333		45.50	790	6.25	841.75	1,225
1231 12", 5mm, Epoxy, 400k, 4ft		12	6.667		45.50	395	3.13	443.63	650
1232 12", 5mm, Epoxy, 400k, 10ft		30	2.667		45.50	158	1.25	204.75	288
1233 12", 5mm, Epoxy, 400k, 20ft		60	1.333		45.50	79	.63	125.13	170
1234 12", 5mm, Epoxy, 400k, 50ft		150	.533		45.50	31.50	.25	77.25	98
1235 12", 5mm, Epoxy, 400k, 100ft		300	.267		45.50	15.80	.13	61.43	74
1236 12", 5mm, Epoxy, 400k, 300ft		900	.089		45.50	5.25	.04	50.79	58
1237 12", 5mm, Epoxy, 400k, 328ft		1000	.080		45.50	4.74	.04	50.28	57
1238 12", 5mm, Epoxy, 400k, Transitions, add					20%				
1239 12", 5mm, Epoxy, 400k, 45 and 90 deg, add					50%				
2410 24", 12mm, Epoxy, 250k, 2ft	C-17E	4	20		218	1,175	9.40	1,402.40	2,025
2411 24", 12mm, Epoxy, 250k, 4ft		8	10		218	595	4.70	817.70	1,125
2412 24", 12mm, Epoxy, 250k, 10ft		20	4		218	237	1.88	456.88	595

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33 01 Operation and Maintenance of Utilities

33 01 30 – Operation and Maintenance of Sewer Utilities

	33 01 30.75 Cured-In-place Pipe Lining	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2413	24", 12mm, Epoxy, 250k, 20ft	C-17E	40	2	L.F.	218	119	.94	337.94	420
2414	24", 12mm, Epoxy, 250k, 50ft		100	.800		218	47.50	.38	265.88	310
2415	24", 12mm, Epoxy, 250k, 100ft		200	.400		218	23.50	.19	241.69	276
2416	24", 12mm, Epoxy, 250k, 300ft		600	.133		218	7.90	.06	225.96	252
2417	24", 12mm, Epoxy, 250k, 328ft		656	.122		218	7.25	.06	225.31	251
2418	24", 12mm, Epoxy, 250k, Transitions, add					20%				
2419	24", 12mm, Epoxy, 250k, 45 and 90 deg, add					50%				
2430	24", 10.5mm, Epoxy, 400k, 2ft	C-17E	4	20		191	1,175	9.40	1,375.40	2,000
2431	24", 10.5mm, Epoxy, 400k, 4ft		8	10		191	595	4.70	790.70	1,100
2432	24", 10.5mm, Epoxy, 400k, 10ft		20	4		191	237	1.88	429.88	565
2433	24", 10.5mm, Epoxy, 400k, 20ft		40	2		191	119	.94	310.94	390
2434	24", 10.5mm, Epoxy, 400k, 50ft		100	.800		191	47.50	.38	238.88	282
2435	24", 10.5mm, Epoxy, 400k, 100ft	C-17E	200	.400	L.F.	191	23.50	.19	214.69	246
2436	24", 10.5mm, Epoxy, 400k, 300ft		600	.133		191	7.90	.06	198.96	222
2437	24", 10.5mm, Epoxy, 400k, 328ft		656	.122		191	7.25	.06	198.31	221
2438	24", 10.5mm, Epoxy, 400k, Transitions, add					20%				
2439	24", 10.5mm, Epoxy, 400k, 45 and 90 deg, add					50%				

33 05 Common Work Results for Utilities

33 05 07 – Trenchless Installation of Utility Piping

33 05 07.23 Utility Boring and Jacking

0010	**UTILITY BORING AND JACKING**									
0011	Casing only, 100' minimum,									
0020	not incl. jacking pits or dewatering									
0100	Roadwork, 1/2" thick wall, 24" diameter casing	B-42	20	3.200	L.F.	154	164	135	453	560
0200	36" diameter		16	4		238	205	168	611	750
0300	48" diameter		15	4.267		330	218	179	727	885
0500	Railroad work, 24" diameter		15	4.267		154	218	179	551	690
0600	36" diameter		14	4.571		238	234	192	664	820
0700	48" diameter		12	5.333		330	273	224	827	1,025
0900	For ledge, add								20%	20%

33 05 07.36 Microtunneling

0010	**MICROTUNNELING**									
0011	Not including excavation, backfill, shoring,									
0020	or dewatering, average 50'/day, slurry method									
0100	24" to 48" outside diameter, minimum				L.F.				965	965
0110	Adverse conditions, add				"				500	500
1000	Rent microtunneling machine, average monthly lease				Month				97,500	107,000
1010	Operating technician				Day				630	705
1100	Mobilization and demobilization, minimum				Job				41,200	45,900
1110	Maximum				"				445,500	490,500

33 05 61 – Concrete Manholes

33 05 61.10 Storm Drainage Manholes, Frames and Covers

0010	**STORM DRAINAGE MANHOLES, FRAMES & COVERS**									
0020	Excludes footing, excavation, backfill (See line items for frame & cover)									
0050	Brick, 4' inside diameter, 4' deep	D-1	1	16	Ea.	995	800		1,795	2,300
0100	6' deep		.70	22.857		1,425	1,150		2,575	3,300
0150	8' deep		.50	32		1,850	1,600		3,450	4,450
0200	Add for 1' depth increase		4	4	V.L.F.	250	201		451	575
0400	Concrete blocks (radial), 4' ID, 4' deep		1.50	10.667	Ea.	455	535		990	1,300

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33 05 61 – Concrete Manholes

	33 05 61.10 Storm Drainage Manholes, Frames and Covers	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0500	6′ deep	D-1	1	16	Ea.	590	800		1,390	1,850
0600	8′ deep	D-1	.70	22.857	Ea.	720	1,150		1,870	2,525
0700	For depths over 8′, add	″	5.50	2.909	V.L.F.	68.50	146		214.50	295
0800	Concrete, cast in place, 4′ x 4′, 8″ thick, 4′ deep	C-14H	2	24	Ea.	790	1,325	13.90	2,128.90	2,850
0900	6′ deep		1.50	32		1,150	1,750	18.55	2,918.55	3,900
1000	8′ deep		1	48		1,650	2,650	28	4,328	5,750
1100	For depths over 8′, add		8	6	V.L.F.	186	330	3.48	519.48	700
1110	Precast, 4′ ID, 4′ deep	B-22	4.10	7.317	Ea.	1,025	390	63.50	1,478.50	1,775
1120	6′ deep		3	10		1,200	530	86.50	1,816.50	2,225
1130	8′ deep		2	15		2,125	800	130	3,055	3,675
1140	For depths over 8′, add		16	1.875	V.L.F.	119	100	16.25	235.25	298
1150	5′ ID, 4′ deep	B-6	3	8	Ea.	2,100	395	110	2,605	3,000
1160	6′ deep		2	12		3,625	595	164	4,384	5,025
1170	8′ deep		1.50	16		3,075	790	219	4,084	4,800
1180	For depths over 8′, add		12	2	V.L.F.	525	99	27.50	651.50	750
1190	6′ ID, 4′ deep		2	12	Ea.	2,325	595	164	3,084	3,625
1200	6′ deep		1.50	16		5,125	790	219	6,134	7,050
1210	8′ deep		1	24		6,000	1,175	330	7,505	8,725
1220	For depths over 8′, add		8	3	V.L.F.	475	148	41	664	785
1250	Slab tops, precast, 8″ thick									
1300	4′ diameter manhole	B-6	8	3	Ea.	190	148	41	379	475
1400	5′ diameter manhole		7.50	3.200		325	158	44	527	645
1500	6′ diameter manhole		7	3.429		700	169	47	916	1,075
3800	Steps, heavyweight cast iron, 7″ x 9″	1 Bric	40	.200		17.90	11.05		28.95	36.5
3900	8″ x 9″		40	.200		21.50	11.05		32.55	40
3928	12″ x 10-1/2″		40	.200		63	11.05		74.05	86
4000	Standard sizes, galvanized steel		40	.200		25	11.05		36.05	44
4100	Aluminum		40	.200		32	11.05		43.05	51.5
4150	Polyethylene		40	.200		34	11.05		45.05	54

33 05 63 – Concrete Vaults and Chambers

33 05 63.13 Precast Concrete Utility Structures

0010	**PRECAST CONCRETE UTILITY STRUCTURES**, 6″ thick									
0050	5′ x 10′ x 6′ high, ID	B-13	2	28	Ea.	1,975	1,400	1,050	4,425	5,400
0100	6′ x 10′ x 6′ high, ID		2	28		2,050	1,400	1,050	4,500	5,500
0150	5′ x 12′ x 6′ high, ID		2	28		2,175	1,400	1,050	4,625	5,625
0200	6′ x 12′ x 6′ high, ID		1.80	31.111		2,450	1,550	1,175	5,175	6,250
0250	6′ x 13′ x 6′ high, ID		1.50	37.333		3,200	1,850	1,400	6,450	7,800
0300	8′ x 14′ x 7′ high, ID		1	56		3,450	2,775	2,100	8,325	10,200
0350	Hand hole, precast concrete, 1-1/2″ thick									
0400	1′-0″ x 2′-0″ x 1′-9″, ID, light duty	B-1	4	6	Ea.	440	278		718	900
0450	4′-6″ x 3′-2″ x 2′-0″, OD, heavy duty	B-6	3	8	″	2,050	395	110	2,555	2,950

33 05 97 – Identification and Signage for Utilities

33 05 97.05 Utility Connection

0010	**UTILITY CONNECTION**									
0020	Water, sanitary, stormwater, gas, single connection	B-14	1	48	Ea.	3,050	2,300	330	5,680	7,125
0030	Telecommunication	″	3	16	″	415	765	110	1,290	1,725

33 05 97.10 Utility Accessories

0010	**UTILITY ACCESSORIES**									
0400	Underground tape, detectable, reinforced, alum. foil core, 2″	1 Clab	150	.053	C.L.F.	2	2.43		4.43	5.8

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

33 11 Groundwater Sources

33 11 13 – Potable Water Supply Wells

33 11 13.10 Wells and Accessories	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **WELLS & ACCESSORIES**									
0011 Domestic									
0100 Drilled, 4" to 6" diameter	B-23	120	.333	L.F.		15.35	9.70	25.05	33.50
0200 8" diameter	"	95.20	.420	"		19.35	12.20	31.55	42.50
0400 Gravel pack well, 40' deep, incl. gravel & casing, complete									
0500 24" diameter casing x 18" diameter screen	B-23	.13	308	Total	40,400	14,200	8,950	63,550	75,500
0600 36" diameter casing x 18" diameter screen		.12	333	"	41,600	15,300	9,700	66,600	79,000
0800 Observation wells, 1-1/4" riser pipe		163	.245	V.L.F.	18.95	11.30	7.15	37.40	45.50
0900 For flush Buffalo roadway box, add	1 Skwk	16.60	.482	Ea.	54.50	28.50		83	103
1200 Test well, 2-1/2" diameter, up to 50' deep (15 to 50 GPM)	B-23	1.51	26.490	"	935	1,225	770	2,930	3,700
1300 Over 50' deep, add	"	121.80	.328	L.F.	25	15.10	9.55	49.65	60.50
1500 Pumps, installed in wells to 100' deep, 4" submersible									
1510 1/2 HP	Q-1	3.22	4.969	Ea.	575	310		885	1,100
1520 3/4 HP		2.66	6.015		795	380		1,175	1,450
1600 1 HP		2.29	6.987		935	440		1,375	1,675
1700 1-1/2 HP	Q-22	1.60	10		1,250	630	1,250	3,130	3,675
1800 2 HP		1.33	12.030		1,725	755	1,500	3,980	4,675
1900 3 HP		1.14	14.035		2,325	880	1,750	4,955	5,800
2000 5 HP		1.14	14.035		2,850	880	1,750	5,480	6,400
3000 Pump, 6" submersible, 25' to 150' deep, 25 HP, 103 to 400 GPM		.89	17.978		9,725	1,125	2,225	13,075	14,800
3100 25' to 500' deep, 30 HP, 104 to 400 GPM		.73	21.918		11,400	1,375	2,725	15,500	17,700
8000 Steel well casing	B-23A	3020	.008	Lb.	1.35	.41	.30	2.06	2.43
9950 See Section 31 23 19.40 for wellpoints									
9960 See Section 31 23 19.30 for drainage wells									

33 11 13.20 Water Supply Wells, Pumps

0010 **WATER SUPPLY WELLS, PUMPS**									
0011 With pressure control									
1000 Deep well, jet, 42 gal. galvanized tank									
1040 3/4 HP	1 Plum	.80	10	Ea.	1,175	700		1,875	2,350
3000 Shallow well, jet, 30 gal. galvanized tank									
3040 1/2 HP	1 Plum	2	4	Ea.	945	279		1,224	1,475

33 14 Water Utility Transmission and Distribution

33 14 13 – Public Water Utility Distribution Piping

33 14 13.15 Water Supply, Ductile Iron Pipe

0010 **WATER SUPPLY, DUCTILE IRON PIPE** R331113-80									
0020 Not including excavation or backfill									
2000 Pipe, class 50 water piping, 18' lengths									
2020 Mechanical joint, 4" diameter	B-21	200	.140	L.F.	57	7.35	.87	65.22	74.50
2040 6" diameter		160	.175		70	9.20	1.08	80.28	92
2060 8" diameter		133.33	.210		97.50	11.05	1.30	109.85	125
2080 10" diameter		114.29	.245		126	12.85	1.52	140.37	160
2100 12" diameter		105.26	.266		157	13.95	1.65	172.60	196
2120 14" diameter		100	.280		120	14.70	1.73	136.43	156
2140 16" diameter		72.73	.385		122	20	2.38	144.38	167
2160 18" diameter		68.97	.406		163	21.50	2.51	187.01	215
2170 20" diameter		57.14	.490		165	25.50	3.03	193.53	223
2180 24" diameter		47.06	.595		182	31	3.68	216.68	251
3000 Push-on joint, 4" diameter		400	.070		24	3.68	.43	28.11	32.50
3020 6" diameter		333.33	.084		23.50	4.41	.52	28.43	33
3040 8" diameter		200	.140		33	7.35	.87	41.22	48.50

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33 14 13 – Public Water Utility Distribution Piping

	33 14 13.15 Water Supply, Ductile Iron Pipe	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
3060	10" diameter	B-21	181.82	.154	L.F.	51	8.10	.95	60.05	69.5
3080	12" diameter		160	.175		54	9.20	1.08	64.28	74.5
3100	14" diameter		133.33	.210		54	11.05	1.30	66.35	77.5
3120	16" diameter		114.29	.245		57.50	12.85	1.52	71.87	84
3140	18" diameter		100	.280		64	14.70	1.73	80.43	94
3160	20" diameter		88.89	.315		66.50	16.55	1.95	85	99.5
3180	24" diameter		76.92	.364		92.50	19.10	2.25	113.85	133
8000	Piping, fittings, mechanical joint, AWWA C110									
8006	90° bend, 4" diameter	B-20	16	1.500	Ea.	216	76		292	350
8020	6" diameter	"	12.80	1.875		365	95		460	540
8040	8" diameter	B-21	10.67	2.624		545	138	16.25	699.25	825
8060	10" diameter		11.43	2.450		915	129	15.15	1,059.15	1,200
8080	12" diameter		10.53	2.659		1,450	140	16.45	1,606.45	1,825
8100	14" diameter	B-21	10	2.800	Ea.	1,550	147	17.35	1,714.35	1,950
8120	16" diameter		7.27	3.851		2,325	202	24	2,551	2,875
8140	18" diameter		6.90	4.058		3,275	213	25	3,513	3,950
8160	20" diameter		5.71	4.904		4,075	257	30.50	4,362.50	4,925
8180	24" diameter		4.70	5.957		6,200	315	37	6,552	7,300
8200	Wye or tee, 4" diameter	B-20	10.67	2.249		550	114		664	775
8220	6" diameter	"	8.53	2.814		745	143		888	1,025
8240	8" diameter	B-21	7.11	3.938		1,150	207	24.50	1,381.50	1,600
8260	10" diameter		7.62	3.675		785	193	23	1,001	1,175
8280	12" diameter		7.02	3.989		2,200	209	24.50	2,433.50	2,775
8300	14" diameter		6.67	4.198		2,625	220	26	2,871	3,250
8320	16" diameter		4.85	5.773		3,025	305	35.50	3,365.50	3,825
8340	18" diameter		4.60	6.087		5,325	320	37.50	5,682.50	6,375
8360	20" diameter		3.81	7.349		7,775	385	45.50	8,205.50	9,175
8380	24" diameter		3.14	8.917		10,700	470	55	11,225	12,600
8450	Decreaser, 6" x 4" diameter	B-20	14.22	1.688		268	85.50		353.50	425
8460	8" x 6" diameter	B-21	11.64	2.406		400	126	14.90	540.90	645
8470	10" x 6" diameter		13.33	2.101		505	110	13	628	735
8480	12" x 6" diameter		12.70	2.205		710	116	13.65	839.65	975
8490	16" x 6" diameter		10	2.800		1,150	147	17.35	1,314.35	1,525
8500	20" x 6" diameter		8.42	3.325		2,075	175	20.50	2,270.50	2,575
8550	Piping, butterfly valves, cast iron									
8560	4" diameter	B-20	6	4	Ea.	640	203		843	1,000
8570	6" diameter	"	5	4.800		875	243		1,118	1,325
8580	8" diameter	B-21	4	7		1,125	370	43.50	1,538.50	1,850
8590	10" diameter		3.50	8		1,575	420	49.50	2,044.50	2,425
8600	12" diameter		3	9.333		2,175	490	58	2,723	3,200
8610	14" diameter		2	14		4,075	735	86.50	4,896.50	5,675
8620	16" diameter		2	14		6,375	735	86.50	7,196.50	8,225

33 14 13.25 Water Supply, Polyvinyl Chloride Pipe

0010	**WATER SUPPLY, POLYVINYL CHLORIDE PIPE**									
0020	Not including excavation or backfill, unless specified									
2100	PVC pipe, Class 150, 1-1/2" diameter	Q-1A	750	.013	L.F.	.80	.94		1.74	2.2
2120	2" diameter		686	.015		.81	1.02		1.83	2.4
2140	2-1/2" diameter		500	.020		1.18	1.40		2.58	3.3
2160	3" diameter	B-20	430	.056		1.77	2.83		4.60	6.2
3010	AWWA C905, PR 100, DR 25									
3030	14" diameter	B-21	213	.131	L.F.	14.85	6.90	.81	22.56	27.5
3040	16" diameter		200	.140		20.50	7.35	.87	28.72	34.5

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33 14 13.25 Water Supply, Polyvinyl Chloride Pipe	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
3050 18" diameter	B-21	160	.175	L.F.	24.50	9.20	1.08	34.78	42
3060 20" diameter		133	.211		30.50	11.05	1.30	42.85	51.50
3070 24" diameter		107	.262		45.50	13.75	1.62	60.87	72.50
3080 30" diameter		80	.350		76.50	18.40	2.17	97.07	114
3090 36" diameter		80	.350		118	18.40	2.17	138.57	159
3100 42" diameter		60	.467		159	24.50	2.89	186.39	215
3200 48" diameter		60	.467		203	24.50	2.89	230.39	263
4520 Pressure pipe Class 150, SDR 18, AWWA C900, 4" diameter	B-20	380	.063		4.09	3.20		7.29	9.30
4530 6" diameter	"	316	.076		5.95	3.85		9.80	12.25
4540 8" diameter	B-21	264	.106		7.60	5.55	.66	13.81	17.35
4550 10" diameter		220	.127		10.30	6.70	.79	17.79	22
4560 12" diameter		186	.151		14.05	7.90	.93	22.88	28.50
8000 Fittings with rubber gasket									
8003 Class 150, DR 18									
8006 90° bend , 4" diameter	B-20	100	.240	Ea.	45	12.15		57.15	67.50
8020 6" diameter	"	90	.267		80.50	13.50		94	109
8040 8" diameter	B-21	80	.350		155	18.40	2.17	175.57	201
8060 10" diameter		50	.560		300	29.50	3.47	332.97	385
8080 12" diameter		30	.933		450	49	5.80	504.80	575
8100 Tee, 4" diameter		90	.311		62	16.35	1.93	80.28	95
8120 6" diameter		80	.350		139	18.40	2.17	159.57	183
8140 8" diameter		70	.400		198	21	2.48	221.48	252
8160 10" diameter		40	.700		236	37	4.33	277.33	320
8180 12" diameter		20	1.400		390	73.50	8.65	472.15	550
8200 45° bend, 4" diameter	B-20	100	.240		45	12.15		57.15	67.50
8220 6" diameter	"	90	.267		76	13.50		89.50	104
8240 8" diameter	B-21	50	.560		121	29.50	3.47	153.97	182
8260 10" diameter		50	.560		190	29.50	3.47	222.97	257
8280 12" diameter		30	.933		258	49	5.80	312.80	360
8300 Reducing tee 6" x 4"		100	.280		135	14.70	1.73	151.43	173
8320 8" x 6"		90	.311		241	16.35	1.93	259.28	292
8330 10" x 6"		90	.311		211	16.35	1.93	229.28	259
8340 10" x 8"		90	.311		226	16.35	1.93	244.28	275
8350 12" x 6"		90	.311		283	16.35	1.93	301.28	335
8360 12" x 8"		90	.311		315	16.35	1.93	333.28	370
8400 Tapped service tee (threaded type) 6" x 6" x 3/4"		100	.280		102	14.70	1.73	118.43	137
8430 6" x 6" x 1"		90	.311		102	16.35	1.93	120.28	140
8440 6" x 6" x 1-1/2"		90	.311		102	16.35	1.93	120.28	140
8450 6" x 6" x 2"		90	.311		102	16.35	1.93	120.28	140
8460 8" x 8" x 3/4"	B-21	90	.311	Ea.	151	16.35	1.93	169.28	193
8470 8" x 8" x 1"		90	.311		151	16.35	1.93	169.28	193
8480 8" x 8" x 1-1/2"		90	.311		151	16.35	1.93	169.28	193
8490 8" x 8" x 2"		90	.311		151	16.35	1.93	169.28	193
8500 Repair coupling 4"	B-20	100	.240		28	12.15		40.15	49
8520 6" diameter		90	.267		43	13.50		56.50	67
8540 8" diameter		50	.480		103	24.50		127.50	151
8560 10" diameter		50	.480		218	24.50		242.50	276
8580 12" diameter		50	.480		277	24.50		301.50	340
8600 Plug end 4"		100	.240		24.50	12.15		36.65	44.50
8620 6" diameter		90	.267		43.50	13.50		57	68
8640 8" diameter		50	.480		74.50	24.50		99	118
8660 10" diameter		50	.480		119	24.50		143.50	168
8680 12" diameter		50	.480		160	24.50		184.50	213

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33 14 Water Utility Transmission and Distribution

33 14 19 – Valves and Hydrants for Water Utility Service

33 14 19.30 Fire Hydrants	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **FIRE HYDRANTS**									
0020 Mechanical joints unless otherwise noted									
1000 Fire hydrants, two way; excavation and backfill not incl.									
1100 4-1/2" valve size, depth 2'-0"	B-21	10	2.800	Ea.	3,075	147	17.35	3,239.35	3,65
1120 2'-6"		10	2.800		3,075	147	17.35	3,239.35	3,65
1140 3'-0"		10	2.800		3,200	147	17.35	3,364.35	3,77
1300 7'-0"		6	4.667		3,675	245	29	3,949	4,45
2400 Lower barrel extensions with stems, 1'-0"	B-20	14	1.714		655	87		742	85
2480 3'-0"	"	12	2		1,375	101		1,476	1,65

33 16 Water Utility Storage Tanks

33 16 11 – Elevated Composite Water Storage Tanks

33 16 11.50 Elevated Water Storage Tanks

0010 **ELEVATED WATER STORAGE TANKS**									
0011 Not incl. pipe, pumps or foundation									
3000 Elevated water tanks, 100' to bottom capacity line, incl. painting									
3010 50,000 gallons				Ea.				185,000	204,00
3300 100,000 gallons								280,000	307,50
3400 250,000 gallons								751,500	826,50
3600 500,000 gallons								1,336,000	1,470,00
3700 750,000 gallons								1,622,000	1,783,50
3900 1,000,000 gallons								2,322,000	2,556,00

33 16 23 – Ground-Level Steel Water Storage Tanks

33 16 23.13 Steel Water Storage Tanks

0010 **STEEL WATER STORAGE TANKS**									
0910 Steel, ground level, ht./diam. less than 1, not incl. fdn., 100,000 gallons				Ea.				202,000	244,50
1000 250,000 gallons								295,500	324,00
1200 500,000 gallons								417,000	458,50
1250 750,000 gallons								538,000	591,50
1300 1,000,000 gallons								558,000	725,50
1500 2,000,000 gallons								1,043,000	1,148,00
1600 4,000,000 gallons								2,121,000	2,333,00
1800 6,000,000 gallons								3,095,000	3,405,00
1850 8,000,000 gallons								4,068,000	4,475,00
1910 10,000,000 gallons								5,050,000	5,554,50
2100 Steel standpipes, ht./diam. more than 1,100' to overflow, no fdn.									
2200 500,000 gallons				Ea.				546,500	600,50
2400 750,000 gallons								722,500	794,50
2500 1,000,000 gallons								1,060,500	1,167,00
2700 1,500,000 gallons								1,749,000	1,923,00
2800 2,000,000 gallons								2,327,000	2,559,00

33 16 36 – Ground-Level Reinforced Concrete Water Storage Tanks

33 16 36.16 Prestressed Conc. Water Storage Tanks

0010 **PRESTRESSED CONC. WATER STORAGE TANKS**									
0020 Not including fdn., pipe or pumps, 250,000 gallons				Ea.				299,000	329,50
0100 500,000 gallons								487,000	536,00
0300 1,000,000 gallons								707,000	807,50
0400 2,000,000 gallons								1,072,000	1,179,00
0600 4,000,000 gallons								1,706,000	1,877,00

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33 16 Water Utility Storage Tanks

33 16 36 – Ground-Level Reinforced Concrete Water Storage Tanks

33 16 36.16 Prestressed Conc. Water Storage Tanks		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0700	6,000,000 gallons				Ea.				2,266,000	2,493,000
0750	8,000,000 gallons								2,924,000	3,216,000
0800	10,000,000 gallons								3,533,000	3,886,000

33 16 56 – Ground-Level Plastic Water Storage Cisterns

33 16 56.23 Plastic-Coated Fabric Pillow Water Tanks

0010	**PLASTIC-COATED FABRIC PILLOW WATER TANKS**									
7000	Water tanks, vinyl coated fabric pillow tanks, freestanding, 5,000 gallons	4 Clab	4	8	Ea.	3,175	365		3,540	4,050
7100	Supporting embankment not included, 25,000 gallons	6 Clab	2	24		11,000	1,100		12,100	13,700
7200	50,000 gallons	8 Clab	1.50	42.667		16,900	1,950		18,850	21,500
7300	100,000 gallons	9 Clab	.90	80		30,200	3,650		33,850	38,700
7400	150,000 gallons		.50	144		35,700	6,575		42,275	49,100
7500	200,000 gallons		.40	180		57,500	8,200		65,700	75,500
7600	250,000 gallons		.30	240		71,500	10,900		82,400	95,500

33 31 Sanitary Sewerage Piping

33 31 11 – Public Sanitary Sewerage Gravity Piping

3416	16" diameter	B-21	80	.350	L.F.	237	18.40	2.17	257.57	290
3418	18" diameter	B-13B	80	.700		415	34.50	28.50	478	540
3420	20" diameter		60	.933		450	46.50	38	534.50	605
3424	24" diameter		60	.933		610	46.50	38	694.50	780
3436	36" diameter		40	1.400		950	69.50	56.50	1,076	1,225

33 31 11.25 Sewage Collection, Polyvinyl Chloride Pipe

0010	**SEWAGE COLLECTION, POLYVINYL CHLORIDE PIPE**									
0020	Not including excavation or backfill									
2000	20' lengths, SDR 35, B&S, 4" diameter	B-20	375	.064	L.F.	2.21	3.24		5.45	7.30
2040	6" diameter		350	.069		4.26	3.48		7.74	9.90
2080	13' lengths, SDR 35, B&S, 8" diameter		335	.072		12.70	3.63		16.33	19.40
2120	10" diameter	B-21	330	.085		12.05	4.46	.53	17.04	20.50
2160	12" diameter		320	.088		16.95	4.59	.54	22.08	26
2170	14" diameter		280	.100		23.50	5.25	.62	29.37	34
2200	15" diameter		240	.117		28.50	6.15	.72	35.37	41.50
2250	16" diameter		220	.127		34.50	6.70	.79	41.99	49
4000	Piping, DWV PVC, no exc./bkfill., 10' L, Sch 40, 4" diameter	B-20	375	.064		8.55	3.24		11.79	14.25
4010	6" diameter		350	.069		20.50	3.48		23.98	27.50
4020	8" diameter		335	.072		32.50	3.63		36.13	41.50

33 31 11.37 Centrif. Cst. Fbgs-Reinf. Polymer Mort. Util. Pipe

0010	**CENTRIF. CST. FBGS-REINF. POLYMER MORT. UTIL. PIPE**									
0020	Not including excavation or backfill									
3348	48" diameter, SN 46, 25psi	B-13B	40	1.400	L.F.	196	69.50	56.50	322	380
3354	54" diameter		40	1.400		320	69.50	56.50	446	515
3363	63" diameter		20	2.800		395	139	113	647	765
3418	18" diameter, 100psi		60	.933		139	46.50	38	223.50	264
3424	24" diameter		60	.933		153	46.50	38	237.50	279
3436	36" diameter		40	1.400		173	69.50	56.50	299	355
3444	44" diameter		40	1.400		190	69.50	56.50	316	375
3448	48" diameter		40	1.400		212	69.50	56.50	338	400

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33 34 13 – Septic Tanks

	33 34 13.13 Concrete Septic Tanks	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**CONCRETE SEPTIC TANKS**									
0011	Not including excavation or piping									
0015	Septic tanks, precast, 1,000 gallon	B-21	8	3.500	Ea.	990	184	21.50	1,195.50	1,400
0060	1,500 gallon		7	4		1,425	210	25	1,660	1,900
0100	2,000 gallon		5	5.600		2,400	294	34.50	2,728.50	3,125
0200	5,000 gallon	B-13	3.50	16		7,250	795	600	8,645	9,800
0300	15,000 gallon, 4 piece	B-13B	1.70	32.941	Ea.	20,300	1,625	1,325	23,250	26,200
0400	25,000 gallon, 4 piece		1.10	50.909		37,500	2,525	2,050	42,075	47,300
0500	40,000 gallon, 4 piece		.80	70		60,000	3,475	2,825	66,300	74,500
0520	50,000 gallon, 5 piece	B-13C	.60	93.333		69,000	4,625	2,350	75,975	85,500
0640	75,000 gallon, cast in place	C-14C	.25	448		84,000	24,100	112	108,212	128,500
0660	100,000 gallon	"	.15	747		104,000	40,200	187	144,387	174,000
1150	Leaching field chambers, 13' x 3'-7" x 1'-4", standard	B-13	16	3.500		480	174	131	785	935
1200	Heavy duty, 8' x 4' x 1'-6"		14	4		284	199	149	632	770
1300	13' x 3'-9" x 1'-6"		12	4.667		1,400	232	174	1,806	2,075
1350	20' x 4' x 1'-6"		5	11.200		1,250	555	420	2,225	2,650
1400	Leaching pit, precast concrete, 3' diameter, 3' deep	B-21	8	3.500		715	184	21.50	920.50	1,075
1500	6' diameter, 3' section		4.70	5.957		1,125	315	37	1,477	1,725
2000	Velocity reducing pit, precast conc., 6' diameter, 3' deep		4.70	5.957		1,875	315	37	2,227	2,575

33 34 13.33 Polyethylene Septic Tanks

0010	**POLYETHYLENE SEPTIC TANKS**									
0011	High density polyethylene, 300 gallon	B-21	9.50	2.947	Ea.	725	155	18.25	898.25	1,050
0012	High density polyethylene, 500 gallon		9	3.111		1,150	163	19.25	1,332.25	1,550
0014	High density polyethylene, 750 gallon		8.50	3.294		1,225	173	20.50	1,418.50	1,625
0015	High density polyethylene, 1,000 gallon		8	3.500		1,325	184	21.50	1,530.50	1,750
0020	1,250 gallon		8	3.500		1,725	184	21.50	1,930.50	2,200
0025	1,500 gallon		7	4		2,300	210	25	2,535	2,875
0030	2,500 gallon		6	4.667		4,750	245	29	5,024	5,625
0035	3,000 gallon		5.50	5.091		6,500	267	31.50	6,798.50	7,575
0040	3,500 gallon		5	5.600		7,750	294	34.50	8,078.50	9,000

33 34 16 – Septic Tank Effluent Filters

33 34 16.13 Septic Tank Gravity Effluent Filters

0010	**SEPTIC TANK GRAVITY EFFLUENT FILTERS**									
3000	Effluent filter, 4" diameter	1 Skwk	8	1	Ea.	36	59		95	128
3020	6" diameter		7	1.143		44	67.50		111.50	149
3030	8" diameter		7	1.143		256	67.50		323.50	380
3040	8" diameter, very fine		7	1.143		510	67.50		577.50	660
3050	10" diameter, very fine		6	1.333		242	78.50		320.50	385
3060	10" diameter		6	1.333		276	78.50		354.50	425
3080	12" diameter		6	1.333		665	78.50		743.50	850
3090	15" diameter		5	1.600		1,100	94		1,194	1,350

33 34 51 – Drainage Field Systems

33 34 51.10 Drainage Field Excavation and Fill

0010	**DRAINAGE FIELD EXCAVATION AND FILL**									
2200	Septic tank & drainage field excavation with 3/4 C.Y. backhoe	B-12F	145	.110	C.Y.		6	6.05	12.05	15.60
2400	4' trench for disposal field, 3/4 C.Y. backhoe	B-12F	335	.048	L.F.		2.60	2.61	5.21	6.75
2600	Gravel fill, run of bank	B-6	150	.160	C.Y.	25	7.90	2.19	35.09	41.50
2800	Crushed stone, 3/4"	"	150	.160	"	28.50	7.90	2.19	38.59	45

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33 34 Onsite Wastewater Disposal

33 34 51 – Drainage Field Systems

33 34 51.13 Utility Septic Tank Tile Drainage Field	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **UTILITY SEPTIC TANK TILE DRAINAGE FIELD**									
0015 Distribution box, concrete, 5 outlets	2 Clab	20	.800	Ea.	75.50	36.50		112	138
0020 7 outlets		16	1		94	45.50		139.50	171
0025 9 outlets		8	2		535	91		626	720
0115 Distribution boxes, HDPE, 5 outlets		20	.800		75.50	36.50		112	138
0117 6 outlets		15	1.067		75.50	48.50		124	156
0118 7 outlets		15	1.067		75	48.50		123.50	155
0120 8 outlets	↓	10	1.600		79.50	73		152.50	197
0240 Distribution boxes, outlet flow leveler	1 Clab	50	.160		3.01	7.30		10.31	14.15
0300 Precast concrete, galley, 4′ x 4′ x 4′	B-21	16	1.750	↓	248	92	10.85	350.85	420
0350 HDPE infiltration chamber 12″ H x 15″ W	2 Clab	300	.053	L.F.	7.10	2.43		9.53	11.40
0351 12″ H x 15″ W end cap	1 Clab	32	.250	Ea.	19.15	11.40		30.55	38
0355 chamber 12″ H x 22″ W	2 Clab	300	.053	L.F.	6.75	2.43		9.18	11
0356 12″ H x 22″ W end cap	1 Clab	32	.250	Ea.	23.50	11.40		34.90	43
0360 chamber 13″ H x 34″ W	2 Clab	300	.053	L.F.	14.55	2.43		16.98	19.60
0361 13″ H x 34″ W end cap	1 Clab	32	.250	Ea.	51.50	11.40		62.90	73.50
0365 chamber 16″ H x 34″ W	2 Clab	300	.053	L.F.	14.95	2.43		17.38	20
0366 16″ H x 34″ W end cap	1 Clab	32	.250	Ea.	17	11.40		28.40	35.50
0370 chamber 8″ H x 16″ W	2 Clab	300	.053	L.F.	11.40	2.43		13.83	16.15
0371 8″ H x 16″ W end cap	1 Clab	32	.250	Ea.	11.20	11.40		22.60	29.50

33 41 Subdrainage

33 41 16 – Subdrainage Piping

33 41 16.10 Piping, Subdrainage, Vitrified Clay

0010 **PIPING, SUBDRAINAGE, VITRIFIED CLAY**									
0020 Not including excavation and backfill									
1000 Foundation drain, 6″ diameter	B-14	315	.152	L.F.	6.10	7.30	1.04	14.44	18.75
1010 8″ diameter		290	.166		9.10	7.90	1.13	18.13	23
1020 12″ diameter		275	.175		19.60	8.35	1.20	29.15	35.50
3000 Perforated, 5′ lengths, C700, 4″ diameter		400	.120		3.45	5.75	.82	10.02	13.25
3020 6″ diameter		315	.152		6.60	7.30	1.04	14.94	19.25
3040 8″ diameter		290	.166		7.25	7.90	1.13	16.28	21
3060 12″ diameter	↓	275	.175	↓	19.95	8.35	1.20	29.50	36

33 41 16.25 Piping, Subdrainage, Corrugated Metal

0010 **PIPING, SUBDRAINAGE, CORRUGATED METAL**									
0021 Not including excavation and backfill									
2010 Aluminum, perforated									
2020 6″ diameter, 18 ga.	B-20	380	.063	L.F.	7.35	3.20		10.55	12.90
2200 8″ diameter, 16 ga.	″	370	.065		12.05	3.29		15.34	18.20
2220 10″ diameter, 16 ga.	B-21	360	.078		15.10	4.08	.48	19.66	23
2240 12″ diameter, 16 ga.		285	.098		16.90	5.15	.61	22.66	27
2260 18″ diameter, 16 ga.	↓	205	.137	↓	25.50	7.15	.85	33.50	39.50
3000 Uncoated galvanized, perforated									
3020 6″ diameter, 18 ga.	B-20	380	.063	L.F.	7.80	3.20		11	13.40
3200 8″ diameter, 16 ga.	″	370	.065		9.40	3.29		12.69	15.20
3220 10″ diameter, 16 ga.	B-21	360	.078		9.95	4.08	.48	14.51	17.60
3240 12″ diameter, 16 ga.		285	.098		11.05	5.15	.61	16.81	20.50
3260 18″ diameter, 16 ga.	↓	205	.137	↓	16.95	7.15	.85	24.95	30.50
4000 Steel, perforated, asphalt coated									
4020 6″ diameter, 18 ga.	B-20	380	.063	L.F.	6.95	3.20		10.15	12.45

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33 41 Subdrainage

33 41 16 – Subdrainage Piping

	33 41 16.25 Piping, Subdrainage, Corrugated Metal	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4030	8" diameter, 18 ga.	B-20	370	.065	L.F.	10.75	3.29		14.04	16.7
4040	10" diameter, 16 ga.	B-21	360	.078		10.90	4.08	.48	15.46	18.6
4050	12" diameter, 16 ga.		285	.098		10.85	5.15	.61	16.61	20.5
4060	18" diameter, 16 ga.		205	.137		19.45	7.15	.85	27.45	33

33 41 16.40 Piping, Subdrainage, Polyvinyl Chloride

0010 **PIPING, SUBDRAINAGE, POLYVINYL CHLORIDE**

0020 Perforated, price as solid pipe, Section 33 31 11.25

33 42 Stormwater Conveyance

33 42 11 – Stormwater Gravity Piping

33 42 11.40 Piping, Storm Drainage, Corrugated Metal

0010 **PIPING, STORM DRAINAGE, CORRUGATED METAL**

0020 Not including excavation or backfill

2000 Corrugated metal pipe, galvanized

2040	8" diameter, 16 ga.	B-14	330	.145	L.F.	7.60	6.95	1	15.55	19.8
2060	10" diameter, 16 ga.		260	.185		7.90	8.85	1.26	18.01	23
2080	12" diameter, 16 ga.		210	.229		12.55	10.95	1.57	25.07	32
2100	15" diameter, 16 ga.		200	.240		13.30	11.50	1.64	26.44	33.5
2120	18" diameter, 16 ga.		190	.253		19.55	12.10	1.73	33.38	41.5
2140	24" diameter, 14 ga.		160	.300		21.50	14.35	2.06	37.91	48
2160	30" diameter, 14 ga.	B-13	120	.467		27.50	23	17.45	67.95	84
2180	36" diameter, 12 ga.		120	.467		30.50	23	17.45	70.95	87.5
2200	48" diameter, 12 ga.		100	.560		41.50	28	21	90.50	110
2220	60" diameter, 10 ga.	B-13B	75	.747		73	37	30	140	169
2240	72" diameter, 8 ga.	"	45	1.244		76	62	50.50	188.50	232
2500	Galvanized, uncoated, 20' lengths									
2520	8" diameter, 16 ga.	B-14	355	.135	L.F.	8.55	6.45	.93	15.93	20
2540	10" diameter, 16 ga.		280	.171		8.55	8.20	1.17	17.92	23
2560	12" diameter, 16 ga.		220	.218		21	10.45	1.49	32.94	40
2580	15" diameter, 16 ga.		220	.218		28.50	10.45	1.49	40.44	48.5
2600	18" diameter, 16 ga.		205	.234		32.50	11.20	1.60	45.30	54.5
2620	24" diameter, 14 ga.		175	.274		35	13.10	1.88	49.98	60
2640	30" diameter, 14 ga.	B-13	130	.431		29	21.50	16.10	66.60	81.5
2660	36" diameter, 12 ga.		130	.431		33.50	21.50	16.10	71.10	86
2680	48" diameter, 12 ga.		110	.509		49.50	25.50	19	94	113
2690	60" diameter, 10 ga.	B-13B	78	.718		81.50	35.50	29	146	175
2780	End sections, 8" diameter	B-14	35	1.371	Ea.	86	65.50	9.40	160.90	202
2785	10" diameter		35	1.371		84.50	65.50	9.40	159.40	200
2790	12" diameter		35	1.371		100	65.50	9.40	174.90	218
2800	18" diameter		30	1.600		117	76.50	10.95	204.45	254
2810	24" diameter	B-13	25	2.240		197	111	83.50	391.50	475
2820	30" diameter		25	2.240		355	111	83.50	549.50	650
2825	36" diameter		20	2.800		475	139	105	719	840
2830	48" diameter		10	5.600		1,025	278	209	1,512	1,800
2835	60" diameter	B-13B	5	11.200		2,025	555	455	3,035	3,550
2840	72" diameter	"	4	14		2,350	695	565	3,610	4,250

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33 42 11 – Stormwater Gravity Piping

33 42 11.60 Sewage/Drainage Collection, Concrete Pipe	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **SEWAGE/DRAINAGE COLLECTION, CONCRETE PIPE**									
0020 Not including excavation or backfill									
1000 Non-reinforced pipe, extra strength, B&S or T&G joints									
1010 6" diameter	B-14	265.04	.181	L.F.	10.80	8.65	1.24	20.69	26
1020 8" diameter		224	.214		11.90	10.25	1.47	23.62	30
1030 10" diameter		216	.222		13.20	10.65	1.52	25.37	32
1040 12" diameter		200	.240		13.70	11.50	1.64	26.84	34
1050 15" diameter		180	.267		19.70	12.75	1.83	34.28	42.50
1060 18" diameter		144	.333		24.50	15.95	2.28	42.73	53
1070 21" diameter		112	.429		26	20.50	2.94	49.44	62
1080 24" diameter		100	.480		30	23	3.29	56.29	70.50
2000 Reinforced culvert, class 3, no gaskets									
2010 12" diameter	B-14	150	.320	L.F.	19.95	15.30	2.19	37.44	47.50
2020 15" diameter		150	.320		24	15.30	2.19	41.49	51.50
2030 18" diameter		132	.364		27.50	17.40	2.49	47.39	59
2035 21" diameter		120	.400		32.50	19.15	2.74	54.39	67
2040 24" diameter		100	.480		40	23	3.29	66.29	81.50
2045 27" diameter	B-13	92	.609	L.F.	45.50	30	23	98.50	120
2050 30" diameter		88	.636		55	31.50	24	110.50	134
2060 36" diameter		72	.778		94	38.50	29	161.50	193
2070 42" diameter	B-13B	68	.824		133	41	33.50	207.50	244
2080 48" diameter		64	.875		177	43.50	35.50	256	298
2085 54" diameter		56	1		181	49.50	40.50	271	320
2090 60" diameter		48	1.167		214	58	47.50	319.50	375
2100 72" diameter		40	1.400		305	69.50	56.50	431	505
2120 84" diameter		32	1.750		500	87	71	658	755
2140 96" diameter		24	2.333		600	116	94.50	810.50	935
2200 With gaskets, class 3, 12" diameter	B-21	168	.167		22	8.75	1.03	31.78	38
2220 15" diameter		160	.175		26	9.20	1.08	36.28	43.50
2230 18" diameter		152	.184		30.50	9.65	1.14	41.29	49
2235 21" diameter		152	.184		35.50	9.65	1.14	46.29	54.50
2240 24" diameter		136	.206		49	10.80	1.27	61.07	71.50
2260 30" diameter	B-13	88	.636		66	31.50	24	121.50	146
2270 36" diameter	"	72	.778		107	38.50	29	174.50	208
2290 48" diameter	B-13B	64	.875		195	43.50	35.50	274	320
2310 72" diameter	"	40	1.400		335	69.50	56.50	461	535
2330 Flared ends, 12" diameter	B-21	31	.903	Ea.	340	47.50	5.60	393.10	450
2340 15" diameter		25	1.120		365	59	6.95	430.95	495
2400 18" diameter		20	1.400		405	73.50	8.65	487.15	565
2420 24" diameter		14	2		485	105	12.40	602.40	705
2440 36" diameter	B-13	10	5.600		1,125	278	209	1,612	1,900
3080 Radius pipe, add to pipe prices, 12" to 60" diameter				L.F.	50%				
3090 Over 60" diameter, add				"	20%				
3500 Reinforced elliptical, 8' lengths, C507 class 3									
3520 14" x 23" inside, round equivalent 18" diameter	B-21	82	.341	L.F.	39.50	17.95	2.11	59.56	73
3524 18" x 29" inside, round equivalent 30" diameter	B-13	58	.966		53.50	48	36	137.50	170
3525 22" x 36" inside, round equivalent 30" diameter		58	.966		71	48	36	155	189
3530 24" x 38" inside, round equivalent 30" diameter		58	.966		71	48	36	155	189
3540 29" x 45" inside, round equivalent 36" diameter		52	1.077		98	53.50	40	191.50	232
3550 38" x 60" inside, round equivalent 48" diameter		38	1.474		198	73	55	326	390
3560 48" x 76" inside, round equivalent 60" diameter		26	2.154		262	107	80.50	449.50	535
3570 58" x 91" inside, round equivalent 72" diameter		22	2.545		460	126	95	681	800

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33 42 11 – Stormwater Gravity Piping

	33 42 11.60 Sewage/Drainage Collection, Concrete Pipe	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
3780	Concrete slotted pipe, class 4 mortar joint									
3800	12" diameter	B-21	168	.167	L.F.	33	8.75	1.03	42.78	50.50
3840	18" diameter	B-21	152	.184	L.F.	41.50	9.65	1.14	52.29	61
3900	Concrete slotted pipe, Class 4 O-ring joint									
3940	12" diameter	B-21	168	.167	L.F.	26.50	8.75	1.03	36.28	43.50
3960	18" diameter	"	152	.184	"	42.50	9.65	1.14	53.29	62.50

33 42 13 – Stormwater Culverts

33 42 13.15 Oval Arch Culverts

0010	**OVAL ARCH CULVERTS**									
3000	Corrugated galvanized or aluminum, coated & paved									
3020	17" x 13", 16 ga., 15" equivalent	B-14	200	.240	L.F.	15.10	11.50	1.64	28.24	35.50
3040	21" x 15", 16 ga., 18" equivalent		150	.320		15.45	15.30	2.19	32.94	42.50
3060	28" x 20", 14 ga., 24" equivalent		125	.384		23.50	18.35	2.63	44.48	56.50
3080	35" x 24", 14 ga., 30" equivalent		100	.480		29	23	3.29	55.29	69.50
3100	42" x 29", 12 ga., 36" equivalent	B-13	100	.560		27	28	21	76	94
3120	49" x 33", 12 ga., 42" equivalent		90	.622		34.50	31	23.50	89	110
3140	57" x 38", 12 ga., 48" equivalent		75	.747		46	37	28	111	136
3160	Steel, plain oval arch culverts, plain									
3180	17" x 13", 16 ga., 15" equivalent	B-14	225	.213	L.F.	24.50	10.20	1.46	36.16	43.50
3200	21" x 15", 16 ga., 18" equivalent		175	.274		30.50	13.10	1.88	45.48	55
3220	28" x 20", 14 ga., 24" equivalent		150	.320		18	15.30	2.19	35.49	45
3240	35" x 24", 14 ga., 30" equivalent	B-13	108	.519		23.50	25.50	19.40	68.40	85.50
3260	42" x 29", 12 ga., 36" equivalent		108	.519		41.50	25.50	19.40	86.40	106
3280	49" x 33", 12 ga., 42" equivalent		92	.609		50	30	23	103	126
3300	57" x 38", 12 ga., 48" equivalent		75	.747		50.50	37	28	115.50	141
3320	End sections, 17" x 13"		22	2.545	Ea.	365	126	95	586	695
3340	42" x 29"		17	3.294	"	490	163	123	776	915
3360	Multi-plate arch, steel	B-20	1690	.014	Lb.	1.15	.72		1.87	2.35

33 42 33 – Stormwater Curbside Drains and Inlets

33 42 33.13 Catch Basins

0010	**CATCH BASINS**									
0011	Not including footing & excavation									
1600	Frames & grates, C.I., 24" square, 500 lb.	B-6	7.80	3.077	Ea.	410	152	42	604	725
1700	26" D shape, 600 lb.		7	3.429		760	169	47	976	1,150
1800	Light traffic, 18" diameter, 100 lb.		10	2.400		224	119	33	376	460
1900	24" diameter, 300 lb.		8.70	2.759		216	136	38	390	485
2000	36" diameter, 900 lb.		5.80	4.138		745	204	56.50	1,005.50	1,200
2100	Heavy traffic, 24" diameter, 400 lb.		7.80	3.077		275	152	42	469	580
2200	36" diameter, 1,150 lb.		3	8		990	395	110	1,495	1,800
2300	Mass. State standard, 26" diameter, 475 lb.		7	3.429		720	169	47	936	1,100
2400	30" diameter, 620 lb.	B-6	7	3.429	Ea.	395	169	47	611	740
2500	Watertight, 24" diameter, 350 lb.		7.80	3.077		445	152	42	639	765
2600	26" diameter, 500 lb.		7	3.429		460	169	47	676	810
2700	32" diameter, 575 lb.		6	4		950	198	55	1,203	1,400
2800	3 piece cover & frame, 10" deep,									
2900	1,200 lb., for heavy equipment	B-6	3	8	Ea.	1,125	395	110	1,630	1,950
3000	Raised for paving 1-1/4" to 2" high									
3100	4 piece expansion ring									
3200	20" to 26" diameter	1 Clab	3	2.667	Ea.	231	122		353	435
3300	30" to 36" diameter	"	3	2.667	"	370	122		492	590
3320	Frames and covers, existing, raised for paving, 2", including									
3340	row of brick, concrete collar, up to 12" wide frame	B-6	18	1.333	Ea.	54	66	18.25	138.25	178

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33 42 Stormwater Conveyance

33 42 33 – Stormwater Curbside Drains and Inlets

	33 42 33.13 Catch Basins	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
3360	20" to 26" wide frame	B-6	11	2.182	Ea.	82	108	30	220	283
3380	30" to 36" wide frame		9	2.667		101	132	36.50	269.50	350
3400	Inverts, single channel brick	D-1	3	5.333		117	267		384	530
3500	Concrete		5	3.200		142	160		302	395
3600	Triple channel, brick		2	8		193	400		593	810
3700	Concrete		3	5.333		161	267		428	575
	33 42 33.50 Stormwater Management									
0010	**STORMWATER MANAGEMENT**									
0030	Add per S.F. of impervious surface	B-37	6000	.008	S.F.	1.74	.38	.04	2.16	2.54

33 52 Hydrocarbon Transmission and Distribution

33 52 13 – Liquid Hydrocarbon Piping

	33 52 13.16 Gasoline Piping									
0010	**GASOLINE PIPING**									
0020	Primary containment pipe, fiberglass-reinforced									
0030	Plastic pipe 15′ & 30′ lengths									
0040	2" diameter	Q-6	425	.056	L.F.	6.60	3.71		10.31	12.80
0050	3" diameter		400	.060		8.95	3.94		12.89	15.75
0060	4" diameter		375	.064		11.60	4.20		15.80	19
0100	Fittings									
0110	Elbows, 90° & 45°, bell ends, 2"	Q-6	24	1	Ea.	39.50	65.50		105	142
0120	3" diameter		22	1.091		52	71.50		123.50	164
0130	4" diameter		20	1.200		65	79		144	190
0200	Tees, bell ends, 2"		21	1.143		52.50	75		127.50	170
0210	3" diameter		18	1.333		59.50	87.50		147	197
0220	4" diameter		15	1.600		73.50	105		178.50	238
0230	Flanges bell ends, 2"		24	1		28.50	65.50		94	129
0240	3" diameter		22	1.091		35	71.50		106.50	146
0250	4" diameter	Q-6	20	1.200	Ea.	39	79		118	161
0260	Sleeve couplings, 2"		21	1.143		10.85	75		85.85	124
0270	3" diameter		18	1.333		17.10	87.50		104.60	150
0280	4" diameter		15	1.600		19	105		124	178
0290	Threaded adapters, 2"		21	1.143		17.80	75		92.80	132
0300	3" diameter		18	1.333		23	87.50		110.50	157
0310	4" diameter		15	1.600		33	105		138	194
0320	Reducers, 2"		27	.889		24.50	58.50		83	114
0330	3" diameter		22	1.091		24	71.50		95.50	134
0340	4" diameter		20	1.200		32.50	79		111.50	154
1010	Gas station product line for secondary containment (double wall)									
1100	Fiberglass reinforced plastic pipe 25′ lengths									
1120	Pipe, plain end, 3" diameter	Q-6	375	.064	L.F.	32.50	4.20		36.70	42.50
1130	4" diameter		350	.069		26.50	4.50		31	36
1140	5" diameter		325	.074		30	4.85		34.85	40.50
1150	6" diameter		300	.080		33	5.25		38.25	44.50
1200	Fittings									
1230	Elbows, 90° & 45°, 3" diameter	Q-6	18	1.333	Ea.	138	87.50		225.50	283
1240	4" diameter		16	1.500		166	98.50		264.50	330
1250	5" diameter		14	1.714		159	113		272	345
1260	6" diameter		12	2		198	131		329	415
1270	Tees, 3" diameter		15	1.600		172	105		277	345
1280	4" diameter		12	2		163	131		294	375

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33 52 13 – Liquid Hydrocarbon Piping

	33 52 13.16 Gasoline Piping	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
1290	5" diameter	Q-6	9	2.667	Ea.	214	175		389	495
1300	6" diameter		6	4		300	263		563	720
1310	Couplings, 3" diameter		18	1.333		49	87.50		136.50	185
1320	4" diameter		16	1.500		111	98.50		209.50	269
1330	5" diameter		14	1.714		198	113		311	385
1340	6" diameter		12	2		310	131		441	535
1350	Cross-over nipples, 3" diameter		18	1.333		9.25	87.50		96.75	141
1360	4" diameter		16	1.500		11.30	98.50		109.80	159
1370	5" diameter		14	1.714		15.65	113		128.65	185
1380	6" diameter		12	2		16.35	131		147.35	214
1400	Telescoping, reducers, concentric 4" x 3"		18	1.333		39.50	87.50		127	175
1410	5" x 4"		17	1.412		84.50	92.50		177	231
1420	6" x 5"		16	1.500		237	98.50		335.50	410

33 52 16 – Gas Hydrocarbon Piping

33 52 16.20 Piping, Gas Service and Distribution, P.E.

0010	**PIPING, GAS SERVICE AND DISTRIBUTION, POLYETHYLENE**									
0020	Not including excavation or backfill									
1000	60 psi coils, compression coupling @ 100', 1/2" diameter, SDR 11	B-20A	608	.053	L.F.	.57	2.88		3.45	4.9
1010	1" diameter, SDR 11		544	.059		1.55	3.22		4.77	6.5
1040	1-1/4" diameter, SDR 11		544	.059		3.26	3.22		6.48	8.4
1100	2" diameter, SDR 11		488	.066		5.75	3.59		9.34	11.6
1160	3" diameter, SDR 11		408	.078		6.25	4.29		10.54	13.3
1500	60 psi 40' joints with coupling, 3" diameter, SDR 11	B-21A	408	.098		9.30	5.55	1.40	16.25	20
1540	4" diameter, SDR 11		352	.114		18	6.40	1.62	26.02	31
1600	6" diameter, SDR 11		328	.122		46	6.90	1.74	54.64	62.5
1640	8" diameter, SDR 11		272	.147		77	8.30	2.10	87.40	99

33 52 16.23 Medium Density Polyethylene Piping

2010	**MEDIUM DENSITY POLYETHYLENE PIPING**									
2020	ASTM D2513, not including excavation or backfill									
2200	Butt fused pipe									
2205	80psi coils, butt fusion joint @ 100', 1/2" CTS diameter, SDR 7	B-22C	2050	.008	L.F.	.28	.41	.12	.81	1.0
2210	1" CTS diameter, SDR 11.5		1900	.008		.29	.44	.13	.86	1.1
2215	80psi coils, butt fusion joint @ 100', IPS 1/2" diameter, SDR 9.3		1950	.008		.31	.43	.13	.87	1.1
2220	3/4" diameter, SDR 11		1950	.008		.47	.43	.13	1.03	1.3
2225	1" diameter, SDR 11		1850	.009		.76	.45	.13	1.34	1.6
2230	1-1/4" diameter, SDR 11		1850	.009		1.25	.45	.13	1.83	2.2
2235	1-1/2" diameter, SDR 11		1750	.009		1.37	.48	.14	1.99	2.3
2240	2" diameter, SDR 11		1750	.009		2.43	.48	.14	3.05	3.5
2245	80psi 40' lengths, butt fusion joint, IPS 3" diameter, SDR 11.5	B-22A	660	.061		3.03	3.16	.99	7.18	9.1
2250	4" diameter, SDR 11.5	"	500	.080		4.77	4.18	1.31	10.26	12.9
2400	Socket fused pipe									
2405	80psi coils, socket fusion coupling @ 100', 1/2" CTS diameter, SDR 7	B-20	1050	.023	L.F.	.30	1.16		1.46	2.0
2410	1" CTS diameter, SDR 11.5		1000	.024		.31	1.22		1.53	2.1
2415	80psi coils, socket fusion coupling @ 100', IPS 1/2" diameter, SDR 9.3		1000	.024		.33	1.22		1.55	2.1
2420	3/4" diameter, SDR 11		1000	.024		.49	1.22		1.71	2.3
2425	1" diameter, SDR 11		950	.025		.78	1.28		2.06	2.7
2430	1-1/4" diameter, SDR 11		950	.025		1.28	1.28		2.56	3.3
2435	1-1/2" diameter, SDR 11		900	.027		1.40	1.35		2.75	3.5
2440	2" diameter, SDR 11		850	.028		2.46	1.43		3.89	4.8
2445	80psi 40' lengths, socket fusion coupling, IPS 3" diameter, SDR 11.5	B-21A	340	.118		3.52	6.65	1.68	11.85	15.6
2450	4" diameter, SDR 11.5	"	260	.154		5.50	8.70	2.20	16.40	21.5
2600	Compression coupled pipe									

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33 52 16 – Gas Hydrocarbon Piping

	33 52 16.23 Medium Density Polyethylene Piping	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2605	80psi coils, compression coupling @ 100′, 1/2″ CTS diameter, SDR 7	B-20	2250	.011	L.F.	.44	.54		.98	1.29
2610	1″ CTS diameter, SDR 11.5		2175	.011		.59	.56		1.15	1.49
2615	80psi coils, compression coupling @ 100′, IPS 1/2″ diameter, SDR 9.3		2175	.011		.52	.56		1.08	1.41
2620	3/4″ diameter, SDR 11		2100	.011		.70	.58		1.28	1.64
2625	1″ diameter, SDR 11		2025	.012		1.04	.60		1.64	2.05
3000	Fittings, butt fusion									
3010	SDR 11, IPS unless noted CTS									
3100	Caps, 3/4″ diameter	B-22C	28.50	.561	Ea.	3.95	29.50	8.75	42.20	58
3105	1″ diameter		27	.593		3.64	31	9.25	43.89	60.50
3110	1-1/4″ diameter		27	.593		5.80	31	9.25	46.05	63
3115	1-1/2″ diameter		25.50	.627		3.37	33	9.75	46.12	63.50
3120	2″ diameter		24	.667		11.65	35	10.40	57.05	76
3125	3″ diameter		24	.667		16.50	35	10.40	61.90	81.50
3130	4″ diameter		18	.889		30	46.50	13.85	90.35	118
3200	Reducers, 1″ x 3/4″ diameters		13.50	1.185		14.05	62	18.45	94.50	128
3205	1-1/4″ x 1″ diameters		13.50	1.185		15.65	62	18.45	96.10	130
3210	1-1/2″ x 3/4″ diameters		12.75	1.255		20.50	65.50	19.55	105.55	142
3215	1-1/2″ x 1″ diameters		12.75	1.255		17.35	65.50	19.55	102.40	139
3220	1-1/2″ x 1-1/4″ diameters		12.75	1.255		17.35	65.50	19.55	102.40	139
3225	2″ x 1″ diameters		12	1.333		17.75	69.50	21	108.25	147
3230	2″ x 1-1/4″ diameters		12	1.333		17.75	69.50	21	108.25	147
3235	2″ x 1-1/2″ diameters		12	1.333		20.50	69.50	21	111	150
3240	3″ x 2″ diameters		12	1.333		20.50	69.50	21	111	150
3245	4″ x 2″ diameters		9	1.778		33	93	27.50	153.50	206
3250	4″ x 3″ diameters		9	1.778		29.50	93	27.50	150	202
3300	Elbows, 90°, 3/4″ diameter		14.25	1.123		4.93	58.50	17.50	80.93	113
3302	1″ diameter		13.50	1.185		6.05	62	18.45	86.50	120
3304	1-1/4″ diameter		13.50	1.185		11.55	62	18.45	92	126
3306	1-1/2″ diameter		12.75	1.255		10.10	65.50	19.55	95.15	131
3308	2″ diameter		12	1.333		17.30	69.50	21	107.80	146
3310	3″ diameter		12	1.333		32.50	69.50	21	123	163
3312	4″ diameter		9	1.778		40	93	27.50	160.50	214
3350	45°, 3″ diameter		12	1.333		32.50	69.50	21	123	163
3352	4″ diameter		9	1.778		40	93	27.50	160.50	214
3400	Tees, 3/4″ diameter		9.50	1.684		20	88	26	134	183
3405	1″ diameter		9	1.778		6.05	93	27.50	126.55	176
3410	1-1/4″ diameter		9	1.778		15.65	93	27.50	136.15	187
3415	1-1/2″ diameter		8.50	1.882		19	98.50	29.50	147	200
3420	2″ diameter		8	2		20	105	31	156	212
3425	3″ diameter		8	2		36.50	105	31	172.50	230
3430	4″ diameter		6	2.667		56.50	139	41.50	237	315
3500	Tapping tees, high volume, butt fusion outlets									
3505	1-1/2″ punch, 2″ x 2″ outlet	B-22C	11	1.455	Ea.	134	76	22.50	232.50	286
3510	1-7/8″ punch, 3″ x 2″ outlet		11	1.455		134	76	22.50	232.50	286
3515	4″ x 2″ outlet		9	1.778		134	93	27.50	254.50	315
3550	For protective sleeves, add					3.60			3.60	3.96
3600	Service saddles, saddle contour x outlet, butt fusion outlets									
3602	1-1/4″ x 3/4″ outlet	B-22C	17	.941	Ea.	22.50	49	14.65	86.15	114
3604	1-1/4″ x 1″ outlet		17	.941		8.10	49	14.65	71.75	98.50
3606	1-1/4″ x 1-1/4″ outlet		16	1		8.10	52.50	15.55	76.15	104
3608	1-1/2″ x 3/4″ outlet		16	1		8.10	52.50	15.55	76.15	104
3610	1-1/2″ x 1-1/4″ outlet		15	1.067		21.50	55.50	16.60	93.60	126
3612	2″ x 3/4″ outlet		12	1.333		8.10	69.50	21	98.60	136

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33 52 16.23 Medium Density Polyethylene Piping		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
3614	2" x 1" outlet	B-22C	12	1.333	Ea.	8.10	69.50	21	98.60	136
3616	2" x 1-1/4" outlet		11	1.455		8.10	76	22.50	106.60	148
3618	3" x 3/4" outlet		12	1.333		8.10	69.50	21	98.60	136
3620	3" x 1" outlet		12	1.333		8.10	69.50	21	98.60	136
3622	3" x 1-1/4" outlet		11	1.455		8.10	76	22.50	106.60	148
3624	4" x 3/4" outlet		10	1.600		8.10	83.50	25	116.60	161
3626	4" x 1" outlet		10	1.600		8.10	83.50	25	116.60	161
3628	4" x 1-1/4" outlet		9	1.778		22.50	93	27.50	143	194
3685	For protective sleeves, 3/4" diameter outlets, add					1.07			1.07	1.18
3690	1" diameter outlets, add					1.79			1.79	1.97
3695	1-1/4" diameter outlets, add					3.08			3.08	3.39
3700	Branch saddles, contour x outlet, butt outlets, round base									
3702	2" x 2" outlet	B-22C	11	1.455	Ea.	21	76	22.50	119.50	162
3704	3" x 2" outlet		11	1.455		40	76	22.50	138.50	183
3706	3" x 3" outlet		11	1.455		33	76	22.50	131.50	175
3708	4" x 2" outlet		9	1.778		40	93	27.50	160.50	214
3710	4" x 3" outlet		9	1.778		75	93	27.50	195.50	252
3712	4" x 4" outlet		9	1.778		44	93	27.50	164.50	218
3750	Rectangular base, 2" x 2" outlet		11	1.455		21	76	22.50	119.50	162
3752	3" x 2" outlet		11	1.455		23	76	22.50	121.50	165
3754	3" x 3" outlet		11	1.455		33	76	22.50	131.50	175
3756	4" x 2" outlet		9	1.778		26	93	27.50	146.50	198
3758	4" x 3" outlet		9	1.778		31.50	93	27.50	152	204
3760	4" x 4" outlet		9	1.778		38	93	27.50	158.50	212
4000	Fittings, socket fusion									
4010	SDR 11, IPS unless noted CTS									
4100	Caps, 1/2" CTS diameter	B-20	30	.800	Ea.	2.89	40.50		43.39	63.50
4105	1/2" diameter		28.50	.842		2.89	42.50		45.39	67
4110	3/4" diameter		28.50	.842		4.33	42.50		46.83	69
4115	1" CTS diameter		28	.857		4.79	43.50		48.29	70.50
4120	1" diameter		27	.889		4.79	45		49.79	73
4125	1-1/4" diameter		27	.889		5.80	45		50.80	74
4130	1-1/2" diameter		25.50	.941		7.50	47.50		55	80
4135	2" diameter		24	1		7.40	50.50		57.90	83.50
4140	3" diameter		24	1		16.95	50.50		67.45	94
4145	4" diameter		18	1.333		25	67.50		92.50	129
4200	Reducers, 1/2" x 1/2" CTS diameters		14.25	1.684		7.55	85.50		93.05	136
4202	3/4" x 1/2" CTS diameters		14.25	1.684		6.95	85.50		92.45	136
4204	3/4" x 1/2" diameters		14.25	1.684		7.45	85.50		92.95	136
4206	1" CTS x 1/2" diameters		14	1.714		7.25	87		94.25	138
4208	1" CTS x 3/4" diameters		13.50	1.778		7.35	90		97.35	143
4210	1" x 1/2" CTS diameters		13.50	1.778		6.90	90		96.90	143
4212	1" x 1/2" diameters		13.50	1.778		7.70	90		97.70	143
4214	1" x 3/4" diameters		13.50	1.778		10.70	90		100.70	147
4216	1" x 1" CTS diameters		13.50	1.778		6.30	90		96.30	142
4218	1-1/4" x 1/2" CTS diameters		13.50	1.778		7.25	90		97.25	143
4220	1-1/4" x 1/2" diameters		13.50	1.778		10.55	90		100.55	147
4222	1-1/4" x 3/4" diameters		13.50	1.778		15.20	90		105.20	152
4224	1-1/4" x 1" CTS diameters		13.50	1.778		10.55	90		100.55	147
4226	1-1/4" x 1" diameters		13.50	1.778		12.95	90		102.95	149
4228	1-1/2" x 3/4" diameters		12.75	1.882		11.60	95.50		107.10	156
4230	1-1/2" x 1" diameters		12.75	1.882		9.80	95.50		105.30	154
4232	1-1/2" x 1-1/4" diameters		12.75	1.882		11.10	95.50		106.60	155

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33 52 16.23 Medium Density Polyethylene Piping		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4234	2" x 3/4" diameters	B-20	12	2	Ea.	12.15	101		113.15	164
4236	2" x 1" CTS diameters		12	2		12	101		113	164
4238	2" x 1" diameters		12	2		13.05	101		114.05	165
4240	2" x 1-1/4" diameters		12	2		11.90	101		112.90	164
4242	2" x 1-1/2" diameters		12	2		10.35	101		111.35	162
4244	3" x 2" diameters		12	2		14.35	101		115.35	167
4246	4" x 2" diameters		9	2.667		30	135		165	235
4248	4" x 3" diameters		9	2.667		34	135		169	240
4300	Couplings, 1/2" CTS diameter		15	1.600		2.20	81		83.20	123
4305	1/2" diameter		14.25	1.684		1.83	85.50		87.33	130
4310	3/4" diameter		14.25	1.684		2.05	85.50		87.55	130
4315	1" CTS diameter		14	1.714		2.48	87		89.48	133
4320	1" diameter		13.50	1.778		2.09	90		92.09	137
4325	1-1/4" diameter		13.50	1.778		2.51	90		92.51	138
4330	1-1/2" diameter		12.75	1.882		2.97	95.50		98.47	146
4335	2" diameter		12	2		2.59	101		103.59	154
4340	3" diameter		12	2		19.75	101		120.75	173
4345	4" diameter		9	2.667		28.50	135		163.50	233
4400	Elbows, 90°, 1/2" CTS diameter		15	1.600		4.16	81		85.16	126
4405	1/2" diameter		14.25	1.684		4.09	85.50		89.59	133
4410	3/4" diameter		14.25	1.684		4.83	85.50		90.33	133
4415	1" CTS diameter		14	1.714		4.65	87		91.65	135
4420	1" diameter		13.50	1.778		5.15	90		95.15	141
4425	1-1/4" diameter		13.50	1.778		4.93	90		94.93	140
4430	1-1/2" diameter		12.75	1.882		6.20	95.50		101.70	150
4435	2" diameter		12	2		5.10	101		106.10	157
4440	3" diameter		12	2		27	101		128	181
4445	4" diameter		9	2.667		69.50	135		204.50	279
4460	45°, 1" diameter		13.50	1.778		8.30	90		98.30	144
4465	2" diameter		12	2		11.15	101		112.15	163
4500	Tees, 1/2" CTS diameter		10	2.400		3.98	122		125.98	186
4505	1/2" diameter		9.50	2.526		3.53	128		131.53	195
4510	3/4" diameter		9.50	2.526		4.75	128		132.75	196
4515	1" CTS diameter		9.33	2.571		4.65	130		134.65	200
4520	1" diameter		9	2.667		5.80	135		140.80	208
4525	1-1/4" diameter		9	2.667		6.45	135		141.45	209
4530	1-1/2" diameter		8.50	2.824		10.65	143		153.65	226
4535	2" diameter		8	3		12.75	152		164.75	241
4540	3" diameter		8	3		39	152		191	270
4545	4" diameter		6	4		73	203		276	385
4600	Tapping tees, type II, 3/4" punch, socket fusion outlets									
4601	Saddle contour x outlet diameter, IPS unless noted CTS									
4602	1-1/4" x 1/2" CTS outlet	B-20	17	1.412	Ea.	14.60	71.50		86.10	123
4604	1-1/4" x 1/2" outlet		17	1.412		14.60	71.50		86.10	123
4606	1-1/4" x 3/4" outlet		17	1.412		14.60	71.50		86.10	123
4608	1-1/4" x 1" CTS outlet		17	1.412		15.95	71.50		87.45	125
4610	1-1/4" x 1" outlet		17	1.412		15.95	71.50		87.45	125
4612	1-1/4" x 1-1/4" outlet		16	1.500		27	76		103	144
4614	1-1/2" x 1/2" CTS outlet		16	1.500		14.60	76		90.60	130
4616	1-1/2" x 1/2" outlet		16	1.500		14.60	76		90.60	130
4618	1-1/2" x 3/4" outlet		16	1.500		14.60	76		90.60	130
4620	1-1/2" x 1" CTS outlet		16	1.500		15.95	76		91.95	132
4622	1-1/2" x 1" outlet		16	1.500		15.95	76		91.95	132

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	33 52 16.23 Medium Density Polyethylene Piping	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4624	1-1/2" x 1-1/4" outlet	B-20	15	1.600	Ea.	27	81		108	151
4626	2" x 1/2" CTS outlet		12	2		14.60	101		115.60	167
4628	2" x 1/2" outlet		12	2		14.60	101		115.60	167
4630	2" x 3/4" outlet		12	2		14.60	101		115.60	167
4632	2" x 1" CTS outlet		12	2		15.95	101		116.95	169
4634	2" x 1" outlet		12	2		15.95	101		116.95	169
4636	2" x 1-1/4" outlet		11	2.182		27	111		138	195
4638	3" x 1/2" CTS outlet		12	2		14.60	101		115.60	167
4640	3" x 1/2" outlet		12	2		14.60	101		115.60	167
4642	3" x 3/4" outlet		12	2		14.60	101		115.60	167
4644	3" x 1" CTS outlet		12	2		15.95	101		116.95	169
4646	3" x 1" outlet		12	2		15.95	101		116.95	169
4648	3" x 1-1/4" outlet		11	2.182		27	111		138	195
4650	4" x 1/2" CTS outlet		10	2.400		14.60	122		136.60	198
4652	4" x 1/2" outlet		10	2.400		14.60	122		136.60	198
4654	4" x 3/4" outlet		10	2.400		14.60	122		136.60	198
4656	4" x 1" CTS outlet		10	2.400		15.95	122		137.95	200
4658	4" x 1" outlet		10	2.400		15.95	122		137.95	200
4660	4" x 1-1/4" outlet		9	2.667		27	135		162	232
4685	For protective sleeves, 1/2" CTS to 3/4" diameter outlets, add					1.07			1.07	1.1
4690	1" CTS & IPS diameter outlets, add					1.79			1.79	1.9
4695	1-1/4" diameter outlets, add					3.08			3.08	3.3
4700	Tapping tees, high volume, socket fusion outlets									
4705	1-1/2" punch, 2" x 1-1/4" outlet	B-20	11	2.182	Ea.	134	111		245	310
4710	1-7/8" punch, 3" x 1-1/4" outlet		11	2.182		134	111		245	310
4715	4" x 1-1/4" outlet		9	2.667		134	135		269	350
4750	For protective sleeves, add					3.60			3.60	3.9
4800	Service saddles, saddle contour x outlet, socket fusion outlets									
4801	IPS unless noted CTS									
4802	1-1/4" x 1/2" CTS outlet	B-20	17	1.412	Ea.	4.52	71.50		76.02	112
4804	1-1/4" x 1/2" outlet	B-20	17	1.412	Ea.	4.52	71.50		76.02	112
4806	1-1/4" x 3/4" outlet		17	1.412		4.52	71.50		76.02	112
4808	1-1/4" x 1" CTS outlet		17	1.412		7.45	71.50		78.95	115
4810	1-1/4" x 1" outlet		17	1.412		22.50	71.50		94	132
4812	1-1/4" x 1-1/4" outlet		16	1.500		12	76		88	127
4814	1-1/2" x 1/2" CTS outlet		16	1.500		4.52	76		80.52	119
4816	1-1/2" x 1/2" outlet		16	1.500		4.52	76		80.52	119
4818	1-1/2" x 3/4" outlet		16	1.500		22.50	76		98.50	139
4820	1-1/2" x 1-1/4" outlet		15	1.600		12	81		93	134
4822	2" x 1/2" CTS outlet		12	2		4.52	101		105.52	156
4824	2" x 1/2" outlet		12	2		4.52	101		105.52	156
4826	2" x 3/4" outlet		12	2		4.52	101		105.52	156
4828	2" x 1" CTS outlet		12	2		7.45	101		108.45	159
4830	2" x 1" outlet		12	2		7.45	101		108.45	159
4832	2" x 1-1/4" outlet		11	2.182		22.50	111		133.50	190
4834	3" x 1/2" CTS outlet		12	2		4.52	101		105.52	156
4836	3" x 1/2" outlet		12	2		4.52	101		105.52	156
4838	3" x 3/4" outlet		12	2		4.52	101		105.52	156
4840	3" x 1" CTS outlet		12	2		7.45	101		108.45	159
4842	3" x 1" outlet		12	2		7.45	101		108.45	159
4844	3" x 1-1/4" outlet		11	2.182		19.15	111		130.15	186
4846	4" x 1/2" CTS outlet		10	2.400		4.52	122		126.52	187
4848	4" x 1/2" outlet		10	2.400		4.52	122		126.52	187

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	33 52 16.23 Medium Density Polyethylene Piping	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4850	4" x 3/4" outlet	B-20	10	2.400	Ea.	4.52	122		126.52	187
4852	4" x 1" CTS outlet		10	2.400		7.45	122		129.45	190
4854	4" x 1" outlet		10	2.400		7.45	122		129.45	190
4856	4" x 1-1/4" outlet		9	2.667		19.70	135		154.70	224
4885	For protective sleeves, 1/2" CTS to 3/4" diameter outlets, add					1.07			1.07	1.18
4890	1" CTS & IPS diameter outlets, add					1.79			1.79	1.97
4895	1-1/4" diameter outlets, add					3.08			3.08	3.39
4900	Spigot fittings, tees, SDR 7, 1/2" CTS diameter	B-20	10	2.400		31	122		153	217
4901	SDR 9.3, 1/2" diameter		9.50	2.526		13.75	128		141.75	206
4902	SDR 10, 1-1/4" diameter		9	2.667		13.75	135		148.75	217
4903	SDR 11, 3/4" diameter		9.50	2.526		28.50	128		156.50	223
4904	2" diameter		8	3		26.50	152		178.50	256
4906	SDR 11.5, 1" CTS diameter		9.33	2.571		73.50	130		203.50	276
4907	3" diameter		8	3		74.50	152		226.50	310
4908	4" diameter		6	4		192	203		395	515
4921	90° elbows, SDR 7, 1/2" CTS diameter		15	1.600		16.40	81		97.40	139
4922	SDR 9.3, 1/2" diameter		14.25	1.684		7.05	85.50		92.55	136
4923	SDR 10, 1-1/4" diameter		13.50	1.778		7.20	90		97.20	143
4924	SDR 11, 3/4" diameter		14.25	1.684		8.05	85.50		93.55	137
4925	2" diameter		12	2		30.50	101		131.50	185
4927	SDR 11.5, 1" CTS diameter		14	1.714		28	87		115	161
4928	3" diameter		12	2		69	101		170	227
4929	4" diameter		9	2.667		147	135		282	365
4935	Caps, SDR 7, 1/2" CTS diameter		30	.800		5.45	40.50		45.95	66.50
4936	SDR 9.3, 1/2" diameter		28.50	.842		5.45	42.50		47.95	70
4937	SDR 10, 1-1/4" diameter		27	.889		5.65	45		50.65	73.50
4938	SDR 11, 3/4" diameter		28.50	.842		5.80	42.50		48.30	70.50
4939	1" diameter		27	.889		6.50	45		51.50	74.50
4940	2" diameter		24	1		6.95	50.50		57.45	83
4942	SDR 11.5, 1" CTS diameter		28	.857		23	43.50		66.50	90
4943	3" diameter		24	1		37	50.50		87.50	116
4944	4" diameter		18	1.333		35.50	67.50		103	140
4946	SDR 13.5, 4" diameter		18	1.333		89.50	67.50		157	200
4950	Reducers, SDR 10 x SDR 11, 1-1/4" x 3/4" diameters		13.50	1.778		18.60	90		108.60	156
4951	1-1/4" x 1" diameters		13.50	1.778		18.60	90		108.60	156
4952	SDR 10 x SDR 11.5, 1-1/4" x 1" CTS diameters		13.50	1.778		18.60	90		108.60	156
4953	SDR 11 x SDR 7, 3/4" x 1/2" CTS diameters		14.25	1.684		8.30	85.50		93.80	137
4954	SDR 11 x SDR 9.3, 3/4" x 1/2" diameters		14.25	1.684		8.30	85.50		93.80	137
4955	SDR 11 x SDR 10, 2" x 1-1/4" diameters		12	2		19.30	101		120.30	172
4956	SDR 11 x SDR 11, 1" x 3/4" diameters		13.50	1.778		9.55	90		99.55	146
4957	2" x 3/4" diameters		12	2		19.05	101		120.05	172
4958	2" x 1" diameters		12	2		19.15	101		120.15	172
4959	SDR 11 x SDR 11.5, 1" x 1" CTS diameters		13.50	1.778		9.75	90		99.75	146
4960	2" x 1" CTS diameters		12	2		19.05	101		120.05	172
4962	SDR 11.5 x SDR 11, 3" x 2" diameters		12	2		25.50	101		126.50	179
4963	4" x 2" diameters		9	2.667		39	135		174	245
4964	SDR 11.5 x SDR 11.5, 4" x 3" diameters		9	2.667		42	135		177	248
6100	Fittings, compression									
6101	MDPE gas pipe, ASTM D2513/ASTM F1924-98									
6102	Caps, SDR 7, 1/2" CTS diameter	B-20	60	.400	Ea.	15.65	20.50		36.15	48
6104	SDR 9.3, 1/2" IPS diameter		58	.414		27.50	21		48.50	61.50
6106	SDR 10, 1/2" CTS diameter		60	.400		13.85	20.50		34.35	45.50
6108	1-1/4" IPS diameter		54	.444		91	22.50		113.50	134

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33 52 16.23 Medium Density Polyethylene Piping	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
6110 SDR 11, 3/4" IPS diameter	B-20	58	.414	Ea.	24.50	21		45.50	58.50
6112 1" IPS diameter		54	.444		39.50	22.50		62	77
6114 1-1/4" IPS diameter		54	.444		95.50	22.50		118	139
6116 1-1/2" IPS diameter		52	.462		116	23.50		139.50	163
6118 2" IPS diameter		50	.480		102	24.50		126.50	149
6120 SDR 11.5, 1" CTS diameter		56	.429		25.50	21.50		47	60.50
6122 SDR 12.5, 1" CTS diameter		56	.429		29	21.50		50.50	64.50
6202 Reducers, SDR 7 x SDR 10, 1/2" CTS x 1/2" CTS diameters		30	.800		21	40.50		61.50	84
6204 SDR 9.3 x SDR 7, 1/2" IPS x 1/2" CTS diameters		29	.828		61	42		103	130
6206 SDR 11 x SDR 7, 3/4" IPS x 1/2" CTS diameters		29	.828		60.50	42		102.50	129
6208 1" IPS x 1/2" CTS diameters		27	.889		73.50	45		118.50	148
6210 SDR 11 x SDR 9.3, 3/4" IPS x 1/2" IPS diameters		29	.828		59.50	42		101.50	128
6212 1" IPS x 1/2" IPS diameters		27	.889		75.50	45		120.50	151
6214 SDR 11 x SDR 10, 2" IPS x 1-1/4" IPS diameters		25	.960		116	48.50		164.50	201
6216 SDR 11 x SDR 11, 1" IPS x 3/4" IPS diameters		27	.889		73	45		118	148
6218 1-1/4" IPS x 1" IPS diameters		27	.889		69.50	45		114.50	144
6220 2" IPS x 1-1/4" IPS diameters		25	.960		116	48.50		164.50	201
6222 SDR 11 x SDR 11.5, 1" IPS x 1" CTS diameters		27	.889		56.50	45		101.50	130
6224 SDR 11 x SDR 12.5, 1" IPS x 1" CTS diameters		27	.889		68.50	45		113.50	143
6226 SDR 11.5 x SDR 7, 1" CTS x 1/2" CTS diameters		28	.857		41.50	43.50		85	111
6228 SDR 11.5 x SDR 9.3, 1" CTS x 1/2" IPS diameters		28	.857		48	43.50		91.50	118
6230 SDR 11.5 x SDR 11, 1" CTS x 3/4" IPS diameters		28	.857		67	43.50		110.50	139
6232 SDR 12.5 x SDR 7, 1" CTS x 1/2" CTS diameters		28	.857		44	43.50		87.50	113
6234 SDR 12.5 x SDR 9.3, 1" CTS x 1/2" IPS diameters		28	.857		49.50	43.50		93	120
6236 SDR 12.5 x SDR 11, 1" CTS x 3/4" IPS diameters		28	.857		42.50	43.50		86	112
6302 Couplings, SDR 7, 1/2" CTS diameter		30	.800		16	40.50		56.50	78
6304 SDR 9.3, 1/2" IPS diameter		29	.828		21	42		63	86
6306 SDR 10, 1/2" CTS diameter		30	.800		15.15	40.50		55.65	77
6308 SDR 11, 3/4" IPS diameter		29	.828		23.50	42		65.50	88
6310 1" IPS diameter		27	.889		28	45		73	98.50
6312 SDR 11.5, 1" CTS diameter		28	.857		30	43.50		73.50	98
6314 SDR 12.5, 1" CTS diameter		28	.857		34	43.50		77.50	103
6402 Repair couplings, SDR 10, 1-1/4" IPS diameter		27	.889		87.50	45		132.50	164
6404 SDR 11, 1-1/4" IPS diameter		27	.889		89	45		134	166
6406 1-1/2" IPS diameter		26	.923		96	47		143	175
6408 2" IPS diameter	B-20	25	.960	Ea.	112	48.50		160.50	196
6502 Elbows, 90°, SDR 7, 1/2" CTS diameter		30	.800		28	40.50		68.50	91.50
6504 SDR 9.3, 1/2" IPS diameter		29	.828		48.50	42		90.50	116
6506 SDR 10, 1-1/4" IPS diameter		27	.889		120	45		165	200
6508 SDR 11, 3/4" IPS diameter		29	.828		44.50	42		86.50	111
6510 1" IPS diameter		27	.889		44.50	45		89.50	117
6512 1-1/4" IPS diameter		27	.889		119	45		164	199
6514 1-1/2" IPS diameter		26	.923		178	47		225	266
6516 2" IPS diameter		25	.960		152	48.50		200.50	240
6518 SDR 11.5, 1" CTS diameter		28	.857		45	43.50		88.50	115
6520 SDR 12.5, 1" CTS diameter		28	.857		65.50	43.50		109	137
6602 Tees, SDR 7, 1/2" CTS diameter		20	1.200		49.50	61		110.50	146
6604 SDR 9.3, 1/2" IPS diameter		19.33	1.241		55	63		118	155
6606 SDR 10, 1-1/4" IPS diameter		18	1.333		155	67.50		222.50	272
6608 SDR 11, 3/4" IPS diameter		19.33	1.241		69	63		132	170
6610 1" IPS diameter		18	1.333		75.50	67.50		143	184
6612 1-1/4" IPS diameter		18	1.333		127	67.50		194.50	241
6614 1-1/2" IPS diameter		17.33	1.385		263	70		333	395

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	33 52 16.23 Medium Density Polyethylene Piping	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
6616	2" IPS diameter	B-20	16.67	1.440	Ea.	175	73		248	300
6618	SDR 11.5, 1" CTS diameter		18.67	1.286		69.50	65		134.50	174
6620	SDR 12.5, 1" CTS diameter		18.67	1.286		72	65		137	177
8100	Fittings, accessories									
8105	SDR 11, IPS unless noted CTS									
8110	Protective sleeves, for high volume tapping tees, butt fusion outlets	1 Skwk	16	.500	Ea.	6.65	29.50		36.15	51.50
8120	For tapping tees, socket outlets, CTS, 1/2" diameter		18	.444		1.73	26		27.73	41.50
8122	1" diameter		18	.444		3.06	26		29.06	43
8124	IPS, 1/2" diameter		18	.444		2.39	26		28.39	42
8126	3/4" diameter		18	.444		3.06	26		29.06	43
8128	1" diameter		18	.444		4.17	26		30.17	44
8130	1-1/4" diameter		18	.444		5.25	26		31.25	45.50
8205	Tapping tee test caps, type I, yellow PE cap, "aldyl style"		45	.178		54	10.45		64.45	74.50
8210	Type II, yellow polyethylene cap		45	.178		55	10.45		65.45	75.50
8215	High volume, yellow polyethylene cap		45	.178		69	10.45		79.45	91.50
8250	Quick connector, female x female inlets, 1/4" N.P.T.		50	.160		22.50	9.40		31.90	39
8255	Test hose, 24" length, 3/8" ID, male outlets, 1/4" N.P.T.		50	.160		31	9.40		40.40	48
8260	Quick connector and test hose assembly		50	.160		54	9.40		63.40	73
8305	Purge point caps, butt fusion, SDR 10, 1-1/4" diameter	B-22C	27	.593	Ea.	39	31	9.25	79.25	99
8310	SDR 11, 1-1/4" diameter		27	.593		39	31	9.25	79.25	99
8315	2" diameter		24	.667		39.50	35	10.40	84.90	107
8320	3" diameter		24	.667		54.50	35	10.40	99.90	123
8325	4" diameter		18	.889		53.50	46.50	13.85	113.85	144
8340	Socket fusion, SDR 11, 1-1/4" diameter		27	.593		9.75	31	9.25	50	67.50
8345	2" diameter		24	.667		11.70	35	10.40	57.10	76.50
8350	3" diameter		24	.667		71.50	35	10.40	116.90	142
8355	4" diameter		18	.889		52.50	46.50	13.85	112.85	143
8360	Purge test quick connector, female x female inlets, 1/4" N.P.T.	1 Skwk	50	.160		22.50	9.40		31.90	39
8365	Purge test hose, 24" length, 3/8" ID, male outlets, 1/4" N.P.T.		50	.160		31	9.40		40.40	48
8370	Purge test quick connector and test hose assembly		50	.160		54	9.40		63.40	73
8405	Transition fittings, MDPE x zinc plated steel, SDR 7, 1/2" CTS x 1/2" MPT	B-22C	30	.533		30	28	8.30	66.30	83.50
8410	SDR 9.3, 1/2" IPS x 3/4" MPT		28.50	.561		46.50	29.50	8.75	84.75	105
8415	SDR 10, 1-1/4" IPS x 1-1/4" MPT		27	.593		44.50	31	9.25	84.75	106
8420	SDR 11, 3/4" IPS x 3/4" MPT		28.50	.561		23.50	29.50	8.75	61.75	79.50
8425	1" IPS x 1" MPT		27	.593		29	31	9.25	69.25	88.50
8430	1-1/4" IPS x 1-1/4" MPT		17	.941		54	49	14.65	117.65	149
8435	1-1/2" IPS x 1-1/2" MPT		25.50	.627		55.50	33	9.75	98.25	121
8440	2" IPS x 2" MPT		24	.667		63	35	10.40	108.40	133
8445	SDR 11.5, 1" CTS x 1" MPT		28	.571		39	30	8.90	77.90	97.50

	33 52 16.26 High Density Polyethylene Piping									
2010	**HIGH DENSITY POLYETHYLENE PIPING**									
2020	ASTM D2513, not including excavation or backfill									
2200	Butt fused pipe									
2205	125psi coils, butt fusion joint @ 100', 1/2" CTS diameter, SDR 7	B-22C	2050	.008	L.F.	.16	.41	.12	.69	.92
2210	160psi coils, butt fusion joint @ 100', IPS 1/2" diameter, SDR 9		1950	.008		.21	.43	.13	.77	1.01
2215	3/4" diameter, SDR 11		1950	.008		.31	.43	.13	.87	1.12
2220	1" diameter, SDR 11		1850	.009		.51	.45	.13	1.09	1.39
2225	1-1/4" diameter, SDR 11		1850	.009		.75	.45	.13	1.33	1.66
2230	1-1/2" diameter, SDR 11		1750	.009		1.40	.48	.14	2.02	2.41
2235	2" diameter, SDR 11		1750	.009		1.14	.48	.14	1.76	2.12
2240	3" diameter, SDR 11		1650	.010		1.88	.51	.15	2.54	3
2245	160psi 40' lengths, butt fusion joint, IPS 3" diameter, SDR 11	B-22A	660	.061		2.04	3.16	.99	6.19	8.05

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	33 52 16.26 High Density Polyethylene Piping	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2250	4" diameter, SDR 11	B-22A	500	.080	L.F.	3.37	4.18	1.31	8.86	11.40
2400	Socket fused pipe									
2405	125psi coils, socket fusion coupling @ 100', 1/2" CTS diameter, SDR 7	B-20	1050	.023	L.F.	.18	1.16		1.34	1.93
2410	160psi coils, socket fusion coupling @ 100', IPS 1/2" diameter, SDR 9	B-20	1000	.024	L.F.	.23	1.22		1.45	2.08
2415	3/4" diameter, SDR 11		1000	.024		.33	1.22		1.55	2.18
2420	1" diameter, SDR 11		950	.025		.53	1.28		1.81	2.49
2425	1-1/4" diameter, SDR 11		950	.025		.78	1.28		2.06	2.77
2430	1-1/2" diameter, SDR 11		900	.027		1.43	1.35		2.78	3.59
2435	2" diameter, SDR 11		850	.028		1.17	1.43		2.60	3.43
2440	3" diameter, SDR 11		850	.028		2.02	1.43		3.45	4.36
2445	160psi 40' lengths, socket fusion coupling, IPS 3" diameter, SDR 11	B-21A	340	.118		2.40	6.65	1.68	10.73	14.40
2450	4" diameter, SDR 11	"	260	.154		4.04	8.70	2.20	14.94	19.80
2600	Compression coupled pipe									
2610	160psi coils, compression coupling @ 100', IPS 1/2" diameter, SDR 9	B-20	1000	.024	L.F.	.42	1.22		1.64	2.28
2615	3/4" diameter, SDR 11		1000	.024		.54	1.22		1.76	2.42
2620	1" diameter, SDR 11		950	.025		.79	1.28		2.07	2.78
2625	1-1/4" diameter, SDR 11		950	.025		1.64	1.28		2.92	3.72
2630	1-1/2" diameter, SDR 11		900	.027		2.36	1.35		3.71	4.61
2635	2" diameter, SDR 11		850	.028		2.26	1.43		3.69	4.62
3000	Fittings, butt fusion									
3010	SDR 11, IPS unless noted CTS									
3105	Caps, 1/2" diameter	B-22C	28.50	.561	Ea.	8.20	29.50	8.75	46.45	62.50
3110	3/4" diameter		28.50	.561		4.26	29.50	8.75	42.51	58.50
3115	1" diameter		27	.593		4.64	31	9.25	44.89	62
3120	1-1/4" diameter		27	.593		7.70	31	9.25	47.95	65
3125	1-1/2" diameter		25.50	.627		5.60	33	9.75	48.35	66
3130	2" diameter		24	.667		11.65	35	10.40	57.05	76
3135	3" diameter		24	.667		16.50	35	10.40	61.90	81.50
3140	4" diameter		18	.889		30	46.50	13.85	90.35	118
3205	Reducers, 1/2" x 1/2" CTS diameters		14.25	1.123		15.20	58.50	17.50	91.20	124
3210	3/4" x 1/2" CTS diameters		14.25	1.123		10.90	58.50	17.50	86.90	119
3215	1" x 1/2" CTS diameters		13.50	1.185		16.95	62	18.45	97.40	132
3220	1" x 1/2" diameters		13.50	1.185		21	62	18.45	101.45	136
3225	1" x 3/4" diameters		13.50	1.185		14.05	62	18.45	94.50	128
3230	1-1/4" x 1" diameters		13.50	1.185		15.65	62	18.45	96.10	130
3232	1-1/2" x 3/4" diameters		12.75	1.255		9.80	65.50	19.55	94.85	130
3233	1-1/2" x 1" diameters		12.75	1.255		9.80	65.50	19.55	94.85	130
3234	1-1/2" x 1-1/4" diameters		12.75	1.255		9.80	65.50	19.55	94.85	130
3235	2" x 1" diameters		12	1.333		17.75	69.50	21	108.25	147
3240	2" x 1-1/4" diameters		12	1.333		17.75	69.50	21	108.25	147
3245	2" x 1-1/2" diameters	B-22C	12	1.333	Ea.	11.25	69.50	21	101.75	139
3250	3" x 2" diameters		12	1.333		13.10	69.50	21	103.60	141
3255	4" x 2" diameters		9	1.778		17.90	93	27.50	138.40	189
3260	4" x 3" diameters		9	1.778		19.20	93	27.50	139.70	191
3305	Elbows, 90°, 3/4" diameter		14.25	1.123		7.25	58.50	17.50	83.25	115
3310	1" diameter		13.50	1.185		7.15	62	18.45	87.60	121
3315	1-1/4" diameter		13.50	1.185		8.30	62	18.45	88.75	122
3320	1-1/2" diameter		12.75	1.255		9.45	65.50	19.55	94.50	130
3325	2" diameter		12	1.333		10.20	69.50	21	100.70	138
3330	3" diameter		12	1.333		19.90	69.50	21	110.40	149
3335	4" diameter		9	1.778		26	93	27.50	146.50	198
3380	45°, 3/4" diameter		14.25	1.123		8.05	58.50	17.50	84.05	116
3385	1" diameter		13.50	1.185		8.05	62	18.45	88.50	122

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33 52 16.26 High Density Polyethylene Piping		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
3390	1-1/4" diameter	B-22C	13.50	1.185	Ea.	8.25	62	18.45	88.70	122
3395	1-1/2" diameter		12.75	1.255		10.75	65.50	19.55	95.80	131
3400	2" diameter		12	1.333		12.05	69.50	21	102.55	140
3405	3" diameter		12	1.333		20.50	69.50	21	111	150
3410	4" diameter		9	1.778		25.50	93	27.50	146	198
3505	Tees, 1/2" CTS diameter		10	1.600		9.90	83.50	25	118.40	163
3510	1/2" diameter		9.50	1.684		10.95	88	26	124.95	173
3515	3/4" diameter		9.50	1.684		8.10	88	26	122.10	170
3520	1" diameter		9	1.778		8.80	93	27.50	129.30	179
3525	1-1/4" diameter		9	1.778		9.30	93	27.50	129.80	180
3530	1-1/2" diameter		8.50	1.882		15.30	98.50	29.50	143.30	196
3535	2" diameter		8	2		12.15	105	31	148.15	203
3540	3" diameter		8	2		22.50	105	31	158.50	215
3545	4" diameter		6	2.667		33	139	41.50	213.50	290
3600	Tapping tees, type II, 3/4" punch, butt fusion outlets									
3601	Saddle contour x outlet diameter, IPS unless noted CTS									
3602	1-1/4" x 1/2" CTS outlet	B-22C	17	.941	Ea.	13.90	49	14.65	77.55	105
3604	1-1/4" x 1/2" outlet		17	.941		13.90	49	14.65	77.55	105
3606	1-1/4" x 3/4" outlet		17	.941		13.90	49	14.65	77.55	105
3608	1-1/4" x 1" outlet		17	.941		16.20	49	14.65	79.85	107
3610	1-1/4" x 1-1/4" outlet		16	1		29	52.50	15.55	97.05	127
3612	1-1/2" x 1/2" CTS outlet		16	1		13.90	52.50	15.55	81.95	110
3614	1-1/2" x 1/2" outlet		16	1		13.90	52.50	15.55	81.95	110
3616	1-1/2" x 3/4" outlet		16	1		13.90	52.50	15.55	81.95	110
3618	1-1/2" x 1" outlet		16	1		16.20	52.50	15.55	84.25	113
3620	1-1/2" x 1-1/4" outlet		15	1.067		29	55.50	16.60	101.10	134
3622	2" x 1/2" CTS outlet		12	1.333		13.90	69.50	21	104.40	142
3624	2" x 1/2" outlet		12	1.333		13.90	69.50	21	104.40	142
3626	2" x 3/4" outlet		12	1.333		13.90	69.50	21	104.40	142
3628	2" x 1" outlet		12	1.333		16.20	69.50	21	106.70	145
3630	2" x 1-1/4" outlet		11	1.455		29	76	22.50	127.50	171
3632	3" x 1/2" CTS outlet		12	1.333		13.90	69.50	21	104.40	142
3634	3" x 1/2" outlet		12	1.333		13.90	69.50	21	104.40	142
3636	3" x 3/4" outlet		12	1.333		13.90	69.50	21	104.40	142
3638	3" x 1" outlet		12	1.333		16.20	69.50	21	106.70	145
3640	3" x 1-1/4" outlet		11	1.455		16.20	76	22.50	114.70	157
3642	4" x 1/2" CTS outlet		10	1.600		13.90	83.50	25	122.40	168
3644	4" x 1/2" outlet		10	1.600		13.90	83.50	25	122.40	168
3646	4" x 3/4" outlet		10	1.600		13.90	83.50	25	122.40	168
3648	4" x 1" outlet		10	1.600		16.20	83.50	25	124.70	170
3650	4" x 1-1/4" outlet		9	1.778		29	93	27.50	149.50	202
3675	For protective sleeves, 1/2" to 3/4" diameter outlets, add					1.07			1.07	1.18
3680	1" diameter outlets, add					1.79			1.79	1.97
3685	1-1/4" diameter outlets, add					3.08			3.08	3.39
3700	Tapping tees, high volume, butt fusion outlets									
3705	1-1/2" punch, 2" x 2" outlet	B-22C	11	1.455	Ea.	136	76	22.50	234.50	289
3710	1-7/8" punch, 3" x 2" outlet		11	1.455		136	76	22.50	234.50	289
3715	4" x 2" outlet		9	1.778		136	93	27.50	256.50	320
3750	For protective sleeves, add					3.60			3.60	3.96
3800	Service saddles, saddle contour x outlet, butt fusion outlets									
3801	IPS unless noted CTS									
3802	1-1/4" x 3/4" outlet	B-22C	17	.941	Ea.	8.25	49	14.65	71.90	98.50
3804	1-1/4" x 1" outlet		16	1		8.25	52.50	15.55	76.30	104

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33 52 16.26 High Density Polyethylene Piping		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
3806	1-1/4" x 1-1/4" outlet	B-22C	16	1	Ea.	8.60	52.50	15.55	76.65	105
3808	1-1/2" x 3/4" outlet		16	1		22.50	52.50	15.55	90.55	120
3810	1-1/2" x 1-1/4" outlet		15	1.067		22.50	55.50	16.60	94.60	126
3812	2" x 3/4" outlet		12	1.333		22.50	69.50	21	113	152
3814	2" x 1" outlet		11	1.455		8.25	76	22.50	106.75	148
3816	2" x 1-1/4" outlet		11	1.455		8.60	76	22.50	107.10	148
3818	3" x 3/4" outlet		12	1.333		22.50	69.50	21	113	152
3820	3" x 1" outlet		11	1.455		22.50	76	22.50	121	164
3822	3" x 1-1/4" outlet		11	1.455		8.60	76	22.50	107.10	148
3824	4" x 3/4" outlet		10	1.600		22.50	83.50	25	131	177
3826	4" x 1" outlet		9	1.778		22.50	93	27.50	143	194
3828	4" x 1-1/4" outlet		9	1.778		22.50	93	27.50	143	194
3880	For protective sleeves, 3/4" diameter outlets, add					1.07			1.07	1.1
3885	1" diameter outlets, add					1.79			1.79	1.9
3890	1-1/4" diameter outlets, add					3.08			3.08	3.3
3905	Branch saddles, contour x outlet, 2" x 2" outlet	B-22C	11	1.455		23	76	22.50	121.50	165
3910	3" x 2" outlet		11	1.455		23	76	22.50	121.50	165
3915	3" x 3" outlet		11	1.455		31	76	22.50	129.50	173
3920	4" x 2" outlet		9	1.778		23	93	27.50	143.50	195
3925	4" x 3" outlet		9	1.778		31	93	27.50	151.50	204
3930	4" x 4" outlet		9	1.778		42.50	93	27.50	163	216
3980	Ball valves, full port, 3/4" diameter		14.25	1.123		71	58.50	17.50	147	186
3982	1" diameter		13.50	1.185		71	62	18.45	151.45	192
3984	1-1/4" diameter		13.50	1.185		71.50	62	18.45	151.95	192
3986	1-1/2" diameter		12.75	1.255		105	65.50	19.55	190.05	235
3988	2" diameter		12	1.333		164	69.50	21	254.50	305
3990	3" diameter		12	1.333		385	69.50	21	475.50	545
3992	4" diameter		9	1.778		505	93	27.50	625.50	725
4000	Fittings, socket fusion									
4010	SDR 11, IPS unless noted CTS									
4105	Caps, 1/2" CTS diameter	B-20	30	.800	Ea.	2.94	40.50		43.44	63.5
4110	1/2" diameter		28.50	.842		2.96	42.50		45.46	67.5
4115	3/4" diameter		28.50	.842		3.23	42.50		45.73	67.5
4120	1" diameter		27	.889		4.09	45		49.09	72
4125	1-1/4" diameter		27	.889		4.28	45		49.28	72
4130	1-1/2" diameter		25.50	.941		4.73	47.50		52.23	76.5
4135	2" diameter		24	1		4.98	50.50		55.48	81
4140	3" diameter		24	1		30.50	50.50		81	109
4145	4" diameter		18	1.333		49.50	67.50		117	156
4205	Reducers, 1/2" x 1/2" CTS diameters		14.25	1.684		7.45	85.50		92.95	136
4210	3/4" x 1/2" CTS diameters		14.25	1.684		7.65	85.50		93.15	136
4215	3/4" x 1/2" diameters		14.25	1.684		7.65	85.50		93.15	136
4220	1" x 1/2" CTS diameters		13.50	1.778		7.40	90		97.40	143
4225	1" x 1/2" diameters		13.50	1.778		7.85	90		97.85	144
4230	1" x 3/4" diameters		13.50	1.778		6.40	90		96.40	142
4235	1-1/4" x 1/2" CTS diameters		13.50	1.778		7.40	90		97.40	143
4240	1-1/4" x 3/4" diameters		13.50	1.778		7.40	90		97.40	143
4245	1-1/4" x 1" diameters		13.50	1.778		7	90		97	143
4250	1-1/2" x 3/4" diameters		12.75	1.882		8.05	95.50		103.55	152
4252	1-1/2" x 1" diameters		12.75	1.882		10	95.50		105.50	154
4255	1-1/2" x 1-1/4" diameters		12.75	1.882		8.20	95.50		103.70	152
4260	2" x 3/4" diameters		12	2		10.20	101		111.20	162
4265	2" x 1" diameters		12	2		10.40	101		111.40	162

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33 52 16.26 High Density Polyethylene Piping		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4270	2" x 1-1/4" diameters	B-20	12	2	Ea.	10.65	101		111.65	163
4275	3" x 2" diameters		12	2		14.70	101		115.70	167
4280	4" x 2" diameters		9	2.667		35	135		170	241
4285	4" x 3" diameters		9	2.667		32	135		167	238
4305	Couplings, 1/2" CTS diameter		15	1.600		2.42	81		83.42	124
4310	1/2" diameter		14.25	1.684		2.42	85.50		87.92	131
4315	3/4" diameter		14.25	1.684		1.91	85.50		87.41	130
4320	1" diameter		13.50	1.778		1.89	90		91.89	137
4325	1-1/4" diameter		13.50	1.778		2.76	90		92.76	138
4330	1-1/2" diameter		12.75	1.882		3.01	95.50		98.51	146
4335	2" diameter		12	2		3.12	101		104.12	154
4340	3" diameter		12	2		14.20	101		115.20	167
4345	4" diameter		9	2.667		27	135		162	232
4405	Elbows, 90°, 1/2" CTS diameter		15	1.600		4.16	81		85.16	126
4410	1/2" diameter		14.25	1.684		4.20	85.50		89.70	133
4415	3/4" diameter		14.25	1.684		3.45	85.50		88.95	132
4420	1" diameter		13.50	1.778		4.17	90		94.17	140
4425	1-1/4" diameter		13.50	1.778		5.75	90		95.75	141
4430	1-1/2" diameter		12.75	1.882		8.35	95.50		103.85	152
4435	2" diameter		12	2		8.50	101		109.50	160
4440	3" diameter		12	2		31	101		132	185
4445	4" diameter		9	2.667		124	135		259	340
4450	45°, 3/4" diameter		14.25	1.684		8.45	85.50		93.95	137
4455	1" diameter		13.50	1.778		9.50	90		99.50	145
4460	1-1/4" diameter		13.50	1.778		8	90		98	144
4465	1-1/2" diameter		12.75	1.882		12.50	95.50		108	157
4470	2" diameter		12	2		9.30	101		110.30	161
4475	3" diameter		12	2		51	101		152	207
4480	4" diameter		9	2.667		66.50	135		201.50	276
4505	Tees, 1/2" CTS diameter		10	2.400		3.59	122		125.59	186
4510	1/2" diameter		9.50	2.526		3.56	128		131.56	195
4515	3/4" diameter		9.50	2.526		3.55	128		131.55	195
4520	1" diameter		9	2.667		4.38	135		139.38	207
4525	1-1/4" diameter		9	2.667		6.10	135		141.10	209
4530	1-1/2" diameter		8.50	2.824		10.50	143		153.50	226
4535	2" diameter		8	3		11.25	152		163.25	239
4540	3" diameter		8	3		46.50	152		198.50	278
4545	4" diameter		6	4		90	203		293	405
4600	Tapping tees, type II, 3/4" punch, socket fusion outlets									
4601	Saddle countour x outlet diameter, IPS unless noted CTS									
4602	1-1/4" x 1/2" CTS outlet	B-20	17	1.412	Ea.	13.90	71.50		85.40	122
4604	1-1/4" x 1/2" outlet		17	1.412		13.90	71.50		85.40	122
4606	1-1/4" x 3/4" outlet		17	1.412		13.90	71.50		85.40	122
4608	1-1/4" x 1" outlet		17	1.412		16.20	71.50		87.70	125
4610	1-1/4" x 1-1/4" outlet		16	1.500		29	76		105	146
4612	1-1/2" x 1/2" CTS outlet		16	1.500		13.90	76		89.90	129
4614	1-1/2" x 1/2" outlet		16	1.500		13.90	76		89.90	129
4616	1-1/2" x 3/4" outlet		16	1.500		13.90	76		89.90	129
4618	1-1/2" x 1" outlet		16	1.500		16.20	76		92.20	132
4620	1-1/2" x 1-1/4" outlet		15	1.600		29	81		110	153
4622	2" x 1/2" CTS outlet		12	2		13.90	101		114.90	166
4624	2" x 1/2" outlet		12	2		13.90	101		114.90	166
4626	2" x 3/4" outlet		12	2		13.90	101		114.90	166

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33 52 16.26 High Density Polyethylene Piping		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4628	2" x 1" outlet	B-20	12	2	Ea.	16.20	101		117.20	169
4630	2" x 1-1/4" outlet		11	2.182		29	111		140	197
4632	3" x 1/2" CTS outlet		12	2		13.90	101		114.90	166
4634	3" x 1/2" outlet		12	2		13.90	101		114.90	166
4636	3" x 3/4" outlet		12	2		13.90	101		114.90	166
4638	3" x 1" outlet		12	2		16.20	101		117.20	169
4640	3" x 1-1/4" outlet		11	2.182		29	111		140	197
4642	4" x 1/2" CTS outlet		10	2.400		13.90	122		135.90	197
4644	4" x 1/2" outlet		10	2.400		13.90	122		135.90	197
4646	4" x 3/4" outlet		10	2.400		13.90	122		135.90	197
4648	4" x 1" outlet		10	2.400		16.20	122		138.20	200
4650	4" x 1-1/4" outlet		9	2.667		29	135		164	234
4675	For protective sleeves, 1/2" to 3/4" diameter outlets, add					1.07			1.07	1.1
4680	1" diameter outlets, add					1.79			1.79	1.9
4685	1-1/4" diameter outlets, add					3.08			3.08	3.3
4700	Tapping tees, high volume, socket fusion outlets									
4705	1-1/2" punch, 2" x 1-1/4" outlet	B-20	11	2.182	Ea.	136	111		247	315
4710	1-7/8" punch, 3" x 1-1/4" outlet	"	11	2.182	"	136	111		247	315
4715	4" x 1-1/4" outlet	B-20	9	2.667	Ea.	136	135		271	350
4750	For protective sleeves, add				"	3.60			3.60	3.9
4800	Service saddles, saddle contour x outlet, socket fusion outlets									
4801	IPS unless noted CTS									
4802	1-1/4" x 1/2" CTS outlet	B-20	17	1.412	Ea.	7.30	71.50		78.80	115
4804	1-1/4" x 1/2" outlet		17	1.412		7.30	71.50		78.80	115
4806	1-1/4" x 3/4" outlet		17	1.412		7.30	71.50		78.80	115
4808	1-1/4" x 1" outlet		16	1.500		8.60	76		84.60	123
4810	1-1/4" x 1-1/4" outlet		16	1.500		12.20	76		88.20	127
4812	1-1/2" x 1/2" CTS outlet		16	1.500		7.30	76		83.30	122
4814	1-1/2" x 1/2" outlet		16	1.500		7.30	76		83.30	122
4816	1-1/2" x 3/4" outlet		16	1.500		7.30	76		83.30	122
4818	1-1/2" x 1-1/4" outlet		15	1.600		12.20	81		93.20	134
4820	2" x 1/2" CTS outlet		12	2		7.30	101		108.30	159
4822	2" x 1/2" outlet		12	2		7.30	101		108.30	159
4824	2" x 3/4" outlet		12	2		7.30	101		108.30	159
4826	2" x 1" outlet		11	2.182		8.60	111		119.60	174
4828	2" x 1-1/4" outlet		11	2.182		12.20	111		123.20	178
4830	3" x 1/2" CTS outlet		12	2		7.30	101		108.30	159
4832	3" x 1/2" outlet		12	2		7.30	101		108.30	159
4834	3" x 3/4" outlet		12	2		7.30	101		108.30	159
4836	3" x 1" outlet		11	2.182		8.60	111		119.60	174
4838	3" x 1-1/4" outlet		11	2.182		12.20	111		123.20	178
4840	4" x 1/2" CTS outlet		10	2.400		7.30	122		129.30	190
4842	4" x 1/2" outlet		10	2.400		7.30	122		129.30	190
4844	4" x 3/4" outlet		10	2.400		7.30	122		129.30	190
4846	4" x 1" outlet		9	2.667		8.60	135		143.60	211
4848	4" x 1-1/4" outlet		9	2.667		12.20	135		147.20	215
4880	For protective sleeves, 1/2" to 3/4" diameter outlets, add					1.07			1.07	1.1
4885	1" diameter outlets, add					1.79			1.79	1.9
4890	1-1/4" diameter outlets, add					3.08			3.08	3.3
4900	Reducer tees, 1-1/4" x 3/4" x 3/4" diameters	B-20	9	2.667		9.30	135		144.30	212
4902	1-1/4" x 3/4" x 1" diameters		9	2.667		12.05	135		147.05	215
4904	1-1/4" x 3/4" x 1-1/4" diameters		9	2.667		12.05	135		147.05	215
4906	1-1/4" x 1" x 3/4" diameters		9	2.667		12.05	135		147.05	215

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33 52 16.26 High Density Polyethylene Piping		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
4908	1-1/4" x 1" x 1" diameters	B-20	9	2.667	Ea.	9.20	135		144.20	212
4910	1-1/4" x 1" x 1-1/4" diameters		9	2.667		12.05	135		147.05	215
4912	1-1/4" x 1-1/4" x 3/4" diameters	B-20	9	2.667	Ea.	8.65	135		143.65	212
4914	1-1/4" x 1-1/4" x 1" diameters		9	2.667		9.20	135		144.20	212
4916	1-1/2" x 3/4" x 3/4" diameters		8.50	2.824		15.30	143		158.30	231
4918	1-1/2" x 3/4" x 1" diameters		8.50	2.824		15.30	143		158.30	231
4920	1-1/2" x 3/4" x 1-1/4" diameters		8.50	2.824		15.30	143		158.30	231
4922	1-1/2" x 3/4" x 1-1/2" diameters		8.50	2.824		15.30	143		158.30	231
4924	1-1/2" x 1" x 3/4" diameters		8.50	2.824		15.30	143		158.30	231
4926	1-1/2" x 1" x 1" diameters		8.50	2.824		15.30	143		158.30	231
4928	1-1/2" x 1" x 1-1/4" diameters		8.50	2.824		15.30	143		158.30	231
4930	1-1/2" x 1" x 1-1/2" diameters		8.50	2.824		15.30	143		158.30	231
4932	1-1/2" x 1-1/4" x 3/4" diameters		8.50	2.824		12.85	143		155.85	228
4934	1-1/2" x 1-1/4" x 1" diameters		8.50	2.824		12.70	143		155.70	228
4936	1-1/2" x 1-1/4" x 1-1/4" diameters		8.50	2.824		12.85	143		155.85	228
4938	1-1/2" x 1-1/4" x 1-1/2" diameters		8.50	2.824		15.30	143		158.30	231
4940	1-1/2" x 1-1/2" x 3/4" diameters		8.50	2.824		11.95	143		154.95	227
4942	1-1/2" x 1-1/2" x 1" diameters		8.50	2.824		11.95	143		154.95	227
4944	1-1/2" x 1-1/2" x 1-1/4" diameters		8.50	2.824		11.95	143		154.95	227
4946	2" x 1-1/4" x 3/4" diameters		8	3		13.90	152		165.90	242
4948	2" x 1-1/4" x 1" diameters		8	3		13.45	152		165.45	242
4950	2" x 1-1/4" x 1-1/4" diameters		8	3		14	152		166	242
4952	2" x 1-1/2" x 3/4" diameters		8	3		13.90	152		165.90	242
4954	2" x 1-1/2" x 1" diameters		8	3		13.45	152		165.45	242
4956	2" x 1-1/2" x 1-1/4" diameters		8	3		13.45	152		165.45	242
4958	2" x 2" x 3/4" diameters		8	3		13.85	152		165.85	242
4960	2" x 2" x 1" diameters		8	3		13.60	152		165.60	242
4962	2" x 2" x 1-1/4" diameters		8	3		13.95	152		165.95	242
8100	Fittings, accessories									
8105	SDR 11, IPS unless noted CTS									
8110	Flange adapters, 2" x 6" long	1 Skwk	32	.250	Ea.	19.30	14.75		34.05	43
8115	3" x 6" long		32	.250		24	14.75		38.75	48.50
8120	4" x 6" long		24	.333		30	19.65		49.65	62.50
8135	Backup flanges, 2" diameter		32	.250		24.50	14.75		39.25	49
8140	3" diameter		32	.250		33	14.75		47.75	58.50
8145	4" diameter		24	.333		65	19.65		84.65	101
8200	Tapping tees, test caps									
8205	Type II, yellow polyethylene cap	1 Skwk	45	.178	Ea.	55	10.45		65.45	75.50
8210	High volume, black polyethylene cap		45	.178		70.50	10.45		80.95	93
8215	Quick connector, female x female inlets, 1/4" N.P.T.		50	.160		22.50	9.40		31.90	39
8220	Test hose, 24" length, 3/8" ID, male outlets, 1/4" N.P.T.		50	.160		31	9.40		40.40	48
8225	Quick connector and test hose assembly		50	.160		54	9.40		63.40	73
8300	Threaded transition fittings									
8302	HDPE x MPT zinc plated steel, SDR 7, 1/2" CTS x 1/2" MPT	B-22C	30	.533	Ea.	37.50	28	8.30	73.80	92
8304	SDR 9.3, 1/2" IPS x 3/4" MPT		28.50	.561		50	29.50	8.75	88.25	109
8306	SDR 11, 3/4" IPS x 3/4" MPT		28.50	.561		24.50	29.50	8.75	62.75	80.50
8308	1" IPS x 1" MPT		27	.593		32	31	9.25	72.25	91.50
8310	1-1/4" IPS x 1-1/4" MPT		27	.593		51	31	9.25	91.25	113
8312	1-1/2" IPS x 1-1/2" MPT		25.50	.627		59	33	9.75	101.75	125
8314	2" IPS x 2" MPT		24	.667		67.50	35	10.40	112.90	138
8322	HDPE x MPT 316 stainless steel, SDR 11, 3/4" IPS x 3/4" MPT		28.50	.561		32.50	29.50	8.75	70.75	89.50
8324	1" IPS x 1" MPT		27	.593		33.50	31	9.25	73.75	93.50
8326	1-1/4" IPS x 1-1/4" MPT		27	.593		41	31	9.25	81.25	102

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33 52 16 – Gas Hydrocarbon Piping

33 52 16.26 High Density Polyethylene Piping		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
8328	2" IPS x 2" MPT	B-22C	24	.667	Ea.	49.50	35	10.40	94.90	118
8330	3" IPS x 3" MPT		24	.667		99	35	10.40	144.40	172
8332	4" IPS x 4" MPT		18	.889		136	46.50	13.85	196.35	234
8342	HDPE x FPT 316 stainless steel, SDR 11, 3/4" IPS x 3/4" FPT		28.50	.561		42.50	29.50	8.75	80.75	100
8344	1" IPS x 1" FPT		27	.593		56.50	31	9.25	96.75	119
8346	1-1/4" IPS x 1-1/4" FPT		27	.593		91.50	31	9.25	131.75	158
8348	1-1/2" IPS x 1-1/2" FPT		25.50	.627		87.50	33	9.75	130.25	156
8350	2" IPS x 2" FPT		24	.667		116	35	10.40	161.40	190
8352	3" IPS x 3" FPT		24	.667		224	35	10.40	269.40	310
8354	4" IPS x 4" FPT		18	.889		320	46.50	13.85	380.35	440
8362	HDPE x MPT epoxy carbon steel, SDR 11, 3/4" IPS x 3/4" MPT		28.50	.561		24.50	29.50	8.75	62.75	80.5
8364	1" IPS x 1" MPT		27	.593		27	31	9.25	67.25	86.5
8366	1-1/4" IPS x 1-1/4" MPT		27	.593		28.50	31	9.25	68.75	88
8368	1-1/2" IPS x 1-1/2" MPT		25.50	.627		31.50	33	9.75	74.25	94.5
8370	2" IPS x 2" MPT		24	.667		34	35	10.40	79.40	101
8372	3" IPS x 3" MPT		24	.667		52.50	35	10.40	97.90	121
8374	4" IPS x 4" MPT		18	.889		71	46.50	13.85	131.35	163
8382	HDPE x FPT epoxy carbon steel, SDR 11, 3/4" IPS x 3/4" FPT		28.50	.561		30	29.50	8.75	68.25	86.5
8384	1" IPS x 1" FPT		27	.593		33	31	9.25	73.25	92.5
8386	1-1/4" IPS x 1-1/4" FPT		27	.593		70	31	9.25	110.25	134
8388	1-1/2" IPS x 1-1/2" FPT		25.50	.627		71	33	9.75	113.75	138
8390	2" IPS x 2" FPT		24	.667		75.50	35	10.40	120.90	146
8392	3" IPS x 3" FPT		24	.667		128	35	10.40	173.40	204
8394	4" IPS x 4" FPT	B-22C	18	.889	Ea.	160	46.50	13.85	220.35	261
8402	HDPE x MPT poly coated carbon steel, SDR 11, 1" IPS x 1" MPT		27	.593		26.50	31	9.25	66.75	85.5
8404	1-1/4" IPS x 1-1/4" MPT		27	.593		34.50	31	9.25	74.75	94.5
8406	1-1/2" IPS x 1-1/2" MPT		25.50	.627		41	33	9.75	83.75	105
8408	2" IPS x 2" MPT		24	.667		46.50	35	10.40	91.90	114
8410	3" IPS x 3" MPT		24	.667		90	35	10.40	135.40	162
8412	4" IPS x 4" MPT		18	.889		140	46.50	13.85	200.35	239
8602	Socket fused HDPE x MPT brass, SDR 11, 3/4" IPS x 3/4" MPT	B-20	28.50	.842		14.50	42.50		57	80
8604	1" IPS x 3/4" MPT		27	.889		17.50	45		62.50	87
8606	1" IPS x 1" MPT		27	.889		16.90	45		61.90	86
8608	1-1/4" IPS x 3/4" MPT		27	.889		18.10	45		63.10	87.5
8610	1-1/4" IPS x 1" MPT		27	.889		18.10	45		63.10	87.5
8612	1-1/4" IPS x 1-1/4" MPT		27	.889		26	45		71	96
8614	1-1/2" IPS x 1-1/2" MPT		25.50	.941		35.50	47.50		83	111
8616	2" IPS x 2" MPT		24	1		36.50	50.50		87	116
8618	Socket fused HDPE x FPT brass, SDR 11, 3/4" IPS x 3/4" FPT		28.50	.842		14.50	42.50		57	80
8620	1" IPS x 1/2" FPT		27	.889		14.50	45		59.50	83.5
8622	1" IPS x 3/4" FPT		27	.889		17.50	45		62.50	87
8624	1" IPS x 1" FPT		27	.889		16.90	45		61.90	86
8626	1-1/4" IPS x 3/4" FPT		27	.889		18.10	45		63.10	87.5
8628	1-1/4" IPS x 1" FPT		27	.889		17.50	45		62.50	87
8630	1-1/4" IPS x 1-1/4" FPT		27	.889		26	45		71	96
8632	1-1/2" IPS x 1-1/2" FPT		25.50	.941		36.50	47.50		84	112
8634	2" IPS x 1-1/2" FPT		24	1		37	50.50		87.50	116
8636	2" IPS x 2" FPT		24	1		38.50	50.50		89	118

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33 71 16 – Electrical Utility Poles

33 71 16.33 Wood Electrical Utility Poles	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **WOOD ELECTRICAL UTILITY POLES**									
0011 Excludes excavation, backfill and cast-in-place concrete									
6200 Wood, class 3 Douglas Fir, penta-treated, 20′	R-3	3.10	6.452	Ea.	264	425	56	745	985
6600 30′		2.60	7.692		345	505	66.50	916.50	1,200
7000 40′		2.30	8.696		630	575	75.50	1,280.50	1,625
7200 45′		1.70	11.765		920	775	102	1,797	2,250
7400 Cross arms with hardware & insulators									
7600 4′ long	1 Elec	2.50	3.200	Ea.	160	212		372	490
7800 5′ long		2.40	3.333		175	221		396	525
8000 6′ long		2.20	3.636		212	241		453	595

33 71 19 – Electrical Underground Ducts and Manholes

33 71 19.17 Electric and Telephone Underground

0010 **ELECTRIC AND TELEPHONE UNDERGROUND**									
0011 Not including excavation									
0200 backfill and cast in place concrete									
0400 Hand holes, precast concrete, with concrete cover									
0600 2′ x 2′ x 3′ deep	R-3	2.40	8.333	Ea.	445	550	72.50	1,067.50	1,375
0800 3′ x 3′ x 3′ deep		1.90	10.526		580	695	91.50	1,366.50	1,750
1000 4′ x 4′ x 4′ deep		1.40	14.286		1,675	940	124	2,739	3,375
1200 Manholes, precast with iron racks & pulling irons, C.I. frame									
1400 and cover, 4′ x 6′ x 7′ deep	B-13	2	28	Ea.	3,200	1,400	1,050	5,650	6,750
1600 6′ x 8′ x 7′ deep		1.90	29.474		3,600	1,475	1,100	6,175	7,325
1800 6′ x 10′ x 7′ deep		1.80	31.111		4,025	1,550	1,175	6,750	8,025
4200 Underground duct, banks ready for concrete fill, min. of 7.5″									
4400 between conduits, center to center									
4580 PVC, type EB, 1 @ 2″ diameter	2 Elec	480	.033	L.F.	1.12	2.21		3.33	4.51
4600 2 @ 2″ diameter		240	.067		2.24	4.41		6.65	9
4800 4 @ 2″ diameter		120	.133		4.49	8.85		13.34	18.05
5000 2 @ 3″ diameter		200	.080		3.06	5.30		8.36	11.20
5200 4 @ 3″ diameter		100	.160		6.10	10.60		16.70	22.50
5400 2 @ 4″ diameter		160	.100		4.39	6.60		10.99	14.70
5600 4 @ 4″ diameter		80	.200		8.80	13.25		22.05	29.50
5800 6 @ 4″ diameter		54	.296		13.15	19.60		32.75	43.50
6200 Rigid galvanized steel, 2 @ 2″ diameter		180	.089		17.05	5.90		22.95	27.50
6400 4 @ 2″ diameter		90	.178		34	11.75		45.75	55
6800 2 @ 3″ diameter		100	.160		37.50	10.60		48.10	57.50
7000 4 @ 3″ diameter		50	.320		75.50	21		96.50	115
7200 2 @ 4″ diameter		70	.229		52.50	15.15		67.65	80.50
7400 4 @ 4″ diameter		34	.471		105	31		136	163
7600 6 @ 4″ diameter		22	.727		158	48		206	245

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33 81 13 – Communications Transmission Towers

33 81 13.10 Radio Towers	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **RADIO TOWERS**									
0020 Guyed, 50′ H, 40 lb. section, 70 MPH basic wind speed	2 Sswk	1	16	Ea.	3,175	990		4,165	5,0
0100 Wind load 90 MPH basic wind speed	"	1	16		4,775	990		5,765	6,7
0300 190′ high, 40 lb. section, wind load 70 MPH basic wind speed	K-2	.33	72.727		9,800	4,275	1,150	15,225	18,6
0400 200′ high, 70 lb. section, wind load 90 MPH basic wind speed	K-2	.33	72.727	Ea.	16,700	4,275	1,150	22,125	26,2
0600 300′ high, 70 lb. section, wind load 70 MPH basic wind speed		.20	120		20,300	7,050	1,875	29,225	35,3
0700 270′ high, 90 lb. section, wind load 90 MPH basic wind speed		.20	120		19,300	7,050	1,875	28,225	34,2
0800 400′ high, 100 lb. section, wind load 70 MPH basic wind speed		.14	171		33,500	10,100	2,700	46,300	55,0
0900 Self-supporting, 60′ high, wind load 70 MPH basic wind speed		.80	30		5,700	1,750	470	7,920	9,5
0910 60′ high, wind load 90 MPH basic wind speed		.45	53.333		5,450	3,125	840	9,415	11,7
1000 120′ high, wind load 70 MPH basic wind speed		.40	60		8,825	3,525	945	13,295	16,1
1200 190′ high, wind load 90 MPH basic wind speed		.20	120		31,300	7,050	1,875	40,225	47,3
2000 For states west of Rocky Mountains, add for shipping					10%				

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Estimating Tips

34 11 00 Rail Tracks

This subdivision includes items that may involve either repair of existing or construction of new railroad tracks. Additional preparation work, such as the roadbed earthwork, would be found in Division 31. Additional new construction siding and turnouts are found in Subdivision 34 72. Maintenance of railroads is found under 34 01 23 Operation and Maintenance of Railways.

34 40 00 Traffic Signals

This subdivision includes traffic signal systems. Other traffic control devices such as traffic signs are found in Subdivision 10 14 53 Traffic Signage.

34 70 00 Vehicle Barriers

This subdivision includes security vehicle barriers, guide and guard rails, crash barriers, and delineators. The actual maintenance and construction of concrete and asphalt pavement are found in Division 32.

Reference Numbers

Reference numbers are shown at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear. ■

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34 01 Operation and Maintenance of Transportation

34 01 23 – Operation and Maintenance of Railways

34 01 23.51 Maintenance of Railroads	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **MAINTENANCE OF RAILROADS**									
0400 Resurface and realign existing track	B-14	200	.240	L.F.		11.50	1.64	13.14	18.90
0600 For crushed stone ballast, add	"	500	.096	"	16.50	4.59	.66	21.75	25.50

34 11 Rail Tracks

34 11 13 – Track Rails

34 11 13.23 Heavy Rail Track

0010 **HEAVY RAIL TRACK** R347216-10									
1000 Rail, 100 lb. prime grade				L.F.	33.50			33.50	37
1500 Relay rail				"	16.85			16.85	18.55

34 11 33 – Track Cross Ties

34 11 33.13 Concrete Track Cross Ties

0010 **CONCRETE TRACK CROSS TIES**									
1400 Ties, concrete, 8'-6" long, 30" OC	B-14	80	.600	Ea.	141	28.50	4.11	173.61	202

34 11 33.16 Timber Track Cross Ties

0010 **TIMBER TRACK CROSS TIES**									
1600 Wood, pressure treated, 6" x 8" x 8'-6", C.L. lots	B-14	90	.533	Ea.	59.50	25.50	3.65	88.65	108
1700 L.C.L. lots		90	.533		62.50	25.50	3.65	91.65	111
1900 Heavy duty, 7" x 9" x 8'-6", C.L. lots		70	.686		65.50	33	4.70	103.20	126
2000 L.C.L. lots		70	.686		65.50	33	4.70	103.20	126

34 11 33.17 Timber Switch Ties

0010 **TIMBER SWITCH TIES**									
1200 Switch timber, for a #8 switch, pressure treated	B-14	3.70	12.973	M.B.F.	3,575	620	89	4,284	4,950
1300 Complete set of timbers, 3.7 MBF for #8 switch	"	1	48	Total	13,700	2,300	330	16,330	18,900

34 11 93 – Track Appurtenances and Accessories

34 11 93.50 Track Accessories

0010 **TRACK ACCESSORIES**									
0020 Car bumpers, test	B-14	2	24	Ea.	3,475	1,150	164	4,789	5,675
0100 Heavy duty	"	2	24	"	6,550	1,150	164	7,864	9,100
0200 Derails hand throw (sliding)	B-14	10	4.800	Ea.	1,575	230	33	1,838	2,100
0300 Hand throw with standard timbers, open stand & target		8	6	"	1,700	287	41	2,028	2,350
2400 Wheel stops, fixed		18	2.667	Pr.	765	128	18.25	911.25	1,050
2450 Hinged		14	3.429	"	1,025	164	23.50	1,212.50	1,425

34 11 93.60 Track Material

0010 **TRACK MATERIAL**									
0020 Track bolts				Ea.	4.89			4.89	5.40
0100 Joint bars				Pr.	68			68	75
0200 Spikes				Ea.	4			4	4.40
0300 Tie plates				"	14.85			14.85	16.35

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34 41 Roadway Signaling and Control Equipment

34 41 13 – Traffic Signals

34 41 13.10 Traffic Signals Systems	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **TRAFFIC SIGNALS SYSTEMS**									
0020 Component costs									
0600 Crew employs crane/directional driller as required									
1000 Vertical mast with foundation									
1010 Mast sized for single arm to 40′; no lighting or power function	R-11	.50	112	Signal	10,500	7,050	4,300	21,850	26,800
1100 Horizontal arm									
1110 Per linear foot of arm	R-11	50	1.120	Signal	225	70.50	43	338.50	400
1200 Traffic signal									
1210 Includes signal, bracket, sensor, and wiring	R-11	2.50	22.400	Signal	1,075	1,400	860	3,335	4,250
1300 Pedestrian signals and callers									
1310 Includes four signals with brackets and two call buttons	R-11	2.50	22.400	Signal	3,800	1,400	860	6,060	7,225
1400 Controller, design, and underground conduit									
1410 Includes miscellaneous signage and adjacent surface work	R-11	.25	224	Signal	25,200	14,100	8,625	47,925	58,000

34 71 Roadway Construction

34 71 13 – Vehicle Barriers

34 71 13.17 Security Vehicle Barriers

0010 **SECURITY VEHICLE BARRIERS**									
0020 Security planters excludes filling material									
0100 Concrete security planter, exposed aggregate 36″ diam. x 30″ high	B-11M	8	2	Ea.	545	106	50.50	701.50	815
0200 48″ diam. x 36″ high		8	2		660	106	50.50	816.50	940
0300 53″ diam. x 18″ high		8	2		870	106	50.50	1,026.50	1,175
0400 72″ diam. x 18″ high with seats		8	2		1,975	106	50.50	2,131.50	2,400
0450 84″ diam. x 36″ high		8	2		2,000	106	50.50	2,156.50	2,425
0500 36″ x 36″ x 24″ high square		8	2		460	106	50.50	616.50	720
0600 36″ x 36″ x 30″ high square		8	2		760	106	50.50	916.50	1,050
0700 48″ L x 24″ W x 30″ H rectangle		8	2		475	106	50.50	631.50	735
0800 72″ L x 24″ W x 30″ H rectangle	B-11M	8	2	Ea.	580	106	50.50	736.50	850
0900 96″ L x 24″ W x 30″ H rectangle		8	2		850	106	50.50	1,006.50	1,150
0950 Decorative geometric concrete barrier, 96″ L x 24″ W x 36″ H		8	2		855	106	50.50	1,011.50	1,150
1000 Concrete security planter, filling with washed sand or gravel <1 C.Y.		8	2		17.85	106	50.50	174.35	233
1050 2 C.Y. or less		6	2.667		35.50	141	67	243.50	325
1200 Jersey concrete barrier, 10′ L x 2′ by 0.5′ W x 30″ H	B-21B	16	2.500		1,175	124	124	1,423	1,625
1300 10 or more same site		24	1.667		1,175	82.50	82.50	1,340	1,525
1400 10′ L x 2′ by 0.5′ W x 32″ H		16	2.500		1,250	124	124	1,498	1,725
1500 10 or more same site		24	1.667		1,250	82.50	82.50	1,415	1,625
1600 20′ L x 2′ by 0.5′ W x 30″ H		12	3.333		1,400	165	165	1,730	1,975
1700 10 or more same site		18	2.222		1,400	110	110	1,620	1,825
1800 20′ L x 2′ by 0.5′ W x 32″ H		12	3.333		1,725	165	165	2,055	2,325
1900 10 or more same site		18	2.222		1,725	110	110	1,945	2,175
2000 GFRC decorative security barrier per 10′ section including concrete		4	10		3,075	495	495	4,065	4,650
2100 Per 12′ section including concrete		4	10		3,675	495	495	4,665	5,325
2210 GFRC decorative security barrier will stop 30 MPH, 4,000 lb. vehicle									
2300 High security barrier base prep per 12′ section on bare ground	B-11C	4	4	Ea.	18.55	212	82	312.55	425
2310 GFRC barrier base prep does not include haulaway of excavated matl.									
2400 GFRC decorative high security barrier per 12′ section w/concrete	B-21B	3	13.333	Ea.	6,125	660	660	7,445	8,450
2410 GFRC decorative high security barrier will stop 50 MPH, 15,000 lb. vehicle									
2500 GFRC decorative impaler security barrier per 10′ section w/prep	B-6	4	6	Ea.	2,425	296	82	2,803	3,175
2600 Per 12′ section w/prep	″	4	6	″	2,900	296	82	3,278	3,700
2610 Impaler barrier should stop 50 MPH, 15,000 lb. vehicle w/some penetr.									
2700 Pipe bollards, steel, concrete filled/painted, 8′ L x 4′ D hole, 8″ diam.	B-6	10	2.400	Ea.	1,100	119	33	1,252	1,425

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34 71 13 – Vehicle Barriers

	34 71 13.17 Security Vehicle Barriers	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2710	Schedule 80 concrete bollards will stop 4,000 lb. vehicle @ 30 MPH									
2800	GFRC decorative jersey barrier cover per 10′ section excludes soil	B-6	8	3	Ea.	1,000	148	41	1,189	1,400
2900	Per 12′ section excludes soil		8	3		1,225	148	41	1,414	1,600
3000	GFRC decorative 8″ diameter bollard cover		12	2		580	99	27.50	706.50	815
3100	GFRC decorative barrier face 10′ section excludes earth backing		10	2.400		995	119	33	1,147	1,300
3200	Drop arm crash barrier, 15,000 lb. vehicle @ 50 MPH									
3205	Includes all material, labor for complete installation									
3210	12′ width				Ea.				64,500	71,000
3310	24′ width								86,000	95,000
3410	Wedge crash barrier, 10′ width								98,000	108,000
3510	12.5′ width				Ea.				108,000	119,000
3520	15′ width								118,500	130,000
3610	Sliding crash barrier, 12′ width								178,500	196,000
3710	Sliding roller crash barrier, 20′ width								198,000	217,500
3810	Sliding cantilever crash barrier, 20′ width								198,000	217,500
3890	Note: Raised bollard crash barriers should be used w/tire shredders									
3910	Raised bollard crash barrier, 10′ width				Ea.				38,800	42,900
4010	12′ width								44,900	49,000
4110	Raised bollard crash barrier, 10′ width, solar powered								46,900	52,000
4210	12′ width								53,000	58,000
4310	In ground tire shredder, 16′ width								43,900	47,900

34 71 13.26 Vehicle Guide Rails

0010	**VEHICLE GUIDE RAILS**									
0012	Corrugated stl., galv. stl. posts, 6′-3″ OC - "W-Beam Guiderail"	B-80	850	.038	L.F.	12.55	1.89	.64	15.08	17.30
0200	End sections, galvanized, flared		50	.640	Ea.	99.50	32	10.85	142.35	169
0300	Wrap around end		50	.640		142	32	10.85	184.85	216
0325	W-Beam, stl., galv. Terminal Connector, Concrete Mounted		8	4		264	201	67.50	532.50	665
0410	Thrie Beam, stl., galv. stl. posts, 6′-3″ OC		850	.038	L.F.	24	1.89	.64	26.53	29.50
0440	Thrie Beam, stl., galv, Wrap Around End Section		50	.640	Ea.	94.50	32	10.85	137.35	164
0450	Thrie Beam, stl., galv. Terminal Connector, Concrete Mounted		8	4	″	289	201	67.50	557.50	695
0510	Rub Rail, stl, galv, steel posts (not included), 6′-3″ OC		850	.038	L.F.	2.04	1.89	.64	4.57	5.75
0600	Cable guide rail, 3 at 3/4″ cables, steel posts, single face		900	.036		12.70	1.78	.60	15.08	17.30
0700	Wood posts		950	.034		13.40	1.69	.57	15.66	17.90
0900	Guide rail, steel box beam, 6″ x 6″		120	.267		38.50	13.35	4.51	56.36	67.50
1100	Median barrier, steel box beam, 6″ x 8″		215	.149		52.50	7.45	2.52	62.47	72
1400	Resilient guide fence and light shield, 6′ high	B-2	130	.308		25	14.15		39.15	48.50
1500	Concrete posts, individual, 6′-5″, triangular	B-80	110	.291	Ea.	69	14.60	4.93	88.53	102
1550	Square		110	.291	″	75.50	14.60	4.93	95.03	110
1650	Timber guide rail, 4″ x 8″ with 6″ x 8″ wood posts, treated		960	.033	L.F.	14.05	1.67	.56	16.28	18.55
2000	Median, precast concrete, 3′-6″ high, 2′ wide, single face	B-29	380	.147		61	7.30	2.26	70.56	80.50
2200	Double face	″	340	.165		70	8.15	2.52	80.67	92
2400	Speed bumps, thermoplastic, 10-1/2″ x 2-1/4″ x 48″ long	B-2	120	.333	Ea.	146	15.35		161.35	183
3030	Impact barrier, MUTCD, barrel type	B-16	30	1.067	″	400	51	25.50	476.50	545

34 71 19 – Vehicle Delineators

34 71 19.13 Fixed Vehicle Delineators

0010	**FIXED VEHICLE DELINEATORS**									
0020	Crash barriers									
0100	Traffic channelizing pavement markers, layout only	A-7	2000	.012	Ea.		.73	.02	.75	1.12
0110	13″ x 7-1/2″ x 2-1/2″ high, non-plowable, install	2 Clab	96	.167		30.50	7.60		38.10	45
0200	8″ x 8″ x 3-1/4″ high, non-plowable, install		96	.167		29.50	7.60		37.10	44
0230	4″ x 4″ x 3/4″ high, non-plowable, install		120	.133		2.68	6.10		8.78	12
0240	9-1/4″ x 5-7/8″ x 1/4″ high, plowable, concrete pavmt.	A-2A	70	.343		4.74	16.20	7.10	28.04	37

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34 71 Roadway Construction

34 71 19 – Vehicle Delineators

34 71 19.13 Fixed Vehicle Delineators	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0250 9-1/4" x 5-7/8" x 1/4" high, plowable, asphalt pavmt.	A-2A	120	.200	Ea.	3.86	9.45	4.15	17.46	23
0300 Barrier and curb delineators, reflectorized, 4" x 6"	2 Clab	150	.107		3.34	4.86		8.20	10.90
0310 3" x 5"	"	150	.107		4.54	4.86		9.40	12.25
0500 Rumble strip, polycarbonate									
0510 24" x 3-1/2" x 1/2" high	2 Clab	50	.320	Ea.	10.20	14.60		24.80	32.50

34 72 Railway Construction

34 72 16 – Railway Siding

34 72 16.50 Railroad Sidings

0010 **RAILROAD SIDINGS** R347216-10									
0800 Siding, yard spur, level grade									
0820 100 lb. new rail	B-14	57	.842	L.F.	140	40.50	5.75	186.25	220
1002 Steel ties in concrete, incl. fasteners & plates									
1020 100 lb. new rail	B-14	22	2.182	L.F.	207	104	14.95	325.95	400

34 72 16.60 Railroad Turnouts

0010 **RAILROAD TURNOUTS**									
2200 Turnout, #8 complete, w/rails, plates, bars, frog, switch point,									
2250 timbers, and ballast to 6" below bottom of ties									
2280 90 lb. rails	B-13	.25	224	Ea.	35,800	11,100	8,375	55,275	65,000
2290 90 lb. relay rails		.25	224		24,000	11,100	8,375	43,475	52,000
2300 100 lb. rails		.25	224		39,900	11,100	8,375	59,375	69,500
2310 100 lb. relay rails		.25	224		26,800	11,100	8,375	46,275	55,000
2320 110 lb. rails		.25	224		43,900	11,100	8,375	63,375	74,000
2330 110 lb. relay rails		.25	224		29,600	11,100	8,375	49,075	58,000
2340 115 lb. rails		.25	224		48,100	11,100	8,375	67,575	78,500
2350 115 lb. relay rails		.25	224		31,300	11,100	8,375	50,775	60,000
2360 132 lb. rails		.25	224		55,000	11,100	8,375	74,475	86,000
2370 132 lb. relay rails		.25	224		36,400	11,100	8,375	55,875	66,000

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Division Notes

	CREW	DAILY OUTPUT	LABOR-HOURS	UNIT	BARE COSTS MAT.	BARE COSTS LABOR	BARE COSTS EQUIP.	BARE COSTS TOTAL	TOTAL INCL O&P

Estimating Tips

35 01 50 Operation and Maintenance of Marine Construction

Includes unit price lines for pile cleaning and pile wrapping for protection.

35 20 16 Hydraulic Gates

This subdivision includes various types of gates that are commonly used in waterway and canal construction. Various earthwork and structural support items are found in Division 31, and concrete work is found in Division 3.

35 20 23 Dredging

This subdivision includes barge and shore dredging systems for rivers, canals, and channels.

35 31 00 Shoreline Protection

This subdivision includes breakwaters, bulkheads, and revetments for ocean and river inlets. Additional earthwork may be required from Division 31, as well as concrete work from Division 3.

35 41 00 Levees

Contains information on levee construction, including the estimated cost of clay cone material.

35 49 00 Waterway Structures

This subdivision includes breakwaters and bulkheads for canals.

35 51 00 Floating Construction

This section includes floating piers, docks, and dock accessories. Fixed Pier Timber Construction is found in Section 06 13 33. Driven piles are found in Division 31, as are sheet piling, cofferdams, and riprap.

Reference Numbers

Reference numbers are shown at the beginning of some major classifications. These numbers refer to related items in the Reference Section. The reference information may be an estimating procedure, an alternate pricing method, or technical information.

Note: Not all subdivisions listed here necessarily appear. ■

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35 24 Dredging

35 24 13 – Suction Dredging

35 24 13.13 Cutter Suction Dredging	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **CUTTER SUCTION DREDGING**									
0015 Add, Marine Equipment Rental, See Section 01 54 33.80									
1000 Hydraulic method, pumped 1,000′ to shore dump, minimum	B-57	460	.104	B.C.Y.		5.45	4.39	9.84	12.9
1100 Maximum	B-57	310	.155	B.C.Y.		8.10	6.50	14.60	19.2
1400 Into scows dumped 20 miles, minimum		425	.113			5.90	4.75	10.65	13.9
1500 Maximum	↓	243	.198			10.30	8.30	18.60	24.5
1600 For inland rivers and canals in South, deduct				↓				30%	30%

35 24 23 – Clamshell Dredging

35 24 23.13 Mechanical Dredging

0010 **MECHANICAL DREDGING**									
0015 Add, Marine Equipment Rental, See Section 01 54 33.80									
0020 Dredging mobilization and demobilization, add to below, minimum	B-8	.53	121	Total		6,325	9,075	15,400	19,400
0100 Maximum	"	.10	640	"		33,600	48,100	81,700	103,000
0300 Barge mounted clamshell excavation into scows									
0310 Dumped 20 miles at sea, minimum	B-57	310	.155	B.C.Y.		8.10	6.50	14.60	19.2
0400 Maximum	"	213	.225	"		11.75	9.50	21.25	28
0500 Barge mounted dragline or clamshell, hopper dumped,									
0510 pumped 1,000′ to shore dump, minimum	B-57	340	.141	B.C.Y.		7.35	5.95	13.30	17.5
0525 All pumping uses 2,000 gallons of water per cubic yard									
0600 Maximum	B-57	243	.198	B.C.Y.		10.30	8.30	18.60	24.5

35 51 Floating Construction

35 51 13 – Floating Piers

35 51 13.23 Floating Wood Piers

0010 **FLOATING WOOD PIERS**									
0020 Polyethylene encased polystyrene, no pilings included	F-3	330	.121	S.F.	31.50	7	6	44.50	51.5
0200 Pile supported, shore constructed, minimum		130	.308		28.50	17.75	15.25	61.50	75
0250 Maximum		120	.333		31.50	19.25	16.55	67.30	81.5
0400 Floating, small boat, prefab, no shore facilities, minimum		250	.160		26	9.25	7.95	43.20	51
0500 Maximum		150	.267	↓	57	15.40	13.20	85.60	100
0700 Per slip, minimum (180 S.F. each)		1.59	25.157	Ea.	5,575	1,450	1,250	8,275	9,675
0800 Maximum	↓	1.40	28.571	"	8,600	1,650	1,425	11,675	13,500

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Estimating Tips

Products such as conveyors, material handling cranes and hoists, and other items specified in this division require trained installers. The general contractor may not have any choice as to who will perform the installation or when it will be performed. Long lead times are often required for these products, making early decisions in purchasing and scheduling necessary. The installation of this type of equipment may require the embedment of mounting hardware during the construction of floors, structural walls, or interior walls/partitions. Electrical connections will require coordination with the electrical contractor.

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41 21 Conveyors

41 21 23 – Piece Material Conveyors

41 21 23.16 Container Piece Material Conveyors	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **CONTAINER PIECE MATERIAL CONVEYORS**									
0020 Gravity fed, 2" rollers, 3" OC									
0050 10' sections with 2 supports, 600 lb. capacity, 18" wide				Ea.	495			495	545
0100 24" wide					620			620	685
0150 1,400 lb. capacity, 18" wide					735			735	810
0200 24" wide					620			620	685
0350 Horizontal belt, center drive and takeup, 60 fpm									
0400 16" belt, 26.5' length	2 Mill	.50	32	Ea.	3,825	1,950		5,775	7,000
0450 24" belt, 41.5' length		.40	40		5,650	2,425		8,075	9,725
0500 61.5' length		.30	53.333		9,350	3,225		12,575	15,000
0600 Inclined belt, 10' rise with horizontal loader and									
0620 End idler assembly, 27.5' length, 18" belt	2 Mill	.30	53.333	Ea.	7,925	3,225		11,150	13,400
0700 24" belt	"	.15	107	"	9,700	6,450		16,150	20,000
3600 Monorail, overhead, manual, channel type									
3700 125 lb./L.F.	1 Mill	26	.308	L.F.	20.50	18.65		39.15	49.50
3900 500 lb./L.F.	"	21	.381	"	24.50	23		47.50	60.50
4000 Trolleys for above, 2 wheel, 125 lb. capacity				Ea.	92			92	101
4200 4 wheel, 250 lb. capacity					425			425	470
4300 8 wheel, 500 lb. capacity					930			930	1,025

41 22 Cranes and Hoists

41 22 13 – Cranes

41 22 13.10 Crane Rail

0010 **CRANE RAIL**									
0020 Box beam bridge, no equipment included	E-4	3400	.009	Lb.	1.64	.59	.04	2.27	2.75
0200 Running track only, 104 lb. per yard		5600	.006	"	.82	.36	.03	1.21	1.48
0210 Running track only, 104 lb. per yard, 20' piece		160	.200	L.F.	28.50	12.45	.92	41.87	51.50

41 22 13.13 Bridge Cranes

0010 **BRIDGE CRANES**									
0100 1 girder, 20' span, 3 ton	M-3	1	34	Ea.	25,600	2,375	172	28,147	31,900
0125 5 ton		1	34		29,100	2,375	172	31,647	35,700
0150 7.5 ton		1	34		30,600	2,375	172	33,147	37,400
0175 10 ton		.80	42.500		40,900	2,975	215	44,090	49,600
0176 12.5 ton		.80	42.500		49,100	2,975	215	52,290	58,500
0200 15 ton		.80	42.500		66,500	2,975	215	69,690	78,000
0225 30' span, 3 ton		1	34		25,800	2,375	172	28,347	32,100
0250 5 ton		1	34		29,400	2,375	172	31,947	36,000
0275 7.5 ton		1	34		33,000	2,375	172	35,547	40,000
0300 10 ton		.80	42.500		41,100	2,975	215	44,290	49,800
0325 15 ton		.80	42.500		69,500	2,975	215	72,690	81,000
0350 2 girder, 40' span, 3 ton	M-4	.50	72		23,100	4,975	510	28,585	33,400
0375 5 ton		.50	72		45,900	4,975	510	51,385	58,500
0400 7.5 ton		.50	72		50,500	4,975	510	55,985	63,500
0425 10 ton		.40	90		43,800	6,225	640	50,665	58,000
0450 15 ton		.40	90		73,000	6,225	640	79,865	90,000
0475 25 ton		.30	120		82,500	8,300	855	91,655	103,500
0500 50' span, 3 ton		.50	72		44,500	4,975	510	49,985	57,000
0525 5 ton		.50	72		48,000	4,975	510	53,485	61,000
0550 7.5 ton	M-4	.50	72	Ea.	54,000	4,975	510	59,485	67,500
0575 10 ton		.40	90		65,500	6,225	640	72,365	82,000
0600 15 ton		.40	90		78,000	6,225	640	84,865	95,500

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41 22 13 – Cranes

	41 22 13.13 Bridge Cranes	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0625	25 ton	M-4	.30	120	Ea.	69,500	8,300	855	78,655	89,500
	41 22 13.19 Jib Cranes									
0010	**JIB CRANES**									
0020	Jib crane, wall cantilever, 500 lb. capacity, 8′ span	2 Mill	1	16	Ea.	1,550	970		2,520	3,100
0040	12′ span		1	16		1,700	970		2,670	3,275
0060	16′ span		1	16		1,975	970		2,945	3,575
0080	20′ span		1	16		2,400	970		3,370	4,025
0100	1,000 lb. capacity, 8′ span		1	16		1,650	970		2,620	3,225
0120	12′ span		1	16		1,800	970		2,770	3,400
0130	16′ span		1	16		2,525	970		3,495	4,175
0150	20′ span		1	16		2,800	970		3,770	4,500

41 22 23 – Hoists

	41 22 23.10 Material Handling									
0010	**MATERIAL HANDLING**, cranes, hoists and lifts									
1500	Cranes, portable hydraulic, floor type, 2,000 lb. capacity				Ea.	4,375			4,375	4,800
1600	4,000 lb. capacity					5,900			5,900	6,500
1800	Movable gantry type, 12′ to 15′ range, 2,000 lb. capacity					3,975			3,975	4,375
1900	6,000 lb. capacity					6,850			6,850	7,525
2100	Hoists, electric overhead, chain, hook hung, 15′ lift, 1 ton cap.					2,975			2,975	3,275
2200	3 ton capacity					4,075			4,075	4,475
2500	5 ton capacity					7,550			7,550	8,300
2600	For hand-pushed trolley, add					15%				
2700	For geared trolley, add					30%				
2800	For motor trolley, add					75%				
3000	For lifts over 15′, 1 ton, add				L.F.	26.50			26.50	29.50
3100	5 ton, add				″	99			99	109
3110	Air powered hoist, 500 lb. capacity	2 Mill	2.67	5.993	Ea.	2,200	365		2,565	2,950
3300	Lifts, scissor type, portable, electric, 36″ high, 2,000 lb.					3,700			3,700	4,075
3400	48″ high, 4,000 lb.					6,125			6,125	6,725

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Division Notes

	CREW	DAILY OUTPUT	LABOR-HOURS	UNIT	BARE COSTS MAT.	BARE COSTS LABOR	BARE COSTS EQUIP.	BARE COSTS TOTAL	TOTAL INCL O&P

Estimating Tips

This section involves equipment and construction costs for air, noise, and odor pollution control systems. These systems may be interrelated and care must be taken that the complete systems are estimated. For example, air pollution equipment may include dust and air-entrained particles that have to be collected. The vacuum systems could be noisy, requiring silencers to reduce noise pollution, and the collected solids have to be disposed of to prevent solid pollution.

Reference Numbers

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44 11 16 – Fugitive Dust Barrier Systems

	44 11 16.10 Dust Collection Systems	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010	**DUST COLLECTION SYSTEMS** Commercial/Industrial									
0120	Central vacuum units									
0130	Includes stand, filters and motorized shaker									
0200	500 CFM, 10" inlet, 2 HP	Q-20	2.40	8.333	Ea.	4,025	515		4,540	5,200
0220	1,000 CFM, 10" inlet, 3 HP	Q-20	2.20	9.091	Ea.	4,775	565		5,340	6,100
0240	1,500 CFM, 10" inlet, 5 HP		2	10		4,400	620		5,020	5,750
0260	3,000 CFM, 13" inlet, 10 HP		1.50	13.333		13,900	825		14,725	16,600
0280	5,000 CFM, 16" inlet, 2 @ 10 HP		1	20		14,800	1,250		16,050	18,200
1000	Vacuum tubing, galvanized									
1100	2-1/8" OD, 16 ga.	Q-9	440	.036	L.F.	3.60	2.21		5.81	7.30
1110	2-1/2" OD, 16 ga.		420	.038		3.90	2.32		6.22	7.80
1120	3" OD, 16 ga.		400	.040		3.98	2.43		6.41	8.05
1130	3-1/2" OD, 16 ga.		380	.042		6.10	2.56		8.66	10.55
1140	4" OD, 16 ga.		360	.044		7	2.70		9.70	11.75
1150	5" OD, 14 ga.		320	.050		9.90	3.04		12.94	15.50
1160	6" OD, 14 ga.		280	.057		12	3.47		15.47	18.45
1170	8" OD, 14 ga.		200	.080		18.55	4.86		23.41	28
1180	10" OD, 12 ga.		160	.100		54	6.10		60.10	68.50
1190	12" OD, 12 ga.		120	.133		51	8.10		59.10	68
1200	14" OD, 12 ga.		80	.200		57.50	12.15		69.65	81.50
1940	Hose, flexible wire reinforced rubber									
1956	3" diam.	Q-9	400	.040	L.F.	6.05	2.43		8.48	10.35
1960	4" diam.		360	.044		7.15	2.70		9.85	11.95
1970	5" diam.		320	.050		8.85	3.04		11.89	14.30
1980	6" diam.		280	.057		9.40	3.47		12.87	15.60
2000	90° elbow, slip fit									
2110	2-1/8" diam.	Q-9	70	.229	Ea.	13.50	13.90		27.40	36
2120	2-1/2" diam.		65	.246		16.65	14.95		31.60	41
2130	3" diam.		60	.267		26	16.20		42.20	53
2140	3-1/2" diam.		55	.291		31.50	17.70		49.20	61
2150	4" diam.		50	.320		34.50	19.45		53.95	67.50
2160	5" diam.		45	.356		53.50	21.50		75	91.50
2170	6" diam.		40	.400		70	24.50		94.50	114
2180	8" diam.		30	.533		160	32.50		192.50	225
2400	45° elbow, slip fit									
2410	2-1/8" diam.	Q-9	70	.229	Ea.	9.90	13.90		23.80	32
2420	2-1/2" diam.		65	.246		16.15	14.95		31.10	40.50
2430	3" diam.		60	.267		19.90	16.20		36.10	46.50
2440	3-1/2" diam.		55	.291		24	17.70		41.70	53
2450	4" diam.		50	.320		31	19.45		50.45	63.50
2460	5" diam.		45	.356		51	21.50		72.50	88.50
2470	6" diam.		40	.400		64	24.50		88.50	107
2480	8" diam.		35	.457		170	28		198	229
2800	90° TY, slip fit thru 6" diam.									
2810	2-1/8" diam.	Q-9	42	.381	Ea.	21	23		44	58.50
2820	2-1/2" diam.		39	.410		26.50	25		51.50	66.50
2830	3" diam.		36	.444		32.50	27		59.50	76
2840	3-1/2" diam.		33	.485		47	29.50		76.50	96
2850	4" diam.		30	.533		41.50	32.50		74	94.50
2860	5" diam.		27	.593		69	36		105	131
2870	6" diam.		24	.667		102	40.50		142.50	173
2880	8" diam., butt end					174			174	191
2890	10" diam., butt end					370			370	410

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44 11 16 – Fugitive Dust Barrier Systems

	44 11 16.10 Dust Collection Systems	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
2900	12" diam., butt end				Ea.	370			370	410
2910	14" diam., butt end					665			665	735
2920	6" x 4" diam., butt end					113			113	124
2930	8" x 4" diam., butt end					214			214	235
2940	10" x 4" diam., butt end					280			280	310
2950	12" x 4" diam., butt end					320			320	350
3100	90° elbow, butt end, segmented									
3110	8" diam., butt end, segmented				Ea.	169			169	186
3120	10" diam., butt end, segmented					580			580	635
3130	12" diam., butt end, segmented					199			199	218
3140	14" diam., butt end, segmented					253			253	278
3200	45° elbow, butt end, segmented									
3210	8" diam., butt end, segmented				Ea.	102			102	112
3220	10" diam., butt end, segmented					209			209	229
3230	12" diam., butt end, segmented					114			114	125
3240	14" diam., butt end, segmented					775			775	855
3400	All butt end fittings require one coupling per joint.									
3410	Labor for fitting included with couplings.									
3460	Compression coupling, galvanized, neoprene gasket									
3470	2-1/8" diam.	Q-9	44	.364	Ea.	15.25	22		37.25	50.50
3480	2-1/2" diam.		44	.364		15.25	22		37.25	50.50
3490	3" diam.		38	.421		17.70	25.50		43.20	58
3500	3-1/2" diam.		35	.457		18.50	28		46.50	62.50
3510	4" diam.		33	.485		20	29.50		49.50	66.50
3520	5" diam.		29	.552		24.50	33.50		58	77
3530	6" diam.		26	.615		28.50	37.50		66	87.50
3540	8" diam.		22	.727		51	44		95	123
3550	10" diam.		20	.800		64.50	48.50		113	145
3560	12" diam.	Q-9	18	.889	Ea.	72	54		126	161
3570	14" diam.	"	16	1	"	108	61		169	211
3800	Air gate valves, galvanized									
3810	2-1/8" diam.	Q-9	30	.533	Ea.	105	32.50		137.50	165
3820	2-1/2" diam.		28	.571		114	34.50		148.50	179
3830	3" diam.		26	.615		122	37.50		159.50	191
3840	4" diam.		23	.696		141	42.50		183.50	219
3850	6" diam.		18	.889		196	54		250	298

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Division Notes

	CREW	DAILY OUTPUT	LABOR-HOURS	UNIT	BARE COSTS MAT.	BARE COSTS LABOR	BARE COSTS EQUIP.	BARE COSTS TOTAL	TOTAL INCL O&P

Estimating Tips

This division contains information about water and wastewater equipment and systems, which was formerly located in Division 44. The main areas of focus are total wastewater treatment plants and components of wastewater treatment plants. Also included in this section are oil/water separators for wastewater treatment.

Reference Numbers

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46 07 53 – Packaged Wastewater Treatment Equipment

46 07 53.10 Biological Pkg. Wastewater Treatment Plants	Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **BIOLOGICAL PACKAGED WASTEWATER TREATMENT PLANTS**									
0011 Not including fencing or external piping									
0020 Steel packaged, blown air aeration plants									
0100 1,000 GPD				Gal.				55	60.50
0200 5,000 GPD								22	24
0300 15,000 GPD								22	24
0400 30,000 GPD								15.40	16.95
0500 50,000 GPD								11	12.10
0600 100,000 GPD								9.90	10.90
0700 200,000 GPD								8.80	9.70
0800 500,000 GPD								7.70	8.45
1000 Concrete, extended aeration, primary and secondary treatment									
1010 10,000 GPD				Gal.				22	24
1100 30,000 GPD								15.40	16.95
1200 50,000 GPD								11	12.10
1400 100,000 GPD								9.90	10.90
1500 500,000 GPD								7.70	8.45
1700 Municipal wastewater treatment facility									
1720 1.0 MGD				Gal.				11	12.10
1740 1.5 MGD								10.60	11.65
1760 2.0 MGD								10	11
1780 3.0 MGD								7.80	8.60
1800 5.0 MGD								5.80	6.70
2000 Holding tank system, not incl. excavation or backfill									
2010 Recirculating chemical water closet	2 Plum	4	4	Ea.	550	279		829	1,025
2100 For voltage converter, add	"	16	1		275	70		345	410
2200 For high level alarm, add	1 Plum	7.80	1.026		145	71.50		216.50	266

46 07 53.20 Wastewater Treatment System									
0010 **WASTEWATER TREATMENT SYSTEM**									
0020 Fiberglass, 1,000 gallon	B-21	1.29	21.705	Ea.	4,275	1,150	134	5,559	6,550
0100 1,500 gallon	"	1.03	27.184	"	9,150	1,425	168	10,743	12,400

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Estimating Tips

- When estimating costs for the installation of electrical power generation equipment, factors to review include access to the job site, access and setting up at the installation site, required connections, uncrating pads, anchors, leveling, final assembly of the components, and temporary protection from physical damage, such as environmental exposure.
- Be aware of the costs of equipment supports, concrete pads, and vibration isolators. Cross-reference them against other trades' specifications. Also, review site and structural drawings for items that must be included in the estimates.
- It is important to include items that are not documented in the plans and specifications but must be priced. These items include, but are not limited to, testing, dust protection, roof penetration, core drilling concrete floors and walls, patching, cleanup, and final adjustments. Add a contingency or allowance for utility company fees for power hookups, if needed.
- The project size and scope of electrical power generation equipment will have a significant impact on cost. The intent of RSMeans cost data is to provide a benchmark cost so that owners, engineers, and electrical contractors will have a comfortable number with which to start a project. Additionally, there are many websites available to use for research and to obtain a vendor's quote to finalize costs.

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Note: Trade Service, in part, has been used as a reference source for some of the material prices used in Division 48.

48 15 13 – Wind Turbines

48 15 13.50 Wind Turbines and Components		Crew	Daily Output	Labor-Hours	Unit	2022 Bare Costs Material	Labor	Equipment	Total	Total Incl O&P
0010 **WIND TURBINES & COMPONENTS**										
0500 Complete system, grid connected										
1000 20 kW, 31′ diam., incl. labor & material	G				System				49,900	49,900
2000 2.4 kW, 12′ diam., incl. labor & material	G				″				18,000	18,000
2900 Component system										
3200 1,000 W, 9′ diam.	G	1 Elec	2.05	3.902	Ea.	1,500	258		1,758	2,025
3400 Mounting hardware										
3500 30′ guyed tower kit	G	2 Clab	5.12	3.125	Ea.	425	143		568	675
3505 3′ galvanized helical earth screw	G	1 Clab	8	1		59.50	45.50		105	134
3510 Attic mount kit	G	1 Rofc	2.56	3.125		247	155		402	525
3520 Roof mount kit	G	1 Clab	3.41	2.346		252	107		359	435
8900 Equipment										
9100 DC to AC inverter for, 48 V, 4,000 W	G	1 Elec	2	4	Ea.	2,175	265		2,440	2,800

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Reference Section

All the reference information is in one section, making it easy to find what you need to know and easy to use the data set on a daily basis. This section is visually identified by a vertical black bar on the page edges.

In this Reference Section, we've included Equipment Rental Costs, a listing of rental and operating costs; Crew Listings, a full listing of all crews and equipment and their costs; Historical Cost Indexes for cost comparisons over time; City Cost Indexes and Location Factors for adjusting costs to the region you are in; Reference Tables, where you will find explanations, estimating information and procedures, and technical data; Change Orders, information on pricing changes to contract documents; and an explanation of all the Abbreviations in the data set.

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Estimating Tips

- This section contains the average costs to rent and operate hundreds of pieces of construction equipment. This is useful information when one is estimating the time and material requirements of any particular operation in order to establish a unit or total cost. Bare equipment costs shown on a unit cost line include, not only rental, but also operating costs for equipment under normal use.

Rental Costs

- Equipment rental rates are obtained from the following industry sources throughout North America: contractors, suppliers, dealers, manufacturers, and distributors.
- Rental rates vary throughout the country, with larger cities generally having lower rates. Lease plans for new equipment are available for periods in excess of six months, with a percentage of payments applying toward purchase.
- Monthly rental rates vary from 2% to 5% of the purchase price of the equipment depending on the anticipated life of the equipment and its wearing parts.
- Rental rates can also be treated as reimbursement costs for contractor-owned equipment. Owned equipment costs include depreciation, loan payments, interest, taxes, insurance, storage, and major repairs.

Operating Costs

- The operating costs include parts and labor for routine servicing, such as the repair and replacement of pumps, filters, and worn lines. Normal operating expendables, such as fuel, lubricants, tires, and electricity (where applicable), are also included.
- Extraordinary operating expendables with highly variable wear patterns, such as diamond bits and blades, are excluded. These costs can be found as material costs in the Unit Price section.
- The hourly operating costs listed do not include the operator's wages.

Equipment Cost/Day

- Any power equipment required by a crew is shown in the Crew Listings with a daily cost.
- This daily cost of equipment needed by a crew includes both the rental cost and the operating cost and is based on dividing the weekly rental rate by 5 (the number of working days in the week), then adding the hourly operating cost multiplied by 8 (the number of hours in a day). This "Equipment Cost/Day" is shown in the far right column of the Equipment Rental section.
- If equipment is needed for only one or two days, it is best to develop your own cost by including components for daily rent and hourly operating costs. This is important when the listed Crew for a task does not contain the equipment needed, such as a crane for lifting mechanical heating/cooling equipment up onto a roof.
- If the quantity of work is less than the crew's Daily Output shown for a Unit Price line item that includes a bare unit equipment cost, the recommendation is to estimate one day's rental cost and operating cost for equipment shown in the Crew Listing for that line item.
- Please note, in some cases the equipment description in the crew is followed by a time period in parenthesis. For example: (daily) or (monthly). In these cases the equipment cost/day is calculated by adding the rental cost per time period to the hourly operating cost multiplied by 8.

Mobilization, Demobilization Costs

- The cost to move construction equipment from an equipment yard or rental company to the job site and back again is not included in equipment rental costs listed in the Reference Section. It is also not included in the bare equipment cost of any Unit Price line item or in any equipment costs shown in the Crew Listings.
- Mobilization (to the site) and demobilization (from the site) costs can be found in the Unit Price section.
- If a piece of equipment is already at the job site, it is not appropriate to utilize mobilization or demobilization costs again in an estimate. ■

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01 54 33 | Equipment Rental

			UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY
10	0010	**CONCRETE EQUIPMENT RENTAL** without operators R015433-10						
	0200	Bucket, concrete lightweight, 1/2 C.Y.	Ea.	.78	55	165	495	39.20
	0300	1 C.Y.		1.01	63.33	190	570	46.08
	0400	1-1/2 C.Y.		1.32	85	255	765	61.53
	0500	2 C.Y.		1.43	99.83	299.50	898.50	71.32
	0580	8 C.Y.		7.15	126.67	380	1,140	133.20
	0600	Cart, concrete, self-propelled, operator walking, 10 C.F.		2.94	159	477	1,431	118.93
	0700	Operator riding, 18 C.F.		4.95	166.83	500.50	1,501.50	139.72
	0800	Conveyer for concrete, portable, gas, 16" wide, 26' long		10.93	103.33	310	930	149.42
	0900	46' long		11.32	126.67	380	1,140	166.53
	1000	56' long		11.48	151.67	455	1,365	182.87
	1100	Core drill, electric, 2-1/2 H.P., 1" to 8" bit diameter		1.61	99.89	286.11	671.89	70.13
	1150	11 H.P., 8" to 18" cores		5.56	147.07	373.33	924.05	119.12
	1200	Finisher, concrete floor, gas, riding trowel, 96" wide		9.95	250.41	779.18	1,999.08	235.40
	1300	Gas, walk-behind, 3 blade, 36" trowel		2.10	101	313.69	910	79.52
	1400	4 blade, 48" trowel		3.16	109.76	307.50	724.64	86.80
	1500	Float, hand-operated (Bull float), 48" wide		.08	13	40.44	117	8.76
	1570	Curb builder, 14 H.P., gas, single screw		14.42	141.33	424	1,272	200.15
	1590	Double screw		12.75	333.33	1,000	3,000	302
	1600	Floor grinder, concrete and terrazzo, electric, 22" path		3.13	130.88	382.38	898.33	101.51
	1700	Edger, concrete, electric, 7" path		1.22	80	198.33	530	49.42
	1750	Vacuum pick-up system for floor grinders, wet/dry		1.67	103.07	329.44	879.78	79.22
	1800	Mixer, powered, mortar and concrete, gas, 6 C.F., 18 H.P.		7.63	100.17	260.71	678.57	113.21
	1900	10 C.F., 25 H.P.		9.26	114.71	332.67	806.90	140.63
	2000	16 C.F.		9.63	119.68	304.88	746.10	138.02
	2100	Concrete, stationary, tilt drum, 2 C.Y.		8.14	98.94	258.57	673.67	116.83
	2120	Pump, concrete, truck mounted, 4" line, 80' boom		31.86	833	2,499	7,497	754.72
	2140	5" line, 110' boom		40.79	1,066.33	3,199	9,597	966.12
	2160	Mud jack, 50 C.F. per hr.		6.63	142.67	428	1,284	138.60
	2180	225 C.F. per hr.		8.78	192	576	1,728	185.44
	2190	Shotcrete pump rig, 12 C.Y./hr.		17.06	843	2,529	7,587	642.32
	2200	35 C.Y./hr.		16.23	1,098.33	3,295	9,885	788.84
	2600	Saw, concrete, manual, gas, 18 H.P.		5.70	116.85	323	767.46	110.19
	2650	Self-propelled, gas, 30 H.P.		8.13	174.56	468	1,252.06	158.60
	2675	V-groove crack chaser, manual, gas, 6 H.P.		1.69	130.44	339.11	960.33	81.33
	2700	Vibrators, concrete, electric, 60 cycle, 2 H.P.		.48	71.15	206.93	524.98	45.25
	2800	3 H.P.		.58	69.68	199.76	485.24	44.58
	2900	Gas engine, 5 H.P.		1.59	17.05	53.11	154	23.33
	3000	8 H.P.		2.14	17.25	53.65	155	27.87
	3050	Vibrating screed, gas engine, 8 H.P.		2.89	119.38	315.63	768	86.24
	3120	Concrete transit mixer, 6 x 4, 250 H.P., 8 C.Y., rear discharge		52.10	157.67	473	1,419	511.44
	3200	Front discharge		60.49	95.33	286	858	541.09
	3300	6 x 6, 285 H.P., 12 C.Y., rear discharge		59.73	333.33	1,000	3,000	677.86
	3400	Front discharge		62.24	333.33	1,000	3,000	697.90
20	0010	**EARTHWORK EQUIPMENT RENTAL** without operators R015433-10						
	0040	Aggregate spreader, push type, 8' to 12' wide	Ea.	2.67	70	210	630	63.37
	0045	Tailgate type, 8' wide		2.62	52.67	158	474	52.52
	0055	Earth auger, truck mounted, for fence & sign posts, utility poles		14.23	84.17	252.50	757.50	164.35
	0060	For borings and monitoring wells		43.81	63.17	189.50	568.50	388.41
	0070	Portable, trailer mounted		2.37	109.76	299.85	713.44	78.91
	0075	Truck mounted, for caissons, water wells		87.72	139.83	419.50	1,258.50	785.64
	0080	Horizontal boring machine, 12" to 36" diameter, 45 H.P.		23.39	275	825	2,475	352.12
	0090	12" to 48" diameter, 65 H.P.		32.10	324	972	2,916	451.20
	0095	Auger, for fence posts, gas engine, hand held		.46	73.04	226.70	542.87	49.02
	0100	Excavator, diesel hydraulic, crawler mounted, 1/2 C.Y. cap.		22.35	831.63	2,375.88	5,349.75	654
	0120	5/8 C.Y. capacity		29.88	918.63	2,450.75	5,696	729.23
	0140	3/4 C.Y. capacity		33.61	1,004.63	3,025.73	6,854.27	874.03
	0150	1 C.Y. capacity		42.41	1,018.33	2,863.33	6,600	911.97

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		UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY
0200	1-1/2 C.Y. capacity	Ea.	50.00	962.78	2,942.78	7,273.33	988.59
0300	2 C.Y. capacity		58.23	810	2,519.91	7,300	969.84
0320	2-1/2 C.Y. capacity		85.05	952.22	3,301.67	9,303.33	1,340.70
0325	3-1/2 C.Y. capacity		123.62	2,025	6,296.66	18,200	2,248.30
0330	4-1/2 C.Y. capacity		156.05	3,700	11,543.88	33,400	3,557.16
0335	6 C.Y. capacity		197.99	3,250	10,127.13	29,300	3,609.36
0340	7 C.Y. capacity		180.31	3,350	13,350	40,000	4,112.45
0342	Excavator attachments, bucket thumbs		3.50	261	812.90	2,350	190.57
0345	Grapples		3.23	225	699.09	2,025	165.68
0346	Hydraulic hammer for boom mounting, 4000 ft lb.		13.87	900	2,802.02	8,100	671.39
0347	5000 ft lb.		16.42	960	2,990.92	8,650	729.52
0348	8000 ft lb.		24.23	1,225	3,778	10,900	949.42
0349	12,000 ft lb.		26.47	1,125	3,497.80	10,100	911.33
0350	Gradall type, truck mounted, 3 ton @ 15′ radius, 5/8 C.Y.		44.71	833.33	2,500	7,500	857.66
0370	1 C.Y. capacity		61.13	1,250	5,000	15,000	1,489.06
0400	Backhoe-loader, 40 to 45 H.P., 5/8 C.Y. capacity		12.25	261.30	853.80	1,853.04	268.74
0450	45 H.P. to 60 H.P., 3/4 C.Y. capacity		18.55	272.22	902.22	1,852.78	328.84
0460	80 H.P., 1-1/4 C.Y. capacity		20.95	442.22	1,173.89	2,595	402.39
0470	112 H.P., 1-1/2 C.Y. capacity		33.95	620	1,923.86	5,575	656.34
0482	Backhoe-loader attachment, compactor, 20,000 lb.		6.63	390.56	1,001.67	2,963.33	253.34
0485	Hydraulic hammer, 750 ft lb.		3.79	108	336	970	97.51
0486	Hydraulic hammer, 1200 ft lb.		6.74	207	644.90	1,875	182.89
0500	Brush chipper, gas engine, 6″ cutter head, 35 H.P.		9.43	263.78	809.63	1,936.46	237.40
0550	Diesel engine, 12″ cutter head, 130 H.P.		24.36	480.78	1,564.44	3,971.89	507.78
0600	15″ cutter head, 165 H.P.		27.36	515	1,602.17	4,625	539.32
0750	Bucket, clamshell, general purpose, 3/8 C.Y.		1.44	36.67	110	330	33.50
0800	1/2 C.Y.		1.56	36.67	110	330	34.47
0850	3/4 C.Y.		1.69	40	120	360	37.50
0900	1 C.Y.		1.75	48.33	145	435	42.98
0950	1-1/2 C.Y.		2.87	48.33	145	435	51.93
1000	2 C.Y.		3.00	190	570	1,710	138.02
1010	Bucket, dragline, medium duty, 1/2 C.Y.		.84	32.50	97.50	292.50	26.24
1020	3/4 C.Y.		.80	35.17	105.50	316.50	27.52
1030	1 C.Y.		.82	40.17	120.50	361.50	30.66
1040	1-1/2 C.Y.		1.29	41	123	369	34.95
1050	2 C.Y.		1.33	46.67	140	420	38.62
1070	3 C.Y.		2.14	52	156	468	48.30
1200	Compactor, manually guided 2-drum vibratory smooth roller, 7.5 H.P.		7.43	142.24	388.05	959.15	137.04
1250	Rammer/tamper, gas, 8″		2.27	87.39	288.37	683.46	75.84
1260	15″		2.71	98	305	709	82.65
1300	Vibratory plate, gas, 18″ plate, 3000 lb. blow		2.19	173	475.61	1,169.66	112.64
1350	21″ plate, 5000 lb. blow		2.69	206.56	577.80	1,380.61	137.11
1370	Curb builder/extruder, 14 H.P., gas, single screw		12.75	1,000	3,000	9,000	702
1390	Double screw		12.75	1,000	3,000	9,000	702
1500	Disc harrow attachment, for tractor		.49	350	1,100	3,300	223.90
1810	Feller buncher, shearing & accumulating trees, 100 H.P.		44.63	1,266.67	3,800	11,400	1,117
1860	Grader, self-propelled, 25,000 lb.		34.32	1,075	3,175	9,500	909.56
1910	30,000 lb.		33.81	850	2,500	5,500	770.49
1920	40,000 lb.		53.40	1,000	4,000	12,000	1,227.20
1930	55,000 lb.		68.88	1,250	5,000	15,000	1,551.05
1950	Hammer, pavement breaker, self-propelled, diesel, 1000 to 1250 lb.		29.23	450	1,800	4,500	593.82
2000	1300 to 1500 lb.		44.05	450	1,800	4,500	712.39
2050	Pile driving hammer, steam or air, 4150 ft lb. @ 225 bpm		12.51	505	1,574.17	4,550	414.88
2100	8750 ft lb. @ 145 bpm		14.76	710	2,203.83	6,375	558.88
2150	15,000 ft lb. @ 60 bpm		15.10	845	2,623.61	7,600	645.54
2200	24,450 ft lb. @ 111 bpm		16.15	980	3,043.39	8,800	737.84
2250	Leads, 60′ high for pile driving hammers up to 20,000 ft lb.		3.78	305	944.50	2,725	219.12
2300	90′ high for hammers over 20,000 ft lb.		5.61	545	1,700.10	4,925	384.88

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		UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY
2350	Diesel type hammer, 22,400 ft lb.	Ea.	18.34	495	1,544.51	4,475	455.60
2400	41,300 ft lb.		26.43	625	1,950.96	5,650	601.64
2450	141,000 ft lb.		42.53	995	3,089.02	8,925	958.07
2500	Vib. elec. hammer/extractor, 200 kW diesel generator, 34 H.P.		42.58	725	2,249.02	6,500	790.42
2550	80 H.P.		75.15	1,050	3,251.60	9,400	1,251.55
2600	150 H.P.		139.08	2,000	6,259.32	18,100	2,364.52
2700	Hydro Excavator w/EXT boom 12 C.Y., 1200 gallons		38.92	1,625	5,037.33	14,600	1,318.79
2800	Log chipper, up to 22" diameter, 600 H.P.		45.90	345	1,035	3,105	574.20
2850	Logger, for skidding & stacking logs, 150 H.P.		44.71	86.67	260	780	409.71
2860	Mulcher, diesel powered, trailer mounted		20.46	747.50	2,242.50	6,727.50	612.19
2900	Rake, spring tooth, with tractor		15.15	50.78	133.33	352.22	147.84
3000	Roller, vibratory, tandem, smooth drum, 20 H.P.		8.03	331.67	996.67	2,348.89	263.60
3050	35 H.P.		10.43	424.44	1,277.78	2,786.67	338.98
3100	Towed type vibratory compactor, smooth drum, 50 H.P.		26.01	575	2,300	6,900	668.06
3150	Sheepsfoot, 50 H.P.		26.39	389	1,100	2,893	431.11
3170	Landfill compactor, 220 H.P.		71.92	1,778.33	5,335	16,005	1,642.32
3200	Pneumatic tire roller, 80 H.P.		13.30	410	1,273.54	3,675	361.08
3250	120 H.P.		19.95	570	1,700	5,100	499.63
3300	Sheepsfoot vibratory roller, 240 H.P.		64.02	389	1,100	2,893	732.18
3320	340 H.P.		86.27	1,500	4,500	13,500	1,590.14
3350	Smooth drum vibratory roller, 75 H.P.		24.02	411.63	1,382.38	3,014.50	468.61
3400	125 H.P.		28.42	450	1,350	3,950	497.35
3410	Rotary mower, brush, 60", with tractor		19.34	119.11	342.22	897.22	223.13
3420	Rototiller, walk-behind, gas, 5 H.P.		2.20	109.24	324.52	777	82.48
3422	8 H.P.		2.89	117.93	335.33	853.73	90.20
3440	Scrapers, towed type, 7 C.Y. capacity		6.63	129	401.03	1,150	133.22
3450	10 C.Y. capacity		7.41	172	536.51	1,550	166.62
3500	15 C.Y. capacity		7.61	199	617.80	1,775	184.47
3525	Self-propelled, single engine, 14 C.Y. capacity		137.17	1,666.67	5,000	15,000	2,097.38
3550	Dual engine, 21 C.Y. capacity		145.49	1,650	5,000	15,000	2,163.94
3600	31 C.Y. capacity		193.32	1,325	6,625	26,500	2,871.57
3640	44 C.Y. capacity		239.46	1,400	7,000	28,000	3,315.67
3650	Elevating type, single engine, 11 C.Y. capacity		63.67	800	2,400	7,200	989.35
3700	22 C.Y. capacity		117.96	1,250	5,000	15,000	1,943.69
3710	Screening plant, 110 H.P. w/5' x 10' screen		21.75	650	2,024.81	5,850	578.94
3720	5' x 16' screen		27.46	1,222.22	3,666.67	11,000	952.98
3850	Shovel, crawler-mounted, front-loading, 7 C.Y. capacity		225.02	3,975	12,356.07	35,700	4,271.41
3855	12 C.Y. capacity		346.72	5,500	17,125.08	49,500	6,198.74
3860	Shovel/backhoe bucket, 1/2 C.Y.		2.77	74	229.78	665	68.13
3870	3/4 C.Y.		2.74	83	257.96	745	73.54
3880	1 C.Y.		2.84	43.45	137.25	386	50.15
3890	1-1/2 C.Y.		3.04	108	336	970	91.52
3910	3 C.Y.		3.54	146	455.22	1,325	119.34
3950	Stump chipper, 18" deep, 30 H.P.		7.09	321.22	1,015.56	2,516.67	259.82
4110	Dozer, crawler, torque converter, diesel 80 H.P.		25.99	619.44	1,638.89	4,514.44	535.68
4150	105 H.P.		35.34	605	1,885.49	5,450	659.79
4200	140 H.P.		42.47	660	1,980	5,940	735.80
4260	200 H.P.		65.00	1,381	4,143	12,843	1,348.56
4310	300 H.P.		83.08	1,611.11	4,833.33	14,500	1,631.32
4360	410 H.P.		109.85	2,000	8,000	24,000	2,478.84
4370	500 H.P.		137.27	2,333.33	7,000	21,000	2,498.17
4380	700 H.P.		236.87	2,600	10,400	31,200	3,974.98
4400	Loader, crawler, torque conv., diesel, 1-1/2 C.Y., 80 H.P.		30.40	555	1,729.41	5,000	589.09
4450	1-1/2 to 1-3/4 C.Y., 95 H.P.		31.15	705	2,198.44	6,350	688.92
4510	1-3/4 to 2-1/4 C.Y., 130 H.P.		49.15	675	2,700	8,100	933.20
4530	2-1/2 to 3-1/4 C.Y., 190 H.P.		59.47	1,125	3,525.80	10,200	1,180.92
4560	3-1/2 to 5 C.Y., 275 H.P.		73.49	1,100	4,400	13,200	1,467.90
4610	Front end loader, 4WD, articulated frame, diesel, 1 to 1-1/4 C.Y., 70 H.P.		17.11	335.11	931.67	2,722.33	323.21

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			UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY	
20	4620	1-1/2 to 1-3/4 C.Y., 95 H.P.	Ea.	20.58	350	1,400	4,200	444.62	20
	4650	1-3/4 to 2 C.Y., 130 H.P.		21.68	491	1,588.56	4,320.89	491.15	
	4710	2-1/2 to 3-1/2 C.Y., 145 H.P.		30.39	500	2,000	6,000	643.09	
	4730	3 to 4-1/2 C.Y., 185 H.P.		33.03	825	2,501.67	4,682.22	764.54	
	4760	5-1/4 to 5-3/4 C.Y., 270 H.P.		54.74	900	3,600	10,800	1,157.96	
	4810	7 to 9 C.Y., 475 H.P.		93.83	1,500	6,000	18,000	1,950.65	
	4870	9 to 11 C.Y., 620 H.P.		135.76	2,725	8,508.35	24,600	2,787.78	
	4880	Skid-steer loader, wheeled, 10 C.F., 30 H.P. gas		9.85	325	921.67	1,936.67	263.12	
	4890	1 C.Y., 78 H.P., diesel		18.97	430.56	1,349.44	3,163.89	421.68	
	4892	Skid-steer attachment, auger		.77	115.13	319.49	819.49	70.04	
	4893	Backhoe		.76	99.67	321.67	816.67	70.42	
	4894	Broom		.73	143.13	378.75	882	81.57	
	4895	Forks		.16	40.33	107.44	289.67	22.75	
	4896	Grapple		.74	81.25	221.25	613	50.21	
	4897	Concrete hammer		1.08	203.25	579.38	1,516	124.54	
	4898	Tree spade		.62	315	945	2,268	193.94	
	4899	Trencher		.67	115.40	313.13	806.38	68	
	4900	Trencher, chain, boom type, gas, operator walking, 12 H.P.		4.30	249.39	787.07	1,735.85	191.80	
	4910	Operator riding, 40 H.P.		17.17	474.74	1,321.03	3,023.33	401.58	
	5000	Wheel type, diesel, 4′ deep, 12″ wide		70.71	975	3,034.82	8,775	1,172.66	
	5100	6′ deep, 20″ wide		90.13	838.41	2,364.76	7,865.24	1,194.02	
	5150	Chain type, diesel, 5′ deep, 8″ wide		16.78	365	1,138.06	3,300	361.81	
	5200	Diesel, 8′ deep, 16″ wide		92.28	1,950	6,069.65	17,600	1,952.14	
	5202	Rock trencher, wheel type, 6″ wide x 18″ deep		48.41	838.11	2,366.56	7,865.22	860.58	
	5206	Chain type, 18″ wide x 7′ deep		107.55	243.33	730	2,190	1,006.38	
	5210	Tree spade, self-propelled		14.07	374.17	1,122.50	3,367.50	337.03	
	5250	Truck, dump, 2-axle, 12 ton, 8 C.Y. payload, 220 H.P.		24.65	344.46	974.12	2,604.20	392.01	
	5300	Three axle dump, 16 ton, 12 C.Y. payload, 400 H.P.		45.93	666.67	2,000	6,000	767.47	
	5310	Four axle dump, 25 ton, 18 C.Y. payload, 450 H.P.		51.46	350	1,750	7,580	761.66	
	5350	Dump trailer only, rear dump, 16-1/2 C.Y.		5.91	153	476.90	1,375	142.67	
	5400	20 C.Y.		6.38	172	536.51	1,550	158.36	
	5450	Flatbed, single axle, 1-1/2 ton rating		19.61	255	915	2,400	339.86	
	5500	3 ton rating		26.47	275.83	827.50	2,482.50	377.25	
	5550	Off highway rear dump, 25 ton capacity		64.69	1,150	4,600	13,700	1,437.52	
	5600	35 ton capacity		69.06	1,150	4,600	13,800	1,472.45	
	5610	50 ton capacity		86.57	1,625	6,500	19,450	1,992.59	
	5620	65 ton capacity		92.45	2,025	6,286.42	18,200	1,996.90	
	5630	100 ton capacity		125.15	2,975	9,267.05	26,800	2,854.63	
	6000	Vibratory plow, 25 H.P., walking		6.98	323.33	970	2,910	249.84	
40	0010	**GENERAL EQUIPMENT RENTAL** without operators R015433 -10							40
	0020	Aerial lift, scissor type, to 20′ high, 1200 lb. capacity, electric	Ea.	3.59	183.89	375.56	699.44	103.86	
	0030	To 30′ high, 1200 lb. capacity		3.90	271.92	690.51	1,362.69	169.26	
	0040	Over 30′ high, 1500 lb. capacity		5.30	338.25	781.50	1,649.38	198.70	
	0070	Articulating boom, to 45′ high, 500 lb. capacity, diesel R015433 -15		10.24	2,390	4,693.89	9,760.56	1,020.68	
	0075	To 60′ high, 500 lb. capacity		14.10	647.78	1,628.89	3,541.11	438.57	
	0080	To 80′ high, 500 lb. capacity		16.57	1,089.44	2,707.22	5,666.11	674	
	0085	To 125′ high, 500 lb. capacity		18.94	1,986.59	5,280.45	13,543.86	1,207.58	
	0100	Telescoping boom to 40′ high, 500 lb. capacity, diesel		11.60	491.54	1,168.46	2,436.41	326.48	
	0105	To 45′ high, 500 lb. capacity		12.91	512.22	1,161.11	2,505	335.51	
	0110	To 60′ high, 500 lb. capacity		16.89	512.22	1,161.11	2,505	367.32	
	0115	To 80′ high, 500 lb. capacity		21.96	972.45	2,372.87	4,948.40	650.22	
	0120	To 100′ high, 500 lb. capacity		29.64	1,089.44	2,707.22	5,666.11	778.56	
	0125	To 120′ high, 500 lb. capacity		30.10	1,601.91	4,231.41	11,028.77	1,087.10	
	0195	Air compressor, portable, 6.5 CFM, electric		.93	48.56	143.92	342.45	36.24	
	0196	Gasoline		.67	59.51	166.79	401.79	38.74	
	0200	Towed type, gas engine, 60 CFM		9.74	129	401.84	1,175	158.26	
	0300	160 CFM		10.81	212.57	592.03	1,180.81	204.90	

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		UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY
0400	Diesel engine, rotary screw, 250 CFM	Ea.	12.47	162.43	552.03	1,122.70	210.20
0500	365 CFM		16.51	355	1,109.59	3,200	354.03
0550	450 CFM		20.59	345.95	949.59	2,692.97	354.64
0600	600 CFM		35.20	251	780.38	2,250	437.66
0700	750 CFM		35.74	639.38	1,612.60	3,901.88	608.41
0915	Air purifier		.72	9.51	22.05	62.95	10.18
0917	Air scrubber, 500 - 700 CFM, 110 V		.71	81.50	254.07	735	56.53
0919	200 - 1200 CFM, 110 V		.71	96.50	300.73	870	65.86
0930	Air tools, breaker, pavement, 60 lb.		.58	58.72	164.58	402.22	37.59
0940	80 lb.		.58	63.68	181.22	419.32	40.90
0950	Drills, hand (jackhammer), 65 lb.		.69	64.62	178.11	483.92	41.15
0960	Track or wagon, swing boom, 4" drifter		63.75	1,000	3,000	9,000	1,110
0970	5" drifter		63.75	1,000	3,000	9,000	1,110
0975	Track mounted quarry drill, 6" diameter drill		105.00	738.67	2,216	6,648	1,283.21
0980	Dust control per drill		1.07	9.33	28	84	14.18
0990	Hammer, chipping, 12 lb.		.62	44.67	121.78	293.11	29.30
1000	Hose, air with couplings, 50' long, 3/4" diameter		.07	13.79	36.86	90.47	7.93
1100	1" diameter		.08	15.78	40.56	116.67	8.75
1200	1-1/2" diameter		.23	42.54	107.03	281.22	23.22
1300	2" diameter		.25	65.89	157.22	406.11	33.42
1400	2-1/2" diameter		.37	70	168.57	507.86	36.67
1410	3" diameter		.43	82.67	207.78	620	44.99
1450	Drill, steel, 7/8" x 2'		.09	9.91	22.94	58.17	5.29
1460	7/8" x 6'		.12	19.85	61.78	179	13.31
1520	Moil points		.03	10.14	22.72	60.03	4.77
1525	Pneumatic nailer w/accessories		.49	31.33	81.67	213.67	20.27
1530	Sheeting driver for 60 lb. breaker		.05	7.85	24.39	70.50	5.24
1540	For 90 lb. breaker		.13	10.65	33.06	95.50	7.69
1550	Spade, 25 lb.		.52	7.50	23.30	67.50	8.80
1560	Tamper, single, 35 lb.		.61	72.67	222.22	626.67	49.31
1570	Triple, 140 lb.		.91	57.67	166.11	399.67	40.54
1580	Wrenches, impact, air powered, up to 3/4" bolt		.44	45.50	129.11	333	29.33
1590	Up to 1-1/4" bolt		.59	86.37	228	591.29	50.35
1600	Barricades, barrels, reflectorized, 1 to 99 barrels		.03	5.11	12.11	37.39	2.69
1610	100 to 200 barrels		.03	6.11	15.44	41.22	3.29
1620	Barrels with flashers, 1 to 99 barrels		.04	6.11	15.44	41.22	3.38
1630	100 to 200 barrels		.03	6.11	15.44	41.22	3.32
1640	Barrels with steady burn type C lights		.05	6.11	15.44	41.22	3.48
1650	Illuminated board, trailer mounted, with generator		3.38	99.11	260.56	574.22	79.16
1670	Portable barricade, stock, with flashers, 1 to 6 units		.04	4.78	12.89	41.78	2.86
1680	25 to 50 units		.03	4.78	12.89	41.78	2.85
1685	Butt fusion machine, wheeled, 1.5 HP electric, 2" - 8" diameter pipe		2.71	379	1,137	3,411	249.07
1690	Tracked, 20 HP diesel, 4"-12" diameter pipe		10.24	373.33	1,120	3,360	305.93
1695	83 HP diesel, 8" - 24" diameter pipe		52.88	513.33	1,540	4,620	731.01
1700	Carts, brick, gas engine, 1000 lb. capacity		3.04	30.25	79.36	202.50	40.16
1800	1500 lb., 7-1/2' lift		3.01	70	218.28	630	67.73
1822	Dehumidifier, medium, 6 lb./hr., 150 CFM		1.23	53	170	533.33	43.81
1824	Large, 18 lb./hr., 600 CFM		2.26	250	1,750	5,250	368.11
1830	Distributor, asphalt, trailer mounted, 2000 gal., 38 H.P. diesel		11.35	355	1,110.96	3,225	312.98
1840	3000 gal., 38 H.P. diesel		13.28	385	1,192.25	3,450	344.69
1850	Drill, rotary hammer, electric		1.15	54.78	142.11	325.89	37.61
1860	Carbide bit, 1-1/2" diameter, add to electric rotary hammer		.03	48.08	117.44	335.28	23.75
1865	Rotary, crawler, 250 H.P.		140.15	2,458.33	7,375	22,125	2,596.20
1870	Emulsion sprayer, 65 gal., 5 H.P. gas engine		2.86	108	336	970	90.05
1880	200 gal., 5 H.P. engine		7.46	181	563.61	1,625	172.38
1900	Floor auto-scrubbing machine, walk-behind, 28" path		5.81	219.72	719.03	1,476.94	190.25
1930	Floodlight, mercury vapor, or quartz, on tripod, 1000 watt		.47	40.71	110.40	275.31	25.85
1940	2000 watt		.61	42.28	115.69	324.72	28.01

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		UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY
1950	Floodlights, trailer mounted with generator, 1 - 300 watt light	Ea.	3.66	168.89	433.33	850	115.94
1960	2 - 1000 watt lights		4.63	168.89	433.33	850	123.71
2000	4 - 300 watt lights		4.38	168.89	433.33	850	121.71
2005	Foam spray rig, incl. box trailer, compressor, generator, proportioner		26.28	540	1,679.99	4,850	546.24
2015	Forklift, pneumatic tire, rough terr, straight mast, 5000 lb, 12′ lift, gas		19.19	504.44	1,248.89	2,715.56	403.33
2025	8000 lb, 12′ lift		23.41	593.89	1,561.67	3,292.78	499.64
2030	5000 lb, 12′ lift, diesel		15.90	392.08	1,024.86	2,278.75	332.20
2035	8000 lb, 12′ lift, diesel		17.24	564.89	1,519.43	3,262.39	441.79
2045	All terrain, telescoping boom, diesel, 5000 lb, 10′ reach, 19′ lift		17.75	466.14	1,199.89	2,626.93	382
2055	6600 lb, 29′ reach, 42′ lift		21.71	495.91	1,332.95	2,889.43	440.31
2065	10,000 lb, 31′ reach, 45′ lift		23.77	851.67	2,190.56	4,532.78	628.27
2070	Cushion tire, smooth floor, gas, 5000 lb capacity		8.49	327.22	815	1,971.11	230.92
2075	8000 lb capacity		11.70	381.53	951.25	2,282.22	283.82
2085	Diesel, 5000 lb capacity		7.98	257	798.49	2,300	223.51
2090	12,000 lb capacity		12.40	639.09	1,706.70	3,981.59	440.55
2095	20,000 lb capacity		17.76	813.89	2,310.14	6,005.83	604.09
2100	Generator, electric, gas engine, 1.5 kW to 3 kW		2.65	59.78	169.78	422.22	55.16
2200	5 kW		3.31	83.94	257.81	605.72	78.05
2300	10 kW		6.10	128.89	356.25	907.64	120.06
2400	25 kW		7.62	321.39	795.14	1,969.17	220.01
2500	Diesel engine, 20 kW		9.48	251.25	642.78	1,526.53	204.37
2600	50 kW		16.41	375.89	961.67	2,492.22	323.62
2700	100 kW		29.43	546.25	1,334.03	3,446.39	502.26
2800	250 kW		55.94	830.71	2,100.71	5,479	867.65
2850	Hammer, hydraulic, for mounting on boom, to 500 ft lb.		2.98	94.50	293.73	850	82.63
2860	1000 ft lb.		4.74	141	438.97	1,275	125.71
2900	Heaters, space, oil or electric, 50 MBH		1.51	87.78	251.22	686.44	62.29
3000	100 MBH		2.80	131	330.83	771.25	88.55
3100	300 MBH		8.16	675.56	1,791.11	5,030	423.47
3150	500 MBH		13.54	240.57	581.29	1,405.57	224.60
3200	Hose, water, suction with coupling, 20′ long, 2″ diameter		.02	7.59	18.74	52.41	3.91
3210	3″ diameter		.03	17.18	47.44	130.88	9.74
3220	4″ diameter		.03	28.50	88.15	255	17.88
3230	6″ diameter		.11	41	127.51	370	26.41
3240	8″ diameter		.28	54	167.91	485	35.80
3250	Discharge hose with coupling, 50′ long, 2″ diameter		.01	8.66	22.77	55.29	4.64
3260	3″ diameter		.01	10.60	25.77	69.89	5.24
3270	4″ diameter		.02	21	65.59	190	13.28
3280	6″ diameter		.06	29.50	91.30	264	18.77
3290	8″ diameter		.25	38	118.06	340	25.58
3295	Insulation blower		.86	118	366.62	1,050	80.17
3300	Ladders, extension type, 16′ to 36′ long		.19	41.17	103.26	282.71	22.14
3400	40′ to 60′ long		.66	136.74	345.11	851.94	74.28
3405	Lance for cutting concrete		2.27	133.33	400	1,200	98.15
3407	Lawn mower, rotary, 22″, 5 H.P.		1.09	36.33	117.56	305	32.20
3408	48″ self-propelled		2.98	175.02	461.56	1,251.88	116.17
3410	Level, electronic, automatic, with tripod and leveling rod		1.08	56.13	138.83	376.77	36.43
3430	Laser type, for pipe and sewer line and grade		2.24	152.86	401.43	1,101.14	98.20
3440	Rotating beam for interior control		.93	87.57	218.54	657.57	51.14
3460	Builder's optical transit, with tripod and rod		.10	55.63	138.69	372.71	28.55
3500	Light towers, towable, with diesel generator, 2000 watt		4.39	168.89	433.33	850	121.80
3600	4000 watt		4.64	161.53	430.28	859.31	123.21
3700	Mixer, powered, plaster and mortar, 6 C.F., 7 H.P.		2.12	101.17	246.71	678.86	66.29
3800	10 C.F., 9 H.P.		2.31	117.96	301.49	761.06	78.76
3850	Nailer, pneumatic		.49	31.33	81.67	213.67	20.29
3900	Paint sprayers complete, 8 CFM		.88	143.21	418.50	1,082.76	90.71
4000	17 CFM		1.65	169.55	405.45	1,055	94.27
4020	Pavers, bituminous, rubber tires, 8′ wide, 50 H.P., diesel		32.96	575	1,788.38	5,175	621.32

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		UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY
4030	10′ wide, 150 H.P.	Ea.	98.70	1,975	6,123.84	17,700	2,014.40
4050	Crawler, 8′ wide, 100 H.P., diesel		90.42	2,075	6,476.10	18,700	2,018.54
4060	10′ wide, 150 H.P.		107.32	2,375	7,397.38	21,400	2,338.01
4070	Concrete paver, 12′ to 24′ wide, 250 H.P.		90.45	1,700	5,310.94	15,400	1,785.75
4080	Placer-spreader-trimmer, 24′ wide, 300 H.P.		121.30	2,575	8,047.70	23,300	2,579.95
4100	Pump, centrifugal gas pump, 1-1/2″ diam., 65 GPM		4.05	54.50	170.17	490	66.43
4200	2″ diameter, 130 GPM		5.14	49.45	131.82	358[illegible]	67.48
4300	3″ diameter, 250 GPM		5.28	59.55	171.82	488[illegible]	76.61
4400	6″ diameter, 1500 GPM		22.91	395	1,045	2,605[illegible]	392.30
4500	Submersible electric pump, 1-1/4″ diameter, 55 GPM		.41	47.79	133.06	345[illegible]	29.90
4600	1-1/2″ diameter, 83 GPM		.46	51.85	155.47	384[illegible]	34.76
4700	2″ diameter, 120 GPM		1.70	55	171.11	495	47.78
4800	3″ diameter, 300 GPM		3.13	124.04	326.57	917[illegible]	90.35
4900	4″ diameter, 560 GPM		15.20	75.83	227.50	682[illegible]	167.10
5000	6″ diameter, 1590 GPM		22.75	211.67	635	1,905	308.97
5100	Diaphragm pump, gas, single, 1-1/2″ diameter		1.16	40	120	360	33.28
5200	2″ diameter		4.10	45	135	405	59.79
5300	3″ diameter		4.17	74.21	220.64	561[illegible]	77.51
5400	Double, 4″ diameter		6.22	204.87	458.94	1,170[illegible]	141.52
5450	Pressure washer 5 GPM, 3000 psi		3.99	99.65	344.79	919[illegible]	100.91
5460	7 GPM, 3000 psi		5.10	99.49	343.24	920[illegible]	109.42
5470	High Pressure Water Jet 10 KSI		40.83	730	2,266.80	6,55[illegible]	779.96
5480	40 KSI		28.78	990	3,085.37	8,925	847.30
5500	Trash pump, self-priming, gas, 2″ diameter		3.93	77.33	232	696	77.86
5600	Diesel, 4″ diameter		6.88	285.78	723.33	1,912[illegible]	199.70
5650	Diesel, 6″ diameter		17.36	395	1,045	2,605[illegible]	347.88
5655	Grout Pump		19.30	284	883.35	2,550	331.07
5700	Salamanders, L.P. gas fired, 100,000 Btu		2.98	60.06	166.82	440[illegible]	57.17
5705	50,000 Btu		1.72	23.82	68.09	178[illegible]	27.34
5720	Sandblaster, portable, open top, 3 C.F. capacity		.62	145	395	945	83.94
5730	6 C.F. capacity		1.04	330	790	2,035	166.28
5740	Accessories for above		.14	24	74.79	216	16.09
5750	Sander, floor		.79	71.06	201.88	489[illegible]	46.72
5760	Edger		.53	41	117.78	288[illegible]	27.83
5800	Saw, chain, gas engine, 18″ long		1.81	71.22	170	477[illegible]	48.47
5900	Hydraulic powered, 36″ long		.81	73.17	219.50	658[illegible]	50.34
5950	60″ long		.80	81.67	245	735	55.44
6000	Masonry, table mounted, 14″ diameter, 5 H.P.		1.36	81.57	279.48	679[illegible]	66.79
6050	Portable cut-off, 8 H.P.		1.87	77.85	257.24	625[illegible]	66.39
6100	Circular, hand held, electric, 7-1/4″ diameter		.23	15.45	40.48	102[illegible]	9.97
6200	12″ diameter		.24	47.55	128.79	334[illegible]	27.71
6250	Wall saw, w/hydraulic power, 10 H.P.		3.39	129.33	388	1,164	104.72
6275	Shot blaster, walk-behind, 20″ wide		4.89	284	883.35	2,550	215.77
6280	Sidewalk broom, walk-behind		2.31	83.50	260.13	755	70.52
6300	Steam cleaner, 100 gallons per hour		3.45	83.50	260.13	755	79.60
6310	200 gallons per hour		4.47	101	314.32	91[illegible]	98.64
6340	Tar Kettle/Pot, 400 gallons		16.98	126.67	380	1,140	211.82
6350	Torch, cutting, acetylene-oxygen, 150′ hose, excludes gases		.47	15.50	48.23	140	13.37
6360	Hourly operating cost includes tips and gas		21.59	7.10	22.02	63[illegible]	177.16
6410	Toilet, portable chemical		.14	23.50	72.62	210	15.61
6420	Recycle flush type		.17	29	89.96	260	19.33
6430	Toilet, fresh water flush, garden hose,		.20	34.50	107.30	310	23.06
6440	Hoisted, non-flush, for high rise		.16	28	87.79	254	18.86
6465	Tractor, farm with attachment		17.93	405.65	1,359.02	2,927[illegible]	415.21
6480	Trailers, platform, flush deck, 2 axle, 3 ton capacity		1.74	96	298.04	860	73.56
6500	25 ton capacity		6.43	145	449.80	1,300	141.42
6600	40 ton capacity		8.30	206	639.48	1,850	194.29
6700	3 axle, 50 ton capacity		9.00	500	1,300	2,97[illegible]	332.01

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			UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY	
40	6800	75 ton capacity	Ea.	11.43	305	941.21	2,725	279.72	40
	6810	Trailer mounted cable reel for high voltage line work		6.06	252.67	758	2,274	200.11	
	6820	Trailer mounted cable tensioning rig		12.03	83.33	250	750	146.21	
	6830	Cable pulling rig		76.00	142.50	427.50	1,282.50	693.54	
	6850	Portable cable/wire puller, 8000 lb max pulling capacity		3.81	189.35	524.76	1,258.33	135.46	
	6900	Water tank trailer, engine driven discharge, 5000 gallons		7.39	160	498.58	1,450	158.82	
	6925	10,000 gallons		10.06	218	677.42	1,950	216	
	6950	Water truck, off highway, 6000 gallons		74.06	1,333.33	4,000	12,000	1,392.52	
	7010	Tram car for high voltage line work, powered, 2 conductor		7.09	29.33	88	264	74.32	
	7020	Transit (builder's level) with tripod		.10	51.78	129.89	345.56	26.79	
	7030	Trench box, 3000 lb., 6′ x 8′		.58	97.50	304	880	65.42	
	7040	7200 lb., 6′ x 20′		.74	189	587.69	1,700	123.46	
	7050	8000 lb., 8′ x 16′		1.11	205	637.76	1,850	136.44	
	7060	9500 lb., 8′ x 20′		1.24	235	731.61	2,125	156.25	
	7065	11,000 lb., 8′ x 24′		1.30	221	688.25	2,000	148.07	
	7070	12,000 lb., 10′ x 20′		1.54	267	829.16	2,400	178.14	
	7100	Truck, pickup, 3/4 ton, 2 wheel drive		9.53	62.50	194.01	560	115.08	
	7200	4 wheel drive		9.79	174.39	508.64	1,505.15	180.03	
	7250	Crew carrier, 9 passenger		13.07	109	340.44	985	172.61	
	7290	Flat bed truck, 20,000 lb. GVW		15.75	134	417.29	1,200	209.49	
	7300	Tractor, 4 x 2, 220 H.P.		22.97	218	677.42	1,950	319.23	
	7410	330 H.P.		33.37	298	926.71	2,675	452.31	
	7500	6 x 4, 380 H.P.		37.26	345	1,073.03	3,100	512.66	
	7600	450 H.P.		45.66	420	1,300.64	3,775	625.39	
	7610	Tractor, with A frame, boom and winch, 225 H.P.		25.54	296	919.57	2,650	388.20	
	7620	Vacuum truck, hazardous material, 2500 gallons		13.20	315	975.48	2,825	300.72	
	7625	5,000 gallons		13.44	445	1,381.93	4,000	383.94	
	7650	Vacuum, HEPA, 16 gallon, wet/dry		.88	134.09	386.21	1,005.30	84.26	
	7655	55 gallon, wet/dry		.80	33.91	86.79	228.64	23.77	
	7660	Water tank, portable		.75	147.40	425.74	1,083.40	91.17	
	7690	Sewer/catch basin vacuum, 14 C.Y., 1500 gallons		17.87	670	2,086.44	6,025	560.27	
	7700	Welder, electric, 200 amp		3.94	36.22	80.22	226.25	47.54	
	7800	300 amp		5.73	32.08	81.30	214.09	62.07	
	7900	Gas engine, 200 amp		9.23	102.73	283.48	666.52	130.57	
	8000	300 amp		10.45	112.44	318.78	711.33	147.37	
	8100	Wheelbarrow, any size		.07	13.94	34.91	98.91	7.51	
	8200	Wrecking ball, 4000 lb.	▼	2.58	62	186	558	57.84	
50	0010	**HIGHWAY EQUIPMENT RENTAL** without operators R015433-10							50
	0050	Asphalt batch plant, portable drum mixer, 100 ton/hr.	Ea.	91.26	1,550	4,850.30	14,000	1,700.12	
	0060	200 ton/hr.		105.27	1,675	5,175.46	15,000	1,877.29	
	0070	300 ton/hr.		123.72	1,950	6,069.65	17,600	2,203.69	
	0100	Backhoe attachment, long stick, up to 185 H.P., 10.5′ long		.38	26	80.21	232	19.09	
	0140	Up to 250 H.P., 12′ long		.42	29	89.96	260	21.39	
	0180	Over 250 H.P., 15′ long		.58	39.50	122.48	355	29.16	
	0200	Special dipper arm, up to 100 H.P., 32′ long		1.19	80.50	250.37	725	59.63	
	0240	Over 100 H.P., 33′ long		1.49	101	314.32	910	74.79	
	0280	Catch basin/sewer cleaning truck, 3 ton, 9 C.Y., 1000 gal.		36.53	425	1,327.74	3,850	557.79	
	0300	Concrete batch plant, portable, electric, 200 C.Y./hr.		24.96	565	1,761.28	5,100	551.97	
	0520	Grader/dozer attachment, ripper/scarifier, rear mounted, up to 135 H.P.		3.25	64	199.43	575	65.90	
	0540	Up to 180 H.P.		4.27	97	301.31	870	94.41	
	0580	Up to 250 H.P.		6.04	155	482.32	1,400	144.78	
	0700	Pvmt. removal bucket, for hyd. excavator, up to 90 H.P.		2.23	59	183.17	530	54.46	
	0740	Up to 200 H.P.		2.38	75.50	234.11	675	65.86	
	0780	Over 200 H.P.		2.60	92.50	287.22	830	78.24	
	0900	Aggregate spreader, self-propelled, 187 H.P.		52.23	750	2,330.31	6,750	883.90	
	1000	Chemical spreader, 3 C.Y.		3.26	70	210	630	68.11	
	1900	Hammermill, traveling, 250 H.P.	▼	69.39	600	1,800	5,400	915.14	

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			UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY
50	2000	Horizontal borer, 3" diameter, 13 H.P. gas driven	Ea.	5.58	103.33	310	930	106.64
	2150	Horizontal directional drill, 20,000 lb. thrust, 78 H.P. diesel		28.42	738.67	2,216	6,648	670.52
	2160	30,000 lb. thrust, 115 H.P.		34.93	738.67	2,216	6,648	722.60
	2170	50,000 lb. thrust, 170 H.P.		50.07	738.67	2,216	6,648	843.77
	2190	Mud trailer for HDD, 1500 gallons, 175 H.P., gas		26.28	659.83	1,979.50	5,938.50	606.11
	2200	Hydromulcher, diesel, 3000 gallon, for truck mounting		17.96	926.67	2,780	8,340	699.68
	2300	Gas, 600 gallon		7.72	433.33	1,300	3,900	321.77
	2400	Joint & crack cleaner, walk behind, 25 H.P.		3.25	217.33	652	1,956	156.44
	2500	Filler, trailer mounted, 400 gallons, 20 H.P.		8.60	345	1,035	3,105	275.79
	3000	Paint striper, self-propelled, 40 gallon, 22 H.P.		6.97	20	60	180	67.72
	3100	120 gallon, 120 H.P.		18.18	133.33	400	1,200	225.45
	3200	Post drivers, 6" I-Beam frame, for truck mounting		12.79	75	225	675	147.31
	3400	Road sweeper, self-propelled, 8' wide, 90 H.P.		37.06	372.78	1,043.33	2,660	505.17
	3450	Road sweeper, vacuum assisted, 4 C.Y., 220 gallons		60.16	3,035	6,515	12,545	1,784.25
	4000	Road mixer, self-propelled, 130 H.P.		47.73	835	2,601.28	7,525	902.06
	4100	310 H.P.		77.42	2,175	6,801.26	19,700	1,979.64
	4220	Cold mix paver, incl. pug mill and bitumen tank, 165 H.P.		98.03	750	2,150	6,400	1,214.25
	4240	Pavement brush, towed		3.54	101	314.32	910	91.15
	4250	Paver, asphalt, wheel or crawler, 130 H.P., diesel		97.27	2,300	7,153.51	20,700	2,208.89
	4300	Paver, road widener, gas, 1' to 6', 67 H.P.		48.16	985	3,061.92	8,850	997.70
	4400	Diesel, 2' to 14', 88 H.P.		58.20	1,175	3,630.95	10,500	1,191.78
	4600	Slipform pavers, curb and gutter, 2 track, 75 H.P.		59.70	1,275	3,956.11	11,400	1,268.80
	4700	4 track, 165 H.P.		36.84	855	2,655.47	7,675	825.78
	4800	Median barrier, 215 H.P.		60.31	1,350	4,227.08	12,200	1,327.93
	4901	Trailer, low bed, 75 ton capacity		11.05	286	888.77	2,575	266.17
	5000	Road planer, walk behind, 10" cutting width, 10 H.P.		2.53	353.33	991.78	2,268.78	218.58
	5100	Self-propelled, 12" cutting width, 64 H.P.		8.51	326.11	877.78	2,430	243.60
	5120	Traffic line remover, metal ball blaster, truck mounted, 115 H.P.		47.97	2,066.67	6,200	18,600	1,623.77
	5140	Grinder, truck mounted, 115 H.P.		52.43	2,066.67	6,200	18,600	1,659.47
	5160	Walk-behind, 11 H.P.		3.66	286.67	860	2,580	201.31
	5200	Pavement profiler, 4' to 6' wide, 450 H.P.		223.15	1,000	3,000	9,000	2,385.17
	5300	8' to 10' wide, 750 H.P.		341.64	1,000	3,000	9,000	3,333.09
	5400	Roadway plate, steel, 1" x 8' x 20'		.09	61.50	191.52	555	39.01
	5600	Stabilizer, self-propelled, 150 H.P.		42.38	233.33	700	2,100	479.06
	5700	310 H.P.		78.49	291.67	875	2,625	802.91
	5800	Striper, truck mounted, 120 gallon paint, 460 H.P.		50.22	348.67	1,046	3,138	610.97
	5900	Thermal paint heating kettle, 115 gallons		7.94	150	450	1,350	153.51
	6000	Tar kettle, 330 gallon, trailer mounted		12.65	191.67	575	1,725	216.16
	7000	Tunnel locomotive, diesel, 8 to 12 ton		30.72	625	1,950.96	5,650	635.92
	7005	Electric, 10 ton		30.19	715	2,221.92	6,425	685.90
	7010	Muck cars, 1/2 C.Y. capacity		2.37	27	84	243	35.77
	7020	1 C.Y. capacity		2.59	35	109.47	315	42.64
	7030	2 C.Y. capacity		2.74	39.50	122.48	355	46.42
	7040	Side dump, 2 C.Y. capacity		2.96	49	151.74	440	54.05
	7050	3 C.Y. capacity		3.98	53.50	166.92	485	65.20
	7060	5 C.Y. capacity		5.80	69.50	215.69	625	89.57
	7100	Ventilating blower for tunnel, 7-1/2 H.P.		2.21	53.50	165.83	480	50.82
	7110	10 H.P.		2.50	55.50	173.42	500	54.67
	7120	20 H.P.		3.66	72.50	225.44	650	74.33
	7140	40 H.P.		6.34	96	298.06	860	110.30
	7160	60 H.P.		8.97	103	319.74	925	135.70
	7175	75 H.P.		10.70	160	498.58	1,450	185.34
	7180	200 H.P.		21.45	315	980.90	2,850	367.81
	7800	Windrow loader, elevating		55.57	1,759.58	5,278.75	15,836.25	1,500.35
60	0010	**LIFTING AND HOISTING EQUIPMENT RENTAL** without operators						
	0150	Crane, flatbed mounted, 3 ton capacity [R015433-10]	Ea.	14.88	849.70	2,252.27	5,480.30	569.46
	0200	Crane, climbing, 106' jib, 6000 lb. capacity, 410 fpm [R312316-45]		40.93	2,758.34	8,275.02	24,825.06	1,982.43
	0300	101' jib, 10,250 lb. capacity, 270 fpm		47.84	2,904.26	8,712.77	26,138.31	2,125.28

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		UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY
0500	Tower, static, 130' high, 106' jib, 6200 lb. capacity at 400 fpm	Ea.	46.53	2,374.49	7,123.48	21,370.44	1,796.91
0520	Mini crawler spider crane, up to 24" wide, 1990 lb. lifting capacity		12.91	555	1,734.19	5,025	450.08
0525	Up to 30" wide, 6450 lb. lifting capacity		14.99	660	2,059.34	5,950	531.80
0530	Up to 52" wide, 6680 lb. lifting capacity		23.85	810	2,519.99	7,300	694.78
0535	Up to 55" wide, 8920 lb. lifting capacity		26.63	895	2,790.95	8,075	771.20
0540	Up to 66" wide, 13,350 lb. lifting capacity		36.05	1,400	4,335.46	12,500	1,155.46
0600	Crawler mounted, lattice boom, 1/2 C.Y., 15 tons at 12' radius		38.08	878.25	2,634.74	7,904.22	831.61
0700	3/4 C.Y., 20 tons at 12' radius		55.81	986.74	2,960.22	8,880.66	1,038.56
0800	1 C.Y., 25 tons at 12' radius		69.47	1,043.05	3,129.14	9,387.42	1,181.56
0900	1-1/2 C.Y., 40 tons at 12' radius		68.32	1,193.43	3,580.28	10,740.84	1,262.65
1000	2 C.Y., 50 tons at 12' radius		91.46	1,414.53	4,243.60	12,730.80	1,580.38
1100	3 C.Y., 75 tons at 12' radius		66.96	2,475.43	7,426.30	22,278.90	2,020.96
1200	100 ton capacity, 60' boom		88.51	1,166.67	3,500	10,500	1,408.10
1300	165 ton capacity, 60' boom		109.32	1,400	4,200	12,600	1,714.56
1400	200 ton capacity, 70' boom		142.40	1,556.67	4,670	14,010	2,073.21
1500	350 ton capacity, 80' boom		187.72	3,266.67	9,800	29,400	3,461.78
1600	Truck mounted, lattice boom, 6 x 4, 20 tons at 10' radius		40.96	963.62	2,437.13	7,195.32	815.12
1700	25 tons at 10' radius		44.02	2,475.43	7,426.30	22,278.90	1,837.44
1800	8 x 4, 30 tons at 10' radius		55.80	2,652.25	7,956.75	23,870.25	2,037.78
1900	40 tons at 12' radius		55.80	2,899.79	8,699.38	26,098.14	2,186.31
2000	60 tons at 15' radius		55.31	3,041.25	9,123.74	27,371.22	2,267.25
2050	82 tons at 15' radius		61.23	3,129.83	9,389.48	28,168.44	2,367.72
2100	90 tons at 15' radius		68.40	3,221.50	9,664.49	28,993.47	2,480.12
2200	115 tons at 15' radius		77.17	3,316.94	9,950.83	29,852.49	2,607.51
2300	150 tons at 18' radius		83.55	2,864.43	8,593.29	25,779.87	2,387.05
2350	165 tons at 18' radius		89.67	2,917.65	8,752.94	26,258.82	2,467.97
2400	Truck mounted, hydraulic, 12 ton capacity		30.40	2,899.79	8,699.38	26,098.14	1,983.05
2500	25 ton capacity		37.46	2,988.03	8,964.09	26,892.27	2,092.48
2550	33 ton capacity		55.80	2,988.03	8,964.09	26,892.27	2,239.25
2560	40 ton capacity		55.80	3,014.47	9,043.40	27,130.20	2,255.11
2600	55 ton capacity		55.41	3,041.25	9,123.74	27,371.22	2,268.02
2700	80 ton capacity		72.55	3,094.12	9,282.36	27,847.08	2,436.89
2720	100 ton capacity		77.23	3,226.65	9,679.94	29,039.82	2,553.84
2740	120 ton capacity		108.47	3,271.28	9,813.84	29,441.52	2,830.50
2760	150 ton capacity		116.08	3,478.32	10,434.96	31,304.88	3,015.60
2800	Self-propelled, 4 x 4, with telescoping boom, 5 ton		15.60	370	1,110	3,330	346.78
2900	12-1/2 ton capacity		22.06	658.33	1,975	5,925	571.52
3000	15 ton capacity		35.46	750	2,250	6,750	733.70
3050	20 ton capacity		23.00	841.67	2,525	7,575	689.01
3100	25 ton capacity		37.80	900	2,700	8,100	842.41
3150	40 ton capacity		46.26	1,089.33	3,268	9,804	1,023.68
3200	Derricks, guy, 20 ton capacity, 60' boom, 75' mast		23.43	1,503.11	4,509.34	13,528.02	1,089.34
3300	100' boom, 115' mast		37.13	2,121.80	6,365.40	19,096.20	1,570.15
3400	Stiffleg, 20 ton capacity, 70' boom, 37' mast		26.18	654.39	1,963.18	5,889.54	602.05
3500	100' boom, 47' mast		40.51	707.27	2,121.80	6,365.40	748.43
3550	Helicopter, small, lift to 1250 lb. maximum, w/pilot		102.15	6,666.67	20,000	60,000	4,817.17
3600	Hoists, chain type, overhead, manual, 3/4 ton		.15	15	38	75	8.79
3900	10 ton		.81	124	310	620	68.50
4000	Hoist and tower, 5000 lb. cap., portable electric, 40' high		4.92	150.38	451.14	1,353.42	129.56
4100	For each added 10' section, add		.12	33.65	100.94	302.82	21.14
4200	Hoist and single tubular tower, 5000 lb. electric, 100' high		7.17	111.58	334.75	1,004.25	124.28
4300	For each added 6'-6" section, add		.21	40.51	121.54	364.62	26.01
4400	Hoist and double tubular tower, 5000 lb., 100' high		7.80	111.58	334.75	1,004.25	129.36
4500	For each added 6'-6" section, add		.23	43.95	131.84	395.52	28.24
4550	Hoist and tower, mast type, 6000 lb., 100' high		9.51	487.53	1,462.60	4,387.80	368.57
4570	For each added 10' section, add		.14	33.65	100.94	302.82	21.27
4600	Hoist and tower, personnel, electric, 2000 lb., 100' @ 125 fpm		18.03	528.73	1,586.20	4,758.60	461.46
4700	3000 lb., 100' @ 200 fpm		20.63	555.17	1,665.51	4,996.53	498.13

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			UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY
60	4800	3000 lb., 150′ @ 300 fpm	Ea.	22.89	749.84	2,249.52	6,748.56	633.04
	4900	4000 lb., 100′ @ 300 fpm		23.68	775.93	2,327.80	6,983.40	655.01
	5000	6000 lb., 100′ @ 275 fpm		25.45	802.71	2,408.14	7,224.42	685.22
	5100	For added heights up to 500′, add	L.F.	.01	3.43	10.30	30.90	2.14
	5200	Jacks, hydraulic, 20 ton	Ea.	.05	21.28	55.98	101.51	11.61
	5500	100 ton		.41	26.06	64.70	133.48	16.23
	6100	Jacks, hydraulic, climbing w/50′ jackrods, control console, 30 ton cap.		2.23	32.96	98.88	296.64	37.63
	6150	For each added 10′ jackrod section, add		.05	5.15	15.45	46.35	3.50
	6300	50 ton capacity		3.59	35.36	106.09	318.27	49.92
	6350	For each added 10′ jackrod section, add		.06	5.15	15.45	46.35	3.58
	6500	125 ton capacity		9.38	54.93	164.80	494.40	108.01
	6550	For each added 10′ jackrod section, add		.63	5.15	15.45	46.35	8.17
	6600	Cable jack, 10 ton capacity with 200′ cable		1.63	37.77	113.30	339.90	35.72
	6650	For each added 50′ of cable, add		.23	15.79	47.38	142.14	11.30
70	0010	**WELLPOINT EQUIPMENT RENTAL** without operators (R015433-10)						
	0020	Based on 2 months rental						
	0100	Combination jetting & wellpoint pump, 60 H.P. diesel	Ea.	16.15	316.55	949.66	2,848.98	319.10
	0200	High pressure gas jet pump, 200 H.P., 300 psi	"	34.86	165	495	1,485	377.85
	0300	Discharge pipe, 8″ diameter	L.F.	.01	50	150	450	30.07
	0350	12″ diameter		.01	53.33	160	480	32.10
	0400	Header pipe, flows up to 150 GPM, 4″ diameter		.01	25.33	76	228	15.26
	0500	400 GPM, 6″ diameter		.01	39.33	118	354	23.68
	0600	800 GPM, 8″ diameter		.01	46.67	140	420	28.10
	0700	1500 GPM, 10″ diameter		.01	54	162	486	32.51
	0800	2500 GPM, 12″ diameter		.03	61.33	184	552	37.01
	0900	4500 GPM, 16″ diameter		.03	50	150	450	30.26
	0950	For quick coupling aluminum and plastic pipe, add		.03	9.90	29.71	89.12	6.22
	1100	Wellpoint, 25′ long, with fittings & riser pipe, 1-1/2″ or 2″ diameter	Ea.	.07	77.25	231.75	695.25	46.90
	1200	Wellpoint pump, diesel powered, 4″ suction, 20 H.P.		7.21	166.67	500	1,500	157.71
	1300	6″ suction, 30 H.P.		9.68	280	840	2,520	245.42
	1400	8″ suction, 40 H.P.		13.11	250	750	2,250	254.89
	1500	10″ suction, 75 H.P.		19.13	320	960	2,880	345
	1600	12″ suction, 100 H.P.		28.06	336.67	1,010	3,030	426.50
	1700	12″ suction, 175 H.P.		40.16	298.33	895	2,685	500.27
80	0010	**MARINE EQUIPMENT RENTAL** without operators (R015433-10)						
	0200	Barge, 400 Ton, 30′ wide x 90′ long	Ea.	18.20	1,200	3,766.43	10,900	898.90
	0240	800 Ton, 45′ wide x 90′ long		22.85	1,500	4,633.53	13,400	1,109.54
	2000	Tugboat, diesel, 100 H.P.		30.52	240	747.87	2,175	393.75
	2040	250 H.P.		59.26	435	1,354.83	3,925	745.07
	2080	380 H.P.		129.02	1,300	4,064.50	11,800	1,845.03
	3000	Small work boat, gas, 16-foot, 50 H.P.		11.71	48.50	150.38	435	123.78
	4000	Large, diesel, 48-foot, 200 H.P.		77.08	1,375	4,308.37	12,500	1,478.34

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Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew A-1	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Building Laborer	$45.60	$364.80	$67.90	$543.20	$45.60	$67.90
1 Concrete Saw, Gas Manual		117.14		128.86	14.64	16.11
8 L.H., Daily Totals		$481.94		$672.06	$60.24	$84.01
Crew A-1A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Skilled Worker	$58.90	$471.20	$88.45	$707.60	$58.90	$88.45
1 Shot Blaster, 20"		215.77		237.34	26.97	29.67
8 L.H., Daily Totals		$686.97		$944.94	$85.87	$118.12
Crew A-1B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Building Laborer	$45.60	$364.80	$67.90	$543.20	$45.60	$67.90
1 Concrete Saw		115.94		127.54	14.49	15.94
8 L.H., Daily Totals		$480.74		$670.74	$60.09	$83.84
Crew A-1C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Building Laborer	$45.60	$364.80	$67.90	$543.20	$45.60	$67.90
1 Chain Saw, Gas, 18"		53.87		59.26	6.73	7.41
8 L.H., Daily Totals		$418.67		$602.46	$52.33	$75.31
Crew A-1D	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Building Laborer	$45.60	$364.80	$67.90	$543.20	$45.60	$67.90
1 Vibrating Plate, Gas, 18"		32.77		36.05	4.10	4.51
8 L.H., Daily Totals		$397.57		$579.25	$49.70	$72.41
Crew A-1E	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Building Laborer	$45.60	$364.80	$67.90	$543.20	$45.60	$67.90
1 Vibrating Plate, Gas, 21"		171.39		188.53	21.42	23.57
8 L.H., Daily Totals		$536.19		$731.73	$67.02	$91.47
Crew A-1F	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Building Laborer	$45.60	$364.80	$67.90	$543.20	$45.60	$67.90
1 Rammer/Tamper, Gas, 8"		48.45		53.30	6.06	6.66
8 L.H., Daily Totals		$413.25		$596.50	$51.66	$74.56
Crew A-1G	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Building Laborer	$45.60	$364.80	$67.90	$543.20	$45.60	$67.90
1 Rammer/Tamper, Gas, 15"		56.33		61.97	7.04	7.75
8 L.H., Daily Totals		$421.13		$605.17	$52.64	$75.65
Crew A-1H	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Building Laborer	$45.60	$364.80	$67.90	$543.20	$45.60	$67.90
1 Exterior Steam Cleaner		79.60		87.56	9.95	10.94
8 L.H., Daily Totals		$444.40		$630.76	$55.55	$78.84
Crew A-1J	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Building Laborer	$45.60	$364.80	$67.90	$543.20	$45.60	$67.90
1 Cultivator, Walk-Behind, 5 H.P.		54.91		60.40	6.86	7.55
8 L.H., Daily Totals		$419.71		$603.60	$52.46	$75.45
Crew A-1K	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Building Laborer	$45.60	$364.80	$67.90	$543.20	$45.60	$67.90
1 Cultivator, Walk-Behind, 8 H.P.		95.21		104.73	11.90	13.09
8 L.H., Daily Totals		$460.01		$647.93	$57.50	$80.99
Crew A-1M	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Building Laborer	$45.60	$364.80	$67.90	$543.20	$45.60	$67.90
1 Snow Blower, Walk-Behind		70.52		77.57	8.81	9.70
8 L.H., Daily Totals		$435.32		$620.77	$54.41	$77.60

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew A-2	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Laborers	$45.60	$729.60	$67.90	$1086.40	$47.20	$70.37
1 Truck Driver (light)	50.40	403.20	75.30	602.40		
1 Flatbed Truck, Gas, 1.5 Ton		203.25		223.57	8.47	9.32
24 L.H., Daily Totals		$1336.05		$1912.37	$55.67	$79.68
Crew A-2A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Laborers	$45.60	$729.60	$67.90	$1086.40	$47.20	$70.37
1 Truck Driver (light)	50.40	403.20	75.30	602.40		
1 Flatbed Truck, Gas, 1.5 Ton		203.25		223.57		
1 Concrete Saw		115.94		127.54	13.30	14.63
24 L.H., Daily Totals		$1451.99		$2039.91	$60.50	$85.00
Crew A-2B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Truck Driver (light)	$50.40	$403.20	$75.30	$602.40	$50.40	$75.30
1 Flatbed Truck, Gas, 1.5 Ton		203.25		223.57	25.41	27.95
8 L.H., Daily Totals		$606.45		$825.97	$75.81	$103.25
Crew A-3A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (light)	$57.00	$456.00	$84.80	$678.40	$57.00	$84.80
1 Pickup Truck, 4x4, 3/4 Ton		182.00		200.20	22.75	25.03
8 L.H., Daily Totals		$638.00		$878.60	$79.75	$109.83
Crew A-3B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$56.73	$84.55
1 Truck Driver (heavy)	53.05	424.40	79.25	634.00		
1 Dump Truck, 12 C.Y., 400 H.P.		594.66		654.12		
1 F.E. Loader, W.M., 2.5 C.Y.		657.89		723.68	78.28	86.11
16 L.H., Daily Totals		$2160.15		$2730.60	$135.01	$170.66
Crew A-3C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (light)	$57.00	$456.00	$84.80	$678.40	$57.00	$84.80
1 Loader, Skid Steer, 78 H.P.		460.30		506.33	57.54	63.29
8 L.H., Daily Totals		$916.30		$1184.73	$114.54	$148.09
Crew A-3D	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Truck Driver (light)	$50.40	$403.20	$75.30	$602.40	$50.40	$75.30
1 Pickup Truck, 4x4, 3/4 Ton		182.00		200.20		
1 Flatbed Trailer, 25 Ton		141.42		155.56	40.43	44.47
8 L.H., Daily Totals		$726.62		$958.16	$90.83	$119.77
Crew A-3E	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$58.23	$86.80
1 Truck Driver (heavy)	53.05	424.40	79.25	634.00		
1 Pickup Truck, 4x4, 3/4 Ton		182.00		200.20	11.38	12.51
16 L.H., Daily Totals		$1113.60		$1589.00	$69.60	$99.31
Crew A-3F	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$58.23	$86.80
1 Truck Driver (heavy)	53.05	424.40	79.25	634.00		
1 Pickup Truck, 4x4, 3/4 Ton		182.00		200.20		
1 Truck Tractor, 6x4, 380 H.P.		512.66		563.93		
1 Lowbed Trailer, 75 Ton		266.17		292.79	60.05	66.06
16 L.H., Daily Totals		$1892.43		$2445.71	$118.28	$152.86

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew A-3G	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$58.23	$86.80
1 Truck Driver (heavy)	53.05	424.40	79.25	634.00		
1 Pickup Truck, 4x4, 3/4 Ton		182.00		200.20		
1 Truck Tractor, 6x4, 450 H.P.		625.39		687.93		
1 Lowbed Trailer, 75 Ton		266.17		292.79	67.10	73.81
16 L.H., Daily Totals		$2005.16		$2569.72	$125.32	$160.61
Crew A-3H	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$63.40	$94.35
1 Hyd. Crane, 12 Ton (Daily)		756.78		832.46	94.60	104.06
8 L.H., Daily Totals		$1263.98		$1587.26	$158.00	$198.41
Crew A-3I	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$63.40	$94.35
1 Hyd. Crane, 25 Ton (Daily)		835.58		919.14	104.45	114.89
8 L.H., Daily Totals		$1342.78		$1673.94	$167.85	$209.24
Crew A-3J	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$63.40	$94.35
1 Hyd. Crane, 40 Ton (Daily)		1327.41		1460.15	165.93	182.52
8 L.H., Daily Totals		$1834.61		$2214.95	$229.33	$276.87
Crew A-3K	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$58.70	$87.35
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Hyd. Crane, 55 Ton (Daily)		1420.54		1562.59		
1 P/U Truck, 3/4 Ton (Daily)		147.80		162.58	98.02	107.82
16 L.H., Daily Totals		$2507.54		$3122.77	$156.72	$195.17
Crew A-3L	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$58.70	$87.35
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Hyd. Crane, 80 Ton (Daily)		2124.93		2337.42		
1 P/U Truck, 3/4 Ton (Daily)		147.80		162.58	142.05	156.25
16 L.H., Daily Totals		$3211.93		$3897.60	$200.75	$243.60
Crew A-3M	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$58.70	$87.35
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Hyd. Crane, 100 Ton (Daily)		2324.92		2557.42		
1 P/U Truck, 3/4 Ton (Daily)		147.80		162.58	154.55	170.00
16 L.H., Daily Totals		$3411.92		$4117.60	$213.25	$257.35
Crew A-3N	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$63.40	$94.35
1 Tower Crane (monthly)		1794.74		1974.21	224.34	246.78
8 L.H., Daily Totals		$2301.94		$2729.01	$287.74	$341.13
Crew A-3P	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (light)	$57.00	$456.00	$84.80	$678.40	$57.00	$84.80
1 A.T. Forklift, 31' reach, 45' lift		356.07		391.68	44.51	48.96
8 L.H., Daily Totals		$812.07		$1070.08	$101.51	$133.76
Crew A-3Q	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (light)	$57.00	$456.00	$84.80	$678.40	$57.00	$84.80
1 Pickup Truck, 4x4, 3/4 Ton		182.00		200.20		
1 Flatbed Trailer, 3 Ton		73.56		80.91	31.94	35.14
8 L.H., Daily Totals		$711.56		$959.51	$88.94	$119.94

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Ho	
Crew A-3R	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (light)	$57.00	$456.00	$84.80	$678.40	$57.00	$84.80
1 Forklift, Smooth Floor, 8,000 Lb.		292.16		321.38	36.52	40.17
8 L.H., Daily Totals		$748.16		$999.78	$93.52	$124.97
Crew A-4	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Carpenters	$56.30	$900.80	$83.80	$1340.80	$53.47	$79.48
1 Painter, Ordinary	47.80	382.40	70.85	566.80		
24 L.H., Daily Totals		$1283.20		$1907.60	$53.47	$79.48
Crew A-5	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Laborers	$45.60	$729.60	$67.90	$1086.40	$46.13	$68.72
.25 Truck Driver (light)	50.40	100.80	75.30	150.60		
.25 Flatbed Truck, Gas, 1.5 Ton		50.81		55.89	2.82	3.11
18 L.H., Daily Totals		$881.21		$1292.89	$48.96	$71.83
Crew A-6	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Instrument Man	$58.90	$471.20	$88.45	$707.60	$56.45	$84.35
1 Rodman/Chainman	54.00	432.00	80.25	642.00		
1 Level, Electronic		35.52		39.08	2.22	2.44
16 L.H., Daily Totals		$938.73		$1388.68	$58.67	$86.79
Crew A-7	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Chief of Party	$70.50	$564.00	$105.25	$842.00	$61.13	$91.32
1 Instrument Man	58.90	471.20	88.45	707.60		
1 Rodman/Chainman	54.00	432.00	80.25	642.00		
1 Level, Electronic		35.52		39.08	1.48	1.63
24 L.H., Daily Totals		$1502.72		$2230.68	$62.61	$92.94
Crew A-8	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Chief of Party	$70.50	$564.00	$105.25	$842.00	$59.35	$88.55
1 Instrument Man	58.90	471.20	88.45	707.60		
2 Rodmen/Chainmen	54.00	864.00	80.25	1284.00		
1 Level, Electronic		35.52		39.08	1.11	1.22
32 L.H., Daily Totals		$1934.72		$2872.68	$60.46	$89.77
Crew A-9	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Asbestos Foreman	$63.55	$508.40	$97.20	$777.60	$63.11	$96.54
7 Asbestos Workers	63.05	3530.80	96.45	5401.20		
64 L.H., Daily Totals		$4039.20		$6178.80	$63.11	$96.54
Crew A-10A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Asbestos Foreman	$63.55	$508.40	$97.20	$777.60	$63.22	$96.70
2 Asbestos Workers	63.05	1008.80	96.45	1543.20		
24 L.H., Daily Totals		$1517.20		$2320.80	$63.22	$96.70
Crew A-10B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Asbestos Foreman	$63.55	$508.40	$97.20	$777.60	$63.17	$96.64
3 Asbestos Workers	63.05	1513.20	96.45	2314.80		
32 L.H., Daily Totals		$2021.60		$3092.40	$63.17	$96.64
Crew A-10C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
3 Asbestos Workers	$63.05	$1513.20	$96.45	$2314.80	$63.05	$96.45
1 Flatbed Truck, Gas, 1.5 Ton		203.25		223.57	8.47	9.32
24 L.H., Daily Totals		$1716.45		$2538.37	$71.52	$105.77

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Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew A-10D	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Asbestos Workers	$63.05	$1008.80	$96.45	$1543.20	$60.88	$91.90
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Hydraulic Crane, 33 Ton		1012.08		1113.29	31.63	34.79
32 L.H., Daily Totals		$2960.08		$4054.09	$92.50	$126.69
Crew A-11	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Asbestos Foreman	$63.55	$508.40	$97.20	$777.60	$63.11	$96.54
7 Asbestos Workers	63.05	3530.80	96.45	5401.20		
2 Chip. Hammers, 12 Lb., Elec.		67.95		74.75	1.06	1.17
64 L.H., Daily Totals		$4107.15		$6253.55	$64.17	$97.71
Crew A-12	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Asbestos Foreman	$63.55	$508.40	$97.20	$777.60	$63.11	$96.54
7 Asbestos Workers	63.05	3530.80	96.45	5401.20		
1 Trk-Mtd Vac, 14 CY, 1500 Gal.		560.27		616.30		
1 Flatbed Truck, 20,000 GVW		209.49		230.44	12.03	13.23
64 L.H., Daily Totals		$4808.96		$7025.53	$75.14	$109.77
Crew A-13	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (light)	$57.00	$456.00	$84.80	$678.40	$57.00	$84.80
1 Trk-Mtd Vac, 14 CY, 1500 Gal.		560.27		616.30		
1 Flatbed Truck, 20,000 GVW		209.49		230.44	96.22	105.84
8 L.H., Daily Totals		$1225.76		$1525.13	$153.22	$190.64
Crew B-1	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$46.27	$68.88
2 Laborers	45.60	729.60	67.90	1086.40		
24 L.H., Daily Totals		$1110.40		$1653.20	$46.27	$68.88
Crew B-1A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$46.27	$68.88
2 Laborers	45.60	729.60	67.90	1086.40		
2 Cutting Torches		26.74		29.41		
2 Sets of Gases		354.31		389.75	15.88	17.47
24 L.H., Daily Totals		$1491.45		$2072.36	$62.14	$86.35
Crew B-1B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$50.55	$75.25
2 Laborers	45.60	729.60	67.90	1086.40		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
2 Cutting Torches		26.74		29.41		
2 Sets of Gases		354.31		389.75		
1 Hyd. Crane, 12 Ton		489.34		538.27	27.20	29.92
32 L.H., Daily Totals		$2487.99		$3365.43	$77.75	$105.17
Crew B-1C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$46.27	$68.88
2 Laborers	45.60	729.60	67.90	1086.40		
1 Telescoping Boom Lift, to 60'		301.02		331.12	12.54	13.80
24 L.H., Daily Totals		$1411.42		$1984.32	$58.81	$82.68
Crew B-1D	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Laborers	$45.60	$729.60	$67.90	$1086.40	$45.60	$67.90
1 Small Work Boat, Gas, 50 H.P.		123.78		136.15		
1 Pressure Washer, 7 GPM		96.77		106.44	13.78	15.16
16 L.H., Daily Totals		$950.14		$1329.00	$59.38	$83.06

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-1E	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$46.10	$68.64
3 Laborers	45.60	1094.40	67.90	1629.60		
1 Work Boat, Diesel, 200 H.P.		1478.34		1626.17		
2 Pressure Washers, 7 GPM		193.53		212.89	52.25	57.47
32 L.H., Daily Totals		$3147.07		$4035.46	$98.35	$126.11
Crew B-1F	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Skilled Workers	$58.90	$942.40	$88.45	$1415.20	$54.47	$81.60
1 Laborer	45.60	364.80	67.90	543.20		
1 Small Work Boat, Gas, 50 H.P.		123.78		136.15		
1 Pressure Washer, 7 GPM		96.77		106.44	9.19	10.11
24 L.H., Daily Totals		$1527.74		$2201.00	$63.66	$91.71
Crew B-1G	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Laborers	$45.60	$729.60	$67.90	$1086.40	$45.60	$67.90
1 Small Work Boat, Gas, 50 H.P.		123.78		136.15	7.74	8.51
16 L.H., Daily Totals		$853.38		$1222.55	$53.34	$76.41
Crew B-1H	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Skilled Workers	$58.90	$942.40	$88.45	$1415.20	$54.47	$81.60
1 Laborer	45.60	364.80	67.90	543.20		
1 Small Work Boat, Gas, 50 H.P.		123.78		136.15	5.16	5.67
24 L.H., Daily Totals		$1430.98		$2094.55	$59.62	$87.27
Crew B-1J	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (inside)	$46.10	$368.80	$68.65	$549.20	$45.85	$68.28
1 Laborer	45.60	364.80	67.90	543.20		
16 L.H., Daily Totals		$733.60		$1092.40	$45.85	$68.28
Crew B-1K	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Carpenter Foreman (inside)	$56.80	$454.40	$84.55	$676.40	$56.55	$84.17
1 Carpenter	56.30	450.40	83.80	670.40		
16 L.H., Daily Totals		$904.80		$1346.80	$56.55	$84.17
Crew B-2	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$46.00	$68.49
4 Laborers	45.60	1459.20	67.90	2172.80		
40 L.H., Daily Totals		$1840.00		$2739.60	$46.00	$68.49
Crew B-2A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$46.27	$68.88
2 Laborers	45.60	729.60	67.90	1086.40		
1 Telescoping Boom Lift, to 60'		301.02		331.12	12.54	13.80
24 L.H., Daily Totals		$1411.42		$1984.32	$58.81	$82.68
Crew B-3	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$50.88	$75.83
2 Laborers	45.60	729.60	67.90	1086.40		
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
2 Truck Drivers (heavy)	53.05	848.80	79.25	1268.00		
1 Crawler Loader, 3 C.Y.		1180.92		1299.01		
2 Dump Trucks, 12 C.Y., 400 H.P.		1189.32		1308.25	49.38	54.32
48 L.H., Daily Totals		$4812.63		$6247.26	$100.26	$130.15
Crew B-3A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
4 Laborers	$45.60	$1459.20	$67.90	$2172.80	$48.56	$72.29
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
1 Hyd. Excavator, 1.5 C.Y.		714.87		786.36	17.87	19.66
40 L.H., Daily Totals		$2657.27		$3677.96	$66.43	$91.95

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-3B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Laborers	$45.60	$729.60	$67.90	$1086.40	$51.16	$76.22
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
1 Truck Driver (heavy)	53.05	424.40	79.25	634.00		
1 Backhoe Loader, 80 H.P.		240.94		265.04		
1 Dump Truck, 12 C.Y., 400 H.P.		594.66		654.12	26.11	28.72
32 L.H., Daily Totals		$2472.80		$3358.36	$77.28	$104.95
Crew B-3C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
3 Laborers	$45.60	$1094.40	$67.90	$1629.60	$49.30	$73.39
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
1 Crawler Loader, 4 C.Y.		1500.46		1650.51	46.89	51.58
32 L.H., Daily Totals		$3078.06		$3998.91	$96.19	$124.97
Crew B-4	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$47.17	$70.28
4 Laborers	45.60	1459.20	67.90	2172.80		
1 Truck Driver (heavy)	53.05	424.40	79.25	634.00		
1 Truck Tractor, 220 H.P.		319.23		351.15		
1 Flatbed Trailer, 40 Ton		194.29		213.72	10.70	11.77
48 L.H., Daily Totals		$2777.92		$3938.47	$57.87	$82.05
Crew B-5	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$50.11	$74.59
4 Laborers	45.60	1459.20	67.90	2172.80		
2 Equip. Oper. (medium)	60.40	966.40	89.85	1437.60		
1 Air Compressor, 250 cfm		208.68		229.55		
2 Breakers, Pavement, 60 lb.		110.96		122.06		
2 -50' Air Hoses, 1.5"		47.19		51.91		
1 Crawler Loader, 3 C.Y.		1180.92		1299.01	27.64	30.40
56 L.H., Daily Totals		$4354.15		$5879.73	$77.75	$105.00
Crew B-5A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$50.42	$75.10
6 Laborers	45.60	2188.80	67.90	3259.20		
2 Equip. Oper. (medium)	60.40	966.40	89.85	1437.60		
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
2 Truck Drivers (heavy)	53.05	848.80	79.25	1268.00		
1 Air Compressor, 365 cfm		354.03		389.44		
2 Breakers, Pavement, 60 lb.		110.96		122.06		
8 -50' Air Hoses, 1"		66.53		73.19		
2 Dump Trucks, 8 C.Y., 220 H.P.		838.83		922.71	14.27	15.70
96 L.H., Daily Totals		$6211.16		$8717.39	$64.70	$90.81
Crew B-5B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Powderman	$58.90	$471.20	$88.45	$707.60	$56.48	$84.32
2 Equip. Oper. (medium)	60.40	966.40	89.85	1437.60		
3 Truck Drivers (heavy)	53.05	1273.20	79.25	1902.00		
1 F.E. Loader, W.M., 2.5 C.Y.		657.89		723.68		
3 Dump Trucks, 12 C.Y., 400 H.P.		1783.97		1962.37		
1 Air Compressor, 365 cfm		354.03		389.44	58.25	64.07
48 L.H., Daily Totals		$5506.70		$7122.69	$114.72	$148.39

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hou	
Crew B-5C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
3 Laborers	$45.60	$1094.40	$67.90	$1629.60	$52.59	$78.34
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
2 Truck Drivers (heavy)	53.05	848.80	79.25	1268.00		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
2 Dump Trucks, 12 C.Y., 400 H.P.		1189.32		1308.25		
1 Crawler Loader, 4 C.Y.		1500.46		1650.51		
1 S.P. Crane, 4x4, 25 Ton		1192.78		1312.06	60.66	66.73
64 L.H., Daily Totals		$7248.16		$9284.81	$113.25	$145.08
Crew B-5D	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$50.48	$75.17
4 Laborers	45.60	1459.20	67.90	2172.80		
2 Equip. Oper. (medium)	60.40	966.40	89.85	1437.60		
1 Truck Driver (heavy)	53.05	424.40	79.25	634.00		
1 Air Compressor, 250 cfm		208.68		229.55		
2 Breakers, Pavement, 60 lb.		110.96		122.06		
2 -50' Air Hoses, 1.5"		47.19		51.91		
1 Crawler Loader, 3 C.Y.		1180.92		1299.01		
1 Dump Truck, 12 C.Y., 400 H.P.		594.66		654.12	33.48	36.82
64 L.H., Daily Totals		$5373.21		$7167.85	$83.96	$112.00
Crew B-5E	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$50.48	$75.17
4 Laborers	45.60	1459.20	67.90	2172.80		
2 Equip. Oper. (medium)	60.40	966.40	89.85	1437.60		
1 Truck Driver (heavy)	53.05	424.40	79.25	634.00		
1 Water Tank Trailer, 5000 Gal.		158.82		174.70		
1 High Pressure Water Jet 40 KSI		847.30		932.03		
2 -50' Air Hoses, 1.5"		47.19		51.91		
1 Crawler Loader, 3 C.Y.		1180.92		1299.01		
1 Dump Truck, 12 C.Y., 400 H.P.		594.66		654.12	44.20	48.62
64 L.H., Daily Totals		$6059.69		$7922.98	$94.68	$123.80
Crew B-6	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Laborers	$45.60	$729.60	$67.90	$1086.40	$49.40	$73.53
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Backhoe Loader, 48 H.P.		221.72		243.89	9.24	10.16
24 L.H., Daily Totals		$1407.32		$2008.69	$58.64	$83.70
Crew B-6A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
.5 Labor Foreman (outside)	$47.60	$190.40	$70.85	$283.40	$51.92	$77.27
1 Laborer	45.60	364.80	67.90	543.20		
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
1 Vacuum Truck, 5000 Gal.		383.94		422.34	19.20	21.12
20 L.H., Daily Totals		$1422.34		$1967.74	$71.12	$98.39
Crew B-6B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Labor Foremen (outside)	$47.60	$761.60	$70.85	$1133.60	$46.27	$68.88
4 Laborers	45.60	1459.20	67.90	2172.80		
1 S.P. Crane, 4x4, 5 Ton		393.98		433.38		
1 Flatbed Truck, Gas, 1.5 Ton		203.25		223.57		
1 Butt Fusion Mach., 4"-12" diam.		434.93		478.43	21.50	23.65
48 L.H., Daily Totals		$3252.96		$4441.78	$67.77	$92.54

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Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-6C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Labor Foremen (outside)	$47.60	$761.60	$70.85	$1133.60	$46.27	$68.88
4 Laborers	45.60	1459.20	67.90	2172.80		
1 S.P. Crane, 4x4, 12 Ton		445.72		490.30		
1 Flatbed Truck, Gas, 3 Ton		877.96		965.75		
1 Butt Fusion Mach., 8"-24" diam.		1119.59		1231.55	50.90	55.99
48 L.H., Daily Totals		$4664.07		$5994.00	$97.17	$124.88
Crew B-6D	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
.5 Labor Foreman (outside)	$47.60	$190.40	$70.85	$283.40	$51.92	$77.27
1 Laborer	45.60	364.80	67.90	543.20		
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
1 Hydro Excavator, 12 C.Y.		1318.79		1450.67	65.94	72.53
20 L.H., Daily Totals		$2357.19		$2996.07	$117.86	$149.80
Crew B-7	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$48.40	$72.05
4 Laborers	45.60	1459.20	67.90	2172.80		
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
1 Brush Chipper, 12", 130 H.P.		376.37		414.01		
1 Crawler Loader, 3 C.Y.		1180.92		1299.01		
2 Chain Saws, Gas, 36" Long		86.21		94.83	34.24	37.66
48 L.H., Daily Totals		$3966.70		$5266.24	$82.64	$109.71
Crew B-7A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Laborers	$45.60	$729.60	$67.90	$1086.40	$49.40	$73.53
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Rake w/Tractor		354.21		389.63		
2 Chain Saws, Gas, 18"		107.75		118.52	19.25	21.17
24 L.H., Daily Totals		$1647.55		$2272.95	$68.65	$94.71
Crew B-7B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$49.06	$73.08
4 Laborers	45.60	1459.20	67.90	2172.80		
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
1 Truck Driver (heavy)	53.05	424.40	79.25	634.00		
1 Brush Chipper, 12", 130 H.P.		376.37		414.01		
1 Crawler Loader, 3 C.Y.		1180.92		1299.01		
2 Chain Saws, Gas, 36" Long		86.21		94.83		
1 Dump Truck, 8 C.Y., 220 H.P.		419.41		461.35	36.84	40.52
56 L.H., Daily Totals		$4810.51		$6361.60	$85.90	$113.60
Crew B-7C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$49.06	$73.08
4 Laborers	45.60	1459.20	67.90	2172.80		
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
1 Truck Driver (heavy)	53.05	424.40	79.25	634.00		
1 Brush Chipper, 12", 130 H.P.		376.37		414.01		
1 Crawler Loader, 3 C.Y.		1180.92		1299.01		
2 Chain Saws, Gas, 36" Long		86.21		94.83		
1 Dump Truck, 12 C.Y., 400 H.P.		594.66		654.12	39.97	43.96
56 L.H., Daily Totals		$4985.75		$6554.37	$89.03	$117.04

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-8	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$52.46	$78.15
2 Laborers	45.60	729.60	67.90	1086.40		
2 Equip. Oper. (medium)	60.40	966.40	89.85	1437.60		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
2 Truck Drivers (heavy)	53.05	848.80	79.25	1268.00		
1 Hyd. Crane, 25 Ton		603.44		663.78		
1 Crawler Loader, 3 C.Y.		1180.92		1299.01		
2 Dump Trucks, 12 C.Y., 400 H.P.		1189.32		1308.25	46.46	51.11
64 L.H., Daily Totals		$6331.27		$8272.64	$98.93	$129.26
Crew B-9	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$46.00	$68.49
4 Laborers	45.60	1459.20	67.90	2172.80		
1 Air Compressor, 250 cfm		208.68		229.55		
2 Breakers, Pavement, 60 lb.		110.96		122.06		
2 -50' Air Hoses, 1.5"		47.19		51.91	9.17	10.09
40 L.H., Daily Totals		$2206.83		$3143.12	$55.17	$78.58
Crew B-9A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Laborers	$45.60	$729.60	$67.90	$1086.40	$48.08	$71.68
1 Truck Driver (heavy)	53.05	424.40	79.25	634.00		
1 Water Tank Trailer, 5000 Gal.		158.82		174.70		
1 Truck Tractor, 220 H.P.		319.23		351.15		
2 -50' Discharge Hoses, 3"		9.30		10.23	20.31	22.34
24 L.H., Daily Totals		$1641.35		$2256.49	$68.39	$94.02
Crew B-9B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Laborers	$45.60	$729.60	$67.90	$1086.40	$48.08	$71.68
1 Truck Driver (heavy)	53.05	424.40	79.25	634.00		
2 -50' Discharge Hoses, 3"		9.30		10.23		
1 Water Tank Trailer, 5000 Gal.		158.82		174.70		
1 Truck Tractor, 220 H.P.		319.23		351.15		
1 Pressure Washer		100.40		110.44	24.49	26.94
24 L.H., Daily Totals		$1741.75		$2366.92	$72.57	$98.62
Crew B-9D	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$46.00	$68.49
4 Common Laborers	45.60	1459.20	67.90	2172.80		
1 Air Compressor, 250 cfm		208.68		229.55		
2 -50' Air Hoses, 1.5"		47.19		51.91		
2 Air Powered Tampers		82.32		90.55	8.45	9.30
40 L.H., Daily Totals		$2178.19		$3111.61	$54.45	$77.79
Crew B-9E	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Cement Finisher	$53.15	$425.20	$77.75	$622.00	$49.38	$72.83
1 Laborer	45.60	364.80	67.90	543.20		
1 Chip. Hammers, 12 Lb., Elec.		33.98		37.37	2.12	2.34
16 L.H., Daily Totals		$823.98		$1202.57	$51.50	$75.16
Crew B-10	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$55.47	$82.53
.5 Laborer	45.60	182.40	67.90	271.60		
12 L.H., Daily Totals		$665.60		$990.40	$55.47	$82.53
Crew B-10A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$55.47	$82.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 Roller, 2-Drum, W.B., 7.5 H.P.		171.95		189.14	14.33	15.76
12 L.H., Daily Totals		$837.55		$1179.54	$69.80	$98.30

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-10B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$55.47	$82.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 Dozer, 200 H.P.		1567.46		1724.21	130.62	143.68
12 L.H., Daily Totals		$2233.06		$2714.61	$186.09	$226.22
Crew B-10C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$55.47	$82.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 Dozer, 200 H.P.		1567.46		1724.21		
1 Vibratory Roller, Towed, 23 Ton		536.14		589.75	175.30	192.83
12 L.H., Daily Totals		$2769.20		$3304.36	$230.77	$275.36
Crew B-10D	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$55.47	$82.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 Dozer, 200 H.P.		1567.46		1724.21		
1 Sheepsft. Roller, Towed		439.25		483.18	167.23	183.95
12 L.H., Daily Totals		$2672.31		$3197.78	$222.69	$266.48
Crew B-10E	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$55.47	$82.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 Tandem Roller, 5 Ton		267.23		293.96	22.27	24.50
12 L.H., Daily Totals		$932.83		$1284.36	$77.74	$107.03
Crew B-10F	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$55.47	$82.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 Tandem Roller, 10 Ton		254.53		279.98	21.21	23.33
12 L.H., Daily Totals		$920.13		$1270.38	$76.68	$105.86
Crew B-10G	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$55.47	$82.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 Sheepsfoot Roller, 240 H.P.		1404.71		1545.18	117.06	128.76
12 L.H., Daily Totals		$2070.31		$2535.58	$172.53	$211.30
Crew B-10H	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$55.47	$82.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 Diaphragm Water Pump, 2"		90.40		99.44		
1 -20' Suction Hose, 2"		3.69		4.06		
2 -50' Discharge Hoses, 2"		8.25		9.08	8.53	9.38
12 L.H., Daily Totals		$767.95		$1102.98	$64.00	$91.92
Crew B-10I	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$55.47	$82.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 Diaphragm Water Pump, 4"		109.44		120.39		
1 -20' Suction Hose, 4"		17.88		19.67		
2 -50' Discharge Hoses, 4"		26.56		29.22	12.82	14.11
12 L.H., Daily Totals		$819.49		$1159.67	$68.29	$96.64
Crew B-10J	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$55.47	$82.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 Centrifugal Water Pump, 3"		76.47		84.12		
1 -20' Suction Hose, 3"		9.06		9.97		
2 -50' Discharge Hoses, 3"		9.30		10.23	7.90	8.69
12 L.H., Daily Totals		$760.43		$1094.72	$63.37	$91.23

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hou	
Crew B-10K	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$55.47	$82.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 Centr. Water Pump, 6"		240.92		265.01		
1 -20' Suction Hose, 6"		26.41		29.05		
2 -50' Discharge Hoses, 6"		37.54		41.29	25.41	27.95
12 L.H., Daily Totals		$970.46		$1325.75	$80.87	$110.48
Crew B-10L	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$55.47	$82.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 Dozer, 80 H.P.		417.40		459.14	34.78	38.26
12 L.H., Daily Totals		$1083.00		$1449.54	$90.25	$120.80
Crew B-10M	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$55.47	$82.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 Dozer, 300 H.P.		1840.03		2024.04	153.34	168.67
12 L.H., Daily Totals		$2505.63		$3014.44	$208.80	$251.20
Crew B-10N	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$55.47	$82.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 F.E. Loader, T.M., 1.5 C.Y.		589.09		648.00	49.09	54.00
12 L.H., Daily Totals		$1254.69		$1638.40	$104.56	$136.53
Crew B-10O	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$55.47	$82.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 F.E. Loader, T.M., 2.25 C.Y.		953.18		1048.50	79.43	87.37
12 L.H., Daily Totals		$1618.78		$2038.90	$134.90	$169.91
Crew B-10P	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$55.47	$82.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 Crawler Loader, 3 C.Y.		1180.92		1299.01	98.41	108.25
12 L.H., Daily Totals		$1846.52		$2289.41	$153.88	$190.78
Crew B-10Q	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$55.47	$82.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 Crawler Loader, 4 C.Y.		1500.46		1650.51	125.04	137.54
12 L.H., Daily Totals		$2166.06		$2640.91	$180.51	$220.08
Crew B-10R	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$55.47	$82.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 F.E. Loader, W.M., 1 C.Y.		314.63		346.09	26.22	28.84
12 L.H., Daily Totals		$980.23		$1336.49	$81.69	$111.37
Crew B-10S	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$55.47	$82.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 F.E. Loader, W.M., 1.5 C.Y.		454.98		500.48	37.92	41.71
12 L.H., Daily Totals		$1120.58		$1490.88	$93.38	$124.24
Crew B-10T	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$55.47	$82.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 F.E. Loader, W.M., 2.5 C.Y.		657.89		723.68	54.82	60.31
12 L.H., Daily Totals		$1323.49		$1714.08	$110.29	$142.84

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Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-10U	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$55.47	$82.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 F.E. Loader, W.M., 5.5 C.Y.		996.48		1096.13	83.04	91.34
12 L.H., Daily Totals		$1662.08		$2086.53	$138.51	$173.88
Crew B-10V	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$55.47	$82.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 Dozer, 700 H.P.		5335.27		5868.80	444.61	489.07
12 L.H., Daily Totals		$6000.87		$6859.20	$500.07	$571.60
Crew B-10W	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$55.47	$82.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 Dozer, 105 H.P.		659.79		725.77	54.98	60.48
12 L.H., Daily Totals		$1325.39		$1716.17	$110.45	$143.01
Crew B-10X	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$55.47	$82.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 Dozer, 410 H.P.		2896.31		3185.94	241.36	265.50
12 L.H., Daily Totals		$3561.91		$4176.34	$296.83	$348.03
Crew B-10Y	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$55.47	$82.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 Vibr. Roller, Towed, 12 Ton		603.24		663.57	50.27	55.30
12 L.H., Daily Totals		$1268.84		$1653.97	$105.74	$137.83
Crew B-11A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equipment Oper. (med.)	$60.40	$483.20	$89.85	$718.80	$53.00	$78.88
1 Laborer	45.60	364.80	67.90	543.20		
1 Dozer, 200 H.P.		1567.46		1724.21	97.97	107.76
16 L.H., Daily Totals		$2415.46		$2986.21	$150.97	$186.64
Crew B-11B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equipment Oper. (light)	$57.00	$456.00	$84.80	$678.40	$51.30	$76.35
1 Laborer	45.60	364.80	67.90	543.20		
1 Air Powered Tamper		41.16		45.28		
1 Air Compressor, 365 cfm		354.03		389.44		
2 -50' Air Hoses, 1.5"		47.19		51.91	27.65	30.41
16 L.H., Daily Totals		$1263.18		$1708.22	$78.95	$106.76
Crew B-11C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equipment Oper. (med.)	$60.40	$483.20	$89.85	$718.80	$53.00	$78.88
1 Laborer	45.60	364.80	67.90	543.20		
1 Backhoe Loader, 48 H.P.		221.72		243.89	13.86	15.24
16 L.H., Daily Totals		$1069.72		$1505.89	$66.86	$94.12
Crew B-11J	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equipment Oper. (med.)	$60.40	$483.20	$89.85	$718.80	$53.00	$78.88
1 Laborer	45.60	364.80	67.90	543.20		
1 Grader, 30,000 Lbs.		1108.49		1219.34		
1 Ripper, Beam & 1 Shank		94.41		103.85	75.18	82.70
16 L.H., Daily Totals		$2050.89		$2585.18	$128.18	$161.57

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-11K	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equipment Oper. (med.)	$60.40	$483.20	$89.85	$718.80	$53.00	$78.88
1 Laborer	45.60	364.80	67.90	543.20		
1 Trencher, Chain Type, 8' D		1952.14		2147.36	122.01	134.21
16 L.H., Daily Totals		$2800.14		$3409.36	$175.01	$213.08
Crew B-11L	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equipment Oper. (med.)	$60 40	$483.20	$89.85	$718.80	$53.00	$78.88
1 Laborer	45.60	364.80	67.90	543.20		
1 Grader, 30,000 Lbs.		1108.49		1219.34	69 28	76.21
16 L.H., Daily Totals		$1956.49		$2481.34	$122.28	$155.08
Crew B-11M	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equipment Oper. (med.)	$60.40	$483.20	$89.85	$718.80	$53.00	$78.88
1 Laborer	45.60	364.80	67.90	543.20		
1 Backhoe Loader, 80 H.P.		240.94		265.04	15.06	16.56
16 L.H., Daily Totals		$1088.94		$1527.04	$68.06	$95.44
Crew B-11N	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$54.08	$80.67
2 Equipment Operators (med.)	60.40	966.40	89.85	1437.60		
6 Truck Drivers (heavy)	53.05	2546.40	79.25	3804.00		
1 F.E. Loader, W.M., 5.5 C.Y.		996.48		1096.13		
1 Dozer, 410 H.P.		2896.31		3185.94		
6 Dump Trucks, Off Hwy., 50 Ton		12244.11		13468.53	224.12	246.54
72 L.H., Daily Totals		$20030.51		$23559.00	$278.20	$327.21
Crew B-11Q	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equipment Operator (med.)	$60.40	$483.20	$89.85	$718.80	$55.47	$82.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 Dozer, 140 H.P.		750.45		825.50	62.54	68.79
12 L.H., Daily Totals		$1416.05		$1815.90	$118.00	$151.32
Crew B-11R	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equipment Operator (med.)	$60.40	$483.20	$89.85	$718.80	$55.47	$82.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 Dozer, 200 H.P.		1567.46		1724.21	130.62	143.68
12 L.H., Daily Totals		$2233.06		$2714.61	$186.09	$226.22
Crew B-11S	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equipment Operator (med.)	$60.40	$483.20	$89.85	$718.80	$55.47	$82.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 Dozer, 300 H.P.		1840.03		2024.04		
1 Ripper, Beam & 1 Shank		94.41		103.85	161.20	177.32
12 L.H., Daily Totals		$2600.04		$3118.29	$216.67	$259.86
Crew B-11T	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equipment Operator (med.)	$60.40	$483.20	$89.85	$718.80	$55.47	$82.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 Dozer, 410 H.P.		2896.31		3185.94		
1 Ripper, Beam & 2 Shanks		144.78		159.26	253.42	278.77
12 L.H., Daily Totals		$3706.69		$4335.60	$308.89	$361.30
Crew B-11U	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equipment Operator (med.)	$60.40	$483.20	$89.85	$718.80	$55.47	$82.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 Dozer, 520 H.P.		3543.02		3897.32	295.25	324.78
12 L.H., Daily Totals		$4208.62		$4887.72	$350.72	$407.31

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-11V	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
3 Laborers	$45.60	$1094.40	$67.90	$1629.60	$45.60	$67.90
1 Roller, 2-Drum, W.B., 7.5 H.P.		171.95		189.14	7.16	7.88
24 L.H., Daily Totals		$1266.35		$1818.74	$52.76	$75.78
Crew B-11W	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equipment Operator (med.)	$60.40	$483.20	$89.85	$718.80	$53.04	$79.19
1 Common Laborer	45.60	364.80	67.90	543.20		
10 Truck Drivers (heavy)	53.05	4244.00	79.25	6340.00		
1 Dozer, 200 H.P.		1567.46		1724.21		
1 Vibratory Roller, Towed, 23 Ton		536.14		589.75		
10 Dump Trucks, 8 C.Y., 220 H.P.		4194.13		4613.54	65.60	72.16
96 L.H., Daily Totals		$11389.73		$14529.50	$118.64	$151.35
Crew B-11Y	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$50.76	$75.54
5 Common Laborers	45.60	1824.00	67.90	2716.00		
3 Equipment Operators (med.)	60.40	1449.60	89.85	2156.40		
1 Dozer, 80 H.P.		417.40		459.14		
2 Rollers, 2-Drum, W.B., 7.5 H.P.		343.89		378.28		
4 Vibrating Plates, Gas, 21"		685.57		754.13	20.10	22.10
72 L.H., Daily Totals		$5101.27		$7030.75	$70.85	$97.65
Crew B-12A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$54.50	$81.13
1 Laborer	45.60	364.80	67.90	543.20		
1 Hyd. Excavator, 1 C.Y.		857.81		943.59	53.61	58.97
16 L.H., Daily Totals		$1729.81		$2241.59	$108.11	$140.10
Crew B-12B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$54.50	$81.13
1 Laborer	45.60	364.80	67.90	543.20		
1 Hyd. Excavator, 1.5 C.Y.		714.87		786.36	44.68	49.15
16 L.H., Daily Totals		$1586.87		$2084.36	$99.18	$130.27
Crew B-12C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$54.50	$81.13
1 Laborer	45.60	364.80	67.90	543.20		
1 Hyd. Excavator, 2 C.Y.		969.84		1066.82	60.61	66.68
16 L.H., Daily Totals		$1841.84		$2364.82	$115.11	$147.80
Crew B-12D	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$54.50	$81.13
1 Laborer	45.60	364.80	67.90	543.20		
1 Hyd. Excavator, 3.5 C.Y.		2248.30		2473.13	140.52	154.57
16 L.H., Daily Totals		$3120.30		$3771.13	$195.02	$235.70
Crew B-12E	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$54.50	$81.13
1 Laborer	45.60	364.80	67.90	543.20		
1 Hyd. Excavator, .5 C.Y.		470.93		518.02	29.43	32.38
16 L.H., Daily Totals		$1342.93		$1816.02	$83.93	$113.50
Crew B-12F	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$54.50	$81.13
1 Laborer	45.60	364.80	67.90	543.20		
1 Hyd. Excavator, .75 C.Y.		723.26		795.59	45.20	49.72
16 L.H., Daily Totals		$1595.26		$2093.59	$99.70	$130.85

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-12G	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$54.50	$81.13
1 Laborer	45.60	364.80	67.90	543.20		
1 Crawler Crane, 15 Ton		835.19		918.71		
1 Clamshell Bucket, .5 C.Y.		70.08		77.09	56.58	62.24
16 L.H., Daily Totals		$1777.28		$2293.81	$111.08	$143.36
Crew B-12H	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$54.50	$81.13
1 Laborer	45.60	364.80	67.90	543.20		
1 Crawler Crane, 25 Ton		1185.81		1304.39		
1 Clamshell Bucket, 1 C.Y.		71.59		78.75	78.59	86.45
16 L.H., Daily Totals		$2129.40		$2681.14	$133.09	$167.57
Crew B-12I	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$54.50	$81.13
1 Laborer	45.60	364.80	67.90	543.20		
1 Crawler Crane, 20 Ton		1042.58		1146.84		
1 Dragline Bucket, .75 C.Y.		64.03		70.44	69.16	76.08
16 L.H., Daily Totals		$1978.62		$2515.28	$123.66	$157.20
Crew B-12J	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$54.50	$81.13
1 Laborer	45.60	364.80	67.90	543.20		
1 Gradall, 5/8 C.Y.		876.16		963.78	54.76	60.24
16 L.H., Daily Totals		$1748.16		$2261.78	$109.26	$141.36
Crew B-12K	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$54.50	$81.13
1 Laborer	45.60	364.80	67.90	543.20		
1 Gradall, 3 Ton, 1 C.Y.		1012.80		1114.08	63.30	69.63
16 L.H., Daily Totals		$1884.80		$2412.08	$117.80	$150.76
Crew B-12L	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$54.50	$81.13
1 Laborer	45.60	364.80	67.90	543.20		
1 Crawler Crane, 15 Ton		835.19		918.71		
1 F.E. Attachment, .5 C.Y.		68.13		74.94	56.46	62.10
16 L.H., Daily Totals		$1775.32		$2291.65	$110.96	$143.23
Crew B-12M	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$54.50	$81.13
1 Laborer	45.60	364.80	67.90	543.20		
1 Crawler Crane, 20 Ton		1042.58		1146.84		
1 F.E. Attachment, .75 C.Y.		73.54		80.89	69.76	76.73
16 L.H., Daily Totals		$1988.12		$2525.73	$124.26	$157.86
Crew B-12N	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$54.50	$81.13
1 Laborer	45.60	364.80	67.90	543.20		
1 Crawler Crane, 25 Ton		1185.81		1304.39		
1 F.E. Attachment, 1 C.Y.		79.82		87.80	79.10	87.01
16 L.H., Daily Totals		$2137.63		$2690.19	$133.60	$168.14
Crew B-12O	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$54.50	$81.13
1 Laborer	45.60	364.80	67.90	543.20		
1 Crawler Crane, 40 Ton		1267.52		1394.27		
1 F.E. Attachment, 1.5 C.Y.		91.52		100.67	84.94	93.43
16 L.H., Daily Totals		$2231.04		$2792.94	$139.44	$174.56

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Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-12P	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$54.50	$81.13
1 Laborer	45.60	364.80	67.90	543.20		
1 Crawler Crane, 40 Ton		1267.52		1394.27		
1 Dragline Bucket, 1.5 C.Y.		67.96		74.76	83.47	91.81
16 L.H., Daily Totals		$2207.48		$2767.03	$137.97	$172.94
Crew B-12Q	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$54.50	$81.13
1 Laborer	45.60	364.80	67.90	543.20		
1 Hyd. Excavator, 5/8 C.Y.		623.13		685.45	38.95	42.84
16 L.H., Daily Totals		$1495.13		$1983.45	$93.45	$123.97
Crew B-12S	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$54.50	$81.13
1 Laborer	45.60	364.80	67.90	543.20		
1 Hyd. Excavator, 2.5 C.Y.		1613.66		1775.03	100.85	110.94
16 L.H., Daily Totals		$2485.66		$3073.03	$155.35	$192.06
Crew B-12T	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$54.50	$81.13
1 Laborer	45.60	364.80	67.90	543.20		
1 Crawler Crane, 75 Ton		2031.06		2234.16		
1 F.E. Attachment, 3 C.Y.		119.34		131.28	134.40	147.84
16 L.H., Daily Totals		$3022.40		$3663.44	$188.90	$228.96
Crew B-12V	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$54.50	$81.13
1 Laborer	45.60	364.80	67.90	543.20		
1 Crawler Crane, 75 Ton		2031.06		2234.16		
1 Dragline Bucket, 3 C.Y.		74.71		82.18	131.61	144.77
16 L.H., Daily Totals		$2977.77		$3614.35	$186.11	$225.90
Crew B-12Y	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$51.53	$76.72
2 Laborers	45.60	729.60	67.90	1086.40		
1 Hyd. Excavator, 3.5 C.Y.		2248.30		2473.13	93.68	103.05
24 L.H., Daily Totals		$3485.10		$4314.33	$145.21	$179.76
Crew B-12Z	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$51.53	$76.72
2 Laborers	45.60	729.60	67.90	1086.40		
1 Hyd. Excavator, 2.5 C.Y.		1613.66		1775.03	67.24	73.96
24 L.H., Daily Totals		$2850.46		$3616.23	$118.77	$150.68
Crew B-13	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$49.63	$73.88
4 Laborers	45.60	1459.20	67.90	2172.80		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Hyd. Crane, 25 Ton		603.44		663.78	10.78	11.85
56 L.H., Daily Totals		$3382.64		$4800.98	$60.40	$85.73

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-13A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$52.24	$77.84
2 Laborers	45.60	729.60	67.90	1086.40		
2 Equipment Operators (med.)	60.40	966.40	89.85	1437.60		
2 Truck Drivers (heavy)	53.05	848.80	79.25	1268.00		
1 Crawler Crane, 75 Ton		2031.06		2234.16		
1 Crawler Loader, 4 C.Y.		1500.46		1650.51		
2 Dump Trucks, 8 C.Y., 220 H.P.		838.83		922.71	78.04	85.85
56 L.H., Daily Totals		$7295.94		$9166.18	$130.28	$163.68
Crew B-13B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$49.63	$73.88
4 Laborers	45.60	1459.20	67.90	2172.80		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Hyd. Crane, 55 Ton		1019.39		1121.33	18.20	20.02
56 L.H., Daily Totals		$3798.59		$5258.53	$67.83	$93.90
Crew B-13C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$49.63	$73.88
4 Laborers	45.60	1459.20	67.90	2172.80		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Crawler Crane, 100 Ton		2384.09		2622.50	42.57	46.83
56 L.H., Daily Totals		$5163.29		$6759.70	$92.20	$120.71
Crew B-13D	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$54.50	$81.13
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Hyd. Excavator, 1 C.Y.		857.81		943.59		
1 Trench Box		123.46		135.81	61.33	67.46
16 L.H., Daily Totals		$1853.27		$2377.40	$115.83	$148.59
Crew B-13E	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$54.50	$81.13
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Hyd. Excavator, 1.5 C.Y.		714.87		786.36		
1 Trench Box		123.46		135.81	52.40	57.64
16 L.H., Daily Totals		$1710.33		$2220.16	$106.90	$138.76
Crew B-13F	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$54.50	$81.13
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Hyd. Excavator, 3.5 C.Y.		2248.30		2473.13		
1 Trench Box		123.46		135.81	148.24	163.06
16 L.H., Daily Totals		$3243.76		$3906.94	$202.74	$244.18
Crew B-13G	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$54.50	$81.13
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Hyd. Excavator, .75 C.Y.		723.26		795.59		
1 Trench Box		123.46		135.81	52.92	58.21
16 L.H., Daily Totals		$1718.73		$2229.40	$107.42	$139.34
Crew B-13H	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$54.50	$81.13
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Gradall, 5/8 C.Y.		876.16		963.78		
1 Trench Box		123.46		135.81	62.48	68.72
16 L.H., Daily Totals		$1871.62		$2397.59	$116.98	$149.85

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-13I	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$54.50	$81.13
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Gradall, 3 Ton, 1 C.Y.		1012.80		1114.08		
1 Trench Box		123.46		135.81	71.02	78.12
16 L.H., Daily Totals		$2008.27		$2547.89	$125.52	$159.24
Crew B-13J	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$54.50	$81.13
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Hyd. Excavator, 2.5 C.Y.		1613.66		1775.03		
1 Trench Box		123.46		135.81	108.57	119.43
16 L.H., Daily Totals		$2609.13		$3208.84	$163.07	$200.55
Crew B-13K	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Equip. Opers. (crane)	$63.40	$1014.40	$94.35	$1509.60	$63.40	$94.35
1 Hyd. Excavator, .75 C.Y.		723.26		795.59		
1 Hyd. Hammer, 4000 ft-lb		671.39		738.52		
1 Hyd. Excavator, .75 C.Y.		723.26		795.59	132.37	145.61
16 L.H., Daily Totals		$3132.31		$3839.30	$195.77	$239.96
Crew B-13L	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Equip. Opers. (crane)	$63.40	$1014.40	$94.35	$1509.60	$63.40	$94.35
1 Hyd. Excavator, 1.5 C.Y.		714.87		786.36		
1 Hyd. Hammer, 5000 ft-lb		729.52		802.47		
1 Hyd. Excavator, .75 C.Y.		723.26		795.59	135.48	149.03
16 L.H., Daily Totals		$3182.05		$3894.02	$198.88	$243.38
Crew B-13M	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Equip. Opers. (crane)	$63.40	$1014.40	$94.35	$1509.60	$63.40	$94.35
1 Hyd. Excavator, 2.5 C.Y.		1613.66		1775.03		
1 Hyd. Hammer, 8000 ft-lb		949.42		1044.36		
1 Hyd. Excavator, 1.5 C.Y.		714.87		786.36	204.87	225.36
16 L.H., Daily Totals		$4292.35		$5115.34	$268.27	$319.71
Crew B-13N	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Equip. Opers. (crane)	$63.40	$1014.40	$94.35	$1509.60	$63.40	$94.35
1 Hyd. Excavator, 3.5 C.Y.		2248.30		2473.13		
1 Hyd. Hammer, 12,000 ft-lb		911.33		1002.46		
1 Hyd. Excavator, 1.5 C.Y.		714.87		786.36	242.16	266.37
16 L.H., Daily Totals		$4888.90		$5771.54	$305.56	$360.72
Crew B-14	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$47.83	$71.21
4 Laborers	45.60	1459.20	67.90	2172.80		
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Backhoe Loader, 48 H.P.		221.72		243.89	4.62	5.08
48 L.H., Daily Totals		$2517.72		$3661.89	$52.45	$76.29
Crew B-14A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$57.47	$85.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 Hyd. Excavator, 4.5 C.Y.		3557.16		3912.87	296.43	326.07
12 L.H., Daily Totals		$4246.76		$4939.27	$353.90	$411.61
Crew B-14B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$57.47	$85.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 Hyd. Excavator, 6 C.Y.		3609.36		3970.30	300.78	330.86
12 L.H., Daily Totals		$4298.96		$4996.70	$358.25	$416.39

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hou	
Crew B-14C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$57.47	$85.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 Hyd. Excavator, 7 C.Y.		3579.34		3937.27	298.28	328.11
12 L.H., Daily Totals		$4268.94		$4963.67	$355.74	$413.64
Crew B-14F	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$57.47	$85.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 Hyd. Shovel, 7 C.Y.		4271.41		4698.55	355.95	391.55
12 L.H., Daily Totals		$4961.01		$5724.95	$413.42	$477.08
Crew B-14G	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (crane)	$63.40	$507.20	$94.35	$754.80	$57.47	$85.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 Hyd. Shovel, 12 C.Y.		6198.74		6818.61	516.56	568.22
12 L.H., Daily Totals		$6888.34		$7845.01	$574.03	$653.75
Crew B-14J	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$55.47	$82.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 F.E. Loader, 8 C.Y.		2356.88		2592.56	196.41	216.05
12 L.H., Daily Totals		$3022.48		$3582.96	$251.87	$298.58
Crew B-14K	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$55.47	$82.53
.5 Laborer	45.60	182.40	67.90	271.60		
1 F.E. Loader, 10 C.Y.		2787.78		3066.56	232.32	255.55
12 L.H., Daily Totals		$3453.38		$4056.96	$287.78	$338.08
Crew B-15	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equipment Oper. (med.)	$60.40	$483.20	$89.85	$718.80	$54.09	$80.66
.5 Laborer	45.60	182.40	67.90	271.60		
2 Truck Drivers (heavy)	53.05	848.80	79.25	1268.00		
2 Dump Trucks, 12 C.Y., 400 H.P.		1189.32		1308.25		
1 Dozer, 200 H.P.		1567.46		1724.21	98.46	108.30
28 L.H., Daily Totals		$4271.18		$5290.85	$152.54	$188.96
Crew B-16	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$47.96	$71.47
2 Laborers	45.60	729.60	67.90	1086.40		
1 Truck Driver (heavy)	53.05	424.40	79.25	634.00		
1 Dump Truck, 12 C.Y., 400 H.P.		594.66		654.12	18.58	20.44
32 L.H., Daily Totals		$2129.46		$2941.32	$66.55	$91.92
Crew B-17	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Laborers	$45.60	$729.60	$67.90	$1086.40	$50.31	$74.96
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Truck Driver (heavy)	53.05	424.40	79.25	634.00		
1 Backhoe Loader, 48 H.P.		221.72		243.89		
1 Dump Truck, 8 C.Y., 220 H.P.		419.41		461.35	20.04	22.04
32 L.H., Daily Totals		$2251.13		$3104.04	$70.35	$97.00
Crew B-17A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Labor Foremen (outside)	$47.60	$761.60	$70.85	$1133.60	$48.86	$72.91
6 Laborers	45.60	2188.80	67.90	3259.20		
1 Skilled Worker Foreman (out)	60.90	487.20	91.50	732.00		
1 Skilled Worker	58.90	471.20	88.45	707.60		
80 L.H., Daily Totals		$3908.80		$5832.40	$48.86	$72.91

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Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-17B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Laborers	$45.60	$729.60	$67.90	$1086.40	$50.31	$74.96
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Truck Driver (heavy)	53.05	424.40	79.25	634.00		
1 Backhoe Loader, 48 H.P.		221.72		243.89		
1 Dump Truck, 12 C.Y., 400 H.P.		594.66		654.12	25.51	28.06
32 L.H., Daily Totals		$2426.37		$3296.81	$75.82	$103.03
Crew B-18	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$46.27	$68.88
2 Laborers	45.60	729.60	67.90	1086.40		
1 Vibrating Plate, Gas, 21"		171.39		188.53	7.14	7.86
24 L.H., Daily Totals		$1281.79		$1841.73	$53.41	$76.74
Crew B-19	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Pile Driver Foreman (outside)	$60.20	$481.60	$93.15	$745.20	$59.23	$90.30
4 Pile Drivers	58.20	1862.40	90.05	2881.60		
2 Equip. Oper. (crane)	63.40	1014.40	94.35	1509.60		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Crawler Crane, 40 Ton		1267.52		1394.27		
1 Lead, 90' High		384.88		423.37		
1 Hammer, Diesel, 22k ft-lb		455.60		501.16	32.94	36.23
64 L.H., Daily Totals		$5898.40		$8097.99	$92.16	$126.53
Crew B-19A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Pile Driver Foreman (outside)	$60.20	$481.60	$93.15	$745.20	$59.23	$90.30
4 Pile Drivers	58.20	1862.40	90.05	2881.60		
2 Equip. Oper. (crane)	63.40	1014.40	94.35	1509.60		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Crawler Crane, 75 Ton		2031.06		2234.16		
1 Lead, 90' High		384.88		423.37		
1 Hammer, Diesel, 41k ft-lb		601.64		661.80	47.15	51.86
64 L.H., Daily Totals		$6807.97		$9098.53	$106.37	$142.16
Crew B-19B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Pile Driver Foreman (outside)	$60.20	$481.60	$93.15	$745.20	$59.23	$90.30
4 Pile Drivers	58.20	1862.40	90.05	2881.60		
2 Equip. Oper. (crane)	63.40	1014.40	94.35	1509.60		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Crawler Crane, 40 Ton		1267.52		1394.27		
1 Lead, 90' High		384.88		423.37		
1 Hammer, Diesel, 22k ft-lb		455.60		501.16		
1 Barge, 400 Ton		898.90		988.79	46.98	51.68
64 L.H., Daily Totals		$6797.30		$9086.79	$106.21	$141.98
Crew B-19C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Pile Driver Foreman (outside)	$60.20	$481.60	$93.15	$745.20	$59.23	$90.30
4 Pile Drivers	58.20	1862.40	90.05	2881.60		
2 Equip. Oper. (crane)	63.40	1014.40	94.35	1509.60		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Crawler Crane, 75 Ton		2031.06		2234.16		
1 Lead, 90' High		384.88		423.37		
1 Hammer, Diesel, 41k ft-lb		601.64		661.80		
1 Barge, 400 Ton		898.90		988.79	61.19	67.31
64 L.H., Daily Totals		$7706.88		$10087.32	$120.42	$157.61
Crew B-20	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$50.70	$75.73
1 Skilled Worker	58.90	471.20	88.45	707.60		
1 Laborer	45.60	364.80	67.90	543.20		
24 L.H., Daily Totals		$1216.80		$1817.60	$50.70	$75.73

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-20A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$54.71	$81.54
1 Laborer	45.60	364.80	67.90	543.20		
1 Plumber	69.80	558.40	104.10	832.80		
1 Plumber Apprentice	55.85	446.80	83.30	666.40		
32 L.H., Daily Totals		$1750.80		$2609.20	$54.71	$81.54
Crew B-21	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$52.51	$78.39
1 Skilled Worker	58.90	471.20	88.45	707.60		
1 Laborer	45.60	364.80	67.90	543.20		
.5 Equip. Oper. (crane)	63.40	253.60	94.35	377.40		
.5 S.P. Crane, 4x4, 5 Ton		196.99		216.69	7.04	7.74
28 L.H., Daily Totals		$1667.39		$2411.69	$59.55	$86.13
Crew B-21A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$56.45	$84.10
1 Laborer	45.60	364.80	67.90	543.20		
1 Plumber	69.80	558.40	104.10	832.80		
1 Plumber Apprentice	55.85	446.80	83.30	666.40		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 S.P. Crane, 4x4, 12 Ton		445.72		490.30	11.14	12.26
40 L.H., Daily Totals		$2703.72		$3854.30	$67.59	$96.36
Crew B-21B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$49.56	$73.78
3 Laborers	45.60	1094.40	67.90	1629.60		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Hyd. Crane, 12 Ton		489.34		538.27	12.23	13.46
40 L.H., Daily Totals		$2471.74		$3489.47	$61.79	$87.24
Crew B-21C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$49.63	$73.88
4 Laborers	45.60	1459.20	67.90	2172.80		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
2 Cutting Torches		26.74		29.41		
2 Sets of Gases		354.31		389.75		
1 Lattice Boom Crane, 90 Ton		1767.55		1944.30	38.37	42.20
56 L.H., Daily Totals		$4927.80		$6500.66	$88.00	$116.08
Crew B-22	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$53.24	$79.46
1 Skilled Worker	58.90	471.20	88.45	707.60		
1 Laborer	45.60	364.80	67.90	543.20		
.75 Equip. Oper. (crane)	63.40	380.40	94.35	566.10		
.75 S.P. Crane, 4x4, 5 Ton		295.49		325.03	9.85	10.83
30 L.H., Daily Totals		$1892.69		$2708.73	$63.09	$90.29
Crew B-22A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$52.22	$77.89
1 Skilled Worker	58.90	471.20	88.45	707.60		
2 Laborers	45.60	729.60	67.90	1086.40		
1 Equipment Operator, Crane	63.40	507.20	94.35	754.80		
1 S.P. Crane, 4x4, 5 Ton		393.98		433.38		
1 Butt Fusion Mach., 4"-12" diam.		434.93		478.43	20.72	22.80
40 L.H., Daily Totals		$2917.71		$4027.40	$72.94	$100.69

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-22B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$52.22	$77.89
1 Skilled Worker	58.90	471.20	88.45	707.60		
2 Laborers	45.60	729.60	67.90	1086.40		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 S.P. Crane, 4x4, 5 Ton		393.98		433.38		
1 Butt Fusion Mach., 8"-24" diam.		1119.59		1231.55	37.84	41.62
40 L.H., Daily Totals		$3602.37		$4780.53	$90.06	$119.51
Crew B-22C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Skilled Worker	$58.90	$471.20	$88.45	$707.60	$52.25	$78.17
1 Laborer	45.60	364.80	67.90	543.20		
1 Butt Fusion Mach., 2"-8" diam.		139.58		153.54	8.72	9.60
16 L.H., Daily Totals		$975.58		$1404.34	$60.97	$87.77
Crew B-23	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$46.00	$68.49
4 Laborers	45.60	1459.20	67.90	2172.80		
1 Drill Rig, Truck-Mounted		785.11		863.62		
1 Flatbed Truck, Gas, 3 Ton		877.96		965.75	41.58	45.73
40 L.H., Daily Totals		$3503.07		$4568.98	$87.58	$114.22
Crew B-23A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$51.20	$76.20
1 Laborer	45.60	364.80	67.90	543.20		
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
1 Drill Rig, Truck-Mounted		785.11		863.62		
1 Pickup Truck, 3/4 Ton		115.08		126.59	37.51	41.26
24 L.H., Daily Totals		$2128.99		$2819.01	$88.71	$117.46
Crew B-23B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$51.20	$76.20
1 Laborer	45.60	364.80	67.90	543.20		
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
1 Drill Rig, Truck-Mounted		785.11		863.62		
1 Pickup Truck, 3/4 Ton		115.08		126.59		
1 Centr. Water Pump, 6"		240.92		265.01	47.55	52.30
24 L.H., Daily Totals		$2369.91		$3084.02	$98.75	$128.50
Crew B-24	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Cement Finisher	$53.15	$425.20	$77.75	$622.00	$51.68	$76.48
1 Laborer	45.60	364.80	67.90	543.20		
1 Carpenter	56.30	450.40	83.80	670.40		
24 L.H., Daily Totals		$1240.40		$1835.60	$51.68	$76.48
Crew B-25	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$49.82	$74.15
7 Laborers	45.60	2553.60	67.90	3802.40		
3 Equip. Oper. (medium)	60.40	1449.60	89.85	2156.40		
1 Asphalt Paver, 130 H.P.		2208.89		2429.77		
1 Tandem Roller, 10 Ton		254.53		279.98		
1 Roller, Pneum. Whl., 12 Ton		361.08		397.18	32.10	35.31
88 L.H., Daily Totals		$7208.49		$9632.54	$81.91	$109.46
Crew B-25B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$50.70	$75.46
7 Laborers	45.60	2553.60	67.90	3802.40		
4 Equip. Oper. (medium)	60.40	1932.80	89.85	2875.20		
1 Asphalt Paver, 130 H.P.		2208.89		2429.77		
1 Tandem Rollers, 10 Ton		509.05		559.96		
1 Roller, Pneum. Whl., 12 Ton		361.08		397.18	32.07	35.28
96 L.H., Daily Totals		$7946.21		$10631.31	$82.77	$110.74

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hou	
Crew B-25C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$50.87	$75.71
3 Laborers	45.60	1094.40	67.90	1629.60		
2 Equip. Oper. (medium)	60.40	966.40	89.85	1437.60		
1 Asphalt Paver, 130 H.P.		2208.89		2429.77		
1 Tandem Roller, 10 Ton		254.53		279.98	51.32	56.45
48 L.H., Daily Totals		$4905.01		$6343.75	$102.19	$132.16
Crew B-25D	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$51.10	$76.06
3 Laborers	45.60	1094.40	67.90	1629.60		
2.125 Equip. Oper. (medium)	60.40	1026.80	89.85	1527.45		
.125 Truck Driver (heavy)	53.05	53.05	79.25	79.25		
.125 Truck Tractor, 6x4, 380 H.P.		64.08		70.49		
.125 Dist. Tanker, 3000 Gallon		43.09		47.40		
1 Asphalt Paver, 130 H.P.		2208.89		2429.77		
1 Tandem Roller, 10 Ton		254.53		279.98	51.41	56.55
50 L.H., Daily Totals		$5125.63		$6630.74	$102.51	$132.61
Crew B-25E	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$51.32	$76.39
3 Laborers	45.60	1094.40	67.90	1629.60		
2.250 Equip. Oper. (medium)	60.40	1087.20	89.85	1617.30		
.25 Truck Driver (heavy)	53.05	106.10	79.25	158.50		
.25 Truck Tractor, 6x4, 380 H.P.		128.17		140.98		
.25 Dist. Tanker, 3000 Gallon		86.17		94.79		
1 Asphalt Paver, 130 H.P.		2208.89		2429.77		
1 Tandem Roller, 10 Ton		254.53		279.98	51.50	56.64
52 L.H., Daily Totals		$5346.25		$6917.72	$102.81	$133.03
Crew B-26	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$50.53	$75.12
6 Laborers	45.60	2188.80	67.90	3259.20		
2 Equip. Oper. (medium)	60.40	966.40	89.85	1437.60		
1 Rodman (reinf.)	60.70	485.60	90.65	725.20		
1 Cement Finisher	53.15	425.20	77.75	622.00		
1 Grader, 30,000 Lbs.		1108.49		1219.34		
1 Paving Mach. & Equip.		2579.95		2837.94	41.91	46.11
88 L.H., Daily Totals		$8135.23		$10668.08	$92.45	$121.23
Crew B-26A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$50.53	$75.12
6 Laborers	45.60	2188.80	67.90	3259.20		
2 Equip. Oper. (medium)	60.40	966.40	89.85	1437.60		
1 Rodman (reinf.)	60.70	485.60	90.65	725.20		
1 Cement Finisher	53.15	425.20	77.75	622.00		
1 Grader, 30,000 Lbs.		1108.49		1219.34		
1 Paving Mach. & Equip.		2579.95		2837.94		
1 Concrete Saw		115.94		127.54	43.23	47.55
88 L.H., Daily Totals		$8251.18		$10795.61	$93.76	$122.68
Crew B-26B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$51.35	$76.35
6 Laborers	45.60	2188.80	67.90	3259.20		
3 Equip. Oper. (medium)	60.40	1449.60	89.85	2156.40		
1 Rodman (reinf.)	60.70	485.60	90.65	725.20		
1 Cement Finisher	53.15	425.20	77.75	622.00		
1 Grader, 30,000 Lbs.		1108.49		1219.34		
1 Paving Mach. & Equip.		2579.95		2837.94		
1 Concrete Pump, 110' Boom		506.49		557.14	43.70	48.07
96 L.H., Daily Totals		$9124.92		$11944.01	$95.05	$124.42

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-26C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$49.55	$73.65
6 Laborers	45.60	2188.80	67.90	3259.20		
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
1 Rodman (reinf.)	60.70	485.60	90.65	725.20		
1 Cement Finisher	53.15	425.20	77.75	622.00		
1 Paving Mach. & Equip.		2579.95		2837.94		
1 Concrete Saw		115.94		127.54	33.70	37.07
80 L.H., Daily Totals		$6659.49		$8857.48	$83.24	$110.72
Crew B-27	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$46.10	$68.64
3 Laborers	45.60	1094.40	67.90	1629.60		
1 Berm Machine		261.22		287.34	8.16	8.98
32 L.H., Daily Totals		$1736.42		$2483.74	$54.26	$77.62
Crew B-28	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Carpenters	$56.30	$900.80	$83.80	$1340.80	$52.73	$78.50
1 Laborer	45.60	364.80	67.90	543.20		
24 L.H., Daily Totals		$1265.60		$1884.00	$52.73	$78.50
Crew B-29	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$49.63	$73.88
4 Laborers	45.60	1459.20	67.90	2172.80		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Gradall, 5/8 C.Y.		876.16		963.78	15.65	17.21
56 L.H., Daily Totals		$3655.36		$5100.98	$65.27	$91.09
Crew B-30	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$55.50	$82.78
2 Truck Drivers (heavy)	53.05	848.80	79.25	1268.00		
1 Hyd. Excavator, 1.5 C.Y.		714.87		786.36		
2 Dump Trucks, 12 C.Y., 400 H.P.		1189.32		1308.25	79.34	87.28
24 L.H., Daily Totals		$3236.19		$4081.40	$134.84	$170.06
Crew B-31	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$48.14	$71.67
3 Laborers	45.60	1094.40	67.90	1629.60		
1 Carpenter	56.30	450.40	83.80	670.40		
1 Air Compressor, 250 cfm		208.68		229.55		
1 Sheeting Driver		7.69		8.46		
2 -50' Air Hoses, 1.5"		47.19		51.91	6.59	7.25
40 L.H., Daily Totals		$2189.16		$3156.71	$54.73	$78.92
Crew B-32	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$56.70	$84.36
3 Equip. Oper. (medium)	60.40	1449.60	89.85	2156.40		
1 Grader, 30,000 Lbs.		1108.49		1219.34		
1 Tandem Roller, 10 Ton		254.53		279.98		
1 Dozer, 200 H.P.		1567.46		1724.21	91.58	100.74
32 L.H., Daily Totals		$4744.87		$5923.12	$148.28	$185.10
Crew B-32A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$55.47	$82.53
2 Equip. Oper. (medium)	60.40	966.40	89.85	1437.60		
1 Grader, 30,000 Lbs.		1108.49		1219.34		
1 Roller, Vibratory, 25 Ton		693.41		762.76	75.08	82.59
24 L.H., Daily Totals		$3133.10		$3962.89	$130.55	$165.12

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-32B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$55.47	$82.53
2 Equip. Oper. (medium)	60.40	966.40	89.85	1437.60		
1 Dozer, 200 H.P.		1567.46		1724.21		
1 Roller, Vibratory, 25 Ton		693.41		762.76	94.20	103.62
24 L.H., Daily Totals		$3592.07		$4467.76	$149.67	$186.16
Crew B-32C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$53.33	$79.37
2 Laborers	45.60	729.60	67.90	1086.40		
3 Equip. Oper. (medium)	60.40	1449.60	89.85	2156.40		
1 Grader, 30,000 Lbs.		1108.49		1219.34		
1 Tandem Roller, 10 Ton		254.53		279.98		
1 Dozer, 200 H.P.		1567.46		1724.21	61.05	67.16
48 L.H., Daily Totals		$5490.47		$7033.12	$114.38	$146.52
Crew B-33A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$56.17	$83.58
.5 Laborer	45.60	182.40	67.90	271.60		
.25 Equip. Oper. (medium)	60.40	120.80	89.85	179.70		
1 Scraper, Towed, 7 C.Y.		133.22		146.54		
1.25 Dozers, 300 H.P.		2300.04		2530.05	173.80	191.19
14 L.H., Daily Totals		$3219.66		$3846.69	$229.98	$274.76
Crew B-33B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$56.17	$83.58
.5 Laborer	45.60	182.40	67.90	271.60		
.25 Equip. Oper. (medium)	60.40	120.80	89.85	179.70		
1 Scraper, Towed, 10 C.Y.		166.62		183.28		
1.25 Dozers, 300 H.P.		2300.04		2530.05	176.19	193.81
14 L.H., Daily Totals		$3253.06		$3883.43	$232.36	$277.39
Crew B-33C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$56.17	$83.58
.5 Laborer	45.60	182.40	67.90	271.60		
.25 Equip. Oper. (medium)	60.40	120.80	89.85	179.70		
1 Scraper, Towed, 15 C.Y.		184.47		202.92		
1.25 Dozers, 300 H.P.		2300.04		2530.05	177.47	195.21
14 L.H., Daily Totals		$3270.91		$3903.06	$233.64	$278.79
Crew B-33D	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$56.17	$83.58
.5 Laborer	45.60	182.40	67.90	271.60		
.25 Equip. Oper. (medium)	60.40	120.80	89.85	179.70		
1 S.P. Scraper, 14 C.Y.		2495.24		2744.76		
.25 Dozer, 300 H.P.		460.01		506.01	211.09	232.20
14 L.H., Daily Totals		$3741.65		$4420.87	$267.26	$315.78
Crew B-33E	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$56.17	$83.58
.5 Laborer	45.60	182.40	67.90	271.60		
.25 Equip. Oper. (medium)	60.40	120.80	89.85	179.70		
1 S.P. Scraper, 21 C.Y.		2735.18		3008.70		
.25 Dozer, 300 H.P.		460.01		506.01	228.23	251.05
14 L.H., Daily Totals		$3981.59		$4684.81	$284.40	$334.63

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-33F	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$56.17	$83.58
.5 Laborer	45.60	182.40	67.90	271.60		
.25 Equip. Oper. (medium)	60.40	120.80	89.85	179.70		
1 Elev. Scraper, 11 C.Y.		1090.07		1199.08		
.25 Dozer, 300 H.P.		460.01		506.01	110.72	121.79
14 L.H., Daily Totals		$2336.48		$2875.19	$166.89	$205.37
Crew B-33G	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$56.17	$83.58
.5 Laborer	45.60	182.40	67.90	271.60		
.25 Equip. Oper. (medium)	60.40	120.80	89.85	179.70		
1 Elev. Scraper, 22 C.Y.		1949.58		2144.54		
.25 Dozer, 300 H.P.		460.01		506.01	172.11	189.33
14 L.H., Daily Totals		$3195.99		$3820.65	$228.29	$272.90
Crew B-33H	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
.5 Laborer	$45.60	$182.40	$67.90	$271.60	$56.17	$83.58
1 Equipment Operator (med.)	60.40	483.20	89.85	718.80		
.25 Equipment Operator (med.)	60.40	120.80	89.85	179.70		
1 S.P. Scraper, 44 C.Y.		4836.67		5320.34		
.25 Dozer, 410 H.P.		724.08		796.49	397.20	436.92
14 L.H., Daily Totals		$6347.15		$7286.92	$453.37	$520.49
Crew B-33J	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equipment Operator (med.)	$60.40	$483.20	$89.85	$718.80	$60.40	$89.85
1 S.P. Scraper, 14 C.Y.		2495.24		2744.76	311.91	343.10
8 L.H., Daily Totals		$2978.44		$3463.56	$372.31	$432.95
Crew B-33K	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equipment Operator (med.)	$60.40	$483.20	$89.85	$718.80	$56.17	$83.58
.25 Equipment Operator (med.)	60.40	120.80	89.85	179.70		
.5 Laborer	45.60	182.40	67.90	271.60		
1 S.P. Scraper, 31 C.Y.		3818.46		4200.30		
.25 Dozer, 410 H.P.		724.08		796.49	324.47	356.91
14 L.H., Daily Totals		$5328.93		$6166.89	$380.64	$440.49
Crew B-34A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Truck Driver (heavy)	$53.05	$424.40	$79.25	$634.00	$53.05	$79.25
1 Dump Truck, 8 C.Y., 220 H.P.		419.41		461.35	52.43	57.67
8 L.H., Daily Totals		$843.81		$1095.35	$105.48	$136.92
Crew B-34B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Truck Driver (heavy)	$53.05	$424.40	$79.25	$634.00	$53.05	$79.25
1 Dump Truck, 12 C.Y., 400 H.P.		594.66		654.12	74.33	81.77
8 L.H., Daily Totals		$1019.06		$1288.12	$127.38	$161.02
Crew B-34C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Truck Driver (heavy)	$53.05	$424.40	$79.25	$634.00	$53.05	$79.25
1 Truck Tractor, 6x4, 380 H.P.		512.66		563.93		
1 Dump Trailer, 16.5 C.Y.		142.67		156.94	81.92	90.11
8 L.H., Daily Totals		$1079.73		$1354.86	$134.97	$169.36
Crew B-34D	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Truck Driver (heavy)	$53.05	$424.40	$79.25	$634.00	$53.05	$79.25
1 Truck Tractor, 6x4, 380 H.P.		512.66		563.93		
1 Dump Trailer, 20 C.Y.		158.36		174.20	83.88	92.27
8 L.H., Daily Totals		$1095.42		$1372.13	$136.93	$171.52

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-34E	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Truck Driver (heavy)	$53.05	$424.40	$79.25	$634.00	$53.05	$79.25
1 Dump Truck, Off Hwy., 25 Ton		1471.56		1618.72	183.95	202.34
8 L.H., Daily Totals		$1895.96		$2252.72	$237.00	$281.59
Crew B-34F	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Truck Driver (heavy)	$53.05	$424.40	$79.25	$634.00	$53.05	$79.25
1 Dump Truck, Off Hwy., 35 Ton		971.45		1068.60	121.43	133.57
8 L.H., Daily Totals		$1395.85		$1702.60	$174.48	$212.82
Crew B-34G	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Truck Driver (heavy)	$53.05	$424.40	$79.25	$634.00	$53.05	$79.25
1 Dump Truck, Off Hwy., 50 Ton		2040.69		2244.75	255.09	280.59
8 L.H., Daily Totals		$2465.09		$2878.75	$308.14	$359.84
Crew B-34H	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Truck Driver (heavy)	$53.05	$424.40	$79.25	$634.00	$53.05	$79.25
1 Dump Truck, Off Hwy., 65 Ton		1996.90		2196.59	249.61	274.57
8 L.H., Daily Totals		$2421.30		$2830.59	$302.66	$353.82
Crew B-34I	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Truck Driver (heavy)	$53.05	$424.40	$79.25	$634.00	$53.05	$79.25
1 Dump Truck, 18 C.Y., 450 H.P.		774.61		852.07	96.83	106.51
8 L.H., Daily Totals		$1199.01		$1486.07	$149.88	$185.76
Crew B-34J	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Truck Driver (heavy)	$53.05	$424.40	$79.25	$634.00	$53.05	$79.25
1 Dump Truck, Off Hwy., 100 Ton		2854.63		3140.09	356.83	392.51
8 L.H., Daily Totals		$3279.03		$3774.09	$409.88	$471.76
Crew B-34K	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Truck Driver (heavy)	$53.05	$424.40	$79.25	$634.00	$53.05	$79.25
1 Truck Tractor, 6x4, 450 H.P.		625.39		687.93		
1 Lowbed Trailer, 75 Ton		266.17		292.79	111.44	122.59
8 L.H., Daily Totals		$1315.96		$1614.72	$164.50	$201.84
Crew B-34L	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (light)	$57.00	$456.00	$84.80	$678.40	$57.00	$84.80
1 Flatbed Truck, Gas, 1.5 Ton		203.25		223.57	25.41	27.95
8 L.H., Daily Totals		$659.25		$901.97	$82.41	$112.75
Crew B-34M	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (light)	$57.00	$456.00	$84.80	$678.40	$57.00	$84.80
1 Flatbed Truck, Gas, 3 Ton		877.96		965.75	109.74	120.72
8 L.H., Daily Totals		$1333.96		$1644.15	$166.74	$205.52
Crew B-34N	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Truck Driver (heavy)	$53.05	$424.40	$79.25	$634.00	$56.73	$84.55
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
1 Truck Tractor, 6x4, 380 H.P.		512.66		563.93		
1 Flatbed Trailer, 40 Ton		194.29		213.72	44.18	48.60
16 L.H., Daily Totals		$1614.55		$2130.45	$100.91	$133.15
Crew B-34P	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Pipe Fitter	$70.35	$562.80	$104.90	$839.20	$60.38	$90.02
1 Truck Driver (light)	50.40	403.20	75.30	602.40		
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
1 Flatbed Truck, Gas, 3 Ton		877.96		965.75		
1 Backhoe Loader, 48 H.P.		221.72		243.89	45.82	50.40
24 L.H., Daily Totals		$2548.87		$3370.04	$106.20	$140.42

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Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-34Q	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Pipe Fitter	$70.35	$562.80	$104.90	$839.20	$61.38	$91.52
1 Truck Driver (light)	50.40	403.20	75.30	602.40		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Flatbed Trailer, 25 Ton		141.42		155.56		
1 Dump Truck, 8 C.Y., 220 H.P.		419.41		461.35		
1 Hyd. Crane, 25 Ton		603.44		663.78	48.51	53.36
24 L.H., Daily Totals		$2637.47		$3477.09	$109.89	$144.88
Crew B-34R	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Pipe Fitter	$70.35	$562.80	$104.90	$839.20	$61.38	$91.52
1 Truck Driver (light)	50.40	403.20	75.30	602.40		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Flatbed Trailer, 25 Ton		141.42		155.56		
1 Dump Truck, 8 C.Y., 220 H.P.		419.41		461.35		
1 Hyd. Crane, 25 Ton		603.44		663.78		
1 Hyd. Excavator, 1 C.Y.		857.81		943.59	84.25	92.68
24 L.H., Daily Totals		$3495.27		$4420.68	$145.64	$184.20
Crew B-34S	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Pipe Fitters	$70.35	$1125.60	$104.90	$1678.40	$64.29	$95.85
1 Truck Driver (heavy)	53.05	424.40	79.25	634.00		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Flatbed Trailer, 40 Ton		194.29		213.72		
1 Truck Tractor, 6x4, 380 H.P.		512.66		563.93		
1 Hyd. Crane, 80 Ton		1502.22		1652.44		
1 Hyd. Excavator, 2 C.Y.		969.84		1066.82	99.34	109.28
32 L.H., Daily Totals		$5236.21		$6564.11	$163.63	$205.13
Crew B-34T	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Pipe Fitters	$70.35	$1125.60	$104.90	$1678.40	$64.29	$95.85
1 Truck Driver (heavy)	53.05	424.40	79.25	634.00		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Flatbed Trailer, 40 Ton		194.29		213.72		
1 Truck Tractor, 6x4, 380 H.P.		512.66		563.93		
1 Hyd. Crane, 80 Ton		1502.22		1652.44	69.04	75.94
32 L.H., Daily Totals		$4266.37		$5497.28	$133.32	$171.79
Crew B-34U	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Truck Driver (heavy)	$53.05	$424.40	$79.25	$634.00	$55.02	$82.03
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Truck Tractor, 220 H.P.		319.23		351.15		
1 Flatbed Trailer, 25 Ton		141.42		155.56	28.79	31.67
16 L.H., Daily Totals		$1341.05		$1819.11	$83.82	$113.69
Crew B-34V	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Truck Driver (heavy)	$53.05	$424.40	$79.25	$634.00	$57.82	$86.13
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Truck Tractor, 6x4, 450 H.P.		625.39		687.93		
1 Equipment Trailer, 50 Ton		213.73		235.10		
1 Pickup Truck, 4x4, 3/4 Ton		182.00		200.20	42.55	46.80
24 L.H., Daily Totals		$2408.72		$3190.43	$100.36	$132.93

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-34W	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
5 Truck Drivers (heavy)	$53.05	$2122.00	$79.25	$3170.00	$55.68	$83.04
2 Equip. Opers. (crane)	63.40	1014.40	94.35	1509.60		
1 Equip. Oper. (mechanic)	63.50	508.00	94.50	756.00		
1 Laborer	45.60	364.80	67.90	543.20		
4 Truck Tractors, 6x4, 380 H.P.		2050.64		2255.71		
2 Equipment Trailers, 50 Ton		427.46		470.20		
2 Flatbed Trailers, 40 Ton		388.58		427.44		
1 Pickup Truck, 4x4, 3/4 Ton		182.00		200.20		
1 S.P. Crane, 4x4, 20 Ton		592.53		651.78	50.57	55.63
72 L.H., Daily Totals		$7650.41		$9984.14	$106.26	$138.67
Crew B-35	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$58.44	$87.16
1 Skilled Worker	58.90	471.20	88.45	707.60		
2 Welders	69.80	1116.80	104.10	1665.60		
1 Laborer	45.60	364.80	67.90	543.20		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
2 Welder, Electric, 300 amp		221.51		243.66		
1 Hyd. Excavator, .75 C.Y.		723.26		795.59	16.87	18.56
56 L.H., Daily Totals		$4217.57		$5920.05	$75.31	$105.72
Crew B-35A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$54.99	$81.99
2 Laborers	45.60	729.60	67.90	1086.40		
1 Skilled Worker	58.90	471.20	88.45	707.60		
1 Welder (plumber)	69.80	558.40	104.10	832.80		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Welder, Gas Engine, 300 amp		152.88		168.16		
1 Crawler Crane, 75 Ton		2031.06		2234.16	39.00	42.90
56 L.H., Daily Totals		$5263.13		$6993.53	$93.98	$124.88
Crew B-36	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$51.92	$77.27
2 Laborers	45.60	729.60	67.90	1086.40		
2 Equip. Oper. (medium)	60.40	966.40	89.85	1437.60		
1 Dozer, 200 H.P.		1567.46		1724.21		
1 Aggregate Spreader		61.81		67.99		
1 Tandem Roller, 10 Ton		254.53		279.98	47.09	51.80
40 L.H., Daily Totals		$3960.59		$5162.97	$99.01	$129.07
Crew B-36A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$54.34	$80.86
2 Laborers	45.60	729.60	67.90	1086.40		
4 Equip. Oper. (medium)	60.40	1932.80	89.85	2875.20		
1 Dozer, 200 H.P.		1567.46		1724.21		
1 Aggregate Spreader		61.81		67.99		
1 Tandem Roller, 10 Ton		254.53		279.98		
1 Roller, Pneum. Whl., 12 Ton		361.08		397.18	40.09	44.10
56 L.H., Daily Totals		$5288.07		$6997.76	$94.43	$124.96

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-36B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$54.18	$80.66
2 Laborers	45.60	729.60	67.90	1086.40		
4 Equip. Oper. (medium)	60.40	1932.80	89.85	2875.20		
1 Truck Driver (heavy)	53.05	424.40	79.25	634.00		
1 Grader, 30,000 Lbs.		1108.49		1219.34		
1 F.E. Loader, Crl, 1.5 C.Y.		688.92		757.81		
1 Dozer, 300 H.P.		1840.03		2024.04		
1 Roller, Vibratory, 25 Ton		693.41		762.76		
1 Truck Tractor, 6x4, 450 H.P.		625.39		687.93		
1 Water Tank Trailer, 5000 Gal.		158.82		174.70	79.92	87.92
64 L.H., Daily Totals		$8582.66		$10788.97	$134.10	$168.58
Crew B-36C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$56.37	$83.93
3 Equip. Oper. (medium)	60.40	1449.60	89.85	2156.40		
1 Truck Driver (heavy)	53.05	424.40	79.25	634.00		
1 Grader, 30,000 Lbs.		1108.49		1219.34		
1 Dozer, 300 H.P.		1840.03		2024.04		
1 Roller, Vibratory, 25 Ton		693.41		762.76		
1 Truck Tractor, 6x4, 450 H.P.		625.39		687.93		
1 Water Tank Trailer, 5000 Gal.		158.82		174.70	110.65	121.72
40 L.H., Daily Totals		$6680.94		$8225.96	$167.02	$205.65
Crew B-36D	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$57.20	$85.10
3 Equip. Oper. (medium)	60.40	1449.60	89.85	2156.40		
1 Grader, 30,000 Lbs.		1108.49		1219.34		
1 Dozer, 300 H.P.		1840.03		2024.04		
1 Roller, Vibratory, 25 Ton		693.41		762.76	113.81	125.19
32 L.H., Daily Totals		$5472.34		$6729.33	$171.01	$210.29
Crew B-37	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$47.83	$71.21
4 Laborers	45.60	1459.20	67.90	2172.80		
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Tandem Roller, 5 Ton		267.23		293.96	5.57	6.12
48 L.H., Daily Totals		$2563.23		$3711.96	$53.40	$77.33
Crew B-37A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Laborers	$45.60	$729.60	$67.90	$1086.40	$47.20	$70.37
1 Truck Driver (light)	50.40	403.20	75.30	602.40		
1 Flatbed Truck, Gas, 1.5 Ton		203.25		223.57		
1 Tar Kettle, T.M.		160.79		176.87	15.17	16.69
24 L.H., Daily Totals		$1496.84		$2089.24	$62.37	$87.05
Crew B-37B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
3 Laborers	$45.60	$1094.40	$67.90	$1629.60	$46.80	$69.75
1 Truck Driver (light)	50.40	403.20	75.30	602.40		
1 Flatbed Truck, Gas, 1.5 Ton		203.25		223.57		
1 Tar Kettle, T.M.		160.79		176.87	11.38	12.51
32 L.H., Daily Totals		$1861.64		$2632.44	$58.18	$82.26
Crew B-37C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Laborers	$45.60	$729.60	$67.90	$1086.40	$48.00	$71.60
2 Truck Drivers (light)	50.40	806.40	75.30	1204.80		
2 Flatbed Trucks, Gas, 1.5 Ton		406.50		447.15		
1 Tar Kettle, T.M.		160.79		176.87	17.73	19.50
32 L.H., Daily Totals		$2103.29		$2915.22	$65.73	$91.10

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-37D	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$48.00	$71.60
1 Truck Driver (light)	50.40	403.20	75.30	602.40		
1 Pickup Truck, 3/4 Ton		115.08		126.59	7.19	7.91
16 L.H., Daily Totals		$883.08		$1272.19	$55.19	$79.51
Crew B-37E	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
3 Laborers	$45.60	$1094.40	$67.90	$1629.60	$50.71	$75.56
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
2 Truck Drivers (light)	50.40	806.40	75.30	1204.80		
4 Barrels w/ Flasher		17.23		18.95		
1 Concrete Saw		115.94		127.54		
1 Rotary Hammer Drill		54.02		59.42		
1 Hammer Drill Bit		26.18		28.80		
1 Loader, Skid Steer, 30 H.P.		184.81		203.29		
1 Conc. Hammer Attach.		122.73		135.00		
1 Vibrating Plate, Gas, 18"		32.77		36.05		
2 Flatbed Trucks, Gas, 1.5 Ton		406.50		447.15	17.15	18.86
56 L.H., Daily Totals		$3800.18		$5287.80	$67.86	$94.42
Crew B-37F	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
3 Laborers	$45.60	$1094.40	$67.90	$1629.60	$46.80	$69.75
1 Truck Driver (light)	50.40	403.20	75.30	602.40		
4 Barrels w/ Flasher		17.23		18.95		
1 Concrete Mixer, 10 C.F.		151.35		166.49		
1 Air Compressor, 60 cfm		158.26		174.09		
1 -50' Air Hose, 3/4"		7.40		8.15		
1 Spade (Chipper)		8.80		9.68		
1 Flatbed Truck, Gas, 1.5 Ton		203.25		223.57	17.07	18.78
32 L.H., Daily Totals		$2043.90		$2832.93	$63.87	$88.53
Crew B-37G	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$47.83	$71.21
4 Laborers	45.60	1459.20	67.90	2172.80		
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Berm Machine		261.22		287.34		
1 Tandem Roller, 5 Ton		267.23		293.96	11.01	12.11
48 L.H., Daily Totals		$2824.45		$3999.30	$58.84	$83.32
Crew B-37H	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$47.83	$71.21
4 Laborers	45.60	1459.20	67.90	2172.80		
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Tandem Roller, 5 Ton		267.23		293.96		
1 Flatbed Truck, Gas, 1.5 Ton		203.25		223.57		
1 Tar Kettle, T.M.		160.79		176.87	13.15	14.47
48 L.H., Daily Totals		$2927.27		$4112.40	$60.98	$85.67

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Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-37I	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
3 Laborers	$45.60	$1094.40	$67.90	$1629.60	$50.71	$75.56
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
2 Truck Drivers (light)	50.40	806.40	75.30	1204.80		
4 Barrels w/ Flasher		17.23		18.95		
1 Concrete Saw		115.94		127.54		
1 Rotary Hammer Drill		54.02		59.42		
1 Hammer Drill Bit		26.18		28.80		
1 Air Compressor, 60 cfm		158.26		174.09		
1 -50' Air Hose, 3/4"		7.40		8.15		
1 Spade (Chipper)		8.80		9.68		
1 Loader, Skid Steer, 30 H.P.		184.81		203.29		
1 Conc. Hammer Attach.		122.73		135.00		
1 Concrete Mixer, 10 C.F.		151.35		166.49		
1 Vibrating Plate, Gas, 18"		32.77		36.05		
2 Flatbed Trucks, Gas, 1.5 Ton		406.50		447.15	22.96	25.26
56 L.H., Daily Totals		$4126.00		$5646.20	$73.68	$100.83
Crew B-37J	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$47.83	$71.21
4 Laborers	45.60	1459.20	67.90	2172.80		
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Air Compressor, 60 cfm		158.26		174.09		
1 -50' Air Hose, 3/4"		7.40		8.15		
2 Concrete Mixers, 10 C.F.		302.71		332.98		
2 Flatbed Trucks, Gas, 1.5 Ton		406.50		447.15		
1 Shot Blaster, 20"		215.77		237.34	22.72	24.99
48 L.H., Daily Totals		$3386.64		$4617.70	$70.55	$96.20
Crew B-37K	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$47.83	$71.21
4 Laborers	45.60	1459.20	67.90	2172.80		
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Air Compressor, 60 cfm		158.26		174.09		
1 -50' Air Hose, 3/4"		7.40		8.15		
2 Flatbed Trucks, Gas, 1.5 Ton		406.50		447.15		
1 Shot Blaster, 20"		215.77		237.34	16.42	18.06
48 L.H., Daily Totals		$3083.93		$4284.73	$64.25	$89.27
Crew B-38	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$51.24	$76.26
2 Laborers	45.60	729.60	67.90	1086.40		
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
1 Backhoe Loader, 48 H.P.		221.72		243.89		
1 Hyd. Hammer (1200 lb.)		182.89		201.18		
1 F.E. Loader, W.M., 4 C.Y.		782.70		860.97		
1 Pvmt. Rem. Bucket		65.86		72.45	31.33	34.46
40 L.H., Daily Totals		$3302.77		$4428.89	$82.57	$110.72
Crew B-39	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$47.83	$71.21
4 Laborers	45.60	1459.20	67.90	2172.80		
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Air Compressor, 250 cfm		208.68		229.55		
2 Breakers, Pavement, 60 lb.		110.96		122.06		
2 -50' Air Hoses, 1.5"		47.19		51.91	7.64	8.41
48 L.H., Daily Totals		$2662.83		$3821.52	$55.48	$79.61

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-40	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Pile Driver Foreman (outside)	$60.20	$481.60	$93.15	$745.20	$59.23	$90.30
4 Pile Drivers	58.20	1862.40	90.05	2881.60		
2 Equip. Oper. (crane)	63.40	1014.40	94.35	1509.60		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Crawler Crane, 40 Ton		1267.52		1394.27		
1 Vibratory Hammer & Gen.		2364.52		2600.97	56.75	62.43
64 L.H., Daily Totals		$7422.44		$9774.44	$115.98	$152.73
Crew B-40B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$50.30	$74.88
3 Laborers	45.60	1094.40	67.90	1629.60		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Lattice Boom Crane, 40 Ton		2198.13		2417.95	45.79	50.37
48 L.H., Daily Totals		$4612.53		$6011.95	$96.09	$125.25
Crew B-41	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$47.15	$70.20
4 Laborers	45.60	1459.20	67.90	2172.80		
.25 Equip. Oper. (crane)	63.40	126.80	94.35	188.70		
.25 Equip. Oper. (oiler)	54.00	108.00	80.35	160.70		
.25 Crawler Crane, 40 Ton		316.88		348.57	7.20	7.92
44 L.H., Daily Totals		$2391.68		$3437.57	$54.36	$78.13
Crew B-42	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$51.17	$76.57
4 Laborers	45.60	1459.20	67.90	2172.80		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Welder	61.95	495.60	95.40	763.20		
1 Hyd. Crane, 25 Ton		603.44		663.78		
1 Welder, Gas Engine, 300 amp		152.88		168.16		
1 Horz. Boring Csg. Mch.		337.69		371.46	17.09	18.80
64 L.H., Daily Totals		$4368.80		$6103.80	$68.26	$95.37
Crew B-43	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$50.30	$74.88
3 Laborers	45.60	1094.40	67.90	1629.60		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Drill Rig, Truck-Mounted		785.11		863.62	16.36	17.99
48 L.H., Daily Totals		$3199.51		$4457.62	$66.66	$92.87
Crew B-44	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Pile Driver Foreman (outside)	$60.20	$481.60	$93.15	$745.20	$58.17	$88.74
4 Pile Drivers	58.20	1862.40	90.05	2881.60		
2 Equip. Oper. (crane)	63.40	1014.40	94.35	1509.60		
1 Laborer	45.60	364.80	67.90	543.20		
1 Crawler Crane, 40 Ton		1267.52		1394.27		
1 Lead, 60' High		219.12		241.03		
1 Hammer, Diesel, 15K ft.-lbs.		645.54		710.10	33.32	36.65
64 L.H., Daily Totals		$5855.38		$8025.00	$91.49	$125.39
Crew B-45	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$56.73	$84.55
1 Truck Driver (heavy)	53.05	424.40	79.25	634.00		
1 Dist. Tanker, 3000 Gallon		344.69		379.16		
1 Truck Tractor, 6x4, 380 H.P.		512.66		563.93	53.58	58.94
16 L.H., Daily Totals		$1764.95		$2295.89	$110.31	$143.49

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-46	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Pile Driver Foreman (outside)	$60.20	$481.60	$93.15	$745.20	$52.23	$79.49
2 Pile Drivers	58.20	931.20	90.05	1440.80		
3 Laborers	45.60	1094.40	67.90	1629.60		
1 Chain Saw, Gas, 36" Long		43.10		47.42	.90	.99
48 L.H., Daily Totals		$2550.30		$3863.02	$53.13	$80.48
Crew B-47	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Blast Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$50.07	$74.52
1 Driller	45.60	364.80	67.90	543.20		
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Air Track Drill, 4"		1160.28		1276.31		
1 Air Compressor, 600 cfm		437.66		481.43		
2 -50' Air Hoses, 3"		79.46		87.40	69.89	76.88
24 L.H., Daily Totals		$2879.01		$3633.55	$119.96	$151.40
Crew B-47A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Drilling Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$55.00	$81.85
1 Equip. Oper. (heavy)	63.40	507.20	94.35	754.80		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Air Track Drill, 5"		1160.28		1276.31	48.35	53.18
24 L.H., Daily Totals		$2480.28		$3240.71	$103.35	$135.03
Crew B-47C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$51.30	$76.35
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Air Compressor, 750 C.F.M.		613.58		674.94		
2 -50' Air Hoses, 3"		79.46		87.40		
1 Air Track Drill, 4"		1160.28		1276.31	115.83	127.42
16 L.H., Daily Totals		$2674.12		$3260.26	$167.13	$203.77
Crew B-47E	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$46.10	$68.64
3 Laborers	45.60	1094.40	67.90	1629.60		
1 Flatbed Truck, Gas, 3 Ton		877.96		965.75	27.44	30.18
32 L.H., Daily Totals		$2353.16		$3162.15	$73.54	$98.82
Crew B-47G	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$48.95	$72.86
2 Laborers	45.60	729.60	67.90	1086.40		
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Air Track Drill, 4"		1160.28		1276.31		
1 Air Compressor, 600 cfm		437.66		481.43		
2 -50' Air Hoses, 3"		79.46		87.40		
1 Gunite Pump Rig		331.07		364.17	62.76	69.04
32 L.H., Daily Totals		$3574.87		$4540.92	$111.71	$141.90
Crew B-47H	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Skilled Worker Foreman (out)	$60.90	$487.20	$91.50	$732.00	$59.40	$89.21
3 Skilled Workers	58.90	1413.60	88.45	2122.80		
1 Flatbed Truck, Gas, 3 Ton		877.96		965.75	27.44	30.18
32 L.H., Daily Totals		$2778.76		$3820.55	$86.84	$119.39

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-48	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$51.26	$76.29
3 Laborers	45.60	1094.40	67.90	1629.60		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Centr. Water Pump, 6"		240.92		265.01		
1 -20' Suction Hose, 6"		26.41		29.05		
1 -50' Discharge Hose, 6"		18.77		20.65		
1 Drill Rig, Truck-Mounted		785.11		863.62	19.13	21.04
56 L.H., Daily Totals		$3941.60		$5450.72	$70.39	$97.33
Crew B-49	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$53.87	$80.80
3 Laborers	45.60	1094.40	67.90	1629.60		
2 Equip. Oper. (crane)	63.40	1014.40	94.35	1509.60		
2 Equip. Oper. (oilers)	54.00	864.00	80.35	1285.60		
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
2 Pile Drivers	58.20	931.20	90.05	1440.80		
1 Hyd. Crane, 25 Ton		603.44		663.78		
1 Centr. Water Pump, 6"		240.92		265.01		
1 -20' Suction Hose, 6"		26.41		29.05		
1 -50' Discharge Hose, 6"		18.77		20.65		
1 Drill Rig, Truck-Mounted		785.11		863.62	19.03	20.93
88 L.H., Daily Totals		$6415.44		$8952.90	$72.90	$101.74
Crew B-50	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Pile Driver Foremen (outside)	$60.20	$963.20	$93.15	$1490.40	$56.23	$85.67
6 Pile Drivers	58.20	2793.60	90.05	4322.40		
2 Equip. Oper. (crane)	63.40	1014.40	94.35	1509.60		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
3 Laborers	45.60	1094.40	67.90	1629.60		
1 Crawler Crane, 40 Ton		1267.52		1394.27		
1 Lead, 60' High		219.12		241.03		
1 Hammer, Diesel, 15K ft.-lbs.		645.54		710.10		
1 Air Compressor, 600 cfm		437.66		481.43		
2 -50' Air Hoses, 3"		79.46		87.40		
1 Chain Saw, Gas, 36" Long		43.10		47.42	24.04	26.44
112 L.H., Daily Totals		$8990.01		$12556.45	$80.27	$112.11
Crew B-51	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$46.73	$69.63
4 Laborers	45.60	1459.20	67.90	2172.80		
1 Truck Driver (light)	50.40	403.20	75.30	602.40		
1 Flatbed Truck, Gas, 1.5 Ton		203.25		223.57	4.23	4.66
48 L.H., Daily Totals		$2446.45		$3565.57	$50.97	$74.28
Crew B-52	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Carpenter Foreman (outside)	$58.30	$466.40	$86.80	$694.40	$52.16	$77.47
1 Carpenter	56.30	450.40	83.80	670.40		
3 Laborers	45.60	1094.40	67.90	1629.60		
1 Cement Finisher	53.15	425.20	77.75	622.00		
.5 Rodman (reinf.)	60.70	242.80	90.65	362.60		
.5 Equip. Oper. (medium)	60.40	241.60	89.85	359.40		
.5 Crawler Loader, 3 C.Y.		590.46		649.50	10.54	11.60
56 L.H., Daily Totals		$3511.26		$4987.90	$62.70	$89.07
Crew B-53	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (light)	$57.00	$456.00	$84.80	$678.40	$57.00	$84.80
1 Trencher, Chain, 12 H.P.		163.91		180.30	20.49	22.54
8 L.H., Daily Totals		$619.91		$858.70	$77.49	$107.34

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Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-54	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (light)	$57.00	$456.00	$84.80	$678.40	$57.00	$84.80
1 Trencher, Chain, 40 H.P.		465.06		511.57	58.13	63.95
8 L.H., Daily Totals		$921.06		$1189.97	$115.13	$148.75
Crew B-54A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
.17 Labor Foreman (outside)	$47.60	$64.74	$70.85	$96.36	$58.54	$87.09
1 Equipment Operator (med.)	60.40	483.20	89.85	718.80		
1 Wheel Trencher 67 H.P.		1172.66		1289.93	125.28	137.81
9.36 L.H., Daily Totals		$1720.60		$2105.09	$183.82	$224.90
Crew B-54B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
.25 Labor Foreman (outside)	$47.60	$95.20	$70.85	$141.70	$57.84	$86.05
1 Equipment Operator (med.)	60.40	483.20	89.85	718.80		
1 Wheel Trencher, 150 H.P.		1271.72		1398.89	127.17	139.89
10 L.H., Daily Totals		$1850.12		$2259.39	$185.01	$225.94
Crew B-54C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$53.00	$78.88
1 Equipment Operator (med.)	60.40	483.20	89.85	718.80		
1 Wheel Trencher, 67 H.P.		1172.66		1289.93	73.29	80.62
16 L.H., Daily Totals		$2020.66		$2551.93	$126.29	$159.50
Crew B-54D	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$53.00	$78.88
1 Equipment Operator (med.)	60.40	483.20	89.85	718.80		
1 Rock Trencher, 6" Width		443.83		488.21	27.74	30.51
16 L.H., Daily Totals		$1291.83		$1750.21	$80.74	$109.39
Crew B-54E	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$53.00	$78.88
1 Equipment Operator (med.)	60.40	483.20	89.85	718.80		
1 Rock Trencher, 18" Width		1038.46		1142.30	64.90	71.39
16 L.H., Daily Totals		$1886.46		$2404.30	$117.90	$150.27
Crew B-55	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Laborers	$45.60	$729.60	$67.90	$1086.40	$47.20	$70.37
1 Truck Driver (light)	50.40	403.20	75.30	602.40		
1 Truck-Mounted Earth Auger		402.88		443.17		
1 Flatbed Truck, Gas, 3 Ton		877.96		965.75	53.37	58.71
24 L.H., Daily Totals		$2413.64		$3097.72	$100.57	$129.07
Crew B-56	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$51.30	$76.35
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Air Track Drill, 4"		1160.28		1276.31		
1 Air Compressor, 600 cfm		437.66		481.43		
1 -50' Air Hose, 3"		39.73		43.70	102.35	112.59
16 L.H., Daily Totals		$2458.48		$3023.04	$153.65	$188.94

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-57	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$52.20	$77.69
2 Laborers	45.60	729.60	67.90	1086.40		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Crawler Crane, 25 Ton		1185.81		1304.39		
1 Clamshell Bucket, 1 C.Y.		71.59		78.75		
1 Centr. Water Pump, 6"		240.92		265.01		
1 -20' Suction Hose, 6"		26.41		29.05		
20 -50' Discharge Hoses, 6"		375.41		412.95	39.59	43.54
48 L.H., Daily Totals		$4405.73		$5819.34	$91.79	$121.24
Crew B-58	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Laborers	$45.60	$729.60	$67.90	$1086.40	$49.40	$73.53
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Backhoe Loader, 48 H.P.		221.72		243.89		
1 Small Helicopter, w/ Pilot		2165.30		2381.83	99.46	109.40
24 L.H., Daily Totals		$3572.61		$4390.51	$148.86	$182.94
Crew B-59	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Truck Driver (heavy)	$53.05	$424.40	$79.25	$634.00	$53.05	$79.25
1 Truck Tractor, 220 H.P.		319.23		351.15		
1 Water Tank Trailer, 5000 Gal.		158.82		174.70	59.76	65.73
8 L.H., Daily Totals		$902.45		$1159.85	$112.81	$144.98
Crew B-59A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Laborers	$45.60	$729.60	$67.90	$1086.40	$48.08	$71.68
1 Truck Driver (heavy)	53.05	424.40	79.25	634.00		
1 Water Tank Trailer, 5000 Gal.		158.82		174.70		
1 Truck Tractor, 220 H.P.		319.23		351.15	19.92	21.91
24 L.H., Daily Totals		$1632.05		$2246.25	$68.00	$93.59
Crew B-60	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$52.89	$78.71
2 Laborers	45.60	729.60	67.90	1086.40		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
2 Equip. Oper. (light)	57.00	912.00	84.80	1356.80		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Crawler Crane, 40 Ton		1267.52		1394.27		
1 Lead, 60' High		219.12		241.03		
1 Hammer, Diesel, 15K ft.-lbs.		645.54		710.10		
1 Backhoe Loader, 48 H.P.		221.72		243.89	42.03	46.24
56 L.H., Daily Totals		$5315.50		$6996.89	$94.92	$124.94
Crew B-61	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$48.28	$71.87
3 Laborers	45.60	1094.40	67.90	1629.60		
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Cement Mixer, 2 C.Y.		115.40		126.94		
1 Air Compressor, 160 cfm		218.71		240.59	8.35	9.19
40 L.H., Daily Totals		$2265.31		$3242.32	$56.63	$81.06
Crew B-62	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Laborers	$45.60	$729.60	$67.90	$1086.40	$49.40	$73.53
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Loader, Skid Steer, 30 H.P.		184.81		203.29	7.70	8.47
24 L.H., Daily Totals		$1370.41		$1968.09	$57.10	$82.00

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-62A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Laborers	$45.60	$729.60	$67.90	$1086.40	$49.40	$73.53
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Loader, Skid Steer, 30 H.P.		184.81		203.29		
1 Trencher Attachment		68.63		75.49	10.56	11.62
24 L.H., Daily Totals		$1439.04		$2043.58	$59.96	$85.15
Crew B-63	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
4 Laborers	$45.60	$1459.20	$67.90	$2172.80	$47.88	$71.28
1 Equip. Oper (light)	57.00	456.00	84.80	678.40		
1 Loader, Skid Steer, 30 H.P.		184.81		203.29	4.62	5.08
40 L.H., Daily Totals		$2100.01		$3054.49	$52.50	$76.36
Crew B-63B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (inside)	$46.10	$368.80	$68.65	$549.20	$48.58	$72.31
2 Laborers	45.60	729.60	67.90	1086.40		
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Loader, Skid Steer, 78 H.P.		460.30		506.33	14.38	15.82
32 L.H., Daily Totals		$2014.70		$2820.33	$62.96	$88.14
Crew B-64	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$48.00	$71.60
1 Truck Driver (light)	50.40	403.20	75.30	602.40		
1 Power Mulcher (small)		207.17		227.89		
1 Flatbed Truck, Gas, 1.5 Ton		203.25		223.57	25.65	28.22
16 L.H., Daily Totals		$1178.42		$1597.07	$73.65	$99.82
Crew B-65	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$48.00	$71.60
1 Truck Driver (light)	50.40	403.20	75.30	602.40		
1 Power Mulcher (Large)		355.38		390.92		
1 Flatbed Truck, Gas, 1.5 Ton		203.25		223.57	34.91	38.41
16 L.H., Daily Totals		$1326.63		$1760.09	$82.91	$110.01
Crew B-66	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (light)	$57.00	$456.00	$84.80	$678.40	$57.00	$84.80
1 Loader-Backhoe, 40 H.P.		275.82		303.40	34.48	37.93
8 L.H., Daily Totals		$731.82		$981.80	$91.48	$122.73
Crew B-67	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Millwright	$60.55	$484.40	$87.50	$700.00	$58.77	$86.15
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 R.T. Forklift, 5,000 Lb., diesel		280.85		308.94	17.55	19.31
16 L.H., Daily Totals		$1221.25		$1687.34	$76.33	$105.46
Crew B-67B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Millwright Foreman (inside)	$61.05	$488.40	$88.20	$705.60	$60.80	$87.85
1 Millwright	60.55	484.40	87.50	700.00		
16 L.H., Daily Totals		$972.80		$1405.60	$60.80	$87.85
Crew B-68	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Millwrights	$60.55	$968.80	$87.50	$1400.00	$59.37	$86.60
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 R.T. Forklift, 5,000 Lb., diesel		280.85		308.94	11.70	12.87
24 L.H., Daily Totals		$1705.65		$2387.34	$71.07	$99.47
Crew B-68A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Millwright Foreman (inside)	$61.05	$488.40	$88.20	$705.60	$60.72	$87.73
2 Millwrights	60.55	968.80	87.50	1400.00		
1 Forklift, Smooth Floor, 8,000 Lb.		292.16		321.38	12.17	13.39
24 L.H., Daily Totals		$1749.36		$2426.98	$72.89	$101.12

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hou	
Crew B-68B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Millwright Foreman (inside)	$61.05	$488.40	$88.20	$705.60	$64.88	$95.46
2 Millwrights	60.55	968.80	87.50	1400.00		
2 Electricians	66.20	1059.20	98.40	1574.40		
2 Plumbers	69.80	1116.80	104.10	1665.60		
1 R.T. Forklift, 5,000 Lb., gas		291.20		320.32	5.20	5.72
56 L.H., Daily Totals		$3924.40		$5665.92	$70.08	$101.18
Crew B-68C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Millwright Foreman (inside)	$61.05	$488.40	$88.20	$705.60	$64.40	$94.55
1 Millwright	60.55	484.40	87.50	700.00		
1 Electrician	66 20	529.60	98.40	787.20		
1 Plumber	69.80	558.40	104.10	832.80		
1 R.T. Forklift, 5,000 Lb., gas		291.20		320.32	9.10	10.01
32 L.H., Daily Totals		$2352.00		$3345.92	$73.50	$104.56
Crew B-68D	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (inside)	$46.10	$368.80	$68.65	$549.20	$49.57	$73.78
1 Laborer	45.60	364.80	67.90	543.20		
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 R.T. Forklift, 5,000 Lb., gas		291.20		320.32	12.13	13.35
24 L.H., Daily Totals		$1480.80		$2091.12	$61.70	$87.13
Crew B-68E	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Struc. Steel Foreman (inside)	$62.35	$498.80	$96.05	$768.40	$61.97	$95.44
3 Struc. Steel Workers	61.85	1484.40	95.25	2286.00		
1 Welder	61.95	495.60	95.40	763.20		
1 Forklift, Smooth Floor, 8,000 Lb.		292.16		321.38	7.30	8.03
40 L.H., Daily Totals		$2770.96		$4138.98	$69.27	$103.47
Crew B-68F	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Skilled Worker Foreman (out)	$60.90	$487.20	$91.50	$732.00	$59.57	$89.47
2 Skilled Workers	58.90	942.40	88.45	1415.20		
1 R.T. Forklift, 5,000 Lb., gas		291.20		320.32	12.13	13.35
24 L.H., Daily Totals		$1720.80		$2467.52	$71.70	$102.81
Crew B-68G	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Structural Steel Workers	$61.85	$989.60	$95.25	$1524.00	$61.85	$95.25
1 R.T. Forklift, 5,000 Lb., gas		291.20		320.32	18.20	20.02
16 L.H., Daily Totals		$1280.80		$1844.32	$80.05	$115.27
Crew B-69	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$50.30	$74.88
3 Laborers	45.60	1094.40	67.90	1629.60		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Hyd. Crane, 80 Ton		1502.22		1652.44	31.30	34.43
48 L.H., Daily Totals		$3916.62		$5246.44	$81.60	$109.30
Crew B-69A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$49.66	$73.69
3 Laborers	45.60	1094.40	67.90	1629.60		
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
1 Concrete Finisher	53.15	425.20	77.75	622.00		
1 Curb/Gutter Paver, 2-Track		1268.80		1395.68	26.43	29.08
48 L.H., Daily Totals		$3652.40		$4932.88	$76.09	$102.77

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Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-69B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$49.66	$73.69
3 Laborers	45.60	1094.40	67.90	1629.60		
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
1 Cement Finisher	53.15	425.20	77.75	622.00		
1 Curb/Gutter Paver, 4-Track		825.78		908.36	17.20	18.92
48 L.H., Daily Totals		$3209.38		$4445.56	$66.86	$92.62
Crew B-70	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$52.23	$77.73
3 Laborers	45.60	1094.40	67.90	1629.60		
3 Equip. Oper. (medium)	60.40	1449.60	89.85	2156.40		
1 Grader, 30,000 Lbs.		1108.49		1219.34		
1 Ripper, Beam & 1 Shank		94.41		103.85		
1 Road Sweeper, S.P., 8' wide		745.48		820.02		
1 F.E. Loader, W.M., 1.5 C.Y.		454.98		500.48	42.92	47.21
56 L.H., Daily Totals		$5328.15		$6996.49	$95.15	$124.94
Crew B-70A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$57.44	$85.46
4 Equip. Oper. (medium)	60.40	1932.80	89.85	2875.20		
1 Grader, 40,000 Lbs.		1256.80		1382.48		
1 F.E. Loader, W.M., 2.5 C.Y.		657.89		723.68		
1 Dozer, 80 H.P.		417.40		459.14		
1 Roller, Pneum. Whl., 12 Ton		361.08		397.18	67.33	74.06
40 L.H., Daily Totals		$4990.77		$6380.89	$124.77	$159.52
Crew B-71	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$52.23	$77.73
3 Laborers	45.60	1094.40	67.90	1629.60		
3 Equip. Oper. (medium)	60.40	1449.60	89.85	2156.40		
1 Pvmt. Profiler, 750 H.P.		3565.85		3922.43		
1 Road Sweeper, S.P., 8' wide		745.48		820.02		
1 F.E. Loader, W.M., 1.5 C.Y.		454.98		500.48	85.11	93.62
56 L.H., Daily Totals		$7691.10		$9595.73	$137.34	$171.35
Crew B-72	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$53.25	$79.24
3 Laborers	45.60	1094.40	67.90	1629.60		
4 Equip. Oper. (medium)	60.40	1932.80	89.85	2875.20		
1 Pvmt. Profiler, 750 H.P.		3565.85		3922.43		
1 Hammermill, 250 H.P.		879.87		967.85		
1 Windrow Loader		1507.52		1658.28		
1 Mix Paver, 165 H.P.		2239.34		2463.27		
1 Roller, Pneum. Whl., 12 Ton		361.08		397.18	133.65	147.02
64 L.H., Daily Totals		$11961.65		$14480.61	$186.90	$226.26
Crew B-73	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$55.10	$81.99
2 Laborers	45.60	729.60	67.90	1086.40		
5 Equip. Oper. (medium)	60.40	2416.00	89.85	3594.00		
1 Road Mixer, 310 H.P.		1979.64		2177.61		
1 Tandem Roller, 10 Ton		254.53		279.98		
1 Hammermill, 250 H.P.		879.87		967.85		
1 Grader, 30,000 Lbs.		1108.49		1219.34		
.5 F.E. Loader, W.M., 1.5 C.Y.		227.49		250.24		
.5 Truck Tractor, 220 H.P.		159.61		175.58		
.5 Water Tank Trailer, 5000 Gal.		79.41		87.35	73.27	80.59
64 L.H., Daily Totals		$8215.44		$10405.14	$128.37	$162.58

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-74	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$55.11	$82.08
1 Laborer	45.60	364.80	67.90	543.20		
4 Equip. Oper. (medium)	60.40	1932.80	89.85	2875.20		
2 Truck Drivers (heavy)	53.05	848.80	79.25	1268.00		
1 Grader, 30,000 Lbs.		1108.49		1219.34		
1 Ripper, Beam & 1 Shank		94.41		103.85		
2 Stabilizers, 310 H.P.		2889.92		3178.91		
1 Flatbed Truck, Gas, 3 Ton		877.96		965.75		
1 Chem. Spreader, Towed		88.12		96.93		
1 Roller, Vibratory, 25 Ton		693.41		762.76		
1 Water Tank Trailer, 5000 Gal.		158.82		174.70		
1 Truck Tractor, 220 H.P.		319.23		351.15	97.35	107.08
64 L.H., Daily Totals		$9757.55		$12106.59	$152.46	$189.17
Crew B-75	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$55.41	$82.49
1 Laborer	45.60	364.80	67.90	543.20		
4 Equip. Oper. (medium)	60.40	1932.80	89.85	2875.20		
1 Truck Driver (heavy)	53.05	424.40	79.25	634.00		
1 Grader, 30,000 Lbs.		1108.49		1219.34		
1 Ripper, Beam & 1 Shank		94.41		103.85		
2 Stabilizers, 310 H.P.		2889.92		3178.91		
1 Dist. Tanker, 3000 Gallon		344.69		379.16		
1 Truck Tractor, 6x4, 380 H.P.		512.66		563.93		
1 Roller, Vibratory, 25 Ton		693.41		762.76	100.78	110.86
56 L.H., Daily Totals		$8746.38		$10827.14	$156.19	$193.34
Crew B-76	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Dock Builder Foreman (outside)	$60.20	$481.60	$93.15	$745.20	$59.11	$90.27
5 Dock Builders	58.20	2328.00	90.05	3602.00		
2 Equip. Oper. (crane)	63.40	1014.40	94.35	1509.60		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Crawler Crane, 50 Ton		1586.15		1744.77		
1 Barge, 400 Ton		898.90		988.79		
1 Hammer, Diesel, 15K ft.-lbs.		645.54		710.10		
1 Lead, 60' High		219.12		241.03		
1 Air Compressor, 600 cfm		437.66		481.43		
2 -50' Air Hoses, 3"		79.46		87.40	53.71	59.08
72 L.H., Daily Totals		$8122.84		$10753.12	$112.82	$149.35
Crew B-76A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$49.13	$73.13
5 Laborers	45.60	1824.00	67.90	2716.00		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Crawler Crane, 50 Ton		1586.15		1744.77		
1 Barge, 400 Ton		898.90		988.79	38.83	42.71
64 L.H., Daily Totals		$5629.05		$7413.96	$87.95	$115.84
Crew B-77	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$46.96	$69.97
3 Laborers	45.60	1094.40	67.90	1629.60		
1 Truck Driver (light)	50.40	403.20	75.30	602.40		
1 Crack Cleaner, 25 H.P.		54.53		59.98		
1 Crack Filler, Trailer Mtd.		176.12		193.73		
1 Flatbed Truck, Gas, 3 Ton		877.96		965.75	27.72	30.49
40 L.H., Daily Totals		$2987.01		$4018.27	$74.68	$100.46

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-78	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$46.73	$69.63
4 Laborers	45.60	1459.20	67.90	2172.80		
1 Truck Driver (light)	50.40	403.20	75.30	602.40		
1 Paint Striper, S.P., 40 Gallon		132.19		145.41		
1 Flatbed Truck, Gas, 3 Ton		877.96		965.75		
1 Pickup Truck, 3/4 Ton		115.08		126.59	23.44	25.79
48 L.H., Daily Totals		$3368.43		$4579.75	$70.18	$95.41
Crew B-78A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (light)	$57.00	$456.00	$84.80	$678.40	$57.00	$84.80
1 Line Rem. (Metal Balls) 115 H.P.		1026.71		1129.39	128.34	141.17
8 L.H., Daily Totals		$1482.71		$1807.79	$185.34	$225.97
Crew B-78B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Laborers	$45.60	$729.60	$67.90	$1086.40	$46.87	$69.78
.25 Equip. Oper. (light)	57.00	114.00	84.80	169.60		
1 Pickup Truck, 3/4 Ton		115.08		126.59		
1 Line Rem.,11 H.P.,Walk Behind		118.49		130.34		
.25 Road Sweeper, S.P., 8' wide		186.37		205.01	23.33	25.66
18 L.H., Daily Totals		$1263.54		$1717.94	$70.20	$95.44
Crew B-78C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$46.73	$69.63
4 Laborers	45.60	1459.20	67.90	2172.80		
1 Truck Driver (light)	50.40	403.20	75.30	602.40		
1 Paint Striper, T.M., 120 Gal.		618.71		680.58		
1 Flatbed Truck, Gas, 3 Ton		877.96		965.75		
1 Pickup Truck, 3/4 Ton		115.08		126.59	33.58	36.94
48 L.H., Daily Totals		$3854.95		$5114.92	$80.31	$106.56
Crew B-78D	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Labor Foremen (outside)	$47.60	$761.60	$70.85	$1133.60	$46.48	$69.23
7 Laborers	45.60	2553.60	67.90	3802.40		
1 Truck Driver (light)	50.40	403.20	75.30	602.40		
1 Paint Striper, T.M., 120 Gal.		618.71		680.58		
1 Flatbed Truck, Gas, 3 Ton		877.96		965.75		
3 Pickup Trucks, 3/4 Ton		345.24		379.77		
1 Air Compressor, 60 cfm		158.26		174.09		
1 -50' Air Hose, 3/4"		7.40		8.15		
1 Breaker, Pavement, 60 lb.		55.48		61.03	25.79	28.37
80 L.H., Daily Totals		$5781.46		$7807.76	$72.27	$97.60
Crew B-78E	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Labor Foremen (outside)	$47.60	$761.60	$70.85	$1133.60	$46.33	$69.01
9 Laborers	45.60	3283.20	67.90	4888.80		
1 Truck Driver (light)	50.40	403.20	75.30	602.40		
1 Paint Striper, T.M., 120 Gal.		618.71		680.58		
1 Flatbed Truck, Gas, 3 Ton		877.96		965.75		
4 Pickup Trucks, 3/4 Ton		460.33		506.36		
2 Air Compressors, 60 cfm		316.52		348.18		
2 -50' Air Hoses, 3/4"		14.81		16.29		
2 Breakers, Pavement, 60 lb.		110.96		122.06	24.99	27.49
96 L.H., Daily Totals		$6847.29		$9264.02	$71.33	$96.50

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-78F	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Labor Foremen (outside)	$47.60	$761.60	$70.85	$1133.60	$46.23	$68.85
11 Laborers	45.60	4012.80	67.90	5975.20		
1 Truck Driver (light)	50.40	403.20	75.30	602.40		
1 Paint Striper, T.M., 120 Gal.		618.71		680.58		
1 Flatbed Truck, Gas, 3 Ton		877.96		965.75		
7 Pickup Trucks, 3/4 Ton		805.57		886.13		
3 Air Compressors, 60 cfm		474.79		522.26		
3 -50' Air Hoses, 3/4"		22.21		24.44		
3 Breakers, Pavement, 60 lb.		166.45		183.09	26.48	29.13
112 L.H., Daily Totals		$8143.28		$10973.45	$72.71	$97.98
Crew B-79	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$46.96	$69.97
3 Laborers	45.60	1094.40	67.90	1629.60		
1 Truck Driver (light)	50.40	403.20	75.30	602.40		
1 Paint Striper, T.M., 120 Gal.		618.71		680.58		
1 Heating Kettle, 115 Gallon		110.18		121.20		
1 Flatbed Truck, Gas, 3 Ton		877.96		965.75		
2 Pickup Trucks, 3/4 Ton		230.16		253.18	45.93	50.52
40 L.H., Daily Totals		$3715.41		$4819.51	$92.89	$120.49
Crew B-79A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1.5 Equip. Oper. (light)	$57.00	$684.00	$84.80	$1017.60	$57.00	$84.80
.5 Line Remov. (Grinder) 115 H.P.		531.21		584.33		
1 Line Rem. (Metal Balls) 115 H.P.		1026.71		1129.39	129.83	142.81
12 L.H., Daily Totals		$2241.92		$2731.31	$186.83	$227.61
Crew B-79B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$45.60	$67.90
1 Set of Gases		177.16		194.87	22.14	24.36
8 L.H., Daily Totals		$541.96		$738.07	$67.74	$92.26
Crew B-79C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$46.57	$69.38
5 Laborers	45.60	1824.00	67.90	2716.00		
1 Truck Driver (light)	50.40	403.20	75.30	602.40		
1 Paint Striper, T.M., 120 Gal.		618.71		680.58		
1 Heating Kettle, 115 Gallon		110.18		121.20		
1 Flatbed Truck, Gas, 3 Ton		877.96		965.75		
3 Pickup Trucks, 3/4 Ton		345.24		379.77		
1 Air Compressor, 60 cfm		158.26		174.09		
1 -50' Air Hose, 3/4"		7.40		8.15		
1 Breaker, Pavement, 60 lb.		55.48		61.03	38.81	42.69
56 L.H., Daily Totals		$4781.24		$6275.76	$85.38	$112.07
Crew B-79D	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Labor Foremen (outside)	$47.60	$761.60	$70.85	$1133.60	$46.70	$69.56
5 Laborers	45.60	1824.00	67.90	2716.00		
1 Truck Driver (light)	50.40	403.20	75.30	602.40		
1 Paint Striper, T.M., 120 Gal.		618.71		680.58		
1 Heating Kettle, 115 Gallon		110.18		121.20		
1 Flatbed Truck, Gas, 3 Ton		877.96		965.75		
4 Pickup Trucks, 3/4 Ton		460.33		506.36		
1 Air Compressor, 60 cfm		158.26		174.09		
1 -50' Air Hose, 3/4"		7.40		8.15		
1 Breaker, Pavement, 60 lb.		55.48		61.03	35.76	39.33
64 L.H., Daily Totals		$5277.12		$6969.15	$82.45	$108.89

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Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-79E	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Labor Foremen (outside)	$47.60	$761.60	$70.85	$1133.60	$46.48	$69.23
7 Laborers	45.60	2553.60	67.90	3802.40		
1 Truck Driver (light)	50.40	403.20	75.30	602.40		
1 Paint Striper, T.M., 120 Gal.		618.71		680.58		
1 Heating Kettle, 115 Gallon		110.18		121.20		
1 Flatbed Truck, Gas, 3 Ton		877.96		965.75		
5 Pickup Trucks, 3/4 Ton		575.41		632.95		
2 Air Compressors, 60 cfm		316.52		348.18		
2 -50' Air Hoses, 3/4"		14.81		16.29		
2 Breakers, Pavement, 60 lb.		110.96		122.06	32.81	36.09
80 L.H., Daily Totals		$6342.95		$8425.40	$79.29	$105.32
Crew B-80	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$50.15	$74.71
1 Laborer	45.60	364.80	67.90	543.20		
1 Truck Driver (light)	50.40	403.20	75.30	602.40		
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Flatbed Truck, Gas, 3 Ton		877.96		965.75		
1 Earth Auger, Truck-Mtd.		208.12		228.94	33.94	37.33
32 L.H., Daily Totals		$2690.88		$3585.49	$84.09	$112.05
Crew B-80A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
3 Laborers	$45.60	$1094.40	$67.90	$1629.60	$45.60	$67.90
1 Flatbed Truck, Gas, 3 Ton		877.96		965.75	36.58	40.24
24 L.H., Daily Totals		$1972.36		$2595.35	$82.18	$108.14
Crew B-80B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
3 Laborers	$45.60	$1094.40	$67.90	$1629.60	$48.45	$72.13
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Crane, Flatbed Mounted, 3 Ton		245.58		270.14	7.67	8.44
32 L.H., Daily Totals		$1795.98		$2578.14	$56.12	$80.57
Crew B-80C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Laborers	$45.60	$729.60	$67.90	$1086.40	$47.20	$70.37
1 Truck Driver (light)	50.40	403.20	75.30	602.40		
1 Flatbed Truck, Gas, 1.5 Ton		203.25		223.57		
1 Manual Fence Post Auger, Gas		56.37		62.01	10.82	11.90
24 L.H., Daily Totals		$1392.42		$1974.38	$58.02	$82.27
Crew B-81	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$53.02	$79.00
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
1 Truck Driver (heavy)	53.05	424.40	79.25	634.00		
1 Hydromulcher, T.M., 3000 Gal.		263.98		290.37		
1 Truck Tractor, 220 H.P.		319.23		351.15	24.30	26.73
24 L.H., Daily Totals		$1855.61		$2537.53	$77.32	$105.73
Crew B-81A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$48.00	$71.60
1 Truck Driver (light)	50.40	403.20	75.30	602.40		
1 Hydromulcher, T.M., 600 Gal.		121.48		133.62		
1 Flatbed Truck, Gas, 3 Ton		877.96		965.75	62.46	68.71
16 L.H., Daily Totals		$1767.43		$2244.98	$110.46	$140.31
Crew B-82	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$51.30	$76.35
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Horiz. Borer, 6 H.P.		190.24		209.27	11.89	13.08
16 L.H., Daily Totals		$1011.04		$1430.87	$63.19	$89.43

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-82A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Laborers	$45.60	$729.60	$67.90	$1086.40	$51.30	$76.35
2 Equip. Opers. (light)	57.00	912.00	84.80	1356.80		
2 Dump Truck, 8 C.Y., 220 H.P.		838.83		922.71		
1 Flatbed Trailer, 25 Ton		141.42		155.56		
1 Horiz. Dir. Drill, 20k lb. Thrust		560.43		616.47		
1 Mud Trailer for HDD, 1500 Gal.		320.19		352.21		
1 Pickup Truck, 4x4, 3/4 Ton		182.00		200.20		
1 Flatbed Trailer, 3 Ton		73.56		80.91		
1 Loader, Skid Steer, 78 H.P.		460.30		506.33	80.52	88.57
32 L.H., Daily Totals		$4218.32		$5277.60	$131.82	$164.92
Crew B-82B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Laborers	$45.60	$729.60	$67.90	$1086.40	$51.30	$76.35
2 Equip. Opers. (light)	57.00	912.00	84.80	1356.80		
2 Dump Truck, 8 C.Y., 220 H.P.		838.83		922.71		
1 Flatbed Trailer, 25 Ton		141.42		155.56		
1 Horiz. Dir. Drill, 30k lb. Thrust		666.98		733.67		
1 Mud Trailer for HDD, 1500 Gal.		320.19		352.21		
1 Pickup Truck, 4x4, 3/4 Ton		182.00		200.20		
1 Flatbed Trailer, 3 Ton		73.56		80.91		
1 Loader, Skid Steer, 78 H.P.		460.30		506.33	83.85	92.24
32 L.H., Daily Totals		$4324.87		$5394.80	$135.15	$168.59
Crew B-82C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Laborers	$45.60	$729.60	$67.90	$1086.40	$51.30	$76.35
2 Equip. Opers. (light)	57.00	912.00	84.80	1356.80		
2 Dump Truck, 8 C.Y., 220 H.P.		838.83		922.71		
1 Flatbed Trailer, 25 Ton		141.42		155.56		
1 Horiz. Dir. Drill, 50k lb. Thrust		847.85		932.64		
1 Mud Trailer for HDD, 1500 Gal.		320.19		352.21		
1 Pickup Truck, 4x4, 3/4 Ton		182.00		200.20		
1 Flatbed Trailer, 3 Ton		73.56		80.91		
1 Loader, Skid Steer, 78 H.P.		460.30		506.33	89.50	98.45
32 L.H., Daily Totals		$4505.75		$5593.76	$140.80	$174.81
Crew B-82D	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (light)	$57.00	$456.00	$84.80	$678.40	$57.00	$84.80
1 Mud Trailer for HDD, 1500 Gal.		320.19		352.21	40.02	44.03
8 L.H., Daily Totals		$776.19		$1030.61	$97.02	$128.83
Crew B-83	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Tugboat Captain	$60.40	$483.20	$89.85	$718.80	$53.00	$78.88
1 Tugboat Hand	45.60	364.80	67.90	543.20		
1 Tugboat, 250 H.P.		745.07		819.58	46.57	51.22
16 L.H., Daily Totals		$1593.07		$2081.58	$99.57	$130.10
Crew B-84	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$60.40	$89.85
1 Rotary Mower/Tractor		382.30		420.53	47.79	52.57
8 L.H., Daily Totals		$865.50		$1139.33	$108.19	$142.42
Crew B-85	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
3 Laborers	$45.60	$1094.40	$67.90	$1629.60	$50.05	$74.56
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
1 Truck Driver (heavy)	53.05	424.40	79.25	634.00		
1 Telescoping Boom Lift, to 80'		399.18		439.10		
1 Brush Chipper, 12", 130 H.P.		376.37		414.01		
1 Pruning Saw, Rotary		27.36		30.10	20.07	22.08
40 L.H., Daily Totals		$2804.91		$3865.60	$70.12	$96.64

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-86	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$60.40	$89.85
1 Stump Chipper, S.P.		195.25		214.77	24.41	26.85
8 L.H., Daily Totals		$678.45		$933.57	$84.81	$116.70
Crew B-86A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$60.40	$89.85
1 Grader, 30,000 Lbs.		1108.49		1219.34	138.56	152.42
8 L.H., Daily Totals		$1591.69		$1938.14	$198.96	$242.27
Crew B-86B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$60.40	$89.85
1 Dozer, 200 H.P.		1567.46		1724.21	195.93	215.53
8 L.H., Daily Totals		$2050.66		$2443.01	$256.33	$305.38
Crew B-87	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$57.44	$85.46
4 Equip. Oper. (medium)	60.40	1932.80	89.85	2875.20		
2 Feller Bunchers, 100 H.P.		1292.22		1421.44		
1 Log Chipper, 22" Tree		569.41		626.36		
1 Dozer, 105 H.P.		659.79		725.77		
1 Chain Saw, Gas, 36" Long		43.10		47.42	64.11	70.52
40 L.H., Daily Totals		$4862.13		$6239.38	$121.55	$155.98
Crew B-88	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$58.29	$86.71
6 Equip. Oper. (medium)	60.40	2899.20	89.85	4312.80		
2 Feller Bunchers, 100 H.P.		1292.22		1421.44		
1 Log Chipper, 22" Tree		569.41		626.36		
2 Log Skidders, 50 H.P.		1882.34		2070.57		
1 Dozer, 105 H.P.		659.79		725.77		
1 Chain Saw, Gas, 36" Long		43.10		47.42	79.41	87.35
56 L.H., Daily Totals		$7710.86		$9747.55	$137.69	$174.06
Crew B-89	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (light)	$57.00	$456.00	$84.80	$678.40	$53.70	$80.05
1 Truck Driver (light)	50.40	403.20	75.30	602.40		
1 Flatbed Truck, Gas, 3 Ton		877.96		965.75		
1 Concrete Saw		115.94		127.54		
1 Water Tank, 65 Gal.		106.63		117.29	68.78	75.66
16 L.H., Daily Totals		$1959.73		$2491.38	$122.48	$155.71
Crew B-89A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Skilled Worker	$58.90	$471.20	$88.45	$707.60	$52.25	$78.17
1 Laborer	45.60	364.80	67.90	543.20		
1 Core Drill (Large)		125.34		137.87	7.83	8.62
16 L.H., Daily Totals		$961.34		$1388.67	$60.08	$86.79
Crew B-89B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (light)	$57.00	$456.00	$84.80	$678.40	$53.70	$80.05
1 Truck Driver (light)	50.40	403.20	75.30	602.40		
1 Wall Saw, Hydraulic, 10 H.P.		89.13		98.04		
1 Generator, Diesel, 100 kW		537.22		590.94		
1 Water Tank, 65 Gal.		106.63		117.29		
1 Flatbed Truck, Gas, 3 Ton		877.96		965.75	100.68	110.75
16 L.H., Daily Totals		$2470.14		$3052.83	$154.38	$190.80
Crew B-89C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Cement Finisher	$53.15	$425.20	$77.75	$622.00	$53.15	$77.75
1 Masonry cut-off saw, gas		60.05		66.06	7.51	8.26
8 L.H., Daily Totals		$485.25		$688.06	$60.66	$86.01

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-90	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$50.56	$75.33
3 Laborers	45.60	1094.40	67.90	1629.60		
2 Equip. Oper. (light)	57.00	912.00	84.80	1356.80		
2 Truck Drivers (heavy)	53.05	848.80	79.25	1268.00		
1 Road Mixer, 310 H.P.		1979.64		2177.61		
1 Dist. Truck, 2000 Gal.		312.98		344.27	35.82	39.40
64 L.H., Daily Totals		$5528.62		$7343.08	$86.38	$114.74
Crew B-90A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$54.34	$80.86
2 Laborers	45.60	729.60	67.90	1086.40		
4 Equip. Oper. (medium)	60.40	1932.80	89.85	2875.20		
2 Graders, 30,000 Lbs.		2216.97		2438.67		
1 Tandem Roller, 10 Ton		254.53		279.98		
1 Roller, Pneum. Whl., 12 Ton		361.08		397.18	50.58	55.64
56 L.H., Daily Totals		$5875.78		$7644.23	$104.92	$136.50
Crew B-90B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$53.33	$79.37
2 Laborers	45.60	729.60	67.90	1086.40		
3 Equip. Oper. (medium)	60.40	1449.60	89.85	2156.40		
1 Roller, Pneum. Whl., 12 Ton		361.08		397.18		
1 Road Mixer, 310 H.P.		1979.64		2177.61	48.77	53.64
48 L.H., Daily Totals		$4900.72		$6384.39	$102.10	$133.01
Crew B-90C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$51.85	$77.25
4 Laborers	45.60	1459.20	67.90	2172.80		
3 Equip. Oper. (medium)	60.40	1449.60	89.85	2156.40		
3 Truck Drivers (heavy)	53.05	1273.20	79.25	1902.00		
3 Road Mixers, 310 H.P.		5938.93		6532.82	67.49	74.24
88 L.H., Daily Totals		$10501.73		$13330.82	$119.34	$151.49
Crew B-90D	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$50.89	$75.81
6 Laborers	45.60	2188.80	67.90	3259.20		
3 Equip. Oper. (medium)	60.40	1449.60	89.85	2156.40		
3 Truck Drivers (heavy)	53.05	1273.20	79.25	1902.00		
3 Road Mixers, 310 H.P.		5938.93		6532.82	57.11	62.82
104 L.H., Daily Totals		$11231.33		$14417.22	$107.99	$138.63
Crew B-90E	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$51.58	$76.81
4 Laborers	45.60	1459.20	67.90	2172.80		
3 Equip. Oper. (medium)	60.40	1449.60	89.85	2156.40		
1 Truck Driver (heavy)	53.05	424.40	79.25	634.00		
1 Road Mixer, 310 H.P.		1979.64		2177.61	27.50	30.24
72 L.H., Daily Totals		$5693.64		$7707.61	$79.08	$107.05
Crew B-91	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$54.18	$80.66
2 Laborers	45.60	729.60	67.90	1086.40		
4 Equip. Oper. (medium)	60.40	1932.80	89.85	2875.20		
1 Truck Driver (heavy)	53.05	424.40	79.25	634.00		
1 Dist. Tanker, 3000 Gallon		344.69		379.16		
1 Truck Tractor, 6x4, 380 H.P.		512.66		563.93		
1 Aggreg. Spreader, S.P.		883.90		972.29		
1 Roller, Pneum. Whl., 12 Ton		361.08		397.18		
1 Tandem Roller, 10 Ton		254.53		279.98	36.83	40.51
64 L.H., Daily Totals		$5824.46		$7754.94	$91.01	$121.17

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Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-91B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$53.00	$78.88
1 Equipment Oper. (med.)	60.40	483.20	89.85	718.80		
1 Road Sweeper, Vac. Assist.		903.96		994.35	56.50	62.15
16 L.H., Daily Totals		$1751.96		$2256.35	$109.50	$141.02
Crew B-91C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$48.00	$71.60
1 Truck Driver (light)	50.40	403.20	75.30	602.40		
1 Catch Basin Cleaning Truck		557.79		613.57	34.86	38.35
16 L.H., Daily Totals		$1325.79		$1759.17	$82.86	$109.95
Crew B-91D	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$52.59	$78.32
5 Laborers	45.60	1824.00	67.90	2716.00		
5 Equip. Oper. (medium)	60.40	2416.00	89.85	3594.00		
2 Truck Drivers (heavy)	53.05	848.80	79.25	1268.90		
1 Aggreg. Spreader, S.P.		883.90		972.29		
2 Truck Tractors, 6x4, 380 H.P.		1025.32		1127.85		
2 Dist. Tankers, 3000 Gallon		689.38		758.32		
2 Pavement Brushes, Towed		182.31		200.54		
2 Rollers Pneum. Whl., 12 Ton		722.15		794.37	33.68	37.05
104 L.H., Daily Totals		$8972.66		$11998.17	$86.28	$115.37
Crew B-92	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$46.10	$68.64
3 Laborers	45.60	1094.40	67.90	1629.60		
1 Crack Cleaner, 25 H.P.		54.53		59.98		
1 Air Compressor, 60 cfm		158.26		174.09		
1 Tar Kettle, T.M.		160.79		176.87		
1 Flatbed Truck, Gas, 3 Ton		877.96		965.75	39.11	43.02
32 L.H., Daily Totals		$2726.74		$3573.09	$85.21	$111.66
Crew B-93	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Equip. Oper. (medium)	$60.40	$483.20	$89.85	$718.80	$60.40	$89.85
1 Feller Buncher, 100 H.P.		646.11		710.72	80.76	88.84
8 L.H., Daily Totals		$1129.31		$1429.52	$141.16	$178.69
Crew B-94A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$45.60	$67.90
1 Diaphragm Water Pump, 2"		90.40		99.44		
1 -20' Suction Hose, 2"		3.69		4.06		
2 -50' Discharge Hoses, 2"		8.25		9.08	12.79	14.07
8 L.H., Daily Totals		$467.15		$655.78	$58.39	$81.97
Crew B-94B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$45.60	$67.90
1 Diaphragm Water Pump, 4"		109.44		120.39		
1 -20' Suction Hose, 4"		17.88		19.67		
2 -50' Discharge Hoses, 4"		26.56		29.22	19.24	21.16
8 L.H., Daily Totals		$518.69		$712.47	$64.84	$89.06
Crew B-94C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$45.60	$67.90
1 Centrifugal Water Pump, 3"		76.47		84.12		
1 -20' Suction Hose, 3"		9.06		9.97		
2 -50' Discharge Hoses, 3"		9.30		10.23	11.85	13.04
8 L.H., Daily Totals		$459.63		$647.52	$57.45	$80.94

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew B-94D	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$45.60	$67.90
1 Centr. Water Pump, 6"		240.92		265.01		
1 -20' Suction Hose, 6"		26.41		29.05		
2 -50' Discharge Hoses, 6"		37.54		41.29	38.11	41.92
8 L.H., Daily Totals		$669.66		$878.55	$83.71	$109.82
Crew C-1	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
3 Carpenters	$56.30	$1351.20	$83.80	$2011.20	$53.63	$79.83
1 Laborer	45.60	364.80	67.90	543.20		
32 L.H., Daily Totals		$1716.00		$2554.40	$53.63	$79.83
Crew C-2	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Carpenter Foreman (outside)	$58.30	$466.40	$86.80	$694.40	$54.85	$81.65
4 Carpenters	56.30	1801.60	83.80	2681.60		
1 Laborer	45.60	364.80	67.90	543.20		
48 L.H., Daily Totals		$2632.80		$3919.20	$54.85	$81.65
Crew C-2A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Carpenter Foreman (outside)	$58.30	$466.40	$86.80	$694.40	$54.33	$80.64
3 Carpenters	56.30	1351.20	83.80	2011.20		
1 Cement Finisher	53.15	425.20	77.75	622.00		
1 Laborer	45.60	364.80	67.90	543.20		
48 L.H., Daily Totals		$2607.60		$3870.80	$54.33	$80.64
Crew C-3	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Rodman Foreman (outside)	$62.70	$501.60	$93.65	$749.20	$56.71	$84.61
4 Rodmen (reinf.)	60.70	1942.40	90.65	2900.80		
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
2 Laborers	45.60	729.60	67.90	1086.40		
3 Stressing Equipment		58.72		64.60		
.5 Grouting Equipment		127.30		140.03	2.91	3.20
64 L.H., Daily Totals		$3815.62		$5619.43	$59.62	$87.80
Crew C-4	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Rodman Foreman (outside)	$62.70	$501.60	$93.65	$749.20	$61.20	$91.40
3 Rodmen (reinf.)	60.70	1456.80	90.65	2175.60		
3 Stressing Equipment		58.72		64.60	1.84	2.02
32 L.H., Daily Totals		$2017.12		$2989.40	$63.04	$93.42
Crew C-4A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Rodmen (reinf.)	$60.70	$971.20	$90.65	$1450.40	$60.70	$90.65
4 Stressing Equipment		78.30		86.13	4.89	5.38
16 L.H., Daily Totals		$1049.50		$1536.53	$65.59	$96.03
Crew C-5	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Rodman Foreman (outside)	$62.70	$501.60	$93.65	$749.20	$60.41	$90.14
4 Rodmen (reinf.)	60.70	1942.40	90.65	2900.80		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Hyd. Crane, 25 Ton		603.44		663.78	10.78	11.85
56 L.H., Daily Totals		$3986.64		$5711.38	$71.19	$101.99
Crew C-6	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$47.19	$70.03
4 Laborers	45.60	1459.20	67.90	2172.80		
1 Cement Finisher	53.15	425.20	77.75	622.00		
2 Gas Engine Vibrators		55.74		61.31	1.16	1.28
48 L.H., Daily Totals		$2320.94		$3422.91	$48.35	$71.31

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew C-6A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Cement Finishers	$53.15	$850.40	$77.75	$1244.00	$53.15	$77.75
1 Concrete Vibrator, Elec, 2 HP		47.42		52.16	2.96	3.26
16 L.H., Daily Totals		$897.82		$1296.16	$56.11	$81.01
Crew C-7	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$49.24	$73.14
5 Laborers	45.60	1824.00	67.90	2716.00		
1 Cement Finisher	53.15	425.20	77.75	622.00		
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
2 Gas Engine Vibrators		55.74		61.31		
1 Concrete Bucket, 1 C.Y.		47.48		52.23		
1 Hyd. Crane, 55 Ton		1019.39		1121.33	15.59	17.15
72 L.H., Daily Totals		$4667.81		$6501.27	$64.83	$90.30
Crew C-7A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$47.71	$71.11
5 Laborers	45.60	1824.00	67.90	2716.00		
2 Truck Drivers (heavy)	53.05	848.80	79.25	1268.00		
2 Conc. Transit Mixers		1203.20		1323.52	18.80	20.68
64 L.H., Daily Totals		$4256.80		$5874.32	$66.51	$91.79
Crew C-7B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$49.13	$73.13
5 Laborers	45.60	1824.00	67.90	2716.00		
1 Equipment Operator, Crane	63.40	507.20	94.35	754.80		
1 Equipment Oiler	54.00	432.00	80.35	642.80		
1 Conc. Bucket, 2 C.Y.		57.51		63.27		
1 Lattice Boom Crane, 165 Ton		2479.87		2727.85	39.65	43.61
64 L.H., Daily Totals		$5681.38		$7471.52	$88.77	$116.74
Crew C-7C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$49.55	$73.76
5 Laborers	45.60	1824.00	67.90	2716.00		
2 Equipment Operators (med.)	60.40	966.40	89.85	1437.60		
2 F.E. Loaders, W.M., 4 C.Y.		1565.41		1721.95	24.46	26.91
64 L.H., Daily Totals		$4736.61		$6442.35	$74.01	$100.66
Crew C-7D	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$48.00	$71.46
5 Laborers	45.60	1824.00	67.90	2716.00		
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
1 Concrete Conveyer		212.33		233.56	3.79	4.17
56 L.H., Daily Totals		$2900.33		$4235.16	$51.79	$75.63
Crew C-8	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$50.16	$74.27
3 Laborers	45.60	1094.40	67.90	1629.60		
2 Cement Finishers	53.15	850.40	77.75	1244.00		
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
1 Concrete Pump (Small)		435.09		478.60	7.77	8.55
56 L.H., Daily Totals		$3243.89		$4637.80	$57.93	$82.82
Crew C-8A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$48.45	$71.67
3 Laborers	45.60	1094.40	67.90	1629.60		
2 Cement Finishers	53.15	850.40	77.75	1244.00		
48 L.H., Daily Totals		$2325.60		$3440.40	$48.45	$71.67

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Ho	
Crew C-8B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$48.96	$72.8
3 Laborers	45.60	1094.40	67.90	1629.60		
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
1 Vibrating Power Screed		90.52		99.57		
1 Roller, Vibratory, 25 Ton		693.41		762.76		
1 Dozer, 200 H.P.		1567.46		1724.21	58.78	64.6
40 L.H., Daily Totals		$4309.79		$5501.73	$107.74	$137.5
Crew C-8C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$49.66	$73.69
3 Laborers	45.60	1094.40	67.90	1629.60		
1 Cement Finisher	53.15	425.20	77.75	622.00		
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
1 Shotcrete Pump Rig, 12 C.Y./hr		276.88		304.57		
1 Air Compressor, 160 cfm		218.71		240.59		
4 -50' Air Hoses, 1"		33.27		36.59		
4 -50' Air Hoses, 2"		119.90		131.89	13.52	14.87
48 L.H., Daily Totals		$3032.36		$4250.84	$63.17	$88.56
Crew C-8D	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$50.84	$75.33
1 Laborer	45.60	364.80	67.90	543.20		
1 Cement Finisher	53.15	425.20	77.75	622.00		
1 Equipment Oper. (light)	57.00	456.00	84.80	678.40		
1 Air Compressor, 250 cfm		208.68		229.55		
2 -50' Air Hoses, 1"		16.63		18.30	7.04	7.75
32 L.H., Daily Totals		$1852.11		$2658.24	$57.88	$83.07
Crew C-8E	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$49.09	$72.85
3 Laborers	45.60	1094.40	67.90	1629.60		
1 Cement Finisher	53.15	425.20	77.75	622.00		
1 Equipment Oper. (light)	57.00	456.00	84.80	678.40		
1 Shotcrete Rig, 35 C.Y./hr		310.01		341.01		
1 Air Compressor, 250 cfm		208.68		229.55		
4 -50' Air Hoses, 1"		33.27		36.59		
4 -50' Air Hoses, 2"		119.90		131.89	14.00	15.40
48 L.H., Daily Totals		$3028.26		$4235.84	$63.09	$88.25
Crew C-9	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Cement Finisher	$53.15	$425.20	$77.75	$622.00	$50.34	$74.59
2 Laborers	45.60	729.60	67.90	1086.40		
1 Equipment Oper. (light)	57.00	456.00	84.80	678.40		
1 Grout Pump, 50 C.F./hr.		196.51		216.16		
1 Air Compressor, 160 cfm		218.71		240.59		
2 -50' Air Hoses, 1"		16.63		18.30		
2 -50' Air Hoses, 2"		59.95		65.95	15.37	16.91
32 L.H., Daily Totals		$2102.61		$2927.79	$65.71	$91.49
Crew C-10	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$50.63	$74.47
2 Cement Finishers	53.15	850.40	77.75	1244.00		
24 L.H., Daily Totals		$1215.20		$1787.20	$50.63	$74.47
Crew C-10B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
3 Laborers	$45.60	$1094.40	$67.90	$1629.60	$48.62	$71.84
2 Cement Finishers	53.15	850.40	77.75	1244.00		
1 Concrete Mixer, 10 C.F.		151.35		166.49		
2 Trowels, 48" Walk-Behind		194.75		214.23	8.65	9.52
40 L.H., Daily Totals		$2290.91		$3254.32	$57.27	$81.36

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Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew C-10C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$50.63	$74.47
2 Cement Finishers	53.15	850.40	77.75	1244.00		
1 Trowel, 48" Walk-Behind		97.38		107.11	4.06	4.46
24 L.H., Daily Totals		$1312.58		$1894.31	$54.69	$78.93
Crew C-10D	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$50.63	$74.47
2 Cement Finishers	53.15	850.40	77.75	1244.00		
1 Vibrating Power Screed		90.52		99.57		
1 Trowel, 48" Walk-Behind		97.38		107.11	7.83	8.61
24 L.H., Daily Totals		$1403.10		$1993.89	$58.46	$83.08
Crew C-10E	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$50.63	$74.47
2 Cement Finishers	53.15	850.40	77.75	1244.00		
1 Vibrating Power Screed		90.52		99.57		
1 Cement Trowel, 96" Ride-On		176.03		193.63	11.11	12.22
24 L.H., Daily Totals		$1481.75		$2080.41	$61.74	$86.68
Crew C-10F	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$50.63	$74.47
2 Cement Finishers	53.15	850.40	77.75	1244.00		
1 Telescoping Boom Lift, to 60'		301.02		331.12	12.54	13.80
24 L.H., Daily Totals		$1516.22		$2118.32	$63.18	$88.26
Crew C-11	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Struc. Steel Foreman (outside)	$63.85	$510.80	$98.35	$786.80	$61.37	$93.84
6 Struc. Steel Workers	61.85	2968.80	95.25	4572.00		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Lattice Boom Crane, 150 Ton		2398.73		2638.61	33.32	36.65
72 L.H., Daily Totals		$6817.53		$9395.01	$94.69	$130.49
Crew C-12	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Carpenter Foreman (outside)	$58.30	$466.40	$86.80	$694.40	$56.03	$83.41
3 Carpenters	56.30	1351.20	83.80	2011.20		
1 Laborer	45.60	364.80	67.90	543.20		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Hyd. Crane, 12 Ton		489.34		538.27	10.19	11.21
48 L.H., Daily Totals		$3178.94		$4541.87	$66.23	$94.62
Crew C-13	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Struc. Steel Worker	$61.85	$494.80	$95.25	$762.00	$60.03	$91.48
1 Welder	61.95	495.60	95.40	763.20		
1 Carpenter	56.30	450.40	83.80	670.40		
1 Welder, Gas Engine, 300 amp		152.88		168.16	6.37	7.01
24 L.H., Daily Totals		$1593.68		$2363.76	$66.40	$98.49
Crew C-14	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Carpenter Foreman (outside)	$58.30	$466.40	$86.80	$694.40	$54.93	$81.68
5 Carpenters	56.30	2252.00	83.80	3352.00		
4 Laborers	45.60	1459.20	67.90	2172.80		
4 Rodmen (reinf.)	60.70	1942.40	90.65	2900.80		
2 Cement Finishers	53.15	850.40	77.75	1244.00		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Hyd. Crane, 80 Ton		1502.22		1652.44	10.43	11.48
144 L.H., Daily Totals		$9411.82		$13414.04	$65.36	$93.15

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew C-14A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Carpenter Foreman (outside)	$58.30	$466.40	$86.80	$694.40	$56.27	$83.74
16 Carpenters	56.30	7206.40	83.80	10726.40		
4 Rodmen (reinf.)	60.70	1942.40	90.65	2900.80		
2 Laborers	45.60	729.60	67.90	1086.40		
1 Cement Finisher	53.15	425.20	77.75	622.00		
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
1 Gas Engine Vibrator		27.87		30.65		
1 Concrete Pump (Small)		435.09		478.60	2.31	2.55
200 L.H., Daily Totals		$11716.16		$17258.05	$58.58	$86.29
Crew C-14B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Carpenter Foreman (outside)	$58.30	$466.40	$86.80	$694.40	$56.15	$83.51
16 Carpenters	56.30	7206.40	83.80	10726.40		
4 Rodmen (reinf.)	60.70	1942.40	90.65	2900.80		
2 Laborers	45.60	729.60	67.90	1086.40		
2 Cement Finishers	53.15	850.40	77.75	1244.00		
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
1 Gas Engine Vibrator		27.87		30.65		
1 Concrete Pump (Small)		435.09		478.60	2.23	2.45
208 L.H., Daily Totals		$12141.36		$17880.05	$58.37	$85.96
Crew C-14C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Carpenter Foreman (outside)	$58.30	$466.40	$86.80	$694.40	$53.79	$80.02
6 Carpenters	56.30	2702.40	83.80	4022.40		
2 Rodmen (reinf.)	60.70	971.20	90.65	1450.40		
4 Laborers	45.60	1459.20	67.90	2172.80		
1 Cement Finisher	53.15	425.20	77.75	622.00		
1 Gas Engine Vibrator		27.87		30.65	.25	.27
112 L.H., Daily Totals		$6052.27		$8992.65	$54.04	$80.29
Crew C-14D	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Carpenter Foreman (outside)	$58.30	$466.40	$86.80	$694.40	$55.91	$83.20
18 Carpenters	56.30	8107.20	83.80	12067.20		
2 Rodmen (reinf.)	60.70	971.20	90.65	1450.40		
2 Laborers	45.60	729.60	67.90	1086.40		
1 Cement Finisher	53.15	425.20	77.75	622.00		
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
1 Gas Engine Vibrator		27.87		30.65		
1 Concrete Pump (Small)		435.09		478.60	2.31	2.55
200 L.H., Daily Totals		$11645.76		$17148.45	$58.23	$85.74
Crew C-14E	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Carpenter Foreman (outside)	$58.30	$466.40	$86.80	$694.40	$54.88	$81.68
2 Carpenters	56.30	900.80	83.80	1340.80		
4 Rodmen (reinf.)	60.70	1942.40	90.65	2900.80		
3 Laborers	45.60	1094.40	67.90	1629.60		
1 Cement Finisher	53.15	425.20	77.75	622.00		
1 Gas Engine Vibrator		27.87		30.65	.32	.35
88 L.H., Daily Totals		$4857.07		$7218.25	$55.19	$82.03
Crew C-14F	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$50.86	$74.79
2 Laborers	45.60	729.60	67.90	1086.40		
6 Cement Finishers	53.15	2551.20	77.75	3732.00		
1 Gas Engine Vibrator		27.87		30.65	.39	.43
72 L.H., Daily Totals		$3689.47		$5415.85	$51.24	$75.22

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew C-14G	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$50.20	$73.95
2 Laborers	45.60	729.60	67.90	1086.40		
4 Cement Finishers	53.15	1700.80	77.75	2488.00		
1 Gas Engine Vibrator		27.87		30.65	.50	.55
56 L.H., Daily Totals		$2839.07		$4171.85	$50.70	$74.50
Crew C-14H	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Carpenter Foreman (outside)	$58.30	$466.40	$86.80	$694.40	$55.06	$81.78
2 Carpenters	56.30	900.80	83.80	1340.80		
1 Rodman (reinf.)	60.70	485.60	90.65	725.20		
1 Laborer	45.60	364.80	67.90	543.20		
1 Cement Finisher	53.15	425.20	77.75	622.00		
1 Gas Engine Vibrator		27.87		30.65	.58	.64
48 L.H., Daily Totals		$2670.67		$3956.25	$55.64	$82.42
Crew C-14L	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Carpenter Foreman (outside)	$58.30	$466.40	$86.80	$694.40	$52.64	$78.25
6 Carpenters	56.30	2702.40	83.80	4022.40		
4 Laborers	45.60	1459.20	67.90	2172.80		
1 Cement Finisher	53.15	425.20	77.75	622.00		
1 Gas Engine Vibrator		27.87		30.65	.29	.32
96 L.H., Daily Totals		$5081.07		$7542.25	$52.93	$78.57
Crew C-14M	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Carpenter Foreman (outside)	$58.30	$466.40	$86.80	$694.40	$54.54	$81.06
2 Carpenters	56.30	900.80	83.80	1340.80		
1 Rodman (reinf.)	60.70	485.60	90.65	725.20		
2 Laborers	45.60	729.60	67.90	1086.40		
1 Cement Finisher	53.15	425.20	77.75	622.00		
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
1 Gas Engine Vibrator		27.87		30.65		
1 Concrete Pump (Small)		435.09		478.60	7.23	7.96
64 L.H., Daily Totals		$3953.76		$5696.85	$61.78	$89.01
Crew C-15	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Carpenter Foreman (outside)	$58.30	$466.40	$86.80	$694.40	$52.74	$78.25
2 Carpenters	56.30	900.80	83.80	1340.80		
3 Laborers	45.60	1094.40	67.90	1629.60		
2 Cement Finishers	53.15	850.40	77.75	1244.00		
1 Rodman (reinf.)	60.70	485.60	90.65	725.20		
72 L.H., Daily Totals		$3797.60		$5634.00	$52.74	$78.25
Crew C-16	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$50.16	$74.27
3 Laborers	45.60	1094.40	67.90	1629.60		
2 Cement Finishers	53.15	850.40	77.75	1244.00		
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
1 Gunite Pump Rig		331.07		364.17		
2 -50' Air Hoses, 3/4"		14.81		16.29		
2 -50' Air Hoses, 2"		59.95		65.95	7.25	7.97
56 L.H., Daily Totals		$3214.63		$4605.61	$57.40	$82.24
Crew C-16A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$53.08	$78.31
2 Cement Finishers	53.15	850.40	77.75	1244.00		
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
1 Gunite Pump Rig		331.07		364.17		
2 -50' Air Hoses, 3/4"		14.81		16.29		
2 -50' Air Hoses, 2"		59.95		65.95		
1 Telescoping Boom Lift, to 60'		301.02		331.12	22.09	24.30
32 L.H., Daily Totals		$2405.24		$3283.53	$75.16	$102.61

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Ho	
Crew C-17	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Skilled Worker Foremen (out)	$60.90	$974.40	$91.50	$1464.00	$59.30	$89.06
8 Skilled Workers	58.90	3769.60	88.45	5660.80		
80 L.H., Daily Totals		$4744.00		$7124.80	$59.30	$89.06
Crew C-17A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Skilled Worker Foremen (out)	$60.90	$974.40	$91.50	$1464.00	$59.35	$89.13
8 Skilled Workers	58.90	3769.60	88.45	5660.80		
.125 Equip. Oper. (crane)	63.40	63.40	94.35	94.35		
.125 Hyd. Crane, 80 Ton		187.78		206.55	2.32	2.55
81 L.H., Daily Totals		$4995.18		$7425.70	$61.67	$91.68
Crew C-17B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Skilled Worker Foremen (out)	$60.90	$974.40	$91.50	$1464.00	$59.40	$89.19
8 Skilled Workers	58.90	3769.60	88.45	5660.80		
.25 Equip. Oper. (crane)	63.40	126.80	94.35	188.70		
.25 Hyd. Crane, 80 Ton		375.55		413.11		
.25 Trowel, 48" Walk-Behind		24.34		26.78	4.88	5.36
82 L.H., Daily Totals		$5270.70		$7753.39	$64.28	$94.55
Crew C-17C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Skilled Worker Foremen (out)	$60.90	$974.40	$91.50	$1464.00	$59.45	$89.25
8 Skilled Workers	58.90	3769.60	88.45	5660.80		
.375 Equip. Oper. (crane)	63.40	190.20	94.35	283.05		
.375 Hyd. Crane, 80 Ton		563.33		619.66	6.79	7.47
83 L.H., Daily Totals		$5497.53		$8027.51	$66.24	$96.72
Crew C-17D	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Skilled Worker Foremen (out)	$60.90	$974.40	$91.50	$1464.00	$59.50	$89.31
8 Skilled Workers	58.90	3769.60	88.45	5660.80		
.5 Equip. Oper. (crane)	63.40	253.60	94.35	377.40		
.5 Hyd. Crane, 80 Ton		751.11		826.22	8.94	9.84
84 L.H., Daily Totals		$5748.71		$8328.42	$68.44	$99.15
Crew C-17E	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Skilled Worker Foremen (out)	$60.90	$974.40	$91.50	$1464.00	$59.30	$89.06
8 Skilled Workers	58.90	3769.60	88.45	5660.80		
1 Hyd. Jack with Rods		37.76		41.54	.47	.52
80 L.H., Daily Totals		$4781.76		$7166.34	$59.77	$89.58
Crew C-18	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
.125 Labor Foreman (outside)	$47.60	$47.60	$70.85	$70.85	$45.82	$68.23
1 Laborer	45.60	364.80	67.90	543.20		
1 Concrete Cart, 10 C.F.		120.90		132.99	13.43	14.78
9 L.H., Daily Totals		$533.30		$747.04	$59.26	$83.00
Crew C-19	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
.125 Labor Foreman (outside)	$47.60	$47.60	$70.85	$70.85	$45.82	$68.23
1 Laborer	45.60	364.80	67.90	543.20		
1 Concrete Cart, 18 C.F.		143.42		157.76	15.94	17.53
9 L.H., Daily Totals		$555.82		$771.81	$61.76	$85.76
Crew C-20	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$48.64	$72.24
5 Laborers	45.60	1824.00	67.90	2716.00		
1 Cement Finisher	53.15	425.20	77.75	622.00		
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
2 Gas Engine Vibrators		55.74		61.31		
1 Concrete Pump (Small)		435.09		478.60	7.67	8.44
64 L.H., Daily Totals		$3604.02		$5163.51	$56.31	$80.68

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Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew C-21	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$48.64	$72.24
5 Laborers	45.60	1824.00	67.90	2716.00		
1 Cement Finisher	53.15	425.20	77.75	622.00		
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
2 Gas Engine Vibrators		55.74		61.31		
1 Concrete Conveyer		212.33		233.56	4.19	4.61
64 L.H., Daily Totals		$3381.27		$4918.47	$52.83	$76.85
Crew C-22	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Rodman Foreman (outside)	$62.70	$501.60	$93.65	$749.20	$60.99	$91.06
4 Rodmen (reinf.)	60.70	1942.40	90.65	2900.80		
.125 Equip. Oper. (crane)	63.40	63.40	94.35	94.35		
.125 Equip. Oper. (oiler)	54.00	54.00	80.35	80.35		
.125 Hyd. Crane, 25 Ton		75.43		82.97	1.80	1.98
42 L.H., Daily Totals		$2636.83		$3907.67	$62.78	$93.04
Crew C-23	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Skilled Worker Foremen (out)	$60.90	$974.40	$91.50	$1464.00	$59.26	$88.84
6 Skilled Workers	58.90	2827.20	88.45	4245.60		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Lattice Boom Crane, 90 Ton		1767.55		1944.30	22.09	24.30
80 L.H., Daily Totals		$6508.35		$9051.50	$81.35	$113.14
Crew C-23A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$51.24	$76.27
2 Laborers	45.60	729.60	67.90	1086.40		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Crawler Crane, 100 Ton		2384.09		2622.50		
3 Conc. Buckets, 8 C.Y.		347.58		382.34	68.29	75.12
40 L.H., Daily Totals		$4781.27		$6055.64	$119.53	$151.39
Crew C-24	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Skilled Worker Foremen (out)	$60.90	$974.40	$91.50	$1464.00	$59.26	$88.84
6 Skilled Workers	58.90	2827.20	88.45	4245.60		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Lattice Boom Crane, 150 Ton		2398.73		2638.61	29.98	32.98
80 L.H., Daily Totals		$7139.53		$9745.81	$89.24	$121.82
Crew C-25	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Rodmen (reinf.)	$60.70	$971.20	$90.65	$1450.40	$48.98	$75.53
2 Rodmen Helpers	37.25	596.00	60.40	966.40		
32 L.H., Daily Totals		$1567.20		$2416.80	$48.98	$75.53
Crew C-27	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Cement Finishers	$53.15	$850.40	$77.75	$1244.00	$53.15	$77.75
1 Concrete Saw		115.94		127.54	7.25	7.97
16 L.H., Daily Totals		$966.34		$1371.54	$60.40	$85.72
Crew C-28	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Cement Finisher	$53.15	$425.20	$77.75	$622.00	$53.15	$77.75
1 Portable Air Compressor, Gas		40.12		44.13	5.01	5.52
8 L.H., Daily Totals		$465.32		$666.13	$58.16	$83.27
Crew C-29	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$45.60	$67.90
1 Pressure Washer		100.40		110.44	12.55	13.80
8 L.H., Daily Totals		$465.20		$653.64	$58.15	$81.70

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew C-30	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$45.60	$67.90
1 Concrete Mixer, 10 C.F.		151.35		166.49	18.92	20.81
8 L.H., Daily Totals		$516.15		$709.69	$64.52	$88.71
Crew C-31	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Cement Finisher	$53.15	$425.20	$77.75	$622.00	$53.15	$77.75
1 Grout Pump		331.07		364.17	41.38	45.52
8 L.H., Daily Totals		$756.27		$986.17	$94.53	$123.27
Crew C-32	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Cement Finisher	$53.15	$425.20	$77.75	$622.00	$49.38	$72.83
1 Laborer	45.60	364.80	67.90	543.20		
1 Crack Chaser Saw, Gas, 6 H.P.		75.72		83.30		
1 Vacuum Pick-Up System		77.50		85.25	9.58	10.53
16 L.H., Daily Totals		$943.22		$1333.74	$58.95	$83.36
Crew D-1	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Bricklayer	$55.25	$442.00	$82.95	$663.60	$50.13	$75.28
1 Bricklayer Helper	45.00	360.00	67.60	540.80		
16 L.H., Daily Totals		$802.00		$1204.40	$50.13	$75.28
Crew D-2	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
3 Bricklayers	$55.25	$1326.00	$82.95	$1990.80	$51.62	$77.45
2 Bricklayer Helpers	45.00	720.00	67.60	1081.60		
.5 Carpenter	56.30	225.20	83.80	335.20		
44 L.H., Daily Totals		$2271.20		$3407.60	$51.62	$77.45
Crew D-3	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
3 Bricklayers	$55.25	$1326.00	$82.95	$1990.80	$51.40	$77.14
2 Bricklayer Helpers	45.00	720.00	67.60	1081.60		
.25 Carpenter	56.30	112.60	83.80	167.60		
42 L.H., Daily Totals		$2158.60		$3240.00	$51.40	$77.14
Crew D-4	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Bricklayer	$55.25	$442.00	$82.95	$663.60	$50.56	$75.74
2 Bricklayer Helpers	45.00	720.00	67.60	1081.60		
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Grout Pump, 50 C.F./hr.		196.51		216.16	6.14	6.76
32 L.H., Daily Totals		$1814.51		$2639.76	$56.70	$82.49
Crew D-5	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Bricklayer	55.25	442.00	82.95	663.60	55.25	82.95
8 L.H., Daily Totals		$442.00		$663.60	$55.25	$82.95
Crew D-6	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
3 Bricklayers	$55.25	$1326.00	$82.95	$1990.80	$50.37	$75.62
3 Bricklayer Helpers	45.00	1080.00	67.60	1622.40		
.25 Carpenter	56.30	112.60	83.80	167.60		
50 L.H., Daily Totals		$2518.60		$3780.80	$50.37	$75.62
Crew D-7	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Tile Layer	$53.15	$425.20	$77.65	$621.20	$47.98	$70.10
1 Tile Layer Helper	42.80	342.40	62.55	500.40		
16 L.H., Daily Totals		$767.60		$1121.60	$47.98	$70.10
Crew D-8	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
3 Bricklayers	$55.25	$1326.00	$82.95	$1990.80	$51.15	$76.81
2 Bricklayer Helpers	45.00	720.00	67.60	1081.60		
40 L.H., Daily Totals		$2046.00		$3072.40	$51.15	$76.81

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew D-9	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
3 Bricklayers	$55.25	$1326.00	$82.95	$1990.80	$50.13	$75.28
3 Bricklayer Helpers	45.00	1080.00	67.60	1622.40		
48 L.H., Daily Totals		$2406.00		$3613.20	$50.13	$75.28
Crew D-10	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Bricklayer Foreman (outside)	$57.25	$458.00	$85.95	$687.60	$55.23	$82.71
1 Bricklayer	55.25	442.00	82.95	663.60		
1 Bricklayer Helper	45.00	360.00	67.60	540.80		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 S.P. Crane, 4x4, 12 Ton		445.72		490.30	13.93	15.32
32 L.H., Daily Totals		$2212.92		$3137.10	$69.15	$98.03
Crew D-11	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Bricklayer Foreman (outside)	$57.25	$458.00	$85.95	$687.60	$52.50	$78.83
1 Bricklayer	55.25	442.00	82.95	663.60		
1 Bricklayer Helper	45.00	360.00	67.60	540.80		
24 L.H., Daily Totals		$1260.00		$1892.00	$52.50	$78.83
Crew D-12	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Bricklayer Foreman (outside)	$57.25	$458.00	$85.95	$687.60	$50.63	$76.03
1 Bricklayer	55.25	442.00	82.95	663.60		
2 Bricklayer Helpers	45.00	720.00	67.60	1081.60		
32 L.H., Daily Totals		$1620.00		$2432.80	$50.63	$76.03
Crew D-13	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Bricklayer Foreman (outside)	$57.25	$458.00	$85.95	$687.60	$53.70	$80.38
1 Bricklayer	55.25	442.00	82.95	663.60		
2 Bricklayer Helpers	45.00	720.00	67.60	1081.60		
1 Carpenter	56.30	450.40	83.80	670.40		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 S.P. Crane, 4x4, 12 Ton		445.72		490.30	9.29	10.21
48 L.H., Daily Totals		$3023.32		$4348.30	$62.99	$90.59
Crew D-14	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
3 Bricklayers	$55.25	$1326.00	$82.95	$1990.80	$52.69	$79.11
1 Bricklayer Helper	45.00	360.00	67.60	540.80		
32 L.H., Daily Totals		$1686.00		$2531.60	$52.69	$79.11
Crew E-1	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Welder Foreman (outside)	$63.95	$511.60	$98.50	$788.00	$60.97	$92.90
1 Welder	61.95	495.60	95.40	763.20		
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Welder, Gas Engine, 300 amp		152.88		168.16	6.37	7.01
24 L.H., Daily Totals		$1616.08		$2397.76	$67.34	$99.91
Crew E-2	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Struc. Steel Foreman (outside)	$63.85	$510.80	$98.35	$786.80	$61.24	$93.44
4 Struc. Steel Workers	61.85	1979.20	95.25	3048.00		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Lattice Boom Crane, 90 Ton		1767.55		1944.30	31.56	34.72
56 L.H., Daily Totals		$5196.75		$7176.70	$92.80	$128.16
Crew E-3	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Struc. Steel Foreman (outside)	$63.85	$510.80	$98.35	$786.80	$62.55	$96.33
1 Struc. Steel Worker	61.85	494.80	95.25	762.00		
1 Welder	61.95	495.60	95.40	763.20		
1 Welder, Gas Engine, 300 amp		152.88		168.16	6.37	7.01
24 L.H., Daily Totals		$1654.08		$2480.16	$68.92	$103.34

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-H	
Crew E-3A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Struc. Steel Foreman (outside)	$63.85	$510.80	$98.35	$786.80	$62.55	$96.3
1 Struc. Steel Worker	61.85	494.80	95.25	762.00		
1 Welder	61.95	495.60	95.40	763.20		
1 Welder, Gas Engine, 300 amp		152.88		168.16		
1 Telescoping Boom Lift, to 40'		290.76		319.84	18.48	20.3
24 L.H., Daily Totals		$1944.84		$2800.00	$81.03	$116.6
Crew E-4	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Struc. Steel Foreman (outside)	$63.85	$510.80	$98.35	$786.80	$62.35	$96.0
3 Struc. Steel Workers	61.85	1484.40	95.25	2286.00		
1 Welder, Gas Engine, 300 amp		152.88		168.16	4.78	5.2
32 L.H., Daily Totals		$2148.08		$3240.96	$67.13	$101.2
Crew E-5	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Struc. Steel Foremen (outside)	$63.85	$1021.60	$98.35	$1573.60	$61.63	$94.3
5 Struc. Steel Workers	61.85	2474.00	95.25	3810.00		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Welder	61.95	495.60	95.40	763.20		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Lattice Boom Crane, 90 Ton		1767.55		1944.30		
1 Welder, Gas Engine, 300 amp		152.88		168.16	24.01	26.4
80 L.H., Daily Totals		$6850.83		$9656.87	$85.64	$120.7
Crew E-6	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
3 Struc. Steel Foremen (outside)	$63.85	$1532.40	$98.35	$2360.40	$61.53	$94.20
9 Struc. Steel Workers	61.85	4453.20	95.25	6858.00		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Welder	61.95	495.60	95.40	763.20		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Lattice Boom Crane, 90 Ton		1767.55		1944.30		
1 Welder, Gas Engine, 300 amp		152.88		168.16		
1 Air Compressor, 160 cfm		218.71		240.59		
2 Impact Wrenches		93.50		102.84	17.44	19.19
128 L.H., Daily Totals		$10109.04		$14513.50	$78.98	$113.39
Crew E-7	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Struc. Steel Foreman (outside)	$63.85	$510.80	$98.35	$786.80	$61.65	$94.33
4 Struc. Steel Workers	61.85	1979.20	95.25	3048.00		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Welder Foreman (outside)	63.95	511.60	98.50	788.00		
2 Welders	61.95	991.20	95.40	1526.40		
1 Lattice Boom Crane, 90 Ton		1767.55		1944.30		
2 Welder, Gas Engine, 300 amp		305.75		336.33	25.92	28.51
80 L.H., Daily Totals		$7005.30		$9827.43	$87.57	$122.84
Crew E-8	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Struc. Steel Foreman (outside)	$63.85	$510.80	$98.35	$786.80	$61.34	$93.77
4 Struc. Steel Workers	61.85	1979.20	95.25	3048.00		
1 Welder Foreman (outside)	63.95	511.60	98.50	788.00		
4 Welders	61.95	1982.40	95.40	3052.80		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Lattice Boom Crane, 90 Ton		1767.55		1944.30		
4 Welder, Gas Engine, 300 amp		611.51		672.66	22.88	25.16
104 L.H., Daily Totals		$8758.26		$12368.56	$84.21	$118.93

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Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew E-9	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Struc. Steel Foremen (outside)	$63.85	$1021.60	$98.35	$1573.60	$61.57	$94.25
5 Struc. Steel Workers	61.85	2474.00	95.25	3810.00		
1 Welder Foreman (outside)	63.95	511.60	98.50	788.00		
5 Welders	61.95	2478.00	95.40	3816.00		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Lattice Boom Crane, 90 Ton		1767.55		1944.30		
5 Welder, Gas Engine, 300 amp		764.38		840.82	19.78	21.76
128 L.H., Daily Totals		$10412.33		$14848.72	$81.35	$116.01
Crew E-10	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Welder Foreman (outside)	$63.95	$511.60	$98.50	$788.00	$62.95	$96.95
1 Welder	61.95	495.60	95.40	763.20		
1 Welder, Gas Engine, 300 amp		152.88		168.16		
1 Flatbed Truck, Gas, 3 Ton		877.96		965.75	64.43	70.87
16 L.H., Daily Totals		$2038.03		$2685.12	$127.38	$167.82
Crew E-11	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Painters, Struc. Steel	$48.90	$782.40	$78.05	$1248.80	$50.10	$77.20
1 Building Laborer	45.60	364.80	67.90	543.20		
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Air Compressor, 250 cfm		208.68		229.55		
1 Sandblaster, Portable, 3 C.F.		86.86		95.55		
1 Set Sand Blasting Accessories		16.09		17.70	9.74	10.71
32 L.H., Daily Totals		$1914.84		$2813.20	$59.84	$87.91
Crew E-11A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Painters, Struc. Steel	$48.90	$782.40	$78.05	$1248.80	$50.10	$77.20
1 Building Laborer	45.60	364.80	67.90	543.20		
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Air Compressor, 250 cfm		208.68		229.55		
1 Sandblaster, Portable, 3 C.F.		86.86		95.55		
1 Set Sand Blasting Accessories		16.09		17.70		
1 Telescoping Boom Lift, to 60'		301.02		331.12	19.15	21.06
32 L.H., Daily Totals		$2215.85		$3144.32	$69.25	$98.26
Crew E-11B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Painters, Struc. Steel	$48.90	$782.40	$78.05	$1248.80	$47.80	$74.67
1 Building Laborer	45.60	364.80	67.90	543.20		
2 Paint Sprayer, 8 C.F.M.		91.47		100.62		
1 Telescoping Boom Lift, to 60'		301.02		331.12	16.35	17.99
24 L.H., Daily Totals		$1539.69		$2223.74	$64.15	$92.66
Crew E-12	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Welder Foreman (outside)	$63.95	$511.60	$98.50	$788.00	$60.48	$91.65
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Welder, Gas Engine, 300 amp		152.88		168.16	9.55	10.51
16 L.H., Daily Totals		$1120.48		$1634.56	$70.03	$102.16
Crew E-13	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Welder Foreman (outside)	$63.95	$511.60	$98.50	$788.00	$61.63	$93.93
.5 Equip. Oper. (light)	57.00	228.00	84.80	339.20		
1 Welder, Gas Engine, 300 amp		152.88		168.16	12.74	14.01
12 L.H., Daily Totals		$892.48		$1295.36	$74.37	$107.95
Crew E-14	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Welder Foreman (outside)	$63.95	$511.60	$98.50	$788.00	$63.95	$98.50
1 Welder, Gas Engine, 300 amp		152.88		168.16	19.11	21.02
8 L.H., Daily Totals		$664.48		$956.16	$83.06	$119.52

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew E-16	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Welder Foreman (outside)	$63.95	$511.60	$98.50	$788.00	$62.95	$96.95
1 Welder	61.95	495.60	95.40	763.20		
1 Welder, Gas Engine, 300 amp		152.88		168.16	9.55	10.51
16 L.H., Daily Totals		$1160.08		$1719.36	$72.50	$107.46
Crew E-17	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Struc. Steel Foreman (outside)	$63.85	$510.80	$98.35	$786.80	$62.85	$96.80
1 Structural Steel Worker	61.85	494.80	95.25	762.00		
16 L.H., Daily Totals		$1005.60		$1548.80	$62.85	$96.80
Crew E-18	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Struc. Steel Foreman (outside)	$63.85	$510.80	$98.35	$786.80	$61.96	$94.79
3 Structural Steel Workers	61.85	1484.40	95.25	2286.00		
1 Equipment Operator (med.)	60.40	483.20	89.85	718.80		
1 Lattice Boom Crane, 20 Ton		1577.49		1735.24	39.44	43.38
40 L.H., Daily Totals		$4055.89		$5526.84	$101.40	$138.17
Crew E-19	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Struc. Steel Foreman (outside)	$63.85	$510.80	$98.35	$786.80	$60.90	$92.80
1 Structural Steel Worker	61.85	494.80	95.25	762.00		
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Lattice Boom Crane, 20 Ton		1577.49		1735.24	65.73	72.30
24 L.H., Daily Totals		$3039.09		$3962.44	$126.63	$165.10
Crew E-20	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Struc. Steel Foreman (outside)	$63.85	$510.80	$98.35	$786.80	$61.31	$93.66
5 Structural Steel Workers	61.85	2474.00	95.25	3810.00		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Lattice Boom Crane, 40 Ton		2198.13		2417.95	34.35	37.78
64 L.H., Daily Totals		$6122.13		$8412.35	$95.66	$131.44
Crew E-22	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Skilled Worker Foreman (out)	$60.90	$487.20	$91.50	$732.00	$59.57	$89.47
2 Skilled Workers	58.90	942.40	88.45	1415.20		
24 L.H., Daily Totals		$1429.60		$2147.20	$59.57	$89.47
Crew E-24	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
3 Structural Steel Workers	$61.85	$1484.40	$95.25	$2286.00	$61.49	$93.90
1 Equipment Operator (med.)	60.40	483.20	89.85	718.80		
1 Hyd. Crane, 25 Ton		603.44		663.78	18.86	20.74
32 L.H., Daily Totals		$2571.04		$3668.58	$80.34	$114.64
Crew E-25	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Welder Foreman (outside)	$63.95	$511.60	$98.50	$788.00	$63.95	$98.50
1 Cutting Torch		13.37		14.71	1.67	1.84
8 L.H., Daily Totals		$524.97		$802.71	$65.62	$100.34
Crew E-26	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Struc. Steel Foreman (outside)	$63.85	$510.80	$98.35	$786.80	$63.33	$97.04
1 Struc. Steel Worker	61.85	494.80	95.25	762.00		
1 Welder	61.95	495.60	95.40	763.20		
.25 Electrician	66.20	132.40	98.40	196.80		
.25 Plumber	69.80	139.60	104.10	208.20		
1 Welder, Gas Engine, 300 amp		152.88		168.16	5.46	6.01
28 L.H., Daily Totals		$1926.08		$2885.16	$68.79	$103.04

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew E-27	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Struc. Steel Foreman (outside)	$63.85	$510.80	$98.35	$786.80	$61.31	$93.66
5 Struc. Steel Workers	61.85	2474.00	95.25	3810.00		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Hyd. Crane, 12 Ton		489.34		538.27		
1 Hyd. Crane, 80 Ton		1502.22		1652.44	31.12	34.23
64 L.H., Daily Totals		$5915.56		$8185.11	$92.43	$127.89
Crew F-3	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
4 Carpenters	$56.30	$1801.60	$83.80	$2681.60	$57.72	$85.91
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Hyd. Crane, 12 Ton		489.34		538.27	12.23	13.46
40 L.H., Daily Totals		$2798.14		$3974.67	$69.95	$99.37
Crew F-4	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
4 Carpenters	$56.30	$1801.60	$83.80	$2681.60	$57.10	$84.98
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Hyd. Crane, 55 Ton		1019.39		1121.33	21.24	23.36
48 L.H., Daily Totals		$3760.19		$5200.53	$78.34	$108.34
Crew F-5	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Carpenter Foreman (outside)	$58.30	$466.40	$86.80	$694.40	$56.80	$84.55
3 Carpenters	56.30	1351.20	83.80	2011.20		
32 L.H., Daily Totals		$1817.60		$2705.60	$56.80	$84.55
Crew F-6	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Carpenters	$56.30	$900.80	$83.80	$1340.80	$53.44	$79.55
2 Building Laborers	45.60	729.60	67.90	1086.40		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Hyd. Crane, 12 Ton		489.34		538.27	12.23	13.46
40 L.H., Daily Totals		$2626.94		$3720.27	$65.67	$93.01
Crew F-7	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Carpenters	$56.30	$900.80	$83.80	$1340.80	$50.95	$75.85
2 Building Laborers	45.60	729.60	67.90	1086.40		
32 L.H., Daily Totals		$1630.40		$2427.20	$50.95	$75.85
Crew G-1	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Roofer Foreman (outside)	$51.60	$412.80	$83.65	$669.20	$46.36	$75.15
4 Roofers Composition	49.60	1587.20	80.40	2572.80		
2 Roofer Helpers	37.25	596.00	60.40	966.40		
1 Application Equipment		200.52		220.57		
1 Tar Kettle/Pot		215.43		236.98		
1 Crew Truck		172.61		189.87	10.51	11.56
56 L.H., Daily Totals		$3184.56		$4855.81	$56.87	$86.71
Crew G-2	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Plasterer	$51.40	$411.20	$76.40	$611.20	$47.62	$70.82
1 Plasterer Helper	45.85	366.80	68.15	545.20		
1 Building Laborer	45.60	364.80	67.90	543.20		
1 Grout Pump, 50 C.F./hr.		196.51		216.16	8.19	9.01
24 L.H., Daily Totals		$1339.31		$1915.76	$55.80	$79.82

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Ho	
Crew G-2A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Roofer Composition	$49.60	$396.80	$80.40	$643.20	$44.15	$69.57
1 Roofer Helper	37.25	298.00	60.40	483.20		
1 Building Laborer	45.60	364.80	67.90	543.20		
1 Foam Spray Rig, Trailer-Mtd.		546.24		600.86		
1 Pickup Truck, 3/4 Ton		115.08		126.59	27.56	30.31
24 L.H., Daily Totals		$1720.92		$2397.05	$71.71	$99.88
Crew G-3	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Sheet Metal Workers	$67.55	$1080.80	$101.75	$1628.00	$56.58	$84.83
2 Building Laborers	45.60	729.60	67.90	1086.40		
32 L.H., Daily Totals		$1810.40		$2714.40	$56.58	$84.83
Crew G-4	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (outside)	$47.60	$380.80	$70.85	$566.80	$46.27	$68.88
2 Building Laborers	45.60	729.60	67.90	1086.40		
1 Flatbed Truck, Gas, 1.5 Ton		203.25		223.57		
1 Air Compressor, 160 cfm		218.71		240.59	17.58	19.34
24 L.H., Daily Totals		$1532.36		$2117.36	$63.85	$88.22
Crew G-5	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Roofer Foreman (outside)	$51.60	$412.80	$83.65	$669.20	$45.06	$73.05
2 Roofers Composition	49.60	793.60	80.40	1286.40		
2 Roofer Helpers	37.25	596.00	60.40	966.40		
1 Application Equipment		200.52		220.57	5.01	5.51
40 L.H., Daily Totals		$2002.92		$3142.57	$50.07	$78.56
Crew G-6A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Roofers Composition	$49.60	$793.60	$80.40	$1286.40	$49.60	$80.40
1 Small Compressor, Electric		40.64		44.70		
2 Pneumatic Nailers		57.32		63.05	6.12	6.73
16 L.H., Daily Totals		$891.56		$1394.15	$55.72	$87.13
Crew G-7	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Carpenter	$56.30	$450.40	$83.80	$670.40	$56.30	$83.80
1 Small Compressor, Electric		40.64		44.70		
1 Pneumatic Nailer		28.66		31.53	8.66	9.53
8 L.H., Daily Totals		$519.70		$746.63	$64.96	$93.33
Crew H-1	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Glaziers	$54.00	$864.00	$80.25	$1284.00	$57.92	$87.75
2 Struc. Steel Workers	61.85	989.60	95.25	1524.00		
32 L.H., Daily Totals		$1853.60		$2808.00	$57.92	$87.75
Crew H-2	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Glaziers	$54.00	$864.00	$80.25	$1284.00	$51.20	$76.13
1 Building Laborer	45.60	364.80	67.90	543.20		
24 L.H., Daily Totals		$1228.80		$1827.20	$51.20	$76.13
Crew H-3	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Glazier	$54.00	$432.00	$80.25	$642.00	$48.65	$72.85
1 Helper	43.30	346.40	65.45	523.60		
16 L.H., Daily Totals		$778.40		$1165.60	$48.65	$72.85
Crew H-4	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Carpenter	$56.30	$450.40	$83.80	$670.40	$53.08	$79.38
1 Carpenter Helper	43.30	346.40	65.45	523.60		
.5 Electrician	66.20	264.80	98.40	393.60		
20 L.H., Daily Totals		$1061.60		$1587.60	$53.08	$79.38

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Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew J-1	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
3 Plasterers	$51.40	$1233.60	$76.40	$1833.60	$49.18	$73.10
2 Plasterer Helpers	45.85	733.60	68.15	1090.40		
1 Mixing Machine, 6 C.F.		116.55		128.20	2.91	3.21
40 L.H., Daily Totals		$2083.75		$3052.20	$52.09	$76.31
Crew J-2	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
3 Plasterers	$51.40	$1233.60	$76.40	$1833.60	$50.32	$74.54
2 Plasterer Helpers	45.85	733.60	68.15	1090.40		
1 Lather	56.00	448.00	81.75	654.00		
1 Mixing Machine, 6 C.F.		116.55		128.20	2.43	2.67
48 L.H., Daily Totals		$2531.75		$3706.20	$52.74	$77.21
Crew J-3	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Terrazzo Worker	$53.40	$427.20	$78.00	$624.00	$49.10	$71.72
1 Terrazzo Helper	44.80	358.40	65.45	523.60		
1 Floor Grinder, 22" Path		99.18		109.09		
1 Terrazzo Mixer		167.65		184.42	16.68	18.34
16 L.H., Daily Totals		$1052.43		$1441.11	$65.78	$90.07
Crew J-4	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Cement Finishers	$53.15	$850.40	$77.75	$1244.00	$50.63	$74.47
1 Laborer	45.60	364.80	67.90	543.20		
1 Floor Grinder, 22" Path		99.18		109.09		
1 Floor Edger, 7" Path		45.53		50.08		
1 Vacuum Pick-Up System		77.50		85.25	9.26	10.18
24 L.H., Daily Totals		$1437.40		$2031.62	$59.89	$84.65
Crew J-4A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Cement Finishers	$53.15	$850.40	$77.75	$1244.00	$49.38	$72.83
2 Laborers	45.60	729.60	67.90	1086.40		
1 Floor Grinder, 22" Path		99.18		109.09		
1 Floor Edger, 7" Path		45.53		50.08		
1 Vacuum Pick-Up System		77.50		85.25		
1 Floor Auto Scrubber		185.41		203.95	12.74	14.01
32 L.H., Daily Totals		$1987.61		$2778.77	$62.11	$86.84
Crew J-4B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Laborer	$45.60	$364.80	$67.90	$543.20	$45.60	$67.90
1 Floor Auto Scrubber		185.41		203.95	23.18	25.49
8 L.H., Daily Totals		$550.21		$747.15	$68.78	$93.39
Crew J-6	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Painters	$47.80	$764.80	$70.85	$1133.60	$49.55	$73.60
1 Building Laborer	45.60	364.80	67.90	543.20		
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Air Compressor, 250 cfm		208.68		229.55		
1 Sandblaster, Portable, 3 C.F.		86.86		95.55		
1 Set Sand Blasting Accessories		16.09		17.70	9.74	10.71
32 L.H., Daily Totals		$1897.24		$2698.00	$59.29	$84.31
Crew J-7	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Painters	$47.80	$764.80	$70.85	$1133.60	$47.80	$70.85
1 Floor Belt Sander		51.97		57.17		
1 Floor Sanding Edger		26.05		28.65	4.88	5.36
16 L.H., Daily Totals		$842.82		$1219.42	$52.68	$76.21

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew K-1	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Carpenter	$56.30	$450.40	$83.80	$670.40	$53.35	$79.55
1 Truck Driver (light)	50.40	403.20	75.30	602.40		
1 Flatbed Truck, Gas, 3 Ton		877.96		965.75	54.87	60.36
16 L.H., Daily Totals		$1731.56		$2238.55	$108.22	$139.91
Crew K-2	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Struc. Steel Foreman (outside)	$63.85	$510.80	$98.35	$786.80	$58.70	$89.63
1 Struc. Steel Worker	61.85	494.80	95.25	762.00		
1 Truck Driver (light)	50.40	403.20	75.30	602.40		
1 Flatbed Truck, Gas, 3 Ton		877.96		965.75	36.58	40.24
24 L.H., Daily Totals		$2286.76		$3116.95	$95.28	$129.87
Crew L-1	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Electrician	$66.20	$529.60	$98.40	$787.20	$68.00	$101.25
1 Plumber	69.80	558.40	104.10	832.80		
16 L.H., Daily Totals		$1088.00		$1620.00	$68.00	$101.25
Crew L-2	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Carpenter	$56.30	$450.40	$83.80	$670.40	$49.80	$74.63
1 Carpenter Helper	43.30	346.40	65.45	523.60		
16 L.H., Daily Totals		$796.80		$1194.00	$49.80	$74.63
Crew L-3	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Carpenter	$56.30	$450.40	$83.80	$670.40	$61.59	$91.94
.5 Electrician	66.20	264.80	98.40	393.60		
.5 Sheet Metal Worker	67.55	270.20	101.75	407.00		
16 L.H., Daily Totals		$985.40		$1471.00	$61.59	$91.94
Crew L-3A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Carpenter Foreman (outside)	$58.30	$466.40	$86.80	$694.40	$61.38	$91.78
.5 Sheet Metal Worker	67.55	270.20	101.75	407.00		
12 L.H., Daily Totals		$736.60		$1101.40	$61.38	$91.78
Crew L-4	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Skilled Workers	$58.90	$942.40	$88.45	$1415.20	$53.70	$80.78
1 Helper	43.30	346.40	65.45	523.60		
24 L.H., Daily Totals		$1288.80		$1938.80	$53.70	$80.78
Crew L-5	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Struc. Steel Foreman (outside)	$63.85	$510.80	$98.35	$786.80	$62.36	$95.56
5 Struc. Steel Workers	61.85	2474.00	95.25	3810.00		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Hyd. Crane, 25 Ton		603.44		663.78	10.78	11.85
56 L.H., Daily Totals		$4095.44		$6015.38	$73.13	$107.42
Crew L-5A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Struc. Steel Foreman (outside)	$63.85	$510.80	$98.35	$786.80	$62.74	$95.80
2 Structural Steel Workers	61.85	989.60	95.25	1524.00		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 S.P. Crane, 4x4, 25 Ton		1192.78		1312.06	37.27	41.00
32 L.H., Daily Totals		$3200.38		$4377.66	$100.01	$136.80

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew L-5B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Struc. Steel Foreman (outside)	$63.85	$510.80	$98.35	$786.80	$64.23	$96.68
2 Structural Steel Workers	61.85	989.60	95.25	1524.00		
2 Electricians	66.20	1059.20	98.40	1574.40		
2 Steamfitters/Pipefitters	70.35	1125.60	104.90	1678.40		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Equip. Oper. (oiler)	54.00	432.00	80.35	642.80		
1 Hyd. Crane, 80 Ton		1502.22		1652.44	20.86	22.95
72 L.H., Daily Totals		$6126.62		$8613.64	$85.09	$119.63
Crew L-6	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Plumber	$69.80	$558.40	$104.10	$832.80	$68.60	$102.20
.5 Electrician	66.20	264.80	98.40	393.60		
12 L.H., Daily Totals		$823.20		$1226.40	$68.60	$102.20
Crew L-7	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Carpenters	$56.30	$900.80	$83.80	$1340.80	$54.66	$81.34
1 Building Laborer	45.60	364.80	67.90	543.20		
.5 Electrician	66.20	264.80	98.40	393.60		
28 L.H., Daily Totals		$1530.40		$2277.60	$54.66	$81.34
Crew L-8	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Carpenters	$56.30	$900.80	$83.80	$1340.80	$59.00	$87.86
.5 Plumber	69.80	279.20	104.10	416.40		
20 L.H., Daily Totals		$1180.00		$1757.20	$59.00	$87.86
Crew L-9	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Labor Foreman (inside)	$46.10	$368.80	$68.65	$549.20	$51.61	$77.53
2 Building Laborers	45.60	729.60	67.90	1086.40		
1 Struc. Steel Worker	61.85	494.80	95.25	762.00		
.5 Electrician	66.20	264.80	98.40	393.60		
36 L.H., Daily Totals		$1858.00		$2791.20	$51.61	$77.53
Crew L-10	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Struc. Steel Foreman (outside)	$63.85	$510.80	$98.35	$786.80	$63.03	$95.98
1 Structural Steel Worker	61.85	494.80	95.25	762.00		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Hyd. Crane, 12 Ton		489.34		538.27	20.39	22.43
24 L.H., Daily Totals		$2002.14		$2841.87	$83.42	$118.41
Crew L-11	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Wreckers	$45.60	$729.60	$68.90	$1102.40	$52.90	$79.24
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Hyd. Excavator, 2.5 C.Y.		1613.66		1775.03		
1 Loader, Skid Steer, 78 H.P.		460.30		506.33	64.81	71.29
32 L.H., Daily Totals		$3766.76		$4816.96	$117.71	$150.53
Crew M-1	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
3 Elevator Constructors	$93.55	$2245.20	$138.50	$3324.00	$88.88	$131.57
1 Elevator Apprentice	74.85	598.80	110.80	886.40		
5 Hand Tools		51.95		57.15	1.62	1.79
32 L.H., Daily Totals		$2895.95		$4267.55	$90.50	$133.36

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew M-3	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Electrician Foreman (outside)	$68.20	$545.60	$101.35	$810.80	$69.95	$103.77
1 Common Laborer	45.60	364.80	67.90	543.20		
.25 Equipment Operator (med.)	60.40	120.80	89.85	179.70		
1 Elevator Constructor	93.55	748.40	138.50	1108.00		
1 Elevator Apprentice	74.85	598.80	110.80	886.40		
.25 S.P. Crane, 4x4, 20 Ton		148.13		162.95	4.36	4.79
34 L.H., Daily Totals		$2526.53		$3691.05	$74.31	$108.56
Crew M-4	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Electrician Foreman (outside)	$68.20	$545.60	$101.35	$810.80	$69.23	$102.72
1 Common Laborer	45.60	364.80	67.90	543.20		
.25 Equipment Operator, Crane	63.40	126.80	94.35	188.70		
.25 Equip. Oper. (oiler)	54.00	108.00	80.35	160.70		
1 Elevator Constructor	93.55	748.40	138.50	1108.00		
1 Elevator Apprentice	74.85	598.80	110.80	886.40		
.25 S.P. Crane, 4x4, 40 Ton		195.96		215.56	5.44	5.99
36 L.H., Daily Totals		$2688.36		$3913.36	$74.68	$108.70
Crew Q-1	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Plumber	$69.80	$558.40	$104.10	$832.80	$62.83	$93.70
1 Plumber Apprentice	55.85	446.80	83.30	666.40		
16 L.H., Daily Totals		$1005.20		$1499.20	$62.83	$93.70
Crew Q-1A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
.25 Plumber Foreman (outside)	$71.80	$143.60	$107.05	$214.10	$70.20	$104.69
1 Plumber	69.80	558.40	104.10	832.80		
10 L.H., Daily Totals		$702.00		$1046.90	$70.20	$104.69
Crew Q-1C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Plumber	$69.80	$558.40	$104.10	$832.80	$62.02	$92.42
1 Plumber Apprentice	55.85	446.80	83.30	666.40		
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
1 Trencher, Chain Type, 8' D		1952.14		2147.36	81.34	89.47
24 L.H., Daily Totals		$3440.54		$4365.36	$143.36	$181.89
Crew Q-2	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Plumbers	$69.80	$1116.80	$104.10	$1665.60	$65.15	$97.17
1 Plumber Apprentice	55.85	446.80	83.30	666.40		
24 L.H., Daily Totals		$1563.60		$2332.00	$65.15	$97.17
Crew Q-3	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Plumber Foreman (inside)	$70.30	$562.40	$104.85	$838.80	$66.44	$99.09
2 Plumbers	69.80	1116.80	104.10	1665.60		
1 Plumber Apprentice	55.85	446.80	83.30	666.40		
32 L.H., Daily Totals		$2126.00		$3170.80	$66.44	$99.09
Crew Q-4	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Plumber Foreman (inside)	$70.30	$562.40	$104.85	$838.80	$66.44	$99.09
1 Plumber	69.80	558.40	104.10	832.80		
1 Welder (plumber)	69.80	558.40	104.10	832.80		
1 Plumber Apprentice	55.85	446.80	83.30	666.40		
1 Welder, Electric, 300 amp		110.75		121.83	3.46	3.81
32 L.H., Daily Totals		$2236.75		$3292.63	$69.90	$102.89
Crew Q-5	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Steamfitter	$70.35	$562.80	$104.90	$839.20	$63.33	$94.42
1 Steamfitter Apprentice	56.30	450.40	83.95	671.60		
16 L.H., Daily Totals		$1013.20		$1510.80	$63.33	$94.42

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Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew Q-6	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Steamfitters	$70.35	$1125.60	$104.90	$1678.40	$65.67	$97.92
1 Steamfitter Apprentice	56.30	450.40	83.95	671.60		
24 L.H., Daily Totals		$1576.00		$2350.00	$65.67	$97.92
Crew Q-7	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Steamfitter Foreman (inside)	$70.85	$566.80	$105.65	$845.20	$66.96	$99.85
2 Steamfitters	70.35	1125.60	104.90	1678.40		
1 Steamfitter Apprentice	56.30	450.40	83.95	671.60		
32 L.H., Daily Totals		$2142.80		$3195.20	$66.96	$99.85
Crew Q-8	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Steamfitter Foreman (inside)	$70.85	$566.80	$105.65	$845.20	$66.96	$99.85
1 Steamfitter	70.35	562.80	104.90	839.20		
1 Welder (steamfitter)	70.35	562.80	104.90	839.20		
1 Steamfitter Apprentice	56.30	450.40	83.95	671.60		
1 Welder, Electric, 300 amp		110.75		121.83	3.46	3.81
32 L.H., Daily Totals		$2253.55		$3317.03	$70.42	$103.66
Crew Q-9	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Sheet Metal Worker	$67.55	$540.40	$101.75	$814.00	$60.80	$91.60
1 Sheet Metal Apprentice	54.05	432.40	81.45	651.60		
16 L.H., Daily Totals		$972.80		$1465.60	$60.80	$91.60
Crew Q-10	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Sheet Metal Workers	$67.55	$1080.80	$101.75	$1628.00	$63.05	$94.98
1 Sheet Metal Apprentice	54.05	432.40	81.45	651.60		
24 L.H., Daily Totals		$1513.20		$2279.60	$63.05	$94.98
Crew Q-11	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Sheet Metal Foreman (inside)	$68.05	$544.40	$102.50	$820.00	$64.30	$96.86
2 Sheet Metal Workers	67.55	1080.80	101.75	1628.00		
1 Sheet Metal Apprentice	54.05	432.40	81.45	651.60		
32 L.H., Daily Totals		$2057.60		$3099.60	$64.30	$96.86
Crew Q-12	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Sprinkler Installer	$68.55	$548.40	$102.30	$818.40	$61.70	$92.08
1 Sprinkler Apprentice	54.85	438.80	81.85	654.80		
16 L.H., Daily Totals		$987.20		$1473.20	$61.70	$92.08
Crew Q-13	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Sprinkler Foreman (inside)	$69.05	$552.40	$103.05	$824.40	$65.25	$97.38
2 Sprinkler Installers	68.55	1096.80	102.30	1636.80		
1 Sprinkler Apprentice	54.85	438.80	81.85	654.80		
32 L.H., Daily Totals		$2088.00		$3116.00	$65.25	$97.38
Crew Q-14	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Asbestos Worker	$63.05	$504.40	$96.45	$771.60	$56.75	$86.83
1 Asbestos Apprentice	50.45	403.60	77.20	617.60		
16 L.H., Daily Totals		$908.00		$1389.20	$56.75	$86.83
Crew Q-15	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Plumber	$69.80	$558.40	$104.10	$832.80	$62.83	$93.70
1 Plumber Apprentice	55.85	446.80	83.30	666.40		
1 Welder, Electric, 300 amp		110.75		121.83	6.92	7.61
16 L.H., Daily Totals		$1115.95		$1621.03	$69.75	$101.31

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew Q-16	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Plumbers	$69.80	$1116.80	$104.10	$1665.60	$65.15	$97.17
1 Plumber Apprentice	55.85	446.80	83.30	666.40		
1 Welder, Electric, 300 amp		110.75		121.83	4.61	5.08
24 L.H., Daily Totals		$1674.35		$2453.83	$69.76	$102.24
Crew Q-17	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Steamfitter	$70.35	$562.80	$104.90	$839.20	$63.33	$94.42
1 Steamfitter Apprentice	56.30	450.40	83.95	671.60		
1 Welder, Electric, 300 amp		110.75		121.83	6.92	7.61
16 L.H., Daily Totals		$1123.95		$1632.63	$70.25	$102.04
Crew Q-17A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Steamfitter	$70.35	$562.80	$104.90	$839.20	$63.35	$94.40
1 Steamfitter Apprentice	56.30	450.40	83.95	671.60		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Hyd. Crane, 12 Ton		489.34		538.27		
1 Welder, Electric, 300 amp		110.75		121.83	25.00	27.50
24 L.H., Daily Totals		$2120.49		$2925.70	$88.35	$121.90
Crew Q-18	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Steamfitters	$70.35	$1125.60	$104.90	$1678.40	$65.67	$97.92
1 Steamfitter Apprentice	56.30	450.40	83.95	671.60		
1 Welder, Electric, 300 amp		110.75		121.83	4.61	5.08
24 L.H., Daily Totals		$1686.75		$2471.83	$70.28	$102.99
Crew Q-19	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Steamfitter	$70.35	$562.80	$104.90	$839.20	$64.28	$95.75
1 Steamfitter Apprentice	56.30	450.40	83.95	671.60		
1 Electrician	66.20	529.60	98.40	787.20		
24 L.H., Daily Totals		$1542.80		$2298.00	$64.28	$95.75
Crew Q-20	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Sheet Metal Worker	$67.55	$540.40	$101.75	$814.00	$61.88	$92.96
1 Sheet Metal Apprentice	54.05	432.40	81.45	651.60		
.5 Electrician	66.20	264.80	98.40	393.60		
20 L.H., Daily Totals		$1237.60		$1859.20	$61.88	$92.96
Crew Q-21	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Steamfitters	$70.35	$1125.60	$104.90	$1678.40	$65.80	$98.04
1 Steamfitter Apprentice	56.30	450.40	83.95	671.60		
1 Electrician	66.20	529.60	98.40	787.20		
32 L.H., Daily Totals		$2105.60		$3137.20	$65.80	$98.04
Crew Q-22	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Plumber	$69.80	$558.40	$104.10	$832.80	$62.83	$93.70
1 Plumber Apprentice	55.85	446.80	83.30	666.40		
1 Hyd. Crane, 12 Ton		489.34		538.27	30.58	33.64
16 L.H., Daily Totals		$1494.54		$2037.47	$93.41	$127.34
Crew Q-22A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Plumber	$69.80	$558.40	$104.10	$832.80	$58.66	$87.41
1 Plumber Apprentice	55.85	446.80	83.30	666.40		
1 Laborer	45.60	364.80	67.90	543.20		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Hyd. Crane, 12 Ton		489.34		538.27	15.29	16.82
32 L.H., Daily Totals		$2366.54		$3335.47	$73.95	$104.23

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew Q-23	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Plumber Foreman (outside)	$71.80	$574.40	$107.05	$856.40	$67.33	$100.33
1 Plumber	69.80	558.40	104.10	832.80		
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
1 Lattice Boom Crane, 20 Ton		1577.49		1735.24	65.73	72.30
24 L.H., Daily Totals		$3193.49		$4143.24	$133.06	$172.63
Crew R-1	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Electrician Foreman	$66.70	$533.60	$99.15	$793.20	$61.87	$91.96
3 Electricians	66.20	1588.80	98.40	2361.60		
2 Electrician Apprentices	52.95	847.20	78.70	1259.20		
48 L.H., Daily Totals		$2969.60		$4414.00	$61.87	$91.96
Crew R-1A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Electrician	$66.20	$529.60	$98.40	$787.20	$59.58	$88.55
1 Electrician Apprentice	52.95	423.60	78.70	629.60		
16 L.H., Daily Totals		$953.20		$1416.80	$59.58	$88.55
Crew R-1B	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Electrician	$66.20	$529.60	$98.40	$787.20	$57.37	$85.27
2 Electrician Apprentices	52.95	847.20	78.70	1259.20		
24 L.H., Daily Totals		$1376.80		$2046.40	$57.37	$85.27
Crew R-1C	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
2 Electricians	$66.20	$1059.20	$98.40	$1574.40	$59.58	$88.55
2 Electrician Apprentices	52.95	847.20	78.70	1259.20		
1 Portable cable puller, 8000 lb.		105.93		116.52	3.31	3.64
32 L.H., Daily Totals		$2012.33		$2950.12	$62.89	$92.19
Crew R-2	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Electrician Foreman	$66.70	$533.60	$99.15	$793.20	$62.09	$92.30
3 Electricians	66.20	1588.80	98.40	2361.60		
2 Electrician Apprentices	52.95	847.20	78.70	1259.20		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 S.P. Crane, 4x4, 5 Ton		393.98		433.38	7.04	7.74
56 L.H., Daily Totals		$3870.78		$5602.18	$69.12	$100.04
Crew R-3	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Electrician Foreman	$66.70	$533.60	$99.15	$793.20	$65.84	$97.89
1 Electrician	66.20	529.60	98.40	787.20		
.5 Equip. Oper. (crane)	63.40	253.60	94.35	377.40		
.5 S.P. Crane, 4x4, 5 Ton		196.99		216.69	9.85	10.83
20 L.H., Daily Totals		$1513.79		$2174.49	$75.69	$108.72
Crew R-4	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Struc. Steel Foreman (outside)	$63.85	$510.80	$98.35	$786.80	$63.12	$96.50
3 Struc. Steel Workers	61.85	1484.40	95.25	2286.00		
1 Electrician	66.20	529.60	98.40	787.20		
1 Welder, Gas Engine, 300 amp		152.88		168.16	3.82	4.20
40 L.H., Daily Totals		$2677.68		$4028.16	$66.94	$100.70

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew R-5	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Electrician Foreman	$66.70	$533.60	$99.15	$793.20	$57.92	$86.49
4 Electrician Linemen	66.20	2118.40	98.40	3148.80		
2 Electrician Operators	66.20	1059.20	98.40	1574.40		
4 Electrician Groundmen	43.30	1385.60	65.45	2094.40		
1 Crew Truck		172.61		189.87		
1 Flatbed Truck, 20,000 GVW		209.49		230.44		
1 Pickup Truck, 3/4 Ton		115.08		126.59		
.2 Hyd. Crane, 55 Ton		203.88		224.27		
.2 Hyd. Crane, 12 Ton		97.87		107.65		
.2 Earth Auger, Truck-Mtd.		41.62		45.79		
1 Tractor w/Winch		388.20		427.02	13.96	15.36
88 L.H., Daily Totals		$6325.55		$8962.42	$71.88	$101.85
Crew R-6	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Electrician Foreman	$66.70	$533.60	$99.15	$793.20	$57.92	$86.49
4 Electrician Linemen	66.20	2118.40	98.40	3148.80		
2 Electrician Operators	66.20	1059.20	98.40	1574.40		
4 Electrician Groundmen	43.30	1385.60	65.45	2094.40		
1 Crew Truck		172.61		189.87		
1 Flatbed Truck, 20,000 GVW		209.49		230.44		
1 Pickup Truck, 3/4 Ton		115.08		126.59		
.2 Hyd. Crane, 55 Ton		203.88		224.27		
.2 Hyd. Crane, 12 Ton		97.87		107.65		
.2 Earth Auger, Truck-Mtd.		41.62		45.79		
1 Tractor w/Winch		388.20		427.02		
3 Cable Trailers		198.95		218.85		
.5 Tensioning Rig		57.01		62.71		
.5 Cable Pulling Rig		312.92		344.21	20.43	22.47
88 L.H., Daily Totals		$6894.43		$9588.20	$78.35	$108.96
Crew R-7	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Electrician Foreman	$66.70	$533.60	$99.15	$793.20	$47.20	$71.07
5 Electrician Groundmen	43.30	1732.00	65.45	2618.00		
1 Crew Truck		172.61		189.87	3.60	3.96
48 L.H., Daily Totals		$2438.21		$3601.07	$50.80	$75.02
Crew R-8	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Electrician Foreman	$66.70	$533.60	$99.15	$793.20	$58.65	$87.54
3 Electrician Linemen	66.20	1588.80	98.40	2361.60		
2 Electrician Groundmen	43.30	692.80	65.45	1047.20		
1 Pickup Truck, 3/4 Ton		115.08		126.59		
1 Crew Truck		172.61		189.87	5.99	6.59
48 L.H., Daily Totals		$3102.89		$4518.46	$64.64	$94.13
Crew R-9	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Electrician Foreman	$66.70	$533.60	$99.15	$793.20	$54.81	$82.02
1 Electrician Lineman	66.20	529.60	98.40	787.20		
2 Electrician Operators	66.20	1059.20	98.40	1574.40		
4 Electrician Groundmen	43.30	1385.60	65.45	2094.40		
1 Pickup Truck, 3/4 Ton		115.08		126.59		
1 Crew Truck		172.61		189.87	4.50	4.94
64 L.H., Daily Totals		$3795.69		$5565.66	$59.31	$86.96
Crew R-10	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Electrician Foreman	$66.70	$533.60	$99.15	$793.20	$62.47	$93.03
4 Electrician Linemen	66.20	2118.40	98.40	3148.80		
1 Electrician Groundman	43.30	346.40	65.45	523.60		
1 Crew Truck		172.61		189.87		
3 Tram Cars		224.91		247.41	8.28	9.11
48 L.H., Daily Totals		$3395.92		$4902.87	$70.75	$102.14

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Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew R-11	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Electrician Foreman	$66.70	$533.60	$99.15	$793.20	$62.93	$93.57
4 Electricians	66.20	2118.40	98.40	3148.80		
1 Equip. Oper. (crane)	63.40	507.20	94.35	754.80		
1 Common Laborer	45.60	364.80	67.90	543.20		
1 Crew Truck		172.61		189.87		
1 Hyd. Crane, 12 Ton		489.34		538.27	11.82	13.00
56 L.H., Daily Totals		$4185.95		$5968.14	$74.75	$106.57
Crew R-12	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Carpenter Foreman (inside)	$56.80	$454.40	$84.55	$676.40	$53.33	$79.68
4 Carpenters	56.30	1801.60	83.80	2681.60		
4 Common Laborers	45.60	1459.20	67.90	2172.80		
1 Equip. Oper. (medium)	60.40	483.20	89.85	718.80		
1 Steel Worker	61.85	494.80	95.25	762.00		
1 Dozer, 200 H.P.		1567.46		1724.21		
1 Pickup Truck, 3/4 Ton		115.08		126.59	19.12	21.03
88 L.H., Daily Totals		$6375.74		$8862.39	$72.45	$100.71
Crew R-13	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Electrician Foreman	$66.70	$533.60	$99.15	$793.20	$63.84	$94.91
3 Electricians	66.20	1588.80	98.40	2361.60		
.25 Equip. Oper. (crane)	63.40	126.80	94.35	188.70		
1 Equipment Oiler	54.00	432.00	80.35	642.80		
.25 Hydraulic Crane, 33 Ton		253.02		278.32	6.02	6.63
42 L.H., Daily Totals		$2934.22		$4264.62	$69.86	$101.54
Crew R-15	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Electrician Foreman	$66.70	$533.60	$99.15	$793.20	$64.75	$96.26
4 Electricians	66.20	2118.40	98.40	3148.80		
1 Equipment Oper. (light)	57.00	456.00	84.80	678.40		
1 Telescoping Boom Lift, to 40'		290.76		319.84	6.06	6.66
48 L.H., Daily Totals		$3398.76		$4940.24	$70.81	$102.92
Crew R-15A	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Electrician Foreman	$66.70	$533.60	$99.15	$793.20	$57.88	$86.09
2 Electricians	66.20	1059.20	98.40	1574.40		
2 Common Laborers	45.60	729.60	67.90	1086.40		
1 Equip. Oper. (light)	57.00	456.00	84.80	678.40		
1 Telescoping Boom Lift, to 40'		290.76		319.84	6.06	6.66
48 L.H., Daily Totals		$3069.16		$4452.24	$63.94	$92.75
Crew R-18	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
.25 Electrician Foreman	$66.70	$133.40	$99.15	$198.30	$58.08	$86.33
1 Electrician	66.20	529.60	98.40	787.20		
2 Electrician Apprentices	52.95	847.20	78.70	1259.20		
26 L.H., Daily Totals		$1510.20		$2244.70	$58.08	$86.33
Crew R-19	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
.5 Electrician Foreman	$66.70	$266.80	$99.15	$396.60	$66.30	$98.55
2 Electricians	66.20	1059.20	98.40	1574.40		
20 L.H., Daily Totals		$1326.00		$1971.00	$66.30	$98.55
Crew R-21	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Electrician Foreman	$66.70	$533.60	$99.15	$793.20	$66.18	$98.37
3 Electricians	66.20	1588.80	98.40	2361.60		
.1 Equip. Oper. (medium)	60.40	48.32	89.85	71.88		
.1 S.P. Crane, 4x4, 25 Ton		119.28		131.21	3.64	4.00
32.8 L.H., Daily Totals		$2290.00		$3357.89	$69.82	$102.37

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
Crew R-22	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
.66 Electrician Foreman	$66.70	$352.18	$99.15	$523.51	$60.58	$90.05
2 Electricians	66.20	1059.20	98.40	1574.40		
2 Electrician Apprentices	52.95	847.20	78.70	1259.20		
37.28 L.H., Daily Totals		$2258.58		$3357.11	$60.58	$90.05
Crew R-30	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
.25 Electrician Foreman (outside)	$68.20	$136.40	$101.35	$202.70	$53.68	$79.86
1 Electrician	66.20	529.60	98.40	787.20		
2 Laborers (Semi-Skilled)	45.60	729.60	67.90	1086.40		
26 L.H., Daily Totals		$1395.60		$2076.30	$53.68	$79.86
Crew R-31	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
1 Electrician	$66.20	$529.60	$98.40	$787.20	$66.20	$98.40
1 Core Drill, Electric, 2.5 H.P.		64.76		71.23	8.09	8.90
8 L.H., Daily Totals		$594.36		$858.43	$74.29	$107.30
Crew W-41E	**Hr.**	**Daily**	**Hr.**	**Daily**	**Bare Costs**	**Incl. O&P**
.5 Plumber Foreman (outside)	$71.80	$287.20	$107.05	$428.20	$60.52	$90.21
1 Plumber	69.80	558.40	104.10	832.80		
1 Laborer	45.60	364.80	67.90	543.20		
20 L.H., Daily Totals		$1210.40		$1804.20	$60.52	$90.21

Historical Cost Indexes

The table below lists both the RSMeans® historical cost index based on Jan. 1, 1993 = 100 as well as the computed value of an index based on Jan. 1, 2022 costs. Since the Jan. 1, 2022 figure is estimated, space is left to write in the actual index figures as they become available through the quarterly *RSMeans Construction Cost Indexes.*

To compute the actual index based on Jan. 1, 2022 = 100, divide the historical cost index for a particular year by the actual Jan. 1, 2022 construction cost index. Space has been left to advance the index figures as the year progresses.

Year	Historical Cost Index Jan. 1, 1993 = 100		Current Index Based on Jan. 1, 2022 = 100		Year	Historical Cost Index Jan. 1, 1993 = 100	Current Index Based on Jan. 1, 2022 = 100		Year	Historical Cost Index Jan. 1, 1993 = 100	Current Index Based on Jan. 1, 2022 = 100	
	Est.	Actual	Est.	Actual		Actual	Est.	Actual		Actual	Est.	Actual
Oct 2022					July 2005	151.6	60.7		1985	82.6	34.6	
July 2022					2004	143.7	55.8		1984	82.0	33.9	
April 2022					2003	132.0	54.4		1983	80.2	32.2	
Jan 2022	261.6		100.0		2002	128.7	52.9		1982	76.1	29.6	
July 2021		257.5	99.1		2001	125.1	51.1		1981	70.0	26.6	
2020		234.6	98.1		2000	120.9	49.7		1980	62.9	24.4	
2019		232.2	94.2		1999	117.6	48.6		1979	57.8	22.6	
2018		222.9	90.2		1998	115.1	47.7		1978	53.5	20.9	
2017		213.6	87.6		1997	112.8	46.6		1977	49.5	19.8	
2016		207.3	87.1		1996	110.2	45.5		1976	46.9	18.9	
2015		206.2	86.6		1995	107.6	44.1		1975	44.8	17.5	
2014		204.9	85.0		1994	104.4	43.0		1974	41.4	15.9	
2013		201.2	82.2		1993	101.7	42.0		1973	37.7	14.7	
2012		194.6	80.8		1992	99.4	40.9		1972	34.8	13.6	
2011		191.2	77.5		1991	96.8	39.8		1971	32.1	12.1	
2010		183.5	76.1		1990	94.3	38.9		1970	28.7	11.4	
2009		180.1	76.2		1989	92.1	38.0					
2008		180.4	71.6		1988	89.9	37.0					
2007		169.4	68.4		1987	87.7	35.6					
▼ 2006		162.0	64.0		▼ 1986	84.2	34.9		▼			

Adjustments to Costs

The "Historical Cost Index" can be used to convert national average building costs at a particular time to the approximate building costs for some other time.

Time Adjustment Using the Historical Cost Indexes:

$$\frac{\text{Index for Year A}}{\text{Index for Year B}} \times \text{Cost in Year B} = \text{Cost in Year A}$$

Example:

Estimate and compare construction costs for different years in the same city.

To estimate the national average construction cost of a building in 1970, knowing that it cost $900,000 in 2022:

INDEX in 1970 = 28.7

INDEX in 2022 = 261.6

$$\frac{\text{INDEX 1970}}{\text{INDEX 2022}} \times \text{Cost 2022} = \text{Cost 1970}$$

$$\frac{28.7}{261.6} \times \$900{,}000 = .109 \times \$900{,}000 = \$98{,}739$$

The construction cost of the building in 1970 was $98,739.

Note: The city cost indexes for Canada can be used to convert U.S. national averages to local costs in Canadian dollars.

Example:

To estimate and compare the cost of a building in Toronto, ON in 2022 with the known cost of $600,000 (US$) in New York, NY in 2022:

INDEX Toronto = 118.4

INDEX New York = 141.1

$$\frac{\text{INDEX Toronto}}{\text{INDEX New York}} \times \text{Cost New York} = \text{Cost Toronto}$$

$$\frac{118.4}{141.1} \times \$600{,}000 = .839 \times \$600{,}000 = \$503{,}400$$

The construction cost of the building in Toronto is $503,400 (CN$).

*Historical Cost Index updates and other resources are provided on the following website: **rsmeans.com/2022books**

For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

How to Use the City Cost Indexes

What you should know before you begin

RSMeans City Cost Indexes (CCI) are an extremely useful tool for when you want to compare costs from city to city and region to region.

This publication contains average construction cost indexes for 731 U.S. and Canadian cities covering over 930 three-digit zip code locations, as listed directly under each city.

Keep in mind that a City Cost Index number is a percentage ratio of a specific city's cost to the national average cost of the same item at a stated time period.

In other words, these index figures represent relative construction factors (or, if you prefer, multipliers) for material and installation costs, as well as the weighted average for Total In Place costs for each CSI MasterFormat division. Installation costs include both labor and equipment rental costs. When estimating equipment rental rates only for a specific location, use 01 54 33 EQUIPMENT RENTAL COSTS in the Reference Section.

The 30 City Average Index is the average of 30 major U.S. cities and serves as a national average. This national average represents the baseline from which all locations are calculated.

Index figures for both material and installation are based on the 30 major city average of 100 and represent the cost relationship as of July 1, 2021. The index for each division is computed from representative material and labor quantities for that division. The weighted average for each city is a weighted total of the components listed above it. It does not include relative productivity between trades or cities.

As changes occur in local material prices, labor rates, and equipment rental rates (including fuel costs), the impact of these changes should be accurately measured by the change in the City Cost Index for each particular city (as compared to the 30 city average).

Therefore, if you know (or have estimated) building costs in one city today, you can easily convert those costs to expected building costs in another city.

In addition, by using the Historical Cost Index, you can easily convert national average building costs at a particular time to the approximate building costs for some other time. The City Cost Indexes can then be applied to calculate the costs for a particular city.

Quick calculations

Location Adjustment Using the City Cost Indexes:

$$\frac{\text{Index for City A}}{\text{Index for City B}} \times \text{Cost in City B} = \text{Cost in City A}$$

Time Adjustment for the National Average Using the Historical Cost Index:

$$\frac{\text{Index for Year A}}{\text{Index for Year B}} \times \text{Cost in Year B} = \text{Cost in Year A}$$

Adjustment from the National Average:

$$\frac{\text{Index for City A}}{100} \times \text{National Average Cost} = \text{Cost in City A}$$

Since each of the other RSMeans data sets contains many different items, any *one* item multiplied by the particular city index may give incorrect results. However, the larger the number of items compiled, the closer the results should be to actual costs for that particular city.

The City Cost Indexes for Canadian cities are calculated using Canadian material and equipment prices and labor rates in Canadian dollars. When compared to the baseline mentioned previously, the resulting index enables the user to convert baseline costs to local costs. Therefore, indexes for Canadian cities can be used to convert U.S. national average prices to local costs in Canadian dollars.

How to use this section

1. Compare costs from city to city.

In using the RSMeans Indexes, remember that an index number is not a fixed number but a ratio: It's a percentage ratio of a building component's cost at any stated time to the national average cost of that same component at the same time period. Put in the form of an equation:

$$\frac{\text{Specific City Cost}}{\text{National Average Cost}} \times 100 = \text{City Index Number}$$

Therefore, when making cost comparisons between cities, do not subtract one city's index number from the index number of another city and read the result as a percentage difference. Instead, divide one city's index number by that of the other city. The resulting number may then be used as a multiplier to calculate cost differences from city to city.

The formula used to find cost differences between cities for the purpose of comparison is as follows:

$$\frac{\text{City A Index}}{\text{City B Index}} \times \text{City B Cost (Known)} = \text{City A Cost (Unknown)}$$

In addition, you can use RSMeans CCI to calculate and compare costs division by division between cities using the same basic formula. (Just be sure that you're comparing similar divisions.)

2. Compare a specific city's construction costs with the national average.

When you're studying construction location feasibility, it's advisable to compare a prospective project's cost index with an index of the national average cost.

For example, divide the weighted average index of construction costs of a specific city by that of the 30 City Average, which = 100.

$$\frac{\text{City Index}}{100} = \text{\% of National Average}$$

As a result, you get a ratio that indicates the relative cost of construction in that city in comparison with the national average.

3. Convert U.S. national average to actual costs in Canadian City.

$$\frac{\text{Index for Canadian City}}{100} \times \text{National Average Cost} = \text{Cost in Canadian City in \$ CAN}$$

4. Adjust construction cost data based on a national average.

When you use a source of construction cost data which is based on a national average (such as RSMeans cost data), it is necessary to adjust those costs to a specific location.

$$\frac{\text{City Index}}{100} \times \text{Cost Based on National Average Costs} = \text{City Cost (Unknown)}$$

5. When applying the City Cost Indexes to demolition projects, use the appropriate division installation index. For example, for removal of existing doors and windows, use the Division 8 (Openings) index.

What you might like to know about how we developed the Indexes

The information presented in the CCI is organized according to the Construction Specifications Institute (CSI) MasterFormat 2018 classification system.

To create a reliable index, RSMeans researched the building type most often constructed in the United States and Canada. Because it was concluded that no one type of building completely represented the building construction industry, nine different types of buildings were combined to create a composite model.

The exact material, labor, and equipment quantities are based on detailed analyses of these nine building types, and then each quantity is weighted in proportion to expected usage. These various material items, labor hours, and equipment rental rates are thus combined to form a composite building representing as closely as possible the actual usage of materials, labor, and equipment in the North American building construction industry.

The following structures were chosen to make up that composite model:

1. Factory, 1 story
2. Office, 2–4 stories
3. Store, Retail
4. Town Hall, 2–3 stories
5. High School, 2–3 stories
6. Hospital, 4–8 stories
7. Garage, Parking
8. Apartment, 1–3 stories
9. Hotel/Motel, 2–3 stories

For the purposes of ensuring the timeliness of the data, the components of the index for the composite model have been streamlined. They currently consist of:

- specific quantities of 66 commonly used construction materials;
- specific labor-hours for 21 building construction trades; and
- specific days of equipment rental for 6 types of construction equipment (normally used to install the 66 material items by the 21 trades.) Fuel costs and routine maintenance costs are included in the equipment cost.

Material and equipment price quotations are gathered quarterly from cities in the United States and Canada. These prices and the latest negotiated labor wage rates for 21 different building trades are used to compile the quarterly update of the City Cost Index.

The 30 major U.S. cities used to calculate the national average are:

Atlanta, GA
Baltimore, MD
Boston, MA
Buffalo, NY
Chicago, IL
Cincinnati, OH
Cleveland, OH
Columbus, OH
Dallas, TX
Denver, CO
Detroit, MI
Houston, TX
Indianapolis, IN
Kansas City, MO
Los Angeles, CA
Memphis, TN
Milwaukee, WI
Minneapolis, MN
Nashville, TN
New Orleans, LA
New York, NY
Philadelphia, PA
Phoenix, AZ
Pittsburgh, PA
St. Louis, MO
San Antonio, TX
San Diego, CA
San Francisco, CA
Seattle, WA
Washington, DC

What the CCI does not indicate

The weighted average for each city is a total of the divisional components weighted to reflect typical usage. It does not include the productivity variations between trades or cities.

In addition, the CCI does not take into consideration factors such as the following:

- managerial efficiency
- competitive conditions
- automation
- restrictive union practices
- unique local requirements
- regional variations due to specific building codes

For CCI updates and additional guidance please go to www.rsmeans.com/2022books

DIVISION		UNITED STATES			ALABAMA														
		30 CITY			ANNISTON			BIRMINGHAM			BUTLER			DECATUR			DOTHAN		
		AVERAGE			362			350 - 352			369			356			363		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		100.0	100.0		99.3	99.3		104.4	104.4		97.0	97.0		99.3	99.3		97.0	97.0
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	100.0	100.0	100.0	100.7	85.6	90.4	99.5	94.2	95.9	116.3	81.8	92.8	90.4	85.2	86.9	113.4	81.8	91.9
0310	Concrete Forming & Accessories	100.0	100.0	100.0	86.2	65.3	69.4	99.6	68.3	74.3	81.1	67.6	70.2	99.0	64.2	70.9	93.1	67.8	72.7
0320	Concrete Reinforcing	100.0	100.0	100.0	88.4	69.0	82.2	99.0	69.2	89.4	93.2	69.9	85.7	92.2	66.8	84.1	93.2	69.3	85.5
0330	Cast-in-Place Concrete	100.0	100.0	100.0	88.0	66.6	80.6	106.8	69.9	94.0	85.8	66.8	79.2	99.1	66.5	87.8	85.8	67.0	79.3
03	CONCRETE	100.0	100.0	100.0	92.1	68.2	82.5	100.0	70.4	88.2	93.1	69.4	83.6	93.6	67.2	83.0	92.9	69.5	83.5
04	MASONRY	100.0	100.0	100.0	98.2	61.2	74.8	98.0	62.9	75.9	103.1	61.2	76.7	92.3	61.0	72.5	104.7	62.7	78.2
05	METALS	100.0	100.0	100.0	101.3	94.2	99.6	99.3	91.7	97.5	100.2	95.1	99.0	101.1	92.9	99.2	100.3	95.3	99.1
06	WOOD, PLASTICS & COMPOSITES	100.0	100.0	100.0	80.7	65.9	74.6	95.8	68.7	84.6	74.9	68.5	72.2	99.1	64.0	84.6	88.7	68.3	80.3
07	THERMAL & MOISTURE PROTECTION	100.0	100.0	100.0	98.2	60.7	81.8	99.5	66.5	85.0	98.2	64.3	83.3	96.5	63.8	82.1	98.3	63.9	83.2
08	OPENINGS	100.0	100.0	100.0	91.0	66.9	85.2	98.2	68.9	91.1	91.0	68.9	85.7	102.8	65.7	93.9	91.1	68.7	85.7
0920	Plaster & Gypsum Board	100.0	100.0	100.0	89.6	65.6	74.6	99.7	68.0	79.9	85.5	68.2	74.7	99.1	63.7	76.9	103.6	68.1	81.4
0950, 0980	Ceilings & Acoustic Treatment	100.0	100.0	100.0	90.1	65.6	74.2	104.0	68.0	80.7	90.1	68.2	75.9	101.3	63.7	76.9	90.1	68.1	75.8
0960	Flooring	100.0	100.0	100.0	85.9	66.7	80.0	99.4	68.1	89.8	89.6	66.7	82.6	93.1	66.7	85.0	93.5	69.4	86.1
0970, 0990	Wall Finishes & Painting/Coating	100.0	100.0	100.0	96.3	52.3	69.5	101.8	52.3	71.6	96.3	44.3	64.6	90.3	58.9	71.2	96.3	80.7	86.8
09	FINISHES	100.0	100.0	100.0	89.6	64.2	75.8	100.7	66.4	82.0	92.4	64.8	77.4	95.3	63.8	78.2	96.1	69.3	81.5
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	100.0	100.0	100.0	83.7	96.5	100.0	85.2	96.8	100.0	84.8	96.7	100.0	81.5	96.0	100.0	84.9	96.7
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.0	100.0	100.0	102.8	50.6	81.4	100.8	63.9	85.7	98.5	62.8	83.8	100.9	63.2	85.4	98.5	62.8	83.9
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	100.0	100.0	100.0	96.9	55.5	77.0	96.4	64.9	81.2	98.3	55.7	77.7	93.5	62.7	78.7	97.5	74.8	86.6
MF2018	WEIGHTED AVERAGE	100.0	100.0	100.0	97.5	65.3	84.4	99.4	71.0	87.8	97.4	68.2	85.5	98.1	68.6	86.1	97.8	71.7	87.1

DIVISION		ALABAMA																	
		EVERGREEN			GADSDEN			HUNTSVILLE			JASPER			MOBILE			MONTGOMERY		
		364			359			357 - 358			355			365 - 366			360 - 361		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		97.0	97.0		99.3	99.3		99.3	99.3		99.3	99.3		97.0	97.0		105.1	105.1
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	116.8	81.7	93.0	97.5	85.6	89.4	90.1	85.5	87.0	97.4	85.6	89.4	107.6	81.8	90.1	105.9	95.5	98.8
0310	Concrete Forming & Accessories	77.0	65.5	67.7	87.7	65.8	70.0	99.0	66.5	72.8	95.2	65.7	71.4	91.8	67.5	72.2	98.0	68.0	73.8
0320	Concrete Reinforcing	93.3	69.9	85.7	97.4	69.2	88.3	92.2	77.2	87.4	92.2	69.1	84.8	91.5	69.9	84.6	100.5	69.2	90.5
0330	Cast-in-Place Concrete	85.8	66.8	79.2	99.1	66.8	88.0	96.5	66.7	86.2	109.9	66.8	95.0	90.0	66.9	82.0	89.9	69.5	82.8
03	CONCRETE	93.2	68.5	83.3	97.3	68.5	85.7	92.5	70.1	83.5	100.6	68.4	87.7	90.0	69.4	81.7	92.8	70.2	83.7
04	MASONRY	103.1	61.2	76.7	90.9	61.9	72.6	93.7	61.8	73.6	88.9	61.2	71.4	101.9	62.1	76.8	101.9	62.2	76.9
05	METALS	100.2	94.9	99.0	98.7	94.7	97.8	101.1	97.7	100.3	98.6	94.6	97.7	102.6	95.0	100.8	101.8	91.7	99.4
06	WOOD, PLASTICS & COMPOSITES	70.9	65.9	68.9	87.0	65.9	78.3	99.1	66.9	85.8	95.5	65.9	83.3	86.8	68.3	79.2	90.8	68.7	81.6
07	THERMAL & MOISTURE PROTECTION	98.1	63.3	82.8	96.6	64.2	82.4	96.4	64.3	82.3	96.7	63.5	82.2	97.9	63.8	82.9	98.9	66.2	84.6
08	OPENINGS	91.0	67.5	85.4	99.7	67.3	91.9	102.6	69.9	94.7	99.7	67.3	91.9	93.4	68.9	87.5	92.1	68.9	86.5
0920	Plaster & Gypsum Board	84.5	65.6	72.7	86.2	65.6	73.3	99.1	66.6	78.8	93.4	65.6	76.0	97.1	68.1	78.9	99.1	68.0	79.7
0950, 0980	Ceilings & Acoustic Treatment	90.1	65.6	74.2	93.8	65.6	75.5	102.8	66.6	79.3	93.8	65.6	75.5	98.5	68.1	78.7	100.5	68.0	79.5
0960	Flooring	87.9	66.7	81.4	89.8	68.1	83.1	93.1	68.1	85.4	91.6	66.7	84.0	93.5	68.1	85.7	93.0	68.1	85.4
0970, 0990	Wall Finishes & Painting/Coating	96.3	44.3	64.6	90.3	52.3	67.1	90.3	60.2	72.0	90.3	52.3	67.1	99.4	44.3	65.8	101.8	52.3	71.6
09	FINISHES	91.8	63.3	76.3	91.1	64.5	76.6	95.6	65.9	79.5	92.7	64.2	77.2	96.3	65.0	79.3	99.0	66.2	81.2
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	84.6	96.6	100.0	83.8	96.5	100.0	81.8	96.0	100.0	83.7	96.5	100.0	84.9	96.7	100.0	85.0	96.7
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	98.5	56.7	81.3	104.1	63.9	87.6	100.8	63.6	85.6	104.1	63.3	87.4	100.8	59.9	84.0	100.8	62.9	85.3
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	96.5	55.7	76.8	93.7	64.9	79.8	94.3	62.6	79.0	93.3	55.5	75.1	99.0	59.2	79.8	99.2	71.9	86.1
MF2018	WEIGHTED AVERAGE	97.2	66.4	84.7	98.2	69.8	86.6	98.1	70.1	86.7	98.7	68.2	86.3	98.4	68.2	86.1	98.8	71.7	87.8

DIVISION		ALABAMA									ALASKA								
		PHENIX CITY			SELMA			TUSCALOOSA			ANCHORAGE			FAIRBANKS			JUNEAU		
		368			367			354			995 - 996			997			998		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		97.0	97.0		97.0	97.0		99.3	99.3		105.0	105.0		109.7	109.7		105.0	105.0
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	121.3	81.8	94.5	113.1	81.8	91.9	90.7	85.6	87.2	138.8	112.8	121.2	136.6	119.0	124.7	153.4	112.8	125.9
0310	Concrete Forming & Accessories	86.1	67.3	71.0	82.9	65.8	69.1	99.0	67.6	73.7	103.0	111.1	109.5	108.9	110.7	110.4	105.0	111.1	109.9
0320	Concrete Reinforcing	93.2	66.6	84.7	93.2	69.1	85.5	92.2	69.2	84.8	124.6	118.4	122.6	120.1	118.4	119.5	124.6	118.4	122.6
0330	Cast-in-Place Concrete	85.8	66.8	79.2	85.8	66.8	79.2	100.5	66.9	88.9	131.5	113.6	125.3	130.3	110.8	123.6	131.4	113.6	125.2
03	CONCRETE	95.9	68.7	85.0	92.1	68.5	82.7	94.2	69.3	84.3	117.6	112.7	115.6	110.3	111.7	110.9	122.4	112.7	118.5
04	MASONRY	103.1	61.2	76.7	107.6	61.2	78.3	92.6	62.1	73.4	202.3	114.5	147.0	202.5	113.4	146.4	182.0	114.5	139.5
05	METALS	100.2	93.7	98.7	100.2	94.7	98.9	100.4	94.8	99.1	127.5	103.2	121.8	122.6	105.7	118.7	122.7	103.2	118.1
06	WOOD, PLASTICS & COMPOSITES	80.5	68.0	75.3	77.0	65.9	72.4	99.1	68.3	86.4	100.5	108.4	103.8	113.4	108.3	111.3	105.0	108.4	106.4
07	THERMAL & MOISTURE PROTECTION	98.6	64.2	83.6	98.0	64.0	83.1	96.5	64.6	82.5	134.6	111.6	124.5	143.8	110.2	129.1	145.8	111.6	130.8
08	OPENINGS	91.0	67.8	85.4	91.0	67.3	85.3	102.6	68.6	94.4	125.9	112.2	122.6	128.4	111.6	124.4	126.8	112.2	123.3
0920	Plaster & Gypsum Board	92.0	67.7	76.8	88.6	65.6	74.2	99.1	68.0	79.7	116.5	108.6	111.6	167.2	108.6	130.6	168.8	108.6	131.1
0950, 0980	Ceilings & Acoustic Treatment	90.1	67.7	75.6	90.1	65.6	74.2	102.8	68.0	80.3	119.2	108.6	112.3	103.7	108.6	106.9	112.8	108.6	110.1
0960	Flooring	91.0	66.7	83.6	89.8	66.7	82.8	93.1	68.1	85.4	104.8	113.7	107.5	106.3	113.7	108.6	120.5	113.7	118.4
0970, 0990	Wall Finishes & Painting/Coating	96.3	77.7	85.0	96.3	52.3	69.5	90.3	52.3	67.1	101.8	118.6	112.1	97.0	114.5	107.7	98.7	118.6	110.8
09	FINISHES	94.3	68.1	80.1	92.6	64.2	77.2	95.6	65.9	79.5	111.4	112.3	111.9	116.3	111.6	113.7	121.4	112.3	116.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	82.6	96.2	100.0	83.8	96.5	100.0	84.1	96.5	100.0	110.7	102.3	100.0	110.3	102.2	100.0	110.7	102.3
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	98.5	62.7	83.8	98.5	62.2	83.6	100.9	63.8	85.7	100.8	103.3	101.8	100.7	104.3	102.2	101.0	103.3	101.9
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	97.9	65.6	82.3	97.3	70.5	84.4	94.0	64.9	80.0	97.9	105.0	101.3	114.9	105.0	110.1	104.0	105.0	104.5
MF2018	WEIGHTED AVERAGE	98.1	69.7	86.5	97.3	69.8	86.1	98.1	70.2	86.8	117.1	108.7	113.7	117.8	109.2	114.3	118.2	108.7	114.3

DIVISION		ALASKA			ARIZONA														
		KETCHIKAN			CHAMBERS			FLAGSTAFF			GLOBE			KINGMAN			MESA/TEMPE		
		999			865			860			855			864			852		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		109.7	109.7		85.9	85.9		85.9	85.9		86.9	86.9		85.9	85.9		86.9	86.9
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	202.1	119.1	145.7	69.9	86.5	81.2	89.1	86.8	87.5	107.0	87.3	93.6	69.9	86.8	81.3	96.9	87.5	90.5
0310	Concrete Forming & Accessories	98.7	111.1	108.7	100.9	67.5	74.0	108.6	73.7	80.4	91.3	67.6	72.2	98.3	63.7	70.4	95.3	69.8	74.7
0320	Concrete Reinforcing	94.6	118.4	102.3	89.8	73.3	84.5	89.7	73.4	84.5	83.4	73.3	80.1	89.9	73.3	84.5	83.9	73.3	80.5
0330	Cast-in-Place Concrete	264.1	112.4	211.7	80.8	67.1	76.1	80.9	67.4	76.2	78.6	66.8	74.5	80.6	67.3	76.0	79.2	67.0	75.0
03	CONCRETE	180.9	112.4	153.5	88.4	68.4	80.4	105.2	71.4	91.6	92.2	68.4	82.7	88.0	66.8	79.6	85.8	69.5	79.3
04	MASONRY	213.6	114.4	151.1	96.5	58.9	72.8	96.7	59.6	73.3	105.1	58.8	76.0	96.5	59.0	72.9	105.4	58.9	76.1
05	METALS	122.8	105.7	118.8	95.9	70.9	90.0	96.4	71.8	90.6	95.4	71.7	89.8	96.6	71.6	90.8	95.7	72.5	90.3
06	WOOD, PLASTICS & COMPOSITES	103.3	108.3	105.4	100.0	68.8	87.1	107.6	76.9	94.9	86.0	69.0	79.0	94.0	63.5	81.4	90.4	71.7	82.7
07	THERMAL & MOISTURE PROTECTION	151.1	109.9	133.0	101.8	68.1	87.0	103.9	69.5	88.8	99.7	66.8	85.3	101.7	67.9	86.9	99.4	67.5	85.4
08	OPENINGS	124.3	112.2	121.4	101.0	65.6	92.5	101.1	73.5	94.4	91.1	65.7	85.0	101.2	64.3	92.2	91.2	67.7	85.5
0920	Plaster & Gypsum Board	148.8	108.6	123.7	105.5	68.4	82.3	111.4	76.6	89.7	90.7	68.4	76.7	92.6	62.9	74.0	96.0	71.2	80.5
0950, 0980	Ceilings & Acoustic Treatment	98.3	108.6	105.0	109.4	68.4	82.8	110.1	76.6	88.4	95.8	68.4	78.0	110.1	62.9	79.5	95.8	71.2	79.8
0960	Flooring	105.6	113.7	108.1	87.3	60.0	78.9	89.2	63.3	81.3	96.9	60.0	85.6	86.2	60.0	78.2	98.1	62.2	87.1
0970, 0990	Wall Finishes & Painting/Coating	97.0	118.6	110.2	86.7	56.5	68.3	86.7	56.5	68.3	90.7	56.5	69.9	86.7	56.5	68.3	90.7	56.5	69.9
09	FINISHES	117.4	112.3	114.6	95.5	64.7	78.8	99.0	70.1	83.3	96.9	64.8	79.5	93.3	61.6	76.1	96.9	66.9	80.6
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	110.6	102.3	100.0	83.8	96.5	100.0	84.6	96.7	100.0	84.1	96.5	100.0	83.2	96.3	100.0	84.4	96.6
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	97.7	103.3	100.0	98.0	76.0	89.0	101.3	76.0	90.9	95.9	76.0	87.8	98.0	76.0	89.0	101.2	76.0	90.9
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	114.8	105.0	110.1	103.9	66.4	85.8	103.3	62.2	83.5	99.5	62.2	81.5	103.9	62.2	83.8	97.6	62.2	80.5
MF2018	WEIGHTED AVERAGE	128.9	109.3	120.9	96.5	70.3	85.8	100.4	71.5	88.6	96.3	69.8	85.5	96.3	69.0	85.2	96.2	70.5	85.7

DIVISION		ARIZONA												ARKANSAS					
		PHOENIX			PRESCOTT			SHOW LOW			TUCSON			BATESVILLE			CAMDEN		
		850,853			863			859			856 - 857			725			717		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		96.7	96.7		85.9	85.9		86.9	86.9		86.9	86.9		86.5	86.5		86.5	86.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	96.5	96.2	96.3	77.0	86.7	83.6	109.4	87.3	94.4	92.0	87.5	89.0	73.5	81.7	79.1	79.5	81.7	81.0
0310	Concrete Forming & Accessories	101.0	72.0	77.6	103.1	69.6	76.1	100.9	67.7	74.1	96.3	78.3	81.8	78.4	58.7	62.5	76.7	59.1	62.5
0320	Concrete Reinforcing	80.1	73.4	77.9	89.7	73.3	84.4	83.9	73.3	80.5	68.9	73.4	70.3	97.1	65.9	87.1	96.6	67.0	87.1
0330	Cast-in-Place Concrete	83.4	70.8	79.1	80.9	67.3	76.2	78.6	66.8	74.5	81.5	67.1	76.5	61.7	72.9	65.6	67.1	72.8	69.1
03	CONCRETE	87.6	72.0	81.3	93.0	69.5	83.6	94.4	68.4	84.0	83.5	73.4	79.5	71.9	65.7	69.4	74.3	66.0	71.0
04	MASONRY	98.5	60.6	74.6	96.7	59.0	72.9	105.1	58.8	76.0	91.7	59.5	71.4	114.2	59.8	79.9	98.9	60.2	74.5
05	METALS	103.2	75.0	96.6	96.4	71.6	90.6	95.1	71.7	89.7	96.5	72.6	90.9	89.0	75.6	85.8	95.2	75.8	90.6
06	WOOD, PLASTICS & COMPOSITES	98.1	73.7	88.0	101.9	71.5	89.3	95.7	69.0	84.6	90.9	83.1	87.7	84.0	59.9	74.0	84.7	60.4	74.6
07	THERMAL & MOISTURE PROTECTION	100.3	69.8	86.9	102.4	68.8	87.7	100.1	66.8	85.5	100.5	68.9	86.6	103.2	59.7	84.1	98.5	60.3	81.7
08	OPENINGS	101.5	71.3	94.2	101.1	67.3	93.0	90.5	67.3	84.9	87.9	77.0	85.3	96.2	58.1	87.0	99.3	58.7	89.5
0920	Plaster & Gypsum Board	105.1	72.8	84.9	106.3	71.1	84.3	99.7	68.4	80.1	100.9	82.9	89.7	90.7	59.4	71.1	87.4	59.9	70.2
0950, 0980	Ceilings & Acoustic Treatment	109.9	72.8	85.8	107.4	71.1	83.8	95.8	68.4	78.0	97.9	82.9	88.2	98.6	59.4	73.2	91.9	59.9	71.1
0960	Flooring	103.1	62.4	90.7	88.0	62.4	80.2	99.5	60.0	87.4	89.3	63.6	81.4	86.5	68.6	81.0	88.8	70.0	83.1
0970, 0990	Wall Finishes & Painting/Coating	98.7	56.3	72.8	86.7	56.5	68.3	90.7	56.5	69.9	91.8	56.5	70.3	95.9	51.0	68.5	98.7	52.6	70.6
09	FINISHES	103.2	68.5	84.4	95.9	66.8	80.1	99.3	64.8	80.6	95.7	73.9	83.8	87.9	59.6	72.5	87.9	60.2	72.9
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	86.0	97.0	100.0	84.1	96.5	100.0	84.1	96.5	100.0	85.6	96.9	100.0	78.6	95.4	100.0	78.5	95.3
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	97.6	77.0	89.1	101.3	76.0	90.9	95.9	76.0	87.8	101.2	74.5	90.2	96.9	50.5	77.8	96.8	55.7	79.9
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	101.6	62.2	82.6	103.1	62.2	83.4	97.8	62.2	80.6	99.0	59.5	80.0	93.4	56.0	75.4	92.7	53.9	74.0
MF2018	WEIGHTED AVERAGE	98.8	72.6	88.1	98.1	70.3	86.8	96.7	69.9	85.8	95.1	71.9	85.7	91.1	61.7	79.1	92.3	62.7	80.3

DIVISION		ARKANSAS																	
		FAYETTEVILLE			FORT SMITH			HARRISON			HOT SPRINGS			JONESBORO			LITTLE ROCK		
		727			729			726			719			724			720 - 722		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		86.5	86.5		86.5	86.5		86.5	86.5		86.5	86.5		108.9	108.9		93.6	93.6
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	73.0	81.7	78.9	78.5	81.7	80.7	78.1	81.7	80.5	82.6	81.7	82.0	97.7	97.9	97.8	84.6	92.3	89.8
0310	Concrete Forming & Accessories	72.6	59.1	61.7	98.5	59.0	66.6	84.6	58.9	63.9	72.7	59.2	61.8	82.6	59.4	63.9	98.2	59.5	67.0
0320	Concrete Reinforcing	97.1	63.7	86.4	98.3	64.7	87.5	96.7	67.0	87.1	94.9	66.8	85.8	94.5	66.7	85.6	99.6	67.2	89.2
0330	Cast-in-Place Concrete	61.7	72.8	65.5	70.5	72.9	71.3	68.4	72.7	69.9	68.7	73.3	70.3	67.1	74.2	69.6	68.4	75.4	70.8
03	CONCRETE	71.4	65.5	69.1	78.3	65.6	73.2	77.1	65.9	72.7	76.4	66.2	72.3	75.0	67.5	72.0	81.3	67.0	75.6
04	MASONRY	104.4	60.2	76.6	118.2	60.6	81.9	114.4	60.2	80.3	74.6	58.9	64.7	106.5	60.6	77.6	114.1	60.7	80.4
05	METALS	89.0	74.7	85.6	91.4	74.8	87.5	90.3	75.7	86.9	95.1	75.4	90.5	86.1	90.2	87.0	91.4	73.9	87.3
06	WOOD, PLASTICS & COMPOSITES	79.6	60.4	71.6	103.8	60.4	85.8	91.1	60.4	78.4	81.2	60.4	72.6	88.2	60.7	76.8	98.1	60.7	82.6
07	THERMAL & MOISTURE PROTECTION	104.1	60.3	84.9	104.8	60.1	85.2	103.6	60.3	84.6	98.7	59.3	81.4	108.5	60.1	87.3	98.7	61.7	82.5
08	OPENINGS	96.2	57.8	86.9	98.1	57.8	88.3	96.9	58.6	87.6	99.3	58.1	89.4	101.4	58.8	91.1	91.8	58.1	83.7
0920	Plaster & Gypsum Board	88.8	59.9	70.7	101.3	59.9	75.4	99.9	59.9	74.9	84.7	59.9	69.2	103.5	59.9	76.2	112.8	59.9	79.7
0950, 0980	Ceilings & Acoustic Treatment	98.6	59.9	73.5	100.7	59.9	74.2	100.7	59.9	74.2	91.9	59.9	71.1	101.3	59.9	74.4	103.8	59.9	75.3
0960	Flooring	83.9	70.0	79.6	92.4	75.3	87.2	88.6	70.0	82.9	87.8	66.0	81.1	61.4	75.3	65.6	94.5	78.4	89.6
0970, 0990	Wall Finishes & Painting/Coating	95.9	52.6	69.5	95.9	51.3	68.7	95.9	52.6	69.5	98.7	50.6	69.4	85.3	52.6	65.3	100.4	51.6	70.6
09	FINISHES	86.9	60.2	72.4	91.9	61.2	75.3	90.8	60.2	74.2	87.5	59.4	72.3	87.0	61.6	73.2	101.0	62.2	79.9
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	78.5	95.3	100.0	78.7	95.4	100.0	78.5	95.3	100.0	78.9	95.4	100.0	79.4	95.5	100.0	79.4	95.5
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	97.0	59.9	81.8	101.2	48.1	79.4	96.9	48.2	76.9	96.8	48.8	77.1	101.7	49.8	80.4	100.8	48.1	79.2
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	89.7	49.9	70.5	91.8	57.4	75.2	92.5	53.3	73.6	93.9	60.4	77.7	98.8	58.9	79.6	99.6	57.4	79.3
MF2018	WEIGHTED AVERAGE	90.2	62.9	79.1	94.3	61.6	81.0	92.5	61.0	79.7	91.7	61.9	79.6	93.4	65.2	81.9	95.3	62.7	82.0

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DIVISION		ARKANSAS												CALIFORNIA					
		PINE BLUFF			RUSSELLVILLE			TEXARKANA			WEST MEMPHIS			ALHAMBRA			ANAHEIM		
		716			728			718			723			917 - 918			928		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		86.5	86.5		86.5	86.5		87.7	87.7		108.9	108.9		92.8	92.8		96.5	96.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	85.2	81.7	82.8	74.8	81.7	79.5	95.3	83.6	87.4	103.9	97.8	99.7	118.5	101.1	106.7	111.2	101.2	104.4
0310	Concrete Forming & Accessories	72.4	59.2	61.7	79.6	59.1	63.0	81.6	59.1	63.5	89.9	59.5	65.4	113.2	140.1	134.9	101.5	140.1	132.6
0320	Concrete Reinforcing	96.6	67.2	87.2	97.7	66.8	87.8	96.1	67.3	86.8	94.5	59.0	83.1	103.6	130.4	112.2	83.9	130.1	98.7
0330	Cast-in-Place Concrete	68.7	73.0	70.2	64.6	73.2	67.6	74.9	72.8	74.2	70.4	74.3	71.8	94.4	126.7	105.5	99.2	129.6	109.7
03	CONCRETE	77.1	66.2	72.8	74.2	66.1	71.0	76.4	66.1	72.3	80.3	66.3	74.7	98.9	132.6	112.4	98.5	133.7	112.5
04	MASONRY	107.4	60.6	77.9	117.4	58.9	80.5	85.5	60.6	69.8	98.0	58.8	73.3	124.8	139.1	133.8	80.7	135.5	115.2
05	METALS	95.7	75.9	91.1	89.0	75.2	85.8	88.0	76.0	85.2	85.4	87.0	85.8	81.0	114.3	88.8	106.8	115.0	108.8
06	WOOD, PLASTICS & COMPOSITES	80.7	60.4	72.3	85.5	60.4	75.1	90.1	60.4	77.8	95.3	60.7	81.0	97.9	139.1	115.0	95.5	139.3	113.7
07	THERMAL & MOISTURE PROTECTION	98.8	60.4	82.0	104.4	59.3	84.6	99.7	60.1	82.3	109.2	59.2	87.3	93.5	130.2	109.6	96.3	132.4	112.1
08	OPENINGS	100.5	58.3	90.3	96.2	58.1	87.0	104.9	58.7	93.8	99.0	56.5	88.8	85.1	136.6	97.6	99.7	135.3	108.3
0920	Plaster & Gypsum Board	84.2	59.9	69.0	90.7	59.9	71.4	88.8	59.9	70.7	108.1	59.9	78.0	101.8	140.6	126.1	118.0	140.6	132.1
0950, 0980	Ceilings & Acoustic Treatment	91.9	59.9	71.1	98.6	59.9	73.5	98.7	59.9	73.5	100.6	59.9	74.2	107.5	140.6	129.0	106.4	140.6	128.6
0960	Flooring	87.7	75.3	83.9	86.0	66.0	79.9	89.5	76.4	85.5	63.4	66.0	64.2	99.7	119.8	105.9	95.3	119.8	102.8
0970, 0990	Wall Finishes & Painting/Coating	98.7	51.3	69.8	95.9	50.6	68.3	98.7	52.6	70.6	85.3	50.6	64.1	97.4	121.8	112.3	85.3	116.7	104.5
09	FINISHES	87.5	61.2	73.2	88.0	59.4	72.5	90.9	61.5	74.9	89.0	59.7	73.1	101.0	134.4	119.2	99.9	133.9	118.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	78.7	95.4	100.0	78.9	95.4	100.0	78.5	95.3	100.0	79.9	95.6	100.0	117.3	103.8	100.0	117.8	103.9
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	101.1	51.5	80.8	97.0	48.3	77.0	101.1	54.9	82.1	97.5	60.9	82.5	96.4	128.4	109.6	100.6	128.5	112.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	92.7	56.6	75.3	91.8	53.3	73.2	93.8	55.5	75.3	99.8	60.5	80.8	115.9	130.0	122.7	85.1	110.4	97.3
MF2018	WEIGHTED AVERAGE	94.2	62.4	81.3	91.5	60.8	79.0	92.8	63.2	80.8	93.0	66.8	82.4	97.0	127.8	109.5	99.1	124.9	109.6

DIVISION		CALIFORNIA																	
		BAKERSFIELD			BERKELEY			EUREKA			FRESNO			INGLEWOOD			LONG BEACH		
		932 - 933			947			955			936 - 938			903 - 905			906 - 908		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		99.3	99.3		97.3	97.3		94.4	94.4		94.6	94.6		94.2	94.2		94.2	94.2
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	111.7	107.6	109.0	119.4	101.7	107.4	126.9	98.6	107.7	115.0	99.0	104.2	99.8	97.9	98.5	109.3	97.9	101.6
0310	Concrete Forming & Accessories	104.9	139.1	132.4	122.4	169.4	160.3	110.3	156.1	147.3	106.4	155.4	145.9	101.5	140.4	132.9	94.4	140.4	131.5
0320	Concrete Reinforcing	100.4	130.2	110.0	91.3	131.8	104.3	92.5	131.6	105.1	83.1	130.9	98.5	102.2	130.4	111.3	101.4	130.4	110.7
0330	Cast-in-Place Concrete	95.2	130.5	107.4	109.1	133.0	117.3	107.7	129.3	115.2	103.2	129.0	112.1	107.3	129.0	114.8	122.1	129.0	124.5
03	CONCRETE	98.8	133.3	112.6	106.1	148.2	123.0	109.0	141.0	121.8	98.0	140.5	115.0	102.4	133.7	114.9	112.0	133.7	120.7
04	MASONRY	100.7	138.0	124.2	107.4	152.1	135.6	103.3	153.9	135.2	105.7	143.1	129.3	79.7	139.2	117.2	89.5	139.2	120.8
05	METALS	99.4	112.4	102.4	100.1	117.8	104.2	106.5	117.6	109.1	100.0	116.7	103.9	89.7	115.9	95.9	89.6	115.9	95.8
06	WOOD, PLASTICS & COMPOSITES	94.5	138.3	112.6	111.0	175.7	137.8	109.5	160.5	130.6	101.5	160.5	125.9	95.5	139.4	113.7	87.9	139.4	109.3
07	THERMAL & MOISTURE PROTECTION	100.3	123.6	110.5	102.3	154.3	125.1	99.2	148.7	120.9	89.9	131.8	108.3	94.1	131.7	110.6	94.3	131.7	110.7
08	OPENINGS	89.8	134.4	100.6	87.4	162.7	105.6	99.2	143.4	109.9	91.7	147.1	105.1	83.8	136.7	96.6	83.7	136.7	96.5
0920	Plaster & Gypsum Board	102.2	139.4	125.4	116.2	177.6	154.5	125.6	162.2	148.5	96.5	162.2	137.6	112.8	140.6	130.2	104.8	140.6	127.2
0950, 0980	Ceilings & Acoustic Treatment	111.4	139.4	129.6	101.6	177.6	150.9	111.2	162.2	144.3	99.9	162.2	140.4	102.4	140.6	127.2	102.4	140.6	127.2
0960	Flooring	102.8	119.8	108.0	110.4	145.3	121.0	98.8	145.3	113.0	101.9	125.0	108.9	108.6	119.8	112.0	106.1	119.8	110.3
0970, 0990	Wall Finishes & Painting/Coating	98.7	110.9	106.1	97.1	168.4	140.6	87.6	132.1	114.8	101.6	120.3	113.0	99.1	121.8	112.9	99.1	121.8	112.9
09	FINISHES	103.4	132.9	119.4	105.9	166.5	138.8	106.0	153.3	131.7	100.0	148.5	126.3	104.6	134.7	121.0	103.2	134.7	120.3
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	118.0	103.9	100.0	131.3	106.8	100.0	128.4	106.2	100.0	128.3	106.2	100.0	118.1	103.9	100.0	118.1	103.9
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.8	127.7	111.9	96.8	167.1	125.7	96.4	129.6	110.0	100.8	129.6	112.7	95.9	128.5	109.3	95.9	128.5	109.3
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	91.0	105.6	98.0	95.9	164.1	128.8	91.5	125.9	108.1	82.9	104.5	93.3	95.7	130.0	112.2	95.5	130.0	112.1
MF2018	WEIGHTED AVERAGE	98.5	124.1	108.9	100.1	151.5	121.0	102.2	134.1	115.2	97.7	128.9	110.4	94.8	128.0	108.3	96.5	128.0	109.3

DIVISION		CALIFORNIA																	
		LOS ANGELES			MARYSVILLE			MODESTO			MOJAVE			OAKLAND			OXNARD		
		900 - 902			959			953			935			946			930		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		106.5	106.5		94.4	94.4		94.4	94.4		94.6	94.6		97.3	97.3		93.6	93.6
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	108.4	111.3	110.4	122.3	98.5	106.2	115.9	98.5	104.1	106.2	99.3	101.5	125.9	101.7	109.5	115.4	97.5	103.2
0310	Concrete Forming & Accessories	99.2	140.9	132.8	97.1	155.7	144.4	92.0	155.8	143.5	116.7	139.1	134.8	106.2	169.5	157.2	106.6	140.2	133.7
0320	Concrete Reinforcing	101.1	130.5	110.5	92.5	131.0	104.9	95.9	131.0	107.2	101.6	130.3	110.8	93.4	134.3	106.5	99.7	130.1	109.5
0330	Cast-in-Place Concrete	110.9	131.3	117.9	120.4	129.1	123.4	107.7	129.1	115.1	89.2	128.9	102.9	103.5	133.0	113.7	103.9	129.1	112.6
03	CONCRETE	109.6	134.8	119.7	110.5	140.7	122.6	102.1	140.7	117.5	92.7	132.9	108.8	106.4	148.7	123.3	100.0	133.5	113.4
04	MASONRY	96.2	139.3	123.4	104.6	144.1	129.5	103.7	144.1	129.1	103.3	137.9	125.1	116.1	152.1	138.8	106.7	135.1	124.6
05	METALS	104.5	118.5	107.8	105.9	116.3	108.4	100.0	116.4	103.8	98.8	114.7	102.5	95.4	118.7	100.8	95.3	114.8	99.9
06	WOOD, PLASTICS & COMPOSITES	100.6	140.0	116.9	94.6	160.5	121.9	89.6	160.5	118.9	102.4	138.2	117.2	95.7	175.7	128.8	96.2	139.4	114.1
07	THERMAL & MOISTURE PROTECTION	91.6	133.2	109.8	98.5	139.5	116.5	97.9	138.6	115.7	94.9	121.6	106.6	100.7	154.3	124.2	97.6	131.2	112.3
08	OPENINGS	97.8	137.1	107.3	98.5	148.7	110.6	97.6	149.3	110.1	87.0	134.3	98.4	87.5	163.3	105.8	89.3	135.4	100.5
0920	Plaster & Gypsum Board	105.1	140.9	127.4	113.3	162.2	143.9	118.0	162.2	145.7	110.6	139.4	128.6	105.2	177.6	150.4	100.7	140.6	125.7
0950, 0980	Ceilings & Acoustic Treatment	112.0	140.9	130.7	110.5	162.2	144.1	106.4	162.2	142.6	103.9	139.4	126.9	103.8	177.6	151.7	102.2	140.6	127.1
0960	Flooring	110.6	119.8	113.4	95.7	123.6	104.2	95.9	135.6	108.1	102.7	119.8	107.9	105.5	145.3	117.7	95.6	119.8	103.0
0970, 0990	Wall Finishes & Painting/Coating	98.7	121.8	112.8	87.6	132.1	114.8	87.6	136.1	117.2	88.7	110.9	102.3	97.1	168.4	140.6	88.7	116.7	105.8
09	FINISHES	106.8	135.1	122.2	102.3	149.5	128.0	101.6	152.1	129.0	101.9	132.8	118.7	103.8	166.5	137.9	98.4	134.1	117.8
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	118.8	104.1	100.0	128.4	106.2	100.0	128.4	106.2	100.0	126.8	105.8	100.0	131.3	106.8	100.0	118.0	103.9
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.6	128.6	112.1	96.4	129.7	110.0	100.6	131.7	113.4	96.5	127.7	109.3	101.1	167.2	128.2	100.7	128.5	112.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	94.4	130.0	111.6	89.6	119.1	103.9	91.3	110.1	100.4	81.3	105.6	93.0	95.4	164.1	128.6	87.5	116.3	101.3
MF2018	WEIGHTED AVERAGE	102.0	129.6	113.2	101.5	131.4	113.7	99.8	130.9	112.5	95.2	123.8	106.9	100.1	151.6	121.1	97.4	125.4	108.8

DIVISION		CALIFORNIA																	
		PALM SPRINGS			PALO ALTO			PASADENA			REDDING			RICHMOND			RIVERSIDE		
		922			943			910 - 912			960			948			925		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		95.4	95.4		97.3	97.3		92.8	92.8		94.4	94.4		97.3	97.3		95.4	95.4
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	100.9	99.4	99.9	115.2	101.7	106.0	114.2	101.1	105.3	140.3	98.5	111.9	124.6	101.6	109.0	109.3	99.4	102.6
0310	Concrete Forming & Accessories	97.5	140.2	131.9	103.7	169.6	156.9	98.5	140.1	132.0	91.6	155.7	143.4	126.6	169.1	160.9	102.5	140.1	132.8
0320	Concrete Reinforcing	97.1	130.3	107.8	91.3	134.3	105.1	104.5	130.4	112.8	90.3	131.0	103.4	91.3	134.2	105.1	94.4	130.1	105.9
0330	Cast-in-Place Concrete	94.6	129.7	106.7	92.3	133.1	106.4	89.5	126.7	102.4	131.4	129.1	130.6	106.1	132.8	115.4	102.9	129.6	112.1
03	CONCRETE	94.8	133.7	110.4	96.4	148.8	117.3	94.6	132.6	109.8	115.5	140.7	125.6	108.6	148.4	124.5	100.4	133.7	113.7
04	MASONRY	78.4	138.2	116.0	94.0	152.1	130.6	108.2	139.1	127.6	124.3	144.1	136.8	107.1	152.1	135.5	79.6	135.2	114.6
05	METALS	107.3	115.3	109.1	93.4	118.8	99.4	81.1	114.3	88.8	101.5	116.3	105.0	93.5	118.3	99.3	105.5	115.0	107.7
06	WOOD, PLASTICS & COMPOSITES	89.1	139.3	109.9	92.6	175.7	127.0	82.3	139.1	105.8	91.0	160.5	119.7	115.0	175.7	140.1	95.5	139.3	113.7
07	THERMAL & MOISTURE PROTECTION	95.5	132.2	111.6	99.9	155.7	124.4	92.9	130.2	109.2	115.9	139.5	126.3	100.9	154.3	124.3	96.4	132.0	112.0
08	OPENINGS	96.1	136.7	105.9	87.5	162.6	105.6	85.2	136.6	97.6	112.0	148.7	120.8	87.5	162.6	105.6	98.5	135.3	107.4
0920	Plaster & Gypsum Board	108.7	140.6	128.6	102.5	177.6	149.4	92.6	140.6	122.6	123.3	162.2	147.6	116.8	177.6	154.8	117.2	140.6	131.8
0950, 0980	Ceilings & Acoustic Treatment	102.3	140.6	127.2	102.3	177.6	151.1	107.5	140.6	129.0	129.2	162.2	150.6	102.3	177.6	151.1	109.2	140.6	129.6
0960	Flooring	98.5	119.8	105.0	104.5	145.3	117.0	95.0	119.8	102.6	85.7	123.6	97.2	112.2	145.3	122.3	99.5	119.8	105.7
0970, 0990	Wall Finishes & Painting/Coating	84.3	121.8	107.2	97.1	168.4	140.6	97.4	121.8	112.3	90.5	132.1	115.9	97.1	168.4	140.6	84.3	116.7	104.1
09	FINISHES	97.6	134.6	117.7	102.0	166.5	137.1	98.0	134.4	117.8	107.5	149.5	130.3	107.2	166.5	139.4	101.1	133.9	119.0
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	117.8	103.9	100.0	131.4	106.8	100.0	117.3	103.8	100.0	128.4	106.2	100.0	131.2	106.8	100.0	117.8	103.9
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.4	128.5	109.6	96.8	168.7	126.3	96.4	128.4	109.6	100.6	129.7	112.5	96.8	158.2	122.0	100.6	128.5	112.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	86.7	111.7	98.7	95.3	181.7	137.0	114.0	130.0	121.7	92.7	119.1	105.5	95.6	135.0	114.6	84.8	111.7	97.8
MF2018	WEIGHTED AVERAGE	97.0	125.4	108.5	96.1	154.5	119.8	95.0	127.8	108.3	105.7	131.4	116.2	99.3	145.5	118.1	98.9	124.9	109.5

DIVISION		CALIFORNIA																	
		SACRAMENTO			SALINAS			SAN BERNARDINO			SAN DIEGO			SAN FRANCISCO			SAN JOSE		
		942,956 - 958			939			923 - 924			919 - 921			940 - 941			951		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		96.1	96.1		94.6	94.6		95.4	95.4		105.7	105.7		112.2	112.2		96.0	96.0
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	102.9	106.8	105.5	132.2	99.1	109.7	84.0	99.4	94.5	123.5	112.8	116.2	125.3	117.7	120.1	156.7	94.1	114.2
0310	Concrete Forming & Accessories	104.8	158.2	147.9	112.0	158.6	149.6	107.6	140.2	133.9	104.7	130.6	125.6	108.4	169.9	158.1	99.5	169.4	155.9
0320	Concrete Reinforcing	85.6	131.0	100.2	100.4	131.5	110.4	94.4	130.3	105.9	101.1	130.2	110.4	101.8	134.5	112.3	83.8	134.3	100.0
0330	Cast-in-Place Concrete	87.5	130.1	102.2	102.6	129.5	111.9	71.0	129.7	91.3	102.7	127.9	111.4	115.6	134.7	122.2	125.3	132.2	127.6
03	CONCRETE	97.5	141.8	115.2	108.1	142.1	121.7	76.9	133.8	99.7	105.4	128.8	114.8	116.5	149.9	129.9	107.7	148.7	124.1
04	MASONRY	94.7	144.1	125.8	103.7	149.4	132.5	85.7	138.2	118.8	100.8	134.0	121.7	118.3	155.1	141.5	132.7	152.1	144.9
05	METALS	91.0	111.5	95.8	101.8	117.5	105.5	105.5	115.4	107.8	103.8	115.4	106.5	105.0	124.6	109.6	99.1	124.1	104.9
06	WOOD, PLASTICS & COMPOSITES	91.5	163.5	121.3	102.1	163.2	127.4	99.9	139.3	116.2	94.0	128.1	108.1	95.9	175.7	128.9	100.6	175.5	131.6
07	THERMAL & MOISTURE PROTECTION	106.5	141.2	121.7	95.5	145.8	117.5	94.7	133.2	111.6	98.6	122.2	108.9	109.1	157.3	130.3	95.3	155.7	121.8
08	OPENINGS	99.5	151.0	111.9	90.3	155.9	106.2	96.1	136.7	105.9	100.4	126.6	106.7	99.2	163.3	114.7	89.4	163.2	107.2
0920	Plaster & Gypsum Board	100.4	165.1	140.9	101.9	165.1	141.4	119.5	140.6	132.7	102.8	128.6	119.0	101.7	177.6	149.1	111.7	177.6	152.9
0950, 0980	Ceilings & Acoustic Treatment	102.3	165.1	143.0	103.9	165.1	143.6	106.4	140.6	128.6	120.1	128.6	125.6	119.8	177.6	157.3	105.1	177.6	152.1
0960	Flooring	103.9	129.8	111.8	97.7	145.3	112.2	101.0	119.8	106.8	104.3	119.8	109.1	102.9	145.3	115.8	89.7	145.3	106.7
0970, 0990	Wall Finishes & Painting/Coating	95.0	136.1	120.1	89.8	168.4	137.7	84.3	128.4	111.2	98.7	121.8	112.8	98.7	177.0	146.4	87.3	168.4	136.8
09	FINISHES	100.4	152.9	128.9	101.7	158.9	132.8	99.4	135.3	118.9	106.6	127.6	118.0	105.9	167.5	139.4	100.7	166.4	136.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	129.2	106.4	100.0	128.8	106.3	100.0	117.8	103.9	100.0	116.5	103.6	100.0	131.5	106.9	100.0	130.9	106.7
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	101.0	130.2	113.0	96.5	137.2	113.2	96.4	128.5	109.6	100.6	127.2	111.5	101.0	179.6	133.2	100.6	168.6	128.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	91.1	120.8	105.4	82.3	132.9	106.7	86.7	113.9	99.8	96.9	103.9	100.3	95.6	188.8	140.5	95.1	181.7	136.9
MF2018	WEIGHTED AVERAGE	97.0	132.8	111.6	99.0	137.6	114.7	94.2	125.8	107.1	102.4	122.2	110.4	105.0	160.3	127.5	102.3	154.3	123.5

DIVISION		CALIFORNIA																	
		SAN LUIS OBISPO			SAN MATEO			SAN RAFAEL			SANTA ANA			SANTA BARBARA			SANTA CRUZ		
		934			944			949			926 - 927			931			950		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		94.6	94.6		97.3	97.3		96.5	96.5		95.4	95.4		94.6	94.6		96.0	96.0
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	122.0	99.3	106.6	122.1	101.7	108.2	116.1	106.7	109.7	98.8	99.4	99.2	115.4	99.3	104.4	156.0	93.9	113.9
0310	Concrete Forming & Accessories	119.0	140.3	136.2	112.7	169.5	158.5	123.9	169.2	160.4	108.0	140.2	133.9	107.1	140.2	133.8	99.5	158.7	147.3
0320	Concrete Reinforcing	101.6	130.3	110.8	91.3	134.4	105.2	91.6	131.9	104.6	97.4	130.3	108.0	99.7	130.3	109.5	104.3	131.5	113.0
0330	Cast-in-Place Concrete	110.3	129.0	116.8	102.7	133.0	113.2	119.6	132.0	123.9	90.7	129.7	104.2	103.5	129.0	112.3	124.4	131.1	126.7
03	CONCRETE	107.4	133.5	117.9	105.0	148.7	122.5	125.8	147.6	134.5	92.8	133.7	109.2	99.9	133.5	113.3	111.8	143.0	124.3
04	MASONRY	105.5	137.1	125.4	106.8	155.0	137.2	87.1	154.9	129.9	75.7	138.4	115.3	103.9	137.1	124.8	136.6	149.6	144.8
05	METALS	100.0	115.0	103.5	93.3	118.9	99.3	95.5	114.1	99.9	105.6	115.4	107.8	96.7	114.9	101.0	106.0	121.6	109.6
06	WOOD, PLASTICS & COMPOSITES	105.0	139.4	119.2	102.4	175.7	132.8	104.2	175.5	133.7	101.9	139.3	117.4	96.2	139.4	114.1	100.6	163.4	126.6
07	THERMAL & MOISTURE PROTECTION	95.7	130.3	110.9	100.5	155.2	124.5	105.0	154.8	126.8	96.0	132.3	111.9	95.0	131.3	110.9	95.0	147.6	118.0
08	OPENINGS	88.7	135.0	99.9	87.4	163.3	105.8	97.1	161.9	112.8	95.4	136.7	105.4	90.2	136.7	101.4	90.4	155.9	106.2
0920	Plaster & Gypsum Board	111.8	140.6	129.8	112.7	177.6	153.2	117.0	177.6	154.9	121.2	140.6	133.3	100.7	140.6	125.7	118.4	165.1	147.6
0950, 0980	Ceilings & Acoustic Treatment	103.9	140.6	127.7	102.3	177.6	151.1	113.3	177.6	155.0	106.4	140.6	128.6	102.2	140.6	127.1	107.1	165.1	144.7
0960	Flooring	103.4	119.8	108.4	107.3	145.3	118.9	117.3	145.3	125.9	101.5	119.8	107.1	96.9	119.8	103.9	93.6	145.3	109.4
0970, 0990	Wall Finishes & Painting/Coating	88.7	116.7	105.8	97.1	168.4	140.6	94.0	163.7	136.5	84.3	121.8	107.2	88.7	116.7	105.8	87.4	168.4	136.8
09	FINISHES	103.6	134.1	120.2	105.0	166.5	138.4	108.7	165.9	139.8	101.2	134.6	119.4	98.9	134.1	118.0	103.3	159.0	133.6
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	127.0	105.9	100.0	131.3	106.8	100.0	130.7	106.7	100.0	117.8	103.9	100.0	117.9	103.9	100.0	129.0	106.3
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.5	128.5	109.6	96.8	164.7	124.7	96.8	179.5	130.7	96.4	128.5	109.6	100.7	128.5	112.1	100.6	137.2	115.6
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	81.3	109.3	94.8	95.3	172.1	132.3	90.0	125.9	107.3	86.7	113.3	99.5	80.7	107.5	93.6	94.8	132.9	113.2
MF2018	WEIGHTED AVERAGE	98.3	125.0	109.2	98.3	152.6	120.4	101.4	148.8	120.7	96.6	125.6	108.4	96.9	124.5	108.1	104.6	137.8	118.1

For CCI updates and additional guidance please go to www.rsmeans.com/2022books

DIVISION		CALIFORNIA															COLORADO		
		SANTA ROSA			STOCKTON			SUSANVILLE			VALLEJO			VAN NUYS			ALAMOSA		
		954			952			961			945			913 - 916			811		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		94.9	94.9		94.4	94.4		94.4	94.4		96.5	96.5		92.8	92.8		87.8	87.8
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	115.9	98.5	104.1	115.6	98.5	104.0	149.6	98.5	114.9	103.3	106.6	105.5	138.2	101.1	113.0	137.5	80.6	98.8
0310	Concrete Forming & Accessories	98.8	168.4	154.9	97.6	157.8	146.1	93.1	155.7	143.6	109.8	168.2	156.9	107.2	140.1	133.7	100.6	69.0	75.1
0320	Concrete Reinforcing	93.2	131.9	105.6	95.9	131.0	107.2	90.3	131.0	103.4	92.8	131.8	105.3	104.5	130.4	112.8	97.9	65.1	87.4
0330	Cast-in-Place Concrete	118.3	130.5	122.5	105.0	129.1	113.3	119.5	129.1	122.8	95.2	131.2	107.6	94.4	126.7	105.6	90.1	70.1	83.2
03	CONCRETE	110.4	147.0	125.1	101.3	141.6	117.4	116.1	140.7	125.9	102.9	146.8	120.5	106.5	132.6	117.0	104.6	69.3	90.5
04	MASONRY	102.7	154.0	135.0	103.5	144.1	129.1	122.3	144.1	136.0	70.8	154.0	123.2	124.8	139.1	133.8	130.5	58.0	84.8
05	METALS	105.9	119.1	109.0	100.6	116.3	104.3	99.6	116.3	103.5	95.4	113.5	99.6	80.2	114.3	88.2	97.0	77.9	92.6
06	WOOD, PLASTICS & COMPOSITES	91.1	175.3	125.9	96.0	163.2	123.9	92.6	160.5	120.7	90.6	175.5	125.7	92.0	139.1	111.5	94.7	71.3	85.0
07	THERMAL & MOISTURE PROTECTION	96.4	153.7	121.5	98.4	137.9	115.7	118.6	139.5	127.8	102.7	154.0	125.2	94.3	130.2	110.0	108.7	65.4	89.7
08	OPENINGS	96.9	162.5	112.7	97.6	150.2	110.3	112.9	148.7	121.6	98.7	161.9	113.9	85.0	136.6	97.5	92.3	69.4	86.8
0920	Plaster & Gypsum Board	112.5	177.6	153.2	118.0	165.1	147.5	124.2	162.2	148.0	106.4	177.6	150.9	99.5	140.6	125.2	87.1	70.7	76.8
0950, 0980	Ceilings & Acoustic Treatment	106.4	177.6	152.6	113.3	165.1	146.9	121.7	162.2	148.0	114.8	177.6	155.5	104.8	140.6	128.0	104.6	70.7	82.6
0960	Flooring	98.9	132.9	109.3	95.9	135.6	108.1	86.0	123.6	97.5	112.8	145.3	122.7	97.5	119.8	104.3	106.5	80.3	98.5
0970, 0990	Wall Finishes & Painting/Coating	84.3	163.7	132.7	87.6	132.1	114.8	90.5	132.1	115.9	95.0	163.7	136.9	97.4	121.8	112.3	97.8	74.2	83.4
09	FINISHES	100.3	163.3	134.5	103.1	153.3	130.4	107.5	149.5	130.3	104.6	165.6	137.7	100.9	134.4	119.1	101.8	71.8	85.5
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	129.8	106.5	100.0	128.7	106.2	100.0	128.4	106.2	100.0	130.3	106.6	100.0	117.3	103.8	100.0	84.9	96.7
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.4	174.9	128.6	100.6	131.7	113.4	96.4	129.7	110.0	101.1	146.9	119.9	96.4	128.4	109.6	96.6	68.5	85.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	86.9	121.0	103.3	91.3	112.5	101.5	92.9	119.1	105.6	87.7	126.1	106.2	114.0	130.0	121.7	95.3	58.6	77.6
MF2018	WEIGHTED AVERAGE	100.6	146.4	119.2	100.0	131.6	112.8	104.9	131.4	115.7	97.4	141.6	115.4	98.1	127.8	110.2	100.6	68.8	87.7

DIVISION		COLORADO																	
		BOULDER			COLORADO SPRINGS			DENVER			DURANGO			FORT COLLINS			FORT MORGAN		
		803			808 - 809			800 - 802			813			805			807		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		89.9	89.9		87.9	87.9		95.0	95.0		87.8	87.8		89.9	89.9		89.9	89.9
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	92.3	88.1	89.5	94.7	83.1	86.8	99.1	94.8	96.2	131.1	80.6	96.8	104.2	87.4	92.8	94.4	86.8	89.2
0310	Concrete Forming & Accessories	99.9	72.5	77.8	87.4	68.8	72.4	99.3	69.0	74.8	108.9	68.7	76.5	96.9	69.0	74.4	100.6	68.7	74.9
0320	Concrete Reinforcing	97.4	69.7	88.5	97.0	69.4	88.1	101.4	69.5	91.1	97.9	65.1	87.4	97.5	66.8	87.6	97.6	65.6	87.3
0330	Cast-in-Place Concrete	97.8	77.3	90.8	100.5	72.3	90.7	101.8	73.5	92.0	103.7	70.0	92.1	110.5	72.1	97.2	96.0	69.4	86.8
03	CONCRETE	99.0	74.2	89.0	101.5	70.7	89.2	108.3	71.1	93.4	106.7	69.2	91.7	108.0	70.3	92.9	97.7	69.0	86.2
04	MASONRY	111.4	75.7	88.9	115.9	61.7	81.7	123.2	62.4	84.9	118.1	59.0	80.8	128.5	66.5	89.4	127.8	66.5	89.2
05	METALS	89.6	79.3	87.2	92.7	79.0	89.5	101.9	77.9	96.3	97.0	77.7	92.5	90.5	78.2	87.6	89.3	77.4	86.6
06	WOOD, PLASTICS & COMPOSITES	97.7	70.9	86.6	85.5	71.1	79.5	99.4	71.1	87.7	106.1	71.3	91.7	94.3	70.9	84.6	97.7	70.9	86.6
07	THERMAL & MOISTURE PROTECTION	106.2	74.7	92.4	107.1	69.4	90.6	106.7	72.3	91.6	108.7	65.6	89.8	106.6	70.8	90.9	106.1	69.0	89.8
08	OPENINGS	91.2	70.5	86.2	95.0	70.6	89.1	100.4	70.6	93.2	98.6	69.4	91.6	91.2	69.8	86.0	91.2	69.2	85.9
0920	Plaster & Gypsum Board	111.4	70.7	85.9	89.8	70.7	77.9	102.8	70.7	82.7	110.3	70.7	85.5	99.5	70.7	81.5	111.4	70.7	85.9
0950, 0980	Ceilings & Acoustic Treatment	92.0	70.7	78.2	103.6	70.7	82.3	106.5	70.7	83.3	104.6	70.7	82.6	92.0	70.7	78.2	92.0	70.7	78.2
0960	Flooring	106.2	80.3	98.3	97.7	80.3	92.4	102.5	80.3	95.7	110.8	80.3	101.5	102.7	80.3	95.9	106.6	80.3	98.6
0970, 0990	Wall Finishes & Painting/Coating	88.9	74.2	79.9	88.6	78.6	82.5	98.7	74.2	83.7	97.8	74.2	83.4	88.9	74.2	79.9	88.9	74.2	79.9
09	FINISHES	99.9	73.9	85.8	96.7	72.0	83.3	101.4	71.5	85.2	105.9	71.8	87.4	97.6	71.5	83.4	100.0	71.5	84.5
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	87.2	97.2	100.0	84.2	96.6	100.0	84.2	96.6	100.0	84.9	96.7	100.0	84.1	96.5	100.0	84.1	96.5
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.7	76.5	88.4	101.1	68.4	87.7	100.9	75.0	90.3	96.6	55.8	79.9	101.0	70.1	88.3	96.7	69.5	85.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	98.7	80.1	89.7	100.5	72.9	87.2	101.6	80.1	91.2	94.9	51.5	74.0	98.7	80.1	89.7	99.0	72.4	86.2
MF2018	WEIGHTED AVERAGE	96.5	77.4	88.8	98.8	71.8	87.9	103.1	75.3	91.8	101.2	65.2	86.6	99.7	73.9	89.2	97.1	72.3	87.0

DIVISION		COLORADO																	
		GLENWOOD SPRINGS			GOLDEN			GRAND JUNCTION			GREELEY			MONTROSE			PUEBLO		
		816			804			815			806			814			810		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		90.8	90.8		89.9	89.9		90.8	90.8		89.9	89.9		89.3	89.3		87.8	87.8
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	146.5	87.6	106.5	104.0	87.0	92.5	131.0	88.1	101.9	91.8	87.4	88.8	140.1	84.4	102.3	122.9	80.9	94.4
0310	Concrete Forming & Accessories	96.1	68.5	73.8	90.5	68.8	73.0	107.3	69.5	76.8	94.0	69.0	73.8	95.6	68.7	73.9	103.8	69.1	75.8
0320	Concrete Reinforcing	97.3	65.5	87.1	97.6	65.6	87.3	97.5	66.7	87.6	97.4	66.8	87.6	97.3	65.3	87.0	94.0	69.5	86.1
0330	Cast-in-Place Concrete	90.1	69.0	82.8	96.0	72.0	87.7	99.8	72.6	90.4	92.3	72.1	85.3	90.1	69.5	83.0	89.5	72.5	83.6
03	CONCRETE	108.8	68.8	92.8	106.1	69.9	91.6	103.7	70.7	90.5	94.6	70.3	84.9	101.2	69.0	88.3	95.1	71.0	85.4
04	MASONRY	104.0	66.4	80.3	131.2	66.3	90.3	138.5	64.9	92.1	121.1	66.5	86.7	110.4	62.9	80.5	100.4	62.9	76.8
05	METALS	96.7	77.9	92.3	89.5	77.6	86.7	98.0	78.6	93.5	90.5	78.2	87.6	95.5	77.9	91.3	100.3	80.1	95.6
06	WOOD, PLASTICS & COMPOSITES	89.5	71.1	81.9	88.0	70.9	81.0	104.2	71.1	90.5	91.3	70.9	82.9	90.0	71.2	82.2	98.0	71.3	87.0
07	THERMAL & MOISTURE PROTECTION	108.5	67.7	90.6	107.3	70.5	91.1	107.6	69.3	90.8	105.8	70.8	90.4	108.6	66.7	90.3	107.1	68.4	90.1
08	OPENINGS	97.6	69.3	90.8	91.2	69.2	85.9	98.3	69.9	91.4	91.2	69.8	86.0	98.7	69.4	91.7	93.8	70.7	88.3
0920	Plaster & Gypsum Board	118.6	70.7	88.7	94.0	70.7	79.4	141.8	70.7	97.4	97.4	70.7	80.7	85.4	70.7	76.2	93.2	70.7	79.1
0950, 0980	Ceilings & Acoustic Treatment	103.9	70.7	82.4	92.0	70.7	78.2	103.9	70.7	82.4	92.0	70.7	78.2	104.6	70.7	82.6	112.8	70.7	85.5
0960	Flooring	105.7	80.3	97.9	100.5	80.3	94.4	110.2	80.3	101.1	101.6	80.3	95.1	108.6	80.3	99.9	107.5	80.3	99.2
0970, 0990	Wall Finishes & Painting/Coating	97.8	74.2	83.4	88.9	74.2	79.9	97.8	74.2	83.4	88.9	74.2	79.9	97.8	74.2	83.4	97.8	74.2	83.4
09	FINISHES	107.1	71.6	87.8	96.8	71.5	83.1	110.2	72.0	89.4	96.2	71.5	82.8	102.1	71.7	85.6	103.0	71.7	86.0
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	84.3	96.6	100.0	84.0	96.5	100.0	84.8	96.7	100.0	84.1	96.5	100.0	84.6	96.7	100.0	84.8	96.7
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.6	55.7	79.8	96.7	69.4	85.5	100.8	71.4	88.7	101.0	70.1	88.3	96.6	55.7	79.8	100.8	68.4	87.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	93.4	51.5	73.2	99.0	74.7	87.3	94.8	54.5	75.4	98.7	80.1	89.7	94.8	51.5	73.9	95.3	63.4	79.9
MF2018	WEIGHTED AVERAGE	100.9	66.5	86.9	98.3	72.8	87.9	102.9	70.6	89.8	97.0	73.9	87.6	99.6	65.9	85.9	99.5	70.6	87.7

DIVISION		COLORADO			CONNECTICUT														
		SALIDA			BRIDGEPORT			BRISTOL			HARTFORD			MERIDEN			NEW BRITAIN		
		812			066			060			061			064			060		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		89.3	89.3		92.3	92.3		92.3	92.3		97.1	97.1		92.7	92.7		92.3	92.3
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	130.8	84.1	99.1	101.3	93.2	95.8	100.5	93.2	95.6	97.5	101.2	100.0	97.8	93.9	95.2	100.7	93.2	95.6
0310	Concrete Forming & Accessories	107.2	68.9	76.3	99.2	114.5	111.5	99.2	114.4	111.4	100.7	114.6	111.9	98.9	114.3	111.3	100.1	114.4	111.6
0320	Concrete Reinforcing	97.1	65.1	86.9	104.6	141.5	116.5	104.6	141.5	116.5	99.8	141.5	113.2	104.6	141.5	116.5	104.6	141.5	116.5
0330	Cast-in-Place Concrete	103.3	69.6	91.6	81.7	125.0	96.6	76.5	125.0	93.3	78.0	126.7	94.8	73.6	124.9	91.3	77.7	125.0	94.1
03	CONCRETE	102.5	69.1	89.2	92.2	122.3	104.3	90.0	122.2	102.9	90.8	122.8	103.6	88.7	122.2	102.1	90.6	122.2	103.2
04	MASONRY	138.8	59.0	88.5	105.0	129.2	120.3	97.8	129.2	117.6	100.7	129.3	118.8	97.4	129.2	117.5	99.4	129.2	118.2
05	METALS	95.1	77.8	91.1	97.6	117.6	102.3	97.6	117.5	102.2	101.3	115.5	104.6	94.4	117.4	99.8	93.7	117.5	99.2
06	WOOD, PLASTICS & COMPOSITES	99.2	71.2	87.6	99.6	111.8	104.6	99.6	111.8	104.6	92.0	112.0	100.2	99.6	111.8	104.6	99.6	111.8	104.6
07	THERMAL & MOISTURE PROTECTION	107.6	65.6	89.2	103.1	120.4	110.7	103.3	117.7	109.6	110.8	119.3	114.5	103.3	117.7	109.6	103.3	117.7	109.6
08	OPENINGS	92.4	69.4	86.8	92.8	118.8	99.0	92.8	118.8	99.0	94.2	118.9	100.1	94.5	118.8	100.4	92.8	118.8	99.0
0920	Plaster & Gypsum Board	85.9	70.7	76.4	128.4	112.0	118.2	128.4	112.0	118.2	117.2	112.0	114.0	130.6	112.0	119.0	128.4	112.0	118.2
0950, 0980	Ceilings & Acoustic Treatment	104.6	70.7	82.6	103.5	112.0	109.1	103.5	112.0	109.1	104.8	112.0	109.5	113.7	112.0	112.6	103.5	112.0	109.1
0960	Flooring	113.1	80.3	103.1	97.7	122.9	105.4	97.7	122.9	105.4	105.3	125.2	111.4	97.7	115.8	103.3	97.7	122.9	105.4
0970, 0990	Wall Finishes & Painting/Coating	97.8	74.2	83.4	90.1	127.4	112.9	90.1	127.4	112.9	98.7	127.4	116.2	90.1	127.4	112.9	90.1	127.4	112.9
09	FINISHES	102.3	71.7	85.7	102.1	117.0	110.2	102.2	117.0	110.2	105.0	117.5	111.8	104.8	115.8	110.7	102.2	117.0	110.2
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	84.6	96.7	100.0	111.4	102.5	100.0	111.4	102.5	100.0	111.9	102.6	100.0	111.4	102.5	100.0	111.4	102.5
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.6	69.5	85.5	101.0	115.7	107.1	101.0	115.7	107.1	100.9	115.8	107.0	96.8	115.7	104.6	101.0	115.7	107.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	94.9	58.6	77.4	98.2	105.5	101.7	98.2	107.5	102.7	101.2	106.6	103.8	98.1	98.1	98.1	98.2	107.5	102.7
MF2018	WEIGHTED AVERAGE	100.2	69.4	87.6	98.3	115.2	105.2	97.7	115.4	104.9	99.3	115.9	106.1	96.2	113.9	103.4	97.0	115.4	104.5

DIVISION		CONNECTICUT																	
		NEW HAVEN			NEW LONDON			NORWALK			STAMFORD			WATERBURY			WILLIMANTIC		
		065			063			068			069			067			062		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		92.7	92.7		92.7	92.7		92.3	92.3		92.3	92.3		92.3	92.3		92.3	92.3
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	100.5	93.9	96.0	92.8	93.9	93.5	101.1	93.2	95.8	101.7	93.2	96.0	101.0	93.2	95.7	101.1	93.1	95.7
0310	Concrete Forming & Accessories	98.9	114.3	111.3	98.9	114.2	111.2	99.2	114.5	111.5	99.1	114.5	111.5	99.2	114.3	111.4	99.1	114.1	111.2
0320	Concrete Reinforcing	104.6	141.5	116.5	82.0	141.5	101.1	104.6	141.6	116.5	104.6	141.6	116.5	104.6	141.5	116.5	104.6	141.5	116.5
0330	Cast-in-Place Concrete	79.1	123.1	94.3	67.4	123.1	86.6	80.3	126.1	96.1	81.7	126.1	97.0	81.7	125.0	96.6	76.3	121.2	91.8
03	CONCRETE	102.1	121.6	109.9	78.7	121.5	95.8	91.6	122.7	104.1	92.2	122.7	104.4	92.2	122.2	104.2	89.8	120.8	102.2
04	MASONRY	98.0	129.2	117.7	96.2	129.2	117.0	97.5	130.4	118.2	98.3	130.4	118.5	98.3	129.2	117.8	97.6	129.2	117.5
05	METALS	93.9	117.4	99.4	93.6	117.3	99.1	97.6	117.7	102.3	97.6	117.7	102.3	97.6	117.5	102.2	97.3	117.2	102.0
06	WOOD, PLASTICS & COMPOSITES	99.6	111.8	104.6	99.6	111.8	104.6	99.6	111.8	104.6	99.6	111.8	104.6	99.6	111.8	104.6	99.6	111.8	104.6
07	THERMAL & MOISTURE PROTECTION	103.4	117.4	109.5	103.1	117.4	109.4	103.3	120.9	111.0	103.3	120.9	111.0	103.3	117.7	109.6	103.4	116.9	109.3
08	OPENINGS	92.8	118.8	99.0	94.9	117.3	100.3	92.8	118.8	99.0	92.8	118.8	99.0	92.8	118.8	99.0	95.0	118.8	100.7
0920	Plaster & Gypsum Board	128.4	112.0	118.2	128.4	112.0	118.2	128.4	112.0	118.2	128.4	112.0	118.2	128.4	112.0	118.2	128.4	112.0	118.2
0950, 0980	Ceilings & Acoustic Treatment	103.5	112.0	109.1	102.8	112.0	108.8	103.5	112.0	109.1	103.5	112.0	109.1	103.5	112.0	109.1	102.8	112.0	108.8
0960	Flooring	97.7	122.9	105.4	97.7	118.1	104.0	97.7	122.9	105.4	97.7	122.9	105.4	97.7	122.9	105.4	97.7	112.7	102.3
0970, 0990	Wall Finishes & Painting/Coating	90.1	127.4	112.9	90.1	123.6	110.5	90.1 -	127.4	112.9	90.1	127.4	112.9	90.1	127.4	112.9	90.1	127.4	112.9
09	FINISHES	102.2	117.0	110.2	101.5	115.7	109.2	102.2	117.0	110.2	102.2	117.0	110.2	102.0	117.0	110.2	102.1	115.2	109.2
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	111.4	102.5	100.0	111.4	102.5	100.0	111.4	102.5	100.0	111.4	102.5	100.0	111.4	102.5	100.0	111.4	102.5
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	101.0	115.7	107.1	96.8	115.7	104.6	101.0	115.7	107.1	101.0	115.7	107.1	101.0	115.7	107.1	101.0	115.7	107.0
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	98.1	105.8	101.8	96.3	100.0	98.1	98.2	105.5	101.7	98.2	108.2	103.0	97.9	105.8	101.7	98.2	103.1	100.6
MF2018	WEIGHTED AVERAGE	98.6	115.1	105.3	94.1	114.0	102.2	97.9	115.4	105.0	98.0	115.8	105.3	98.0	115.1	105.0	97.8	114.3	104.5

DIVISION		D.C.			DELAWARE									FLORIDA					
		WASHINGTON			DOVER			NEWARK			WILMINGTON			DAYTONA BEACH			FORT LAUDERDALE		
		200 - 205			199			197			198			321			333		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		104.6	104.6		114.6	114.6		114.6	114.6		114.8	114.8		97.0	97.0		90.5	90.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	111.5	98.7	102.8	111.9	104.1	106.6	110.5	103.5	105.7	107.9	105.3	106.1	133.7	81.3	98.1	107.8	70.5	82.5
0310	Concrete Forming & Accessories	102.1	73.4	78.9	102.1	98.7	99.4	98.2	98.4	98.4	101.7	99.0	99.5	95.7	62.3	68.7	91.8	60.6	66.6
0320	Concrete Reinforcing	101.0	90.6	97.7	99.6	118.7	105.7	98.4	118.7	104.9	99.4	118.7	105.6	90.9	60.2	81.0	89.8	61.5	80.7
0330	Cast-in-Place Concrete	129.4	79.3	112.1	119.7	107.9	115.7	99.8	105.4	101.7	116.4	108.0	113.5	90.3	65.4	81.7	93.0	63.4	82.8
03	CONCRETE	114.0	79.3	100.1	105.8	106.4	106.0	97.4	105.6	100.7	104.3	106.5	105.2	90.6	64.7	80.2	92.3	63.5	80.7
04	MASONRY	95.8	85.6	89.4	106.2	102.7	104.0	101.4	102.6	102.1	98.9	102.7	101.3	88.3	59.9	70.4	95.7	56.9	71.2
05	METALS	100 7	95.4	99.5	95.5	123.0	101.9	97.9	126.4	104.5	95.9	123.2	102.3	101.2	88.7	98.3	98.0	89.2	95.9
06	WOOD, PLASTICS & COMPOSITES	100.2	71.8	88.4	92.5	95.9	93.9	92.0	95.6	93.5	89.9	95.9	92.4	90.0	61.2	78.1	79.6	60.8	71.9
07	THERMAL & MOISTURE PROTECTION	104.9	86.9	97.0	104.5	114.1	108.7	107.7	112.3	109.7	103.2	114.1	108.0	101.2	63.8	84.8	106.3	60.0	86.0
08	OPENINGS	101.0	75.7	94.9	88.2	108.1	93.0	88.0	107.9	92.8	85.7	108.1	91.1	89.5	59.9	82.4	90.6	60.0	83.2
0920	Plaster & Gypsum Board	116.0	71.1	87.9	116.5	95.7	103.5	113.9	95.7	102.5	116.5	95.7	103.5	100.9	60.8	75.8	119.7	60.4	82.6
0950, 0980	Ceilings & Acoustic Treatment	112.5	71.1	85.6	109.4	95.7	100.5	105.7	95.7	99.2	101.7	95.7	97.8	83.2	60.8	68.7	96.9	60.4	73.2
0960	Flooring	93.3	77.1	88.3	95.4	110.4	100.0	92.6	110.4	98.1	102.6	110.4	105.0	105.8	59.5	91.7	101.7	61.9	89.5
0970, 0990	Wall Finishes & Painting/Coating	98.7	70.7	81.6	98.7	119.6	111.4	87.6	119.6	107.1	98.7	119.6	111.4	99.5	60.5	75.7	91.2	58.1	71.0
09	FINISHES	103.7	72.7	86.9	103.5	102.0	102.7	97.5	101.7	99.8	104.1	102.0	103.0	98.8	61.1	78.3	101.1	60.0	78.8
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	95.3	99.0	100.0	97.5	99.5	100.0	96.7	99.3	100.0	108.5	101.8	100.0	82.1	96.1	100.0	82.3	96.2
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.6	92.5	97.3	99.1	122.1	108.5	99.4	122.0	108.7	100.6	122.1	109.4	100.5	75.3	90.1	100.5	68.8	87.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	99.3	101.3	100.3	99.2	110.5	104.7	98.7	110.6	104.4	98.9	110.5	104.5	96.5	60.2	79.0	95.8	71.0	83.8
MF2018	WEIGHTED AVERAGE	102.7	88.5	96.9	99.4	110.6	103.9	98.1	110.6	103.2	98.9	111.1	103.8	97.9	69.1	86.2	97.3	67.8	85.3

DIVISION		FLORIDA																	
		FORT MYERS			GAINESVILLE			JACKSONVILLE			LAKELAND			MELBOURNE			MIAMI		
		339,341			326,344			320,322			338			329			330 - 332,340		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		97.0	97.0		97.0	97.0		97.0	97.0		97.0	97.0		97.0	97.0		97.1	97.1
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	123.2	81.4	94.8	144.3	81.1	101.4	133.6	81.1	98.0	125.4	81.4	95.5	143.0	81.4	101.1	108.6	83.4	91.5
0310	Concrete Forming & Accessories	86.2	60.7	65.6	89.1	54.6	61.2	95.3	62.5	68.9	81.5	61.8	65.6	90.7	62.4	67.9	102.5	63.3	70.9
0320	Concrete Reinforcing	90.8	73.3	85.1	96.3	59.6	84.5	90.9	59.6	80.8	93.0	76.3	87.6	91.9	67.2	83.9	100.4	61.5	87.9
0330	Cast-in-Place Concrete	96.9	65.0	85.9	103.7	65.0	90.3	91.2	65.0	82.1	99.2	65.0	87.4	108.9	65.4	93.9	90.0	69.2	82.8
03	CONCRETE	92.9	66.1	82.2	100.8	61.0	84.8	91.0	64.6	80.4	94.5	67.2	83.5	101.0	66.0	87.0	94.7	66.5	83.4
04	MASONRY	90.7	55.8	68.7	102.1	58.4	74.6	88.3	57.7	69.0	107.1	59.2	76.9	87.6	59.9	70.1	99.7	62.2	76.1
05	METALS	100.0	93.0	98.4	99.9	87.3	97.0	99.8	87.3	96.9	99.9	94.5	98.6	109.1	91.3	104.9	97.9	86.0	95.1
06	WOOD, PLASTICS & COMPOSITES	75.7	59.6	69.0	83.0	51.5	70.0	90.0	62.2	78.5	70.6	61.2	66.7	84.9	61.2	75.1	94.4	61.2	80.6
07	THERMAL & MOISTURE PROTECTION	106.0	60.5	86.1	101.5	60.9	83.7	101.5	61.9	84.1	105.9	61.6	86.5	101.7	62.9	84.7	105.2	64.6	87.4
08	OPENINGS	92.2	62.1	84.9	89.4	54.5	80.9	89.5	60.3	82.5	92.1	63.6	85.2	88.9	61.5	82.3	93.0	60.2	85.1
0920	Plaster & Gypsum Board	111.9	59.1	78.9	95.5	50.8	67.5	100.9	61.7	76.4	107.6	60.8	78.3	95.5	60.8	73.8	111.9	60.4	79.7
0950, 0980	Ceilings & Acoustic Treatment	90.6	59.1	70.2	78.7	50.8	60.6	83.2	61.7	69.3	90.6	60.8	71.3	82.6	60.8	68.4	97.6	60.4	73.4
0960	Flooring	98.9	71.8	90.7	103.6	58.3	89.8	105.8	61.3	92.2	97.3	60.7	86.1	103.9	60.7	90.7	101.4	61.3	89.1
0970, 0990	Wall Finishes & Painting/Coating	96.0	62.0	75.3	99.5	62.0	76.6	99.5	62.0	76.6	96.0	62.0	75.3	99.5	78.6	86.7	98.7	58.1	73.9
09	FINISHES	100.6	62.5	79.9	97.6	55.2	74.5	98.8	62.0	78.8	99.6	61.2	78.7	98.0	63.2	79.1	102.0	61.7	80.1
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	80.4	95.7	100.0	79.2	95.5	100.0	80.4	95.7	100.0	81.8	96.0	100.0	82.1	96.1	100.0	85.2	96.8
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	97.2	55.5	80.1	97.5	59.4	81.9	100.5	64.5	85.7	97.2	58.0	81.1	100.5	75.4	90.2	96.1	67.0	84.2
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	96.6	61.8	79.8	96.5	54.3	76.1	96.4	63.3	80.4	95.5	54.3	75.6	97.5	66.6	82.6	97.3	75.7	86.9
MF2018	WEIGHTED AVERAGE	97.5	65.4	84.4	99.1	62.8	84.3	97.7	66.9	85.2	98.1	65.5	84.8	101.1	70.8	88.8	97.5	70.1	86.4

DIVISION		FLORIDA																	
		ORLANDO			PANAMA CITY			PENSACOLA			SARASOTA			ST. PETERSBURG			TALLAHASSEE		
		327 - 328,347			324			325			342			337			323		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		105.1	105.1		97.0	97.0		97.0	97.0		97.0	97.0		97.0	97.0		105.1	105.1
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	131.1	95.0	106.6	150.0	81.3	103.4	149.5	81.2	103.1	134.5	81.4	98.5	127.9	81.4	96.3	126.4	95.0	105.0
0310	Concrete Forming & Accessories	102.2	62.4	70.1	94.4	65.0	70.7	91.3	62.0	67.7	95.3	61.6	68.1	91.2	62.0	67.6	101.5	63.0	70.4
0320	Concrete Reinforcing	101.0	63.6	89.0	94.9	64.4	85.1	97.2	65.3	87.0	92.9	71.0	85.9	93.0	73.4	86.7	101.2	59.7	87.9
0330	Cast-in-Place Concrete	111.7	67.8	96.5	95.8	65.3	85.3	118.4	64.4	99.8	106.9	65.0	92.4	100.2	65.3	88.1	93.6	67.8	84.7
03	CONCRETE	104.4	65.9	89.0	99.0	66.6	86.0	108.4	65.1	91.1	97.4	66.1	84.9	96.2	66.8	84.4	97.5	65.6	84.7
04	MASONRY	102.1	60.0	75.5	92.9	60.0	72.1	110.8	59.0	78.1	92.6	59.2	71.5	147.1	58.4	91.2	88.5	60.1	70.6
05	METALS	96.4	86.5	94.1	100.4	90.0	98.0	101.4	90.2	98.8	102.2	91.9	99.8	100.5	93.2	98.8	100.4	85.1	96.8
06	WOOD, PLASTICS & COMPOSITES	90.6	61.6	78.6	88.6	65.2	79.0	86.4	62.2	76.4	92.5	61.2	79.6	81.1	61.2	72.9	95.9	62.5	82.1
07	THERMAL & MOISTURE PROTECTION	108.0	65.5	89.4	101.8	62.1	84.4	101.7	60.9	83.8	101.1	61.6	83.8	106.2	60.5	86.2	99.4	63.8	83.8
08	OPENINGS	93.9	60.9	86.0	87.9	63.1	81.9	87.9	61.6	81.6	94.2	62.0	86.4	91.0	63.0	84.2	94.1	60.5	86.0
0920	Plaster & Gypsum Board	113.5	60.8	80.5	99.6	64.9	77.9	105.2	61.7	78.0	107.0	60.8	78.1	116.5	60.8	81.7	107.3	61.7	78.8
0950, 0980	Ceilings & Acoustic Treatment	97.6	60.8	73.7	82.6	64.9	71.1	82.6	61.7	69.0	92.1	60.8	71.8	92.1	60.8	71.8	97.6	61.7	74.3
0960	Flooring	105.6	59.5	91.5	105.5	70.2	94.7	101.9	59.5	88.9	104.8	51.0	88.4	100.7	56.0	87.0	105.6	58.6	91.2
0970, 0990	Wall Finishes & Painting/Coating	98.7	60.5	75.4	99.5	62.0	76.6	99.5	62.0	76.6	100.6	62.0	77.0	96.0	62.0	75.3	98.7	62.0	76.3
09	FINISHES	105.8	61.4	81.6	100.1	65.4	81.3	99.6	61.4	78.8	103.0	59.5	79.4	102.4	60.5	79.6	103.9	61.9	81.1
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	82.9	96.3	100.0	81.5	96.0	100.0	80.6	95.8	100.0	80.5	95.8	100.0	80.8	95.8	100.0	81.2	95.9
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.1	56.5	79.9	100.5	64.6	85.8	100.5	60.5	84.1	100.1	54.7	81.5	100.5	57.2	82.7	97.2	63.0	83.2
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	98.1	62.0	80.7	95.7	54.3	75.7	98.2	50.3	75.1	96.7	54.3	76.2	95.9	59.3	78.3	99.7	56.4	78.8
MF2018	WEIGHTED AVERAGE	99.7	66.5	86.2	99.4	67.0	86.2	101.8	64.6	86.7	100.0	64.1	85.3	101.2	65.6	86.7	99.0	66.9	86.0

DIVISION		FLORIDA						GEORGIA											
		TAMPA			WEST PALM BEACH			ALBANY			ATHENS			ATLANTA			AUGUSTA		
		335 - 336,346			334,349			317,398			306			300 - 303,399			308 - 309		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		97.0	97.0		90.5	90.5		91.3	91.3		90.3	90.3		99.1	99.1		90.3	90.3
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	128.1	83.2	97.6	103.5	70.4	81.1	119.7	73.4	88.3	148.7	87.3	107.0	143.0	99.1	113.2	136.2	87.9	103.4
0310	Concrete Forming & Accessories	95.1	62.4	68.7	96.9	60.1	67.2	86.9	66.3	70.3	90.0	41.1	50.6	97.4	74.2	78.7	91.4	71.9	75.7
0320	Concrete Reinforcing	89.8	76.3	85.5	92.3	53.6	79.8	92.5	70.1	85.3	92.3	58.8	81.6	101.0	71.6	91.5	92.5	69.3	85.1
0330	Cast-in-Place Concrete	98.0	65.6	86.8	88.4	63.2	79.7	91.0	68.3	83.2	125.9	67.8	105.9	130.0	71.6	109.8	118.9	69.1	101.7
03	CONCRETE	94.7	67.6	83.9	89.8	61.9	78.6	87.0	69.5	80.0	106.8	55.0	86.0	110.5	73.4	95.7	100.4	71.2	88.7
04	MASONRY	96.6	59.9	73.5	95.0	52.9	68.4	93.6	68.1	77.5	89.9	66.5	75.2	103.2	68.4	81.3	105.0	68.5	82.0
05	METALS	99.9	94.8	98.7	96.7	85.7	94.1	106.1	97.4	104.1	92.4	77.0	88.8	98.5	82.8	94.8	92.1	83.0	90.0
06	WOOD, PLASTICS & COMPOSITES	85.9	61.2	75.7	85.7	60.8	75.4	79.4	66.4	74.0	89.7	33.8	66.6	99.1	76.9	89.9	91.6	74.4	84.5
07	THERMAL & MOISTURE PROTECTION	106.6	62.0	87.0	106.0	59.4	85.6	102.8	67.0	87.1	92.7	63.6	79.9	93.7	72.4	84.4	92.4	69.2	82.2
08	OPENINGS	92.0	63.6	85.1	90.3	58.2	82.6	82.2	68.7	78.9	87.8	48.4	78.3	99.8	75.4	93.9	87.9	73.4	84.4
0920	Plaster & Gypsum Board	121.4	60.8	83.5	128.3	60.4	85.8	108.1	66.1	81.8	100.2	32.5	57.9	107.6	76.4	88.1	102.9	74.2	85.0
0950, 0980	Ceilings & Acoustic Treatment	96.9	60.8	73.5	90.6	60.4	71.0	79.1	66.1	70.7	100.0	32.5	56.2	91.5	76.4	81.7	100.8	74.2	83.6
0960	Flooring	101.7	60.7	89.2	103.3	51.0	87.3	100.8	69.3	91.2	89.9	69.3	83.6	95.3	70.7	87.8	89.9	70.7	84.1
0970, 0990	Wall Finishes & Painting/Coating	96.0	62.0	75.3	91.2	57.8	70.8	94.7	92.5	93.4	91.2	87.2	88.8	98.7	94.2	95.9	91.2	83.7	86.6
09	FINISHES	104.6	61.4	81.1	101.3	57.8	77.6	96.6	69.2	81.7	99.6	49.1	72.1	100.7	75.7	87.1	99.0	73.0	84.9
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	80.8	95.8	100.0	82.3	96.1	100.0	84.1	96.5	100.0	80.2	95.7	100.0	86.1	97.0	100.0	85.0	96.7
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.5	58.4	83.2	97.2	56.4	80.4	100.5	67.9	87.1	96.4	61.4	82.1	100.6	70.1	88.1	100.7	66.1	86.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	95.4	65.1	80.8	96.3	62.5	80.0	98.3	59.7	79.7	98.1	59.2	79.4	98.3	70.4	84.8	98.5	65.9	82.8
MF2018	WEIGHTED AVERAGE	99.0	67.4	86.2	96.0	62.6	82.4	97.6	70.7	86.6	97.8	62.4	83.4	102.2	75.4	91.3	98.1	72.2	87.6

DIVISION		GEORGIA																	
		COLUMBUS			DALTON			GAINESVILLE			MACON			SAVANNAH			STATESBORO		
		318 - 319			307			305			310 - 312			313 - 314			304		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		91.3	91.3		104.9	104.9		90.3	90.3		100.5	100.5		99.2	99.2		93.2	93.2
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	119.6	73.7	88.4	148.8	92.1	110.3	146.8	87.2	106.4	121.8	87.2	98.3	122.0	86.7	98.0	149.5	74.0	98.2
0310	Concrete Forming & Accessories	86.3	68.9	72.4	79.1	60.7	64.3	95.3	39.0	49.9	87.0	67.6	71.3	95.6	71.4	76.1	72.5	70.2	70.6
0320	Concrete Reinforcing	93.3	70.2	85.9	92.1	56.4	80.6	92.3	58.8	81.5	94.5	70.2	86.7	100.8	69.3	90.7	91.9	66.0	83.6
0330	Cast-in-Place Concrete	90.6	68.7	83.0	122.3	66.4	103.0	132.4	67.4	109.9	89.4	69.1	82.4	91.9	70.7	84.6	125.7	67.1	105.5
03	CONCRETE	87.0	70.8	80.5	105.3	63.9	88.7	109.3	53.9	87.1	86.7	70.4	80.2	88.3	72.2	81.9	105.8	70.1	91.5
04	MASONRY	93.6	69.1	78.1	91.0	64.9	74.5	99.4	65.5	78.1	105.5	67.1	81.3	88.5	69.1	76.3	93.4	66.3	76.3
05	METALS	105.9	98.2	104.1	93.8	91.4	93.2	91.8	77.0	88.3	100.2	98.2	99.8	102.1	93.9	100.2	96.9	96.3	96.8
06	WOOD, PLASTICS & COMPOSITES	79.4	69.8	75.4	74.6	61.5	69.2	94.3	31.4	68.3	82.0	68.5	76.4	90.2	73.3	83.2	66.6	73.0	69.3
07	THERMAL & MOISTURE PROTECTION	102.6	68.5	87.7	94.0	65.2	81.3	92.7	62.9	79.6	101.4	69.1	87.2	99.7	69.4	86.4	92.7	65.5	80.7
08	OPENINGS	82.2	71.1	79.5	88.8	63.0	82.6	87.8	47.0	78.0	82.3	70.4	79.4	91.3	72.9	86.8	89.8	71.8	85.4
0920	Plaster & Gypsum Board	108.1	69.6	84.0	93.4	61.0	73.1	104.6	30.0	57.9	104.0	68.2	81.6	109.8	72.9	86.7	87.5	72.9	78.3
0950, 0980	Ceilings & Acoustic Treatment	79.1	69.6	72.9	111.7	61.0	78.8	100.0	30.0	54.6	75.2	68.2	70.7	94.9	72.9	80.6	108.5	72.9	85.4
0960	Flooring	100.8	70.7	91.6	90.0	69.3	83.7	91.0	69.3	84.4	80.7	69.3	77.2	94.9	70.7	87.5	108.3	69.3	96.4
0970, 0990	Wall Finishes & Painting/Coating	94.7	86.2	89.5	81.8	65.0	71.6	91.2	87.2	88.8	97.3	92.5	94.4	98.7	83.1	89.2	89.3	65.0	74.5
09	FINISHES	96.5	70.7	82.5	108.3	62.5	83.4	100.3	47.4	71.6	85.6	70.1	77.2	99.6	72.5	84.9	110.4	69.6	88.2
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	84.5	96.6	100.0	78.6	95.4	100.0	79.7	95.6	100.0	84.0	96.5	100.0	85.6	96.9	100.0	84.3	96.6
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.5	64.9	85.9	96.5	56.3	80.0	96.4	60.9	81.8	100.5	70.0	88.0	100.6	62.9	85.1	97.3	64.5	83.8
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	98.2	69.5	84.4	110.6	57.7	85.1	98.1	68.1	83.6	96.1	60.4	78.9	101.2	61.4	82.0	99.4	61.0	80.9
MF2018	WEIGHTED AVERAGE	97.5	72.2	87.2	99.8	66.4	86.2	98.5	62.9	84.0	95.9	72.7	86.4	98.2	71.9	87.5	99.8	70.3	87.8

DIVISION		GEORGIA						HAWAII									IDAHO		
		VALDOSTA			WAYCROSS			HILO			HONOLULU			STATES & POSS., GUAM			BOISE		
		316			315			967			968			969			836 - 837		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		91.3	91.3		91.3	91.3		95.1	95.1		101.3	101.3		155.9	155.9		92.1	92.1
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	132.2	73.4	92.3	127.7	73.0	90.6	166.6	98.8	120.6	174.0	110.1	130.6	225.3	95.7	137.3	85.4	87.8	87.1
0310	Concrete Forming & Accessories	74.5	70.9	71.6	76.9	69.8	71.2	95.6	121.2	116.3	108.9	121.3	118.9	98.1	61.9	68.9	98.7	79.5	83.2
0320	Concrete Reinforcing	94.9	59.3	83.5	94.9	55.3	82.2	93.9	119.3	102.1	107.2	119.3	111.1	157.3	42.9	120.5	92.8	74.5	86.9
0330	Cast-in-Place Concrete	89.0	68.2	81.9	100.6	66.9	89.0	221.5	121.8	187.1	172.8	123.1	155.6	191.9	101.6	160.7	81.6	96.2	86.6
03	CONCRETE	90.1	69.6	81.9	93.6	67.8	83.2	153.5	120.4	140.2	143.4	120.7	134.3	154.3	73.2	121.9	92.1	84.7	89.1
04	MASONRY	98.5	68.1	79.3	99.5	66.4	78.6	147.8	121.3	131.1	140.5	121.4	128.5	208.4	47.6	107.0	126.8	85.5	100.8
05	METALS	104.7	92.8	102.0	104.1	86.2	99.9	107.6	107.1	107.5	122.2	104.8	118.2	138.3	80.8	124.9	103.2	81.0	98.0
06	WOOD, PLASTICS & COMPOSITES	65.7	73.0	68.7	67.5	73.0	69.7	94.4	121.7	105.7	111.4	121.7	115.7	107.4	62.2	88.7	90.9	78.1	85.6
07	THERMAL & MOISTURE PROTECTION	102.9	67.7	87.5	102.6	65.7	86.4	117.3	115.8	116.6	133.5	117.7	126.6	136.8	68.0	106.6	99.8	85.3	93.5
08	OPENINGS	79.2	70.1	77.0	79.5	66.5	76.4	110.6	120.3	113.0	123.8	120.3	123.0	114.5	51.6	99.3	92.7	73.3	88.0
0920	Plaster & Gypsum Board	94.0	72.9	80.8	94.0	72.9	80.8	127.7	122.4	124.4	169.5	122.4	140.0	259.3	51.7	129.5	93.9	77.7	83.8
0950, 0980	Ceilings & Acoustic Treatment	77.8	72.9	74.6	76.2	72.9	74.0	117.6	122.4	120.7	127.4	122.4	124.1	230.9	51.7	114.6	107.5	77.7	88.2
0960	Flooring	96.4	69.3	88.2	97.3	69.3	88.8	98.1	136.9	109.9	120.3	136.9	125.4	116.1	46.1	94.7	90.0	82.8	87.8
0970, 0990	Wall Finishes & Painting/Coating	94.7	90.7	92.3	94.7	65.0	76.6	86.1	134.5	115.6	98.7	134.5	120.5	90.5	38.6	58.8	90.7	60.5	72.3
09	FINISHES	94.0	72.8	82.5	93.4	69.6	80.5	110.4	126.0	118.9	127.1	126.0	126.5	192.6	56.8	118.8	95.2	78.1	85.9
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	84.7	96.7	100.0	80.2	95.7	100.0	111.1	102.4	100.0	111.2	102.4	100.0	90.2	97.9	100.0	89.2	97.7
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.5	67.6	87.0	97.9	58.9	81.9	100.6	107.2	103.3	100.6	107.2	103.3	102.7	51.0	81.5	101.1	71.0	88.7
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	97.0	54.6	76.6	99.6	61.0	81.0	100.3	119.6	109.6	100.8	119.6	109.9	139.6	47.4	95.1	101.4	69.1	85.8
MF2018	WEIGHTED AVERAGE	97.5	70.2	86.4	97.5	67.4	85.2	114.8	115.0	114.9	119.3	115.8	117.9	136.6	61.9	106.2	99.5	78.3	90.9

DIVISION		IDAHO															ILLINOIS		
		COEUR D'ALENE			IDAHO FALLS			LEWISTON			POCATELLO			TWIN FALLS			BLOOMINGTON		
		838			834			835			832			833			617		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		87.3	87.3		92.1	92.1		87.3	87.3		92.1	92.1		92.1	92.1		98.9	98.9
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	83.7	85.2	84.7	84.2	88.2	86.9	90.5	83.5	85.8	87.0	87.8	87.5	93.7	87.7	89.7	90.5	91.3	91.1
0310	Concrete Forming & Accessories	97.4	85.0	87.4	90.1	79.6	81.6	104.5	84.7	88.5	98.9	79.1	82.9	100.4	79.5	83.5	77.3	109.2	103.0
0320	Concrete Reinforcing	97.0	100.7	98.2	93.9	74.6	87.7	97.0	100.5	98.1	93.0	74.5	87.0	94.1	74.3	87.7	99.9	95.3	98.4
0330	Cast-in-Place Concrete	88.2	83.1	86.5	77.7	96.4	84.1	91.7	84.7	89.3	83.9	96.1	88.1	86.1	96.4	89.6	88.3	106.7	94.6
03	CONCRETE	96.8	87.1	92.9	85.2	84.8	85.0	100.1	87.5	95.0	91.4	84.5	88.6	97.8	84.7	92.6	89.7	106.9	96.6
04	MASONRY	128.8	87.9	103.0	122.2	86.8	99.8	129.3	86.3	102.2	124.5	86.5	100.5	127.4	82.0	98.8	121.0	113.7	116.4
05	METALS	96.0	90.7	94.8	110.3	81.0	103.5	95.5	90.4	94.3	110.7	80.7	103.7	110.4	80.6	103.5	90.4	120.5	97.4
06	WOOD, PLASTICS & COMPOSITES	89.9	84.2	87.5	83.4	78.1	81.2	96.7	84.2	91.5	90.9	78.1	85.6	92.4	78.1	86.5	77.4	106.6	89.5
07	THERMAL & MOISTURE PROTECTION	148.8	83.5	120.2	98.5	79.6	90.2	149.2	82.4	119.9	99.2	76.1	89.1	100.0	82.7	92.5	96.4	105.3	100.3
08	OPENINGS	108.9	78.8	101.6	95.4	72.1	89.8	102.0	82.5	97.3	93.3	66.9	86.9	96.1	73.3	90.6	88.2	111.7	93.9
0920	Plaster & Gypsum Board	151.6	84.1	109.4	85.7	77.7	80.7	154.0	84.1	110.3	87.6	77.7	81.4	92.4	77.7	83.2	77.5	107.1	96.0
0950, 0980	Ceilings & Acoustic Treatment	132.7	84.1	101.2	106.0	77.7	87.6	132.7	84.1	101.2	112.8	77.7	90.1	109.4	77.7	88.9	86.5	107.1	99.9
0960	Flooring	131.7	93.5	120.0	90.2	79.1	86.8	134.5	77.6	117.1	93.1	77.6	88.4	94.1	82.8	90.7	86.5	112.4	94.4
0970, 0990	Wall Finishes & Painting/Coating	104.6	71.2	84.3	90.7	42.5	61.3	104.6	60.5	77.7	90.6	60.5	72.2	90.7	60.5	72.3	88.0	125.0	110.6
09	FINISHES	158.6	85.1	118.7	93.1	75.5	83.5	159.8	80.6	116.8	96.1	77.0	85.8	97.2	78.2	86.8	85.8	111.5	99.8
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	98.4	99.6	100.0	89.4	97.7	100.0	98.2	99.6	100.0	89.2	97.7	100.0	89.4	97.7	100.0	104.7	101.0
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.1	86.1	94.4	102.4	79.0	92.8	102.1	85.7	95.4	100.8	72.4	89.2	100.8	71.1	88.6	96.4	97.6	96.9
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	86.8	81.6	84.3	86.6	70.7	79.0	85.7	84.6	85.2	97.1	70.7	84.4	87.4	70.7	79.4	94.1	83.7	89.1
MF2018	WEIGHTED AVERAGE	104.3	86.0	96.9	98.5	79.9	90.9	104.7	85.6	97.0	100.5	78.2	91.4	101.0	78.1	91.7	93.4	103.0	97.3

DIVISION		ILLINOIS																	
		CARBONDALE			CENTRALIA			CHAMPAIGN			CHICAGO			DECATUR			EAST ST. LOUIS		
		629			628			618 - 619			606 - 608			625			620 - 622		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		107.0	107.0		107.0	107.0		99.8	99.8		100.0	100.0		99.8	99.8		107.0	107.0
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	98.6	91.9	94.0	98.9	93.6	95.3	98.4	92.2	94.2	91.8	104.1	100.2	94.6	92.5	93.2	101.5	93.5	96.1
0310	Concrete Forming & Accessories	88.6	102.3	99.6	91.0	107.3	104.2	86.1	109.7	105.1	93.5	160.2	147.3	93.1	116.4	111.9	85.1	113.1	107.7
0320	Concrete Reinforcing	102.4	96.2	100.4	102.4	96.8	100.6	99.9	94.6	98.2	99.0	151.6	115.9	100.1	99.5	99.9	102.4	103.0	102.6
0330	Cast-in-Place Concrete	86.0	96.1	89.5	86.5	111.9	95.2	102.4	103.7	102.8	107.9	155.0	124.2	94.0	112.0	100.2	87.9	116.9	97.9
03	CONCRETE	83.7	100.7	90.5	84.2	108.7	94.0	100.2	105.8	102.4	103.4	156.3	124.6	92.3	112.7	100.4	84.9	114.2	96.6
04	MASONRY	88.2	104.1	98.2	88.3	114.8	105.0	148.3	117.1	128.6	99.6	165.2	140.9	83.5	120.4	106.8	88.6	123.2	110.4
05	METALS	95.5	126.8	102.8	95.6	129.8	103.6	90.4	117.1	96.6	97.6	148.1	109.4	100.4	121.2	105.3	96.4	134.0	105.2
06	WOOD, PLASTICS & COMPOSITES	88.0	99.9	92.9	91.2	104.9	96.8	85.6	107.5	94.6	101.2	159.6	125.4	91.2	115.9	101.4	84.6	110.1	95.2
07	THERMAL & MOISTURE PROTECTION	93.4	93.8	93.6	93.5	103.4	97.8	97.3	107.1	101.6	88.7	149.6	115.4	98.9	111.0	104.2	93.4	110.7	101.0
08	OPENINGS	84.2	109.4	90.3	84.2	112.2	90.9	88.7	110.9	94.1	101.6	169.7	118.0	94.3	116.9	99.8	84.2	114.8	91.6
0920	Plaster & Gypsum Board	83.8	100.2	94.1	85.5	105.3	97.9	80.4	108.0	97.7	85.6	161.2	132.9	87.4	116.7	105.7	81.9	110.7	99.9
0950, 0980	Ceilings & Acoustic Treatment	87.4	100.2	95.7	87.4	105.3	99.0	86.5	108.0	100.5	79.8	161.2	132.6	96.3	116.7	109.5	87.4	110.7	102.5
0960	Flooring	118.5	108.5	115.5	119.3	108.5	116.0	89.0	108.5	94.9	92.9	162.2	114.1	106.7	113.2	108.7	117.6	102.9	113.1
0970, 0990	Wall Finishes & Painting/Coating	98.7	97.4	97.9	98.7	103.6	101.7	88.0	106.6	99.3	98.7	164.7	138.9	92.2	109.3	102.6	98.7	110.3	105.8
09	FINISHES	93.0	103.7	98.8	93.5	107.2	100.9	87.6	109.5	99.5	89.3	161.9	128.7	94.2	115.7	105.9	92.5	110.7	102.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	98.4	99.7	100.0	97.4	99.4	100.0	105.3	101.2	100.0	127.5	106.0	100.0	106.2	101.3	100.0	113.2	102.9
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.4	98.9	97.5	96.4	90.6	94.0	96.4	99.1	97.5	100.5	133.4	114.0	100.7	96.0	98.8	100.7	95.6	98.6
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	94.0	99.9	96.8	94.7	98.5	96.5	96.0	88.4	92.4	95.1	135.3	114.5	96.4	96.2	96.3	94.5	101.7	98.0
MF2018	WEIGHTED AVERAGE	92.7	102.7	96.8	93.0	104.1	97.5	96.7	103.8	99.6	98.5	144.8	117.3	96.9	107.1	101.1	94.0	109.0	100.1

DIVISION		ILLINOIS																	
		EFFINGHAM			GALESBURG			JOLIET			KANKAKEE			LA SALLE			NORTH SUBURBAN		
		624			614			604			609			613			600 - 603		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		99.8	99.8		98.9	98.9		90.6	90.6		90.6	90.6		98.9	98.9		90.6	90.6
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	97.6	91.1	93.1	92.6	91.2	91.6	87.6	94.2	92.1	82.2	92.0	88.9	92.2	91.9	92.0	87.1	92.8	91.0
0310	Concrete Forming & Accessories	99.0	107.7	106.0	85.9	110.1	105.4	91.1	162.9	149.1	83.0	136.5	126.2	104.9	117.8	115.3	90.2	149.0	137.6
0320	Concrete Reinforcing	103.0	87.3	98.0	99.6	98.3	99.2	109.3	140.8	119.4	109.7	125.7	114.8	99.7	123.7	107.4	109.3	138.7	118.8
0330	Cast-in-Place Concrete	93.6	102.8	96.8	90.9	102.4	94.9	98.1	152.5	116.9	91.4	126.9	103.7	90.8	114.0	98.8	98.1	143.0	113.6
03	CONCRETE	93.3	103.3	97.3	92.4	106.5	98.0	98.7	154.8	121.1	93.4	131.1	108.5	93.7	118.5	103.6	98.6	144.7	117.1
04	MASONRY	92.7	107.7	102.1	121.3	114.4	116.9	98.0	165.1	140.3	95.0	137.3	121.7	121.3	121.2	121.2	95.6	148.3	128.8
05	METALS	97.5	111.8	100.9	90.4	124.2	98.3	89.6	142.3	101.9	89.6	129.5	98.9	90.5	138.1	101.6	90.7	137.7	101.6
06	WOOD, PLASTICS & COMPOSITES	94.4	107.5	99.8	85.4	108.8	95.1	91.5	163.6	121.4	84.3	136.5	105.9	104.4	116.2	109.3	91.2	149.3	115.2
07	THERMAL & MOISTURE PROTECTION	98.4	101.1	99.6	96.7	102.0	99.0	94.4	147.1	117.5	93.4	129.2	109.1	97.2	113.6	104.4	94.7	136.8	113.2
08	OPENINGS	89.8	107.8	94.1	88.2	111.2	93.8	95.4	168.5	113.0	89.0	147.0	103.0	88.2	125.4	97.2	95.4	158.0	110.5
0920	Plaster & Gypsum Board	88.4	108.0	100.7	80.4	109.4	98.5	76.3	165.7	132.2	75.6	137.9	114.5	93.0	117.0	108.0	83.6	151.0	125.7
0950, 0980	Ceilings & Acoustic Treatment	87.4	108.0	100.8	86.5	109.4	101.4	80.3	165.7	135.7	80.3	137.9	117.6	86.5	117.0	106.3	80.3	151.0	126.2
0960	Flooring	107.8	108.5	108.0	88.8	112.4	96.0	91.5	162.2	113.1	89.3	140.2	104.9	93.9	116.1	100.7	91.8	148.4	109.1
0970, 0990	Wall Finishes & Painting/Coating	92.2	101.4	97.8	88.0	91.4	90.0	87.7	164.7	134.7	87.7	125.9	111.0	88.0	123.4	109.6	89.7	152.1	127.8
09	FINISHES	92.8	107.9	101.0	87.0	109.0	99.0	85.3	164.2	128.1	84.3	136.6	112.7	90.5	116.9	104.8	86.7	150.0	121.1
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	103.9	100.9	100.0	104.9	101.1	100.0	127.0	105.9	100.0	110.6	102.3	100.0	105.9	101.3	100.0	123.4	105.1
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.5	96.8	96.6	96.4	98.0	97.1	100.6	135.2	114.8	96.3	120.0	106.1	96.4	119.0	105.7	100.5	126.2	111.0
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	95.2	99.9	97.4	94.6	80.1	87.6	94.1	135.8	114.2	90.8	127.0	108.2	92.9	127.0	109.4	94.3	125.6	109.4
MF2018	WEIGHTED AVERAGE	95.4	102.5	98.3	94.1	102.5	97.5	95.1	143.9	115.0	92.1	126.3	106.0	94.6	119.3	104.7	95.3	134.1	111.1

DIVISION		ILLINOIS																	
		PEORIA			QUINCY			ROCK ISLAND			ROCKFORD			SOUTH SUBURBAN			SPRINGFIELD		
		615 - 616			623			612			610 - 611			605			626 - 627		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		98.9	98.9		99.8	99.8		98.9	98.9		98.9	98.9		90.6	90.6		106.0	106.0
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	93.7	92.0	92.5	96.3	91.5	93.0	91.0	90.0	90.3	93.3	93.6	93.5	87.1	92.7	90.9	98.5	102.9	101.5
0310	Concrete Forming & Accessories	90.8	118.9	113.5	95.7	111.1	108.2	88.0	93.1	92.1	95.8	134.6	127.1	90.2	156.3	143.6	94.3	117.1	112.7
0320	Concrete Reinforcing	97.2	104.5	99.5	102.8	80.2	95.6	99.6	92.1	97.2	91.4	136.5	105.9	109.3	138.7	118.8	99.9	99.6	99.8
0330	Cast-in-Place Concrete	88.2	116.0	97.8	93.8	99.7	95.8	89.0	92.0	90.0	90.3	132.4	104.8	98.1	142.9	113.6	89.3	110.9	96.8
03	CONCRETE	90.0	116.2	100.5	93.0	102.5	96.8	90.7	93.8	92.0	90.0	134.8	108.0	98.6	148.0	118.4	91.0	112.4	99.6
04	MASONRY	119.5	123.9	122.3	117.5	105.8	110.1	121.0	93.6	103.8	93.4	146.3	126.8	95.6	148.2	128.8	96.1	121.1	111.9
05	METALS	93.0	126.2	100.7	97.6	109.6	100.4	90.4	115.2	96.2	93.0	147.1	105.6	90.7	137.5	101.6	98.2	118.5	102.9
06	WOOD, PLASTICS & COMPOSITES	95.4	117.2	104.4	91.0	113.4	100.3	87.4	92.0	89.3	95.4	131.9	110.5	91.2	159.2	119.3	89.6	116.2	100.6
07	THERMAL & MOISTURE PROTECTION	97.6	112.7	104.2	98.3	99.6	98.9	96.7	91.2	94.3	100.6	133.5	115.0	94.7	137.9	113.6	104.2	113.5	108.3
08	OPENINGS	93.1	121.2	99.9	90.4	108.7	94.9	88.2	97.2	90.4	93.1	141.5	104.8	95.4	163.5	111.9	95.0	117.1	100.3
0920	Plaster & Gypsum Board	87.5	118.0	106.6	85.5	114.1	103.4	80.4	92.1	87.7	87.5	133.1	116.0	83.6	161.2	132.1	87.1	116.7	105.6
0950, 0980	Ceilings & Acoustic Treatment	92.7	118.0	109.1	87.4	114.1	104.7	86.5	92.1	90.1	92.7	133.1	118.9	80.3	161.2	132.8	99.0	116.7	110.5
0960	Flooring	91.5	126.1	102.1	106.7	105.6	106.4	89.6	88.0	89.1	91.5	130.1	103.3	91.8	148.4	109.1	107.1	125.5	112.7
0970, 0990	Wall Finishes & Painting/Coating	88.0	131.9	114.8	92.2	103.4	99.0	88.0	88.6	88.4	88.0	142.0	120.9	89.7	152.1	127.8	98.7	111.0	106.2
09	FINISHES	90.3	122.0	107.5	92.0	110.4	102.0	87.2	91.4	89.5	90.3	134.4	114.3	86.7	155.9	124.3	98.2	118.8	109.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	106.9	101.5	100.0	103.7	100.8	100.0	89.7	97.8	100.0	112.0	102.6	100.0	124.5	105.3	100.0	107.1	101.6
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.6	99.5	100.2	96.5	95.3	96.0	96.4	90.3	93.9	100.8	118.9	108.2	100.5	126.2	111.0	100.7	99.7	100.3
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	95.2	93.6	94.4	93.8	76.2	85.3	89.9	86.3	88.2	95.5	132.0	113.1	94.3	125.6	109.4	102.9	88.0	95.7
MF2018	WEIGHTED AVERAGE	96.0	109.8	101.6	96.2	98.7	97.2	93.4	93.2	93.3	95.1	129.5	109.1	95.3	135.7	111.7	98.0	107.9	102.0

DIVISION		INDIANA																	
		ANDERSON			BLOOMINGTON			COLUMBUS			EVANSVILLE			FORT WAYNE			GARY		
		460			474			472			476 - 477			467 - 468			463 - 464		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		91.8	91.8		79.3	79.3		79.3	79.3		107.4	107.4		91.8	91.8		91.8	91.8
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	91.5	85.0	87.1	77.4	84.0	81.9	73.8	83.7	80.5	82.0	110.6	101.4	93.1	85.2	87.8	92.1	88.6	89.7
0310	Concrete Forming & Accessories	90.1	77.1	79.6	101.5	81.6	85.4	93.6	77.6	80.7	92.1	81.9	83.9	88.0	81.1	82.4	90.2	106.5	103.3
0320	Concrete Reinforcing	101.2	82.0	95.0	92.0	85.1	89.8	92.5	83.0	89.4	100.6	97.4	99.6	101.2	79.7	94.3	101.2	109.9	104.0
0330	Cast-in-Place Concrete	89.4	73.6	84.0	97.0	74.7	89.3	96.5	71.6	87.9	92.7	83.8	89.6	95.0	73.1	87.4	93.5	106.9	98.1
03	CONCRETE	89.7	77.4	84.8	97.1	79.5	90.1	96.3	76.2	88.3	97.7	85.5	92.8	92.1	78.6	86.7	91.5	107.2	97.8
04	MASONRY	84.5	74.7	78.3	91.2	72.2	79.2	91.0	71.2	78.5	86.7	81.0	83.1	89.5	72.9	79.0	85.9	105.1	98.0
05	METALS	95.8	88.9	94.2	94.1	76.5	90.0	94.2	74.8	89.6	87.8	91.9	88.8	95.8	88.2	94.0	95.8	105.8	98.1
06	WOOD, PLASTICS & COMPOSITES	89.6	77.5	84.6	108.3	82.7	97.7	101.5	78.2	91.9	90.5	81.0	86.6	89.4	84.1	87.2	86.5	104.9	94.1
07	THERMAL & MOISTURE PROTECTION	111.3	73.5	94.7	97.3	76.4	88.1	96.7	74.3	86.9	101.8	82.8	93.5	111.0	78.0	96.6	110.2	100.4	105.9
08	OPENINGS	88.9	75.6	85.7	93.5	79.5	90.1	90.1	76.4	86.8	88.2	82.0	86.7	88.9	77.9	86.2	88.9	110.0	94.0
0920	Plaster & Gypsum Board	97.6	77.4	84.9	100.3	83.1	89.5	94.7	78.5	84.6	92.1	80.4	84.7	96.6	84.1	88.8	86.0	105.6	98.2
0950, 0980	Ceilings & Acoustic Treatment	90.5	77.4	82.0	80.6	83.1	82.2	80.6	78.5	79.2	84.4	80.4	81.8	90.5	84.1	86.4	90.5	105.6	100.3
0960	Flooring	93.0	74.1	87.2	99.6	79.8	93.6	95.3	79.8	90.6	95.7	74.1	89.1	93.0	74.8	87.4	93.0	104.9	96.6
0970, 0990	Wall Finishes & Painting/Coating	90.8	66.1	75.8	87.4	80.1	82.9	87.4	77.7	81.5	92.6	86.0	88.5	90.8	71.2	78.9	90.8	114.2	105.1
09	FINISHES	90.8	75.3	82.4	93.1	81.2	86.7	91.0	78.1	84.0	91.6	80.5	85.6	90.5	79.5	84.6	88.8	106.8	98.6
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	89.3	97.7	100.0	89.4	97.7	100.0	88.7	97.5	100.0	92.2	98.3	100.0	90.6	98.0	100.0	99.9	100.0
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.9	74.6	90.1	100.4	77.4	91.0	96.2	74.8	87.4	100.7	80.3	92.3	100.9	73.4	89.6	100.9	100.3	100.7
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	85.0	81.8	83.5	101.9	84.4	93.5	101.4	83.9	92.9	96.4	83.3	90.1	86.1	77.8	82.1	95.8	104.0	99.8
MF2018	WEIGHTED AVERAGE	94.0	78.7	87.8	96.7	79.6	89.7	95.0	77.6	87.9	94.2	85.4	90.7	94.6	78.7	88.2	95.2	103.1	98.4

DIVISION		INDIANA																	
		INDIANAPOLIS			KOKOMO			LAFAYETTE			LAWRENCEBURG			MUNCIE			NEW ALBANY		
		461 - 462			469			479			470			473			471		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		90.5	90.5		91.8	91.8		79.3	79.3		97.9	97.9		90.3	90.3		88.2	88.2
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	91.4	96.3	94.8	87.7	85.0	85.9	74.4	83.7	80.7	74.4	97.6	90.1	78.1	84.1	82.2	70.5	85.9	80.9
0310	Concrete Forming & Accessories	92.7	85.3	86.7	93.9	75.5	79.0	90.1	79.9	81.9	88.9	75.7	78.3	88.7	76.6	79.0	89.9	74.4	77.4
0320	Concrete Reinforcing	100.6	85.5	95.8	91.5	83.3	88.9	92.0	83.2	89.2	91.7	76.2	86.8	101.8	82.0	95.5	92.6	78.6	88.1
0330	Cast-in-Place Concrete	86.9	85.9	86.6	88.5	78.9	85.2	97.1	76.5	90.0	90.8	71.0	83.9	101.9	72.8	91.9	93.7	70.9	85.8
03	CONCRETE	93.9	85.0	90.3	86.3	78.7	83.2	96.3	79.0	89.4	90.5	74.9	84.2	96.7	76.9	88.8	95.1	74.3	86.8
04	MASONRY	93.6	79.4	84.7	84.1	74.0	77.8	96.0	74.2	82.3	75.8	71.1	72.9	93.3	74.7	81.6	82.4	68.5	73.7
05	METALS	96.8	76.1	92.0	92.0	89.2	91.4	92.5	75.4	88.5	89.4	85.5	88.5	95.8	88.8	94.2	91.2	81.6	88.9
06	WOOD, PLASTICS & COMPOSITES	95.0	85.9	91.2	93.1	74.9	85.6	97.9	81.2	91.0	87.8	76.0	82.9	98.2	77.1	89.5	90.8	75.3	84.4
07	THERMAL & MOISTURE PROTECTION	101.2	81.4	92.5	110.5	74.2	94.6	96.6	76.6	87.8	100.1	73.7	88.5	99.6	74.8	88.7	91.7	71.2	82.7
08	OPENINGS	102.3	81.9	97.4	84.5	74.6	82.1	88.9	78.0	86.3	89.9	73.1	85.8	87.3	75.4	84.4	87.8	71.6	83.9
0920	Plaster & Gypsum Board	86.6	85.5	85.9	105.4	74.7	86.2	91.2	81.6	85.2	73.6	76.2	75.2	92.1	77.4	82.9	87.5	75.3	79.8
0950, 0980	Ceilings & Acoustic Treatment	88.7	85.5	86.6	91.2	74.7	80.5	76.5	81.6	79.8	89.9	76.2	81.0	80.6	77.4	78.5	84.4	75.3	78.5
0960	Flooring	93.2	82.2	89.9	96.3	85.7	93.0	94.3	79.8	89.9	70.1	79.8	73.1	95.8	74.1	89.2	92.5	50.3	79.6
0970, 0990	Wall Finishes & Painting/Coating	98.7	80.1	87.3	90.8	65.5	75.4	87.4	80.1	83.0	87.8	69.9	76.9	87.4	66.1	74.4	92.6	62.8	74.4
09	FINISHES	91.6	84.4	87.7	93.0	76.2	83.9	89.3	80.1	84.3	82.7	76.0	79.1	90.4	75.0	82.0	90.2	68.5	78.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	92.6	98.4	100.0	89.2	97.6	100.0	88.9	97.6	100.0	86.2	97.0	100.0	88.4	97.5	100.0	86.0	97.0
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.8	78.1	91.5	96.7	75.0	87.8	96.2	75.7	87.8	97.3	71.7	86.8	100.4	74.5	89.7	96.5	74.6	87.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	101.6	86.6	94.3	87.5	74.6	81.3	101.1	77.3	89.6	94.4	71.2	83.2	92.2	72.8	82.9	95.6	72.0	84.2
MF2018	WEIGHTED AVERAGE	97.9	83.2	91.9	91.8	78.0	86.2	94.6	78.0	87.8	91.4	76.4	85.3	95.3	77.2	87.9	92.8	74.5	85.3

DIVISION		INDIANA									IOWA								
		SOUTH BEND			TERRE HAUTE			WASHINGTON			BURLINGTON			CARROLL			CEDAR RAPIDS		
		465 - 466			478			475			526			514			522 - 524		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		109.6	109.6		107.4	107.4		107.4	107.4		95.6	95.6		95.6	95.6		92.6	92.6
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	91.3	97.7	95.6	83.2	110.5	101.7	82.1	110.7	101.5	86.5	87.0	86.9	77.8	87.8	84.6	88.0	87.3	87.6
0310	Concrete Forming & Accessories	95.9	76.1	79.9	93.5	76.8	80.0	94.6	79.7	82.6	93.3	88.5	89.4	76.3	78.9	78.4	101.3	83.8	87.2
0320	Concrete Reinforcing	99.7	81.0	93.7	100.6	82.1	94.7	93.1	83.0	89.9	95.1	91.0	93.8	95.8	79.9	90.7	95.8	97.1	96.2
0330	Cast-in-Place Concrete	89.5	79.0	85.9	89.7	77.0	85.3	97.6	83.7	92.8	118.2	51.3	95.1	118.2	76.8	103.9	118.5	82.2	106.0
03	CONCRETE	96.8	79.4	89.8	99.9	78.2	91.2	104.1	82.0	95.2	102.1	76.6	91.9	100.6	79.2	92.0	102.5	86.4	96.0
04	MASONRY	85.5	73.5	77.9	94.3	73.5	81.2	86.9	76.3	80.2	101.7	67.2	79.9	103.0	67.7	80.7	107.3	80.6	90.5
05	METALS	99.6	100.5	99.8	88.5	85.5	87.8	82.4	86.5	83.4	82.8	96.3	85.9	82.8	92.7	85.1	85.2	101.3	89.0
06	WOOD, PLASTICS & COMPOSITES	93.7	75.4	86.2	93.2	76.6	86.3	93.6	79.0	87.6	90.9	92.6	91.6	74.4	83.4	78.1	99.6	83.6	93.0
07	THERMAL & MOISTURE PROTECTION	109.0	77.8	95.3	101.9	77.8	91.3	102.0	80.2	92.4	100.4	71.4	87.7	100.5	73.0	88.4	101.6	79.0	91.7
08	OPENINGS	89.2	74.8	85.7	88.6	74.8	85.3	86.0	78.5	84.2	91.5	90.2	91.2	95.5	79.3	91.6	95.8	85.8	93.4
0920	Plaster & Gypsum Board	90.0	74.8	80.5	92.1	75.8	81.9	93.2	78.3	83.9	97.3	92.8	94.4	90.5	83.3	86.0	106.0	83.7	92.1
0950, 0980	Ceilings & Acoustic Treatment	93.5	74.8	81.4	84.4	75.8	78.9	79.6	78.3	78.8	102.2	92.8	96.1	102.2	83.3	90.0	105.0	83.7	91.2
0960	Flooring	96.8	85.1	93.2	95.7	74.7	89.3	96.5	79.8	91.4	97.2	64.3	87.1	92.2	74.0	86.6	111.6	85.7	103.7
0970, 0990	Wall Finishes & Painting/Coating	98.7	81.2	88.0	92.6	77.0	83.1	92.6	84.3	87.5	93.6	78.5	84.4	93.6	78.5	84.4	95.2	70.4	80.1
09	FINISHES	94.2	78.0	85.4	91.6	76.2	83.2	91.2	79.9	85.1	95.9	84.1	89.5	92.2	78.4	84.7	101.9	82.7	91.5
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	91.4	98.1	100.0	90.6	97.9	100.0	91.6	98.2	100.0	93.2	98.5	100.0	89.2	97.6	100.0	92.4	98.3
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.8	73.8	89.8	100.7	76.0	90.6	96.5	77.8	88.8	96.6	77.6	88.8	96.6	72.1	86.6	100.9	82.1	93.2
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	98.2	85.5	92.1	95.4	82.1	89.0	95.7	80.6	88.4	98.9	67.0	83.5	99.3	71.3	85.8	97.5	77.2	87.7
MF2018	WEIGHTED AVERAGE	97.4	81.7	91.0	95.0	80.9	89.3	92.9	82.8	88.8	94.5	79.2	88.3	94.1	77.4	87.3	97.1	84.4	91.9

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DIVISION		IOWA																	
		COUNCIL BLUFFS			CRESTON			DAVENPORT			DECORAH			DES MOINES			DUBUQUE		
		515			508			527 - 528			521			500 - 503,509			520		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		91.9	91.9		95.6	95.6		95.6	95.6		95.6	95.6		102.1	102.1		91.5	91.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	89.0	84.4	85.9	82.5	88.7	86.7	87.5	90.8	89.7	85.3	86.8	86.3	86.4	99.8	95.5	86.2	84.8	85.2
0310	Concrete Forming & Accessories	75.2	74.6	74.7	69.9	81.5	79.3	100.6	98.1	98.6	89.8	67.5	71.8	93.1	88.0	89.0	77.4	81.2	80.5
0320	Concrete Reinforcing	97.7	82.6	92.9	90.1	79.9	86.8	95.8	97.6	96.4	95.1	79.3	90.0	99.3	100.2	99.6	94.4	78.9	89.5
0330	Cast-in-Place Concrete	123.2	85.8	110.3	121.4	80.1	107.1	114.1	94.0	107.2	115.0	71.1	99.8	103.4	91.6	99.3	116.0	81.6	104.2
03	CONCRETE	104.1	80.9	94.8	100.2	81.5	92.7	100.5	97.2	99.2	100.0	72.0	88.8	99.2	91.9	96.3	98.7	81.8	91.9
04	MASONRY	106.8	76.0	87.4	101.5	74.6	84.5	102.6	92.7	96.4	122.4	64.6	86.0	86.9	86.0	86.3	108.3	68.2	83.0
05	METALS	89.1	95.0	90.5	82.1	93.3	84.7	85.2	107.1	90.3	82.9	91.6	84.9	87.3	102.2	90.8	83.6	92.8	85.7
06	WOOD, PLASTICS & COMPOSITES	72.9	73.4	73.1	66.7	83.4	73.6	99.6	98.0	98.9	87.2	66.9	78.8	88.3	86.6	87.6	75.0	82.2	78.0
07	THERMAL & MOISTURE PROTECTION	100.5	73.4	88.6	109.8	76.1	95.0	101.0	91.0	96.6	100.6	64.8	84.9	101.8	86.2	94.9	100.9	74.6	89.3
08	OPENINGS	95.0	78.2	91.0	104.6	80.9	98.9	95.8	99.6	96.7	94.2	73.3	89.1	97.2	93.3	96.3	95.1	82.2	92.0
0920	Plaster & Gypsum Board	90.5	73.2	79.7	93.2	83.3	87.0	106.0	98.3	101.2	95.6	66.3	77.3	91.7	86.4	88.4	90.5	82.3	85.3
0950, 0980	Ceilings & Acoustic Treatment	102.2	73.2	83.4	90.8	83.3	85.9	105.0	98.3	100.6	102.2	66.3	78.9	94.2	86.4	89.1	102.2	82.3	89.3
0960	Flooring	91.2	83.2	88.8	80.2	64.3	75.3	99.2	88.3	95.9	96.9	64.3	86.9	90.0	90.5	90.1	103.8	69.6	93.4
0970, 0990	Wall Finishes & Painting/Coating	90.9	55.5	69.3	86.5	78.5	81.6	93.6	90.6	91.8	93.6	78.5	84.4	98.7	85.7	90.8	94.8	77.3	84.1
09	FINISHES	93.0	73.7	82.5	85.7	78.1	81.6	98.5	95.5	96.9	95.5	67.8	80.5	92.7	88.0	90.1	96.5	78.6	86.8
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	89.9	97.8	100.0	91.5	98.1	100.0	96.5	99.2	100.0	88.7	97.5	100.0	94.8	98.9	100.0	91.3	98.1
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.9	77.5	91.3	96.6	73.9	87.3	100.9	93.0	97.6	96.6	69.0	85.3	100.7	88.5	95.7	100.9	74.2	89.9
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	100.6	79.0	90.2	92.1	71.3	82.1	94.9	84.8	90.0	97.4	43.8	71.6	101.5	87.9	95.0	99.7	74.1	87.4
MF2018	WEIGHTED AVERAGE	97.3	79.9	90.2	93.7	79.1	87.7	96.1	94.2	95.3	95.1	69.3	84.6	95.9	91.0	93.9	95.7	78.7	88.7

DIVISION		IOWA																	
		FORT DODGE			MASON CITY			OTTUMWA			SHENANDOAH			SIBLEY			SIOUX CITY		
		505			504			525			516			512			510 - 511		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		95.6	95.6		95.6	95.6		91.5	91.5		91.9	91.9		95.6	95.6		95.6	95.6
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	88.0	85.7	86.5	88.1	86.7	87.2	85.7	82.3	83.4	87.1	84.2	85.1	94.4	86.8	89.2	96.8	88.9	91.4
0310	Concrete Forming & Accessories	70.7	73.3	72.8	75.9	67.1	68.8	86.9	82.0	82.9	77.6	72.6	73.6	78.4	35.6	43.9	101.3	73.4	78.8
0320	Concrete Reinforcing	90.1	79.3	86.6	90.0	79.3	86.5	95.1	91.2	93.9	97.7	79.9	92.0	97.7	79.2	91.8	95.8	95.7	95.8
0330	Cast-in-Place Concrete	113.9	39.1	88.1	113.9	66.6	97.6	119.0	59.9	98.6	119.1	77.5	104.8	116.7	51.9	94.3	117.5	85.0	106.3
03	CONCRETE	95.8	63.4	82.9	96.2	70.2	85.8	101.5	76.7	91.6	101.7	76.7	91.7	100.7	50.8	80.7	101.9	82.4	94.1
04	MASONRY	100.5	48.5	67.7	113.3	63.5	81.9	104.3	51.6	71.1	106.3	69.6	83.2	125.1	48.7	77.0	101.0	66.7	79.4
05	METALS	82.1	91.3	84.3	82.2	91.6	84.4	82.7	97.6	86.2	88.4	93.6	89.6	83.0	90.7	84.8	85.2	100.1	88.7
06	WOOD, PLASTICS & COMPOSITES	67.2	83.4	73.9	71.9	66.9	69.8	83.7	92.4	87.3	75.0	74.0	74.6	76.0	32.2	57.9	99.6	72.9	88.5
07	THERMAL & MOISTURE PROTECTION	109.1	60.4	87.8	108.7	65.3	89.7	101.2	65.1	85.4	99.9	67.9	85.9	100.1	51.1	78.6	101.0	69.4	87.2
08	OPENINGS	99.0	71.5	92.3	91.8	73.3	87.3	95.5	87.3	93.5	87.5	71.9	83.7	92.5	43.3	80.6	95.8	79.0	91.8
0920	Plaster & Gypsum Board	93.2	83.3	87.0	93.2	66.3	76.4	91.0	92.8	92.1	90.5	73.9	80.1	90.5	30.7	53.1	106.0	72.5	85.1
0950, 0980	Ceilings & Acoustic Treatment	90.8	83.3	85.9	90.8	66.3	74.9	102.2	92.8	96.1	102.2	73.9	83.8	102.2	30.7	55.8	105.0	72.5	83.9
0960	Flooring	81.3	64.3	76.1	82.8	64.3	77.1	106.5	64.3	93.6	91.8	68.8	84.8	93.0	64.3	84.2	99.3	69.6	90.2
0970, 0990	Wall Finishes & Painting/Coating	86.5	75.4	79.8	86.5	78.5	81.6	94.8	78.5	84.9	90.9	78.5	83.3	93.6	77.6	83.8	93.6	66.0	76.8
09	FINISHES	87.2	73.1	79.5	87.5	67.5	76.7	97.4	79.5	87.7	93.0	72.3	81.7	94.9	43.4	66.9	99.8	71.4	84.3
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	85.2	96.8	100.0	88.3	97.5	100.0	86.8	97.1	100.0	88.1	97.4	100.0	79.8	95.6	100.0	89.9	97.8
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.6	66.2	84.1	96.6	72.0	86.5	96.6	67.7	84.8	96.6	77.7	88.9	96.6	66.2	84.2	100.9	76.7	91.0
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	95.8	64.3	80.6	95.3	43.8	70.4	98.8	65.8	82.9	97.4	72.7	85.5	97.5	43.8	71.6	97.5	71.3	84.9
MF2018	WEIGHTED AVERAGE	93.2	69.3	83.4	93.1	69.5	83.5	94.9	74.0	86.4	94.9	77.0	87.6	95.2	58.7	80.4	96.8	78.3	89.3

DIVISION		IOWA						KANSAS											
		SPENCER			WATERLOO			BELLEVILLE			COLBY			DODGE CITY			EMPORIA		
		513			506 - 507			669			677			678			668		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		95.6	95.6		95.6	95.6		100.6	100.6		100.6	100.6		100.6	100.6		98.9	98.9
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	94.5	85.6	88.5	93.4	88.5	90.1	104.8	87.5	93.1	98.3	88.0	91.3	101.2	88.3	92.4	97.9	85.2	89.3
0310	Concrete Forming & Accessories	86.8	35.3	45.3	90.8	68.4	72.8	93.0	51.9	59.9	98.2	57.7	65.6	88.7	59.4	65.1	80.9	65.9	68.8
0320	Concrete Reinforcing	97.7	79.2	91.8	90.7	79.3	87.0	102.8	97.4	101.0	111.5	97.4	106.9	108.7	97.2	105.0	101.3	97.5	100.1
0330	Cast-in-Place Concrete	116.7	61.3	97.6	122.0	82.6	108.4	106.0	79.3	96.8	101.7	81.6	94.8	103.5	85.9	97.4	102.5	81.7	95.3
03	CONCRETE	101.3	53.9	82.3	102.1	76.4	91.8	104.5	70.9	91.0	103.7	74.4	92.0	104.1	76.6	93.1	97.9	78.1	90.0
04	MASONRY	125.1	48.7	77.0	101.5	74.5	84.5	95.0	56.6	70.8	97.7	60.3	74.1	113.8	58.3	78.8	100.8	61.7	76.1
05	METALS	83.0	90.4	84.7	84.3	93.6	86.5	91.0	97.3	92.5	88.5	98.1	90.7	89.5	97.8	91.4	90.7	98.3	92.5
06	WOOD, PLASTICS & COMPOSITES	83.5	32.2	62.3	87.7	64.3	78.0	90.9	48.3	73.3	97.7	54.1	79.7	87.5	54.9	74.0	79.9	65.0	73.7
07	THERMAL & MOISTURE PROTECTION	101.1	51.7	79.5	109.2	75.4	94.4	99.1	59.1	81.6	105.1	61.3	85.9	104.9	65.1	87.5	97.0	69.8	85.1
08	OPENINGS	102.8	43.3	88.4	92.0	72.8	87.4	90.4	59.2	82.9	94.3	62.4	86.6	94.2	62.9	86.7	88.6	70.4	84.2
0920	Plaster & Gypsum Board	91.0	30.7	53.3	106.2	63.6	79.6	84.1	47.1	61.0	96.9	53.1	69.5	85.5	54.0	65.8	78.3	64.3	69.6
0950, 0980	Ceilings & Acoustic Treatment	102.2	30.7	55.8	92.8	63.6	73.9	86.7	47.1	61.0	81.1	53.1	63.0	81.1	54.0	63.5	86.7	64.3	72.2
0960	Flooring	95.3	64.3	85.8	86.8	77.9	84.1	88.9	63.6	81.2	84.0	63.6	77.7	81.3	64.9	76.2	85.6	63.6	78.9
0970, 0990	Wall Finishes & Painting/Coating	93.6	53.1	68.9	86.5	82.4	84.0	91.7	95.6	94.1	97.1	95.6	96.2	97.1	95.6	96.2	91.7	95.6	94.1
09	FINISHES	95.6	39.6	65.2	91.4	70.6	80.1	87.7	57.3	71.1	86.9	61.6	73.1	84.4	62.8	72.7	84.8	68.0	75.7
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	79.7	95.6	100.0	90.0	97.8	100.0	77.3	95.1	100.0	79.2	95.5	100.0	83.1	96.3	100.0	79.1	95.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.6	66.2	84.2	100.8	78.8	91.8	96.1	66.1	83.8	96.5	65.9	83.9	100.7	74.2	89.9	96.1	68.1	84.6
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	98.5	43.8	72.1	93.3	61.8	78.1	95.9	58.1	77.7	100.5	62.9	82.4	98.8	68.5	84.2	94.5	62.0	78.8
MF2018	WEIGHTED AVERAGE	96.5	58.5	81.1	95.2	76.5	87.6	95.6	67.6	84.2	96.0	70.1	85.5	97.4	73.2	87.5	94.0	72.4	85.2

DIVISION		KANSAS																	
		FORT SCOTT			HAYS			HUTCHINSON			INDEPENDENCE			KANSAS CITY			LIBERAL		
		667			676			675			673			660 - 662			679		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		99.7	99.7		100.6	100.6		100.6	100.6		100.6	100.6		97.5	97.5		100.6	100.6
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	95.1	85.3	88.5	102.1	87.8	92.4	84.5	88.1	87.0	101.4	88.2	92.4	91.7	86.4	88.1	101.8	87.8	92.3
0310	Concrete Forming & Accessories	104.6	78.0	83.1	94.8	56.3	63.8	81.0	53.5	58.8	110.1	63.9	72.8	99.6	99.8	99.8	89.2	55.6	62.1
0320	Concrete Reinforcing	100.6	93.8	98.4	108.7	97.4	105.1	108.7	97.4	105.1	108.1	93.8	103.5	97.8	103.8	99.7	110.3	97.1	106.0
0330	Cast-in-Place Concrete	95.1	77.2	88.9	80.2	79.6	80.0	74.3	81.5	76.8	103.9	81.6	96.2	81.4	97.0	86.8	80.2	78.3	79.6
03	CONCRETE	94.8	81.4	89.4	96.2	73.1	86.9	82.3	72.4	78.3	105.7	76.5	94.0	87.8	100.0	92.7	97.6	72.2	87.4
04	MASONRY	103.7	52.5	71.4	109.8	56.7	76.3	97.2	60.3	73.9	95.2	60.3	73.2	101.8	99.2	100.2	111.3	50.1	72.7
05	METALS	90.7	96.7	92.1	88.0	98.1	90.4	87.8	97.6	90.1	87.7	96.7	89.8	99.4	106.7	101.1	88.3	97.3	90.4
06	WOOD, PLASTICS & COMPOSITES	103.5	85.4	96.0	94.0	54.1	77.5	81.4	48.5	67.8	111.1	62.1	90.9	98.7	99.9	99.2	88.3	54.1	74.1
07	THERMAL & MOISTURE PROTECTION	98.4	67.5	84.8	105.4	59.8	85.4	103.6	60.3	84.6	105.3	69.4	89.6	97.1	98.4	97.7	105.5	57.1	84.3
08	OPENINGS	88.6	80.9	86.7	94.2	62.4	86.5	94.2	59.3	85.8	92.4	66.0	86.0	89.5	98.0	91.5	94.2	62.4	86.6
0920	Plaster & Gypsum Board	89.0	85.3	86.7	92.7	53.1	68.0	83.6	47.3	60.9	112.3	61.4	80.5	81.4	100.2	93.2	86.7	53.1	65.7
0950, 0980	Ceilings & Acoustic Treatment	86.7	85.3	85.8	81.1	53.1	63.0	81.1	47.3	59.2	81.1	61.4	68.3	86.7	100.2	95.5	81.1	53.1	63.0
0960	Flooring	97.6	62.2	86.7	83.1	63.6	77.1	79.2	63.6	74.4	87.0	62.2	79.4	77.8	93.6	82.6	81.5	63.6	76.0
0970, 0990	Wall Finishes & Painting/Coating	92.9	71.9	80.1	97.1	95.6	96.2	97.1	95.6	96.2	97.1	95.6	96.2	99.2	103.7	101.9	97.1	95.6	96.2
09	FINISHES	90.0	75.6	82.2	86.4	60.7	72.4	82.1	58.3	69.2	90.3	66.5	77.4	85.7	99.1	93.0	85.2	60.2	71.6
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	79.9	95.6	100.0	78.0	95.2	100.0	78.6	95.3	100.0	80.1	95.7	100.0	95.9	99.1	100.0	77.3	95.1
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.1	62.4	82.3	96.5	63.5	83.0	96.5	65.9	83.9	96.5	65.3	83.7	100.3	101.4	100.8	96.5	64.3	83.3
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	94.2	62.9	79.1	100.0	62.9	82.1	97.3	56.5	77.6	98.4	67.5	83.5	96.7	96.1	96.4	98.8	62.9	81.5
MF2018	WEIGHTED AVERAGE	94.2	72.3	85.3	95.3	68.8	84.5	91.6	68.2	82.1	96.1	71.9	86.3	95.7	98.8	97.0	95.4	68.0	84.2

DIVISION		KANSAS									KENTUCKY								
		SALINA			TOPEKA			WICHITA			ASHLAND			BOWLING GREEN			CAMPTON		
		674			664 - 666			670 - 672			411 - 412			421 - 422			413 - 414		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		100.6	100.6		106.0	106.0		106.1	106.1		94.8	94.8		88.2	88.2		94.2	94.2
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	93.0	87.9	89.5	94.8	97.5	96.7	91.0	97.6	95.5	102.4	75.0	83.8	71.2	86.0	81.3	79.0	86.3	83.9
0310	Concrete Forming & Accessories	83.8	60.2	64.8	94.8	66.6	72.1	95.3	57.2	64.6	81.0	84.3	83.6	84.9	79.5	80.5	85.3	76.6	78.2
0320	Concrete Reinforcing	108.1	97.3	104.6	99.4	98.8	99.2	100.3	101.0	100.5	93.2	89.2	91.9	91.3	77.4	86.8	92.1	86.6	90.4
0330	Cast-in-Place Concrete	89.8	82.4	87.3	90.2	87.9	89.4	84.1	77.3	81.7	85.3	88.6	86.4	84.6	66.7	78.4	94.4	63.9	83.9
03	CONCRETE	93.4	75.8	86.4	92.2	80.6	87.6	89.7	73.0	83.0	90.8	87.9	89.6	89.7	75.1	83.9	93.1	74.4	85.6
04	MASONRY	128.7	53.7	81.4	97.1	63.4	75.9	95.6	54.4	69.6	93.3	85.9	88.7	95.5	67.8	78.0	92.3	51.1	66.3
05	METALS	89.3	98.4	91.4	94.6	97.5	95.3	91.6	96.9	92.8	90.5	105.5	94.0	91.7	84.6	90.0	91.2	88.0	90.4
06	WOOD, PLASTICS & COMPOSITES	83.2	59.3	73.3	95.7	65.4	83.1	100.1	54.8	81.4	72.5	82.7	76.7	84.1	81.9	83.2	82.2	83.3	82.7
07	THERMAL & MOISTURE PROTECTION	104.3	60.6	85.1	103.2	82.4	94.1	102.6	61.4	84.5	91.6	82.6	87.7	91.6	75.6	84.6	102.0	62.9	84.8
08	OPENINGS	94.2	65.8	87.3	99.3	73.2	93.0	97.2	64.1	89.2	86.8	84.1	86.1	87.8	77.7	85.4	89.0	82.2	87.3
0920	Plaster & Gypsum Board	83.6	58.5	67.9	90.4	64.3	74.1	89.0	53.4	66.8	59.8	82.7	74.1	80.0	82.0	81.2	80.0	82.7	81.7
0950, 0980	Ceilings & Acoustic Treatment	81.1	58.5	66.4	103.1	64.3	77.9	96.3	53.4	68.5	80.6	82.7	82.0	84.4	82.0	82.8	84.4	82.7	83.3
0960	Flooring	80.2	64.9	75.5	91.0	64.9	83.0	90.3	68.9	83.8	74.5	75.6	74.9	90.7	58.8	81.0	93.6	59.8	83.2
0970, 0990	Wall Finishes & Painting/Coating	97.1	95.6	96.2	98.7	95.6	96.8	98.7 -	55.8	72.5	92.5	83.9	87.2	92.6	65.2	75.9	92.6	50.0	66.6
09	FINISHES	83.1	63.8	72.6	95.3	68.0	80.5	93.2	57.8	74.0	77.9	82.5	80.4	88.4	74.2	80.7	89.3	71.1	79.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	85.2	96.8	100.0	83.8	96.5	100.0	85.9	96.9	100.0	81.2	95.9	100.0	88.7	97.6	100.0	87.1	97.2
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.7	67.5	87.1	100.5	72.5	89.0	100.5	69.2	87.7	96.2	78.8	89.0	100.7	75.7	90.5	96.5	70.9	86.0
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	98.7	72.6	86.1	98.3	69.3	84.3	101.6	72.6	87.6	93.5	81.8	87.8	95.9	73.6	85.2	94.3	81.7	88.3
MF2018	WEIGHTED AVERAGE	96.1	72.0	86.3	97.1	76.4	88.7	96.1	71.9	86.2	91.8	84.2	88.7	93.4	76.5	86.5	93.1	74.6	85.6

DIVISION		KENTUCKY																	
		CORBIN			COVINGTON			ELIZABETHTOWN			FRANKFORT			HAZARD			HENDERSON		
		407 - 409			410			427			406			417 - 418			424		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		94.2	94.2		97.9	97.9		88.2	88.2		99.7	99.7		94.2	94.2		107.4	107.4
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	82.5	86.7	85.4	75.5	96.9	90.0	65.8	85.1	78.9	79.3	98.1	92.1	77.2	87.3	84.1	72.6	109.0	97.3
0310	Concrete Forming & Accessories	79.6	71.4	73.0	79.7	66.7	69.2	77.6	68.1	69.9	99.7	74.1	79.0	80.4	77.4	78.0	89.4	72.4	75.7
0320	Concrete Reinforcing	90.5	85.9	89.0	91.4	73.2	85.5	91.7	77.9	87.3	99.1	78.3	92.4	92.6	86.1	90.5	91.4	78.5	87.2
0330	Cast-in-Place Concrete	87.7	67.9	80.9	90.3	76.3	85.5	76.5	63.4	72.0	87.9	72.5	82.6	90.7	65.3	82.0	74.7	79.1	76.2
03	CONCRETE	84.0	73.3	79.7	91.3	72.2	83.7	82.7	68.9	77.2	89.9	74.7	83.8	90.2	75.2	84.2	86.9	76.4	82.7
04	MASONRY	92.6	56.0	69.5	106.2	67.2	81.6	79.6	57.7	65.8	93.4	69.4	78.3	91.0	53.0	67.1	98.5	73.5	82.8
05	METALS	86.5	87.1	86.6	89.3	85.9	88.5	91.1	83.5	89.3	89.0	82.8	87.6	91.2	87.9	90.4	82.2	84.8	82.8
06	WOOD, PLASTICS & COMPOSITES	69.2	73.2	70.9	78.7	64.4	72.8	77.7	69.8	74.4	94.4	73.2	85.6	78.1	83.3	80.2	87.4	71.5	80.8
07	THERMAL & MOISTURE PROTECTION	96.6	64.4	82.5	100.2	67.5	85.9	91.0	63.5	78.9	95.9	71.3	85.1	101.8	64.5	85.4	101.1	76.7	90.4
08	OPENINGS	83.7	66.3	79.5	90.7	68.6	85.4	87.8	68.7	83.2	94.8	74.6	89.9	89.3	82.1	87.5	86.3	73.8	83.3
0920	Plaster & Gypsum Board	91.8	72.3	79.6	67.3	64.2	65.4	77.3	69.5	72.4	103.4	72.3	83.9	77.3	82.7	80.7	86.5	70.6	76.5
0950, 0980	Ceilings & Acoustic Treatment	80.9	72.3	75.3	89.9	64.2	73.2	84.4	69.5	74.8	104.0	72.3	83.4	84.4	82.7	83.3	79.6	70.6	73.8
0960	Flooring	89.9	59.8	80.7	68.0	77.7	71.0	88.4	68.7	82.4	97.7	73.1	90.2	92.1	59.8	82.2	94.9	70.7	87.5
0970, 0990	Wall Finishes & Painting/Coating	89.5	57.5	70.0	87.8	66.0	74.5	92.6	63.2	74.7	101.8	85.1	91.6	92.6	50.0	66.6	92.6	80.5	85.2
09	FINISHES	87.1	67.9	76.7	81.3	68.1	74.1	87.0	67.1	76.2	99.9	75.1	86.4	88.3	71.6	79.2	89.0	73.0	80.3
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	88.5	97.5	100.0	87.3	97.2	100.0	85.7	96.9	100.0	90.4	97.9	100.0	85.7	96.9	100.0	51.4	89.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.7	68.7	85.2	97.3	70.4	86.3	96.7	72.2	86.6	100.8	75.1	90.2	96.5	71.9	86.4	96.7	73.5	87.2
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	92.2	81.7	87.1	96.0	67.1	82.1	94.2	72.2	83.6	97.5	72.2	85.3	94.3	81.7	88.3	95.6	72.2	84.3
MF2018	WEIGHTED AVERAGE	89.9	73.3	83.2	92.8	73.3	84.9	90.3	71.7	82.7	94.8	76.9	87.5	92.5	75.2	85.5	90.5	76.8	84.9

For CCI updates and additional guidance please go to www.rsmeans.com/2022books

DIVISION		KENTUCKY																	
		LEXINGTON			LOUISVILLE			OWENSBORO			PADUCAH			PIKEVILLE			SOMERSET		
		403 - 405			400 - 402			423			420			415 - 416			425 - 426		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		94.2	94.2		96.5	96.5		107.4	107.4		107.4	107.4		94.8	94.8		94.2	94.2
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	85.2	89.1	87.9	77.8	98.1	91.6	81.5	110.6	101.3	74.6	109.2	98.1	110.9	74.2	86.0	71.1	86.8	81.8
0310	Concrete Forming & Accessories	96.3	73.2	77.7	98.7	79.7	83.4	87.1	76.7	78.7	84.4	76.3	77.9	93.4	80.5	83.0	81.9	72.0	73.9
0320	Concrete Reinforcing	99.4	84.8	94.7	98.6	84.8	94.1	91.4	78.0	87.1	91.9	76.7	87.1	93.7	89.1	92.2	91.7	86.1	89.9
0330	Cast-in-Place Concrete	89.8	81.8	87.0	84.5	69.0	79.1	87.2	81.9	85.4	79.7	75.9	78.4	93.8	83.7	90.3	74.7	82.3	77.4
03	CONCRETE	88.0	78.8	84.3	88.2	77.1	83.7	97.0	79.3	89.9	90.6	76.8	85.1	102.5	84.5	95.3	78.8	78.7	78.7
04	MASONRY	91.3	69.9	77.8	85.4	68.9	75.0	91.1	78.0	82.8	94.0	74.0	81.3	90.3	77.7	82.4	85.6	59.0	68.8
05	METALS	88.9	88.1	88.7	90.7	84.9	89.3	83.3	86.8	84.2	81.1	85.3	82.1	90.4	105.3	93.9	91.1	87.7	90.3
06	WOOD, PLASTICS & COMPOSITES	87.6	71.5	80.9	92.2	82.2	88.1	84.7	75.7	81.0	81.9	76.8	79.8	84.9	82.7	84.0	78.7	73.2	76.4
07	THERMAL & MOISTURE PROTECTION	97.1	75.7	87.7	94.3	73.4	85.2	101.8	79.6	92.1	101.2	76.6	90.4	92.7	74.6	84.8	101.0	66.7	86.0
08	OPENINGS	83.8	74.8	81.7	85.2	77.3	83.3	86.3	77.6	84.2	85.7	76.3	83.4	87.3	81.0	85.8	88.4	72.5	84.6
0920	Plaster & Gypsum Board	109.7	70.6	85.2	103.2	82.0	89.9	83.8	74.9	78.2	82.6	76.0	78.5	67.1	82.7	76.8	77.3	72.3	74.2
0950, 0980	Ceilings & Acoustic Treatment	83.6	70.6	75.1	101.1	82.0	88.7	79.6	74.9	76.6	79.6	76.0	77.3	80.6	82.7	82.0	84.4	72.3	76.6
0960	Flooring	93.9	62.2	84.2	98.2	58.6	86.1	94.4	58.8	83.5	93.5	70.7	86.5	78.1	59.8	72.5	92.3	59.8	82.4
0970, 0990	Wall Finishes & Painting/Coating	89.5	78.4	82.8	98.7	65.1	78.2	92.6	88.4	90.0	92.6	67.9	77.5	92.5	85.1	88.0	92.6	63.2	74.7
09	FINISHES	91.7	71.0	80.5	98.2	74.4	85.2	88.9	74.0	80.8	88.2	74.4	80.7	80.8	77.4	78.9	87.7	68.7	77.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	90.1	97.9	100.0	89.6	97.7	100.0	93.2	98.5	100.0	83.9	96.5	100.0	44.4	87.9	100.0	88.7	97.5
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.9	74.8	90.2	100.6	76.3	90.6	100.7	75.8	90.5	96.7	72.5	86.8	96.2	76.2	88.0	96.7	68.5	85.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	93.8	73.4	84.0	101.5	73.6	88.1	95.6	71.1	83.8	97.1	71.6	84.8	95.3	81.8	88.8	94.6	81.7	88.4
MF2018	WEIGHTED AVERAGE	92.6	76.9	86.2	93.9	77.9	87.4	92.9	80.0	87.7	90.7	78.0	85.5	94.1	80.1	88.4	90.5	74.8	84.1

DIVISION		LOUISIANA																	
		ALEXANDRIA			BATON ROUGE			HAMMOND			LAFAYETTE			LAKE CHARLES			MONROE		
		713 - 714			707 - 708			704			705			706			712		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		87.7	87.7		94.7	94.7		86.0	86.0		86.0	86.0		85.6	85.6		87.7	87.7
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	101.2	84.3	89.7	104.1	96.1	98.7	101.4	83.5	89.2	103.0	83.7	89.9	103.8	83.0	89.7	101.2	84.2	89.7
0310	Concrete Forming & Accessories	75.4	59.8	62.8	98.6	70.0	75.6	75.3	53.3	57.6	99.1	64.1	70.8	98.4	67.5	73.5	74.8	59.3	62.3
0320	Concrete Reinforcing	98.0	52.6	83.4	99.6	52.7	84.5	94.5	50.7	80.4	95.9	50.7	81.4	95.9	52.6	82.0	96.9	52.6	82.7
0330	Cast-in-Place Concrete	78.2	65.7	73.9	87.8	68.9	81.3	82.9	64.3	76.5	82.5	66.0	76.8	86.8	66.9	80.0	78.2	65.0	73.7
03	CONCRETE	80.2	61.4	72.7	89.3	67.2	80.5	84.3	57.6	73.6	86.1	63.0	76.9	88.0	65.3	78.9	79.9	61.0	72.3
04	MASONRY	101.7	62.9	77.3	85.0	60.8	69.7	88.9	60.6	71.1	88.8	63.7	73.0	88.4	65.2	73.7	97.4	61.6	74.9
05	METALS	86.5	70.6	82.8	91.8	73.0	87.4	84.6	68.3	80.8	83.9	68.4	80.3	83.9	69.2	80.5	86.5	70.5	82.7
06	WOOD, PLASTICS & COMPOSITES	84.6	58.7	73.9	98.8	73.3	88.3	77.7	51.2	66.7	102.8	64.1	86.8	100.7	67.9	87.1	83.8	58.7	73.4
07	THERMAL & MOISTURE PROTECTION	100.1	64.2	84.4	95.5	66.7	82.9	94.6	61.5	80.1	95.4	65.1	82.1	95.1	66.2	82.4	100.0	63.7	84.1
08	OPENINGS	106.4	58.2	94.8	93.6	70.3	88.0	91.7	51.6	82.0	95.0	58.5	86.2	95.0	61.7	87.0	106.4	56.7	94.4
0920	Plaster & Gypsum Board	85.0	58.2	68.2	104.3	72.8	84.6	95.4	50.4	67.3	113.5	63.8	82.4	113.5	67.7	84.9	84.5	58.2	68.1
0950, 0980	Ceilings & Acoustic Treatment	93.2	58.2	70.5	103.4	72.8	83.5	99.6	50.4	67.7	96.1	63.8	75.1	96.9	67.7	77.9	93.2	58.2	70.5
0960	Flooring	87.8	65.9	81.1	96.5	65.9	87.2	96.4	65.9	87.0	104.2	65.9	92.5	104.2	65.9	92.5	87.5	65.9	80.9
0970, 0990	Wall Finishes & Painting/Coating	98.7	58.8	74.4	101.8	58.8	75.6	99.9	55.5	72.8	99.9	55.4	72.8	99.9	58.8	74.8	98.7	60.6	75.5
09	FINISHES	89.2	60.5	73.6	102.3	68.5	84.0	99.5	55.0	75.4	103.9	63.5	81.9	104.0	66.4	83.6	89.0	60.4	73.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	80.3	95.7	100.0	85.1	96.8	100.0	82.0	96.1	100.0	84.3	96.6	100.0	85.2	96.8	100.0	79.9	95.6
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	101.1	61.3	84.8	100.9	59.9	84.1	96.8	58.3	81.0	101.0	59.6	84.0	101.0	62.5	85.2	101.1	60.2	84.3
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	90.6	52.9	72.4	97.5	57.1	78.0	93.9	64.5	79.7	94.6	59.1	77.5	94.3	63.6	79.5	91.6	56.3	74.6
MF2018	WEIGHTED AVERAGE	93.5	63.3	81.2	95.8	67.2	84.2	91.8	62.2	79.8	93.8	64.5	81.9	94.0	66.9	83.0	93.3	63.3	81.1

DIVISION		LOUISIANA									MAINE								
		NEW ORLEANS			SHREVEPORT			THIBODAUX			AUGUSTA			BANGOR			BATH		
		700 - 701			710 - 711			703			043			044			045		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		90.2	90.2		96.9	96.9		86.0	86.0		98.4	98.4		92.3	92.3		92.3	92.3
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	103.7	96.4	98.8	103.5	97.7	99.6	103.8	83.5	90.0	88.3	102.4	97.9	90.1	91.0	90.7	87.4	89.4	88.8
0310	Concrete Forming & Accessories	103.6	69.9	76.4	99.2	61.2	68.6	87.8	60.9	66.1	97.7	77.1	81.1	90.8	78.4	80.8	85.3	76.7	78.4
0320	Concrete Reinforcing	100.0	52.9	84.9	99.6	51.7	84.2	94.5	50.7	80.4	99.9	81.2	93.9	85.2	81.4	84.0	84.4	81.0	83.3
0330	Cast-in-Place Concrete	79.8	71.8	77.0	80.9	67.9	76.4	89.0	64.0	80.4	74.1	109.2	86.2	58.6	111.5	76.9	58.6	107.9	75.7
03	CONCRETE	89.1	67.5	80.5	86.3	62.5	76.8	88.7	60.9	77.6	88.9	89.5	89.1	79.7	91.1	84.3	79.5	89.0	83.3
04	MASONRY	91.7	62.9	73.5	84.8	62.1	70.5	111.2	60.2	79.0	86.2	92.0	89.8	104.6	93.2	97.4	110.6	89.5	97.3
05	METALS	100.2	61.9	91.3	88.7	68.4	83.9	84.6	68.3	80.8	106.7	91.4	103.1	91.9	94.1	92.4	90.7	93.1	91.3
06	WOOD, PLASTICS & COMPOSITES	103.8	72.3	90.8	99.7	61.0	83.7	86.3	61.8	76.2	92.2	74.1	84.7	88.2	75.5	82.9	81.2	74.1	78.2
07	THERMAL & MOISTURE PROTECTION	93.6	68.8	82.7	98.1	65.8	84.0	95.0	62.4	80.7	106.1	98.7	102.8	104.0	100.2	102.3	103.8	96.5	100.6
08	OPENINGS	97.9	64.9	90.0	100.5	56.4	89.8	95.8	53.6	85.6	98.7	77.9	93.6	92.8	81.5	90.0	92.7	76.9	88.9
0920	Plaster & Gypsum Board	101.0	71.7	82.7	107.0	60.1	77.7	98.3	61.4	75.2	105.5	73.3	85.3	104.3	74.7	85.8	95.6	73.3	81.6
0950, 0980	Ceilings & Acoustic Treatment	90.1	71.7	78.2	102.7	60.1	75.1	99.6	61.4	74.8	96.9	73.3	81.6	80.4	74.7	76.7	80.4	73.3	75.8
0960	Flooring	115.4	67.2	100.6	95.5	65.9	86.4	101.7	65.3	90.6	91.7	107.1	96.4	86.1	107.1	92.5	84.7	102.9	90.3
0970, 0990	Wall Finishes & Painting/Coating	104.5	60.8	77.8	101.8	60.6	76.7	100.3	55.5	73.0	102.0	87.5	93.2	95.5	95.9	95.7	95.5	82.5	87.6
09	FINISHES	106.8	68.7	86.1	101.1	61.8	79.8	101.7	61.1	79.7	98.6	82.8	90.0	90.9	84.5	87.4	89.1	81.4	84.9
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	85.5	96.8	100.0	81.1	95.9	100.0	82.9	96.3	100.0	97.8	99.5	100.0	100.3	100.1	100.0	93.6	98.6
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.6	62.6	85.0	100.9	60.9	84.5	96.8	58.0	80.9	101.2	73.5	89.8	101.4	75.7	90.8	97.1	73.5	87.4
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	101.9	68.6	85.9	98.5	63.1	81.4	93.1	64.5	79.3	105.5	75.5	91.0	100.8	68.2	85.1	99.4	75.5	87.9
MF2018	WEIGHTED AVERAGE	98.8	68.6	86.5	95.4	65.8	83.3	93.9	63.6	81.6	99.6	84.5	93.5	94.5	84.2	90.3	93.2	82.9	89.0

DIVISION		MAINE																	
		HOULTON			KITTERY			LEWISTON			MACHIAS			PORTLAND			ROCKLAND		
		047			039			042			046			040 - 041			048		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		92.3	92.3		92.3	92.3		92.3	92.3		92.3	92.3		95.5	95.5		92.3	92.3
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	89.2	89.4	89.3	76.2	89.4	85.2	88.0	91.0	90.0	88.6	89.4	89.1	88.9	97.7	94.9	85.6	89.4	88.2
0310	Concrete Forming & Accessories	96.0	76.6	80.4	87.2	76.8	78.8	98.1	78.4	82.2	91.9	76.7	79.6	101.1	79.1	83.3	93.4	76.7	79.9
0320	Concrete Reinforcing	85.2	81.0	83.9	85.3	81.1	83.9	104.7	81.4	97.2	85.2	81.0	83.9	98.8	81.5	93.2	85.2	81.0	83.9
0330	Cast-in-Place Concrete	58.6	106.9	75.3	58.9	108.0	75.8	59.8	111.6	77.7	58.6	107.9	75.7	71.1	112.9	85.5	59.8	107.9	76.5
03	CONCRETE	80.7	88.6	83.9	75.4	89.1	80.9	81.9	91.1	85.6	80.1	89.0	83.7	87.6	91.8	89.2	78.0	89.0	82.4
04	MASONRY	88.3	89.5	89.0	106.6	89.5	95.8	89.0	93.2	91.7	88.3	89.5	89.0	99.1	93.3	95.4	83.4	89.5	87.2
05	METALS	91.0	93.1	91.5	86.0	93.3	87.7	96.2	94.1	95.7	91.0	93.1	91.5	101.8	92.6	99.6	90.8	93.1	91.4
06	WOOD, PLASTICS & COMPOSITES	92.8	74.1	85.0	86.8	74.1	81.5	95.1	75.5	87.0	89.4	74.1	83.0	95.2	75.5	87.1	90.4	74.1	83.6
07	THERMAL & MOISTURE PROTECTION	104.1	96.5	100.8	106.7	96.5	102.2	103.8	100.2	102.2	104.0	96.5	100.7	109.0	101.8	105.8	103.7	96.5	100.5
08	OPENINGS	92.8	76.9	89.0	92.9	80.2	89.8	95.3	81.5	92.0	92.8	76.9	89.0	93.0	81.5	90.2	92.8	76.9	88.9
0920	Plaster & Gypsum Board	107.7	73.3	86.2	96.0	73.3	81.8	111.6	74.7	88.5	106.0	73.3	85.5	106.5	74.7	86.6	106.0	73.3	85.5
0950, 0980	Ceilings & Acoustic Treatment	80.4	73.3	75.8	89.7	73.3	79.0	92.1	74.7	80.8	80.4	73.3	75.8	100.1	74.7	83.6	80.4	73.3	75.8
0960	Flooring	87.2	102.9	92.0	90.7	102.9	94.4	88.5	107.1	94.2	86.6	102.9	91.6	91.7	167.9	115.0	86.9	102.9	91.8
0970, 0990	Wall Finishes & Painting/Coating	95.5	82.5	87.6	81.6	94.8	89.6	95.5	95.9	95.7	95.5	82.5	87.6	101.8	95.9	98.2	95.5	82.5	87.6
09	FINISHES	91.8	81.4	86.1	92.4	82.7	87.1	94.9	84.5	89.3	91.3	81.4	85.9	98.4	97.0	97.6	91.1	81.4	85.8
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	90.6	98.0	100.0	93.6	98.6	100.0	100.3	100.1	100.0	90.6	98.0	100.0	100.4	100.1	100.0	93.6	98.6
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	97.1	73.5	87.4	96.9	73.5	87.3	101.4	75.7	90.8	97.1	73.5	87.4	100.8	75.8	90.5	97.1	73.5	87.4
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	102.3	75.5	89.4	99.9	75.5	88.1	102.3	75.6	89.4	102.3	75.5	89.4	101.6	75.6	89.1	102.2	75.5	89.3
MF2018	WEIGHTED AVERAGE	93.2	82.8	88.9	91.6	83.3	88.2	95.8	85.2	91.5	93.0	82.8	88.9	98.1	87.3	93.7	92.4	82.9	88.5

DIVISION		MAINE			MARYLAND														
		WATERVILLE			ANNAPOLIS			BALTIMORE			COLLEGE PARK			CUMBERLAND			EASTON		
		049			214			210 - 212			207 - 208			215			216		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		92.3	92.3		106.4	106.4		104.5	104.5		104.2	104.2		99.5	99.5		99.5	99.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	88.9	89.4	89.2	109.8	96.4	100.7	110.0	97.8	101.7	108.5	88.8	95.2	99.7	86.0	90.4	107.2	84.3	91.7
0310	Concrete Forming & Accessories	84.6	76.7	78.2	103.3	73.8	79.5	103.2	74.3	79.9	80.2	71.9	73.5	91.2	78.7	81.1	88.7	69.7	73.4
0320	Concrete Reinforcing	85.2	81.0	83.9	99.1	88.4	95.7	101.0	91.3	97.9	98.4	98.1	98.3	88.3	87.0	87.9	87.5	81.2	85.5
0330	Cast-in-Place Concrete	58.6	107.9	75.7	103.7	76.3	94.3	111.4	79.2	100.3	136.6	71.7	114.2	86.1	83.2	85.1	95.6	61.8	83.9
03	CONCRETE	80.8	89.0	84.1	97.2	78.4	89.7	104.6	79.9	94.7	114.8	78.0	100.1	85.3	83.1	84.4	91.8	70.5	83.3
04	MASONRY	98.5	89.5	92.8	97.7	71.6	81.2	96.9	76.0	83.7	109.5	69.8	84.5	96.5	86.7	90.4	109.7	55.1	75.3
05	METALS	90.9	93.1	91.4	97.9	100.6	98.5	99.6	98.0	99.3	82.9	110.2	89.3	93.6	103.6	95.9	93.8	100.1	95.3
06	WOOD, PLASTICS & COMPOSITES	80.5	74.1	77.8	94.1	73.1	85.4	102.1	73.3	90.2	73.6	71.4	72.7	83.7	76.4	80.7	81.2	76.3	79.1
07	THERMAL & MOISTURE PROTECTION	104.0	96.5	100.7	105.2	79.0	93.8	105.5	83.6	95.9	103.9	76.9	92.0	101.2	78.9	91.4	101.4	69.6	87.4
08	OPENINGS	92.8	76.9	89.0	98.3	79.3	93.7	101.5	80.0	96.3	89.6	80.9	87.5	94.1	81.1	90.9	92.6	79.1	89.3
0920	Plaster & Gypsum Board	95.6	73.3	81.6	115.0	72.4	88.4	115.0	72.4	88.4	101.4	70.9	82.4	112.7	76.2	89.9	112.7	76.1	89.8
0950, 0980	Ceilings & Acoustic Treatment	80.4	73.3	75.8	110.0	72.4	85.6	110.0	72.4	85.6	117.6	70.9	87.3	116.8	76.2	90.5	116.8	76.1	90.4
0960	Flooring	84.5	102.9	90.1	96.2	74.0	89.4	100.5	75.7	92.9	87.9	73.0	83.3	92.6	91.9	92.4	91.8	70.4	85.3
0970, 0990	Wall Finishes & Painting/Coating	95.5	82.5	87.6	101.8	67.7	81.0	105.0	69.0	83.0	97.4	67.7	79.3	97.2	78.6	85.8	97.2	67.7	79.2
09	FINISHES	89.2	81.4	84.9	105.0	72.6	87.4	106.2	73.3	88.3	99.9	70.9	84.1	105.8	81.0	92.4	106.2	69.8	86.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	90.5	97.9	100.0	89.3	97.7	100.0	89.6	97.7	100.0	79.8	95.6	100.0	90.9	98.0	100.0	81.3	95.9
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	97.1	73.5	87.4	100.7	80.7	92.5	100.7	83.2	93.5	96.5	81.2	90.2	96.3	68.9	85.0	96.3	67.6	84.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	102.3	75.5	89.4	98.1	82.3	90.5	99.2	86.7	93.1	99.8	101.4	100.6	97.9	79.0	88.8	97.6	57.8	78.4
MF2018	WEIGHTED AVERAGE	93.2	82.8	89.0	99.6	81.8	92.3	101.5	83.7	94.2	97.3	84.0	91.9	95.2	81.6	89.7	96.8	70.9	86.2

DIVISION		MARYLAND															MASSACHUSETTS		
		ELKTON			HAGERSTOWN			SALISBURY			SILVER SPRING			WALDORF			BOSTON		
		219			217			218			209			206			020 - 022, 024		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		99.5	99.5		99.5	99.5		99.5	99.5		96.4	96.4		96.4	96.4		103.1	103.1
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	93.3	84.8	87.5	98.3	86.3	90.1	107.2	84.1	91.5	93.7	81.3	85.3	100.4	81.1	87.3	87.7	103.4	98.4
0310	Concrete Forming & Accessories	96.9	86.9	88.9	90.0	83.3	84.6	108.7	47.6	59.4	89.6	71.2	74.7	99.6	71.1	76.6	101.2	135.4	128.8
0320	Concrete Reinforcing	87.5	109.2	94.5	88.3	87.1	87.9	87.5	60.7	78.9	97.8	98.0	97.9	98.5	98.0	98.3	101.6	151.6	117.6
0330	Cast-in-Place Concrete	77.4	67.9	74.1	82.0	83.4	82.5	95.6	59.8	83.2	139.8	72.0	116.4	156.7	71.8	127.4	80.3	141.6	101.5
03	CONCRETE	79.5	85.3	81.8	82.3	85.2	83.5	93.3	56.3	78.5	113.8	77.6	99.3	125.0	77.5	106.0	92.2	139.9	111.3
04	MASONRY	95.1	62.7	74.7	101.2	86.7	92.1	109.2	51.8	73.0	109.7	70.1	84.7	95.2	70.0	79.3	112.1	147.5	134.4
05	METALS	93.9	111.7	98.0	93.7	104.0	96.1	93.9	91.0	93.2	87.5	106.3	91.8	87.5	105.7	91.7	100.2	134.8	108.3
06	WOOD, PLASTICS & COMPOSITES	89.4	95.6	91.9	82.7	82.2	82.5	102.8	48.5	80.3	81.6	70.7	77.1	89.9	70.7	82.0	99.9	133.9	113.9
07	THERMAL & MOISTURE PROTECTION	100.9	75.2	89.6	101.4	83.4	93.5	101.9	65.1	85.8	106.1	81.4	95.2	106.8	81.4	95.6	106.5	138.9	120.7
08	OPENINGS	92.6	97.2	93.7	92.5	84.2	90.5	92.8	58.3	84.4	82.2	80.5	81.8	82.7	80.5	82.2	97.9	142.1	108.6
0920	Plaster & Gypsum Board	116.6	95.9	103.7	112.7	82.1	93.6	131.6	47.5	79.0	112.8	70.9	86.6	117.7	70.9	88.4	112.6	134.7	126.4
0950, 0980	Ceilings & Acoustic Treatment	116.8	95.9	103.3	119.1	82.1	95.1	116.8	47.5	71.8	125.8	70.9	90.2	125.8	70.9	90.2	105.3	134.7	124.4
0960	Flooring	93.9	70.4	86.7	92.2	91.9	92.1	97.1	70.4	88.9	93.1	73.0	87.0	95.8	73.0	88.9	97.5	161.9	117.2
0970, 0990	Wall Finishes & Painting/Coating	97.2	67.7	79.2	97.2	70.2	80.7	97.2	67.7	79.2	105.3	67.7	82.4	105.3	67.7	82.4	105.0	155.2	135.6
09	FINISHES	106.3	83.0	93.6	105.9	83.5	93.7	110.7	52.7	79.2	100.5	70.3	84.1	102.3	70.4	85.0	102.5	142.7	124.3
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	52.2	89.6	100.0	91.5	98.2	100.0	77.3	95.1	100.0	78.4	95.3	100.0	76.5	94.9	100.0	116.7	103.6
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.3	73.0	86.7	100.5	86.0	94.6	96.3	65.6	83.7	96.5	81.6	90.4	96.5	81.5	90.3	96.4	132.9	111.4
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	98.7	80.5	90.0	97.8	79.0	88.7	96.8	55.7	77.0	95.9	101.3	98.5	94.4	101.3	97.8	99.4	132.7	115.4
MF2018	WEIGHTED AVERAGE	94.3	81.0	88.9	95.8	86.3	91.9	97.5	63.5	83.6	96.8	83.2	91.2	98.1	83.0	91.9	98.5	134.5	113.1

For CCI updates and additional guidance please go to www.rsmeans.com/2022books

DIVISION		MASSACHUSETTS																	
		BROCKTON			BUZZARDS BAY			FALL RIVER			FITCHBURG			FRAMINGHAM			GREENFIELD		
		023			025			027			014			017			013		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		95.2	95.2		95.2	95.2		96.1	96.1		92.3	92.3		94.0	94.0		92.3	92.3
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	87.2	94.1	91.9	78.0	93.7	88.6	86.3	94.1	91.6	80.4	93.6	89.3	77.5	93.0	88.0	83.4	92.1	89.3
0310	Concrete Forming & Accessories	98.0	119.8	115.6	95.3	119.1	114.5	98.0	119.6	115.4	91.8	112.4	108.4	101.7	119.8	116.3	89.5	116.1	111.0
0320	Concrete Reinforcing	99.4	140.9	112.7	79.7	118.5	92.1	99.4	118.6	105.5	82.0	132.7	98.3	82.0	140.7	100.8	83.8	118.1	94.8
0330	Cast-in-Place Concrete	69.2	129.3	89.9	57.5	129.0	82.2	66.9	129.5	88.5	63.2	128.9	85.9	63.2	129.2	86.0	64.9	114.5	82.0
03	CONCRETE	84.2	126.6	101.2	71.2	122.3	91.6	82.2	122.7	98.4	72.3	121.5	92.0	74.7	126.5	95.5	74.9	115.5	91.1
04	MASONRY	105.1	132.9	122.6	97.5	132.8	119.8	105.7	132.8	122.8	95.2	124.9	113.9	101.4	128.8	118.7	99.7	115.6	109.7
05	METALS	94.6	127.8	102.4	88.6	117.7	95.4	94.6	118.3	100.1	93.4	120.1	99.6	93.4	127.0	101.3	96.7	111.4	100.2
06	WOOD, PLASTICS & COMPOSITES	95.8	119.3	105.5	91.6	119.3	103.1	95.8	119.5	105.6	91.5	109.9	99.1	99.6	119.0	107.6	89.1	119.6	101.7
07	THERMAL & MOISTURE PROTECTION	102.5	123.5	111.7	101.3	120.3	109.6	102.2	120.2	110.1	101.7	116.3	108.1	101.9	121.3	110.4	101.7	106.6	103.8
08	OPENINGS	93.5	127.4	101.7	89.9	116.6	96.4	93.5	117.7	99.3	95.6	120.2	101.5	86.5	127.3	96.3	95.6	118.2	101.1
0920	Plaster & Gypsum Board	104.3	119.7	113.9	95.9	119.7	110.8	104.3	119.7	113.9	104.2	110.1	107.9	110.8	119.7	116.4	104.3	120.1	114.2
0950, 0980	Ceilings & Acoustic Treatment	103.7	119.7	114.1	85.7	119.7	107.8	103.7	119.7	114.1	87.9	110.1	102.3	87.9	119.7	108.6	97.5	120.1	112.2
0960	Flooring	89.8	154.8	109.7	87.2	154.8	107.9	88.2	154.8	108.6	90.3	154.8	110.0	91.7	154.8	111.0	89.7	133.3	103.0
0970, 0990	Wall Finishes & Painting/Coating	89.9	135.3	117.6	89.9	135.3	117.6	89.9	135.3	117.6	87.5	135.3	116.7	88.4	135.3	117.0	87.5	112.0	102.4
09	FINISHES	95.8	128.2	113.4	89.2	128.2	110.4	95.4	128.4	113.3	91.3	122.7	108.4	92.6	128.0	111.8	93.5	119.9	107.9
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	111.8	102.6	100.0	111.8	102.6	100.0	112.3	102.7	100.0	103.0	100.7	100.0	111.4	102.5	100.0	104.4	101.0
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	101.4	101.5	101.5	96.5	96.8	96.6	101.4	101.2	101.3	97.0	97.8	97.4	97.0	113.3	103.7	97.0	95.5	96.4
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	100.7	96.1	98.5	98.6	92.8	95.8	100.3	97.4	98.9	100.7	96.5	98.7	98.5	115.3	106.6	100.7	97.7	99.3
MF2018	WEIGHTED AVERAGE	96.1	114.7	103.7	90.4	111.2	98.9	95.7	113.0	102.8	92.5	110.2	99.7	92.2	119.3	103.2	93.9	106.7	99.1

DIVISION		MASSACHUSETTS																	
		HYANNIS			LAWRENCE			LOWELL			NEW BEDFORD			PITTSFIELD			SPRINGFIELD		
		026			019			018			027			012			010 - 011		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		95.2	95.2		94.6	94.6		92.3	92.3		96.1	96.1		92.3	92.3		92.3	92.3
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	84.2	93.9	90.8	88.7	93.7	92.1	87.8	94.0	92.0	85.1	94.1	91.2	88.7	92.2	91.1	88.2	92.6	91.2
0310	Concrete Forming & Accessories	87.2	119.5	113.3	103.4	120.3	117.0	98.8	122.2	117.7	98.0	119.7	115.5	98.8	104.0	103.0	99.0	117.4	113.8
0320	Concrete Reinforcing	79.7	118.6	92.1	101.4	138.6	113.3	102.3	138.3	113.9	99.4	118.5	105.5	83.2	114.8	93.4	102.3	118.1	107.4
0330	Cast-in-Place Concrete	63.1	129.2	85.9	73.1	129.4	92.5	66.4	132.2	89.2	59.0	129.6	83.4	72.5	112.7	86.4	69.2	116.3	85.4
03	CONCRETE	75.3	122.6	94.2	87.6	126.4	103.1	81.3	128.1	100.0	79.7	122.8	97.0	79.8	108.9	91.4	82.5	116.7	96.2
04	MASONRY	104.1	132.8	122.2	106.9	135.3	124.8	94.4	136.4	120.9	104.1	131.4	121.3	95.1	110.4	104.7	94.7	118.8	109.9
05	METALS	89.7	118.1	96.3	97.2	127.1	104.2	97.1	123.9	103.4	94.6	118.3	100.1	96.9	109.7	99.9	100.0	111.5	102.7
06	WOOD, PLASTICS & COMPOSITES	83.9	119.3	98.5	100.6	119.2	108.3	99.3	119.2	107.6	95.8	119.5	105.6	99.3	104.5	101.5	99.3	119.6	107.7
07	THERMAL & MOISTURE PROTECTION	101.6	122.7	110.9	102.5	124.2	112.0	102.3	125.3	112.4	102.2	119.8	109.9	102.3	103.1	102.6	102.3	108.0	104.8
08	OPENINGS	90.5	117.8	97.1	89.6	126.7	98.6	96.6	126.7	103.9	93.5	121.9	100.3	96.6	109.0	99.6	96.6	118.2	101.8
0920	Plaster & Gypsum Board	88.9	119.7	108.2	113.7	119.7	117.5	113.7	119.7	117.5	104.3	119.7	113.9	113.7	104.5	108.0	113.7	120.1	117.7
0950, 0980	Ceilings & Acoustic Treatment	93.4	119.7	110.5	98.3	119.7	112.2	98.3	119.7	112.2	103.7	119.7	114.1	98.3	104.5	102.3	98.3	120.1	112.4
0960	Flooring	85.3	154.8	106.5	92.0	154.8	111.2	92.0	154.8	111.2	88.2	154.8	108.6	92.3	128.2	103.3	91.5	133.3	104.3
0970, 0990	Wall Finishes & Painting/Coating	89.9	135.3	117.6	87.6	135.3	116.7	87.5	135.3	116.7	89.9	135.3	117.6	87.5	112.0	102.4	88.3	112.0	102.7
09	FINISHES	89.5	128.2	110.5	96.1	128.2	113.5	96.0	129.5	114.2	95.3	128.4	113.2	96.1	109.5	103.4	96.0	120.7	109.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	111.8	102.6	100.0	111.8	102.6	100.0	113.5	102.9	100.0	112.3	102.7	100.0	102.0	100.4	100.0	105.5	101.2
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	101.4	105.6	103.1	100.9	117.0	107.5	100.9	123.1	110.0	101.4	101.2	101.3	100.9	92.6	97.5	100.9	97.2	99.4
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	99.5	97.4	98.5	100.1	120.9	110.1	100.4	119.7	109.7	101.6	99.4	100.5	100.4	97.7	99.1	100.4	99.0	99.8
MF2018	WEIGHTED AVERAGE	92.8	113.9	101.4	96.8	121.7	106.9	96.0	123.1	107.0	95.4	113.3	102.7	95.8	102.4	98.5	96.8	107.9	101.3

DIVISION		MASSACHUSETTS			MICHIGAN														
		WORCESTER			ANN ARBOR			BATTLE CREEK			BAY CITY			DEARBORN			DETROIT		
		015 - 016			481			490			487			481			482		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		92.3	92.3		105.9	105.9		93.6	93.6		105.9	105.9		105.9	105.9		95.5	95.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	88.1	93.6	91.8	78.3	88.8	85.4	82.6	77.8	79.3	71.8	87.1	82.2	78.0	88.9	85.4	92.6	99.2	97.1
0310	Concrete Forming & Accessories	99.5	121.0	116.8	98.6	102.9	102.0	99.0	79.5	83.2	98.7	77.6	81.7	98.5	103.6	102.6	100.4	103.7	103.1
0320	Concrete Reinforcing	102.3	145.3	116.1	97.9	102.4	99.3	95.3	79.7	90.3	97.9	101.7	99.1	97.9	103.7	99.7	101.3	102.1	101.6
0330	Cast-in-Place Concrete	68.8	129.1	89.6	91.3	96.6	93.1	80.8	90.7	84.2	87.3	83.3	85.9	89.3	97.5	92.1	108.7	98.2	105.1
03	CONCRETE	82.3	127.6	100.5	91.4	101.6	95.5	84.9	83.3	84.3	89.7	85.3	87.9	90.5	102.5	95.3	102.6	101.0	102.0
04	MASONRY	94.3	131.3	117.6	91.4	97.5	95.3	89.2	75.3	80.4	90.9	80.0	84.0	91.2	120.3	109.6	95.9	98.7	97.7
05	METALS	100.1	126.2	106.2	92.9	117.7	98.7	98.9	82.5	95.1	93.5	113.3	98.1	93.0	119.6	99.2	97.5	93.0	96.4
06	WOOD, PLASTICS & COMPOSITES	99.9	121.1	108.6	94.7	104.5	98.8	95.4	79.1	88.7	94.7	77.3	87.5	94.7	104.5	98.8	100.1	105.7	102.5
07	THERMAL & MOISTURE PROTECTION	102.3	119.3	109.7	111.5	97.1	105.2	103.8	76.7	91.9	109.2	81.6	97.1	110.3	104.6	107.8	112.9	103.7	108.9
08	OPENINGS	96.6	129.6	104.6	90.3	99.8	92.6	83.7	75.1	81.6	90.3	81.7	88.2	90.3	99.7	92.6	97.0	101.1	98.0
0920	Plaster & Gypsum Board	113.7	121.6	118.6	94.8	104.6	100.9	85.4	75.7	79.3	94.8	76.5	83.4	94.8	104.6	100.9	90.3	105.9	100.0
0950, 0980	Ceilings & Acoustic Treatment	98.3	121.6	113.4	94.1	104.6	100.9	92.9	75.7	81.7	94.9	76.5	83.0	94.1	104.6	100.9	100.5	105.9	104.0
0960	Flooring	92.0	156.0	111.5	93.1	108.0	97.7	93.2	65.5	84.7	93.1	83.3	90.1	92.0	102.3	95.1	95.3	104.2	98.0
0970, 0990	Wall Finishes & Painting/Coating	87.5	135.3	116.7	88.4	97.9	94.2	90.1	70.8	78.3	88.4	80.3	83.4	88.4	96.1	93.1	102.2	97.8	99.5
09	FINISHES	96.0	129.5	114.2	96.2	103.5	100.2	91.0	75.6	82.7	96.0	78.2	86.3	95.9	102.6	99.6	99.6	103.6	101.7
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	106.6	101.4	100.0	101.0	100.2	100.0	101.3	100.3	100.0	94.8	98.9	100.0	101.5	100.3	100.0	100.7	100.2
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.9	102.2	101.4	101.0	91.5	97.1	100.9	77.8	91.4	101.0	80.3	92.5	101.0	100.3	100.7	100.8	100.6	100.8
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	100.4	102.4	101.4	98.7	101.3	100.0	96.5	72.0	84.7	97.6	76.5	87.4	98.7	96.4	97.6	102.7	101.4	102.1
MF2018	WEIGHTED AVERAGE	96.7	115.6	104.4	95.6	99.5	97.2	94.6	78.2	87.9	95.1	84.1	90.7	95.5	103.4	98.7	100.0	100.3	100.1

DIVISION		MICHIGAN																	
		FLINT			GAYLORD			GRAND RAPIDS			IRON MOUNTAIN			JACKSON			KALAMAZOO		
		484 - 485			497			493,495			498 - 499			492			491		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		105.9	105.9		100.8	100.8		99.2	99.2		88.7	88.7		100.8	100.8		93.6	93.6
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	69.7	87.5	81.8	80.3	75.7	77.2	81.6	90.6	87.7	84.9	84.2	84.4	94.8	77.2	82.8	82.9	77.8	79.4
0310	Concrete Forming & Accessories	103.0	84.8	88.3	98.0	69.7	75.2	96.5	76.2	80.1	91.8	74.1	77.5	93.7	77.5	80.6	99.0	79.7	83.4
0320	Concrete Reinforcing	97.9	102.0	99.2	89.0	86.6	88.2	99.6	79.6	93.2	88.0	79.1	85.2	86.4	101.5	91.3	95.3	78.3	89.9
0330	Cast-in-Place Concrete	91.9	86.3	90.0	80.6	73.5	78.2	85.0	88.4	86.2	95.5	63.4	84.4	80.5	87.5	82.9	82.4	90.8	85.3
03	CONCRETE	92.0	89.7	91.1	81.7	75.7	79.3	92.1	80.9	87.6	88.9	72.0	82.2	77.6	86.5	81.2	87.5	83.2	85.8
04	MASONRY	91.5	89.1	90.0	98.8	67.9	79.3	87.3	74.8	79.4	86.2	74.4	78.8	80.3	81.1	80.8	87.9	82.0	84.1
05	METALS	93.0	113.9	97.9	100.7	108.1	102.5	95.7	81.0	92.3	100.1	88.9	97.5	101.0	111.1	103.4	98.9	82.7	95.1
06	WOOD, PLASTICS & COMPOSITES	99.4	84.6	93.3	89.2	69.3	80.9	95.5	74.8	86.9	87.5	74.5	82.1	87.7	75.3	82.5	95.4	79.1	88.7
07	THERMAL & MOISTURE PROTECTION	109.5	87.2	99.7	102.6	69.3	88.0	105.9	71.8	91.0	106.5	69.3	90.2	101.8	82.1	93.2	103.8	78.8	92.9
08	OPENINGS	90.3	84.9	89.0	82.7	74.1	80.6	97.9	74.4	92.2	88.6	65.7	83.1	82.0	81.8	81.9	83.7	76.3	81.9
0920	Plaster & Gypsum Board	98.0	84.1	89.3	85.0	67.7	74.2	95.0	71.7	80.4	54.3	74.5	66.9	82.8	73.9	77.2	85.4	75.7	79.3
0950, 0980	Ceilings & Acoustic Treatment	94.1	84.1	87.6	90.9	67.7	75.9	104.0	71.7	83.0	91.4	74.5	80.4	90.9	73.9	79.8	92.9	75.7	81.7
0960	Flooring	93.1	88.5	91.7	86.1	79.6	84.1	95.5	85.8	92.5	105.3	84.7	99.0	84.9	73.2	81.3	93.2	73.4	87.1
0970, 0990	Wall Finishes & Painting/Coating	88.4	78.9	82.6	86.2	75.7	79.8	101.8	75.7	85.9	101.3	64.6	78.9	86.2	87.1	86.7	90.1	76.6	81.9
09	FINISHES	95.9	84.4	89.6	90.8	71.4	80.3	98.3	77.5	87.0	91.4	75.0	82.5	91.4	76.7	83.5	91.0	77.8	83.9
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	96.9	99.3	100.0	93.8	98.7	100.0	99.8	100.0	100.0	92.5	98.4	100.0	97.1	99.4	100.0	101.3	100.3
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	101.0	83.9	94.0	96.9	73.2	87.2	100.8	79.6	92.1	96.8	77.8	89.0	96.9	79.5	89.8	100.9	79.4	92.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	98.7	91.8	95.4	95.4	70.7	83.5	101.9	83.2	92.9	100.1	74.7	87.9	97.9	95.4	96.7	96.2	77.0	87.0
MF2018	WEIGHTED AVERAGE	95.5	89.9	93.2	93.7	76.3	86.6	97.2	80.7	90.5	95.2	77.1	87.8	92.9	85.9	90.1	94.8	80.3	88.9

DIVISION		MICHIGAN															MINNESOTA		
		LANSING			MUSKEGON			ROYAL OAK			SAGINAW			TRAVERSE CITY			BEMIDJI		
		488 - 489			494			480,483			486			496			566		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		110.7	110.7		93.6	93.6		87.1	87.1		105.9	105.9		88.7	88.7		94.5	94.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	86.6	99.7	95.5	80.9	77.8	78.8	79.7	87.3	84.9	72.9	87.1	82.5	73.1	83.3	80.0	83.3	90.6	88.3
0310	Concrete Forming & Accessories	96.5	81.4	84.3	99.7	78.7	82.8	93.2	101.7	100.1	98.6	82.2	85.4	91.8	68.2	72.7	81.6	82.9	82.6
0320	Concrete Reinforcing	100.4	101.8	100.8	96.2	80.0	91.0	88.7	97.5	91.5	97.9	101.6	99.1	89.4	74.7	84.7	97.6	101.2	98.8
0330	Cast-in-Place Concrete	100.6	86.7	95.8	80.5	89.7	83.7	79.9	91.2	83.8	90.2	83.2	87.8	74.5	75.1	74.7	112.2	92.5	105.4
03	CONCRETE	96.8	88.0	93.3	83.9	82.7	83.4	79.4	96.7	86.3	90.9	87.4	89.5	75.3	72.7	74.2	97.4	90.9	94.8
04	MASONRY	86.9	88.5	87.9	86.8	80.9	83.1	85.8	93.0	90.3	92.9	80.0	84.8	84.1	69.9	75.1	100.4	100.4	100.4
05	METALS	91.8	109.3	95.8	97.3	83.2	94.0	95.8	89.6	94.4	93.0	113.2	97.7	100.0	86.8	96.9	85.8	118.9	93.5
06	WOOD, PLASTICS & COMPOSITES	93.0	79.8	87.6	93.8	77.5	87.0	89.9	104.5	95.9	92.3	83.7	88.7	87.5	67.9	79.4	68.3	78.2	72.4
07	THERMAL & MOISTURE PROTECTION	105.8	85.6	97.0	102.7	73.7	90.0	107.3	94.0	101.4	110.0	82.3	97.9	105.4	69.0	89.5	102.7	87.3	96.0
08	OPENINGS	98.1	82.1	94.3	82.9	76.0	81.2	90.0	97.6	91.8	88.6	85.2	87.8	88.6	61.6	82.1	96.0	102.2	97.5
0920	Plaster & Gypsum Board	94.0	79.2	84.8	70.5	74.0	72.7	90.0	104.6	99.1	94.8	83.1	87.5	54.3	67.7	62.7	92.4	78.2	83.5
0950, 0980	Ceilings & Acoustic Treatment	99.2	79.2	86.2	92.9	74.0	80.7	93.5	104.6	100.7	94.1	83.1	87.0	91.4	67.7	76.1	120.9	78.2	93.2
0960	Flooring	97.3	85.8	93.7	91.9	85.8	90.0	90.7	99.2	93.3	93.1	83.3	90.1	105.3	79.6	97.4	94.5	101.5	96.7
0970, 0990	Wall Finishes & Painting/Coating	101.8	75.7	85.9	88.3	76.9	81.4	90.0	87.1	88.2	88.4	80.3	83.4	101.3	36.6	61.9	90.9	94.1	92.8
09	FINISHES	98.5	81.1	89.0	87.5	79.5	83.2	94.9	100.0	97.7	95.9	82.0	88.3	90.4	66.6	77.5	98.1	86.9	92.0
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	96.7	99.3	100.0	101.3	100.3	100.0	100.3	100.1	100.0	95.5	99.0	100.0	91.2	98.1	100.0	96.8	99.3
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.8	85.2	94.4	100.7	81.9	93.0	97.0	93.9	95.8	101.0	79.9	92.3	96.8	73.1	87.1	96.9	81.4	90.6
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	101.9	90.9	96.6	96.8	73.9	85.8	100.1	95.6	97.9	97.2	84.1	90.9	97.0	70.7	84.3	102.9	93.3	98.3
MF2018	WEIGHTED AVERAGE	97.2	89.7	94.1	93.6	80.3	88.2	93.4	94.8	94.0	95.1	86.1	91.5	92.5	73.5	84.8	95.2	92.6	94.1

DIVISION		MINNESOTA																	
		BRAINERD			DETROIT LAKES			DULUTH			MANKATO			MINNEAPOLIS			ROCHESTER		
		564			565			556 - 558			560			553 - 555			559		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		97.0	97.0		94.5	94.5		103.1	103.1		97.0	97.0		103.7	103.7		97.3	97.3
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	86.8	95.2	92.5	81.7	90.9	88.0	92.6	102.5	99.3	83.9	96.0	92.1	87.4	102.6	97.7	90.1	93.7	92.6
0310	Concrete Forming & Accessories	80.7	83.5	83.0	77.4	78.6	78.4	99.9	100.8	100.7	91.9	99.3	97.8	97.9	119.4	115.2	101.0	104.9	104.1
0320	Concrete Reinforcing	97.0	101.3	98.4	97.6	101.1	98.7	99.9	101.8	100.5	97.0	107.7	100.4	94.3	111.7	99.9	92.6	108.2	97.6
0330	Cast-in-Place Concrete	122.0	97.1	113.4	108.9	95.5	104.3	141.1	103.4	128.1	112.3	107.4	110.6	124.9	119.6	123.1	134.7	101.8	123.3
03	CONCRETE	101.4	92.8	97.9	95.0	90.0	93.0	119.7	102.8	112.9	97.3	104.6	100.2	112.0	118.7	114.7	108.7	105.4	107.4
04	MASONRY	126.4	109.5	115.7	124.5	106.1	112.9	104.5	112.5	109.5	114.3	122.7	119.6	100.1	124.4	115.4	98.9	113.7	108.2
05	METALS	86.8	118.9	94.3	85.7	118.0	93.3	93.9	119.5	99.9	86.6	122.2	95.0	98.2	127.0	104.9	93.3	125.3	100.8
06	WOOD, PLASTICS & COMPOSITES	80.6	75.3	78.4	65.0	70.2	67.1	98.0	99.2	98.5	92.0	90.0	91.2	101.2	117.5	107.9	102.7	104.0	103.3
07	THERMAL & MOISTURE PROTECTION	99.4	95.2	97.6	102.4	91.2	97.5	94.9	105.7	99.6	100.0	97.4	98.9	91.7	119.5	103.9	97.5	98.3	97.9
08	OPENINGS	83.8	100.6	87.9	95.9	97.8	96.4	99.4	109.8	101.9	88.1	109.2	93.2	99.9	127.2	106.5	94.7	118.6	100.5
0920	Plaster & Gypsum Board	81.3	75.3	77.6	91.9	69.9	78.2	92.6	99.4	96.9	88.1	90.5	89.6	91.9	118.1	108.3	100.8	104.8	103.3
0950, 0980	Ceilings & Acoustic Treatment	60.3	75.3	70.1	120.9	69.9	87.8	100.9	99.4	100.0	60.3	90.5	79.9	100.5	118.1	112.0	98.1	104.8	102.4
0960	Flooring	93.4	101.5	95.9	93.4	79.6	89.1	98.2	105.8	100.5	94.9	86.6	92.4	108.5	126.4	114.0	98.2	94.0	96.9
0970, 0990	Wall Finishes & Painting/Coating	84.4	94.1	90.3	90.9	77.4	82.6	101.7	110.1	106.8	97.1	96.2	96.6	105.0	128.7	119.5	92.0	103.1	98.8
09	FINISHES	82.3	87.0	84.8	97.6	78.0	87.0	98.5	102.8	100.8	84.4	96.4	90.9	101.3	121.7	112.4	96.3	103.1	100.0
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	98.6	99.7	100.0	97.8	99.5	100.0	101.1	100.2	100.0	104.5	101.0	100.0	106.7	101.5	100.0	101.4	100.3
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	95.9	85.1	91.5	96.9	84.0	91.6	100.8	98.2	99.8	95.9	93.0	94.7	100.7	114.6	106.4	100.8	98.9	100.0
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	101.8	101.5	101.6	102.6	65.9	84.9	99.7	101.5	100.6	105.7	95.7	100.9	101.7	115.4	108.3	100.5	95.7	98.2
MF2018	WEIGHTED AVERAGE	94.6	96.2	95.3	95.7	88.4	92.7	101.3	104.4	102.6	94.6	102.4	97.7	101.2	117.8	108.0	99.0	104.3	101.2

DIVISION		MINNESOTA															MISSISSIPPI		
		SAINT PAUL			ST. CLOUD			THIEF RIVER FALLS			WILLMAR			WINDOM			BILOXI		
		550 - 551			563			567			562			561			395		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		103.1	103.1		97.0	97.0		94.5	94.5		97.0	97.0		97.0	97.0		97.5	97.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	90.1	103.2	99.0	83.4	96.4	92.2	82.5	90.5	87.9	82.1	95.1	91.0	76.8	94.4	88.8	115.0	82.4	92.9
0310	Concrete Forming & Accessories	97.9	117.7	113.9	77.1	117.0	109.3	82.7	82.2	82.3	76.8	83.3	82.0	82.6	79.3	80.0	94.9	66.4	71.9
0320	Concrete Reinforcing	94.7	108.4	99.1	97.1	108.1	100.6	97.8	101.0	98.9	96.9	107.8	100.4	96.9	106.7	100.0	88.2	63.1	80.1
0330	Cast-in-Place Concrete	141.6	117.2	133.2	107.6	114.3	109.9	111.2	89.6	103.7	109.3	76.5	98.0	94.5	80.7	89.7	128.8	66.3	107.2
03	CONCRETE	118.4	116.5	117.6	93.0	115.2	101.9	96.3	89.5	93.6	93.1	86.7	90.5	84.8	86.1	85.3	102.3	67.4	88.3
04	MASONRY	96.7	122.3	112.8	109.5	118.6	115.3	100.4	100.3	100.4	112.5	111.7	112.0	123.8	86.8	100.5	85.0	62.3	70.7
05	METALS	93.8	124.1	100.9	87.3	124.3	95.9	85.9	117.9	93.4	86.6	122.1	94.9	86.5	120.0	94.3	89.3	89.9	89.5
06	WOOD, PLASTICS & COMPOSITES	98.1	115.5	105.3	77.2	115.0	92.9	69.7	78.2	73.2	76.9	75.4	76.2	82.2	75.4	79.4	94.3	67.0	83.0
07	THERMAL & MOISTURE PROTECTION	91.5	118.4	103.3	99.6	114.9	106.3	103.7	85.3	95.6	99.3	95.5	97.7	99.4	79.0	90.5	100.9	61.8	83.7
08	OPENINGS	94.4	124.9	101.8	88.5	124.7	97.2	96.0	102.2	97.5	85.7	98.8	88.8	88.9	98.8	91.3	92.6	61.7	85.1
0920	Plaster & Gypsum Board	91.9	116.2	107.1	81.3	116.2	103.1	92.4	78.2	83.5	81.3	75.4	77.6	81.3	75.4	77.6	125.3	66.7	88.6
0950, 0980	Ceilings & Acoustic Treatment	100.5	116.2	110.7	60.3	116.2	96.6	120.9	78.2	93.2	60.3	75.4	70.1	60.3	75.4	70.1	94.9	66.7	76.6
0960	Flooring	97.4	122.4	105.0	90.5	91.5	90.8	94.2	79.6	89.7	91.9	79.6	88.1	94.1	79.6	89.7	93.0	62.7	83.7
0970, 0990	Wall Finishes & Painting/Coating	101.8	127.9	117.8	97.1	128.7	116.4	90.9	77.4	82.6	90.9	77.4	82.6	90.9	96.2	94.1	90.7	47.1	64.1
09	FINISHES	98.0	119.7	109.8	82.0	114.0	99.4	98.0	81.3	88.9	82.0	81.2	81.6	82.1	80.6	81.3	98.3	63.9	79.6
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	106.2	101.4	100.0	105.2	101.1	100.0	96.7	99.3	100.0	98.5	99.7	100.0	95.6	99.0	100.0	82.4	96.2
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.7	114.7	106.4	100.2	111.8	104.9	96.9	81.0	90.4	95.9	101.3	98.2	95.9	78.5	88.8	100.6	55.1	81.9
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	102.0	115.4	108.5	101.8	115.4	108.4	101.3	65.9	84.2	101.8	77.6	90.1	105.7	95.7	100.9	96.9	54.0	76.2
MF2018	WEIGHTED AVERAGE	100.4	116.7	107.0	94.0	114.1	102.2	94.9	87.5	91.9	92.8	95.2	93.8	92.8	89.4	91.4	96.9	65.2	84.0

DIVISION		MISSISSIPPI																	
		CLARKSDALE			COLUMBUS			GREENVILLE			GREENWOOD			JACKSON			LAUREL		
		386			397			387			389			390 - 392			394		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		97.5	97.5		97.5	97.5		97.5	97.5		97.5	97.5		102.9	102.9		97.5	97.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	112.7	80.8	91.0	113.5	81.5	91.8	120.7	82.4	94.7	116.9	80.5	92.2	110.0	91.5	97.4	119.9	80.8	93.4
0310	Concrete Forming & Accessories	80.5	41.6	49.1	78.9	43.7	50.5	76.1	60.5	63.6	93.5	41.8	51.8	98.6	66.0	72.3	79.2	56.3	60.7
0320	Concrete Reinforcing	100.1	62.0	87.9	94.3	62.1	84.0	100.7	62.2	88.3	100.1	62.0	87.9	99.5	66.1	88.7	94.9	30.5	74.3
0330	Cast-in-Place Concrete	105.9	56.1	88.7	131.4	58.2	106.1	109.1	64.6	93.7	113.9	55.9	93.9	111.0	68.6	96.4	128.5	57.4	103.9
03	CONCRETE	96.4	52.3	78.8	103.8	54.2	83.9	100.9	64.0	86.1	102.5	52.3	82.4	99.5	68.3	87.0	105.2	54.1	84.7
04	MASONRY	93.1	48.8	65.2	109.8	51.3	73.0	138.8	61.9	90.3	93.9	48.7	65.4	91.6	62.7	73.4	105.6	51.3	71.4
05	METALS	92.3	86.0	90.9	86.3	88.4	86.8	93.1	89.5	92.3	92.3	85.8	90.8	95.6	88.1	93.8	86.4	74.9	83.7
06	WOOD, PLASTICS & COMPOSITES	76.3	41.9	62.1	76.2	42.7	62.3	72.3	59.3	66.9	92.1	41.9	71.3	98.6	66.3	85.2	77.5	60.9	70.6
07	THERMAL & MOISTURE PROTECTION	98.3	48.7	76.5	100.6	51.9	79.3	98.7	60.9	82.1	98.8	50.7	77.7	98.4	63.7	83.2	100.9	53.9	80.3
08	OPENINGS	91.5	45.3	80.4	92.3	45.8	81.1	91.3	55.0	82.5	91.5	45.3	80.4	95.6	59.8	86.9	89.8	48.7	79.9
0920	Plaster & Gypsum Board	93.5	40.9	60.6	106.0	41.7	65.8	92.6	58.8	71.4	114.6	40.9	68.5	107.0	65.6	81.1	106.0	60.4	77.5
0950, 0980	Ceilings & Acoustic Treatment	90.1	40.9	58.2	87.3	41.7	57.7	91.6	58.8	70.3	90.1	40.9	58.2	99.0	65.6	77.3	87.3	60.4	69.8
0960	Flooring	100.3	62.7	88.8	88.2	62.7	80.4	99.0	62.7	87.9	104.8	62.7	92.0	90.8	64.0	82.6	87.2	62.7	79.7
0970, 0990	Wall Finishes & Painting/Coating	95.6	43.5	63.8	90.7	43.5	61.9	95.6	54.7	70.7	95.6	43.5	63.8	98.7	54.7	71.9	90.7	43.5	61.9
09	FINISHES	95.6	45.4	68.3	92.3	46.5	67.4	96.2	60.1	76.6	100.7	45.4	70.7	98.3	64.5	80.0	92.7	57.2	73.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	44.2	87.9	100.0	45.1	88.1	100.0	81.4	96.0	100.0	44.2	87.9	100.0	83.0	96.3	100.0	31.6	85.1
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	98.7	47.5	77.7	98.2	49.4	78.2	100.7	54.9	81.9	98.7	47.9	77.9	100.6	58.4	83.3	98.3	44.1	76.0
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	96.9	38.6	68.8	95.3	51.0	73.9	96.9	55.0	76.7	96.9	36.1	67.6	99.0	55.0	77.8	96.2	53.7	75.7
MF2018	WEIGHTED AVERAGE	96.0	52.6	78.3	96.1	55.8	79.7	99.2	63.8	84.8	97.5	52.3	79.1	98.4	66.8	85.5	96.2	55.1	79.5

DIVISION		MISSISSIPPI									MISSOURI								
		MCCOMB			MERIDIAN			TUPELO			BOWLING GREEN			CAPE GIRARDEAU			CHILLICOTHE		
		396			393			388			633			637			646		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		97.5	97.5		97.5	97.5		97.5	97.5		104.0	104.0		104.0	104.0		98.7	98.7
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	104.6	80.6	88.3	109.8	82.4	91.2	110.5	80.7	90.3	86.6	85.5	85.9	88.5	85.6	86.6	105.2	84.2	90.9
0310	Concrete Forming & Accessories	78.9	42.9	49.8	75.2	66.6	68.3	76.8	43.1	49.6	89.7	88.6	88.8	80.2	79.5	79.7	82.4	90.2	88.7
0320	Concrete Reinforcing	95.5	32.0	75.1	94.3	66.0	85.2	98.0	61.9	86.4	103.7	89.9	99.3	105.0	83.0	97.9	102.3	95.5	100.1
0330	Cast-in-Place Concrete	114.0	55.7	93.9	122.0	66.3	102.8	105.9	57.0	89.0	79.6	89.4	83.0	78.7	82.9	80.2	93.4	80.6	89.0
03	CONCRETE	94.0	47.6	75.4	98.0	68.0	86.0	95.6	53.3	78.7	87.9	90.7	89.0	87.1	83.2	85.5	95.4	88.8	92.8
04	MASONRY	109.6	48.3	70.9	84.4	62.3	70.5	128.6	49.7	78.9	129.1	91.5	105.4	125.3	78.1	95.5	101.2	86.1	91.7
05	METALS	86.5	73.9	83.6	87.1	91.2	88.1	92.2	85.6	90.7	85.8	114.7	92.5	86.6	111.0	92.3	82.0	108.1	88.1
06	WOOD, PLASTICS & COMPOSITES	76.2	44.2	62.9	73.0	67.0	70.5	73.0	42.7	60.5	93.5	89.1	91.7	84.5	77.8	81.7	88.8	91.6	90.0
07	THERMAL & MOISTURE PROTECTION	100.1	50.8	78.5	100.2	62.1	83.5	98.2	49.0	76.6	95.3	91.9	93.8	94.7	80.6	88.5	90.3	85.9	88.3
08	OPENINGS	92.4	38.8	79.4	92.1	63.4	85.1	91.5	48.4	81.1	95.1	92.4	94.4	95.1	76.2	90.5	83.7	90.5	85.3
0920	Plaster & Gypsum Board	106.0	43.2	66.7	106.0	66.7	81.4	92.6	41.7	60.8	82.0	89.3	86.6	81.0	77.7	78.9	78.4	91.4	86.6
0950, 0980	Ceilings & Acoustic Treatment	87.3	43.2	58.7	88.0	66.7	74.2	90.1	41.7	58.7	98.0	89.3	92.3	98.0	77.7	84.8	94.6	91.4	92.5
0960	Flooring	88.2	62.7	80.4	87.2	62.7	79.7	99.2	62.7	88.0	97.9	90.1	95.5	95.1	82.5	91.2	93.8	92.7	93.5
0970, 0990	Wall Finishes & Painting/Coating	90.7	43.5	61.9	90.7	54.8	68.8	95.6	42.0	62.9	100.0	98.6	99.1	100.0	74.8	84.6	98.1	95.8	96.7
09	FINISHES	91.6	46.6	67.2	91.8	64.7	77.1	95.2	46.2	68.6	95.8	89.7	92.5	94.8	78.9	86.1	94.6	91.5	92.9
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	46.9	88.5	100.0	82.4	96.2	100.0	45.1	88.1	100.0	96.3	99.2	100.0	95.1	98.9	100.0	96.1	99.2
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	98.2	47.0	77.2	100.6	58.5	83.3	98.8	48.8	78.3	96.5	92.2	94.8	100.7	95.6	98.6	96.5	92.6	94.9
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	94.3	51.9	73.9	96.2	55.9	76.8	96.8	51.0	74.7	98.4	71.2	85.3	98.4	91.3	94.9	95.6	70.3	83.4
MF2018	WEIGHTED AVERAGE	94.4	52.6	77.4	94.8	66.5	83.3	97.2	55.1	80.0	94.5	90.2	92.7	95.1	88.5	92.4	92.5	88.7	90.9

DIVISION		MISSOURI																	
		COLUMBIA			FLAT RIVER			HANNIBAL			HARRISONVILLE			JEFFERSON CITY			JOPLIN		
		652			636			634			647			650 - 651			648		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		107.0	107.0		104.0	104.0		104.0	104.0		98.7	98.7		114.1	114.1		102.0	102.0
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	88.7	90.2	89.7	89.0	85.2	86.4	84.4	85.3	85.0	96.7	85.2	88.9	89.2	101.3	97.4	106.8	88.9	94.6
0310	Concrete Forming & Accessories	76.2	85.3	83.6	98.6	83.0	86.0	87.6	77.8	79.7	78.5	93.3	90.4	96.9	75.2	79.4	97.5	74.0	78.6
0320	Concrete Reinforcing	95.6	97.7	96.3	105.0	95.8	102.1	103.1	89.8	98.9	102.1	103.3	102.5	99.9	87.1	95.8	105.7	100.0	103.9
0330	Cast-in-Place Concrete	78.3	82.5	79.8	82.2	84.7	83.0	75.3	87.5	79.5	95.7	93.4	94.9	83.1	82.2	82.8	101.2	73.1	91.5
03	CONCRETE	79.6	88.3	83.1	90.8	87.6	89.5	84.9	85.1	85.0	92.6	96.0	93.9	87.7	81.5	85.2	96.4	79.5	89.6
04	MASONRY	151.5	84.6	109.3	125.8	71.3	91.5	119.4	88.3	99.8	95.2	92.9	93.7	100.7	84.7	90.7	95.3	78.5	84.7
05	METALS	91.0	118.8	97.5	85.7	116.0	92.7	85.8	114.2	92.4	82.3	112.5	89.4	91.1	110.4	95.6	84.1	106.1	89.3
06	WOOD, PLASTICS & COMPOSITES	76.8	84.7	80.1	103.7	84.5	95.7	91.3	76.6	85.2	84.9	93.2	88.3	98.6	71.6	87.4	103.3	73.5	90.9
07	THERMAL & MOISTURE PROTECTION	89.5	85.0	87.6	95.7	84.3	90.7	95.1	86.6	91.4	89.3	93.4	91.1	95.9	84.9	91.1	90.3	78.4	85.1
08	OPENINGS	91.1	86.7	90.0	95.0	91.7	94.2	95.1	78.8	91.1	83.4	97.2	86.7	91.1	76.7	87.6	84.5	76.7	82.6
0920	Plaster & Gypsum Board	73.7	84.6	80.5	91.6	84.6	87.2	81.5	76.4	78.3	76.8	93.1	87.0	85.8	70.7	76.4	89.8	72.8	79.2
0950, 0980	Ceilings & Acoustic Treatment	83.2	84.6	84.1	98.0	84.6	89.3	98.0	76.4	84.0	94.6	93.1	93.6	88.7	70.7	77.0	96.0	72.8	80.9
0960	Flooring	88.7	93.5	90.2	100.6	78.6	93.9	97.3	90.1	95.1	89.3	93.7	90.7	93.7	66.5	85.4	117.5	69.7	102.9
0970, 0990	Wall Finishes & Painting/Coating	98.9	79.9	87.3	100.0	66.6	79.6	100.0	87.3	92.3	102.8	100.0	101.1	100.2	79.9	87.8	97.8	70.4	81.1
09	FINISHES	83.7	85.9	84.8	98.2	79.8	88.2	95.3	80.0	87.0	92.7	93.9	93.3	92.3	73.3	82.0	101.6	72.9	86.0
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	94.9	98.9	100.0	92.1	98.3	100.0	94.0	98.7	100.0	97.4	99.4	100.0	95.9	99.1	100.0	92.9	98.5
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.6	96.1	98.8	96.5	89.7	93.7	96.5	90.6	94.1	96.5	93.4	95.2	100.7	90.7	96.6	100.8	68.0	87.3
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	96.0	79.4	88.0	101.2	91.3	96.4	97.6	71.2	84.9	99.7	93.8	96.9	101.6	79.4	90.9	94.2	71.9	83.5
MF2018	WEIGHTED AVERAGE	94.4	90.9	93.0	95.4	88.5	92.6	93.4	86.6	90.6	91.9	95.2	93.2	95.1	86.8	91.7	94.4	78.4	87.9

DIVISION		MISSOURI																	
		KANSAS CITY			KIRKSVILLE			POPLAR BLUFF			ROLLA			SEDALIA			SIKESTON		
		640 - 641			635			639			654 - 655			653			638		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		104.8	104.8		94.5	94.5		96.7	96.7		107.0	107.0		97.5	97.5		96.7	96.7
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	98.4	98.5	98.5	86.7	80.6	82.6	74.3	84.0	80.9	87.0	90.0	89.0	86.4	84.9	85.3	77.5	84.6	82.3
0310	Concrete Forming & Accessories	97.6	102.5	101.6	78.6	73.9	74.8	78.7	74.6	75.4	86.5	95.7	93.9	84.7	73.7	75.8	79.7	74.6	75.6
0320	Concrete Reinforcing	100.4	108.5	103.0	103.1	77.6	94.9	106.4	70.7	94.9	96.1	98.9	97.0	94.3	102.7	97.0	105.7	70.7	94.5
0330	Cast-in-Place Concrete	99.3	102.1	100.2	82.1	77.0	80.3	63.2	78.1	68.3	80.1	94.5	85.1	83.7	76.2	81.1	67.5	78.1	71.2
03	CONCRETE	96.6	103.8	99.5	99.3	77.0	90.3	79.8	76.5	78.5	81.5	97.3	87.8	91.7	81.0	87.4	82.6	76.5	80.2
04	MASONRY	100.8	100.1	100.4	133.5	79.2	99.3	123.6	69.2	89.3	120.6	86.5	99.1	128.1	76.3	95.4	123.3	69.2	89.2
05	METALS	97.7	110.4	100.7	86.1	98.5	89.0	86.6	95.2	88.6	90.7	119.3	97.4	91.2	110.0	95.6	87.4	95.2	89.3
06	WOOD, PLASTICS & COMPOSITES	101.2	103.1	102.0	77.8	72.2	75.5	76.7	75.5	76.2	85.9	97.8	90.8	80.5	72.4	77.1	78.9	75.5	77.5
07	THERMAL & MOISTURE PROTECTION	91.0	102.6	96.1	99.9	84.2	93.0	98.8	76.9	89.2	89.9	92.1	90.9	94.1	81.3	88.5	99.0	76.1	89.0
08	OPENINGS	97.0	102.0	98.2	100.3	74.2	94.0	101.1	70.8	93.8	91.1	94.3	91.9	96.0	81.9	92.6	101.1	70.8	93.8
0920	Plaster & Gypsum Board	89.4	103.1	98.0	73.2	71.9	72.4	73.5	75.3	74.6	76.1	98.1	89.8	70.5	71.9	71.4	77.4	75.3	76.1
0950, 0980	Ceilings & Acoustic Treatment	99.9	103.1	102.0	96.6	71.9	80.6	98.0	75.3	83.3	83.2	98.1	92.9	83.2	71.9	75.9	98.0	75.3	83.3
0960	Flooring	93.2	100.5	95.5	76.2	89.7	80.4	90.0	78.6	86.5	91.6	94.2	92.4	71.2	67.8	70.2	90.5	78.6	86.9
0970, 0990	Wall Finishes & Painting/Coating	105.0	110.7	108.5	95.5	72.7	81.6	94.7	62.2	74.9	98.9	91.1	94.1	98.9	95.8	97.0	94.7	62.2	74.9
09	FINISHES	96.6	103.1	100.2	94.0	76.0	84.2	93.7	73.5	82.7	84.9	94.9	90.3	83.4	74.1	78.3	94.7	73.8	83.3
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	100.0	100.0	100.0	93.5	98.6	100.0	92.6	98.4	100.0	97.9	99.5	100.0	91.6	98.2	100.0	90.4	97.9
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.6	101.0	100.8	96.5	90.0	93.9	96.5	88.0	93.0	96.4	98.4	97.2	96.4	88.0	92.9	96.5	88.0	93.0
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	101.8	96.2	99.1	96.8	71.1	84.5	97.4	91.2	94.4	95.1	73.9	84.9	95.2	93.8	94.5	96.9	91.2	94.1
MF2018	WEIGHTED AVERAGE	98.6	101.6	99.8	96.4	81.8	90.5	93.2	82.4	88.8	92.5	94.0	93.1	94.7	86.1	91.2	93.8	82.4	89.2

DIVISION		MISSOURI									MONTANA								
		SPRINGFIELD			ST. JOSEPH			ST. LOUIS			BILLINGS			BUTTE			GREAT FALLS		
		656 - 658			644 - 645			630 - 631			590 - 591			597			594		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		99.7	99.7		98.7	98.7		108.7	108.7		94.7	94.7		94.5	94.5		94.5	94.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	88.1	88.5	88.3	100.6	83.4	88.9	95.0	99.3	97.9	83.4	89.3	87.4	86.7	88.7	88.1	90.0	88.9	89.3
0310	Concrete Forming & Accessories	95.3	76.6	80.2	96.1	91.2	92.1	96.1	103.6	102.2	102.0	68.1	74.7	84.1	67.6	70.8	102.0	67.7	74.4
0320	Concrete Reinforcing	91.5	97.3	93.4	99.1	106.2	101.4	100.7	110.0	103.7	91.8	82.2	88.7	99.7	81.6	93.9	91.9	82.0	88.8
0330	Cast-in-Place Concrete	85.0	75.3	81.7	94.0	94.2	94.1	88.9	103.9	94.1	126.4	70.1	106.9	139.1	68.6	114.8	147.0	69.6	120.3
03	CONCRETE	88.9	80.9	85.7	92.1	95.8	93.6	91.6	105.7	97.3	102.9	72.3	90.6	107.2	71.4	92.9	111.8	71.8	95.8
04	MASONRY	95.0	82.3	87.0	95.7	90.9	92.7	101.6	104.4	103.4	152.8	83.1	108.9	146.1	74.3	100.8	152.3	78.3	105.7
05	METALS	97.3	104.5	98.9	88.8	113.3	94.5	97.4	120.2	102.7	100.7	90.6	98.4	94.7	89.4	93.4	98.1	90.3	96.3
06	WOOD, PLASTICS & COMPOSITES	89.4	74.6	83.3	103.3	91.3	98.3	98.7	102.7	100.3	89.7	65.0	79.5	73.8	65.0	70.2	91.3	65.0	80.4
07	THERMAL & MOISTURE PROTECTION	93.9	76.2	86.2	90.1	90.0	90.0	97.2	104.6	100.4	128.2	72.3	103.7	127.6	67.7	101.3	128.4	69.9	102.8
08	OPENINGS	97.9	86.2	95.1	87.2	97.7	89.7	101.3	108.1	102.9	95.3	66.0	88.3	93.7	65.6	86.9	96.4	70.0	90.0
0920	Plaster & Gypsum Board	78.0	74.2	75.6	91.4	91.2	91.3	87.4	103.1	97.2	116.6	64.6	84.1	105.8	64.6	80.0	123.0	64.6	86.4
0950, 0980	Ceilings & Acoustic Treatment	83.2	74.2	77.4	103.5	91.2	95.5	94.4	103.1	100.0	101.7	64.6	77.6	107.3	64.6	79.6	109.3	64.6	80.3
0960	Flooring	90.3	69.7	84.0	97.7	97.4	97.6	99.5	97.6	98.9	93.1	78.2	88.6	91.0	77.4	86.9	97.3	75.2	90.5
0970, 0990	Wall Finishes & Painting/Coating	92.9	101.8	98.4	98.1	100.4	99.5	105.0	107.1	106.3	91.0	91.4	91.3	89.9	62.9	73.4	89.9	88.7	89.2
09	FINISHES	87.4	78.1	82.4	99.0	93.4	96.0	96.9	102.6	100.0	96.3	71.7	82.9	94.9	68.4	80.5	100.1	70.6	84.1
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	93.8	98.7	100.0	96.7	99.3	100.0	101.6	100.4	100.0	94.0	98.7	100.0	94.0	98.7	100.0	93.7	98.6
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.7	72.0	88.9	100.8	88.2	95.6	100.8	104.6	102.4	100.7	75.0	90.2	100.7	66.6	86.7	100.7	72.0	89.0
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	98.1	64.6	82.0	99.8	77.0	88.8	101.9	103.9	102.9	97.5	73.7	86.0	101.3	67.8	85.1	96.9	70.6	84.2
MF2018	WEIGHTED AVERAGE	96.0	79.6	89.3	95.2	91.2	93.6	98.4	105.4	101.3	102.1	77.4	92.0	101.2	73.0	89.7	103.3	75.7	92.0

For CCI updates and additional guidance please go to www.rsmeans.com/2022books

DIVISION		MONTANA																	
		HAVRE			HELENA			KALISPELL			MILES CITY			MISSOULA			WOLF POINT		
		595			596			599			593			598			592		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		94.5	94.5		101.9	101.9		94.5	94.5		94.5	94.5		94.5	94.5		94.5	94.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	91.6	88.3	89.3	80.7	100.1	93.9	77.6	88.4	84.9	82.7	88.3	86.5	72.2	88.5	83.2	95.9	88.3	90.7
0310	Concrete Forming & Accessories	74.5	66.2	67.8	104.8	67.4	74.6	88.8	67.1	71.3	99.7	66.3	72.8	88.8	67.6	71.7	89.6	66.3	70.8
0320	Concrete Reinforcing	100.5	81.8	94.5	101.8	81.6	95.3	102.3	81.8	95.8	99.9	81.8	94.1	101.4	81.6	95.1	101.4	81.8	95.1
0330	Cast-in-Place Concrete	149.9	66.6	121.1	107.2	70.1	94.4	120.7	67.8	102.5	132.2	66.7	109.6	102.5	68.3	90.7	148.2	65.7	119.7
03	CONCRETE	114.3	70.0	96.6	101.8	71.6	89.7	97.8	70.9	87.0	104.7	70.1	90.8	87.1	71.2	80.7	117.5	69.8	98.4
04	MASONRY	147.4	75.2	101.9	135.9	73.2	96.4	144.4	77.2	102.0	155.1	75.2	104.8	174.2	74.0	111.0	156.7	75.2	105.4
05	METALS	91.2	88.7	90.6	96.5	86.1	94.0	91.0	88.9	90.5	90.5	88.8	90.1	91.4	88.7	90.8	90.6	88.8	90.2
06	WOOD, PLASTICS & COMPOSITES	63.8	65.0	64.3	94.4	65.3	82.4	77.9	65.0	72.5	87.7	65.0	78.3	77.9	65.0	72.5	77.2	65.0	72.1
07	THERMAL & MOISTURE PROTECTION	127.9	61.8	98.9	131.6	68.9	104.1	127.2	68.6	101.5	127.7	63.1	99.4	126.7	69.8	101.8	128.6	63.0	99.8
08	OPENINGS	94.2	65.6	87.3	93.3	65.7	86.6	94.2	65.6	87.3	93.8	65.6	87.0	93.8	65.6	87.0	93.8	65.6	87.0
0920	Plaster & Gypsum Board	98.3	64.6	77.2	111.3	64.6	82.1	105.8	64.6	80.0	121.7	64.6	86.0	105.8	64.6	80.0	111.3	64.6	82.1
0950, 0980	Ceilings & Acoustic Treatment	107.3	64.6	79.6	109.9	64.6	80.5	107.3	64.6	79.6	103.2	64.6	78.1	107.3	64.6	79.6	103.2	64.6	78.1
0960	Flooring	88.9	84.6	87.6	103.0	77.4	95.2	92.7	84.6	90.2	97.2	84.6	93.3	92.7	77.4	88.0	93.9	84.6	91.1
0970, 0990	Wall Finishes & Painting/Coating	89.9	62.9	73.4	98.7	55.7	72.5	89.9	84.5	86.6	89.9	62.9	73.4	89.9	84.5	86.6	89.9	62.9	73.4
09	FINISHES	93.7	69.2	80.4	103.1	67.6	83.8	94.9	72.0	82.5	98.1	69.2	82.4	94.4	70.8	81.5	96.8	69.2	81.8
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	82.2	96.1	100.0	89.9	97.8	100.0	82.8	96.3	100.0	82.2	96.1	100.0	89.5	97.7	100.0	82.2	96.1
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.5	63.9	83.1	100.8	66.1	86.6	96.5	64.3	83.3	96.5	69.8	85.5	100.7	66.5	86.7	96.5	69.8	85.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	96.8	64.2	81.1	103.3	68.2	86.4	99.3	63.1	81.9	96.8	69.0	83.4	100.0	66.5	83.8	96.8	69.0	83.4
MF2018	WEIGHTED AVERAGE	100.1	71.3	88.4	101.4	73.3	90.0	97.8	72.2	87.4	99.3	73.3	88.7	98.4	72.9	88.0	101.3	73.3	89.9

DIVISION		NEBRASKA																	
		ALLIANCE			COLUMBUS			GRAND ISLAND			HASTINGS			LINCOLN			MCCOOK		
		693			686			688			689			683 - 685			690		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		92.5	92.5		98.9	98.9		98.9	98.9		98.9	98.9		105.5	105.5		98.9	98.9
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	95.8	91.4	92.8	97.0	86.1	89.6	102.0	86.8	91.7	100.2	86.1	90.6	92.0	97.7	95.9	96.4	86.0	89.4
0310	Concrete Forming & Accessories	82.8	52.1	58.0	95.9	70.6	75.5	95.3	79.2	82.3	100.1	68.3	74.4	96.1	72.4	77.0	89.1	52.6	59.6
0320	Concrete Reinforcing	111.8	81.3	102.0	101.3	80.0	94.5	100.8	78.6	93.6	100.8	70.9	91.2	99.5	78.9	92.9	107.8	71.0	96.0
0330	Cast-in-Place Concrete	97.4	76.6	90.2	97.8	76.6	90.5	103.5	74.3	93.5	103.5	69.3	91.7	81.9	80.8	81.5	105.3	69.2	92.9
03	CONCRETE	109.1	66.6	92.1	97.4	75.6	88.7	101.2	78.5	92.1	101.5	70.4	89.1	90.8	77.5	85.5	101.1	63.3	86.0
04	MASONRY	114.2	72.3	87.8	121.9	72.3	90.6	115.0	71.2	87.4	125.9	69.1	90.1	102.5	75.4	85.4	107.7	72.3	85.4
05	METALS	94.0	83.1	91.5	86.0	95.5	88.3	87.4	95.8	89.3	88.4	91.4	89.1	95.2	93.1	94.7	89.1	91.4	89.6
06	WOOD, PLASTICS & COMPOSITES	80.9	46.0	66.4	92.7	70.6	83.6	91.8	80.2	87.0	96.3	68.0	84.6	98.3	70.9	87.0	88.5	46.9	71.2
07	THERMAL & MOISTURE PROTECTION	103.3	70.2	88.8	102.7	74.5	90.3	102.9	76.9	91.5	103.0	72.0	89.4	102.1	77.4	91.3	97.1	70.5	85.5
08	OPENINGS	87.8	54.7	79.8	88.7	69.4	84.0	88.7	78.0	86.1	88.7	65.7	83.1	101.9	66.8	93.4	88.2	52.5	79.6
0920	Plaster & Gypsum Board	73.5	44.8	55.6	88.0	70.1	76.8	86.8	79.9	82.5	89.2	67.4	75.6	97.5	70.1	80.4	80.4	45.7	58.7
0950, 0980	Ceilings & Acoustic Treatment	89.7	44.8	60.6	82.9	70.1	74.6	82.9	79.9	81.0	82.9	67.4	72.9	109.3	70.1	83.9	86.5	45.7	60.0
0960	Flooring	92.4	81.3	89.0	81.3	81.3	81.3	81.1	73.4	78.7	82.1	75.6	80.1	92.1	80.5	88.5	89.5	81.3	87.0
0970, 0990	Wall Finishes & Painting/Coating	165.9	47.9	94.0	72.9	55.7	62.4	72.9	75.0	74.2	72.9	55.7	62.4	98.7	73.6	83.4	88.0	41.8	59.8
09	FINISHES	91.3	55.5	71.8	84.0	70.8	76.8	84.0	77.7	80.6	84.7	68.1	75.7	98.4	73.7	84.9	87.8	55.3	70.2
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	84.8	96.7	100.0	87.6	97.3	100.0	89.6	97.7	100.0	87.3	97.2	100.0	89.3	97.7	100.0	85.0	96.7
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.8	69.5	85.6	96.7	69.8	85.7	101.0	79.8	92.3	96.7	69.1	85.4	100.7	79.9	92.2	96.4	69.7	85.4
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	92.0	60.8	77.0	94.3	75.5	85.2	93.5	63.6	79.1	93.1	73.6	83.7	102.3	63.6	83.6	93.2	60.9	77.6
MF2018	WEIGHTED AVERAGE	97.1	68.9	85.6	94.2	76.0	86.8	95.6	78.3	88.6	95.4	73.6	86.5	98.1	78.2	90.0	94.5	68.8	84.1

DIVISION		NEBRASKA												NEVADA					
		NORFOLK			NORTH PLATTE			OMAHA			VALENTINE			CARSON CITY			ELKO		
		687			691			680 - 681			692			897			898		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		89.0	89.0		98.9	98.9		96.9	96.9		92.2	92.2		97.6	97.6		92.1	92.1
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	78.7	85.2	83.1	98.3	85.9	89.9	86.6	97.8	94.2	82.4	90.4	87.8	81.0	96.9	91.8	66.1	86.9	80.2
0310	Concrete Forming & Accessories	79.7	69.7	71.7	92.7	71.6	75.7	95.5	76.7	80.3	79.2	50.3	55.9	110.3	82.6	88.0	115.6	90.3	95.2
0320	Concrete Reinforcing	101.4	61.9	88.7	107.3	76.1	97.3	100.7	79.1	93.7	107.9	61.8	93.1	102.3	115.0	106.4	103.2	88.2	98.4
0330	Cast-in-Place Concrete	98.4	66.7	87.5	105.3	63.8	91.0	80.9	80.7	80.8	92.9	50.7	78.4	88.9	82.6	86.7	83.2	67.7	77.9
03	CONCRETE	95.8	68.0	84.7	101.2	70.9	89.1	90.6	78.9	85.9	98.4	53.7	80.5	102.9	88.2	97.0	93.1	82.0	88.7
04	MASONRY	130.7	72.2	93.9	97.6	71.8	81.3	103.3	79.6	88.4	109.1	71.8	85.6	109.1	65.6	81.7	116.7	63.2	83.0
05	METALS	89.2	78.3	86.6	88.1	93.7	89.4	95.2	85.0	92.8	99.6	77.7	94.5	103.2	94.0	101.0	107.3	84.8	102.1
06	WOOD, PLASTICS & COMPOSITES	77.4	70.2	74.4	90.9	72.6	83.3	95.4	76.4	87.5	76.5	44.8	63.4	96.3	83.6	91.0	108.9	96.5	103.8
07	THERMAL & MOISTURE PROTECTION	101.1	72.5	88.6	97.1	74.1	87.0	99.8	80.8	91.5	96.6	68.5	84.3	119.2	79.2	101.7	114.2	68.2	94.0
08	OPENINGS	89.4	64.6	83.4	87.6	72.4	83.9	96.0	77.3	91.5	89.1	50.3	79.8	96.6	81.8	93.1	97.7	83.2	94.2
0920	Plaster & Gypsum Board	87.5	70.1	76.6	80.4	72.1	75.2	95.2	76.1	83.3	81.8	43.9	58.1	110.2	83.1	93.3	130.6	96.7	109.4
0950, 0980	Ceilings & Acoustic Treatment	96.3	70.1	79.3	86.5	72.1	77.2	90.8	76.1	81.2	101.0	43.9	64.0	101.3	83.1	89.5	96.3	96.7	96.6
0960	Flooring	102.3	81.3	95.8	90.4	73.4	85.2	91.9	88.1	90.7	116.7	81.3	105.8	99.1	62.4	87.9	98.2	62.4	87.2
0970, 0990	Wall Finishes & Painting/Coating	135.4	55.7	86.8	88.0	70.7	77.4	98.7	56.6	73.0	162.2	56.6	97.8	98.7	83.0	89.1	93.6	73.6	81.4
09	FINISHES	100.8	70.5	84.3	88.1	71.8	79.2	93.5	76.4	84.2	107.9	55.5	79.4	100.1	78.5	88.3	98.5	84.7	91.0
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	86.6	97.1	100.0	87.6	97.3	100.0	89.1	97.6	100.0	83.6	96.4	100.0	103.0	100.7	100.0	83.8	96.5
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.3	68.9	85.1	100.6	71.7	88.8	100.7	76.8	90.9	95.9	68.2	84.5	100.9	79.2	92.0	98.8	71.1	87.4
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	93.5	75.4	84.8	92.1	63.6	78.4	102.5	80.0	91.6	90.2	60.9	76.0	102.2	88.5	95.6	98.8	81.8	90.6
MF2018	WEIGHTED AVERAGE	95.4	72.9	86.2	94.8	74.2	86.4	97.0	80.7	90.4	97.0	66.0	84.4	101.5	83.9	94.3	100.1	78.6	91.4

DIVISION		NEVADA									NEW HAMPSHIRE								
		ELY			LAS VEGAS			RENO			CHARLESTON			CLAREMONT			CONCORD		
		893			889 - 891			894 - 895			036			037			032 - 033		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		92.1	92.1		92.1	92.1		92.1	92.1		92.3	92.3		92.3	92.3		96.8	96.8
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	71.4	88.0	82.6	74.9	91.9	86.4	71.6	88.6	83.2	77.9	91.0	86.8	72.6	91.0	85.1	87.2	101.3	96.7
0310	Concrete Forming & Accessories	104.9	95.2	97.1	105.9	111.1	110.1	100.2	82.5	85.9	83.9	81.0	81.5	92.3	81.0	83.2	102.2	94.0	95.6
0320	Concrete Reinforcing	102.0	88.4	97.6	94.5	122.9	103.6	96.5	121.0	104.3	85.3	85.0	85.2	85.3	85.0	85.2	98.7	85.3	94.4
0330	Cast-in-Place Concrete	89.3	89.0	89.2	86.5	107.8	93.8	94.5	80.3	89.6	70.5	108.6	83.6	64.7	108.6	79.9	85.8	115.4	96.0
03	CONCRETE	99.8	91.8	96.6	95.1	111.5	101.7	98.6	88.5	94.6	81.8	91.6	85.7	76.3	91.6	82.4	94.1	99.8	96.4
04	MASONRY	121.7	69.9	89.0	108.7	107.1	107.7	115.8	65.4	84.0	87.9	92.9	91.1	88.8	92.9	91.4	99.6	98.0	98.6
05	METALS	107.3	87.6	102.7	116.2	105.6	113.7	108.9	98.1	106.4	92.7	90.6	92.2	92.7	90.6	92.2	100.3	89.4	97.7
06	WOOD, PLASTICS & COMPOSITES	96.5	98.5	97.3	94.1	109.3	100.4	88.9	83.3	86.6	84.6	78.6	82.1	92.1	78.6	86.6	97.1	93.8	95.7
07	THERMAL & MOISTURE PROTECTION	114.5	85.4	101.8	130.1	102.3	117.9	114.0	76.9	97.7	106.1	100.1	103.5	106.0	100.1	103.4	113.7	107.7	111.1
08	OPENINGS	97.7	84.3	94.4	96.7	113.6	100.8	95.6	83.0	92.5	92.8	78.6	89.4	93.9	78.6	90.2	93.5	90.2	92.7
0920	Plaster & Gypsum Board	121.7	98.7	107.3	105.5	109.9	108.2	101.6	83.1	90.1	96.0	78.0	84.7	97.0	78.0	85.1	97.3	93.6	95.0
0950, 0980	Ceilings & Acoustic Treatment	96.3	98.7	97.9	103.2	109.9	107.5	99.8	83.1	89.0	89.7	78.0	82.1	89.7	78.0	82.1	88.4	93.6	91.8
0960	Flooring	96.1	62.4	85.8	88.7	102.5	93.0	93.4	62.4	83.9	89.5	105.2	94.3	91.4	105.2	95.7	98.1	109.5	101.6
0970, 0990	Wall Finishes & Painting/Coating	93.6	103.9	99.9	96.6	122.7	112.5	93.6	83.0	87.1	81.6	83.5	82.8	81.6	83.5	82.8	98.7	101.6	100.4
09	FINISHES	97.0	90.9	93.7	94.0	110.8	103.1	93.5	78.3	85.3	91.3	85.1	87.9	91.5	85.1	88.0	95.4	97.4	96.5
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	65.1	92.4	100.0	104.7	101.0	100.0	102.5	100.5	100.0	81.8	96.0	100.0	81.8	96.0	100.0	106.6	101.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	98.8	88.9	94.7	101.1	109.3	104.5	100.9	79.1	92.0	96.9	76.2	88.4	96.9	76.2	88.4	100.9	85.3	94.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	99.1	86.2	92.8	104.7	105.8	105.2	99.1	88.6	94.0	100.6	69.7	85.7	100.6	69.7	85.7	101.6	77.8	90.1
MF2018	WEIGHTED AVERAGE	101.1	86.1	95.0	103.0	107.2	104.7	101.0	83.6	93.9	93.0	83.6	89.2	92.4	83.6	88.8	98.6	92.3	96.0

DIVISION		NEW HAMPSHIRE															NEW JERSEY		
		KEENE			LITTLETON			MANCHESTER			NASHUA			PORTSMOUTH			ATLANTIC CITY		
		034			035			031			030			038			082,084		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		92.3	92.3		92.3	92.3		97.1	97.1		92.3	92.3		92.3	92.3		90.0	90.0
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	84.4	91.0	88.9	72.9	90.1	84.5	84.2	101.0	95.6	86.4	91.4	89.8	80.8	92.2	88.5	87.0	94.9	92.3
0310	Concrete Forming & Accessories	90.3	81.2	83.0	106.2	75.5	81.4	101.9	94.2	95.7	101.6	94.2	95.6	85.9	93.5	92.0	118.1	142.0	137.4
0320	Concrete Reinforcing	85.3	85.0	85.2	86.0	85.0	85.7	100.3	85.3	95.5	106.5	85.3	99.7	85.3	85.3	85.3	77.2	134.6	95.6
0330	Cast-in-Place Concrete	70.8	108.7	83.9	63.5	100.5	76.3	80.8	115.8	92.9	67.0	114.8	83.5	63.5	114.9	81.3	65.4	131.8	88.3
03	CONCRETE	81.8	91.8	85.8	76.4	86.3	80.4	92.2	100.1	95.4	84.6	99.8	90.7	75.7	99.7	85.3	79.9	135.8	102.3
04	MASONRY	90.2	92.9	91.9	100.2	78.5	86.5	97.0	98.0	97.6	93.2	97.9	96.1	88.8	97.0	94.0	102.7	136.5	124.0
05	METALS	93.2	91.0	92.7	93.2	90.6	92.6	100.6	89.7	98.0	100.0	91.9	98.1	94.4	93.5	94.2	97.0	114.8	101.1
06	WOOD, PLASTICS & COMPOSITES	90.3	78.6	85.5	104.6	78.6	93.8	98.2	93.9	96.4	102.7	93.9	99.0	86.2	93.9	89.4	119.1	143.5	129.2
07	THERMAL & MOISTURE PROTECTION	106.9	100.1	103.9	106.2	93.6	100.7	113.6	107.7	111.0	107.5	106.2	106.9	106.7	103.7	105.4	104.4	133.1	117.0
08	OPENINGS	91.6	81.8	89.3	94.7	78.6	90.8	92.3	91.9	92.2	95.4	89.6	94.0	96.1	80.8	92.4	93.0	138.6	104.0
0920	Plaster & Gypsum Board	96.5	78.0	84.9	121.9	78.0	94.4	101.8	93.6	96.7	111.2	93.6	100.2	96.0	93.6	94.5	128.7	144.7	138.7
0950, 0980	Ceilings & Acoustic Treatment	89.7	78.0	82.1	89.7	78.0	82.1	93.2	93.6	93.5	100.8	93.6	96.1	90.5	93.6	92.5	95.6	144.7	127.4
0960	Flooring	91.2	105.2	95.5	99.8	105.2	101.5	94.5	111.7	99.8	94.2	107.3	98.2	89.6	107.3	95.0	101.7	155.6	118.2
0970, 0990	Wall Finishes & Painting/Coating	81.6	95.9	90.3	81.6	83.5	82.8	98.7	115.0	108.6	81.6	115.0	101.9	81.6	94.9	89.7	81.4	143.5	119.2
09	FINISHES	93.0	86.5	89.4	97.8	81.5	88.9	96.0	99.4	97.9	98.5	98.5	98.5	92.1	96.0	94.3	99.6	146.2	124.9
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	87.5	97.3	100.0	88.3	97.5	100.0	106.7	101.5	100.0	106.8	101.5	100.0	106.3	101.4	100.0	115.3	103.3
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.9	76.2	88.4	96.9	68.7	85.3	100.9	85.4	94.5	101.1	85.5	94.7	101.1	84.7	94.4	100.4	126.5	111.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	100.6	69.7	85.7	101.3	45.5	74.4	101.6	77.8	90.1	102.1	77.8	90.4	100.9	74.7	88.3	92.4	132.9	111.9
MF2018	WEIGHTED AVERAGE	93.5	84.2	89.7	93.7	75.9	86.5	98.2	92.6	95.9	97.4	91.8	95.1	94.0	90.5	92.6	95.4	129.2	109.1

DIVISION		NEW JERSEY																	
		CAMDEN			DOVER			ELIZABETH			HACKENSACK			JERSEY CITY			LONG BRANCH		
		081			078			072			076			073			077		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		90.0	90.0		92.3	92.3		92.3	92.3		92.3	92.3		90.0	90.0		89.6	89.6
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	87.9	95.6	93.1	102.3	96.6	98.4	106.9	96.6	99.9	103.5	96.6	98.8	93.5	96.5	95.5	97.7	96.0	96.5
0310	Concrete Forming & Accessories	105.0	144.9	137.2	94.0	145.3	135.4	109.6	145.4	138.5	94.0	145.3	135.4	99.0	145.4	136.4	99.8	131.4	125.3
0320	Concrete Reinforcing	101.3	137.2	112.8	74.4	152.1	99.4	74.4	152.1	99.4	74.4	152.1	99.4	96.6	152.1	114.5	74.4	151.5	99.2
0330	Cast-in-Place Concrete	63.4	135.9	88.5	67.7	134.9	90.9	58.2	136.2	85.1	66.2	136.1	90.3	52.9	134.9	81.2	58.7	125.5	81.8
03	CONCRETE	82.6	139.0	105.2	77.9	141.6	103.4	76.1	142.1	102.5	76.6	142.0	102.8	76.5	141.4	102.5	77.1	131.7	99.0
04	MASONRY	92.5	140.8	122.9	94.7	140.8	123.8	111.5	140.8	130.0	98.8	140.8	125.3	89.4	140.8	121.8	103.8	126.6	118.2
05	METALS	104.0	116.4	106.9	94.8	125.2	101.9	95.9	125.3	102.8	94.9	125.2	102.0	102.0	122.3	106.7	94.9	120.8	101.0
06	WOOD, PLASTICS & COMPOSITES	104.9	146.1	121.9	91.7	146.1	114.2	108.9	146.1	124.3	91.7	146.1	114.2	93.0	146.1	115.0	94.2	131.4	109.6
07	THERMAL & MOISTURE PROTECTION	104.1	135.9	118.0	94.1	134.2	111.7	94.5	134.4	112.0	93.9	136.5	112.6	93.5	134.2	111.4	93.8	122.6	106.4
08	OPENINGS	94.8	141.1	105.9	98.4	142.8	109.1	96.9	142.8	108.0	96.3	142.8	107.6	94.5	142.8	106.2	91.1	134.7	101.6
0920	Plaster & Gypsum Board	120.0	147.4	137.1	104.8	147.4	131.4	118.1	147.4	136.4	104.8	147.4	131.4	108.5	147.4	132.8	107.9	132.3	123.2
0950, 0980	Ceilings & Acoustic Treatment	108.0	147.4	133.6	81.1	147.4	124.1	81.8	147.4	124.4	81.1	147.4	124.1	90.1	147.4	127.3	81.1	132.3	114.3
0960	Flooring	98.9	155.6	116.2	82.0	182.4	112.7	85.7	182.4	115.3	82.0	182.4	112.7	82.7	182.4	113.2	82.9	164.6	107.9
0970, 0990	Wall Finishes & Painting/Coating	81.4	143.5	119.2	83.7	143.5	120.2	83.7	143.5	120.2	83.7	143.5	120.2	83.8	143.5	120.2	83.8	143.5	120.2
09	FINISHES	100.0	148.1	126.1	89.0	152.2	123.3	92.8	152.8	125.4	88.8	152.2	123.3	91.5	152.9	124.8	90.0	139.4	116.8
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	116.0	103.5	100.0	127.9	106.1	100.0	127.9	106.1	100.0	127.9	106.1	100.0	127.9	106.1	100.0	112.1	102.6
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.8	133.9	114.4	100.3	135.0	114.5	100.6	135.1	114.8	100.3	135.0	114.5	100.6	135.0	114.7	100.3	130.3	112.6
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	95.2	139.6	116.6	92.7	142.2	116.6	93.1	142.2	116.8	92.7	137.7	114.4	95.6	137.7	115.9	92.5	120.4	106.0
MF2018	WEIGHTED AVERAGE	97.1	133.3	111.9	93.8	136.0	111.0	95.1	136.2	111.8	93.7	135.5	110.7	94.8	135.2	111.3	93.4	125.7	106.6

For CCI updates and additional guidance please go to www.rsmeans.com/2022books

DIVISION		NEW JERSEY																	
		NEW BRUNSWICK			NEWARK			PATERSON			POINT PLEASANT			SUMMIT			TRENTON		
		088 - 089			070 - 071			074 - 075			087			079			085 - 086		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		89.6	89.6		97.7	97.7		92.3	92.3		89.6	89.6		92.3	92.3		95.7	95.7
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	98.6	96.4	97.1	109.5	104.7	106.3	105.0	96.6	99.3	99.9	96.0	97.2	104.5	96.6	99.1	87.0	105.9	99.8
0310	Concrete Forming & Accessories	109.6	144.7	137.9	100.1	145.7	136.9	96.5	145.5	136.0	101.5	131.3	125.5	97.5	145.2	136.0	103.6	144.9	136.9
0320	Concrete Reinforcing	78.0	151.6	101.7	100.4	152.2	117.0	96.6	152.2	114.5	78.0	151.5	101.6	74.4	152.1	99.4	100.7	135.6	111.9
0330	Cast-in-Place Concrete	80.8	129.2	97.5	76.6	138.3	97.9	67.3	136.2	91.1	80.8	127.4	96.9	56.3	136.1	83.8	77.5	136.9	98.0
03	CONCRETE	92.6	139.0	111.2	88.9	142.8	110.5	82.7	142.1	106.5	92.0	132.3	108.1	73.6	142.0	100.9	89.6	139.1	109.4
04	MASONRY	100.9	132.9	121.1	99.2	140.9	125.5	95.3	140.8	124.0	89.7	126.6	112.9	97.6	140.8	124.8	99.4	140.9	125.6
05	METALS	97.1	121.0	102.6	103.2	123.4	107.9	97.6	125.4	104.1	97.1	120.7	102.6	94.8	125.1	101.9	103.3	115.6	106.2
06	WOOD, PLASTICS & COMPOSITES	111.4	146.1	125.7	95.3	146.4	116.4	94.6	146.1	115.9	101.8	131.4	114.1	95.9	146.1	116.7	97.0	146.1	117.3
07	THERMAL & MOISTURE PROTECTION	104.7	128.5	115.1	97.7	135.9	114.5	94.2	136.5	112.8	104.7	124.7	113.4	94.5	134.4	112.0	106.9	137.4	120.3
08	OPENINGS	88.5	142.8	101.6	96.6	143.0	107.8	100.9	142.8	111.1	90.2	136.0	101.3	102.2	142.8	112.0	93.0	139.3	104.2
0920	Plaster & Gypsum Board	125.5	147.4	139.2	101.3	147.4	130.1	108.5	147.4	132.8	116.1	132.3	126.2	107.9	147.4	132.6	112.9	147.4	134.5
0950, 0980	Ceilings & Acoustic Treatment	95.6	147.4	129.2	90.0	147.4	127.2	90.1	147.4	127.3	95.6	132.3	119.4	81.1	147.4	124.1	102.3	147.4	131.6
0960	Flooring	100.0	182.4	125.2	97.2	182.4	123.2	82.7	182.4	113.2	98.0	155.6	115.6	82.9	182.4	113.3	103.8	180.7	127.3
0970, 0990	Wall Finishes & Painting/Coating	81.4	143.5	119.2	98.7	143.5	126.0	83.7	143.5	120.2	81.4	143.5	119.2	83.7	143.5	120.2	98.7	143.5	126.0
09	FINISHES	99.8	152.2	128.2	96.7	153.0	127.3	91.6	152.8	124.9	97.7	137.8	119.5	90.0	152.2	123.8	102.6	152.4	129.7
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	127.8	106.0	100.0	128.6	106.2	100.0	127.9	106.1	100.0	102.7	100.6	100.0	127.9	106.1	100.0	115.9	103.5
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.4	133.5	114.0	100.7	135.2	114.8	100.6	135.0	114.7	100.4	130.3	112.7	100.3	131.2	113.0	100.8	133.5	114.2
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	92.8	123.9	107.8	100.4	137.7	118.4	95.6	142.2	118.0	92.4	120.4	105.9	93.1	142.2	116.8	99.4	128.9	113.6
MF2018	WEIGHTED AVERAGE	96.9	131.4	111.0	98.8	136.3	114.1	96.0	136.3	112.4	96.3	125.4	108.1	93.9	135.3	110.8	98.7	133.0	112.6

DIVISION		NEW JERSEY			NEW MEXICO														
		VINELAND			ALBUQUERQUE			CARRIZOZO			CLOVIS			FARMINGTON			GALLUP		
		080,083			870 - 872			883			881			874			873		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		90.0	90.0		104.6	104.6		104.6	104.6		104.6	104.6		104.6	104.6		104.6	104.6
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	90.9	95.1	93.8	89.8	93.2	92.1	106.7	93.2	97.5	94.3	93.2	93.6	95.9	93.2	94.1	104.2	93.2	96.7
0310	Concrete Forming & Accessories	97.2	130.0	123.6	101.3	66.3	73.1	96.4	66.3	72.1	96.4	66.1	72.0	101.5	66.3	73.1	101.5	66.3	73.1
0320	Concrete Reinforcing	77.2	122.2	91.6	94.7	69.8	86.7	99.9	69.8	90.2	101.0	69.8	91.0	103.5	69.8	92.7	99.1	69.8	89.7
0330	Cast-in-Place Concrete	70.5	125.6	89.5	82.6	67.4	77.4	85.4	67.4	79.2	85.3	67.3	79.1	83.4	67.4	77.9	78.5	67.4	74.7
03	CONCRETE	82.7	126.1	100.1	90.1	68.7	81.5	107.9	68.7	92.2	98.2	68.6	86.3	93.9	68.7	83.8	98.7	68.7	86.7
04	MASONRY	91.7	126.6	113.7	103.5	59.1	75.5	109.1	59.1	77.5	109.1	59.1	77.6	110.7	59.1	78.2	98.7	59.1	73.7
05	METALS	96.9	110.4	100.1	100.5	91.3	98.4	98.9	91.3	97.2	98.6	91.2	96.8	97.5	91.3	96.0	96.8	91.3	95.6
06	WOOD, PLASTICS & COMPOSITES	97.7	130.0	111.1	100.3	67.8	86.8	90.9	67.8	81.4	90.9	67.8	81.4	100.5	67.8	86.9	100.5	67.8	86.9
07	THERMAL & MOISTURE PROTECTION	104.0	128.0	114.5	106.5	70.5	90.7	105.7	70.5	90.3	104.4	70.5	89.5	106.8	70.5	90.9	108.0	70.5	91.6
08	OPENINGS	89.8	128.8	99.2	94.3	67.0	87.7	92.3	67.0	86.2	92.5	67.0	86.3	96.6	67.0	89.4	96.6	67.0	89.5
0920	Plaster & Gypsum Board	112.7	130.8	124.0	121.6	66.9	87.4	85.9	66.9	74.0	85.9	66.9	74.0	108.9	66.9	82.6	108.9	66.9	82.6
0950, 0980	Ceilings & Acoustic Treatment	95.6	130.8	118.5	109.8	66.9	82.0	104.6	66.9	80.1	104.6	66.9	80.1	104.6	66.9	80.1	104.6	66.9	80.1
0960	Flooring	97.4	155.6	115.2	87.5	67.3	81.3	94.9	67.3	86.4	94.9	67.3	86.4	88.9	67.3	82.3	88.9	67.3	82.3
0970, 0990	Wall Finishes & Painting/Coating	81.4	143.5	119.2	93.2	51.7	67.9	90.7	51.7	66.9	90.7	51.7	66.9	87.5	51.7	65.7	87.5	51.7	65.7
09	FINISHES	96.2	137.0	118.4	98.7	64.8	80.3	96.4	64.8	79.2	95.0	64.8	78.6	95.8	64.8	79.0	97.1	64.8	79.6
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	112.1	102.6	100.0	85.8	96.9	100.0	85.8	96.9	100.0	85.8	96.9	100.0	85.8	96.9	100.0	85.8	96.9
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.4	122.4	109.5	101.0	65.3	86.4	98.3	65.3	84.8	98.3	64.9	84.6	100.9	65.3	86.3	98.3	65.3	84.8
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	92.4	132.9	111.9	85.0	69.3	77.4	88.4	69.3	79.2	87.0	69.3	78.5	83.5	69.3	76.6	83.1	69.3	76.4
MF2018	WEIGHTED AVERAGE	94.6	123.7	106.4	96.8	71.0	86.3	98.9	71.0	87.6	96.9	70.9	86.4	97.0	71.0	86.4	96.8	71.0	86.3

DIVISION		NEW MEXICO																	
		LAS CRUCES			LAS VEGAS			ROSWELL			SANTA FE			SOCORRO			TRUTH/CONSEQUENCES		
		880			877			882			875			878			879		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		81.3	81.3		104.6	104.6		104.6	104.6		108.7	108.7		104.6	104.6		81.3	81.3
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	95.5	74.2	81.0	94.5	93.2	93.6	96.9	93.2	94.4	96.9	100.0	99.0	91.3	93.2	92.6	109.2	74.2	85.4
0310	Concrete Forming & Accessories	92.7	65.3	70.6	101.5	66.3	73.1	96.4	66.3	72.1	102.5	66.5	73.5	101.5	66.3	73.1	99.5	65.3	71.9
0320	Concrete Reinforcing	99.5	69.6	89.9	100.8	69.8	90.9	101.0	69.8	91.0	101.0	69.9	91.0	102.7	69.8	92.2	98.8	69.7	89.5
0330	Cast-in-Place Concrete	80.6	60.8	73.8	81.1	67.4	76.4	85.3	67.4	79.1	86.2	69.8	80.5	79.5	67.4	75.3	87.1	60.8	78.0
03	CONCRETE	80.3	65.5	74.4	91.6	68.7	82.4	98.9	68.7	86.8	97.2	69.4	86.1	90.9	68.7	82.0	85.5	65.5	77.5
04	MASONRY	104.5	57.3	74.8	99.1	59.1	73.8	120.0	59.1	81.6	96.4	59.2	73.0	98.9	59.1	73.8	95.9	58.8	72.5
05	METALS	96.7	83.8	93.7	96.5	91.3	95.3	99.6	91.3	97.7	95.1	88.6	93.6	96.8	91.3	95.6	95.9	83.9	93.1
06	WOOD, PLASTICS & COMPOSITES	81.9	66.8	75.6	100.5	67.8	86.9	90.9	67.8	81.4	96.9	68.0	84.9	100.5	67.8	86.9	93.7	66.8	82.6
07	THERMAL & MOISTURE PROTECTION	92.7	65.8	80.9	106.4	70.5	90.6	104.5	70.5	89.6	110.7	72.8	94.1	106.3	70.5	90.6	94.3	66.2	82.0
08	OPENINGS	87.8	66.5	82.7	93.4	67.0	87.0	92.3	67.0	86.2	94.7	67.1	88.1	93.2	67.0	86.9	86.7	66.5	81.8
0920	Plaster & Gypsum Board	84.3	66.9	73.4	108.9	66.9	82.6	85.9	66.9	74.0	118.7	66.9	86.3	108.9	66.9	82.6	110.4	66.9	83.2
0950, 0980	Ceilings & Acoustic Treatment	95.2	66.9	76.8	104.6	66.9	80.1	104.6	66.9	80.1	104.0	66.9	79.9	104.6	66.9	80.1	99.8	66.9	78.5
0960	Flooring	123.4	67.3	106.2	88.9	67.3	82.3	94.9	67.3	86.4	97.7	67.3	88.4	88.9	67.3	82.3	115.8	67.3	101.0
0970, 0990	Wall Finishes & Painting/Coating	78.4	51.7	62.1	87.5	51.7	65.7	90.7	51.7	66.9	98.7	51.7	70.0	87.5	51.7	65.7	78.8	51.7	62.3
09	FINISHES	104.4	64.0	82.5	95.7	64.8	78.9	95.1	64.8	78.7	102.5	65.0	82.1	95.6	64.8	78.9	107.9	64.1	84.1
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	83.6	96.4	100.0	85.8	96.9	100.0	85.8	96.9	100.0	86.4	97.0	100.0	85.8	96.9	100.0	83.6	96.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	101.5	65.0	86.6	98.3	65.3	84.8	100.8	65.3	86.3	100.9	65.3	86.3	98.3	65.3	84.8	98.0	65.0	84.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	90.3	77.7	84.2	84.4	69.3	77.1	87.8	69.3	78.9	100.9	69.3	85.7	83.3	69.3	76.5	86.9	69.2	78.4
MF2018	WEIGHTED AVERAGE	94.8	69.1	84.3	95.2	71.0	85.4	98.4	71.0	87.2	98.6	71.5	87.6	95.0	71.0	85.2	94.6	68.0	83.8

DIVISION		NEW MEXICO			NEW YORK														
		TUCUMCARI			ALBANY			BINGHAMTON			BRONX			BROOKLYN			BUFFALO		
		884			120 - 122			137 - 139			104			112			140 - 142		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		104.6	104.6		112.3	112.3		113.5	113.5		101.6	101.6		105.5	105.5		95.7	95.7
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	93.9	93.2	93.4	75.8	103.0	94.3	90.7	85.3	87.0	94.1	104.8	101.4	113.1	114.6	114.1	89.9	96.9	94.6
0310	Concrete Forming & Accessories	96.4	66.1	72.0	101.7	103.9	103.5	100.3	90.2	92.1	87.8	178.9	161.3	107.5	178.9	165.1	100.7	112.5	110.2
0320	Concrete Reinforcing	99.0	69.8	89.7	100.0	111.8	103.8	97.1	104.3	99.4	92.6	169.6	117.3	97.3	225.9	138.6	100.4	112.9	104.4
0330	Cast-in-Place Concrete	85.3	67.3	79.1	76.3	115.0	89.7	105.5	102.0	104.3	69.6	162.4	101.6	107.4	160.7	125.8	126.3	118.6	123.7
03	CONCRETE	97.4	68.6	85.9	92.1	110.1	99.3	95.2	99.1	96.8	80.2	171.2	116.6	104.6	179.3	134.5	112.9	114.3	113.5
04	MASONRY	120.7	59.1	81.9	102.5	116.1	111.1	110.1	101.0	104.3	86.4	181.3	146.2	118.2	181.3	158.0	114.7	120.4	118.3
05	METALS	98.6	91.2	96.8	97.3	122.2	103.1	90.1	133.6	100.2	88.3	170.8	107.6	97.5	170.8	114.6	99.6	105.3	100.9
06	WOOD, PLASTICS & COMPOSITES	90.9	67.8	81.4	96.6	100.1	98.1	100.3	86.9	94.8	89.2	178.0	126.0	104.3	177.7	134.7	97.6	111.2	103.2
07	THERMAL & MOISTURE PROTECTION	104.3	70.5	89.5	113.7	109.4	111.8	111.1	91.7	102.6	105.1	160.6	129.5	112.9	160.0	133.5	108.0	109.2	108.5
08	OPENINGS	92.2	67.0	86.2	93.1	101.8	95.2	87.7	92.4	88.8	90.2	187.6	113.7	85.6	187.4	110.1	100.7	107.9	102.4
0920	Plaster & Gypsum Board	85.9	66.9	74.0	102.7	100.0	101.0	118.2	86.5	98.4	100.1	180.2	150.2	113.6	180.2	155.2	107.4	111.5	110.0
0950, 0980	Ceilings & Acoustic Treatment	104.6	66.9	80.1	104.8	100.0	101.7	105.3	86.5	93.1	76.0	180.2	143.6	99.2	180.2	151.8	107.1	111.5	110.0
0960	Flooring	94.9	67.3	86.4	94.5	107.6	98.5	104.5	97.2	102.3	101.2	179.1	125.0	111.1	179.1	131.9	91.7	116.1	99.2
0970, 0990	Wall Finishes & Painting/Coating	90.7	51.7	66.9	98.7	100.2	99.6	84.0	98.9	93.1	99.3	164.7	139.2	111.9	164.7	144.1	98.7	113.6	107.8
09	FINISHES	95.0	64.8	78.6	98.2	103.5	101.1	98.6	91.5	94.8	95.3	178.1	140.3	111.0	177.9	147.3	98.5	113.7	106.7
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	85.8	96.9	100.0	100.2	100.1	100.0	97.2	99.4	100.0	133.7	107.3	100.0	132.9	107.2	100.0	106.3	101.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	98.3	64.9	84.6	100.9	107.4	103.6	101.4	97.9	100.0	100.4	167.3	127.8	100.5	167.2	127.8	100.9	99.2	100.2
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	88.4	69.3	79.2	101.9	106.2	104.0	100.9	97.5	99.3	96.4	176.3	135.0	103.1	176.3	138.4	101.9	100.4	101.2
MF2018	WEIGHTED AVERAGE	97.4	70.9	86.6	97.8	108.5	102.1	97.0	99.2	97.9	92.7	167.1	122.9	101.5	168.8	128.9	102.6	106.8	104.3

DIVISION		NEW YORK																	
		ELMIRA			FAR ROCKAWAY			FLUSHING			GLENS FALLS			HICKSVILLE			JAMAICA		
		148 - 149			116			113			128			115,117,118			114		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		115.5	115.5		105.5	105.5		105.5	105.5		108.7	108.7		105.5	105.5		105.5	105.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	88.8	84.6	85.9	115.5	114.6	114.9	115.6	114.6	114.9	68.1	94.2	85.8	106.8	113.2	111.2	110.3	114.6	113.2
0310	Concrete Forming & Accessories	76.6	92.1	89.1	89.3	178.9	161.6	94.4	178.9	162.5	79.1	93.9	91.0	84.4	152.1	139.0	94.4	178.9	162.5
0320	Concrete Reinforcing	100.4	103.1	101.2	97.3	225.9	138.6	99.0	225.9	139.8	97.3	104.9	99.7	97.3	171.1	121.0	97.3	225.9	138.6
0330	Cast-in-Place Concrete	111.1	99.9	107.3	116.2	160.8	131.6	116.2	160.8	131.6	73.5	104.3	84.1	98.7	152.3	117.2	107.4	160.8	125.8
03	CONCRETE	97.1	99.1	97.9	109.5	179.3	137.5	110.3	179.3	137.9	80.3	100.8	88.5	96.7	154.8	120.0	103.7	179.3	133.9
04	MASONRY	108.6	100.5	103.5	124.2	181.3	160.2	117.2	181.3	157.6	107.3	105.2	106.0	114.1	167.6	147.8	121.8	181.3	159.3
05	METALS	91.8	133.8	101.6	97.5	170.8	114.6	97.5	170.8	114.6	91.1	120.7	98.0	98.6	147.8	110.1	97.5	170.8	114.6
06	WOOD, PLASTICS & COMPOSITES	75.7	90.5	81.8	84.1	177.7	122.8	89.9	177.7	126.2	80.5	90.7	84.7	80.1	149.7	108.9	89.9	177.7	126.2
07	THERMAL & MOISTURE PROTECTION	110.8	90.6	101.9	112.6	160.2	133.4	112.7	160.2	133.5	104.0	99.2	101.9	112.1	151.8	129.5	112.4	160.2	133.4
08	OPENINGS	93.5	94.1	93.7	84.4	187.4	109.3	84.4	187.4	109.3	87.4	93.2	88.8	84.8	158.5	102.6	84.4	187.4	109.3
0920	Plaster & Gypsum Board	99.0	90.4	93.6	92.6	180.2	147.4	97.9	180.2	149.3	84.1	90.6	88.2	92.1	151.4	129.2	97.9	180.2	149.3
0950, 0980	Ceilings & Acoustic Treatment	113.9	90.4	98.6	84.1	180.2	146.5	84.1	180.2	146.5	94.6	90.6	92.0	83.3	151.4	127.5	84.1	180.2	146.5
0960	Flooring	88.4	95.3	90.5	106.7	179.1	128.8	108.0	179.1	129.7	83.9	100.2	88.9	105.8	179.1	128.3	108.0	179.1	129.7
0970, 0990	Wall Finishes & Painting/Coating	94.7	86.6	89.7	111.9	164.7	144.1	111.9	164.7	144.1	87.4	96.9	93.2	111.9	164.7	144.1	111.9	164.7	144.1
09	FINISHES	95.4	91.8	93.4	103.5	177.9	143.9	104.7	177.9	144.4	88.5	94.7	91.8	102.1	158.1	132.5	104.2	177.9	144.2
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	95.1	98.9	100.0	132.9	107.2	100.0	132.9	107.2	100.0	89.1	97.6	100.0	128.1	106.1	100.0	132.9	107.2
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.8	91.9	94.8	96.1	167.2	125.3	96.1	167.2	125.3	96.7	101.2	98.6	100.5	154.0	122.4	96.1	167.2	125.3
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	99.4	96.5	98.0	107.4	176.3	140.6	107.4	176.3	140.6	96.9	97.3	97.1	102.4	140.3	120.7	101.8	176.3	137.7
MF2018	WEIGHTED AVERAGE	96.3	97.7	96.9	101.1	168.8	128.7	101.1	168.8	128.7	91.8	100.5	95.4	99.2	149.6	119.7	99.6	168.8	127.8

DIVISION		NEW YORK																	
		JAMESTOWN			KINGSTON			LONG ISLAND CITY			MONTICELLO			MOUNT VERNON			NEW ROCHELLE		
		147			124			111			127			105			108		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		87.0	87.0		105.5	105.5		105.5	105.5		105.5	105.5		101.6	101.6		101.6	101.6
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	90.3	84.7	86.5	132.4	109.6	117.0	114.3	114.6	114.5	128.3	109.6	115.6	99.1	100.8	100.2	98.3	100.8	100.0
0310	Concrete Forming & Accessories	76.6	84.7	83.1	80.6	122.9	114.7	100.3	178.9	163.7	90.6	122.9	116.6	76.8	131.2	120.7	93.4	127.9	121.3
0320	Concrete Reinforcing	100.4	103.5	101.4	97.9	149.3	114.4	97.3	225.9	138.6	97.1	149.3	113.9	92.7	169.9	117.5	92.8	169.8	117.5
0330	Cast-in-Place Concrete	115.3	98.2	109.4	99.2	136.7	112.2	110.9	160.8	128.1	92.9	136.8	108.0	77.8	141.0	99.6	77.8	140.7	99.5
03	CONCRETE	100.0	92.9	97.2	98.2	132.2	111.8	106.6	179.3	135.7	94.2	132.2	109.4	87.0	142.2	109.1	87.0	140.6	108.5
04	MASONRY	118.6	97.7	105.4	124.6	145.1	137.5	114.7	181.3	156.7	117.2	145.1	134.8	92.7	147.3	127.1	92.7	147.3	127.1
05	METALS	89.5	98.7	91.7	98.3	131.9	106.2	97.5	170.8	114.6	98.3	132.0	106.2	88.0	167.9	106.7	88.3	167.2	106.7
06	WOOD, PLASTICS & COMPOSITES	74.3	81.3	77.2	81.9	117.0	96.4	97.3	177.7	130.6	90.6	117.0	101.5	78.8	125.0	97.9	97.7	121.4	107.5
07	THERMAL & MOISTURE PROTECTION	110.2	88.4	100.6	126.8	135.4	130.6	112.7	160.2	133.5	126.6	135.4	130.4	105.9	138.4	120.2	106.2	136.1	119.3
08	OPENINGS	93.4	87.5	91.9	90.4	135.5	101.3	84.4	187.4	109.3	86.6	135.5	98.4	90.2	161.5	107.4	90.3	159.5	107.0
0920	Plaster & Gypsum Board	87.0	80.9	83.2	84.2	117.8	105.2	107.3	180.2	152.9	84.9	117.8	105.5	93.2	125.7	113.5	116.4	122.0	119.9
0950, 0980	Ceilings & Acoustic Treatment	109.1	80.9	90.8	79.5	117.8	104.4	84.1	180.2	146.5	79.5	117.8	104.4	74.0	125.7	107.5	74.0	122.0	105.1
0960	Flooring	90.8	95.3	92.2	104.3	149.4	118.1	109.4	179.1	130.7	106.1	149.4	119.3	92.8	167.1	115.6	100.3	152.6	116.3
0970, 0990	Wall Finishes & Painting/Coating	96.3	93.4	94.5	115.8	121.5	119.2	111.9	164.7	144.1	115.8	114.5	115.0	97.7	164.7	138.6	97.7	164.7	138.6
09	FINISHES	93.2	86.7	89.6	101.5	126.9	115.3	106.3	177.9	145.2	101.8	126.1	115.0	92.2	140.1	118.2	97.8	135.0	118.0
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	98.7	99.7	100.0	111.5	102.5	100.0	132.9	107.2	100.0	111.6	102.5	100.0	119.4	104.2	100.0	104.5	101.0
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.6	86.8	92.6	96.6	124.7	108.2	100.5	167.2	127.8	96.6	128.7	109.8	96.3	142.3	115.2	96.3	142.1	115.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	98.1	87.9	93.2	98.6	107.8	103.0	102.1	176.3	137.9	98.6	107.8	103.0	93.9	158.1	124.8	93.9	131.3	111.9
MF2018	WEIGHTED AVERAGE	96.3	90.2	93.8	100.1	125.4	110.4	101.0	168.8	128.6	98.9	126.1	110.0	92.5	143.6	113.3	93.2	138.1	111.5

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DIVISION		NEW YORK																	
		NEW YORK			NIAGARA FALLS			PLATTSBURGH			POUGHKEEPSIE			QUEENS			RIVERHEAD		
		100 - 102			143			129			125 - 126			110			119		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		103.8	103.8		87.0	87.0		91.1	91.1		105.5	105.5		105.5	105.5		105.5	105.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	102.0	108.8	106.6	92.1	85.6	87.7	107.2	91.4	96.5	129.3	108.6	115.3	109.6	114.6	113 0	107.6	113.2	111.4
0310	Concrete Forming & Accessories	97.7	182.8	166.4	76.6	106.3	100.6	87.1	85.8	86.1	80.6	157.4	142.6	84.7	178.9	160.7	90.7	152.8	140.8
0320	Concrete Reinforcing	101.4	171.3	123.8	99.1	104.2	100.7	99.9	104.2	101.3	97.9	148.9	114.3	99.0	225.9	139.8	99.2	238.5	143.9
0330	Cast-in-Place Concrete	80.6	166.1	110.1	119.3	115.9	118.1	89.9	94.0	91.3	96.1	126.5	106.6	102.0	160.8	122.3	100.3	152.7	118.4
03	CONCRETE	92.1	174.5	125.0	102.1	109.0	104.8	91.8	91.9	91.8	95.9	144.2	115.2	99.8	179.3	131.6	97.8	166.7	125.4
04	MASONRY	98.0	183.7	152.0	125.3	116.8	120.0	102.3	90.9	95.1	116.3	130.3	125.1	108.2	181.3	154.3	119.0	167.7	149.7
05	METALS	106.1	171.4	121.3	92.0	99.2	93.7	94.3	96.4	94.8	98.4	131.6	106.1	97.5	170.8	114.6	99.3	173.1	116.5
06	WOOD, PLASTICS & COMPOSITES	98.0	181.8	132.7	74.2	102.1	85.7	89.2	83.2	86.7	81.9	169.1	118.0	80.3	177.7	120.6	86.1	149.7	112.4
07	THERMAL & MOISTURE PROTECTION	110.5	165.2	134.5	110.4	101.9	106.6	118.6	90.0	106.1	126.7	134.6	130.2	112.1	160.2	133.2	113.5	153.3	130.9
08	OPENINGS	97.7	192.8	120.6	93.4	98.5	94.6	94.7	89.1	93.3	90.4	160.5	107.3	84.4	187.4	109.3	84.8	175.1	106.6
0920	Plaster & Gypsum Board	109.6	183.8	156.0	87.0	102.3	96.6	115.1	82.5	94.7	84.2	171.4	138.7	92.1	180.2	147.2	93.9	151.4	129.9
0950, 0980	Ceilings & Acoustic Treatment	94.2	183.8	152.4	109.1	102.3	104.7	110.7	82.5	92.4	79.5	171.4	139.2	84.1	180.2	146.5	84.0	151.4	127.8
0960	Flooring	101.6	181.5	126.0	90.8	104.3	94.9	105.7	97.7	103.3	104.3	147.6	117.5	105.8	179.1	128.3	106.7	179.1	128.8
0970, 0990	Wall Finishes & Painting/Coating	98.7	164.7	138.9	96.3	103.4	100.6	113.4	88.3	98.1	115.8	114.5	115.0	111.9	164.7	144.1	111.9	164.7	144.1
09	FINISHES	101.5	181.4	144.9	93.3	105.8	100.1	101.0	87.6	93.7	101.4	153.9	129.9	102.4	177.9	143.4	102.8	158.1	132.8
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	141.2	108.9	100.0	106.2	101.4	100.0	85.3	96.8	100.0	107.1	101.6	100.0	132.9	107.2	100.0	128.1	106.1
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	99.3	172.4	129.3	96.6	97.4	97.0	96.6	93.0	95.1	96.6	111.5	102.7	100.5	167.2	127.8	100.7	154.6	122.8
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	100.2	183.8	140.5	97.2	91.6	94.5	91.7	85.0	88.5	98.6	112.4	105.2	102.4	176.3	138.1	103.4	140.6	121.3
MF2018	WEIGHTED AVERAGE	100.1	171.3	129.1	97.4	100.9	98.8	96.3	90.4	93.9	99.3	128.1	111.1	99.2	168.8	127.5	100.0	154.4	122.1

DIVISION		NEW YORK																	
		ROCHESTER			SCHENECTADY			STATEN ISLAND			SUFFERN			SYRACUSE			UTICA		
		144 - 146			123			103			109			130 - 132			133 - 135		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		111.7	111.7		108.7	108.7		101.6	101.6		101.6	101.6		108.7	108.7		108.7	108.7
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	81.9	99.5	93.9	77.7	95.5	89.8	103.5	104.8	104.4	95.8	98.7	97.7	89.2	94.5	92.8	69.4	94.0	86.1
0310	Concrete Forming & Accessories	101.7	98.0	98.7	102.2	103.6	103.3	76.2	179.1	159.2	86.3	132.3	123.4	99.5	92.4	93.8	100.1	90.7	92.5
0320	Concrete Reinforcing	100.4	103.4	101.3	96.3	111.8	101.3	92.6	201.3	127.5	92.8	141.5	108.4	98.1	104.5	100.1	98.1	103.4	99.8
0330	Cast-in-Place Concrete	106.7	106.2	106.5	88.8	112.9	97.1	77.8	162.4	107.0	75.4	130.0	94.3	97.9	106.4	100.8	89.6	105.2	94.9
03	CONCRETE	103.7	102.9	103.4	92.5	109.4	99.3	88.3	176.2	123.4	84.8	132.7	104.0	97.1	100.8	98.6	95.0	99.4	96.7
04	MASONRY	104.8	106.5	105.9	105.0	116.0	111.9	97.9	181.3	150.5	92.1	132.8	117.7	100.2	107.9	105.1	92.6	106.3	101.2
05	METALS	100.8	118.3	104.9	95.5	125.8	102.6	86.5	171.0	106.3	86.5	128.4	96.3	94.5	120.4	100.6	92.7	119.9	99.1
06	WOOD, PLASTICS & COMPOSITES	97.4	96.0	96.8	103.8	99.9	102.2	77.6	178.0	119.1	88.6	134.4	107.6	97.5	88.3	93.7	97.5	86.3	92.9
07	THERMAL & MOISTURE PROTECTION	114.1	101.0	108.4	106.0	107.6	106.7	105.4	160.6	129.6	106.0	131.7	117.2	107.0	98.2	103.1	97.0	97.5	97.2
08	OPENINGS	97.1	97.4	97.1	92.2	101.7	94.5	90.2	187.6	113.7	90.3	143.3	103.1	89.3	91.4	89.8	91.6	90.0	91.2
0920	Plaster & Gypsum Board	109.0	95.9	100.8	100.4	100.0	100.2	93.1	180.2	147.6	99.2	135.4	121.8	108.7	88.1	95.8	108.7	86.0	94.5
0950, 0980	Ceilings & Acoustic Treatment	109.4	95.9	100.6	106.9	100.0	102.4	76.0	180.2	143.6	74.0	135.4	113.8	105.3	88.1	94.1	105.3	86.0	92.8
0960	Flooring	91.4	107.0	96.1	89.4	107.6	95.0	96.7	179.1	121.9	96.3	159.6	115.7	91.4	98.2	93.5	88.4	98.3	91.4
0970, 0990	Wall Finishes & Painting/Coating	98.7	99.4	99.1	87.4	100.2	95.2	99.3	164.7	139.2	97.7	117.8	110.0	88.5	101.8	96.6	81.6	101.8	93.9
09	FINISHES	98.9	99.7	99.3	95.9	103.4	100.0	94.1	178.1	139.7	93.7	136.6	117.0	97.2	93.7	95.3	95.4	92.3	93.7
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	98.3	99.6	100.0	99.7	99.9	100.0	133.7	107.3	100.0	105.6	101.2	100.0	98.2	99.6	100.0	95.1	98.9
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.8	90.9	96.8	101.0	105.4	102.8	100.4	167.3	127.8	96.3	114.6	103.8	101.1	93.8	98.1	101.1	101.0	101.0
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	102.3	92.9	97.8	99.7	106.2	102.8	96.4	176.3	135.0	98.1	106.2	102.0	100.8	102.8	101.7	98.0	102.8	100.3
MF2018	WEIGHTED AVERAGE	100.8	99.5	100.3	97.1	107.6	101.4	93.9	167.8	124.0	92.4	122.1	104.5	97.5	100.0	98.5	95.6	100.7	97.7

DIVISION		NEW YORK									NORTH CAROLINA								
		WATERTOWN			WHITE PLAINS			YONKERS			ASHEVILLE			CHARLOTTE			DURHAM		
		136			106			107			287 - 288			281 - 282			277		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		108.7	108.7		101.6	101.6		101.6	101.6		95.9	95.9		101.4	101.4		100.9	100.9
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	76.5	94.3	88.6	94.3	100.8	98.7	101.4	100.8	101.0	104.8	74.9	84.5	107.0	85.8	92.6	111.0	83.1	92.0
0310	Concrete Forming & Accessories	79.7	95.1	92.1	92.1	142.0	132.3	92.3	142.1	132.5	92.1	61.5	67.4	101.4	63.7	71.0	98.2	61.9	68.9
0320	Concrete Reinforcing	98.7	104.5	100.5	92.8	170.0	117.6	96.5	170.0	120.1	98.2	61.6	86.4	100.4	66.8	89.6	99.2	62.3	87.3
0330	Cast-in-Place Concrete	104.3	108.1	105.6	69.1	141.2	94.0	77.3	141.2	99.3	111.5	70.4	97.3	113.7	72.4	99.5	126.1	70.4	106.9
03	CONCRETE	105.3	102.6	104.3	80.2	147.2	107.0	87.5	147.2	111.4	95.7	66.3	83.9	98.3	68.6	86.4	104.7	66.6	89.4
04	MASONRY	94.1	110.7	104.6	91.6	147.3	126.7	93.2	147.3	127.3	88.6	63.6	72.8	90.7	64.4	74.1	91.5	63.6	73.9
05	METALS	92.8	120.3	99.2	87.7	168.3	106.5	97.7	168.4	114.2	93.3	88.7	92.2	94.5	87.4	92.9	109.4	88.9	104.6
06	WOOD, PLASTICS & COMPOSITES	76.0	91.1	82.2	94.9	139.1	113.2	94.7	139.1	113.1	89.4	59.5	77.0	92.3	61.9	79.8	97.6	60.1	82.0
07	THERMAL & MOISTURE PROTECTION	97.1	99.9	98.4	105.8	141.5	121.5	106.2	141.5	121.7	104.2	61.1	85.3	97.4	65.3	83.3	101.5	61.2	83.8
08	OPENINGS	91.6	94.5	92.3	90.3	169.3	109.3	93.3	169.3	111.6	86.3	58.4	79.6	95.7	60.2	87.1	92.6	58.9	84.5
0920	Plaster & Gypsum Board	91.5	91.0	91.2	105.7	140.2	127.3	110.1	140.2	128.9	114.2	58.4	79.3	112.4	60.8	80.1	112.0	59.1	78.9
0950, 0980	Ceilings & Acoustic Treatment	105.3	91.0	96.0	74.0	140.2	116.9	97.3	140.2	125.1	101.4	58.4	73.5	101.7	60.8	75.2	88.4	59.1	69.4
0960	Flooring	82.8	98.3	87.5	98.6	179.1	123.3	98.0	179.1	122.8	97.9	62.1	87.0	99.6	66.7	89.5	108.9	62.1	94.6
0970, 0990	Wall Finishes & Painting/Coating	81.6	101.0	93.4	97.7	164.7	138.6	97.7	164.7	138.6	102.2	53.0	72.2	98.7	65.1	78.2	103.0	53.0	72.5
09	FINISHES	91.7	95.8	93.9	95.0	150.9	125.3	101.3	150.9	128.2	102.1	60.4	79.4	102.4	64.1	81.6	100.5	60.7	78.9
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	99.1	99.8	100.0	123.6	105.1	100.0	130.6	106.7	100.0	84.4	96.6	100.0	85.1	96.8	100.0	84.5	96.6
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	101.1	89.6	96.4	101.0	142.5	118.0	101.0	142.5	118.0	101.6	62.0	85.4	100.8	62.2	84.9	101.7	62.0	85.4
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	100.8	90.9	96.0	93.9	160.0	125.7	98.2	160.0	128.0	100.1	53.6	77.7	100.9	81.1	91.3	95.7	53.2	75.2
MF2018	WEIGHTED AVERAGE	97.0	98.4	97.6	92.7	146.7	114.7	97.2	146.9	117.4	96.9	65.3	84.0	98.3	71.0	87.2	101.7	66.0	87.2

DIVISION		NORTH CAROLINA																	
		ELIZABETH CITY			FAYETTEVILLE			GASTONIA			GREENSBORO			HICKORY			KINSTON		
		279			283			280			270,272 - 274			286			285		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		104.8	104.8		100.9	100.9		95.9	95.9		100.9	100.9		100.9	100.9		100.9	100.9
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	115.4	84.3	94.3	104.0	82.8	89.6	104.3	74.9	84.3	110.8	83.1	92.0	103.1	82.8	89.3	101.6	82.8	88.8
0310	Concrete Forming & Accessories	78.2	60.2	63.7	91.5	60.1	66.2	101.1	62.1	69.6	97.9	61.9	68.9	86.5	62.0	66.8	81.3	60.1	64.2
0320	Concrete Reinforcing	97.7	65.1	87.2	101.4	62.3	88.9	98.5	62.4	86.9	98.6	62.3	86.9	98.2	62.3	86.6	97.6	62.3	86.3
0330	Cast-in-Place Concrete	126.3	69.9	106.9	116.9	67.7	99.9	109.0	70.5	95.7	125.1	70.4	106.2	111.4	70.2	97.2	107.6	67.7	93.8
03	CONCRETE	103.8	66.2	88.8	98.1	64.9	84.8	94.9	66.7	83.6	104.1	66.6	89.1	95.3	66.6	83.8	92.4	64.9	81.4
04	MASONRY	103.9	58.8	75.5	91.6	58.8	70.9	92.5	63.6	74.3	88.1	63.6	72.7	78.3	63.5	69.0	84.5	58.8	68.3
05	METALS	95.5	91.0	94.5	111.9	88.9	106.5	94.2	89.1	93.0	101.1	88.9	98.3	93.6	88.3	92.3	92.5	88.9	91.7
06	WOOD, PLASTICS & COMPOSITES	76.2	59.8	69.4	87.8	60.1	76.3	99.5	60.1	83.2	97.1	60.1	81.8	82.8	60.1	73.4	78.5	60.1	70.9
07	THERMAL & MOISTURE PROTECTION	100.2	58.8	82.0	103.6	59.1	84.1	104.5	61.2	85.5	101.0	61.2	83.6	104.6	61.2	85.6	104.3	59.1	84.5
08	OPENINGS	90.1	59.3	82.7	86.4	58.9	79.8	89.3	58.9	82.0	92.6	58.9	84.5	86.4	58.9	79.7	86.5	58.9	79.8
0920	Plaster & Gypsum Board	95.7	58.2	72.2	117.6	59.1	81.0	124.8	59.1	83.7	111.9	59.1	78.9	114.2	59.1	79.7	112.4	59.1	79.1
0950, 0980	Ceilings & Acoustic Treatment	88.4	58.2	68.8	105.5	59.1	75.4	108.2	59.1	76.3	88.4	59.1	69.4	101.4	59.1	73.9	108.2	59.1	76.3
0960	Flooring	101.2	62.1	89.2	98.0	62.1	87.1	100.4	62.1	88.7	108.9	62.1	94.6	97.9	62.1	87.0	95.7	62.1	85.5
0970, 0990	Wall Finishes & Painting/Coating	103.0	53.0	72.5	102.2	53.0	72.2	102.2	53.0	72.2	103.0	53.0	72.5	102.2	53.0	72.2	102.2	53.0	72.2
09	FINISHES	96.2	59.4	76.2	103.5	59.5	79.6	105.9	60.7	81.3	100.5	60.7	78.9	102.3	60.7	79.7	102.7	59.5	79.2
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	84.8	96.7	100.0	82.9	96.3	100.0	84.6	96.7	100.0	84.5	96.6	100.0	84.6	96.7	100.0	82.9	96.3
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	97.3	59.8	81.9	101.4	59.6	84.2	101.6	62.1	85.4	101.5	62.0	85.3	97.4	62.1	82.9	97.4	59.6	81.8
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	95.1	64.1	80.1	101.6	53.2	78.2	99.8	81.1	90.7	95.0	53.6	75.0	98.7	81.1	90.2	98.5	51.7	76.0
MF2018	WEIGHTED AVERAGE	97.6	66.6	85.0	101.3	64.4	86.3	97.8	69.3	86.2	99.7	66.0	86.0	95.4	69.8	85.0	95.0	64.2	82.5

DIVISION		NORTH CAROLINA															NORTH DAKOTA		
		MURPHY			RALEIGH			ROCKY MOUNT			WILMINGTON			WINSTON-SALEM			BISMARCK		
		289			275 - 276			278			284			271			585		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		95.9	95.9		107.5	107.5		100.9	100.9		95.9	95.9		100.9	100.9		101.2	101.2
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	105.6	74.6	84.5	109.7	95.7	100.2	113.4	82.7	92.6	105.7	74.6	84.6	111.3	83.1	92.1	88.1	99.6	95.9
0310	Concrete Forming & Accessories	102.1	56.7	65.5	98.5	61.6	68.8	87.1	61.4	66.4	93.9	60.1	66.6	100.1	61.9	69.3	98.0	77.1	81.2
0320	Concrete Reinforcing	97.6	60.1	85.6	99.8	62.3	87.8	97.7	62.3	86.3	98.9	62.3	87.2	98.6	62.3	86.9	115.2	97.9	109.6
0330	Cast-in-Place Concrete	115.3	67.7	98.9	129.8	71.5	109.7	123.6	69.5	104.9	111.0	67.7	96.1	128.3	70.4	108.3	111.9	87.6	103.5
03	CONCRETE	98.6	62.9	84.3	105.0	66.7	89.7	104.2	66.0	88.9	95.8	64.9	83.4	105.6	66.6	90.0	107.6	84.8	98.5
04	MASONRY	81.8	58.8	67.3	89.7	62.5	72.5	81.2	62.3	69.3	79.3	58.8	66.4	88.5	63.6	72.8	97.8	82.0	87.8
05	METALS	91.5	88.1	90.7	94.6	85.5	92.5	94.8	88.2	93.2	93.0	88.9	92.1	98.6	88.9	96.4	90.3	92.8	90.9
06	WOOD, PLASTICS & COMPOSITES	100.4	55.6	81.8	94.2	60.3	80.1	85.5	60.1	75.0	91.2	60.1	78.3	97.1	60.1	81.8	94.7	73.7	86.0
07	THERMAL & MOISTURE PROTECTION	104.6	58.3	84.3	96.8	62.4	81.7	100.9	60.7	83.3	104.2	59.1	84.4	101.0	61.2	83.6	98.2	84.4	92.1
08	OPENINGS	86.3	55.9	79.0	94.5	59.0	85.9	89.5	58.9	82.1	86.5	58.9	79.8	92.6	58.9	84.5	100.1	82.7	95.9
0920	Plaster & Gypsum Board	123.3	54.4	80.2	107.6	59.1	77.3	99.5	59.1	74.2	116.0	59.1	80.4	111.9	59.1	78.9	103.9	73.1	84.7
0950, 0980	Ceilings & Acoustic Treatment	101.4	54.4	70.9	84.6	59.1	68.0	85.7	59.1	68.4	105.5	59.1	75.4	88.4	59.1	69.4	107.4	73.1	85.2
0960	Flooring	100.7	62.1	88.9	99.7	62.1	88.2	104.6	62.1	91.6	98.4	62.1	87.3	108.9	62.1	94.6	92.2	53.6	80.4
0970, 0990	Wall Finishes & Painting/Coating	102.2	53.0	72.2	100.1	53.0	71.4	103.0	53.0	72.5	102.2	53.0	72.2	103.0	53.0	72.5	98.7	59.5	74.7
09	FINISHES	104.5	56.9	78.6	98.3	60.5	77.8	97.3	60.4	77.2	103.4	59.5	79.5	100.5	60.7	78.9	98.8	71.5	84.0
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	82.4	96.2	100.0	84.5	96.6	100.0	84.1	96.5	100.0	82.9	96.3	100.0	84.5	96.6	100.0	91.7	98.2
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	97.3	59.5	81.8	100.8	61.5	84.7	97.3	61.4	82.6	101.6	59.6	84.3	101.5	62.0	85.3	100.6	76.0	90.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	100.6	51.7	77.0	100.9	52.2	77.4	96.3	53.2	75.5	100.5	51.7	77.0	95.0	53.6	75.0	102.3	73.4	88.4
MF2018	WEIGHTED AVERAGE	96.2	62.7	82.6	98.9	66.3	85.6	96.8	65.5	84.1	96.7	63.6	83.2	99.5	66.0	85.9	98.9	81.2	91.7

DIVISION		NORTH DAKOTA																	
		DEVILS LAKE			DICKINSON			FARGO			GRAND FORKS			JAMESTOWN			MINOT		
		583			586			580 - 581			582			584			587		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		94.5	94.5		94.5	94.5		101.5	101.5		94.5	94.5		94.5	94.5		94.5	94.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	91.3	88.8	89.6	96.4	88.7	91.2	88.2	99.8	96.0	94.3	89.5	91.1	90.4	88.8	89.3	92.4	89.3	90.3
0310	Concrete Forming & Accessories	102.9	67.6	74.4	88.3	67.5	71.5	97.2	68.3	73.9	93.9	74.4	78.1	90.5	67.5	72.0	87.8	67.7	71.6
0320	Concrete Reinforcing	111.4	97.9	107.1	112.5	97.8	107.8	99.8	98.5	99.4	109.7	98.0	105.9	112.1	98.4	107.7	113.6	97.8	108.5
0330	Cast-in-Place Concrete	131.3	76.4	112.3	118.7	76.3	104.1	108.7	83.6	100.0	118.7	82.7	106.3	129.6	76.4	111.3	118.7	76.6	104.2
03	CONCRETE	111.4	76.8	97.6	109.2	76.7	96.2	105.4	79.5	95.0	107.0	82.1	97.0	109.8	76.8	96.6	106.1	76.9	94.4
04	MASONRY	112.4	80.3	92.2	111.5	77.7	90.2	95.6	89.0	91.4	105.4	83.4	91.5	123.9	88.8	101.8	106.1	77.1	87.8
05	METALS	89.1	94.3	90.3	89.1	93.7	90.1	94.4	93.4	94.2	89.1	95.1	90.5	89.1	94.9	90.4	89.4	94.6	90.6
06	WOOD, PLASTICS & COMPOSITES	97.2	63.7	83.3	81.9	63.7	74.3	94.4	64.1	81.9	87.3	70.9	80.5	84.2	63.7	75.7	81.5	63.7	74.1
07	THERMAL & MOISTURE PROTECTION	97.8	78.6	89.3	98.1	79.0	89.7	93.1	83.9	89.1	97.9	81.7	90.8	97.4	81.3	90.4	97.5	79.4	89.6
08	OPENINGS	97.4	77.2	92.5	97.4	77.2	92.5	97.5	77.4	92.6	96.1	81.1	92.5	97.4	77.2	92.5	96.2	77.2	91.6
0920	Plaster & Gypsum Board	111.1	63.2	81.2	95.6	63.2	75.4	91.1	63.2	73.7	97.8	70.6	80.8	97.3	63.2	76.0	95.6	63.2	75.4
0950, 0980	Ceilings & Acoustic Treatment	99.2	63.2	75.9	99.2	63.2	75.9	99.0	63.2	75.8	99.2	70.6	80.7	99.2	63.2	75.9	99.2	63.2	75.9
0960	Flooring	96.4	53.6	83.3	90.8	53.6	79.4	97.9	53.6	84.4	92.4	53.6	80.5	91.5	53.6	79.9	90.6	53.6	79.3
0970, 0990	Wall Finishes & Painting/Coating	89.0	52.3	66.6	89.0	52.3	66.6	98.7	62.5	76.6	89.0	61.3	72.1	89.0	52.3	66.6	89.0	53.3	67.2
09	FINISHES	95.6	63.6	78.3	92.4	63.6	76.8	96.5	65.1	79.4	92.7	69.6	80.1	92.0	63.6	76.6	91.7	63.8	76.5
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	80.3	95.7	100.0	80.3	95.7	100.0	89.3	97.7	100.0	88.1	97.4	100.0	80.3	95.7	100.0	88.4	97.5
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.5	72.7	86.8	96.5	68.0	84.8	100.7	68.8	87.6	100.8	75.9	90.6	96.5	67.0	84.4	100.8	66.9	86.9
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	96.1	67.4	82.3	101.3	67.1	84.9	102.2	64.3	83.9	98.2	67.4	83.4	96.1	63.3	80.3	100.1	67.9	84.6
MF2018	WEIGHTED AVERAGE	97.9	75.8	88.9	97.8	74.4	88.3	98.8	77.2	90.0	97.7	79.0	90.1	97.7	75.0	88.5	97.7	74.7	88.3

For CCI updates and additional guidance please go to www.rsmeans.com/2022books

DIVISION		NORTH DAKOTA			OHIO														
		WILLISTON			AKRON			ATHENS			CANTON			CHILLICOTHE			CINCINNATI		
		588			442 - 443			457			446 - 447			456			451 - 452		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		94.5	94.5		86.5	86.5		82.6	82.6		86.5	86.5		92.8	92.8		97.2	97.2
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	91.8	89.6	90.3	83.5	90.4	88.2	89.8	81.1	83.9	83.6	90.0	87.9	83.1	90.3	88.0	83.2	99.0	93.9
0310	Concrete Forming & Accessories	96.3	74.3	78.6	98.5	83.7	86.6	88.2	74.3	77.0	98.5	76.7	80.9	92.3	76.7	79.7	96.7	73.8	78.2
0320	Concrete Reinforcing	114.6	97.8	109.2	102.9	88.5	98.3	97.7	83.0	93.0	102.9	75.9	94.3	96.4	82.7	92.0	100.0	83.6	94.8
0330	Cast-in-Place Concrete	118.7	82.7	106.3	101.0	87.3	96.2	111.7	89.7	104.1	102.0	85.3	96.2	101.3	86.5	96.2	96.8	77.3	90.0
03	CONCRETE	107.6	82.0	97.4	99.7	85.4	94.0	102.9	81.1	94.2	100.2	79.4	91.9	98.0	81.7	91.5	96.5	76.9	88.7
04	MASONRY	100.4	80.1	87.6	103.9	90.9	95.7	86.3	90.8	89.1	104.5	83.1	91.0	93.7	84.5	87.9	99.3	81.6	88.2
05	METALS	89.2	94.8	90.5	91.0	81.0	88.7	95.8	78.5	91.8	91.0	75.5	87.4	88.7	87.6	88.4	97.0	82.1	93.5
06	WOOD, PLASTICS & COMPOSITES	89.2	70.9	81.6	102.5	82.3	94.2	82.4	69.8	77.2	103.3	75.3	91.7	93.9	73.6	85.5	98.5	72.1	87.6
07	THERMAL & MOISTURE PROTECTION	97.8	80.8	90.4	102.7	89.4	96.9	100.2	84.8	93.5	103.4	85.9	95.8	101.3	81.9	92.8	101.7	81.0	92.6
08	OPENINGS	97.4	81.1	93.5	103.6	82.4	98.5	92.9	71.4	87.7	97.8	72.2	91.6	84.8	73.4	82.1	98.6	72.4	92.3
0920	Plaster & Gypsum Board	97.8	70.6	80.8	91.8	81.9	85.7	81.2	69.1	73.6	94.7	74.7	82.2	87.7	73.4	78.8	86.6	71.4	77.1
0950, 0980	Ceilings & Acoustic Treatment	99.2	70.6	80.7	93.0	81.9	85.8	103.9	69.1	81.3	93.0	74.7	81.1	97.8	73.4	82.0	88.7	71.4	77.5
0960	Flooring	93.2	53.6	81.1	93.0	76.6	88.0	127.8	70.0	110.1	93.4	70.6	86.4	103.4	70.0	93.2	107.6	80.0	99.2
0970, 0990	Wall Finishes & Painting/Coating	89.0	58.9	70.6	96.4	88.7	91.7	101.7	82.7	90.1	96.4	75.3	83.5	99.4	82.7	89.2	98.7	73.3	83.2
09	FINISHES	92.8	69.4	80.1	93.4	82.9	87.7	98.7	73.7	85.1	94.0	74.7	83.5	96.9	75.3	85.2	95.4	74.4	84.0
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	90.2	97.9	100.0	92.6	98.4	100.0	89.6	97.7	100.0	90.8	98.0	100.0	88.7	97.6	100.0	88.1	97.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.5	72.7	86.7	100.5	87.7	95.3	96.5	75.2	87.8	100.5	78.2	91.4	97.1	85.6	92.4	100.6	78.5	91.6
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	98.5	67.9	83.7	102.3	82.5	92.7	104.0	83.1	94.0	101.9	84.0	93.2	101.3	83.2	92.5	101.0	76.8	89.3
MF2018	WEIGHTED AVERAGE	96.9	78.0	89.2	98.2	85.9	93.2	97.5	79.8	90.3	97.8	80.3	90.6	94.6	83.2	90.0	98.3	79.8	90.8

DIVISION		OHIO																	
		CLEVELAND			COLUMBUS			DAYTON			HAMILTON			LIMA			LORAIN		
		441			430 - 432			453 - 454			450			458			440		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		92.9	92.9		95.6	95.6		86.4	86.4		92.8	92.8		85.8	85.8		86.5	86.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	83.0	97.5	92.9	80.4	96.6	91.4	80.6	89.9	86.9	80.6	89.9	87.0	85.2	80.9	82.3	82.7	90.1	87.8
0310	Concrete Forming & Accessories	98.5	89.9	91.6	99.2	78.0	82.1	94.8	77.6	80.9	94.8	73.0	77.2	88.2	72.1	75.2	98.6	79.1	82.9
0320	Concrete Reinforcing	101.1	92.3	98.3	101.4	79.3	94.3	102.2	78.6	94.6	102.2	71.9	92.5	97.7	78.7	91.6	102.9	88.6	98.3
0330	Cast-in-Place Concrete	100.7	97.6	99.6	99.6	90.1	96.3	86.8	80.9	84.8	93.0	77.6	87.7	102.6	84.0	96.2	96.1	90.6	94.2
03	CONCRETE	98.9	92.6	96.4	98.7	82.5	92.2	90.9	78.9	86.1	93.6	75.1	86.2	96.6	77.7	89.0	97.6	84.6	92.4
04	MASONRY	108.6	99.2	102.7	90.4	86.9	88.2	92.5	74.1	80.9	92.9	75.9	82.2	116.3	73.0	89.0	100.5	91.1	94.6
05	METALS	97.3	84.6	94.3	97.2	80.1	93.2	90.4	77.4	87.4	90.3	83.9	88.8	95.9	80.5	92.3	91.6	81.2	89.2
06	WOOD, PLASTICS & COMPOSITES	99.8	87.9	94.9	100.3	75.7	90.1	97.7	78.2	89.6	96.7	72.8	86.8	82.3	70.9	77.6	102.5	77.3	92.1
07	THERMAL & MOISTURE PROTECTION	101.7	97.4	99.8	110.0	84.5	98.8	104.8	77.0	92.6	101.3	76.0	90.3	99.9	80.7	91.5	103.3	87.4	96.4
08	OPENINGS	101.0	86.3	97.5	98.7	73.7	92.6	91.3	75.3	87.4	89.2	71.3	84.9	92.9	70.5	87.5	97.8	79.7	93.4
0920	Plaster & Gypsum Board	90.6	87.6	88.7	92.0	74.9	81.3	89.6	78.2	82.5	89.6	72.6	79.0	81.2	70.1	74.3	91.8	76.8	82.4
0950, 0980	Ceilings & Acoustic Treatment	90.8	87.6	88.7	92.1	74.9	81.0	97.8	78.2	85.1	97.8	72.6	81.4	103.9	70.1	82.0	93.0	76.8	82.5
0960	Flooring	97.5	89.0	94.9	98.3	75.0	91.2	107.2	71.8	96.4	104.4	73.0	94.8	127.4	71.8	110.4	93.4	87.0	91.4
0970, 0990	Wall Finishes & Painting/Coating	100.1	88.7	93.1	98.7	78.4	86.3	99.4	68.6	80.6	99.4	66.2	79.1	101.8	71.0	83.0	96.4	88.7	91.7
09	FINISHES	94.0	89.5	91.6	94.4	76.9	84.9	98.0	75.5	85.8	97.2	72.1	83.6	98.2	71.2	83.6	93.5	81.2	86.8
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	97.1	99.4	100.0	90.0	97.8	100.0	87.4	97.3	100.0	86.6	97.1	100.0	90.6	98.0	100.0	93.6	98.6
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.5	92.4	97.2	100.6	91.0	96.7	101.5	77.8	91.8	101.3	69.5	88.2	96.5	85.1	91.8	100.5	79.0	91.7
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	102.2	89.3	96.0	102.3	81.2	92.2	99.5	74.1	87.3	99.8	69.9	85.4	104.3	70.1	87.8	102.0	76.9	89.9
MF2018	WEIGHTED AVERAGE	99.3	92.0	96.3	98.5	84.6	92.8	95.4	77.8	88.3	95.4	75.0	87.1	97.7	77.5	89.5	97.3	82.7	91.4

DIVISION		OHIO																	
		MANSFIELD			MARION			SPRINGFIELD			STEUBENVILLE			TOLEDO			YOUNGSTOWN		
		448 - 449			433			455			439			434 - 436			444 - 445		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		86.5	86.5		86.8	86.8		86.4	86.4		90.3	90.3		90.3	90.3		86.5	86.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	79.3	89.7	86.4	74.3	86.5	82.6	80.9	90.0	87.1	101.9	93.9	96.5	77.5	87.2	84.1	83.3	89.9	87.8
0310	Concrete Forming & Accessories	84.2	77.6	78.9	95.7	74.7	78.8	94.8	78.1	81.3	94.4	74.6	78.4	100.7	89.5	91.7	98.5	78.0	82.0
0320	Concrete Reinforcing	93.8	73.6	87.3	97.9	73.6	90.1	102.2	78.7	94.6	96.4	95.2	96.0	106.3	82.9	98.8	102.9	84.2	96.9
0330	Cast-in-Place Concrete	93.5	82.5	89.7	86.1	82.6	84.9	89.1	81.6	86.5	93.6	84.0	90.3	94.3	89.5	92.7	100.0	86.4	95.3
03	CONCRETE	91.5	78.5	86.3	87.6	77.4	83.5	91.9	79.4	86.9	90.9	81.3	87.1	95.5	88.4	92.7	99.3	81.8	92.3
04	MASONRY	102.7	83.1	90.3	92.9	83.9	87.3	92.7	75.2	81.7	81.0	85.1	83.6	99.2	90.8	93.9	104.2	86.7	93.2
05	METALS	92.1	74.9	88.1	92.3	77.2	88.8	90.4	77.4	87.3	89.4	83.1	87.9	92.9	86.6	91.5	91.0	78.9	88.2
06	WOOD, PLASTICS & COMPOSITES	87.1	77.3	83.0	92.7	73.2	84.6	98.7	78.2	90.2	87.1	72.1	80.9	97.8	90.8	94.9	102.5	76.4	91.7
07	THERMAL & MOISTURE PROTECTION	101.8	84.9	94.4	104.1	82.4	94.6	104.7	77.5	92.8	117.9	81.7	102.1	105.7	90.1	98.9	103.6	86.8	96.2
08	OPENINGS	98.8	73.0	92.5	87.5	70.7	83.4	89.7	75.7	86.3	87.4	75.4	84.5	89.9	84.5	88.6	97.8	79.6	93.4
0920	Plaster & Gypsum Board	79.7	76.8	77.9	89.9	72.7	79.1	89.6	78.2	82.5	83.7	71.1	75.8	93.1	90.8	91.6	91.8	75.9	81.9
0950, 0980	Ceilings & Acoustic Treatment	93.7	76.8	82.7	98.0	72.7	81.6	97.8	78.2	85.1	95.6	71.1	79.7	98.0	90.8	93.3	93.0	75.9	81.9
0960	Flooring	88.5	90.8	89.2	95.0	90.8	93.7	107.2	71.8	96.4	125.8	88.5	114.4	95.4	93.3	94.7	93.4	89.4	92.1
0970, 0990	Wall Finishes & Painting/Coating	96.4	72.2	81.6	99.8	72.2	83.0	99.4	68.6	80.6	111.3	80.8	92.7	99.9	85.6	91.2	96.4	78.6	85.5
09	FINISHES	90.1	79.3	84.2	95.0	77.1	85.3	98.0	75.7	85.9	111.2	76.9	92.6	95.9	90.0	92.7	93.6	79.6	86.0
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	90.4	97.9	100.0	87.9	97.4	100.0	87.8	97.3	100.0	89.0	97.6	100.0	94.0	98.7	100.0	90.9	98.0
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.3	77.5	88.6	96.4	86.2	92.2	101.5	78.4	92.0	96.9	84.8	91.9	100.6	92.5	97.3	100.5	82.3	93.0
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	100.5	84.1	92.6	99.8	84.1	92.2	99.5	80.6	90.4	93.1	98.7	95.8	104.0	93.4	98.9	102.0	84.0	93.3
MF2018	WEIGHTED AVERAGE	95.1	80.5	89.2	93.5	81.7	88.7	95.4	79.1	88.8	94.5	85.4	90.8	96.8	90.3	94.2	97.6	83.1	91.7

DIVISION		OHIO			OKLAHOMA														
		ZANESVILLE			ARDMORE			CLINTON			DURANT			ENID			GUYMON		
		437 - 438			734			736			747			737			739		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		86.8	86.8		77.8	77.8		77.0	77.0		77.0	77.0		77.0	77.0		77.0	77.0
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	76.4	86.3	83.1	97.0	88.2	91.0	98.5	86.8	90.5	95.4	86.5	89.4	100.8	86.8	91.3	103.0	86.0	91.5
0310	Concrete Forming & Accessories	91.5	73.8	77.2	88.2	53.8	60.4	86.2	53.8	60.0	80.3	52.2	57.6	91.3	54.0	61.2	95.3	52.1	60.5
0320	Concrete Reinforcing	97.4	86.2	93.8	88.7	66.1	81.5	89.2	66.1	81.8	97.7	59.3	85.4	88.7	66.1	81.4	89.2	58.9	79.5
0330	Cast-in-Place Concrete	90.8	81.1	87.4	83.7	71.3	79.4	80.9	71.3	77.6	80.9	69.1	76.8	80.9	71.4	77.6	80.9	68.6	76.7
03	CONCRETE	90.6	78.7	85.8	82.6	62.1	74.4	82.1	62.1	74.1	83.0	59.5	73.6	82.6	62.2	74.5	84.9	59.1	74.6
04	MASONRY	91.3	80.9	84.7	88.8	60.2	70.8	115.0	60.2	80.5	88.9	58.1	69.5	97.9	60.2	74.2	90.1	51.8	65.9
05	METALS	93.6	84.8	91.5	90.6	62.2	84.0	90.7	62.2	84.0	86.7	59.6	80.4	91.7	62.4	84.9	91.2	57.8	83.4
06	WOOD, PLASTICS & COMPOSITES	86.8	73.2	81.2	93.9	51.3	76.3	92.8	51.3	75.7	83.5	51.3	70.2	97.1	51.3	78.1	101.1	51.3	80.5
07	THERMAL & MOISTURE PROTECTION	104.2	78.8	93.1	103.2	62.7	85.5	103.3	62.7	85.5	98.3	61.4	82.1	103.5	62.7	85.6	103.9	57.9	83.7
08	OPENINGS	87.5	76.0	84.7	99.5	52.4	88.1	99.5	52.4	88.2	92.3	50.8	82.2	100.7	53.8	89.4	99.7	50.8	87.9
0920	Plaster & Gypsum Board	82.0	72.7	76.2	95.9	50.7	67.6	95.4	50.7	67.5	79.5	50.7	61.5	97.8	50.7	68.4	97.8	50.7	68.4
0950, 0980	Ceilings & Acoustic Treatment	98.0	72.7	81.6	93.6	50.7	65.7	93.6	50.7	65.7	85.5	50.7	62.9	93.6	50.7	65.7	93.6	50.7	65.7
0960	Flooring	93.7	70.0	86.4	90.2	53.3	78.9	89.1	53.3	78.2	93.8	48.1	79.8	90.7	69.8	84.3	92.1	53.3	80.3
0970, 0990	Wall Finishes & Painting/Coating	99.8	82.7	89.4	91.9	43.3	62.2	91.9	43.3	62.2	92.5	43.3	62.5	91.9	43.3	62.2	91.9	39.2	59.7
09	FINISHES	93.6	73.3	82.5	92.4	51.2	70.0	92.3	51.2	70.0	88.0	49.2	66.9	93.2	54.6	72.2	94.0	51.0	70.7
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	87.0	97.2	100.0	78.4	95.3	100.0	78.4	95.3	100.0	77.1	95.0	100.0	78.4	95.3	100.0	77.1	95.0
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.4	83.3	91.0	97.0	66.9	84.6	97.0	66.9	84.6	96.9	64.9	83.8	101.2	66.9	87.1	97.0	63.7	83.3
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	100.3	83.1	92.0	94.2	73.7	84.3	94.8	73.7	84.6	96.2	64.2	80.7	94.8	73.7	84.6	95.8	60.8	79.0
MF2018	WEIGHTED AVERAGE	94.1	81.1	88.8	93.3	65.2	81.9	94.4	65.1	82.5	91.5	62.1	79.6	95.2	65.7	83.2	94.4	60.6	80.6

DIVISION		OKLAHOMA																	
		LAWTON			MCALESTER			MIAMI			MUSKOGEE			OKLAHOMA CITY			PONCA CITY		
		735			745			743			744			730 - 731			746		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		77.8	77.8		77.0	77.0		87.7	87.7		87.7	87.7		90.4	90.4		77.0	77.0
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	96.4	88.2	90.8	88.5	86.5	87.1	89.2	83.9	85.6	90.5	83.8	86.0	96.1	102.0	100.1	96.1	86.5	89.6
0310	Concrete Forming & Accessories	95.0	57.0	64.3	77.8	54.8	59.3	95.7	52.2	60.6	101.9	55.9	64.8	100.6	62.5	69.9	89.4	52.2	59.4
0320	Concrete Reinforcing	88.9	66.1	81.6	97.4	64.9	86.9	95.9	66.1	86.3	96.8	65.0	86.6	100.4	66.2	89.4	96.8	66.1	86.9
0330	Cast-in-Place Concrete	78.2	71.4	75.9	71.0	69.6	70.5	74.4	70.1	72.9	75.3	70.7	73.7	82.2	72.4	78.8	83.1	69.3	78.3
03	CONCRETE	79.9	63.6	73.4	75.6	61.8	70.0	79.6	61.9	72.5	81.3	63.6	74.2	88.1	66.5	79.5	84.9	60.7	75.2
04	MASONRY	90.0	60.2	71.2	106.6	57.5	75.7	91.5	56.6	69.5	108.9	59.0	77.4	88.4	57.7	69.0	84.4	56.5	66.8
05	METALS	96.0	62.4	88.1	86.6	61.3	80.7	86.6	76.6	84.3	87.7	76.3	85.0	90.2	64.8	84.3	86.6	62.0	80.9
06	WOOD, PLASTICS & COMPOSITES	100.0	55.4	81.6	80.8	54.3	69.8	99.0	51.5	79.3	104.3	55.5	84.1	97.0	64.1	83.4	93.3	51.3	75.9
07	THERMAL & MOISTURE PROTECTION	103.3	63.1	85.7	97.8	61.8	82.0	98.6	61.8	82.4	98.9	61.9	82.7	95.6	64.4	81.9	98.6	61.0	82.1
08	OPENINGS	102.2	56.0	91.0	92.2	54.7	83.2	92.2	52.5	82.6	93.4	54.4	84.0	95.6	60.8	87.2	92.2	52.4	82.6
0920	Plaster & Gypsum Board	100.3	54.9	71.9	78.8	53.7	63.1	90.7	50.7	65.7	93.4	54.9	69.3	101.0	63.4	77.5	88.0	50.7	64.7
0950, 0980	Ceilings & Acoustic Treatment	105.2	54.9	72.5	85.5	53.7	64.9	85.5	50.7	62.9	98.6	54.9	70.2	94.2	63.4	74.2	85.5	50.7	62.9
0960	Flooring	92.3	69.8	85.5	92.9	62.4	83.5	99.2	48.1	83.6	101.4	61.4	89.2	95.6	69.8	87.8	96.6	53.3	83.4
0970, 0990	Wall Finishes & Painting/Coating	91.9	43.3	62.2	92.5	45.4	63.8	92.5	39.2	60.0	92.5	39.2	60.0	98.7	43.3	64.9	92.5	43.3	62.5
09	FINISHES	95.9	57.0	74.8	87.0	54.4	69.3	90.5	48.9	67.9	94.4	54.2	72.6	97.5	61.5	77.9	90.3	51.2	69.0
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	78.9	95.4	100.0	77.8	95.2	100.0	77.5	95.1	100.0	78.4	95.3	100.0	79.7	95.6	100.0	77.1	95.0
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.9	61.5	82.4	96.9	61.5	82.4	96.9	59.0	81.3	101.1	61.6	84.9	101.1	65.6	86.5	96.9	59.0	81.3
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	95.9	73.7	85.2	95.2	68.5	82.3	96.1	68.5	82.8	94.9	83.5	89.4	100.8	73.7	87.8	95.0	60.8	78.5
MF2018	WEIGHTED AVERAGE	95.7	66.4	83.8	90.8	63.3	79.6	91.4	63.0	79.8	93.8	67.0	82.9	95.4	68.5	84.5	91.8	60.9	79.2

DIVISION		OKLAHOMA												OREGON					
		POTEAU			SHAWNEE			TULSA			WOODWARD			BEND			EUGENE		
		749			748			740 - 741			738			977			974		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		86.5	86.5		77.0	77.0		87.7	87.7		77.0	77.0		94.6	94.6		94.6	94.6
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	76.2	81.9	80.1	98.9	86.5	90.5	96.3	84.0	87.9	98.9	86.8	90.7	127.8	94.0	104.9	115.4	94.0	100.9
0310	Concrete Forming & Accessories	86.6	52.2	58.9	80.1	52.3	57.7	101.7	55.1	64.1	86.3	57.1	62.8	109.9	99.4	101.4	104.6	99.7	100.6
0320	Concrete Reinforcing	97.9	66.1	87.7	96.8	61.1	85.3	97.0	66.2	87.1	88.7	66.1	81.4	90.7	111.7	97.5	94.1	111.7	99.8
0330	Cast-in-Place Concrete	74.4	70.1	72.9	85.8	69.3	80.1	82.0	70.9	78.2	80.9	71.4	77.6	133.2	98.4	121.2	129.0	98.5	118.4
03	CONCRETE	81.2	61.9	73.5	85.9	59.8	75.5	85.4	63.5	76.7	82.3	63.6	74.8	115.8	100.8	109.8	108.3	101.0	105.4
04	MASONRY	91.8	56.6	69.6	108.2	56.5	75.6	92.6	57.6	70.5	85.4	60.2	69.5	107.5	100.1	102.8	104.2	100.1	101.6
05	METALS	86.6	76.7	84.3	86.5	60.3	80.4	91.6	77.0	88.2	90.7	62.4	84.1	106.2	97.1	104.1	106.8	97.5	104.6
06	WOOD, PLASTICS & COMPOSITES	89.3	51.5	73.6	83.3	51.3	70.1	103.3	54.4	83.1	93.0	55.6	77.5	106.5	99.7	103.7	100.9	99.7	100.4
07	THERMAL & MOISTURE PROTECTION	98.6	61.8	82.4	98.5	59.7	81.5	98.9	63.7	83.5	103.4	63.2	85.8	113.1	99.8	107.2	112.1	102.4	107.8
08	OPENINGS	92.2	52.5	82.6	92.2	51.2	82.3	94.8	55.3	85.2	99.6	55.8	89.0	93.5	102.6	95.7	93.7	102.6	95.9
0920	Plaster & Gypsum Board	84.9	50.7	63.5	79.5	50.7	61.5	93.4	53.7	68.6	95.4	55.1	70.2	123.9	99.7	108.8	119.8	99.7	107.3
0950, 0980	Ceilings & Acoustic Treatment	85.5	50.7	62.9	85.5	50.7	62.9	98.6	53.7	69.5	93.6	55.1	68.6	91.3	99.7	96.8	91.3	99.7	96.8
0960	Flooring	96.0	48.1	81.4	93.8	53.3	81.4	100.3	60.8	88.2	89.1	67.1	82.4	98.8	103.8	100.3	97.7	103.8	99.5
0970, 0990	Wall Finishes & Painting/Coating	92.5	43.3	62.5	92.5	39.2	60.0	92.5	53.5	68.7	91.9	43.3	62.2	95.9	77.5	84.7	95.9	64.9	77.0
09	FINISHES	87.7	49.3	66.8	88.3	49.8	67.4	94.3	55.0	73.0	92.4	56.6	72.9	104.4	97.8	100.8	102.0	96.4	99.0
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	77.4	95.1	100.0	77.2	95.0	100.0	78.2	95.3	100.0	78.9	95.4	100.0	101.8	100.4	100.0	101.8	100.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.9	59.0	81.3	96.9	64.9	83.8	101.1	61.5	84.9	97.0	66.9	84.6	96.5	99.6	97.8	101.0	114.2	106.4
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	95.0	68.5	82.2	96.2	73.7	85.4	96.2	68.8	83.0	95.8	73.7	85.1	93.4	92.5	93.0	93.0	92.5	92.8
MF2018	WEIGHTED AVERAGE	90.8	62.9	79.5	92.8	63.5	80.9	94.9	65.0	82.7	93.4	66.3	82.3	103.2	98.1	101.1	102.5	101.2	101.9

For CCI updates and additional guidance please go to www.rsmeans.com/2022books

DIVISION		OREGON																	
		KLAMATH FALLS			MEDFORD			PENDLETON			PORTLAND			SALEM			VALE		
		976			975			978			970 - 972			973			979		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		94.6	94.6		94.6	94.6		92.2	92.2		94.6	94.6		99.4	99.4		92.2	92.2
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	133.1	94.0	106.5	125.3	94.0	104.0	122.2	87.8	98.8	118.1	94.0	101.8	109.3	101.5	104.0	106.1	87.7	93.6
0310	Concrete Forming & Accessories	99.3	99.1	99.1	97.7	99.2	98.9	103.1	99.3	100.0	106.5	99.6	101.0	104.6	99.7	100.7	112.9	98.0	100.9
0320	Concrete Reinforcing	90.7	111.6	97.4	92.2	111.7	98.5	91.1	111.8	97.7	95.0	111.9	100.4	101.1	111.9	104.6	88.9	111.6	96.1
0330	Cast-in-Place Concrete	133.2	93.3	119.4	133.2	98.3	121.1	134.1	93.7	120.2	132.5	98.5	120.8	121.9	100.6	114.5	105.4	93.9	101.5
03	CONCRETE	117.7	98.8	110.1	113.4	100.6	108.3	103.0	99.2	101.4	110.3	101.0	106.5	108.2	101.6	105.5	87.2	98.6	91.7
04	MASONRY	120.9	100.1	107.8	100.9	100.1	100.4	111.6	102.2	105.7	106.4	102.1	103.7	106.9	102.3	104.0	108.6	102.2	104.6
05	METALS	106.2	96.8	104.0	106.4	96.9	104.2	114.1	97.6	110.2	108.6	97.6	106.0	114.9	95.5	110.4	113.9	96.3	109.8
06	WOOD, PLASTICS & COMPOSITES	93.9	99.7	96.3	92.5	99.7	95.5	98.0	99.8	98.7	102.2	99.7	101.2	94.4	99.9	96.7	109.5	99.8	105.5
07	THERMAL & MOISTURE PROTECTION	113.2	95.5	105.4	112.7	95.1	105.0	104.3	92.8	99.3	112.1	100.3	106.9	107.2	102.4	105.1	103.7	89.1	97.3
08	OPENINGS	93.5	102.6	95.7	96.0	102.6	97.6	90.0	102.6	93.1	91.9	102.6	94.4	98.9	102.7	99.8	90.0	90.2	90.0
0920	Plaster & Gypsum Board	110.5	99.7	103.8	109.6	99.7	103.4	101.5	99.7	100.4	116.8	99.7	106.1	113.3	99.7	104.8	114.6	99.7	105.3
0950, 0980	Ceilings & Acoustic Treatment	100.2	99.7	99.9	104.0	99.7	101.3	67.8	99.7	88.5	93.6	99.7	97.6	110.5	99.7	103.5	67.8	99.7	88.5
0960	Flooring	96.7	103.8	98.8	96.3	103.8	98.6	64.7	103.8	76.6	95.4	103.8	97.9	97.5	103.8	99.4	66.2	103.8	77.7
0970, 0990	Wall Finishes & Painting/Coating	95.9	74.8	83.1	95.9	74.8	83.1	91.0	74.8	81.1	95.9	74.8	83.0	98.7	72.5	82.7	91.0	77.5	82.8
09	FINISHES	104.2	97.5	100.6	103.7	97.5	100.3	74.2	97.6	86.9	101.5	97.5	99.3	103.5	97.4	100.2	75.5	97.9	87.7
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	101.7	100.4	100.0	101.7	100.4	100.0	102.1	100.5	100.0	101.8	100.4	100.0	102.3	100.5	100.0	101.9	100.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.5	99.5	97.7	101.0	105.2	102.7	99.7	105.9	102.2	101.0	108.1	103.9	99.9	108.2	103.3	99.7	67.9	86.6
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	92.7	76.6	84.9	95.1	76.6	86.2	86.5	89.8	88.1	93.6	106.3	99.7	98.4	92.5	95.5	86.5	63.1	75.2
MF2018	WEIGHTED AVERAGE	103.9	95.4	100.4	103.6	96.9	100.9	100.1	98.4	99.4	103.1	102.2	102.7	104.7	100.8	103.1	97.6	85.7	92.8

DIVISION		PENNSYLVANIA																	
		ALLENTOWN			ALTOONA			BEDFORD			BRADFORD			BUTLER			CHAMBERSBURG		
		181			166			155			167			160			172		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		108.7	108.7		108.7	108.7		106.5	106.5		108.7	108.7		108.7	108.7		107.9	107.9
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	87.8	93.1	91.4	90.2	92.9	92.0	90.8	89.5	89.9	86.3	90.8	89.3	81.5	92.6	89.1	84.0	90.1	88.1
0310	Concrete Forming & Accessories	98.7	108.4	106.6	78.2	85.6	84.2	81.8	76.5	77.6	81.6	90.9	89.1	79.9	89.8	87.9	85.9	72.2	74.8
0320	Concrete Reinforcing	98.1	112.3	102.6	95.0	107.2	98.9	96.3	98.4	97.0	97.1	98.5	97.5	95.6	118.4	103.0	95.4	104.4	98.3
0330	Cast-in-Place Concrete	88.7	102.8	93.6	98.8	89.2	95.5	101.9	80.3	94.4	94.4	84.7	91.1	87.3	94.4	89.7	94.0	87.6	91.8
03	CONCRETE	92.2	108.1	98.6	88.3	92.0	89.8	98.2	83.1	92.1	93.4	91.2	92.5	81.4	97.6	87.9	96.1	84.9	91.6
04	MASONRY	96.4	98.4	97.7	100.7	89.2	93.5	113.3	74.9	89.1	98.6	76.6	84.7	102.8	89.5	94.4	99.5	73.9	83.4
05	METALS	94.2	122.0	100.7	88.8	116.8	95.4	90.9	110.1	95.4	92.0	110.1	96.2	88.6	121.3	96.2	93.9	115.3	98.9
06	WOOD, PLASTICS & COMPOSITES	96.8	109.8	102.2	73.0	84.1	77.6	79.8	77.0	78.7	78.7	95.5	85.6	74.6	88.7	80.5	80.2	71.3	76.5
07	THERMAL & MOISTURE PROTECTION	107.0	110.8	108.7	105.0	92.9	99.7	103.2	82.5	94.2	106.6	83.3	96.4	104.5	91.7	98.8	104.4	77.0	92.3
08	OPENINGS	89.3	107.9	93.8	83.5	88.2	84.6	90.1	82.4	88.3	89.4	91.5	89.9	83.5	97.0	86.7	86.1	76.6	83.8
0920	Plaster & Gypsum Board	106.5	110.3	108.9	90.1	83.8	86.2	100.6	76.7	85.6	91.4	95.5	94.0	90.1	88.6	89.1	101.5	70.7	82.2
0950, 0980	Ceilings & Acoustic Treatment	95.0	110.3	104.9	98.4	83.8	88.9	102.2	76.7	85.6	98.5	95.5	96.6	99.2	88.6	92.3	94.5	70.7	79.0
0960	Flooring	91.4	97.2	93.2	85.0	104.0	90.8	89.6	96.5	91.7	86.7	96.5	89.7	85.8	98.0	89.5	93.9	72.5	87.4
0970, 0990	Wall Finishes & Painting/Coating	88.5	108.1	100.5	84.9	109.1	99.7	86.7	98.0	93.6	88.5	98.0	94.3	84.9	98.5	93.2	90.1	93.4	92.1
09	FINISHES	94.6	106.4	101.0	91.3	90.8	91.0	99.0	81.8	89.7	91.7	93.1	92.4	91.2	91.7	91.4	93.1	73.8	82.6
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	103.2	100.7	100.0	97.9	99.5	100.0	94.3	98.8	100.0	97.1	99.4	100.0	99.0	99.8	100.0	92.0	98.3
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	101.1	117.0	107.6	100.5	87.7	95.2	92.6	78.3	86.7	96.8	84.0	91.5	96.2	90.0	93.7	94.7	83.1	89.9
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	100.0	98.1	99.1	91.6	110.1	100.5	101.4	110.1	105.6	96.0	110.1	102.8	91.9	99.8	95.7	93.4	79.6	86.7
MF2018	WEIGHTED AVERAGE	96.3	107.4	100.8	92.8	95.5	93.9	95.7	88.1	92.6	94.3	92.8	93.7	90.8	96.2	93.0	94.1	83.9	89.9

DIVISION		PENNSYLVANIA																	
		DOYLESTOWN			DUBOIS			ERIE			GREENSBURG			HARRISBURG			HAZLETON		
		189			158			164 - 165			156			170 - 171			182		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		88.2	88.2		106.5	106.5		108.7	108.7		106.5	106.5		112.1	112.1		108.7	108.7
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	100.3	81.1	87.3	94.6	89.8	91.4	87.5	93.0	91.2	87.3	91.4	90.1	85.9	99.9	95.4	81.1	91.7	88.3
0310	Concrete Forming & Accessories	77.2	119.2	111.1	81.2	78.9	79.3	97.3	87.8	89.6	91.1	84.6	85.9	102.3	90.9	93.1	74.2	83.5	81.7
0320	Concrete Reinforcing	94.6	140.4	109.3	95.6	111.1	100.6	97.1	110.5	101.4	95.6	118.1	102.8	99.2	112.2	103.3	95.2	105.2	98.4
0330	Cast-in-Place Concrete	83.8	121.2	96.7	98.2	90.8	95.7	97.2	91.0	95.0	94.5	93.9	94.3	92.7	101.5	95.8	83.8	89.3	85.7
03	CONCRETE	87.3	123.1	101.6	99.4	90.1	95.7	88.4	94.1	90.7	94.2	95.0	94.5	92.3	99.4	95.1	85.0	90.8	87.3
04	MASONRY	100.2	126.0	116.5	113.7	87.2	97.0	87.9	92.4	90.8	122.4	85.8	99.3	93.3	94.4	94.0	110.3	83.6	93.4
05	METALS	91.9	120.2	98.6	90.9	115.4	96.6	89.1	117.6	95.8	90.9	119.3	97.5	100.6	117.4	104.5	93.9	116.2	99.1
06	WOOD, PLASTICS & COMPOSITES	73.9	118.6	92.4	78.4	77.0	77.8	93.8	85.8	90.5	87.7	82.1	85.4	96.6	88.5	93.2	72.1	82.1	76.3
07	THERMAL & MOISTURE PROTECTION	103.8	122.0	111.8	103.6	89.0	97.2	105.4	91.1	99.1	103.2	89.6	97.2	109.2	107.7	108.5	105.9	93.3	100.4
08	OPENINGS	91.4	125.3	99.6	90.1	85.3	89.0	83.6	90.9	85.4	90.1	93.4	90.9	97.1	89.1	95.2	89.8	87.8	89.3
0920	Plaster & Gypsum Board	89.1	119.3	108.0	98.2	76.7	84.7	106.5	85.5	93.4	101.6	81.9	89.3	111.7	88.1	96.9	89.4	81.8	84.6
0950, 0980	Ceilings & Acoustic Treatment	94.4	119.3	110.6	102.2	76.7	85.6	95.0	85.5	88.8	102.2	81.9	89.0	101.7	88.1	92.9	95.7	81.8	86.7
0960	Flooring	76.7	129.6	92.9	89.4	96.5	91.6	89.4	104.0	93.9	92.6	72.5	86.5	101.7	96.0	100.0	84.4	83.1	84.0
0970, 0990	Wall Finishes & Painting/Coating	88.5	133.3	115.8	86.7	98.5	93.9	93.6	94.3	94.0	86.7	98.5	93.9	98.7	90.5	93.7	88.5	96.6	93.4
09	FINISHES	85.3	122.3	105.4	98.9	83.2	90.4	94.9	90.9	92.7	99.6	83.2	90.7	101.0	91.2	95.7	89.6	84.5	86.9
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	113.9	103.0	100.0	96.1	99.2	100.0	99.0	99.8	100.0	98.1	99.6	100.0	98.5	99.7	100.0	97.8	99.5
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.2	122.8	107.2	92.6	81.2	87.9	100.5	94.7	98.1	92.6	82.4	88.4	96.3	97.6	96.8	96.8	88.5	93.4
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	94.9	122.7	108.3	101.8	110.1	105.8	92.8	90.2	91.6	101.8	110.1	105.8	99.4	91.4	95.6	96.5	83.4	90.2
MF2018	WEIGHTED AVERAGE	93.2	119.4	103.9	96.0	91.9	94.3	93.0	95.0	93.8	95.6	93.6	94.8	97.6	97.6	97.6	93.7	90.1	92.3

DIVISION		PENNSYLVANIA																	
		INDIANA			JOHNSTOWN			KITTANNING			LANCASTER			LEHIGH VALLEY			MONTROSE		
		157			159			162			175 - 176			180			188		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		106.5	106.5		106.5	106.5		108.7	108.7		107.9	107.9		108.7	108.7		108.7	108.7
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	85.7	90.4	88.3	91.2	91.7	91.5	83.8	92.5	89.7	76.7	92.4	87.4	84.7	92.1	89.8	83.5	91.9	89.2
0310	Concrete Forming & Accessories	82.7	87.7	86.7	81.1	85.3	84.5	79.9	84.7	83.8	88.5	89.1	89.0	90.0	103.7	101.0	75.5	84.0	82.4
0320	Concrete Reinforcing	94.9	118.5	102.5	96.3	118.4	103.4	95.6	118.3	102.9	95.1	110.0	99.9	95.2	100.5	96.9	99.7	108.2	102.4
0330	Cast-in-Place Concrete	92.7	91.2	92.1	102.8	88.5	97.9	90.7	91.5	91.0	80.0	95.7	85.4	90.7	92.7	91.4	88.9	86.9	88.2
03	CONCRETE	91.8	95.4	93.2	98.9	93.4	96.7	83.6	94.2	87.9	85.8	96.5	90.1	91.0	100.3	94.7	89.9	90.7	90.2
04	MASONRY	109.1	87.3	95.4	110.2	86.9	95.5	105.1	82.9	91.1	104.6	88.6	94.5	96.4	90.1	92.5	96.4	85.5	89.5
05	METALS	91.0	119.2	97.6	90.9	119.3	97.6	88.7	120.1	96.0	93.9	120.9	100.2	93.9	115.5	98.9	92.1	116.9	97.9
06	WOOD, PLASTICS & COMPOSITES	80.7	88.6	84.0	78.4	84.0	80.7	74.6	84.3	78.6	83.9	88.2	85.7	86.3	106.2	94.5	73.0	82.1	76.8
07	THERMAL & MOISTURE PROTECTION	103.0	90.3	97.4	103.2	89.6	97.3	104.6	88.6	97.6	103.7	103.0	103.4	106.6	103.7	105.3	106.0	84.3	96.5
08	OPENINGS	90.1	93.4	90.9	90.1	90.8	90.3	83.5	94.5	86.1	86.1	88.6	86.7	89.8	100.3	92.3	87.0	86.4	86.9
0920	Plaster & Gypsum Board	101.1	88.6	93.3	98.2	83.8	89.2	90.1	84.0	86.3	107.0	88.1	95.2	93.0	106.5	101.4	90.0	81.8	84.8
0950, 0980	Ceilings & Acoustic Treatment	102.2	88.6	93.3	102.2	83.8	90.3	99.2	84.0	89.3	94.5	88.1	90.3	95.7	106.5	102.7	98.5	81.8	87.6
0960	Flooring	90.0	96.5	92.0	89.4	101.1	93.0	85.8	96.5	89.1	94.8	94.0	94.6	89.0	87.6	88.5	85.0	96.5	88.5
0970, 0990	Wall Finishes & Painting/Coating	86.7	98.5	93.9	86.7	109.1	100.4	84.9	98.5	93.2	90.1	87.2	88.3	88.5	93.7	91.7	88.5	96.6	93.4
09	FINISHES	98.5	90.2	94.0	98.5	90.0	93.9	91.3	87.5	89.2	93.6	89.2	91.2	91.8	99.8	96.1	90.7	86.9	88.6
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	97.3	99.4	100.0	97.5	99.5	100.0	97.1	99.4	100.0	96.6	99.3	100.0	101.9	100.4	100.0	98.4	99.7
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	92.6	79.3	87.2	92.6	87.4	90.5	96.2	84.2	91.3	94.7	95.4	95.0	96.8	108.9	101.8	96.8	87.8	93.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	101.8	110.1	105.8	101.8	110.1	105.8	91.6	110.1	100.5	94.3	92.8	93.6	96.5	119.9	107.8	96.0	88.2	92.3
MF2018	WEIGHTED AVERAGE	94.6	94.0	94.3	95.7	95.4	95.6	91.3	94.3	92.5	92.9	95.6	94.0	94.4	104.8	98.6	93.3	90.9	92.4

DIVISION		PENNSYLVANIA																	
		NEW CASTLE			NORRISTOWN			OIL CITY			PHILADELPHIA			PITTSBURGH			POTTSVILLE		
		161			194			163			190 - 191			150 - 152			179		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		108.7	108.7		93.7	93.7		108.7	108.7		101.1	101.1		97.3	97.3		107.9	107.9
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	82.0	93.1	89.5	102.4	89.8	93.8	80.6	91.0	87.7	106.1	103.8	104.6	91.8	94.9	93.9	79.3	90.6	87.0
0310	Concrete Forming & Accessories	79.9	93.7	91.0	79.1	117.8	110.3	79.9	87.3	85.9	103.1	140.2	133.0	107.4	99.1	100.7	77.1	82.4	81.4
0320	Concrete Reinforcing	94.6	99.0	96.0	97.2	140.4	111.0	95.6	88.3	93.3	101.5	150.1	117.1	101.0	123.0	108.1	94.3	106.2	98.2
0330	Cast-in-Place Concrete	88.1	94.3	90.2	94.2	119.0	102.8	85.6	88.2	86.5	105.7	135.1	115.9	101.4	99.1	100.6	85.2	90.0	86.9
03	CONCRETE	81.6	96.0	87.4	91.6	121.7	103.7	80.3	89.3	83.9	103.8	139.0	117.9	100.5	103.1	101.6	88.4	90.7	89.4
04	MASONRY	103.4	92.3	96.4	110.0	122.5	117.9	101.1	82.9	89.6	96.9	135.9	121.5	96.3	99.9	98.5	98.0	81.8	87.8
05	METALS	88.7	114.3	94.7	93.1	120.2	99.4	88.7	111.9	94.1	99.7	123.9	105.4	99.0	107.3	101.0	94.2	116.9	99.5
06	WOOD, PLASTICS & COMPOSITES	74.6	94.1	82.7	73.7	118.6	92.3	74.6	88.7	80.5	102.2	141.3	118.4	107.7	99.5	104.3	72.1	80.3	75.5
07	THERMAL & MOISTURE PROTECTION	104.5	91.1	98.6	106.5	120.5	112.6	104.3	85.4	96.1	104.6	137.8	119.2	106.2	98.9	103.0	103.7	92.3	98.7
08	OPENINGS	83.5	95.2	86.3	83.7	125.3	93.7	83.5	90.6	85.2	98.9	142.7	109.5	97.9	104.7	99.5	86.1	87.5	86.5
0920	Plaster & Gypsum Board	90.1	94.1	92.6	95.6	119.3	110.4	90.1	88.6	89.1	116.5	142.4	132.7	110.1	99.4	103.4	96.6	79.9	86.2
0950, 0980	Ceilings & Acoustic Treatment	99.2	94.1	95.9	99.5	119.3	112.4	99.2	88.6	92.3	107.1	142.4	130.0	96.3	99.4	98.3	94.5	79.9	85.0
0960	Flooring	85.8	100.8	90.4	89.3	129.6	101.6	85.8	96.5	89.1	101.0	148.3	115.5	96.0	105.7	98.9	91.1	96.5	92.7
0970, 0990	Wall Finishes & Painting/Coating	84.9	106.4	98.0	88.8	133.3	115.9	84.9	98.5	93.2	98.7	168.6	141.3	93.3	109.1	102.9	90.1	96.6	94.1
09	FINISHES	91.2	96.3	94.0	91.8	121.4	107.8	91.1	90.1	90.5	104.5	145.0	126.5	101.1	101.0	101.1	91.2	85.5	88.1
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	99.5	99.9	100.0	112.6	102.7	100.0	97.5	99.5	100.0	119.2	104.2	100.0	101.1	100.2	100.0	97.6	99.5
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.2	93.5	95.1	95.1	121.0	105.7	96.2	87.3	92.6	96.3	141.3	114.8	96.4	96.5	96.4	94.7	88.7	92.2
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	91.9	97.0	94.4	95.5	131.6	112.9	93.3	99.8	96.4	97.7	155.1	125.4	102.2	112.1	107.0	93.2	84.6	89.0
MF2018	WEIGHTED AVERAGE	90.9	96.6	93.2	94.2	120.2	104.8	90.7	92.2	91.3	99.9	137.6	115.2	99.1	102.0	100.3	92.6	90.2	91.6

DIVISION		PENNSYLVANIA																	
		READING			SCRANTON			STATE COLLEGE			STROUDSBURG			SUNBURY			UNIONTOWN		
		195 - 196			184 - 185			168			183			178			154		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		114.6	114.6		108.7	108.7		107.9	107.9		108.7	108.7		108.7	108.7		106.5	106.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	107.8	102.7	104.3	88.4	92.8	91.4	78.7	91.7	87.5	82.7	92.0	89.0	90.5	91.4	91.1	86.1	91.3	89.6
0310	Concrete Forming & Accessories	100.8	88.7	91.1	98.9	89.7	91.5	82.9	85.9	85.3	82.5	85.1	84.6	88.9	79.7	81.5	73.0	89.7	86.5
0320	Concrete Reinforcing	98.4	112.2	102.9	98.1	112.1	102.6	96.3	107.4	99.9	98.4	108.3	101.6	97.0	104.5	99.4	95.6	118.5	103.0
0330	Cast-in-Place Concrete	84.4	96.2	88.5	92.6	92.8	92.7	89.3	88.3	89.0	87.3	88.3	87.6	93.2	88.6	91.6	92.7	93.8	93.1
03	CONCRETE	90.8	96.8	93.2	94.0	96.0	94.8	93.3	91.8	92.7	88.8	91.7	90.0	92.4	88.7	90.9	91.2	97.3	93.6
04	MASONRY	98.2	91.6	94.1	96.9	93.5	94.7	102.6	90.5	95.0	94.6	89.9	91.6	99.5	75.6	84.5	126.8	91.7	104.7
05	METALS	93.4	121.8	100.1	96.1	120.6	101.8	91.8	117.2	97.8	93.9	117.3	99.4	93.9	115.8	99.0	90.7	119.8	97.5
06	WOOD, PLASTICS & COMPOSITES	95.2	86.1	91.4	96.8	88.1	93.2	80.8	84.1	82.2	79.7	82.1	80.7	81.1	80.3	80.8	70.6	88.6	78.0
07	THERMAL & MOISTURE PROTECTION	107.7	104.5	106.3	106.8	91.7	100.2	105.9	102.7	104.5	106.3	84.6	96.8	104.8	85.9	96.5	102.7	92.3	98.1
08	OPENINGS	87.8	94.8	89.5	89.3	92.4	90.1	86.8	88.2	87.2	89.8	89.0	89.6	86.2	84.6	85.8	90.1	95.1	91.3
0920	Plaster & Gypsum Board	110.6	85.9	95.1	108.7	87.9	95.7	92.9	83.8	87.2	91.0	81.8	85.2	95.8	79.9	85.9	93.8	88.6	90.5
0950, 0980	Ceilings & Acoustic Treatment	89.1	85.9	87.0	105.3	87.9	94.0	95.1	83.8	87.8	94.4	81.8	86.2	90.3	79.9	83.6	102.2	88.6	93.3
0960	Flooring	92.6	94.0	93.0	91.4	96.5	93.0	89.6	94.0	90.9	87.2	87.5	87.3	91.7	96.5	93.2	86.9	102.4	91.6
0970, 0990	Wall Finishes & Painting/Coating	87.6	108.1	100.1	88.5	108.1	100.5	88.5	109.1	101.1	88.5	96.6	93.4	90.1	96.6	94.1	86.7	106.4	98.8
09	FINISHES	93.2	90.7	91.8	97.2	92.3	94.5	91.0	89.1	89.9	90.5	86.0	88.1	91.6	84.0	87.5	96.7	93.0	94.7
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	98.7	99.7	100.0	99.5	99.9	100.0	96.2	99.2	100.0	99.4	99.9	100.0	93.6	98.6	100.0	98.8	99.7
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	101.0	114.6	106.5	101.1	96.0	99.0	96.8	95.3	96.2	96.8	90.7	94.3	94.7	80.9	89.0	92.6	86.5	90.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	100.7	95.2	98.0	100.0	93.5	96.8	95.1	110.1	102.4	96.5	131.4	113.3	93.8	85.2	89.6	99.8	110.1	104.8
MF2018	WEIGHTED AVERAGE	96.3	101.8	98.6	97.1	96.6	96.9	93.9	97.1	95.2	93.8	98.4	95.7	93.7	87.1	91.0	94.7	96.9	95.6

DIVISION		PENNSYLVANIA																	
		WASHINGTON			WELLSBORO			WESTCHESTER			WILKES-BARRE			WILLIAMSPORT			YORK		
		153			169			193			186 - 187			177			173 - 174		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		106.5	106.5		108.7	108.7		93.7	93.7		108.7	108.7		108.7	108.7		107.9	107.9
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	86.2	92.1	90.2	89.3	91.3	90.7	109.3	90.7	96.6	80.8	92.5	88.7	82.2	92.4	89.1	81.6	92.4	89.0
0310	Concrete Forming & Accessories	83.0	95.8	93.3	80.6	79.1	79.4	88.1	119.0	113.0	86.4	87.8	87.5	84.4	84.9	84.8	81.6	87.6	86.4
0320	Concrete Reinforcing	95.6	118.7	103.0	96.3	108.1	100.1	96.3	140.4	110.5	97.1	109.9	101.2	96.2	110.0	100.7	97.0	112.0	101.8
0330	Cast-in-Place Concrete	92.7	94.4	93.3	93.6	82.4	89.7	104.4	120.9	110.1	83.8	90.9	86.2	78.8	89.3	82.4	85.6	95.7	89.1
03	CONCRETE	91.9	100.3	95.3	95.2	86.8	91.8	99.1	123.0	108.6	86.3	94.1	89.4	81.7	92.3	86.0	89.8	96.1	92.3
04	MASONRY	106.8	94.2	98.8	101.9	76.0	85.6	105.0	126.0	118.2	110.6	91.7	98.7	90.6	89.6	90.0	100.7	88.6	93.1
05	METALS	90.7	121.0	97.8	91.9	116.1	97.6	93.1	120.2	99.4	92.1	119.3	98.4	93.9	119.6	99.9	95.1	120.9	101.1
06	WOOD, PLASTICS & COMPOSITES	80.8	96.4	87.3	78.0	79.6	78.7	81.6	118.6	96.9	82.5	86.4	84.1	77.3	84.1	80.1	75.8	86.1	80.1
07	THERMAL & MOISTURE PROTECTION	103.0	94.5	99.3	106.9	79.6	95.0	107.1	117.7	111.8	106.1	90.1	99.1	104.0	88.7	97.3	103.9	103.5	103.7
08	OPENINGS	90.0	101.2	92.7	89.4	84.7	88.3	83.7	125.3	93.7	87.0	90.5	87.8	86.2	89.3	87.0	86.1	87.8	86.5
0920	Plaster & Gypsum Board	101.1	96.6	98.3	90.7	79.2	83.5	96.6	119.3	110.8	91.9	86.1	88.3	96.6	83.8	88.6	96.6	85.9	89.9
0950, 0980	Ceilings & Acoustic Treatment	102.2	96.6	98.5	95.1	79.2	84.8	99.5	119.3	112.4	98.5	86.1	90.5	94.5	83.8	87.6	93.7	85.9	88.6
0960	Flooring	90.1	102.4	93.9	86.4	96.5	89.5	91.7	129.6	103.3	87.9	94.5	89.9	90.7	92.1	91.1	92.4	94.0	92.9
0970, 0990	Wall Finishes & Painting/Coating	86.7	106.4	98.8	88.5	96.6	93.4	88.8	133.3	115.9	88.5	105.4	98.8	90.1	105.4	99.4	90.1	90.5	90.3
09	FINISHES	98.8	97.9	98.3	91.1	84.0	87.2	93.1	122.2	108.9	91.6	90.3	90.9	91.6	87.8	89.6	91.4	88.3	89.7
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	99.7	99.9	100.0	93.5	98.6	100.0	113.7	103.0	100.0	98.9	99.8	100.0	95.6	99.1	100.0	96.3	99.2
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	92.6	89.9	91.5	96.8	80.9	90.3	95.1	122.8	106.5	96.8	94.6	95.9	94.7	90.9	93.1	100.9	95.4	98.7
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	101.4	110.1	105.6	96.0	88.2	92.3	95.5	122.7	108.6	96.5	88.6	92.7	94.1	82.0	88.2	95.1	82.4	89.0
MF2018	WEIGHTED AVERAGE	94.4	99.6	96.5	94.7	87.1	91.6	95.4	120.0	105.4	93.6	94.6	94.0	91.6	91.9	91.8	94.8	93.9	94.4

DIVISION		PUERTO RICO			RHODE ISLAND						SOUTH CAROLINA								
		SAN JUAN			NEWPORT			PROVIDENCE			AIKEN			BEAUFORT			CHARLESTON		
		009			028			029			298			299			294		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		88.8	88.8		95.0	95.0		100.5	100.5		100.5	100.5		100.5	100.5		100.5	100.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	123.1	87.2	98.7	82.5	93.5	89.9	86.5	103.5	98.1	144.9	81.9	102.1	139.3	81.9	100.3	121.8	82.0	94.8
0310	Concrete Forming & Accessories	72.8	20.9	31.0	97.9	118.1	114.2	101.6	118.3	115.0	94.7	61.1	67.6	93.0	62.5	68.4	91.8	61.4	67.3
0320	Concrete Reinforcing	118.5	17.9	86.2	99.4	118.8	105.6	99.6	118.8	105.8	98.9	56.2	85.2	98.0	61.9	86.4	97.8	62.7	86.5
0330	Cast-in-Place Concrete	81.0	32.0	64.1	56.3	113.7	76.1	77.2	115.1	90.3	97.6	65.2	86.4	97.6	65.3	86.4	114.6	65.5	97.6
03	CONCRETE	85.0	25.4	61.1	78.6	116.5	93.7	90.5	116.9	101.0	101.8	63.4	86.4	99.6	65.0	85.8	98.8	64.8	85.2
04	MASONRY	96.0	22.9	49.9	98.3	122.7	113.7	104.4	122.8	116.0	87.6	55.9	67.6	103.4	55.9	73.5	105.4	63.9	79.2
05	METALS	92.1	40.8	80.1	94.5	115.1	99.3	98.4	112.8	101.7	94.5	86.6	92.6	94.5	88.7	93.1	96.5	90.1	95.0
06	WOOD, PLASTICS & COMPOSITES	62.1	20.0	44.7	95.7	116.9	104.5	99.0	117.1	106.5	92.5	63.0	80.3	91.1	64.8	80.2	89.4	63.0	78.5
07	THERMAL & MOISTURE PROTECTION	140.4	26.7	90.5	101.9	114.8	107.5	111.4	116.2	113.5	102.2	58.7	83.1	101.7	59.5	83.2	100.5	61.9	83.6
08	OPENINGS	151.5	18.5	119.4	93.5	118.9	99.6	95.3	119.0	101.0	91.0	58.8	83.2	91.0	61.0	83.8	94.2	61.3	86.3
0920	Plaster & Gypsum Board	136.7	17.9	62.4	103.0	117.3	112.0	114.3	117.3	116.2	102.8	62.1	77.3	110.6	63.9	81.4	109.8	62.1	80.0
0950, 0980	Ceilings & Acoustic Treatment	285.1	17.9	111.7	89.8	117.3	107.7	101.0	117.3	111.6	86.2	62.1	70.6	93.8	63.9	74.4	93.8	62.1	73.2
0960	Flooring	220.6	27.6	161.6	88.2	131.2	101.3	88.2	131.2	101.4	105.7	83.5	98.9	107.2	70.5	96.0	106.9	78.0	98.0
0970, 0990	Wall Finishes & Painting/Coating	187.5	21.5	86.2	89.9	119.7	108.1	98.7	119.7	111.5	97.8	61.3	75.5	97.8	52.8	70.3	97.8	66.2	78.5
09	FINISHES	211.4	22.1	108.6	92.1	121.2	107.9	98.1	121.3	110.7	101.5	65.3	81.8	104.3	63.1	81.9	101.4	65.1	81.7
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	98.6	24.9	82.6	100.0	106.7	101.5	100.0	107.0	101.5	100.0	82.9	96.3	100.0	77.5	95.1	100.0	82.9	96.3
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	122.4	17.7	79.5	100.6	108.4	103.8	101.1	108.4	104.1	97.1	51.3	78.3	97.1	56.6	80.5	101.3	56.6	83.0
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	122.5	23.2	74.7	101.3	98.7	100.0	100.5	98.7	99.6	93.4	57.3	76.0	95.6	61.5	79.2	94.7	54.6	75.4
MF2018	WEIGHTED AVERAGE	117.0	28.6	81.0	94.5	111.3	101.3	98.2	112.0	103.8	97.7	63.2	83.7	98.3	65.1	84.8	99.1	65.5	85.4

DIVISION		SOUTH CAROLINA															SOUTH DAKOTA		
		COLUMBIA			FLORENCE			GREENVILLE			ROCK HILL			SPARTANBURG			ABERDEEN		
		290 - 292			295			296			297			293			574		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		106.1	106.1		100.5	100.5		100.5	100.5		100.5	100.5		100.5	100.5		94.5	94.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	121.0	95.2	103.5	132.8	81.8	98.2	127.2	82.1	96.5	123.7	81.8	95.3	127.0	82.1	96.5	88.5	89.1	88.9
0310	Concrete Forming & Accessories	97.6	58.5	66.1	75.6	58.5	61.8	91.5	58.7	65.0	88.9	60.8	66.2	95.3	58.7	65.8	95.4	66.3	71.9
0320	Concrete Reinforcing	100.6	62.7	88.5	97.4	62.7	86.2	97.3	60.1	85.3	98.1	61.0	86.2	97.3	62.7	86.2	98.5	69.0	89.1
0330	Cast-in-Place Concrete	116.0	66.2	98.8	97.5	65.3	86.4	97.5	65.5	86.5	97.5	64.8	86.2	97.5	65.5	86.5	125.1	74.2	107.5
03	CONCRETE	99.0	63.5	84.8	95.0	63.3	82.3	94.7	63.1	82.0	93.3	63.9	81.5	95.0	63.5	82.4	106.7	70.5	92.2
04	MASONRY	98.1	64.0	76.6	87.7	63.8	72.6	85.3	63.9	71.8	110.6	55.2	75.7	87.7	63.9	72.7	117.9	73.2	89.7
05	METALS	94.1	86.4	92.3	95.1	89.3	93.7	95.1	89.7	93.8	94.5	88.2	93.0	95.1	90.2	93.9	87.4	82.7	86.3
06	WOOD, PLASTICS & COMPOSITES	94.2	59.1	79.7	72.8	59.2	67.1	88.7	59.2	76.5	86.8	63.0	77.0	93.5	59.2	79.3	95.3	61.2	81.2
07	THERMAL & MOISTURE PROTECTION	96.9	62.8	82.0	100.8	61.5	83.6	100.9	61.5	83.6	100.7	54.0	80.2	101.0	61.5	83.7	98.8	72.8	87.4
08	OPENINGS	96.3	59.1	87.3	91.0	59.1	83.3	91.0	58.9	83.2	91.0	59.9	83.5	91.0	59.1	83.3	93.8	72.4	88.6
0920	Plaster & Gypsum Board	109.5	58.1	77.4	91.2	58.1	70.5	100.1	58.1	73.9	99.2	62.1	76.0	104.2	58.1	75.4	107.2	60.7	78.1
0950, 0980	Ceilings & Acoustic Treatment	93.5	58.1	70.5	87.6	58.1	68.5	86.2	58.1	68.0	86.2	62.1	70.6	86.2	58.1	68.0	94.8	60.7	72.7
0960	Flooring	99.8	78.0	93.2	98.7	78.0	92.4	104.6	78.0	96.5	103.6	70.5	93.5	105.9	78.0	97.4	95.9	65.6	86.6
0970, 0990	Wall Finishes & Painting/Coating	100.1	66.2	79.4	97.8	66.2	78.5	97.8	66.2	78.5	97.8	61.3	75.5	97.8	66.2	78.5	86.4	76.1	80.1
09	FINISHES	101.1	62.8	80 3	96.5	62.8	78.2	98.7	62.8	79.2	97.9	62.8	78.9	99.7	62.8	79.7	93.5	67.4	79 3
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	82.4	96.2	100.0	82.5	96.2	100.0	82.6	96.2	100.0	82.7	96.2	100.0	82.6	96.2	100.0	83.5	96.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.8	55.0	82.0	101.3	55.0	82.3	101.3	54.0	81.9	97.1	50.9	78.2	101.3	54.0	81.9	100.8	79.5	92.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	98.9	58.2	79.3	93.4	58.2	76.4	94.7	80.4	87.8	94.7	80.4	87.8	94.7	80.4	87.8	95.7	62.3	79.6
MF2018	WEIGHTED AVERAGE	98.8	65.7	85.3	96.8	64.9	83 8	97.1	67.9	85.2	96.7	66.2	84 3	97.3	68.0	85.4	97.4	74.1	88.0

DIVISION		SOUTH DAKOTA																	
		MITCHELL			MOBRIDGE			PIERRE			RAPID CITY			SIOUX FALLS			WATERTOWN		
		573			576			575			577			570 - 571			572		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		94.5	94.5		94.5	94.5		101.2	101.2		94.5	94.5		101.1	101.1		94.5	94.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	85.0	88.4	87.3	84.9	88.4	87.3	88.2	98.7	95.4	87.0	88.6	88.1	82.4	99.5	94.0	84.8	88.4	87.2
0310	Concrete Forming & Accessories	94.1	42.5	52.5	81.3	42.9	50.3	96.3	82.7	85.3	105.3	54.5	64.3	96.2	83.0	85.5	76.6	70.5	71.7
0320	Concrete Reinforcing	98.0	65.9	87.7	100.6	65.8	89.4	100.7	94.0	98.5	92.1	93.6	92.6	100.9	97.6	99.9	95.3	65.7	85.8
0330	Cast-in-Place Concrete	121.6	49.2	96.6	121.6	72.6	104.7	126.9	77.0	109.7	120.6	73.4	104.3	99.9	81.4	93.6	121.6	72.3	104.6
03	CONCRETE	104.4	50.5	82.8	104.1	58.8	85.9	110.5	82.8	99.4	103.5	69.0	89.7	98.6	85.2	93.3	102.6	71.2	90.0
04	MASONRY	104.6	72.3	84.3	112.2	68.0	84.3	104.7	77.1	87.3	111.6	70.9	85.9	106.8	77.2	88.1	138.4	68.8	94.6
05	METALS	86.7	80.4	85.2	86.7	80.7	85.3	90.0	87.5	89.4	89.3	89.2	89.3	90.5	91.4	90.7	86.7	80.1	85.2
06	WOOD, PLASTICS & COMPOSITES	94.1	31.8	68.3	80.3	31.5	60.1	99.7	82.3	92.5	100.7	45.2	77.7	93.9	82.1	89.0	75.5	70.0	73.2
07	THERMAL & MOISTURE PROTECTION	98.6	68.0	85.2	98.5	69.6	85.8	99.8	80.8	91.5	99.4	74.9	88.6	99.9	84.1	93.0	98.2	71.0	86.3
08	OPENINGS	93.0	55.5	83.9	95.4	55.4	85.7	96.5	89.3	94.7	97.2	68.9	90.4	100.2	89.9	97.7	93.0	57.9	84.5
0920	Plaster & Gypsum Board	106.0	30.4	58.7	95.5	30.2	54.7	100.7	82.0	89.0	106.6	44.3	67.6	100.7	81.8	88.9	92.7	69.7	78.3
0950, 0980	Ceilings & Acoustic Treatment	91.4	30.4	51.8	94.8	30.2	52.8	104.4	82.0	89.8	96.9	44.3	62.7	99.0	81.8	87.8	91.4	69.7	77.3
0960	Flooring	95.6	73.0	88.7	91.6	43.2	76.8	105.5	70.2	94.7	95.2	67.5	86.8	101.0	75.2	93.1	90.3	40.8	75.2
0970, 0990	Wall Finishes & Painting/Coating	86.4	76.1	80.1	86.4	76.1	80.1	98.7	115.9	109.2	86.4	115.9	104.4	98.7	115.9	109.2	86.4	76.1	80.1
09	FINISHES	92.3	49.7	69.2	90.3	45.6	66.0	100.9	85.3	92.4	93.6	62.7	76.8	98.3	85.0	91.1	88.7	67.7	77.3
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	75.5	94.7	100.0	75.4	94.6	100.0	88.9	97.6	100.0	83.5	96.4	100.0	88.9	97.6	100.0	78.9	95.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.6	45.5	75.6	96.6	64.0	83.2	100.7	73.1	89.4	100.8	72.2	89.1	100.7	70.3	88.3	96.6	48.3	76.8
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	94.6	58.8	77.3	95.7	36.9	67.3	101.1	44.2	73.7	93.6	44.2	69.8	101.1	64.2	83.3	94.1	58.8	77.1
MF2018	WEIGHTED AVERAGE	95.2	59.6	80.7	95.4	60.7	81.3	99.3	77.1	90.3	97.2	69.2	85.8	97.8	80.1	90.6	95.7	65.7	83.5

DIVISION		TENNESSEE																	
		CHATTANOOGA			COLUMBIA			COOKEVILLE			JACKSON			JOHNSON CITY			KNOXVILLE		
		373 - 374			384			385			383			376			377 - 379		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		101.9	101.9		97.0	97.0		97.0	97.0		102.8	102.8		96.2	96.2		96.2	96.2
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	103.8	90.1	94.5	101.1	81.0	87.4	108.4	80.1	89.2	112.9	90.9	98.0	109.5	80.0	89.5	90.5	80.8	83.9
0310	Concrete Forming & Accessories	100.3	60.6	68.3	76.3	58.9	62.3	76.5	30.9	39.7	85.8	68.8	72.1	81.0	58.5	62.8	98.4	64.3	70.9
0320	Concrete Reinforcing	93.6	66.8	85.0	87.1	60.5	78.6	87.1	60.3	78.5	87.1	67.7	80.9	93.9	62.9	83.9	93.6	67.9	85.3
0330	Cast-in-Place Concrete	94.9	62.2	83.6	94.4	61.7	83.1	107.1	55.0	89.1	104.5	64.6	90.7	76.3	56.6	69.5	89.2	64.6	80.7
03	CONCRETE	93.3	63.9	81.6	92.6	61.9	80.3	101.6	46.9	79.7	94.4	68.6	84.1	99.3	60.4	83.7	91.0	66.6	81.2
04	MASONRY	97.4	55.4	70.9	118.0	51.8	76.3	113.7	36.8	65.3	118.5	56.9	79.6	114.2	42.8	69.2	77.6	56.4	64.2
05	METALS	95.0	89.8	93.8	92.8	87.0	91.4	92.9	86.2	91.4	95.8	90.0	94.4	91.3	87.9	90.5	95.1	90.0	93.9
06	WOOD, PLASTICS & COMPOSITES	104.6	61.3	86.7	66.4	59.8	63.7	66.6	27.8	50.6	80.7	70.4	76.4	75.8	63.8	70.8	93.8	65.1	81.9
07	THERMAL & MOISTURE PROTECTION	100.4	60.6	82.9	95.9	58.5	79.5	96.4	49.0	75.6	97.8	63.3	82.7	95.8	55.5	78.1	93.7	63.4	80.4
08	OPENINGS	98.1	59.9	88.9	87.6	50.2	78.6	87.6	33.4	74.5	93.8	63.8	86.6	94.7	60.7	86.5	92.1	58.2	83.9
0920	Plaster & Gypsum Board	94.5	60.8	73.5	89.6	59.3	70.7	89.6	26.4	50.1	95.7	70.2	79.7	96.7	63.4	75.9	111.7	64.8	82.4
0950, 0980	Ceilings & Acoustic Treatment	97.7	60.8	73.8	80.5	59.3	66.8	80.5	26.4	45.4	87.3	70.2	76.2	94.0	63.4	74.2	95.3	64.8	75.5
0960	Flooring	95.3	59.9	84.5	85.3	50.2	74.5	85.3	46.5	73.5	82.7	54.7	74.2	93.6	54.7	81.7	97.7	57.0	85.2
0970, 0990	Wall Finishes & Painting/Coating	96.3	55.3	71.3	86.0	52.4	65.5	86.0	52.4	65.5	89.0	59.0	70.7	92.6	55.3	69.9	92.6	55.3	69.9
09	FINISHES	95.1	59.5	75.8	91.2	56.4	72.3	91.8	33.9	60.4	91.3	65.4	77.2	97.5	57.5	75.8	92.1	61.8	75.7
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	80.9	95.9	100.0	80.6	95.8	100.0	73.4	94.2	100.0	83.3	96.4	100.0	77.8	95.2	100.0	82.1	96.1
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.9	55.2	82.1	97.8	68.3	85.7	97.8	62.2	83.2	100.8	64.6	85.9	100.7	51.6	80.6	100.7	61.8	84.7
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	102.1	76.8	89.9	94.7	46.9	71.6	95.7	56.8	77.0	102.1	60.9	82.2	92.4	48.7	71.3	96.0	57.4	77.4
MF2018	WEIGHTED AVERAGE	98.0	67.1	85.4	95.0	63.1	82.0	96.5	55.1	79.6	98.4	68.8	86.4	97.3	59.1	81.7	94.8	65.9	83.0

DIVISION		TENNESSEE									TEXAS								
		MCKENZIE			MEMPHIS			NASHVILLE			ABILENE			AMARILLO			AUSTIN		
		382			375,380 - 381			370 - 372			795 - 796			790 - 791			786 - 787		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		97.0	97.0		97.3	97.3		105.0	105.0		87.7	87.7		95.2	95.2		95.3	95.3
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	107.7	80.3	89.1	89.5	89.9	89.8	101.0	98.5	99.3	95.6	83.9	87.7	95.7	94.7	95.1	90.0	94.0	92.7
0310	Concrete Forming & Accessories	87.3	33.0	43.5	99.6	66.8	73.1	101.8	71.8	77.6	98.9	60.5	67.9	100.1	53.8	62.8	99.5	53.8	62.7
0320	Concrete Reinforcing	87.2	61.1	78.8	100.7	71.2	91.2	101.5	68.8	91.0	99.7	50.6	83.9	100.0	49.3	83.7	100.4	44.3	82.3
0330	Cast-in-Place Concrete	104.8	56.1	88.0	92.0	69.3	84.1	86.9	71.1	81.4	77.1	65.2	73.0	75.3	68.3	72.9	83.6	66.7	77.8
03	CONCRETE	100.8	48.4	79.8	96.8	69.3	85.8	94.8	71.9	85.6	84.2	61.3	75.0	89.2	59.0	77.1	87.1	57.5	75.2
04	MASONRY	117.2	42.1	69.9	88.5	59.0	69.9	93.1	63.6	74.5	98.6	61.7	75.4	95.0	62.3	74.4	102.1	61.7	76.7
05	METALS	92.9	86.8	91.5	99.1	82.2	95.1	99.0	84.9	95.7	101.4	70.8	94.3	97.2	68.3	90.4	94.2	65.3	87.4
06	WOOD, PLASTICS & COMPOSITES	77.1	29.9	57.6	99.9	65.9	85.8	101.9	72.2	89.6	99.7	62.6	84.4	101.3	52.2	81.0	96.4	53.7	78.7
07	THERMAL & MOISTURE PROTECTION	96.5	49.9	76.1	95.9	66.7	83.1	100.4	69.5	86.8	102.0	63.3	85.0	100.1	64.0	84.3	95.0	65.4	82.0
08	OPENINGS	87.6	35.0	74.9	97.3	62.8	88.9	101.3	68.8	93.4	97.5	57.9	88.0	98.9	51.9	87.6	97.3	48.9	85.6
0920	Plaster & Gypsum Board	95.7	28.6	53.7	99.1	65.2	77.9	102.8	71.5	83.2	105.8	62.1	78.5	111.2	51.0	73.6	100.3	52.6	70.5
0950, 0980	Ceilings & Acoustic Treatment	80.5	28.6	46.8	99.0	65.2	77.0	91.5	71.5	78.5	104.5	62.1	77.0	103.8	51.0	69.5	98.3	52.6	68.7
0960	Flooring	87.6	50.2	76.1	100.8	55.8	87.0	93.8	62.4	84.2	99.0	69.5	90.0	98.2	66.1	88.4	96.8	59.3	85.3
0970, 0990	Wall Finishes & Painting/Coating	86.0	41.0	58.5	98.7	75.1	84.3	98.7	67.5	79.7	93.1	55.6	70.2	98.7	52.9	70.8	98.7	41.0	63.5
09	FINISHES	93.3	35.2	61.7	98.8	65.2	80.5	96.2	69.4	81.6	96.6	61.8	77.7	102.1	55.4	76.7	97.2	53.0	73.2
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	74.2	94.4	100.0	84.2	96.6	100.0	85.2	96.8	100.0	79.5	95.5	100.0	80.1	95.7	100.0	79.2	95.5
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	97.8	54.4	80.0	100.6	73.6	89.5	100.8	81.4	92.9	101.1	48.6	79.5	100.9	53.0	81.2	101.0	58.2	83.4
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	95.6	51.3	74.2	99.0	64.6	82.5	101.0	64.9	83.6	96.5	53.1	75.6	98.8	59.5	79.8	100.1	57.2	79.4
MF2018	WEIGHTED AVERAGE	96.7	53.8	79.2	98.2	70.8	87.1	99.0	75.2	89.3	97.4	60.6	82.4	97.8	61.7	83.1	96.5	61.5	82.2

DIVISION		TEXAS																	
		BEAUMONT			BROWNWOOD			BRYAN			CHILDRESS			CORPUS CHRISTI			DALLAS		
		776 - 777			768			778			792			783 - 784			752 - 753		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		91.2	91.2		87.7	87.7		91.2	91.2		87.7	87.7		97.6	97.6		109.3	109.3
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	92.3	87.3	88.9	104.2	83.8	90.3	82.2	87.0	85.5	106.6	83.8	91.1	129.8	79.2	95.4	115.5	100.9	105.6
0310	Concrete Forming & Accessories	105.1	56.5	65.9	97.9	57.3	65.1	79.6	54.9	59.6	97.0	57.4	65.0	105.2	52.6	62.8	100.5	62.6	69.9
0320	Concrete Reinforcing	101.0	63.6	89.0	90.4	47.6	76.7	102.2	47.6	84.7	99.8	47.6	83.1	88.3	50.6	76.2	100.9	51.1	84.9
0330	Cast-in-Place Concrete	71.8	65.8	69.7	96.5	55.3	82.3	57.5	55.5	56.9	79.1	55.3	70.9	101.8	65.4	89.3	101.6	70.1	90.7
03	CONCRETE	85.3	62.0	76.0	91.3	55.8	77.1	73.0	54.9	65.8	91.0	55.9	77.0	91.6	58.7	78.4	97.5	64.5	84.3
04	MASONRY	98.7	63.1	76.3	127.5	56.8	82.9	139.3	56.6	87.2	102.4	56.3	73.4	84.6	60.0	69.1	95.2	58.5	72.1
05	METALS	92.2	76.7	88.6	96.7	68.9	90.2	92.0	69.7	86.8	98.5	69.0	91.6	91.3	84.5	89.7	99.9	80.0	95.2
06	WOOD, PLASTICS & COMPOSITES	112.3	56.0	89.0	102.8	59.5	84.9	76.2	55.9	67.8	99.0	59.5	82.7	116.6	52.4	90.0	101.3	64.6	86.1
07	THERMAL & MOISTURE PROTECTION	94.0	65.5	81.5	94.6	59.3	79.1	87.4	60.3	75.5	102.7	59.2	83.6	99.9	61.5	83.1	93.4	66.0	81.4
08	OPENINGS	91.1	57.7	83.0	96.6	54.4	86.4	91.7	52.6	82.3	92.3	54.4	83.1	97.7	50.7	86.4	96.6	59.5	87.7
0920	Plaster & Gypsum Board	110.5	55.5	76.1	93.0	59.0	71.7	84.1	55.4	66.1	104.8	59.0	76.2	98.6	51.6	69.2	95.1	63.4	75.2
0950, 0980	Ceilings & Acoustic Treatment	108.8	55.5	74.2	88.4	59.0	69.3	98.1	55.4	70.4	99.7	59.0	73.3	105.6	51.6	70.5	94.9	63.4	74.4
0960	Flooring	114.5	75.2	102.4	77.3	50.8	69.2	87.3	62.3	79.7	97.4	50.8	83.2	112.3	73.3	100.4	92.6	68.1	85.1
0970, 0990	Wall Finishes & Painting/Coating	88.6	58.0	69.9	86.5	47.9	63.0	86.2	53.3	66.1	93.1	47.9	65.5	105.5	44.4	68.2	98.7	52.9	70.8
09	FINISHES	98.6	59.7	77.5	84.7	55.1	68.6	84.3	55.6	68.7	96.5	55.1	74.0	103.1	55.2	77.1	96.5	62.6	78.1
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	78.2	95.3	100.0	78.8	95.4	100.0	77.5	95.1	100.0	78.8	95.4	100.0	77.8	95.2	100.0	81.5	96.0
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	101.0	63.3	85.5	96.8	46.1	76.0	96.7	60.0	81.6	96.8	50.2	77.7	101.0	58.7	83.6	100.9	61.5	84.7
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	92.6	63.9	78.8	98.7	42.8	71.7	93.3	58.7	76.6	96.5	51.7	74.9	98.0	63.6	81.4	99.7	61.1	81.1
MF2018	WEIGHTED AVERAGE	94.7	66.0	83.0	97.0	56.1	80.4	91.9	61.4	79.5	96.8	58.2	81.1	97.4	63.3	83.5	99.3	67.1	86.2

DIVISION		TEXAS																	
		DEL RIO			DENTON			EASTLAND			EL PASO			FORT WORTH			GALVESTON		
		788			762			764			798 - 799,885			760 - 761			775		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		87.2	87.2		96.7	96.7		87.7	87.7		95.3	95.3		96.9	96.9		103.5	103.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	111.2	82.0	91.3	104.8	78.4	86.9	107.0	83.8	91.2	90.8	94.3	93.1	99.3	97.4	98.0	112.3	85.7	94.3
0310	Concrete Forming & Accessories	100.5	48.2	58.3	108.9	57.5	67.5	99.2	57.3	65.4	102.9	58.8	67.3	98.9	61.1	68.4	91.1	52.6	60.0
0320	Concrete Reinforcing	88.6	44.3	74.4	91.1	47.8	77.2	90.5	47.6	76.7	101.3	50.7	85.0	100.3	50.3	84.3	101.9	55.6	87.0
0330	Cast-in-Place Concrete	109.6	54.7	90.6	74.6	56.4	68.3	102.0	55.3	85.9	68.1	66.4	67.5	86.8	67.0	79.9	76.4	56.5	69.5
03	CONCRETE	107.3	50.8	84.7	74.9	57.3	67.9	95.3	55.9	79.5	87.4	60.7	76.7	88.6	62.0	77.9	85.7	56.6	74.1
04	MASONRY	99.6	56.5	72.5	135.8	58.6	87.2	95.4	56.8	71.1	94.1	64.2	75.3	93.9	59.7	72.4	95.7	56.7	71.1
05	METALS	90.3	65.6	84.6	96.0	84.0	93.2	96.5	69.0	90.0	97.6	68.2	90.7	99.0	69.0	92.0	93.6	88.4	92.4
06	WOOD, PLASTICS & COMPOSITES	99.2	47.5	77.8	116.8	59.7	93.2	109.1	59.5	88.6	92.7	59.4	78.9	96.9	63.0	82.9	92.2	52.7	75.8
07	THERMAL & MOISTURE PROTECTION	97.2	58.7	80.3	93.0	60.6	78.8	95.0	59.3	79.4	103.1	65.6	86.7	92.1	65.8	80.6	87.0	60.6	75.4
08	OPENINGS	93.1	44.9	81.5	114.2	54.1	99.7	67.8	54.4	64.6	92.1	54.3	83.0	96.8	58.1	87.5	95.7	52.7	85.3
0920	Plaster & Gypsum Board	91.7	46.7	63.6	101.1	59.0	74.8	93.0	59.0	71.7	113.8	58.5	79.2	98.7	62.1	75.8	97.1	51.9	68.8
0950, 0980	Ceilings & Acoustic Treatment	99.9	46.7	65.4	92.6	59.0	70.8	88.4	59.0	69.3	102.6	58.5	74.0	98.3	62.1	74.8	103.6	51.9	70.0
0960	Flooring	96.2	50.8	82.3	72.5	50.8	65.9	96.9	50.8	82.8	104.1	77.0	95.8	96.6	69.5	88.3	101.8	62.3	89.7
0970, 0990	Wall Finishes & Painting/Coating	95.2	39.5	61.2	96.0	45.4	65.1	88.0	47.9	63.5	98.7	47.9	67.7	98.7	53.0	70.8	97.3	49.8	68.3
09	FINISHES	94.9	47.1	69.0	83.5	54.9	68.0	90.4	55.1	71.2	103.3	60.8	80.3	98.2	61.8	78.4	95.7	53.3	72.7
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	75.0	94.6	100.0	79.1	95.5	100.0	78.8	95.4	100.0	81.4	96.0	100.0	80.4	95.7	100.0	77.4	95.1
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.6	55.1	79.6	96.8	51.9	78.3	96.8	46.1	76.0	100.7	62.4	85.0	101.0	56.9	82.9	96.7	60.1	81.7
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	99.3	55.4	78.2	101.6	54.4	78.8	98.5	54.3	77.2	99.6	50.6	76.0	98.5	57.6	78.8	93.7	58.8	76.9
MF2018	WEIGHTED AVERAGE	97.5	56.9	81.0	96.9	60.3	82.0	94.2	57.7	79.3	96.9	63.8	83.5	97.3	63.9	83.8	94.4	62.9	81.6

DIVISION		TEXAS																	
		GIDDINGS			GREENVILLE			HOUSTON			HUNTSVILLE			LAREDO			LONGVIEW		
		789			754			770 - 772			773			780			756		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		87.2	87.2		97.4	97.4		101.8	101.8		91.2	91.2		87.2	87.2		89.0	89.0
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	97.5	82.2	87.1	103.7	81.1	88.4	111.9	94.2	99.9	97.6	87.0	90.4	92.2	82.4	85.6	100.2	86.9	91.2
0310	Concrete Forming & Accessories	97.5	48.4	57.9	87.6	54.3	60.7	98.8	59.4	67.0	89.8	51.1	58.6	100.5	52.9	62.1	81.4	57.4	62.1
0320	Concrete Reinforcing	88.9	45.1	74.9	101.7	47.8	84.4	100.4	50.7	84.4	102.3	47.6	84.8	88.6	50.5	76.4	101.5	47.3	84.1
0330	Cast-in-Place Concrete	92.8	55.0	79.8	104.0	56.4	87.6	71.0	67.9	69.9	79.1	55.5	70.9	78.4	65.2	73.8	121.1	55.3	98.4
03	CONCRETE	88.9	51.3	73.8	94.9	55.7	79.2	83.8	61.9	75.0	90.7	53.2	75.7	84.2	57.8	73.6	109.0	55.8	87.7
04	MASONRY	107.3	56.6	75.4	154.7	58.6	94.1	94.0	62.1	73.9	136.7	56.6	86.2	92.5	60.9	72.6	150.8	55.4	90.7
05	METALS	89.8	66.7	84.4	93.1	82.6	90.6	99.9	74.3	94.0	91.9	69.5	86.6	93.1	69.8	87.6	85.8	68.0	81.7
06	WOOD, PLASTICS & COMPOSITES	98.4	47.5	77.3	84.0	55.1	72.1	100.6	60.1	83.8	87.2	51.0	72.2	99.2	52.3	79.8	77.2	59.6	69.9
07	THERMAL & MOISTURE PROTECTION	97.6	59.3	80.8	92.1	59.6	77.9	88.9	68.1	79.8	88.7	59.7	76.0	96.3	63.8	82.1	93.3	58.5	78.1
08	OPENINGS	92.3	45.8	81.1	88.6	52.1	79.8	104.2	56.9	92.8	91.7	49.4	81.5	93.2	50.2	82.8	79.8	54.1	73.6
0920	Plaster & Gypsum Board	90.0	46.7	62.9	77.3	54.3	62.9	98.7	58.9	73.8	91.4	50.2	65.7	93.0	51.6	67.1	76.0	59.0	65.4
0950, 0980	Ceilings & Acoustic Treatment	99.9	46.7	65.4	88.6	54.3	66.3	98.3	58.9	72.8	98.1	50.2	67.1	106.1	51.6	70.7	82.4	59.0	67.2
0960	Flooring	96.5	50.8	82.5	85.0	50.8	74.6	105.8	73.3	95.9	90.8	50.8	78.6	96.1	65.5	86.7	89.6	50.8	77.7
0970, 0990	Wall Finishes & Painting/Coating	95.2	41.0	62.2	88.8	47.9	63.9	98.7	56.5	73.0	86.2	53.3	66.1	95.2	44.4	64.2	81.8	45.4	59.6
09	FINISHES	93.7	47.3	68.5	88.8	52.5	69.1	102.0	61.6	80.0	87.5	50.6	67.5	94.9	53.7	72.5	93.2	54.9	72.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	77.3	95.1	100.0	78.8	95.4	100.0	80.1	95.7	100.0	76.9	95.0	100.0	77.8	95.2	100.0	79.0	95.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.7	59.1	81.3	96.7	53.9	79.1	101.0	63.2	85.5	96.7	59.9	81.6	100.9	59.9	84.0	96.6	53.5	78.9
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	97.3	51.5	75.2	97.8	54.4	76.8	95.2	63.9	80.1	93.3	54.8	74.7	99.4	58.0	79.5	96.7	47.2	72.8
MF2018	WEIGHTED AVERAGE	94.4	57.6	79.4	97.1	60.1	82.0	97.8	66.6	85.1	95.0	59.7	80.7	95.0	61.5	81.3	96.7	58.2	81.0

DIVISION		TEXAS																	
		LUBBOCK			LUFKIN			MCALLEN			MCKINNEY			MIDLAND			ODESSA		
		793 - 794			759			785			750			797			797		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		99.3	99.3		89.0	89.0		97.7	97.7		97.4	97.4		99.3	99.3		87.7	87.7
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	122.8	82.9	95.7	94.7	86.2	88.9	133.3	79.3	96.6	99.8	81.1	87.1	125.5	82.9	96.6	95.8	84.0	87.8
0310	Concrete Forming & Accessories	100.1	54.2	63.1	85.5	51.2	57.9	104.5	48.9	59.6	86.3	54.3	60.5	105.5	61.1	69.7	98.9	60.9	68.2
0320	Concrete Reinforcing	100.4	50.5	84.4	103.3	62.1	90.1	88.4	50.5	76.2	101.7	47.8	84.4	100.9	50.6	84.7	99.7	50.5	83.9
0330	Cast-in-Place Concrete	77.2	66.6	73.5	108.3	54.7	89.8	110.6	56.7	92.0	97.6	56.4	83.3	82.1	66.8	76.8	77.1	64.8	72.9
03	CONCRETE	83.3	59.9	73.9	101.9	55.2	83.2	97.7	53.9	80.2	90.4	55.8	76.6	86.9	63.0	77.4	84.2	61.3	75.0
04	MASONRY	98.0	63.1	76.0	113.4	56.5	77.5	100.2	60.9	75.5	166.8	58.6	98.6	114.8	61.7	81.3	98.6	61.6	75.3
05	METALS	104.8	85.4	100.3	93.3	71.6	88.3	90.2	83.9	88.7	93.0	82.7	90.6	103.2	85.6	99.1	100.7	70.7	93.7
06	WOOD, PLASTICS & COMPOSITES	101.3	52.9	81.3	84.0	51.1	70.4	114.9	47.7	87.1	82.7	55.1	71.3	106.8	62.7	88.6	99.7	62.6	84.4
07	THERMAL & MOISTURE PROTECTION	92.1	63.2	79.4	93.2	57.9	77.7	99.8	61.3	82.9	91.9	59.6	77.7	92.5	63.8	79.9	102.0	62.8	84.8
08	OPENINGS	104.1	52.7	91.7	60.7	53.2	58.9	97.2	46.4	84.9	88.6	52.0	79.7	105.6	58.3	94.2	97.5	58.3	88.1
0920	Plaster & Gypsum Board	106.0	52.1	72.3	74.9	50.2	59.5	100.0	46.7	66.7	77.3	54.3	62.9	107.8	62.1	79.2	105.8	62.1	78.5
0950, 0980	Ceilings & Acoustic Treatment	105.2	52.1	70.7	76.9	50.2	59.6	106.1	46.7	67.5	88.6	54.3	66.3	101.1	62.1	75.8	104.5	62.1	77.0
0960	Flooring	91.9	66.0	84.0	119.1	50.8	98.2	111.9	73.3	100.1	84.7	50.8	74.3	92.9	67.4	85.1	99.0	64.9	88.6
0970, 0990	Wall Finishes & Painting/Coating	103.4	52.9	72.6	81.8	47.9	61.1	105.5	39.5	65.2	88.8	47.9	63.9	103.4	52.9	72.6	93.1	52.9	68.6
09	FINISHES	99.8	55.9	75.9	99.4	50.5	72.9	103.8	52.1	75.7	88.4	52.5	68.9	99.9	61.4	79.0	96.6	60.8	77.2
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	79.5	95.5	100.0	77.2	95.1	100.0	77.5	95.1	100.0	78.8	95.4	100.0	80.1	95.7	100.0	79.9	95.6
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.4	50.1	79.8	96.6	54.0	79.1	96.7	45.9	75.8	96.7	56.0	80.0	96.2	53.6	78.7	101.1	49.6	80.0
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	95.2	51.5	74.2	97.5	56.9	77.9	97.9	29.3	64.8	97.9	54.4	76.9	95.2	59.0	77.8	96.6	59.0	78.5
MF2018	WEIGHTED AVERAGE	98.9	60.8	83.4	94.4	59.2	80.1	97.8	54.4	80.2	96.8	60.6	82.0	99.2	64.0	84.9	97.2	61.6	82.7

DIVISION		TEXAS																	
		PALESTINE			SAN ANGELO			SAN ANTONIO			TEMPLE			TEXARKANA			TYLER		
		758			769			781 - 782			765			755			757		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		89.0	89.0		87.7	87.7		94.5	94.5		87.7	87.7		89.0	89.0		89.0	89.0
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	100.4	86.9	91.2	100.5	83.8	89.1	90.3	94.2	93.0	89.1	83.3	85.1	89.0	86.9	87.6	99.5	86.9	90.9
0310	Concrete Forming & Accessories	73.6	57.4	60.6	98.4	48.7	58.3	98.9	54.7	63.3	103.1	48.3	58.9	95.9	57.8	65.1	88.0	57.5	63.4
0320	Concrete Reinforcing	100.8	47.6	83.7	90.3	50.3	77.5	102.0	50.6	85.5	90.4	47.3	76.6	100.6	50.0	84.3	101.5	50.0	85.0
0330	Cast-in-Place Concrete	98.9	55.3	83.8	91.1	64.4	81.8	74.7	68.6	72.6	74.6	54.8	67.7	99.6	63.6	87.2	118.9	55.4	97.0
03	CONCRETE	101.3	55.9	83.1	87.7	55.6	74.8	84.4	59.5	74.4	76.7	51.5	66.6	95.4	59.3	81.0	108.6	56.3	87.7
04	MASONRY	108.5	55.4	75.1	123.8	56.8	81.6	92.6	62.8	73.8	134.6	56.6	85.4	171.3	55.4	98.3	161.4	55.4	94.6
05	METALS	93.1	68.1	87.2	96.9	70.1	90.6	100.1	65.8	92.1	96.5	67.3	89.7	85.7	69.3	81.9	92.9	69.0	87.4
06	WOOD, PLASTICS & COMPOSITES	73.4	59.6	67.7	103.2	47.6	80.1	99.8	53.7	80.7	112.3	47.6	85.5	92.5	59.6	78.9	86.1	59.6	75.1
07	THERMAL & MOISTURE PROTECTION	93.5	58.7	78.2	94.3	59.7	79.1	90.1	67.0	80.0	93.9	58.3	78.3	93.1	60.1	78.7	93.6	58.7	78.3
08	OPENINGS	60.6	54.5	59.2	96.6	48.5	85.0	102.6	51.8	90.3	64.6	47.8	60.5	79.8	55.1	73.8	60.6	55.1	59.3
0920	Plaster & Gypsum Board	74.1	59.0	64.7	93.0	46.7	64.0	91.1	52.6	67.0	93.0	46.7	64.0	85.9	59.0	69.1	74.9	59.0	65.0
0950, 0980	Ceilings & Acoustic Treatment	76.9	59.0	65.3	88.4	46.7	61.3	99.0	52.6	68.9	88.4	46.7	61.3	82.4	59.0	67.2	76.9	59.0	65.3
0960	Flooring	113.2	50.8	94.1	77.5	50.8	69.3	108.9	74.2	98.3	98.4	50.8	83.8	95.1	59.3	84.1	120.7	50.8	99.3
0970, 0990	Wall Finishes & Painting/Coating	81.8	47.9	61.1	86.5	47.9	63.0	98.7	44.4	65.6	88.0	41.0	59.3	81.8	47.9	61.1	81.8	47.9	61.1
09	FINISHES	98.4	55.2	74.9	84.4	48.1	64.7	99.6	56.8	76.3	89.2	47.3	66.5	95.6	56.9	74.6	100.2	55.2	75.7
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	78.9	95.4	100.0	77.3	95.1	100.0	79.5	95.5	100.0	77.5	95.1	100.0	79.0	95.4	100.0	79.0	95.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.6	52.7	78.6	96.8	48.0	76.7	100.7	60.9	84.4	96.8	49.4	77.3	96.6	51.6	78.2	96.6	54.1	79.2
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	95.0	44.9	70.8	101.4	50.6	76.9	100.1	60.4	81.0	99.4	48.2	74.7	97.5	50.6	74.8	96.7	49.8	74.1
MF2018	WEIGHTED AVERAGE	93.8	57.8	79.1	96.6	56.3	80.2	97.4	63.6	83.7	92.5	55.3	77.4	95.8	59.2	80.9	97.4	59.0	81.8

DIVISION		TEXAS															UTAH		
		VICTORIA			WACO			WAXAHACHIE			WHARTON			WICHITA FALLS			LOGAN		
		779			766 - 767			751			774			763			843		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		102.2	102.2		87.7	87.7		97.4	97.4		103.5	103.5		87.7	87.7		91.4	91.4
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	117.2	83.5	94.3	97.9	83.5	88.1	101.9	80.9	87.7	123.1	85.5	97.5	98.7	83.9	88.6	97.7	85.7	89.6
0310	Concrete Forming & Accessories	90.1	48.5	56.6	101.1	60.5	68.4	86.3	57.6	63.2	83.7	50.1	56.6	101.1	60.6	68.4	100.7	69.8	75.8
0320	Concrete Reinforcing	97.9	47.4	81.7	90.2	50.5	77.5	101.7	47.8	84.4	101.9	47.4	84.4	90.2	50.5	77.5	93.0	83.3	89.9
0330	Cast-in-Place Concrete	85.8	56.4	75.6	80.7	64.3	75.0	103.0	56.1	86.8	88.1	55.5	76.8	86.2	69.6	80.5	77.8	73.3	76.2
03	CONCRETE	90.9	53.3	75.9	81.9	60.9	73.5	93.9	57.2	79.2	94.2	53.7	78.0	84.4	62.8	75.7	98.0	73.9	88.4
04	MASONRY	113.5	56.7	77.7	93.3	60.9	72.9	155.3	58.5	94.3	96.9	56.6	71.5	93.9	60.5	72.8	110.2	61.5	79.5
05	METALS	91.9	85.1	90.3	99.2	69.7	92.3	93.1	82.3	90.5	93.6	84.6	91.5	99.1	70.9	92.5	101.9	83.2	97.5
06	WOOD, PLASTICS & COMPOSITES	93.8	47.6	74.7	110.2	62.6	90.5	82.7	59.8	73.2	83.5	49.7	69.5	110.2	62.6	90.5	85.3	70.4	79.1
07	THERMAL & MOISTURE PROTECTION	89.9	57.8	75.8	94.7	63.5	81.0	92.0	60.0	78.0	87.3	60.2	75.4	94.7	62.5	80.6	103.2	67.3	87.5
08	OPENINGS	95.6	48.0	84.1	75.0	58.2	70.9	88.6	54.6	80.4	95.7	49.1	84.5	75.0	57.9	70.9	88.1	71.6	84.1
0920	Plaster & Gypsum Board	87.7	46.7	62.1	93.1	62.1	73.7	77.7	59.0	66.0	87.4	48.8	63.3	93.1	62.1	73.7	86.2	69.9	76.0
0950, 0980	Ceilings & Acoustic Treatment	105.0	46.7	67.2	89.1	62.1	71.6	90.6	59.0	70.1	103.6	48.8	68.1	89.1	62.1	71.6	106.0	69.9	82.5
0960	Flooring	101.5	50.8	86.0	97.9	68.2	88.8	84.7	50.8	74.3	99.6	62.0	88.1	98.4	72.4	90.4	94.9	61.3	84.6
0970, 0990	Wall Finishes & Painting/Coating	97.5	53.3	70.5	88.0	55.6	68.2	88.8	47.9	63.9	97.3	51.7	69.5	89.5	52.9	67.2	90.7	61.1	72.6
09	FINISHES	92.8	48.7	68.9	89.8	61.5	74.4	89.2	55.2	70.8	94.5	51.7	71.2	90.1	62.1	74.9	96.0	67.0	80.3
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	76.8	95.0	100.0	79.5	95.5	100.0	79.3	95.5	100.0	77.0	95.0	100.0	79.5	95.5	100.0	85.3	96.8
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.7	60.0	81.6	101.0	59.7	84.0	96.7	53.9	79.1	96.7	57.4	80.6	101.0	53.7	81.6	100.8	72.5	89.2
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	96.9	50.1	74.3	101.5	54.6	78.9	97.8	54.4	76.9	95.7	54.8	76.0	104.2	53.9	79.9	95.4	71.5	83.9
MF2018	WEIGHTED AVERAGE	95.9	59.8	81.2	94.4	62.9	81.6	96.9	60.8	82.2	95.9	60.6	81.6	95.1	62.0	81.6	98.7	72.9	88.2

DIVISION		UTAH												VERMONT					
		OGDEN			PRICE			PROVO			SALT LAKE CITY			BELLOWS FALLS			BENNINGTON		
		842,844			845			846 - 847			840 - 841			051			052		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		91.4	91.4		90.5	90.5		90.5	90.5		91.3	91.3		92.3	92.3		92.3	92.3
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	86.0	85.7	85.8	94.9	83.4	87.1	94.2	84.3	87.4	85.7	85.6	85.7	84.8	91.1	89.1	84.2	91.1	88.9
0310	Concrete Forming & Accessories	100.7	69.8	75.8	104.3	62.0	70.1	103.3	69.8	76.3	103.3	69.8	76.3	99.8	96.1	96.9	96.3	96.0	96.1
0320	Concrete Reinforcing	92.8	83.3	89.7	99.9	83.4	94.6	100.7	83.3	95.1	95.2	83.3	91.4	81.0	81.0	81.0	81.0	81.0	81.0
0330	Cast-in-Place Concrete	79.0	73.3	77.0	77.9	69.2	74.9	77.9	73.3	76.3	86.3	73.3	81.8	70.9	111.5	84.9	70.9	111.4	84.9
03	CONCRETE	89.3	73.9	83.1	99.8	68.9	87.4	98.6	73.9	88.7	105.7	73.9	93.0	79.2	98.9	87.1	79.0	98.8	86.9
04	MASONRY	104.3	61.5	77.3	115.8	64.6	83.6	116.0	61.5	81.6	118.6	61.5	82.6	91.6	90.8	91.1	101.9	90.8	94.9
05	METALS	102.4	83.2	97.9	99.0	82.4	95.2	99.8	83.2	95.9	106.2	83.2	100.9	93.5	90.2	92.7	93.4	90.1	92.6
06	WOOD, PLASTICS & COMPOSITES	85.3	70.4	79.1	89.4	60.4	77.4	87.2	70.4	80.3	87.6	70.4	80.5	103.7	100.7	102.5	100.5	100.7	100.6
07	THERMAL & MOISTURE PROTECTION	101.9	67.3	86.8	105.1	65.0	87.5	105.2	67.3	88.6	109.1	67.3	90.8	101.7	85.8	94.7	101.6	85.8	94.7
08	OPENINGS	88.1	71.6	84.1	91.8	73.0	87.2	91.8	71.6	86.9	89.7	71.6	85.3	96.8	91.8	95.6	96.8	91.8	95.6
0920	Plaster & Gypsum Board	86.2	69.9	76.0	91.7	59.5	71.6	87.4	69.9	76.4	92.5	69.9	78.3	96.0	100.6	98.9	94.8	100.6	98.4
0950, 0980	Ceilings & Acoustic Treatment	106.0	69.9	82.5	106.0	59.5	75.8	106.0	69.9	82.5	100.6	69.9	80.7	84.8	100.6	95.1	84.8	100.6	95.1
0960	Flooring	92.8	61.3	83.2	95.8	52.2	82.4	95.6	61.3	85.1	97.6	61.3	86.5	91.3	110.1	97.0	90.5	110.1	96.5
0970, 0990	Wall Finishes & Painting/Coating	90.7	61.1	72.6	90.7	56.3	69.7	90.7	61.1	72.6	94.1	60.5	73.6	84.0	94.2	90.2	84.0	94.2	90.2
09	FINISHES	94.1	67.0	79.4	97.6	58.8	76.5	96.7	67.0	80.6	96.0	67.0	80.2	87.9	99.1	94.0	87.5	99.1	93.8
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	85.3	96.8	100.0	84.2	96.6	100.0	85.3	96.8	100.0	85.3	96.8	100.0	99.7	99.9	100.0	99.6	99.9
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.8	72.5	89.2	98.6	60.5	83.0	100.8	72.5	89.2	101.1	72.5	89.4	96.9	81.3	90.5	96.9	81.3	90.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	95.9	71.5	84.2	98.5	63.7	81.8	95.8	68.9	82.8	98.8	71.5	85.6	101.5	73.7	88.1	101.5	50.5	76.9
MF2018	WEIGHTED AVERAGE	96.9	72.9	87.2	98.9	67.5	86.1	99.0	72.4	88.2	101.4	72.9	89.8	93.5	88.8	91.6	93.8	85.4	90.4

DIVISION		VERMONT																	
		BRATTLEBORO			BURLINGTON			GUILDHALL			MONTPELIER			RUTLAND			ST. JOHNSBURY		
		053			054			059			056			057			058		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		92.3	92.3		97.3	97.3		92.3	92.3		97.3	97.3		92.3	92.3		92.3	92.3
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	85.5	91.1	89.3	90.1	101.9	98.1	84.0	90.8	88.6	88.0	101.0	96.8	88.3	92.2	90.9	84.1	90.2	88.2
0310	Concrete Forming & Accessories	100.2	96.2	96.9	102.0	83.7	87.2	95.9	90.7	91.7	102.0	97.4	98.3	100.5	83.7	86.9	93.1	90.6	91.1
0320	Concrete Reinforcing	80.0	81.0	80.4	99.6	83.5	94.4	81.7	81.0	81.4	98.9	83.5	94.0	101.2	83.5	95.5	80.0	81.0	80.3
0330	Cast-in-Place Concrete	73.1	111.5	86.4	87.9	114.5	97.1	68.7	103.7	80.8	81.5	114.5	92.9	69.5	113.4	84.6	68.7	103.6	80.8
03	CONCRETE	80.7	98.9	87.9	95.3	94.6	95.0	77.2	93.6	83.8	92.4	100.7	95.7	83.6	94.3	87.9	76.7	93.6	83.4
04	MASONRY	101.7	90.8	94.8	103.7	94.3	97.8	102.0	77.1	86.3	100.6	94.3	96.6	83.7	94.2	90.3	128.2	77.1	96.0
05	METALS	93.4	90.2	92.7	101.5	88.8	98.5	93.5	89.9	92.6	100.5	88.8	97.7	100.3	91.1	98.2	93.4	89.8	92.6
06	WOOD, PLASTICS & COMPOSITES	104.1	100.7	102.7	100.4	82.1	92.8	99.4	100.7	100.0	98.0	100.7	99.1	104.3	82.0	95.1	93.6	100.7	96.5
07	THERMAL & MOISTURE PROTECTION	101.8	85.8	94.8	108.8	96.8	103.5	101.3	79.6	91.8	110.0	98.8	105.1	101.9	95.2	99.0	101.1	79.6	91.7
08	OPENINGS	96.8	92.0	95.6	98.9	82.5	94.9	96.8	92.2	95.7	99.2	92.8	97.7	99.5	82.5	95.4	96.8	92.2	95.7
0920	Plaster & Gypsum Board	96.0	100.6	98.9	105.0	81.5	90.3	108.3	100.6	103.5	105.0	100.6	102.3	96.4	81.5	87.1	112.4	100.6	105.1
0950, 0980	Ceilings & Acoustic Treatment	84.8	100.6	95.1	94.7	81.5	86.1	84.8	100.6	95.1	90.9	100.6	97.2	90.7	81.5	84.7	84.8	100.6	95.1
0960	Flooring	91.4	110.1	97.1	100.8	110.1	103.6	93.7	110.1	98.7	96.5	110.1	100.7	91.3	110.1	97.0	96.3	110.1	100.5
0970, 0990	Wall Finishes & Painting/Coating	84.0	94.2	90.2	98.7	101.9	100.6	84.0	101.9	94.9	98.7	101.9	100.6	84.0	101.9	94.9	84.0	101.9	94.9
09	FINISHES	88.1	99.1	94.1	98.2	89.9	93.7	90.5	96.5	93.8	96.2	100.8	98.7	89.4	89.9	89.7	91.9	96.5	94.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	99.7	99.9	100.0	98.9	99.8	100.0	95.1	98.9	100.0	100.8	100.2	100.0	98.8	99.7	100.0	95.1	98.9
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.9	81.3	90.5	100.9	67.8	87.3	96.9	58.9	81.3	96.7	67.8	84.8	101.1	67.8	87.4	96.9	58.9	81.3
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	101.5	73.7	88.1	100.8	56.0	79.2	101.5	50.5	76.9	100.8	56.0	79.2	101.6	56.0	79.6	101.5	50.5	76.9
MF2018	WEIGHTED AVERAGE	94.1	88.8	92.0	99.8	82.4	92.7	93.8	77.9	87.3	98.0	85.3	92.8	96.5	81.7	90.5	94.8	77.8	87.9

DIVISION		VERMONT			VIRGINIA														
		WHITE RIVER JCT.			ALEXANDRIA			ARLINGTON			BRISTOL			CHARLOTTESVILLE			CULPEPER		
		050			223			222			242			229			227		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		92.3	92.3		102.1	102.1		100.9	100.9		100.9	100.9		104.8	104.8		100.9	100.9
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	87.6	90.3	89.4	123.9	84.6	97.2	135.5	82.5	99.6	118.4	82.7	94.1	123.1	84.3	96.8	121.3	82.2	94.7
0310	Concrete Forming & Accessories	92.5	91.1	91.4	92.7	71.2	75.3	89.9	60.9	66.5	83.9	58.1	63.1	81.7	59.8	64.0	77.8	67.2	69.2
0320	Concrete Reinforcing	81.0	81.0	81.0	84.0	88.9	85.6	94.9	86.7	92.2	95.2	68.8	86.7	94.5	70.2	86.7	94.9	88.8	92.9
0330	Cast-in-Place Concrete	73.1	104.3	83.9	116.7	74.8	102.2	113.5	74.6	100.1	113.1	48.6	90.9	117.7	71.9	101.9	116.2	72.7	101.2
03	CONCRETE	81.9	94.1	86.8	101.6	77.0	91.7	105.8	71.9	92.2	102.8	58.5	85.1	103.6	67.7	89.2	101.0	74.3	90.4
04	MASONRY	114.6	78.4	91.8	92.0	72.5	79.7	106.5	71.6	84.5	95.8	54.4	69.7	120.2	54.6	78.9	107.4	68.6	82.9
05	METALS	93.5	89.8	92.6	98.6	102.2	99.4	96.8	101.5	97.9	95.8	92.6	95.1	96.1	95.5	95.9	96.1	101.0	97.3
06	WOOD, PLASTICS & COMPOSITES	96.5	100.7	98.2	93.0	70.0	83.5	88.6	56.5	75.3	79.1	56.4	69.7	77.3	56.9	68.9	75.7	66.1	71.7
07	THERMAL & MOISTURE PROTECTION	101.8	80.2	92.3	104.5	77.9	92.9	106.4	75.9	93.0	105.5	59.2	85.2	105.0	66.5	88.1	105.2	75.3	92.1
08	OPENINGS	96.8	92.2	95.7	92.2	74.9	88.0	90.6	67.3	85.0	93.2	63.3	85.9	91.6	63.9	84.9	91.9	72.7	87.3
0920	Plaster & Gypsum Board	92.4	100.6	97.5	115.5	69.3	86.6	109.1	55.4	75.5	101.5	55.2	72.6	101.5	55.2	72.6	101.6	65.3	78.9
0950, 0980	Ceilings & Acoustic Treatment	84.8	100.6	95.1	105.1	69.3	81.9	102.4	55.4	71.9	101.7	55.2	71.6	101.7	55.2	71.6	102.4	65.3	78.3
0960	Flooring	89.8	110.1	96.0	101.5	73.4	93.0	100.2	75.5	92.6	97.3	53.7	83.9	96.0	53.7	83.0	96.0	69.2	87.8
0970, 0990	Wall Finishes & Painting/Coating	84.0	101.9	94.9	117.1	68.3	87.3	117.1	71.1	89.0	102.1	73.0	84.4	102.1	57.4	74.8	117.1	68.1	87.2
09	FINISHES	87.3	96.8	92.5	105.3	70.5	86.4	104.8	63.1	82.1	100.8	58.6	77.9	100.5	57.0	76.9	101.1	66.8	82.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	95.5	99.0	100.0	87.1	97.2	100.0	86.6	97.1	100.0	82.0	96.1	100.0	83.1	96.3	100.0	87.1	97.2
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.9	59.6	81.6	101.2	83.8	94.1	101.2	85.6	94.8	97.0	48.7	77.2	97.0	84.1	91.7	97.0	81.0	90.4
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	101.5	50.4	76.9	96.0	97.0	96.5	94.3	99.7	96.9	95.6	33.7	65.7	95.5	69.3	82.9	97.1	93.7	95.4
MF2018	WEIGHTED AVERAGE	94.7	78.2	88.0	99.8	83.0	93.0	100.5	81.3	92.7	98.1	58.4	81.9	99.2	72.7	88.4	98.4	80.2	91.0

DIVISION		VIRGINIA																	
		FAIRFAX			FARMVILLE			FREDERICKSBURG			GRUNDY			HARRISONBURG			LYNCHBURG		
		220 - 221			239			224 - 225			246			228			245		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		100.9	100.9		104.8	104.8		100.9	100.9		100.9	100.9		100.9	100.9		100.9	100.9
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	133.6	82.4	98.8	119.3	83.2	94.8	120.8	82.1	94.5	116.0	81.2	92.4	130.1	82.5	97.8	116.8	82.7	93.6
0310	Concrete Forming & Accessories	81.9	60.3	64.5	102.7	59.1	67.5	81.9	61.8	65.7	88.5	57.2	63.3	76.3	60.2	63.3	83.9	59.5	64.2
0320	Concrete Reinforcing	94.9	88.9	93.0	90.8	63.5	82.0	95.5	75.7	89.2	93.8	41.2	76.9	94.9	78.7	89.7	94.5	69.1	86.4
0330	Cast-in-Place Concrete	113.5	73.5	99.7	117.2	82.1	105.1	115.2	70.8	99.9	113.1	48.7	90.9	113.5	74.1	99.9	113.1	72.8	99.2
03	CONCRETE	105.3	71.6	91.8	105.0	69.5	90.8	100.9	69.0	88.2	101.8	53.0	82.2	103.3	70.0	90.0	101.6	67.6	88.0
04	MASONRY	106.3	71.7	84.5	101.4	55.4	72.4	106.6	79.5	89.5	96.4	55.3	70.5	104.8	70.4	83.1	111.4	54.6	75.6
05	METALS	96.2	101.8	97.5	94.2	88.9	92.9	96.2	97.0	96.4	95.8	73.8	90.7	96.1	98.1	96.6	96.0	94.5	95.6
06	WOOD, PLASTICS & COMPOSITES	79.1	55.8	69.5	96.7	56.9	80.2	79.1	61.0	71.6	82.7	56.4	71.8	74.4	56.5	67.0	79.1	56.5	69.8
07	THERMAL & MOISTURE PROTECTION	106.0	75.3	92.6	105.2	68.0	88.9	105.3	77.1	92.9	105.5	57.7	84.5	105.7	77.4	93.3	105.3	66.5	88.3
08	OPENINGS	90.6	67.0	84.9	91.1	52.0	81.6	91.7	65.9	85.4	93.2	43.5	81.2	91.9	65.4	85.5	91.9	63.4	85.0
0920	Plaster & Gypsum Board	101.6	54.7	72.3	119.5	55.2	79.3	101.6	60.0	75.6	101.5	55.2	72.6	101.5	55.4	72.7	101.5	55.4	72.7
0950, 0980	Ceilings & Acoustic Treatment	102.4	54.7	71.4	98.1	55.2	70.3	102.4	60.0	74.9	101.7	55.2	71.6	101.7	55.4	71.7	101.7	55.4	71.7
0960	Flooring	97.5	74.5	90.5	98.3	53.7	84.6	97.5	67.4	88.3	98.3	53.7	84.7	95.7	74.9	89.4	97.3	53.7	83.9
0970, 0990	Wall Finishes & Painting/Coating	117.1	68.3	87.3	96.8	53.1	70.1	117.1	52.9	77.9	102.1	29.0	57.5	117.1	57.4	80.7	102.1	73.0	84.4
09	FINISHES	102.8	62.1	80.7	101.8	56.8	77.4	101.4	60.9	79.4	100.9	53.8	75.3	101.7	61.3	79.8	100.6	58.4	77.7
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	86.5	97.1	100.0	81.5	96.0	100.0	72.1	93.9	100.0	80.2	95.7	100.0	82.2	96.1	100.0	81.8	96.0
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	97.0	81.8	90.8	97.2	51.9	78.6	97.0	74.1	87.6	97.0	61.7	82.5	97.0	73.4	87.3	97.0	84.0	91.7
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	96.2	99.7	97.9	92.2	67.2	80.2	94.5	99.7	97.0	95.6	67.2	81.9	95.7	75.4	85.9	96.2	62.8	80.1
MF2018	WEIGHTED AVERAGE	99.3	80.3	91.6	98.1	64.6	84.5	98.2	78.1	90.0	97.9	61.9	83.3	98.8	74.2	88.8	98.5	71.6	87.5

DIVISION		VIRGINIA																	
		NEWPORT NEWS			NORFOLK			PETERSBURG			PORTSMOUTH			PULASKI			RICHMOND		
		236			233 - 235			238			237			243			230 - 232		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		104.9	104.9		104.9	104.9		104.8	104.8		104.8	104.8		100.9	100.9		104.9	104.9
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	118.3	84.4	95.2	118.1	89.5	98.7	122.2	84.3	96.5	116.8	84.0	94.6	115.3	81.4	92.3	109.3	89.5	95.9
0310	Concrete Forming & Accessories	101.5	59.4	67.5	102.0	59.0	67.3	92.2	59.9	66.1	86.0	59.1	64.3	88.5	57.7	63.6	102.0	59.8	67.9
0320	Concrete Reinforcing	90.6	65.3	82.5	99.7	65.2	88.6	90.3	70.3	83.9	90.3	65.3	82.2	93.8	78.2	88.8	99.6	70.3	90.2
0330	Cast-in-Place Concrete	113.9	74.6	100.3	126.5	75.6	108.9	121.0	74.9	105.1	112.8	63.6	95.8	113.1	78.2	101.1	96.3	76.7	89.5
03	CONCRETE	102.3	67.6	88.4	109.7	67.5	92.8	107.0	68.7	91.7	100.6	63.6	85.8	101.8	70.1	89.1	96.4	69.1	85.5
04	MASONRY	95.5	54.6	69.7	99.7	54.7	71.4	110.0	55.8	75.9	101.8	54.6	72.0	91.9	52.1	66.8	98.7	56.0	71.8
05	METALS	96.8	93.2	95.9	98.0	88.9	95.9	94.3	95.7	94.6	95.7	92.8	95.0	95.8	94.0	95.4	98.6	91.6	97.0
06	WOOD, PLASTICS & COMPOSITES	95.2	57.1	79.4	95.1	56.9	79.3	83.9	56.9	72.7	79.5	56.9	70.1	82.7	56.4	71.8	96.3	56.9	80.0
07	THERMAL & MOISTURE PROTECTION	105.2	64.7	87.4	104.9	67.8	88.7	105.1	67.2	88.5	105.0	65.0	87.5	105.5	66.6	88.4	101.1	69.0	87.0
08	OPENINGS	91.3	62.4	84.3	92.0	62.7	84.9	90.8	63.9	84.3	91.4	62.3	84.4	93.2	54.7	83.9	98.0	63.8	89.8
0920	Plaster & Gypsum Board	121.1	55.4	80.0	111.6	55.4	76.5	106.9	55.2	74.6	108.0	55.2	75.0	101.5	55.2	72.6	117.2	55.4	78.6
0950, 0980	Ceilings & Acoustic Treatment	105.7	55.4	73.0	96.3	55.4	69.7	100.2	55.2	71.0	105.7	55.2	72.9	101.7	55.2	71.6	101.7	55.4	71.7
0960	Flooring	98.3	53.7	84.6	103.7	53.7	88.4	94.9	55.8	82.9	92.4	53.7	80.5	98.3	53.7	84.7	91.5	55.8	80.6
0970, 0990	Wall Finishes & Painting/Coating	96.8	56.5	72.2	98.7	57.4	73.5	96.8	57.4	72.7	96.8	57.4	72.7	102.1	44.8	67.1	98.7	57.4	73.5
09	FINISHES	103.5	57.0	78.3	102.4	56.9	77.7	99.6	57.5	76.7	99.8	57.0	76.6	100.9	54.7	75.8	101.2	57.4	77.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	83.6	96.4	100.0	83.1	96.3	100.0	83.1	96.3	100.0	83.5	96.4	100.0	81.1	95.9	100.0	83.1	96.3
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	101.4	64.1	86.1	100.8	63.6	85.5	97.2	84.1	91.8	101.4	64.1	86.1	97.0	62.2	82.7	100.8	84.0	93.9
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	93.9	67.0	80.9	99.7	60.0	80.6	94.0	69.3	82.1	92.9	60.0	77.0	95.6	77.2	86.7	99.8	69.3	85.1
MF2018	WEIGHTED AVERAGE	99.1	67.8	86.4	101.0	66.7	87.1	98.6	73.0	88.2	98.3	66.2	85.3	97.7	68.1	85.7	99.4	73.2	88.7

DIVISION		VIRGINIA									WASHINGTON								
		ROANOKE			STAUNTON			WINCHESTER			CLARKSTON			EVERETT			OLYMPIA		
		240 - 241			244			226			994			982			985		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		100.9	100.9		104.8	104.8		100.9	100.9		87.7	87.7		96.5	96.5		99.5	99.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	116.2	82.8	93.5	119.4	83.1	94.7	128.7	82.1	97.0	110.5	81.9	91.1	106.1	101.6	103.1	107.9	105.6	106.3
0310	Concrete Forming & Accessories	97.7	59.7	67.1	88.0	59.0	64.6	79.7	62.5	65.8	87.0	60.6	65.7	119.6	106.9	109.4	101.8	106.9	105.9
0320	Concrete Reinforcing	94.9	69.1	86.6	94.5	67.7	85.9	94.2	74.7	88.0	89.4	99.8	92.8	95.6	118.4	102.9	102.5	118.0	107.5
0330	Cast-in-Place Concrete	128.6	82.1	112.5	117.7	81.9	105.3	113.5	59.8	95.0	97.6	77.7	90.7	111.6	109.7	110.9	98.3	111.7	102.9
03	CONCRETE	107.2	71.0	92.7	103.4	70.2	90.1	103.0	65.3	87.9	91.4	73.9	84.4	99.0	109.4	103.1	97.9	109.8	102.6
04	MASONRY	98.2	56.4	71.8	106.8	55.4	74.4	102.2	65.1	78.8	109.6	85.6	94.5	104.1	104.7	104.5	102.7	99.8	100.8
05	METALS	98.5	94.4	97.5	96.0	90.0	94.6	96.2	95.3	96.0	95.6	88.7	94.0	106.4	101.7	105.3	107.5	99.0	105.5
06	WOOD, PLASTICS & COMPOSITES	94.1	56.5	78.6	82.7	56.9	72.0	77.3	61.1	70.6	90.6	55.2	75.9	115.9	106.6	112.1	97.7	106.8	101.5
07	THERMAL & MOISTURE PROTECTION	105.3	68.7	89.3	105.1	67.9	88.8	105.8	72.0	91.0	110.5	76.8	95.7	103.7	107.8	105.5	101.8	106.7	103.9
08	OPENINGS	92.2	63.4	85.2	91.9	52.9	82.5	93.2	64.3	86.2	112.5	63.5	100.7	102.4	110.1	104.3	105.9	110.3	107.0
0920	Plaster & Gypsum Board	115.5	55.4	77.9	101.5	55.2	72.6	101.6	60.2	75.7	142.0	54.0	87.0	125.0	107.1	113.8	111.8	107.1	108.9
0950, 0980	Ceilings & Acoustic Treatment	105.1	55.4	72.9	101.7	55.2	71.6	102.4	60.2	75.0	88.0	54.0	66.0	105.9	107.1	106.7	116.8	107.1	110.5
0960	Flooring	101.5	55.3	87.4	97.9	53.7	84.4	97.0	69.2	88.5	84.8	72.1	80.9	102.5	98.9	101.4	100.0	89.4	96.8
0970, 0990	Wall Finishes & Painting/Coating	102.1	73.0	84.4	102.1	28.5	57.2	117.1	72.0	89.6	78.9	66.9	71.6	92.2	94.4	93.5	101.8	94.9	97.6
09	FINISHES	104.2	59.0	79.7	100.8	54.1	75.4	102.1	64.0	81.4	99.2	61.6	78.8	107.6	103.6	105.4	106.7	101.9	104.1
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	82.1	96.1	100.0	81.5	96.0	100.0	76.1	94.8	100.0	93.0	98.5	100.0	105.2	101.1	100.0	103.1	100.7
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	101.2	65.7	86.7	97.0	55.7	80.0	97.0	75.5	88.2	96.5	74.7	87.6	101.0	107.3	103.6	100.9	105.2	102.7
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	95.6	57.4	77.2	94.9	75.7	85.6	94.7	85.1	90.1	82.8	88.6	85.6	108.0	107.7	107.9	105.3	104.6	105.0
MF2018	WEIGHTED AVERAGE	100.5	67.7	87.2	98.5	66.5	85.5	98.7	74.5	88.9	97.2	77.8	89.3	103.6	106.0	104.6	103.3	104.5	103.8

DIVISION		WASHINGTON																	
		RICHLAND			SEATTLE			SPOKANE			TACOMA			VANCOUVER			WENATCHEE		
		993			980 - 981,987			990 - 992			983 - 984			986			988		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		87.7	87.7		99.0	99.0		87.7	87.7		96.5	96.5		93.1	93.1		96.5	96.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	113.1	82.9	92.6	111.8	102.7	105.6	112.8	82.9	92.5	109.6	101.5	104.1	123.0	89.2	100.1	121.4	98.8	106.1
0310	Concrete Forming & Accessories	87.1	83.4	84.1	103.4	107.4	106.7	94.5	83.0	85.2	106.2	106.9	106.7	105.7	98.5	99.9	108.3	77.5	83.4
0320	Concrete Reinforcing	85.8	99.7	90.3	102.0	115.8	106.4	86.4	100.5	91.0	94.9	118.2	102.4	95.4	118.4	102.8	95.4	89.4	93.4
0330	Cast-in-Place Concrete	97.9	86.1	93.8	117.6	111.4	115.5	101.7	86.0	96.3	114.8	109.6	113.0	128.2	97.7	117.7	117.1	86.2	106.4
03	CONCRETE	90.8	87.2	89.3	107.8	109.8	108.6	93.2	87.1	90.8	100.3	109.3	103.9	109.6	101.5	106.3	106.9	82.9	97.3
04	MASONRY	110.7	85.7	94.9	109.5	105.0	106.7	111.4	100.0	104.2	106.0	103.0	104.1	106.0	104.2	104.9	109.5	88.2	96.1
05	METALS	95.9	90.0	94.5	105.7	101.6	104.7	97.3	90.8	95.7	108.7	101.4	107.0	108.2	101.9	106.8	105.7	88.4	101.7
06	WOOD, PLASTICS & COMPOSITES	90.7	81.7	87.0	102.3	106.8	104.1	100.0	81.7	92.4	102.7	106.6	104.3	97.1	98.5	97.7	105.3	76.1	93.2
07	THERMAL & MOISTURE PROTECTION	112.6	85.8	100.8	102.5	109.4	105.5	110.7	87.3	100.4	103.4	107.0	105.0	104.6	98.9	102.1	103.3	82.6	94.2
08	OPENINGS	110.7	78.6	102.9	105.1	109.6	106.2	111.2	78.2	103.3	103.0	110.2	104.8	98.4	104.0	99.7	102.6	72.5	95.4
0920	Plaster & Gypsum Board	142.0	81.2	104.0	110.4	107.1	108.3	135.6	81.2	101.6	113.7	107.1	109.6	111.5	99.0	103.7	121.9	75.8	93.1
0950, 0980	Ceilings & Acoustic Treatment	93.4	81.2	85.5	107.4	107.1	107.2	90.3	81.2	84.4	110.0	107.1	108.1	106.4	99.0	101.6	101.6	75.8	84.8
0960	Flooring	85.1	79.7	83.4	96.3	101.9	98.0	83.4	98.9	88.1	97.2	98.9	97.7	104.9	102.5	104.2	99.4	72.1	91.0
0970, 0990	Wall Finishes & Painting/Coating	78.9	63.6	69.6	98.7	94.4	96.0	79.1	77.1	77.9	92.2	94.9	93.9	93.3	84.5	87.9	92.2	65.8	76.1
09	FINISHES	100.6	79.7	89.3	102.8	104.4	103.6	98.5	85.1	91.2	105.4	103.6	104.5	103.6	97.5	100.3	106.9	74.2	89.1
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	97.7	99.5	100.0	103.1	100.7	100.0	97.6	99.5	100.0	102.6	100.6	100.0	97.8	99.5	100.0	95.5	99.0
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.8	109.5	104.4	101.0	120.2	108.9	100.8	84.3	94.0	101.1	105.2	102.8	101.1	107.5	103.7	96.9	85.3	92.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	79.4	102.0	90.3	104.0	120.7	112.0	80.2	83.3	81.7	107.9	104.6	106.4	117.3	105.0	111.4	108.4	87.6	98.4
MF2018	WEIGHTED AVERAGE	97.9	92.7	95.8	104.3	110.8	106.9	98.6	86.9	93.8	104.1	104.8	104.4	106.1	102.0	104.4	104.1	85.1	96.4

DIVISION		WASHINGTON			WEST VIRGINIA														
		YAKIMA			BECKLEY			BLUEFIELD			BUCKHANNON			CHARLESTON			CLARKSBURG		
		989			258 - 259			247 - 248			262			250 - 253			263 - 264		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		96.5	96.5		100.9	100.9		100.9	100.9		100.9	100.9		103.8	103.8		100.9	100.9
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	113.0	100.9	104.8	108.8	83.1	91.4	109.2	83.1	91.5	116.0	83.5	93.9	106.9	91.5	96.4	116.9	83.5	94.2
0310	Concrete Forming & Accessories	106.7	80.8	85.8	83.9	82.3	82.6	84.0	82.1	82.4	83.1	80.8	81.3	103.5	87.4	90.5	79.6	81.1	80.8
0320	Concrete Reinforcing	95.2	100.7	96.9	94.4	83.2	90.8	93.5	76.8	88.2	94.1	81.5	90.1	99.9	83.5	94.6	94.1	95.8	94.7
0330	Cast-in-Place Concrete	122.6	88.0	110.6	108.9	86.9	101.3	110.6	86.8	102.4	110.3	89.6	103.2	105.4	88.5	99.5	120.9	85.7	108.7
03	CONCRETE	104.9	86.9	97.7	96.0	85.3	91.7	98.1	84.1	92.5	100.4	85.3	94.3	98.0	88.0	94.0	104.5	86.5	97.3
04	MASONRY	100.0	100.4	100.3	96.4	83.2	88.1	93.5	83.2	87.0	104.6	88.1	94.2	90.8	87.7	88.8	109.1	88.1	95.9
05	METALS	106.2	94.3	103.4	91.3	101.9	93.8	96.0	99.5	96.8	96.2	101.5	97.5	90.0	99.1	92.1	96.2	106.8	98.7
06	WOOD, PLASTICS & COMPOSITES	103.4	76.1	92.1	80.6	82.5	81.4	81.2	82.5	81.7	80.3	77.7	79.2	95.7	88.0	92.5	76.0	77.7	76.7
07	THERMAL & MOISTURE PROTECTION	103.6	90.3	97.8	114.7	81.1	100.0	105.2	81.1	94.6	105.6	84.3	96.3	110.5	86.1	99.8	105.4	84.1	96.0
08	OPENINGS	102.6	86.8	98.8	91.3	78.8	88.3	93.6	77.4	89.7	93.6	75.8	89.3	91.6	81.9	89.2	93.6	81.4	90.7
0920	Plaster & Gypsum Board	114.9	75.8	90.4	98.1	82.1	88.1	100.0	82.1	88.8	100.8	77.2	86.0	114.8	87.7	97.8	96.4	77.2	84.4
0950, 0980	Ceilings & Acoustic Treatment	103.2	75.8	85.4	88.0	82.1	84.2	98.3	82.1	87.8	101.7	77.2	85.8	98.6	87.7	91.5	101.7	77.2	85.8
0960	Flooring	97.8	79.7	92.3	94.7	97.1	95.4	95.2	97.1	95.8	95.0	92.3	94.2	97.1	97.1	97.1	94.1	92.3	93.6
0970, 0990	Wall Finishes & Painting/Coating	92.2	77.1	83.0	98.9	85.5	90.7	102.1	83.3	90.6	102.1	86.7	92.7	101.8	90.0	94.6	102.1	86.7	92.7
09	FINISHES	104.5	78.2	90.2	94.6	85.6	89.7	98.5	85.3	91.3	100.0	83.1	90.8	102.1	89.7	95.4	98.9	83.1	90.3
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	97.1	99.4	100.0	88.9	97.6	100.0	91.0	98.0	100.0	92.1	98.3	100.0	92.4	98.3	100.0	92.1	98.3
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	101.1	110.7	105.0	97.2	87.6	93.3	97.0	77.9	89.2	97.0	92.4	95.1	100.8	88.7	95.9	97.0	92.7	95.2
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	109.7	102.0	106.0	92.9	78.0	85.7	94.9	78.0	86.7	95.8	92.5	94.2	99.6	85.1	92.6	95.8	92.5	94.2
MF2018	WEIGHTED AVERAGE	104.2	96.4	101.0	95.4	85.6	91.4	96.9	83.1	91.3	98.1	88.9	94.4	97.2	89.0	93.9	98.8	89.8	95.1

DIVISION		WEST VIRGINIA																	
		GASSAWAY			HUNTINGTON			LEWISBURG			MARTINSBURG			MORGANTOWN			PARKERSBURG		
		266			255 - 257			249			254			265			261		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		100.9	100.9		100.9	100.9		100.9	100.9		100.9	100.9		100.9	100.9		100.9	100.9
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	113.2	83.5	93.0	114.2	84.5	94.0	126.6	83.1	97.1	113.0	83.5	93.0	110.2	84.7	92.9	119.8	84.4	95.7
0310	Concrete Forming & Accessories	82.4	83.3	83.1	100.6	86.1	88.9	80.1	82.1	81.7	83.9	74.7	76.5	80.1	81.4	81.2	86.0	87.5	87.2
0320	Concrete Reinforcing	94.1	85.3	91.3	95.8	88.3	93.4	94.1	76.9	88.6	94.4	88.5	92.5	94.1	95.9	94.7	93.5	81.4	89.6
0330	Cast-in-Place Concrete	115.5	88.5	106.2	118.7	91.8	109.4	110.7	86.8	102.4	114.1	82.6	103.2	110.3	94.8	104.9	112.7	90.0	104.9
03	CONCRETE	101.2	86.7	95.4	101.8	89.6	96.9	105.5	84.1	96.9	99.2	81.2	92.0	97.8	89.8	94.6	102.3	88.5	96.7
04	MASONRY	109.5	88.0	96.0	94.8	89.8	91.7	95.7	83.2	87.8	97.6	78.4	85.5	126.0	88.1	102.1	83.2	81.2	82.0
05	METALS	96.2	102.7	97.7	94.0	104.4	96.4	96.1	99.5	96.9	91.7	101.5	94.0	96.3	107.1	98.8	96.7	101.7	97.9
06	WOOD, PLASTICS & COMPOSITES	78.9	81.3	79.9	95.2	85.3	91.1	76.3	82.5	78.9	80.6	74.2	77.9	76.3	77.7	76.9	80.8	88.8	84.1
07	THERMAL & MOISTURE PROTECTION	105.2	85.0	96.4	115.1	84.8	101.8	106.2	81.1	95.2	114.9	74.9	97.3	105.2	85.4	96.5	105.5	83.6	95.9
08	OPENINGS	92.1	78.6	88.8	90.5	81.4	88.3	93.6	77.4	89.7	92.9	69.5	87.2	94.7	81.4	91.5	92.6	81.9	90.0
0920	Plaster & Gypsum Board	98.3	80.9	87.4	110.4	85.0	94.5	96.4	82.1	87.4	98.1	73.5	82.7	96.4	77.2	84.4	101.5	88.6	93.4
0950, 0980	Ceilings & Acoustic Treatment	101.7	80.9	88.2	88.0	85.0	86.0	101.7	82.1	89.0	88.0	73.5	78.6	101.7	77.2	85.8	101.7	88.6	93.2
0960	Flooring	94.8	97.1	95.5	101.7	97.9	100.5	94.2	97.1	95.1	94.7	92.0	93.9	94.2	92.3	93.6	97.6	97.9	97.7
0970, 0990	Wall Finishes & Painting/Coating	102.1	90.0	94.7	98.9	86.9	91.6	102.1	59.8	76.3	98.9	77.7	86.0	102.1	86.7	92.7	102.1	89.0	94.1
09	FINISHES	99.2	86.6	92.3	98.5	88.3	93.0	100.3	82.7	90.8	94.9	77.8	85.6	98.4	83.1	90.1	100.9	89.8	94.9
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	92.5	98.4	100.0	92.4	98.4	100.0	88.9	97.6	100.0	74.9	94.5	100.0	92.2	98.3	100.0	91.8	98.2
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	97.0	80.3	90.2	101.4	89.1	96.4	97.0	87.5	93.1	97.2	75.0	88.1	97.0	92.7	95.2	101.2	88.1	95.8
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	95.8	85.1	90.6	95.3	86.4	91.0	93.4	78.0	85.9	96.5	71.2	84.3	95.9	92.5	94.3	95.9	87.8	92.0
MF2018	WEIGHTED AVERAGE	98.1	86.1	93.3	98.3	89.4	94.7	98.5	84.8	92.9	96.6	78.8	89.4	98.4	90.4	95.2	98.6	88.3	94.4

DIVISION		WEST VIRGINIA									WISCONSIN								
		PETERSBURG			ROMNEY			WHEELING			BELOIT			EAU CLAIRE			GREEN BAY		
		268			267			260			535			547			541 - 543		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		100.9	100.9		100.9	100.9		100.9	100.9		96.0	96.0		96.7	96.7		94.5	94.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	109.5	84.4	92.4	112.7	84.4	93.5	120.5	84.4	96.0	83.3	96.8	92.5	84.9	95.9	92.4	87.5	92.1	90.6
0310	Concrete Forming & Accessories	84.6	84.1	84.2	79.1	83.9	83.0	88.6	80.3	81.9	90.0	91.0	90.8	94.9	96.4	96.1	111.4	106.7	107.6
0320	Concrete Reinforcing	93.5	85.3	90.9	94.1	88.8	92.4	92.9	95.9	93.9	101.3	139.9	113.7	93.3	113.3	99.7	92.4	110.2	98.1
0330	Cast-in-Place Concrete	110.3	89.6	103.1	115.5	81.6	103.8	112.7	91.2	105.3	89.7	94.2	91.3	110.0	102.3	107.4	113.8	101.9	109.7
03	CONCRETE	97.9	87.4	93.7	101.0	85.1	94.7	102.3	88.1	96.6	92.9	100.8	96.1	98.7	101.7	99.9	102.3	105.7	103.6
04	MASONRY	99.6	88.1	92.4	96.2	88.0	91.0	107.7	85.5	93.7	92.2	107.0	101.5	92.2	108.2	102.3	121.0	102.1	109.1
05	METALS	96.3	102.7	97.8	96.4	103.7	98.1	96.9	107.0	99.2	92.3	115.4	97.7	86.4	108.3	91.6	90.7	107.3	94.6
06	WOOD, PLASTICS & COMPOSITES	81.5	82.5	81.9	75.3	82.5	78.3	82.7	77.7	80.7	90.8	88.8	90.0	98.1	94.2	96.5	111.1	108.0	109.8
07	THERMAL & MOISTURE PROTECTION	105.3	80.4	94.4	105.3	80.3	94.3	105.7	83.1	95.8	94.5	90.7	92.8	100.1	103.3	101.5	103.0	102.7	102.9
08	OPENINGS	94.7	78.7	90.8	94.6	79.5	91.0	93.3	81.4	90.4	95.5	104.5	97.7	100.0	95.3	98.8	95.6	107.4	98.5
0920	Plaster & Gypsum Board	100.8	82.1	89.1	95.9	82.1	87.3	101.5	77.2	86.3	86.7	89.1	88.2	96.9	94.6	95.5	102.7	108.8	106.5
0950, 0980	Ceilings & Acoustic Treatment	101.7	82.1	89.0	101.7	82.1	89.0	101.7	77.2	85.8	87.8	89.1	88.7	90.6	94.6	93.2	83.7	108.8	100.0
0960	Flooring	95.7	92.3	94.7	94.0	92.0	93.4	98.3	92.3	96.5	94.9	110.2	99.6	83.8	119.6	94.8	99.1	121.2	105.9
0970, 0990	Wall Finishes & Painting/Coating	102.1	86.7	92.7	102.1	86.7	92.7	102.1	86.7	92.7	94.5	96.1	95.5	86.1	83.1	84.3	92.8	123.1	111.3
09	FINISHES	99.5	85.9	92.1	98.5	85.8	91.6	101.1	82.5	91.0	91.9	94.4	93.3	88.9	98.9	94.4	93.4	111.6	103.2
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	92.6	98.4	100.0	92.6	98.4	100.0	88.5	97.5	100.0	97.6	99.5	100.0	96.4	99.2	100.0	98.6	99.7
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	97.0	80.8	90.3	97.0	80.5	90.2	101.2	91.3	97.2	98.7	88.8	94.6	100.8	88.5	95.8	101.1	95.5	98.8
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	97.8	71.3	85.0	97.3	71.3	84.8	94.2	92.5	93.4	101.7	78.1	90.3	100.5	102.4	101.4	97.7	104.4	100.9
MF2018	WEIGHTED AVERAGE	97.7	84.3	92.2	97.9	84.0	92.2	99.6	89.3	95.4	95.4	95.5	95.4	95.8	99.0	97.1	98.3	102.6	100.1

DIVISION		WISCONSIN																	
		KENOSHA			LA CROSSE			LANCASTER			MADISON			MILWAUKEE			NEW RICHMOND		
		531			546			538			537			530,532			540		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		94.1	94.1		96.7	96.7		96.0	96.0		100.2	100.2		88.6	88.6		97.0	97.0
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	88.3	95.3	93.0	79.6	95.9	90.7	81.9	96.3	91.7	82.7	104.2	97.3	78.1	93.8	88.7	84.5	94.7	91.4
0310	Concrete Forming & Accessories	104.7	111.9	110.5	76.6	96.5	92.6	89.1	89.9	89.7	95.2	105.9	103.8	95.3	116.6	112.5	87.3	87.1	87.1
0320	Concrete Reinforcing	101.2	113.8	105.3	93.2	108.9	98.2	102.0	99.8	101.2	99.6	109.1	102.6	99.6	113.9	104.2	91.9	107.2	96.8
0330	Cast-in-Place Concrete	97.7	106.1	100.6	98.9	102.3	100.1	89.2	93.7	90.8	82.6	107.4	91.2	83.2	111.0	92.8	114.5	96.4	108.3
03	CONCRETE	97.4	110.0	102.5	90.0	101.0	94.4	92.6	93.3	92.9	93.3	106.8	98.7	93.5	113.2	101.4	97.0	94.4	96.0
04	MASONRY	90.5	113.0	104.7	91.1	102.7	98.4	92.3	107.0	101.6	91.6	105.6	100.4	94.7	117.4	109.0	115.8	107.1	110.3
05	METALS	94.2	107.1	97.2	86.3	106.5	91.1	89.4	99.8	91.8	96.1	102.5	97.6	97.4	97.5	97.5	88.2	104.6	92.1
06	WOOD, PLASTICS & COMPOSITES	101.5	112.2	106.0	79.8	94.2	85.8	89.9	88.8	89.5	93.3	105.9	98.5	99.4	115.9	106.2	85.9	85.1	85.6
07	THERMAL & MOISTURE PROTECTION	95.6	107.7	100.9	99.2	101.1	100.1	94.2	90.5	92.6	92.9	105.7	98.5	92.9	112.5	101.5	99.8	97.0	98.6
08	OPENINGS	89.9	111.2	95.0	99.9	94.0	98.5	91.8	86.5	90.5	99.4	106.4	101.1	102.8	113.2	105.3	85.9	85.0	85.7
0920	Plaster & Gypsum Board	82.5	113.2	101.7	89.4	94.6	92.6	85.4	89.1	87.7	89.8	106.3	100.1	89.1	116.4	106.2	81.5	85.4	83.9
0950, 0980	Ceilings & Acoustic Treatment	87.8	113.2	104.3	89.2	94.6	92.7	81.6	89.1	86.5	95.4	106.3	102.5	92.0	116.4	107.8	58.9	85.4	76.1
0960	Flooring	112.9	115.3	113.7	78.8	121.2	91.8	94.7	103.2	97.3	95.6	119.3	102.9	100.2	115.1	104.7	93.4	106.5	97.4
0970, 0990	Wall Finishes & Painting/Coating	104.0	119.3	113.3	86.1	122.7	108.4	94.5	90.6	92.2	101.8	102.0	101.9	101.8	122.7	114.6	97.1	75.8	84.1
09	FINISHES	96.7	113.9	106.0	85.7	103.6	95.4	90.3	92.2	91.3	95.0	108.3	102.2	95.6	117.5	107.5	82.7	89.2	86.2
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	100.6	100.1	100.0	99.6	99.9	100.0	97.6	99.5	100.0	101.8	100.4	100.0	103.7	100.8	100.0	87.5	97.3
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	101.1	99.5	100.5	100.8	88.5	95.8	94.6	82.7	89.7	96.4	97.6	96.9	96.4	106.7	100.6	95.9	82.4	90.4
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	102.6	99.1	100.9	100.7	104.4	102.5	101.3	78.7	90.4	100.2	102.3	101.2	100.5	102.3	101.4	99.6	78.7	89.5
MF2018	WEIGHTED AVERAGE	97.0	105.3	100.4	93.9	99.0	96.0	93.3	90.8	92.3	96.1	103.5	99.1	96.9	108.0	101.4	93.9	90.5	92.5

DIVISION		WISCONSIN																	
		OSHKOSH			PORTAGE			RACINE			RHINELANDER			SUPERIOR			WAUSAU		
		549			539			534			545			548			544		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		94.5	94.5		96.0	96.0		96.0	96.0		94.5	94.5		97.0	97.0		94.5	94.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	79.9	91.0	87.5	74.9	97.0	89.9	83.9	98.7	94.0	89.6	90.6	90.3	81.6	94.5	90.3	76.5	91.7	86.8
0310	Concrete Forming & Accessories	87.9	90.4	89.9	79.4	90.5	88.4	90.4	111.9	107.8	84.7	89.3	88.4	84.6	83.6	83.8	87.2	92.1	91.1
0320	Concrete Reinforcing	92.5	103.2	95.9	102.0	99.9	101.3	101.3	113.8	105.3	92.5	100.0	94.9	91.9	110.0	97.7	92.5	109.2	97.9
0330	Cast-in-Place Concrete	105.5	93.3	101.3	76.6	92.5	82.1	88.0	105.9	94.2	119.7	92.0	110.1	108.0	92.3	102.6	98.3	87.0	94.4
03	CONCRETE	92.6	94.1	93.2	82.3	93.3	86.7	92.1	110.0	99.3	103.4	92.6	99.1	92.0	91.9	92.0	87.9	93.7	90.2
04	MASONRY	104.9	108.5	107.1	91.0	107.0	101.1	92.4	113.0	105.4	125.1	106.4	113.3	114.8	104.9	108.5	104.2	106.4	105.6
05	METALS	88.5	103.4	92.0	90.0	103.8	93.3	93.8	107.1	96.9	88.0	101.9	91.3	89.2	106.0	93.1	87.9	105.9	92.1
06	WOOD, PLASTICS & COMPOSITES	86.1	88.9	87.2	78.4	88.8	82.7	91.1	112.2	99.9	83.0	88.9	85.4	84.0	80.9	82.7	85.4	91.7	88.0
07	THERMAL & MOISTURE PROTECTION	101.7	82.8	93.4	93.5	96.5	94.8	94.6	107.9	100.4	102.6	81.1	93.2	99.3	91.9	96.1	101.5	92.3	97.5
08	OPENINGS	92.4	90.6	92.0	92.0	93.8	92.4	95.5	111.2	99.3	92.4	86.5	91.0	85.3	90.3	86.5	92.6	93.6	92.8
0920	Plaster & Gypsum Board	81.7	89.1	86.4	73.0	89.1	83.1	86.7	113.2	103.3	81.7	89.1	86.4	81.8	81.1	81.4	81.7	92.0	88.2
0950, 0980	Ceilings & Acoustic Treatment	83.7	89.1	87.2	85.7	89.1	87.9	87.8	113.2	104.3	83.7	89.1	87.2	60.3	81.1	73.8	83.7	92.0	89.1
0960	Flooring	91.9	106.8	96.5	91.6	106.5	96.1	94.9	115.3	101.2	91.4	106.5	96.0	94.6	114.5	100.7	91.8	106.5	96.3
0970, 0990	Wall Finishes & Painting/Coating	90.9	103.5	98.6	94.5	90.6	92.2	94.5	121.6	111.0	90.9	74.2	80.7	84.4	98.1	92.8	90.9	77.2	82.6
09	FINISHES	87.4	94.9	91.5	87.8	93.1	90.7	91.9	114.1	104.0	88.1	91.1	89.8	82.3	90.3	86.6	87.1	93.1	90.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	96.1	99.1	100.0	97.7	99.5	100.0	100.6	100.1	100.0	95.3	99.0	100.0	86.4	97.0	100.0	95.7	99.1
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.9	82.1	90.8	94.6	88.8	92.2	100.9	99.5	100.3	96.9	82.1	90.8	95.9	84.5	91.3	96.9	82.7	91.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	99.9	78.1	89.4	103.9	87.2	95.8	102.5	96.1	99.4	99.5	72.4	86.4	102.6	91.3	97.2	100.6	72.4	87.0
MF2018	WEIGHTED AVERAGE	94.0	91.0	92.7	91.8	94.3	92.8	96.2	105.2	99.8	96.4	88.9	93.4	93.5	92.5	93.0	93.1	90.5	92.1

DIVISION		WYOMING																	
		CASPER			CHEYENNE			NEWCASTLE			RAWLINS			RIVERTON			ROCK SPRINGS		
		826			820			827			823			825			829 - 831		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		99.2	99.2		92.1	92.1		92.1	92.1		92.1	92.1		92.1	92.1		92.1	92.1
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	100.0	98.2	98.8	92.5	86.2	88.2	83.9	86.2	85.4	97.3	86.2	89.8	91.2	86.2	87.8	87.5	86.2	86.6
0310	Concrete Forming & Accessories	102.2	64.3	71.6	105.1	63.5	71.5	91.4	62.8	68.3	97.3	62.8	69.5	89.9	62.7	67.9	100.0	64.9	71.7
0320	Concrete Reinforcing	101.7	82.2	95.4	92.8	82.3	89.4	100.2	82.3	94.5	100.0	82.3	94.3	100.8	82.3	94.9	100.8	81.9	94.8
0330	Cast-in-Place Concrete	95.7	79.5	90.1	90.2	77.9	86.0	91.1	77.3	86.4	91.2	77.3	86.4	91.2	77.3	86.4	91.1	77.9	86.6
03	CONCRETE	102.4	73.1	90.7	96.2	72.4	86.7	96.6	71.9	86.7	108.7	71.9	93.9	103.8	71.8	91.0	97.4	72.9	87.6
04	MASONRY	102.6	65.2	79.0	104.7	66.8	80.8	101.6	66.3	79.4	101.6	66.3	79.3	101.6	66.3	79.4	161.5	61.3	98.3
05	METALS	97.0	79.2	92.9	99.0	81.5	94.9	95.5	81.5	92.2	95.5	81.5	92.2	95.6	81.3	92.3	96.2	80.9	92.6
06	WOOD, PLASTICS & COMPOSITES	96.6	61.9	82.2	97.5	60.7	82.3	84.9	60.5	74.8	89.9	60.5	77.8	83.5	60.5	74.0	96.0	62.9	82.3
07	THERMAL & MOISTURE PROTECTION	107.4	67.5	89.9	102.0	66.7	86.5	102.6	65.2	86.2	104.3	65.2	87.2	103.6	68.4	88.1	102.8	68.0	87.6
08	OPENINGS	104.1	66.8	95.1	102.0	66.1	93.4	106.1	64.6	96.0	105.7	64.6	95.8	105.9	64.6	95.9	106.4	67.0	96.9
0920	Plaster & Gypsum Board	101.4	60.9	76.0	92.8	59.9	72.2	89.5	59.7	70.8	89.8	59.7	70.9	89.5	59.7	70.8	110.3	62.1	80.1
0950, 0980	Ceilings & Acoustic Treatment	112.7	60.9	79.0	100.0	59.9	74.0	102.3	59.7	74.6	102.3	59.7	74.6	102.3	59.7	74.6	102.3	62.1	76.2
0960	Flooring	101.5	73.7	93.0	100.8	73.7	92.5	95.2	66.0	86.3	97.5	66.0	87.8	94.7	66.0	85.9	99.4	58.0	86.7
0970, 0990	Wall Finishes & Painting/Coating	101.8	56.6	74.3	101.0	56.6	74.0	97.2	72.7	82.3	97.2	72.7	82.3	97.2	56.1	72.2	97.2	74.2	83.2
09	FINISHES	103.8	64.6	82.5	100.0	63.9	80.4	95.2	63.6	78.1	97.3	63.6	79.0	96.0	61.8	77.4	99.8	63.8	80.3
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	86.4	97.0	100.0	87.9	97.4	100.0	95.5	99.0	100.0	95.5	99.0	100.0	84.7	96.7	100.0	87.3	97.2
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.9	73.2	89.5	101.2	75.5	90.7	98.8	72.1	87.9	98.8	72.1	87.9	98.8	72.0	87.8	101.1	72.6	89.4
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	102.1	61.8	82.6	99.8	67.8	84.4	97.9	57.8	78.6	97.9	57.8	78.6	97.9	61.8	80.5	96.9	64.9	81.5
MF2018	WEIGHTED AVERAGE	101.0	72.0	89.2	99.7	72.6	88.7	97.9	70.4	86.7	100.1	70.4	88.0	99.1	70.4	87.5	101.6	71.1	89.2

DIVISION		WYOMING												CANADA					
		SHERIDAN			WHEATLAND			WORLAND			YELLOWSTONE NAT'L PA			BARRIE, ONTARIO			BATHURST, NEW BRUNSWICK		
		828			822			824			821								
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		92.1	92.1		92.1	92.1		92.1	92.1		92.1	92.1		96.9	96.9		95.9	95.9
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	91.7	86.2	88.0	88.1	86.2	86.8	85.4	86.2	85.9	85.5	86.2	86.0	120.3	90.0	99.8	113.9	85.6	94.7
0310	Concrete Forming & Accessories	102.6	63.1	70.7	94.0	62.5	68.6	94.1	62.8	68.9	94.2	62.8	68.8	126.4	79.7	88.7	99.1	55.9	64.3
0320	Concrete Reinforcing	100.8	82.3	94.9	100.2	81.6	94.3	100.8	82.3	94.9	102.6	82.3	96.1	152.2	83.4	130.1	70.5	55.2	65.6
0330	Cast-in-Place Concrete	94.2	77.9	88.6	95.1	77.2	88.9	91.1	77.3	86.4	91.1	77.3	86.4	165.2	78.7	135.3	115.6	53.6	94.2
03	CONCRETE	104.3	72.2	91.5	101.0	71.6	89.3	97.0	71.9	86.9	97.4	71.8	87.1	145.1	80.6	119.3	104.4	56.0	85.0
04	MASONRY	101.9	67.4	80.1	102.0	54.8	72.3	101.6	66.3	79.4	101.6	66.3	79.4	170.8	86.0	117.4	165.2	55.3	96.0
05	METALS	99.0	81.3	94.9	95.4	80.3	91.9	95.6	81.5	92.3	96.2	81.4	92.8	95.9	90.3	94.6	82.3	71.9	79.9
06	WOOD, PLASTICS & COMPOSITES	99.5	60.5	83.4	87.3	60.5	76.2	87.4	60.5	76.3	87.4	60.5	76.3	118.5	78.6	102.0	93.4	56.2	78.0
07	THERMAL & MOISTURE PROTECTION	104.6	66.8	88.0	102.9	62.1	85.0	102.7	65.2	86.3	102.2	65.2	86.0	113.6	82.0	99.8	110.0	55.6	86.1
08	OPENINGS	106.6	64.6	96.4	104.7	64.6	95.0	106.3	64.6	96.2	99.6	64.6	91.1	87.0	78.5	85.0	81.3	49.6	73.6
0920	Plaster & Gypsum Board	110.7	59.7	78.8	89.5	59.7	70.8	89.5	59.7	70.8	89.7	59.7	70.9	168.4	78.2	112.0	123.7	55.2	80.9
0950, 0980	Ceilings & Acoustic Treatment	105.4	59.7	75.7	102.3	59.7	74.6	102.3	59.7	74.6	103.0	59.7	74.9	98.1	78.2	85.2	116.4	55.2	76.7
0960	Flooring	100.8	56.1	87.1	96.4	66.0	87.1	96.4	66.0	87.1	96.4	66.0	87.1	119.0	83.8	108.2	101.5	39.8	82.6
0970, 0990	Wall Finishes & Painting/Coating	99.8	56.6	73.5	97.2	54.2	71.0	97.2	72.7	82.3	97.2	56.1	72.2	106.5	80.3	90.5	112.4	45.9	71.8
09	FINISHES	103.9	60.7	80.4	95.9	61.6	77.3	95.5	63.6	78.2	95.7	61.8	77.3	117.4	80.7	97.5	110.9	51.9	78.9
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	85.8	96.9	100.0	85.4	96.8	100.0	95.6	99.0	100.0	95.6	99.0	139.3	61.5	122.4	131.1	54.7	114.5
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	98.8	72.6	88.1	98.8	72.1	87.9	98.8	72.1	87.9	98.8	72.1	87.9	106.5	89.4	99.5	106.4	61.9	88.2
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	99.9	61.8	81.5	97.9	61.8	80.5	97.9	61.8	80.5	97.3	61.8	80.2	120.4	79.3	100.6	120.3	53.4	88.0
MF2018	WEIGHTED AVERAGE	101.0	70.6	88.6	98.6	69.0	86.5	98.1	71.0	87.1	97.6	70.7	86.7	116.1	83.8	102.9	105.3	59.7	86.7

DIVISION		CANADA																	
		BRANDON, MANITOBA			BRANTFORD, ONTARIO			BRIDGEWATER, NOVA SCOTIA			CALGARY, ALBERTA			CAP-DE-LA-MADELEINE, QUEBEC			CHARLESBOURG, QUEBEC		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		98.7	98.7		96.4	96.4		96.1	96.1		120.3	120.3		96.9	96.9		96.9	96.9
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	123.5	88.6	99.8	125.1	90.0	101.3	106.1	87.6	93.5	115.8	109.0	111.2	101.1	88.9	92.8	101.1	88.9	92.8
0310	Concrete Forming & Accessories	153.0	64.0	81.2	128.8	86.3	94.5	89.1	65.7	70.2	123.1	89.7	96.2	137.4	76.6	88.4	137.4	76.6	88.4
0320	Concrete Reinforcing	85.3	52.4	74.7	82.0	82.2	82.1	69.9	45.7	62.1	66.4	76.8	69.7	69.9	69.6	69.8	69.9	69.6	69.8
0330	Cast-in-Place Concrete	124.7	67.3	104.9	149.0	97.7	131.3	153.2	63.9	122.4	145.8	99.5	129.8	120.2	83.9	107.7	120.2	83.9	107.7
03	CONCRETE	118.9	64.2	97.0	123.4	90.0	110.0	121.1	62.7	97.7	128.8	91.6	113.9	108.7	78.6	96.6	108.7	78.6	96.6
04	MASONRY	221.0	58.5	118.5	175.0	90.0	121.4	170.1	63.2	102.7	226.6	83.1	136.2	170.3	73.6	109.3	170.3	73.6	109.3
05	METALS	91.4	77.2	88.1	80.8	90.7	83.1	80.2	74.7	78.9	91.2	95.0	92.1	79.6	83.7	80.5	79.6	83.7	80.5
06	WOOD, PLASTICS & COMPOSITES	150.9	65.0	115.3	120.8	85.3	106.1	83.7	65.5	76.2	101.7	89.8	96.7	134.5	76.8	110.6	134.5	76.8	110.6
07	THERMAL & MOISTURE PROTECTION	126.1	65.4	99.5	119.7	87.1	105.4	114.2	64.4	92.4	139.9	92.6	119.1	114.1	80.2	99.2	114.1	80.2	99.2
08	OPENINGS	96.9	58.1	87.5	84.6	84.1	84.5	79.9	59.5	74.9	84.1	77.9	82.6	86.1	70.2	82.3	86.1	70.2	82.3
0920	Plaster & Gypsum Board	138.7	63.9	91.9	131.9	85.1	102.7	117.3	64.8	84.5	134.8	88.7	106.0	160.6	76.3	107.9	160.6	76.3	107.9
0950, 0980	Ceilings & Acoustic Treatment	122.9	63.9	84.6	103.7	85.1	91.7	103.7	64.8	78.5	145.8	88.7	108.8	103.7	76.3	85.9	103.7	76.3	85.9
0960	Flooring	129.3	59.4	107.9	112.9	83.8	104.0	98.1	56.6	85.4	126.6	80.0	112.3	112.9	82.5	103.6	112.9	82.5	103.6
0970, 0990	Wall Finishes & Painting/Coating	117.6	51.8	77.5	110.9	88.1	97.0	110.9	56.8	77.9	110.1	98.7	103.1	110.9	80.1	92.1	110.9	80.1	92.1
09	FINISHES	127.6	62.1	92.0	113.0	86.3	98.5	106.0	63.3	82.8	126.6	89.4	106.4	117.0	78.4	96.0	117.0	78.4	96.0
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	131.1	56.9	115.0	131.1	63.3	116.4	131.1	57.5	115.1	131.1	86.3	121.4	131.1	71.6	118.2	131.1	71.6	118.2
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	106.7	75.4	93.8	106.5	92.1	100.6	106.5	76.0	94.0	107.5	83.4	97.6	106.9	80.5	96.1	106.9	80.5	96.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	118.8	60.3	90.6	117.0	78.9	98.6	120.4	56.1	89.4	113.7	87.0	100.8	115.1	62.4	89.7	115.1	62.4	89.7
MF2018	WEIGHTED AVERAGE	115.3	67.8	96.0	109.0	87.2	100.1	106.7	67.5	90.8	114.8	89.0	104.3	106.2	76.9	94.3	106.2	76.9	94.3

DIVISION		CANADA																	
		CHARLOTTETOWN, PRINCE EDWARD ISLAND			CHICOUTIMI, QUEBEC			CORNER BROOK, NEWFOUNDLAND			CORNWALL, ONTARIO			DALHOUSIE, NEW BRUNSWICK			DARTMOUTH, NOVA SCOTIA		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		118.0	118.0		96.5	96.5		97.4	97.4		96.4	96.4		96.5	96.5		96.3	96.3
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	149.2	104.7	119.0	110.5	89.0	95.9	128.1	86.3	99.7	122.9	89.5	100.2	104.1	86.1	91.8	119.0	87.7	97.8
0310	Concrete Forming & Accessories	126.5	51.5	66.0	140.8	89.4	99.3	119.2	73.0	82.0	125.7	79.8	88.7	96.8	56.1	64.0	104.7	65.7	73.3
0320	Concrete Reinforcing	76.2	44.7	66.1	53.1	93.4	66.1	78.2	46.8	68.1	82.0	81.9	82.0	71.4	55.3	66.2	81.8	45.7	70.2
0330	Cast-in-Place Concrete	136.8	56.7	109.1	108.8	93.1	103.4	145.2	60.9	116.1	134.0	89.0	118.5	129.4	53.8	103.3	140.2	64.0	113.9
03	CONCRETE	128.0	53.8	98.3	97.9	91.6	95.4	148.0	65.1	114.8	116.6	83.9	103.5	114.3	56.2	91.1	131.2	62.7	103.8
04	MASONRY	186.6	53.0	102.4	167.6	89.1	118.1	216.6	71.5	125.1	173.5	82.5	116.1	171.5	55.3	98.3	232.3	63.2	125.7
05	METALS	94.9	75.8	90.5	82.1	92.0	84.4	91.7	74.2	87.6	80.6	89.5	82.7	75.8	72.5	75.0	91.9	74.8	87.9
06	WOOD, PLASTICS & COMPOSITES	104.7	51.2	82.6	134.8	90.3	116.3	123.8	79.0	105.3	118.9	79.3	102.5	91.2	56.3	76.7	109.2	65.6	91.1
07	THERMAL & MOISTURE PROTECTION	141.2	55.9	103.8	110.9	94.3	103.6	129.6	62.7	100.3	119.4	82.1	103.1	118.8	55.6	91.1	126.6	64.4	99.3
08	OPENINGS	86.7	44.5	76.5	84.9	76.0	82.8	102.5	64.5	93.3	86.1	78.2	84.2	82.7	49.7	74.7	88.6	59.5	81.6
0920	Plaster & Gypsum Board	133.9	49.2	80.9	159.4	90.1	116.1	153.6	78.5	106.6	178.7	79.0	116.4	127.5	55.2	82.3	145.1	64.8	94.9
0950, 0980	Ceilings & Acoustic Treatment	134.7	49.2	79.2	115.0	90.1	98.9	123.6	78.5	94.4	107.9	79.0	89.1	107.7	55.2	73.6	133.9	64.8	89.1
0960	Flooring	123.0	53.1	101.6	114.7	82.5	104.9	114.0	47.6	93.7	112.9	82.6	103.7	104.3	60.9	91.1	109.8	56.6	93.5
0970, 0990	Wall Finishes & Painting/Coating	112.3	38.2	67.1	112.4	102.7	106.5	117.5	54.1	78.8	110.9	82.0	93.3	114.1	45.9	72.5	117.5	56.8	80.5
09	FINISHES	129.1	50.7	86.5	119.7	90.6	103.9	126.5	67.7	94.5	121.5	80.7	99.4	111.8	56.2	81.6	124.8	63.3	91.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	131.1	55.7	114.8	131.1	76.8	119.3	131.1	57.4	115.1	131.1	61.1	115.9	131.1	54.7	114.5	131.1	57.6	115.1
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	106.9	56.5	86.2	106.4	79.7	95.5	106.7	63.0	88.8	106.9	90.2	100.0	106.5	61.9	88.2	106.7	76.0	94.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	122.5	45.4	85.3	115.9	82.8	99.9	114.8	49.3	83.2	117.0	79.7	99.0	120.5	50.5	86.7	118.1	56.1	88.2
MF2018	WEIGHTED AVERAGE	115.9	58.3	92.5	105.4	86.2	97.6	119.1	65.7	97.3	108.7	84.0	98.6	105.8	60.0	87.1	115.9	67.6	96.2

DIVISION		CANADA																	
		EDMONTON, ALBERTA			FORT MCMURRAY, ALBERTA			FREDERICTON, NEW BRUNSWICK			GATINEAU, QUEBEC			GRANBY, QUEBEC			HALIFAX, NOVA SCOTIA		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		121.1	121.1		98.6	98.6		118.2	118.2		96.9	96.9		96.9	96.9		115.5	115.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	123.0	110.5	114.5	130.0	90.8	103.4	154.9	105.8	121.6	100.8	88.9	92.8	101.4	88.9	92.9	112.7	105.5	107.8
0310	Concrete Forming & Accessories	126.4	89.7	96.8	125.3	84.6	92.4	127.5	57.1	70.7	137.4	76.5	88.3	137.4	76.5	88.3	123.9	84.1	91.8
0320	Concrete Reinforcing	66.2	76.8	69.6	75.9	76.7	76.2	70.5	55.5	65.7	73.9	69.5	72.5	73.9	69.5	72.5	76.0	74.8	75.6
0330	Cast-in-Place Concrete	163.8	99.5	141.6	198.0	93.0	161.7	155.3	57.4	121.5	118.6	83.8	106.6	122.5	83.8	109.2	143.9	77.0	120.8
03	CONCRETE	136.9	91.6	118.8	143.4	86.5	120.7	135.1	58.4	104.4	108.8	78.5	96.7	110.6	78.5	97.7	130.2	81.0	110.5
04	MASONRY	226.8	83.1	136.2	217.3	80.8	131.2	193.7	56.7	107.3	170.1	73.6	109.2	170.5	73.6	109.4	186.8	82.4	121.0
05	METALS	93.7	94.9	94.0	100.4	86.4	97.1	95.1	81.1	91.8	79.6	83.6	80.5	79.7	83.5	80.6	94.8	95.3	94.9
06	WOOD, PLASTICS & COMPOSITES	100.7	89.8	96.2	113.6	84.3	101.5	107.1	57.0	86.3	134.5	76.8	110.6	134.5	76.8	110.6	104.1	84.6	96.0
07	THERMAL & MOISTURE PROTECTION	142.5	92.6	120.6	128.6	86.7	110.3	140.8	57.8	104.4	114.1	80.2	99.2	114.1	78.7	98.6	142.7	84.7	117.2
08	OPENINGS	82.7	77.9	81.5	86.1	74.9	83.4	89.9	49.0	80.0	86.1	65.9	81.2	86.1	65.9	81.2	90.9	76.2	87.3
0920	Plaster & Gypsum Board	133.0	88.7	105.3	125.5	83.8	99.4	136.8	55.2	85.8	138.3	76.3	99.6	138.3	76.3	99.6	135.7	83.7	103.2
0950, 0980	Ceilings & Acoustic Treatment	146.5	88.7	109.0	114.0	83.8	94.4	136.1	55.2	83.6	103.7	76.3	85.9	103.7	76.3	85.9	132.2	83.7	100.7
0960	Flooring	128.7	80.0	113.8	112.9	80.0	102.9	123.1	63.6	104.9	112.9	82.5	103.6	112.9	82.5	103.6	116.7	76.9	104.5
0970, 0990	Wall Finishes & Painting/Coating	113.1	98.7	104.3	111.0	84.6	94.9	112.9	58.5	79.7	110.9	80.1	92.1	110.9	80.1	92.1	112.6	86.2	96.5
09	FINISHES	126.4	89.4	106.3	115.5	84.0	98.4	133.0	58.7	92.6	113.4	78.4	94.4	113.4	78.4	94.4	126.9	83.6	103.3
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	131.1	87.5	121.6	131.1	84.6	121.0	131.1	56.3	114.9	131.1	71.6	118.2	131.1	71.6	118.2	131.1	64.8	116.7
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	107.4	83.6	97.6	106.9	89.0	99.6	107.0	70.5	92.0	106.9	80.5	96.1	106.5	80.5	95.8	107.3	77.4	95.0
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	125.6	87.0	107.0	110.4	74.1	92.9	124.2	66.6	96.4	115.1	62.4	89.7	116.0	62.4	90.2	127.2	84.3	106.5
MF2018	WEIGHTED AVERAGE	117.7	89.2	106.1	117.4	84.1	103.9	118.1	67.3	97.4	106.0	76.7	94.1	106.3	76.6	94.2	116.1	83.8	103.0

DIVISION		CANADA																	
		HAMILTON, ONTARIO			HULL, QUEBEC			JOLIETTE, QUEBEC			KAMLOOPS, BRITISH COLUMBIA			KINGSTON, ONTARIO			KITCHENER, ONTARIO		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		112.6	112.6		96.9	96.9		96.9	96.9		99.9	99.9		98.6	98.6		98.5	98.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	115.3	103.9	107.6	100.8	88.9	92.8	101.6	88.9	93.0	127.2	92.3	103.5	122.9	93.0	102.6	102.0	94.9	97.2
0310	Concrete Forming & Accessories	133.2	90.3	98.6	137.4	76.5	88.3	137.4	76.6	88.4	116.5	79.6	86.8	125.8	79.8	88.7	116.6	85.9	91.9
0320	Concrete Reinforcing	67.1	100.2	77.7	73.9	69.5	72.5	69.9	69.6	69.8	54.8	72.8	60.6	82.0	81.9	82.0	48.4	100.0	65.0
0330	Cast-in-Place Concrete	151.6	100.3	133.9	118.6	83.8	106.6	123.5	83.9	109.8	106.9	88.0	100.3	134.0	89.0	118.5	141.2	93.9	124.9
03	CONCRETE	128.8	96.1	115.7	108.8	78.5	96.7	110.2	78.6	97.5	116.0	81.9	102.3	118.3	84.0	104.6	105.5	91.6	99.9
04	MASONRY	189.0	98.3	131.8	170.1	73.6	109.2	170.6	73.6	109.4	178.1	80.9	116.8	181.3	82.5	119.0	153.1	95.8	117.0
05	METALS	93.7	104.0	96.1	79.7	83.6	80.6	79.7	83.7	80.6	81.2	85.8	82.3	81.7	89.4	83.5	89.0	97.9	91.1
06	WOOD, PLASTICS & COMPOSITES	113.7	89.2	103.5	134.5	76.8	110.6	134.5	76.8	110.6	98.8	78.4	90.4	118.9	79.4	102.6	109.9	84.4	99.4
07	THERMAL & MOISTURE PROTECTION	132.5	97.2	117.0	114.1	80.2	99.2	114.1	80.2	99.2	130.1	77.8	107.2	119.4	83.2	103.5	115.7	93.3	105.9
08	OPENINGS	87.3	89.2	87.8	86.1	65.9	81.2	86.1	70.2	82.3	83.3	76.2	81.6	86.1	77.9	84.1	77.5	85.0	79.3
0920	Plaster & Gypsum Board	135.6	88.3	106.0	138.3	76.3	99.6	160.6	76.3	107.9	107.1	77.7	88.7	181.9	79.1	117.7	119.2	84.3	97.3
0950, 0980	Ceilings & Acoustic Treatment	141.9	88.3	107.1	103.7	76.3	85.9	103.7	76.3	85.9	103.7	77.7	86.8	123.6	79.1	94.7	110.2	84.3	93.4
0960	Flooring	123.4	89.6	113.1	112.9	82.5	103.6	112.9	82.5	103.6	114.8	47.2	94.2	112.9	82.6	103.7	102.2	89.7	98.4
0970, 0990	Wall Finishes & Painting/Coating	109.4	96.6	101.6	110.9	80.1	92.1	110.9	80.1	92.1	110.9	73.2	87.9	110.9	75.8	89.5	105.3	87.5	94.4
09	FINISHES	125.5	90.6	106.5	113.4	78.4	94.4	117.0	78.4	96.0	111.3	73.2	90.6	125.5	80.1	100.9	106.8	86.3	95.7
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	131.1	86.7	121.5	131.1	71.6	118.2	131.1	71.6	118.2	131.1	79.9	120.0	131.1	61.2	115.9	131.1	84.1	120.9
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	107.6	86.3	98.9	106.5	80.5	95.8	106.5	80.5	95.8	106.5	83.7	97.1	106.9	90.3	100.1	106.4	86.0	98.0
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	117.7	100.0	109.2	117.9	62.4	91.1	116.0	62.4	90.2	120.0	70.9	96.3	117.0	78.6	98.5	113.2	97.9	105.8
MF2018	WEIGHTED AVERAGE	114.4	94.8	106.4	106.2	76.7	94.2	106.5	76.9	94.4	108.3	80.2	96.8	109.8	84.0	99.3	104.9	91.3	99.4

DIVISION		CANADA																	
		LAVAL, QUEBEC			LETHBRIDGE, ALBERTA			LLOYDMINSTER, ALBERTA			LONDON, ONTARIO			MEDICINE HAT, ALBERTA			MONCTON, NEW BRUNSWICK		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		96.9	96.9		98.6	98.6		98.6	98.6		114.2	114.2		98.6	98.6		95.9	95.9
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	101.4	89.0	93.0	121.5	91.3	101.0	121.1	90.8	100.5	117.2	103.8	108.1	119.9	90.8	100.2	113.3	88.0	96.1
0310	Concrete Forming & Accessories	137.6	77.2	88.9	127.7	84.6	92.9	125.0	75.6	85.2	133.6	86.7	95.8	127.6	75.6	85.6	99.1	63.5	70.4
0320	Concrete Reinforcing	73.9	70.2	72.7	75.9	76.7	76.2	75.9	76.7	76.2	66.8	99.1	77.1	75.9	76.7	76.2	70.5	67.8	69.6
0330	Cast-in-Place Concrete	122.5	84.4	109.4	148.4	93.0	129.3	137.7	89.6	121.1	151.7	98.7	133.4	137.7	89.6	121.1	111.3	65.6	95.5
03	CONCRETE	110.6	79.1	98.0	121.7	86.6	107.7	116.8	81.3	102.6	128.7	93.8	114.8	117.0	81.3	102.7	102.5	66.1	87.9
04	MASONRY	170.4	74.2	109.8	190.2	80.8	121.2	169.8	74.8	109.9	198.6	96.8	134.4	169.8	74.8	109.9	164.8	73.2	107.0
05	METALS	79.6	83.9	80.6	96.3	86.5	94.0	81.2	86.3	82.4	93.7	104.7	96.3	81.3	86.3	82.5	82.3	85.5	83.0
06	WOOD, PLASTICS & COMPOSITES	134.5	77.5	110.9	117.8	84.3	103.9	113.6	75.3	97.8	116.5	85.0	103.5	117.8	75.3	100.2	93.4	61.3	80.1
07	THERMAL & MOISTURE PROTECTION	115.1	80.6	100.0	125.8	86.7	108.7	122.6	82.6	105.0	129.9	95.0	114.6	127.7	82.6	107.9	113.4	69.6	94.2
08	OPENINGS	86.1	66.5	81.4	86.1	74.9	83.4	86.1	69.9	82.2	82.5	85.9	83.3	86.1	69.9	82.2	81.3	58.7	75.8
0920	Plaster & Gypsum Board	138.6	77.0	100.1	121.4	83.8	97.9	115.4	74.5	89.8	136.3	84.0	103.6	119.2	74.5	91.3	123.7	60.4	84.1
0950, 0980	Ceilings & Acoustic Treatment	103.7	77.0	86.4	114.0	83.8	94.4	103.7	74.5	84.8	139.3	84.0	103.4	103.7	74.5	84.8	116.4	60.4	80.1
0960	Flooring	112.9	83.4	103.9	112.9	80.0	102.9	112.9	80.0	102.9	117.6	89.7	109.0	112.9	80.0	102.9	101.5	62.3	89.5
0970, 0990	Wall Finishes & Painting/Coating	110.9	80.8	92.5	110.8	92.3	99.5	111.0	71.9	87.2	112.2	93.6	100.9	110.8	71.9	87.1	112.4	77.5	91.1
09	FINISHES	113.4	79.0	94.7	113.9	84.9	98.1	110.8	75.9	91.8	127.5	87.7	105.9	111.3	75.9	92.0	110.9	64.2	85.5
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	131.1	72.2	118.3	131.1	83.5	120.8	131.1	81.7	120.4	131.1	86.1	121.4	131.1	80.5	120.1	131.1	57.8	115.2
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	106.7	81.2	96.2	106.8	86.0	98.2	106.9	85.9	98.3	107.6	84.7	98.2	106.5	82.9	96.8	106.4	76.5	94.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	116.6	62.9	90.7	112.6	74.1	94.1	109.4	74.1	92.4	109.4	97.7	103.8	109.4	74.1	92.4	123.1	86.5	105.5
MF2018	WEIGHTED AVERAGE	106.4	77.2	94.5	112.3	83.6	100.6	107.1	80.6	96.3	113.6	93.0	105.2	107.2	79.9	96.1	105.3	74.6	92.8

DIVISION		CANADA																	
		MONTREAL, QUEBEC			MOOSE JAW, SASKATCHEWAN			NEW GLASGOW, NOVA SCOTIA			NEWCASTLE, NEW BRUNSWICK			NORTH BAY, ONTARIO			OSHAWA, ONTARIO		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		115.2	115.2		95.1	95.1		96.3	96.3		95.9	95.9		96.6	96.6		98.5	98.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	127.9	103.1	111.1	120.7	85.4	96.7	110.0	87.7	94.9	113.9	85.6	94.7	126.0	89.3	101.1	113.4	95.3	101.1
0310	Concrete Forming & Accessories	131.5	90.2	98.2	103.4	52.8	62.6	104.6	65.7	73.2	99.1	56.1	64.4	154.3	77.5	92.3	124.6	89.2	96.1
0320	Concrete Reinforcing	66.7	93.5	75.3	53.6	58.9	55.3	78.2	45.7	67.8	70.5	55.3	65.6	92.5	81.5	89.0	76.6	100.6	84.3
0330	Cast-in-Place Concrete	117.6	97.4	110.6	133.6	60.9	108.5	140.2	64.0	113.9	115.6	53.7	94.2	135.0	76.9	114.9	163.4	103.4	142.7
03	CONCRETE	113.6	93.9	105.7	103.1	57.8	85.0	130.4	62.7	103.3	104.4	56.2	85.1	133.0	78.6	111.3	127.2	96.4	114.9
04	MASONRY	189.4	89.2	126.3	168.3	54.3	96.5	216.1	63.2	119.7	165.2	55.3	96.0	222.6	78.9	132.0	156.9	99.1	120.5
05	METALS	101.8	100.2	101.4	78.8	73.7	77.6	90.2	74.8	86.6	82.3	72.2	79.9	90.8	89.3	90.5	82.0	98.5	85.9
06	WOOD, PLASTICS & COMPOSITES	109.9	91.0	102.1	95.5	51.7	77.4	109.2	65.6	91.1	93.4	56.2	78.0	154.7	78.1	123.0	118.8	87.9	106.0
07	THERMAL & MOISTURE PROTECTION	130.3	96.4	115.5	113.0	57.1	88.5	126.6	64.4	99.3	113.4	55.6	88.0	132.8	78.8	109.1	116.7	99.7	109.3
08	OPENINGS	84.7	78.2	83.2	82.6	49.8	74.7	88.6	59.5	81.6	81.3	49.6	73.6	95.1	75.9	90.5	82.1	88.0	83.5
0920	Plaster & Gypsum Board	136.7	90.1	107.6	106.1	50.5	71.4	142.8	64.8	94.0	123.7	55.2	80.9	161.4	77.7	109.1	126.7	87.8	102.4
0950, 0980	Ceilings & Acoustic Treatment	144.4	90.1	109.2	103.7	50.5	69.2	122.9	64.8	85.2	116.4	55.2	76.7	122.9	77.7	93.6	105.4	87.8	94.0
0960	Flooring	120.7	85.4	109.9	104.7	51.5	88.4	109.8	56.6	93.5	101.5	60.9	89.1	129.3	82.6	115.0	104.6	91.7	100.6
0970, 0990	Wall Finishes & Painting/Coating	118.9	102.7	109.0	110.9	58.4	78.9	117.5	56.8	80.5	112.4	45.9	71.8	117.5	81.4	95.5	105.3	100.3	102.3
09	FINISHES	129.8	91.6	109.0	106.9	52.9	77.5	122.0	63.3	90.1	110.9	56.2	81.2	131.1	79.2	102.9	108.2	90.4	98.6
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	131.1	78.5	119.7	131.1	54.4	114.5	131.1	57.6	115.1	131.1	54.7	114.5	131.1	60.0	115.7	131.1	84.8	121.1
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	107.6	79.9	96.2	106.9	67.2	90.6	106.7	76.0	94.1	106.4	61.9	88.2	106.7	88.3	99.2	106.4	85.9	98.0
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	119.3	82.8	101.7	119.3	53.9	87.8	115.4	56.1	86.8	119.8	53.4	87.8	117.3	79.6	99.1	113.9	100.3	107.3
MF2018	WEIGHTED AVERAGE	114.4	88.7	103.9	104.6	61.3	87.0	114.1	67.6	95.1	105.3	60.3	87.0	117.4	82.0	103.0	107.7	93.6	102.0

DIVISION		CANADA																	
		OTTAWA, ONTARIO			OWEN SOUND, ONTARIO			PETERBOROUGH, ONTARIO			PORTAGE LA PRAIRIE, MANITOBA			PRINCE ALBERT, SASKATCHEWAN			PRINCE GEORGE, BRITISH COLUMBIA		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		114.5	114.5		96.9	96.9		96.4	96.4		98.6	98.6		95.1	95.1		99.9	99.9
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	117.5	103.9	108.2	120.3	89.9	99.7	125.1	89.5	100.9	121.3	88.4	99.0	116.4	85.5	95.4	131.3	92.3	104.8
0310	Concrete Forming & Accessories	126.6	90.9	97.8	126.4	76.2	85.9	128.8	78.4	88.2	127.9	63.6	76.0	103.4	52.6	62.4	111.3	75.0	82.0
0320	Concrete Reinforcing	66.6	99.1	77.0	152.2	83.4	130.1	82.0	82.0	82.0	75.9	52.3	68.4	56.0	58.9	56.9	54.8	72.8	60.6
0330	Cast-in-Place Concrete	137.9	101.4	125.3	165.2	73.4	133.5	149.0	78.3	124.6	137.7	66.7	113.2	121.0	60.8	100.2	134.0	88.0	118.1
03	CONCRETE	122.1	96.7	111.9	145.1	77.1	117.9	123.4	79.6	105.9	111.3	63.8	92.3	98.1	57.7	81.9	127.6	79.9	108.5
04	MASONRY	186.1	97.5	130.3	170.8	83.9	116.0	175.0	84.8	118.2	173.4	57.5	100.4	167.1	54.3	96.0	180.8	80.9	117.8
05	METALS	94.2	105.9	96.9	95.9	90.1	94.6	80.8	89.6	82.8	81.3	77.1	80.3	78.8	73.5	77.6	81.2	85.9	82.3
06	WOOD, PLASTICS & COMPOSITES	108.8	90.2	101.1	118.5	75.1	100.5	120.8	76.9	102.6	117.8	64.9	95.9	95.5	51.7	77.4	98.8	72.0	87.7
07	THERMAL & MOISTURE PROTECTION	142.6	97.4	122.8	113.6	79.5	98.7	119.7	83.9	104.0	113.7	65.0	92.3	112.9	56.1	88.0	124.4	77.1	103.7
08	OPENINGS	92.4	88.7	91.5	87.0	75.3	84.2	84.6	77.6	82.9	86.1	58.1	79.4	81.7	49.8	74.0	83.3	72.7	80.7
0920	Plaster & Gypsum Board	134.3	89.4	106.2	168.4	74.7	109.8	131.9	76.5	97.2	118.8	63.9	84.4	106.1	50.5	71.4	107.1	71.1	84.6
0950, 0980	Ceilings & Acoustic Treatment	150.8	89.4	110.9	98.1	74.7	82.9	103.7	76.5	86.0	103.7	63.9	77.9	103.7	50.5	69.2	103.7	71.1	82.6
0960	Flooring	116.6	85.5	107.1	119.0	83.8	108.2	112.9	82.6	103.7	112.9	59.4	96.6	104.7	51.5	88.4	109.1	64.7	95.5
0970, 0990	Wall Finishes & Painting/Coating	112.7	88.9	98.2	106.5	80.3	90.5	110.9	83.5	94.2	111.0	51.8	74.9	110.9	49.8	73.6	110.9	73.2	87.9
09	FINISHES	128.3	89.6	107.3	117.4	78.1	96.1	113.0	79.8	95.0	111.2	61.9	84.4	106.9	51.9	77.0	109.7	72.5	89.5
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	131.1	84.9	121.1	139.3	60.5	122.2	131.1	61.3	116.0	131.1	56.6	114.9	131.1	54.4	114.5	131.1	79.2	119.9
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	107.7	87.8	99.5	106.5	88.3	99.0	106.5	91.6	100.3	106.5	74.9	93.5	106.9	60.6	87.9	106.5	83.7	97.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	111.1	98.5	105.0	121.9	78.6	101.0	117.0	79.3	98.8	118.9	52.1	86.7	119.3	53.9	87.8	117.0	70.9	94.8
MF2018	WEIGHTED AVERAGE	113.6	94.8	106.0	116.3	82.1	102.4	109.0	83.8	98.7	107.3	66.3	90.6	103.7	59.7	85.8	109.5	79.6	97.3

DIVISION		CANADA																	
		QUEBEC CITY, QUEBEC			RED DEER, ALBERTA			REGINA, SASKATCHEWAN			RIMOUSKI, QUEBEC			ROUYN-NORANDA, QUEBEC			SAINT HYACINTHE, QUEBEC		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		116.6	116.6		98.6	98.6		125.3	125.3		96.9	96.9		96.9	96.9		96.9	96.9
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	127.3	103.3	111.2	119.9	90.8	100.2	139.2	116.7	123.9	101.3	89.3	93.2	100.8	88.9	92.8	101.4	88.9	92.9
0310	Concrete Forming & Accessories	128.6	90.4	97.8	135.3	75.6	87.1	129.2	86.3	94.6	137.4	89.4	98.7	137.4	76.5	88.3	137.4	76.5	88.3
0320	Concrete Reinforcing	85.4	93.6	74.4	75.9	76.7	76.2	64.5	82.7	70.3	52.7	93.4	65.8	73.9	69.5	72.5	73.9	69.5	72.5
0330	Cast-in-Place Concrete	117.6	97.5	110.7	137.7	89.6	121.1	176.1	93.9	147.7	124.8	93.2	113.9	118.6	83.8	106.6	122.5	83.8	109.2
03	CONCRETE	131.1	94.1	108.5	117.6	81.3	100.0	146.3	89.2	113.9	107.0	91.6	100.3	108.8	78.5	96.7	110.6	78.5	97.8
04	MASONRY	132.2	89.2	107.3	169.8	74.8	109.9	218.5	81.5	132.1	170.0	89.1	119.0	170.1	73.6	109.2	170.4	73.6	109.4
05	METALS	97.5	102.0	98.5	81.3	86.3	82.5	97.6	98.3	97.8	79.3	92.2	82.3	79.7	83.6	80.6	79.7	83.6	80.6
06	WOOD, PLASTICS & COMPOSITES	112.8	91.0	103.8	117.8	75.3	100.2	108.0	87.1	99.3	134.5	90.3	116.2	134.5	76.8	110.6	134.5	76.8	110.6
07	THERMAL & MOISTURE PROTECTION	127.7	96.5	114.0	136.3	82.6	112.8	148.7	81.9	119.4	114.1	94.3	105.4	114.1	80.2	99.2	114.8	80.2	99.6
08	OPENINGS	85.5	85.3	85.5	86.1	69.9	82.2	89.9	75.3	86.4	85.8	76.0	83.4	86.1	65.9	81.2	86.1	65.9	81.2
0920	Plaster & Gypsum Board	137.1	90.1	107.7	119.2	74.5	91.3	143.1	86.0	107.4	160.4	90.1	116.5	138.2	76.3	99.5	138.2	76.3	99.5
0950, 0980	Ceilings & Acoustic Treatment	139.4	90.1	107.1	103.7	74.5	84.8	162.9	86.0	113.0	103.1	90.1	94.7	103.1	76.3	85.7	103.1	76.3	85.7
0960	Flooring	117.0	85.4	107.4	117.1	80.0	105.7	128.2	89.7	116.4	114.1	82.5	104.4	112.9	82.5	103.6	112.9	82.5	103.6
0970, 0990	Wall Finishes & Painting/Coating	119.2	102.7	109.1	119.8	71.9	87.1	112.0	82.6	94.1	113.6	102.7	107.0	110.9	80.1	92.1	110.9	80.1	92.1
09	FINISHES	129.4	91.8	108.9	112.4	75.9	92.6	136.4	87.4	109.8	117.4	90.6	102.8	113.2	78.4	94.3	113.2	78.4	94.3
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	131.1	76.5	119.7	131.1	80.5	120.1	131.1	66.0	117.6	131.1	76.9	119.3	131.1	71.6	118.2	131.1	71.6	118.2
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	107.3	79.9	96.1	106.5	82.9	96.8	107.2	80.6	96.3	106.5	79.7	95.5	106.5	80.5	95.8	102.5	80.5	93.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	126.3	82.8	105.3	109.4	74.1	92.4	123.3	84.8	104.7	116.0	82.8	100.0	116.0	62.4	90.2	116.7	62.4	90.5
MF2018	WEIGHTED AVERAGE	114.2	89.2	104.1	107.6	79.9	96.3	120.4	87.1	106.9	106.0	86.2	97.9	106.0	76.7	94.1	105.5	76.7	93.8

DIVISION		CANADA																	
		SAINT JOHN, NEW BRUNSWICK			SARNIA, ONTARIO			SASKATOON, SASKATCHEWAN			SAULT STE MARIE, ONTARIO			SHERBROOKE, QUEBEC			SOREL, QUEBEC		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		96.9	96.9		96.4	96.4		95.3	95.3		96.4	96.4		96.9	96.9		96.9	96.9
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	114.1	88.0	96.4	123.4	89.6	100.4	117.1	88.9	97.9	112.9	89.2	96.8	101.4	88.9	92.9	101.6	88.9	93.0
0310	Concrete Forming & Accessories	126.2	64.3	76.7	127.0	84.8	93.0	102.0	85.4	88.6	111.4	84.1	89.4	137.4	76.5	88.3	137.4	76.6	88.4
0320	Concrete Reinforcing	70.5	67.6	69.6	58.5	83.3	66.5	57.2	82.6	65.4	52.6	82.2	62.1	73.9	69.5	72.5	69.9	69.6	69.8
0330	Cast-in-Place Concrete	113.8	65.6	97.2	137.5	90.4	121.2	132.9	88.2	117.5	123.5	77.1	107.5	122.5	83.8	109.2	123.5	83.9	109.8
03	CONCRETE	105.8	66.5	90.1	113.1	86.9	102.6	104.2	86.3	97.0	99.1	82.0	92.2	110.6	78.5	97.8	110.2	78.6	97.5
04	MASONRY	188.9	73.2	116.0	187.7	87.2	124.4	181.4	81.2	118.3	171.0	89.6	119.7	170.5	73.6	109.4	170.6	73.6	109.4
05	METALS	82.2	85.5	83.0	80.7	90.0	82.9	76.4	87.9	79.1	80.1	93.9	83.4	79.6	83.6	80.5	79.7	83.7	80.6
06	WOOD, PLASTICS & COMPOSITES	121.4	62.4	97.0	119.8	84.4	105.1	92.3	86.2	89.8	104.2	86.3	96.8	134.5	76.8	110.6	134.5	76.8	110.6
07	THERMAL & MOISTURE PROTECTION	114.1	69.6	94.6	119.7	87.2	105.5	116.7	78.5	100.0	118.3	84.1	103.3	114.1	80.2	99.2	114.1	80.2	99.2
08	OPENINGS	81.2	58.3	75.7	87.5	81.1	86.0	82.5	74.8	80.6	79.7	83.9	80.7	86.1	65.9	81.2	86.1	70.2	82.3
0920	Plaster & Gypsum Board	148.0	61.6	94.0	151.5	84.2	109.4	121.0	86.0	99.1	118.2	86.2	98.2	138.2	76.3	99.5	160.4	76.3	107.8
0950, 0980	Ceilings & Acoustic Treatment	121.9	61.6	82.7	109.9	84.2	93.2	130.3	86.0	101.6	103.7	86.2	92.4	103.1	76.3	85.7	103.1	76.3	85.7
0960	Flooring	111.2	62.3	96.2	112.9	90.3	106.0	108.2	89.7	102.5	107.1	87.4	101.0	112.9	82.5	103.6	112.9	82.5	103.6
0970, 0990	Wall Finishes & Painting/Coating	112.4	77.5	91.1	110.9	94.4	100.8	114.1	82.6	94.9	110.9	87.4	96.6	110.9	80.1	92.1	110.9	80.1	92.1
09	FINISHES	116.8	64.9	89.5	117.6	87.2	101.1	117.5	86.7	100.8	108.5	85.6	96.0	113.2	78.4	94.3	116.9	78.4	96.0
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	131.1	58.2	115.3	131.1	62.6	116.2	131.1	64.3	116.6	131.1	82.3	120.5	131.1	71.6	118.2	131.1	71.6	118.2
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	106.4	76.5	94.1	106.5	97.1	102.6	106.8	80.3	96.0	106.5	85.6	97.9	106.9	80.5	96.1	106.5	80.5	95.8
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	125.1	86.5	106.5	121.3	81.3	102.0	121.8	84.8	104.0	119.3	79.6	100.2	116.0	62.4	90.2	116.0	62.4	90.2
MF2018	WEIGHTED AVERAGE	108.0	74.7	94.4	109.1	87.8	100.4	105.8	83.3	96.6	104.2	85.5	96.6	106.3	76.7	94.3	106.5	76.9	94.4

DIVISION		CANADA																	
		ST CATHARINES, ONTARIO			ST JEROME, QUEBEC			ST. JOHN'S, NEWFOUNDLAND			SUDBURY, ONTARIO			SUMMERSIDE, PRINCE EDWARD ISLAND			SYDNEY, NOVA SCOTIA		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		96.5	96.5		96.9	96.9		118.8	118.8		96.5	96.5		96.2	96.2		96.3	96.3
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	101.8	91.7	94.9	100.8	88.9	92.8	113.4	109.8	111.0	101.9	91.2	94.6	119.6	85.2	96.3	105.3	87.7	93.4
0310	Concrete Forming & Accessories	113.6	91.1	95.5	137.4	76.5	88.3	128.1	81.9	90.8	107.7	86.7	90.8	104.9	50.8	61.3	104.6	65.7	73.2
0320	Concrete Reinforcing	48.8	100.1	65.2	73.9	69.5	72.5	83.6	79.8	82.4	49.2	96.7	64.4	77.2	44.6	66.7	78.2	45.7	67.8
0330	Cast-in-Place Concrete	134.9	95.5	121.3	118.6	83.8	106.6	136.7	95.9	122.6	136.0	92.1	120.8	133.0	52.4	105.2	108.1	64.0	92.8
03	CONCRETE	102.6	94.5	99.3	108.8	78.5	96.7	136.5	87.3	113.2	102.7	90.7	97.9	137.5	51.5	103.1	116.3	62.7	94.9
04	MASONRY	152.5	98.0	118.1	170.1	73.6	109.2	208.1	87.5	132.1	152.6	94.6	116.0	215.1	52.9	112.8	212.8	63.2	118.5
05	METALS	81.9	97.8	85.6	79.7	83.6	80.6	99.4	94.9	98.3	81.5	96.3	85.0	90.2	68.2	85.1	90.2	74.8	86.6
06	WOOD, PLASTICS & COMPOSITES	107.0	91.1	100.4	134.5	76.8	110.6	107.6	80.2	96.3	101.8	86.3	95.4	110.1	50.4	85.4	109.2	65.6	91.1
07	THERMAL & MOISTURE PROTECTION	115.6	96.4	107.2	114.1	80.2	99.2	144.1	91.0	120.8	114.5	91.7	104.5	126.6	54.5	95.0	126.6	64.4	99.3
08	OPENINGS	77.1	89.0	79.9	86.1	65.9	81.2	87.2	71.6	83.4	77.6	84.3	79.3	98.9	44.1	85.7	88.6	59.5	81.6
0920	Plaster & Gypsum Board	112.8	91.1	99.2	138.2	76.3	99.5	151.0	79.1	106.0	110.0	86.2	95.1	145.0	49.2	85.1	142.8	64.8	94.0
0950, 0980	Ceilings & Acoustic Treatment	105.4	91.1	96.1	103.1	76.3	85.7	148.9	79.1	103.6	99.2	86.2	90.8	122.9	49.2	75.1	122.9	64.8	85.2
0960	Flooring	101.2	86.7	96.8	112.9	82.5	103.6	121.8	49.3	99.6	99.7	87.4	95.9	109.8	53.1	92.4	109.8	56.6	93.5
0970, 0990	Wall Finishes & Painting/Coating	105.3	96.6	100.0	110.9	80.1	92.1	114.6	94.9	102.6	105.3	88.4	95.0	117.5	38.2	69.1	117.5	56.8	80.5
09	FINISHES	104.5	91.1	97.2	113.2	78.4	94.3	135.5	77.1	103.8	102.2	86.9	93.9	123.4	50.1	83.6	122.0	63.3	90.1
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	131.1	65.4	116.8	131.1	71.6	118.2	131.1	64.2	116.6	131.1	84.0	120.9	131.1	54.0	114.4	131.1	57.6	115.1
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	106.4	85.0	97.6	106.5	80.5	95.8	107.1	79.8	95.9	106.2	83.4	96.8	106.7	56.3	86.0	106.7	76.0	94.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	115.4	94.4	105.3	116.9	62.4	90.6	126.1	75.4	101.6	112.5	94.7	103.9	113.9	45.4	80.8	115.4	56.1	86.8
MF2018	WEIGHTED AVERAGE	103.1	91.3	98.3	106.1	76.7	94.1	118.2	83.8	104.2	102.5	89.6	97.3	116.1	55.6	91.5	111.9	67.6	93.3

DIVISION		CANADA																	
		THUNDER BAY, ONTARIO			TIMMINS, ONTARIO			TORONTO, ONTARIO			TROIS RIVIERES, QUEBEC			TRURO, NOVA SCOTIA			VANCOUVER, BRITISH COLUMBIA		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		96.5	96.5		96.4	96.4		114.6	114.6		97.0	97.0		96.1	96.1		131.4	131.4
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	107.4	91.4	96.5	125.1	89.1	100.7	115.0	104.9	108.1	105.7	89.1	94.4	106.4	87.6	93.6	121.6	119.2	120.0
0310	Concrete Forming & Accessories	124.6	89.0	95.9	128.8	77.5	87.4	131.1	100.2	106.1	165.5	76.7	93.8	89.1	65.7	70.2	131.2	88.0	96.3
0320	Concrete Reinforcing	43.6	99.5	61.6	82.0	81.4	81.8	67.1	100.8	77.9	78.2	69.6	75.4	69.9	45.7	62.1	69.7	91.4	76.7
0330	Cast-in-Place Concrete	148.5	94.5	129.9	149.0	76.9	124.1	137.8	111.7	128.8	111.9	83.9	102.2	154.8	63.9	123.4	142.1	98.0	126.9
03	CONCRETE	111.1	93.0	103.9	123.4	78.6	105.5	122.5	104.8	115.4	120.6	78.6	103.8	121.8	62.7	98.1	127.8	93.2	114.0
04	MASONRY	153.5	96.2	117.4	175.0	78.9	114.4	187.6	105.9	136.1	217.3	73.6	126.7	170.3	63.2	102.8	187.2	90.2	126.0
05	METALS	81.9	96.6	85.4	80.8	89.2	82.7	94.1	107.0	97.1	89.7	83.8	88.3	80.2	74.7	78.9	94.2	107.5	97.3
06	WOOD, PLASTICS & COMPOSITES	118.8	88.8	106.4	120.8	78.1	103.1	116.5	98.8	109.2	172.5	76.9	132.9	83.7	65.5	76.2	110.3	87.2	100.8
07	THERMAL & MOISTURE PROTECTION	116.1	93.3	106.1	119.7	78.8	101.7	140.3	106.2	125.3	126.5	80.2	106.2	114.2	64.4	92.4	145.7	88.9	120.8
08	OPENINGS	76.4	87.2	79.0	84.6	75.9	82.5	86.0	96.4	88.5	96.9	70.2	90.5	79.9	59.5	74.9	85.5	84.9	85.3
0920	Plaster & Gypsum Board	138.1	88.7	107.2	131.9	77.7	98.0	135.3	98.2	112.1	196.7	76.3	121.4	117.3	64.8	84.5	135.9	86.0	104.7
0950, 0980	Ceilings & Acoustic Treatment	99.2	88.7	92.4	103.7	77.7	86.8	148.8	98.2	115.9	120.9	76.3	92.0	103.7	64.8	78.5	154.1	86.0	109.9
0960	Flooring	104.6	92.9	101.0	112.9	82.6	103.7	117.9	95.1	110.9	129.3	82.5	115.0	98.1	56.6	85.4	132.8	83.5	117.7
0970, 0990	Wall Finishes & Painting/Coating	105.3	89.3	95.5	110.9	81.4	92.9	108.6	100.3	103.6	117.5	80.1	94.7	110.9	56.8	77.9	108.5	95.9	100.8
09	FINISHES	108.5	89.8	98.3	113.0	79.2	94.6	125.8	99.3	111.4	135.6	78.4	104.5	106.0	63.3	82.8	133.1	87.7	108.5
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	131.1	64.9	116.7	131.1	60.0	115.7	131.1	89.8	122.2	131.1	71.6	118.2	131.1	57.5	115.1	131.1	84.8	121.1
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	106.4	84.5	97.4	106.5	88.3	99.0	107.7	95.4	102.7	106.7	80.5	95.9	106.5	76.0	94.0	107.6	85.7	98.6
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	113.2	97.8	105.7	119.3	79.6	100.2	115.2	100.3	108.0	115.8	62.4	90.1	115.5	56.1	86.9	120.3	78.5	100.2
MF2018	WEIGHTED AVERAGE	104.6	90.8	99.0	109.2	82.0	98.1	113.4	100.9	108.3	115.1	76.9	99.6	106.3	67.5	90.5	115.3	91.0	105.4

DIVISION		CANADA																	
		VICTORIA, BRITISH COLUMBIA			WHITEHORSE, YUKON			WINDSOR, ONTARIO			WINNIPEG, MANITOBA			YARMOUTH, NOVA SCOTIA			YELLOWKNIFE, NWT		
		MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433	CONTRACTOR EQUIPMENT		103.0	103.0		127.3	127.3		96.5	96.5		123.9	123.9		96.3	96.3		123.8	123.8
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	130.0	97.4	107.9	132.9	114.4	120.3	98.8	91.5	93.9	124.0	112.9	116.5	109.8	87.7	94.8	148.7	112.9	124.4
0310	Concrete Forming & Accessories	109.4	85.3	89.9	134.4	54.8	70.2	124.6	87.7	94.8	130.2	62.4	75.5	104.6	65.7	73.2	139.4	73.6	86.3
0320	Concrete Reinforcing	56.0	91.2	67.3	81.5	60.7	74.9	47.8	98.9	64.2	65.2	57.6	62.8	78.2	45.7	67.8	73.1	63.3	70.0
0330	Cast-in-Place Concrete	137.7	93.1	122.3	178.7	69.0	140.8	138.2	96.1	123.6	172.1	69.4	136.6	138.7	64.0	112.9	199.6	85.5	160.2
03	CONCRETE	130.8	89.4	114.2	150.1	62.4	115.0	104.6	92.9	99.9	138.7	65.4	109.4	129.8	62.7	103.0	157.9	77.2	125.6
04	MASONRY	184.7	90.0	125.0	261.7	56.0	132.1	152.7	97.2	117.7	213.3	61.8	117.8	215.9	63.2	119.6	250.8	66.6	134.7
05	METALS	77.4	92.7	81.0	102.4	85.4	98.4	81.9	97.1	85.5	99.5	84.3	95.9	90.2	74.8	86.6	99.0	89.4	96.8
06	WOOD, PLASTICS & COMPOSITES	96.4	84.6	91.5	119.5	53.8	92.3	118.8	86.5	105.5	107.2	63.3	89.0	109.2	65.6	91.1	129.6	75.1	107.1
07	THERMAL & MOISTURE PROTECTION	127.1	84.6	108.5	143.9	61.8	107.9	115.9	93.6	106.1	141.5	67.3	109.0	126.6	64.4	99.3	145.2	76.8	115.2
08	OPENINGS	83.9	79.6	82.9	95.9	51.4	85.1	76.3	86.4	78.7	88.2	57.0	80.7	88.6	59.5	81.6	90.5	63.7	84.0
0920	Plaster & Gypsum Board	112.9	84.1	94.9	174.7	51.6	97.8	127.0	86.4	101.6	138.1	61.4	90.2	142.8	64.8	94.0	186.0	73.6	115.7
0950, 0980	Ceilings & Acoustic Treatment	106.3	84.1	91.9	176.7	51.6	95.5	99.2	86.4	90.9	154.0	61.4	93.9	122.9	64.8	85.2	175.0	73.6	109.2
0960	Flooring	112.7	64.7	98.0	127.2	53.0	104.5	104.6	90.4	100.2	122.9	64.6	105.0	109.8	56.6	93.5	126.1	79.6	111.9
0970, 0990	Wall Finishes & Painting/Coating	114.1	95.9	103.0	119.8	50.9	77.8	105.3	90.1	96.0	108.7	50.3	73.1	117.5	56.8	80.5	125.4	72.7	93.3
09	FINISHES	113.6	82.8	96.9	152.7	53.8	99.0	106.3	88.4	96.6	132.9	61.8	94.3	122.0	63.3	90.1	153.7	74.1	110.5
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	131.1	61.8	116.1	131.1	57.3	115.1	131.1	64.9	116.7	131.1	59.8	115.6	131.1	57.6	115.1	131.1	60.8	115.8
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	106.5	82.5	96.7	107.0	68.5	91.2	106.4	85.9	98.0	107.7	60.7	88.4	106.7	76.0	94.1	107.6	84.7	98.2
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	118.8	79.3	99.8	145.3	54.6	101.6	119.7	98.5	109.5	124.9	59.9	93.6	115.4	56.1	86.8	137.9	74.1	107.2
MF2018	WEIGHTED AVERAGE	109.9	85.2	99.8	128.4	66.2	103.1	103.9	91.1	98.7	119.7	67.7	98.5	114.0	67.6	95.1	127.8	79.6	108.2

Location Factors - Commercial

Costs shown in RSMeans cost data publications are based on national averages for materials and installation. To adjust these costs to a specific location, simply multiply the base cost by the factor and divide by 100 for that city. The data is arranged alphabetically by state and postal zip code numbers. For a city not listed, use the factor for a nearby city with similar economic characteristics.

STATE/ZIP	CITY	MAT.	INST.	TOTAL
ALABAMA				
350-352	Birmingham	99.4	71.0	87.8
354	Tuscaloosa	98.1	70.2	86.8
355	Jasper	98.7	68.2	86.3
356	Decatur	98.1	68.6	86.1
357-358	Huntsville	98.1	70.1	86.7
359	Gadsden	98.2	69.8	86.6
360-361	Montgomery	98.8	71.7	87.8
362	Anniston	97.5	65.3	84.4
363	Dothan	97.8	71.7	87.1
364	Evergreen	97.2	66.4	84.7
365-366	Mobile	98.4	68.2	86.1
367	Selma	97.3	69.8	86.1
368	Phenix City	98.1	69.7	86.5
369	Butler	97.4	68.2	85.5
ALASKA				
995-996	Anchorage	117.1	108.7	113.7
997	Fairbanks	117.8	109.2	114.3
998	Juneau	118.2	108.7	114.3
999	Ketchikan	128.9	109.3	120.9
ARIZONA				
850,853	Phoenix	98.8	72.6	88.1
851,852	Mesa/Tempe	96.2	70.5	85.7
855	Globe	96.3	69.8	85.5
856-857	Tucson	95.1	71.9	85.7
859	Show Low	96.7	69.9	85.8
860	Flagstaff	100.4	71.5	88.6
863	Prescott	98.1	70.3	86.8
864	Kingman	96.3	69.0	85.2
865	Chambers	96.5	70.3	85.8
ARKANSAS				
716	Pine Bluff	94.2	62.4	81.3
717	Camden	92.3	62.7	80.3
718	Texarkana	92.8	63.2	80.8
719	Hot Springs	91.7	61.9	79.6
720-722	Little Rock	95.3	62.7	82.0
723	West Memphis	93.0	66.8	82.4
724	Jonesboro	93.4	65.2	81.9
725	Batesville	91.1	61.7	79.1
726	Harrison	92.5	61.0	79.7
727	Fayetteville	90.2	62.9	79.1
728	Russellville	91.5	60.8	79.0
729	Fort Smith	94.3	61.6	81.0
CALIFORNIA				
900-902	Los Angeles	102.0	129.6	113.2
903-905	Inglewood	94.8	128.0	108.3
906-908	Long Beach	96.5	128.0	109.3
910-912	Pasadena	95.0	127.8	108.3
913-916	Van Nuys	98.1	127.8	110.2
917-918	Alhambra	97.0	127.8	109.5
919-921	San Diego	102.4	122.2	110.4
922	Palm Springs	97.0	125.4	108.5
923-924	San Bernardino	94.2	125.8	107.1
925	Riverside	98.9	124.9	109.5
926-927	Santa Ana	96.6	125.6	108.4
928	Anaheim	99.1	124.9	109.6
930	Oxnard	97.4	125.4	108.8
931	Santa Barbara	96.9	124.5	108.1
932-933	Bakersfield	98.5	124.1	108.9
934	San Luis Obispo	98.3	125.0	109.2
935	Mojave	95.2	123.8	106.9
936-938	Fresno	97.7	128.9	110.4
939	Salinas	99.0	137.6	114.7
940-941	San Francisco	105.0	160.3	127.5
942,956-958	Sacramento	97.0	132.8	111.6
943	Palo Alto	96.1	154.5	119.8
944	San Mateo	98.3	152.6	120.4
945	Vallejo	97.4	141.6	115.4
946	Oakland	100.1	151.6	121.1
947	Berkeley	100.1	151.5	121.0
948	Richmond	99.3	145.5	118.1
949	San Rafael	101.4	148.8	120.7
950	Santa Cruz	104.6	137.8	118.1
CALIFORNIA (CONT'D)				
951	San Jose	102.3	154.3	123.5
952	Stockton	100.0	131.6	112.8
953	Modesto	99.8	130.9	112.5
954	Santa Rosa	100.6	146.4	119.2
955	Eureka	102.2	134.1	115.2
959	Marysville	101.5	131.4	113.7
960	Redding	105.7	131.4	116.2
961	Susanville	104.9	131.4	115.7
COLORADO				
800-802	Denver	103.1	75.3	91.8
803	Boulder	96.5	77.4	88.8
804	Golden	98.3	72.8	87.9
805	Fort Collins	99.7	73.9	89.2
806	Greeley	97.0	73.9	87.6
807	Fort Morgan	97.1	72.3	87.0
808-809	Colorado Springs	98.8	71.8	87.9
810	Pueblo	99.5	70.6	87.7
811	Alamosa	100.6	68.8	87.7
812	Salida	100.2	69.4	87.6
813	Durango	101.2	65.2	86.6
814	Montrose	99.6	65.9	85.9
815	Grand Junction	102.9	70.6	89.8
816	Glenwood Springs	100.9	66.5	86.9
CONNECTICUT				
060	New Britain	97.0	115.4	104.5
061	Hartford	99.3	115.9	106.1
062	Willimantic	97.8	114.3	104.5
063	New London	94.1	114.0	102.2
064	Meriden	96.2	113.9	103.4
065	New Haven	98.6	115.1	105.3
066	Bridgeport	98.3	115.2	105.2
067	Waterbury	98.0	115.1	105.0
068	Norwalk	97.9	115.4	105.0
069	Stamford	98.0	115.8	105.3
D.C.				
200-205	Washington	102.7	88.5	96.9
DELAWARE				
197	Newark	98.1	110.6	103.2
198	Wilmington	98.9	111.1	103.8
199	Dover	99.4	110.6	103.9
FLORIDA				
320,322	Jacksonville	97.7	66.9	85.2
321	Daytona Beach	97.9	69.1	86.2
323	Tallahassee	99.0	66.9	86.0
324	Panama City	99.4	67.0	86.2
325	Pensacola	101.8	64.6	86.7
326,344	Gainesville	99.1	62.8	84.3
327-328,347	Orlando	99.7	66.5	86.2
329	Melbourne	101.1	70.8	88.8
330-332,340	Miami	97.5	70.1	86.4
333	Fort Lauderdale	97.3	67.8	85.3
334,349	West Palm Beach	96.0	62.6	82.4
335-336,346	Tampa	99.0	67.4	86.2
337	St. Petersburg	101.2	65.6	86.7
338	Lakeland	98.1	65.5	84.8
339,341	Fort Myers	97.5	65.4	84.4
342	Sarasota	100.0	64.1	85.3
GEORGIA				
300-303,399	Atlanta	102.2	75.4	91.3
304	Statesboro	99.8	70.3	87.8
305	Gainesville	98.5	62.9	84.0
306	Athens	97.8	62.4	83.4
307	Dalton	99.8	66.4	86.2
308-309	Augusta	98.1	72.2	87.6
310-312	Macon	95.9	72.7	86.4
313-314	Savannah	98.2	71.9	87.5
315	Waycross	97.5	67.4	85.2
316	Valdosta	97.5	70.2	86.4
317,398	Albany	97.6	70.7	86.6
318-319	Columbus	97.5	72.2	87.2

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STATE/ZIP	CITY	MAT.	INST.	TOTAL
HAWAII				
967	Hilo	114.8	115.0	114.9
968	Honolulu	119.3	115.8	117.9
STATES & POSS.				
969	Guam	136.6	61.9	106.2
IDAHO				
832	Pocatello	100.5	78.2	91.4
833	Twin Falls	101.0	78.1	91.7
834	Idaho Falls	98.5	79.9	90.9
835	Lewiston	104.7	85.6	97.0
836-837	Boise	99.5	78.3	90.9
838	Coeur d'Alene	104.3	86.0	96.9
ILLINOIS				
600-603	North Suburban	95.3	134.1	111.1
604	Joliet	95.1	143.9	115.0
605	South Suburban	95.3	135.7	111.7
606-608	Chicago	98.5	144.8	117.3
609	Kankakee	92.1	126.3	106.0
610-611	Rockford	95.1	129.5	109.1
612	Rock Island	93.4	93.2	93.3
613	La Salle	94.6	119.3	104.7
614	Galesburg	94.1	102.5	97.5
615-616	Peoria	96.0	109.8	101.6
617	Bloomington	93.4	103.0	97.3
618-619	Champaign	96.7	103.8	99.6
620-622	East St. Louis	94.0	109.0	100.1
623	Quincy	96.2	98.7	97.2
624	Effingham	95.4	102.5	98.3
625	Decatur	96.9	107.1	101.1
626-627	Springfield	98.0	107.9	102.0
628	Centralia	93.0	104.1	97.5
629	Carbondale	92.7	102.7	96.8
INDIANA				
460	Anderson	94.0	78.7	87.8
461-462	Indianapolis	97.9	83.2	91.9
463-464	Gary	95.2	103.1	98.4
465-466	South Bend	97.4	81.7	91.0
467-468	Fort Wayne	94.6	78.7	88.2
469	Kokomo	91.8	78.0	86.2
470	Lawrenceburg	91.4	76.4	85.3
471	New Albany	92.8	74.5	85.3
472	Columbus	95.0	77.6	87.9
473	Muncie	95.3	77.2	87.9
474	Bloomington	96.7	79.6	89.7
475	Washington	92.9	82.8	88.8
476-477	Evansville	94.2	85.4	90.7
478	Terre Haute	95.0	80.9	89.3
479	Lafayette	94.6	78.0	87.8
IOWA				
500-503,509	Des Moines	95.9	91.0	93.9
504	Mason City	93.1	69.5	83.5
505	Fort Dodge	93.2	69.3	83.4
506-507	Waterloo	95.2	76.5	87.6
508	Creston	93.7	79.1	87.7
510-511	Sioux City	96.8	78.3	89.3
512	Sibley	95.2	58.7	80.4
513	Spencer	96.5	58.5	81.1
514	Carroll	94.1	77.4	87.3
515	Council Bluffs	97.3	79.9	90.2
516	Shenandoah	94.9	77.0	87.6
520	Dubuque	95.7	78.7	88.7
521	Decorah	95.1	69.3	84.6
522-524	Cedar Rapids	97.1	84.4	91.9
525	Ottumwa	94.9	74.0	86.4
526	Burlington	94.5	79.2	88.3
527-528	Davenport	96.1	94.2	95.3
KANSAS				
660-662	Kansas City	95.7	98.8	97.0
664-666	Topeka	97.1	76.4	88.7
667	Fort Scott	94.2	72.3	85.3
668	Emporia	94.0	72.4	85.2
669	Belleville	95.6	67.6	84.2
670-672	Wichita	96.1	71.9	86.2
673	Independence	96.1	71.9	86.3
674	Salina	96.1	72.0	86.3
675	Hutchinson	91.6	68.2	82.1
676	Hays	95.3	68.8	84.5
677	Colby	96.0	70.1	85.5

STATE/ZIP	CITY	MAT.	INST.	TOTAL
KANSAS (CONT'D)				
678	Dodge City	97.4	73.2	87.5
679	Liberal	95.4	68.0	84.2
KENTUCKY				
400-402	Louisville	93.9	77.9	87.4
403-405	Lexington	92.6	76.9	86.2
406	Frankfort	94.8	76.9	87.5
407-409	Corbin	89.9	73.3	83.2
410	Covington	92.8	73.3	84.9
411-412	Ashland	91.8	84.2	88.7
413-414	Campton	93.1	74.6	85.6
415-416	Pikeville	94.1	80.1	88.4
417-418	Hazard	92.5	75.2	85.5
420	Paducah	90.7	78.0	85.5
421-422	Bowling Green	93.4	76.5	86.5
423	Owensboro	92.9	80.0	87.7
424	Henderson	90.5	76.8	84.9
425-426	Somerset	90.5	74.8	84.1
427	Elizabethtown	90.3	71.7	82.7
LOUISIANA				
700-701	New Orleans	98.8	68.6	86.5
703	Thibodaux	93.9	63.6	81.6
704	Hammond	91.8	62.2	79.8
705	Lafayette	93.8	64.5	81.9
706	Lake Charles	94.0	66.9	83.0
707-708	Baton Rouge	95.8	67.2	84.2
710-711	Shreveport	95.4	65.8	83.3
712	Monroe	93.3	63.3	81.1
713-714	Alexandria	93.5	63.3	81.2
MAINE				
039	Kittery	91.6	83.3	88.2
040-041	Portland	98.1	87.3	93.7
042	Lewiston	95.8	85.2	91.5
043	Augusta	99.6	84.5	93.5
044	Bangor	94.5	84.2	90.3
045	Bath	93.2	82.9	89.0
046	Machias	93.0	82.8	88.9
047	Houlton	93.2	82.8	88.9
048	Rockland	92.4	82.9	88.5
049	Waterville	93.2	82.8	89.0
MARYLAND				
206	Waldorf	98.1	83.0	91.9
207-208	College Park	97.3	84.0	91.9
209	Silver Spring	96.8	83.2	91.2
210-212	Baltimore	101.5	83.7	94.2
214	Annapolis	99.6	81.8	92.3
215	Cumberland	95.2	81.6	89.7
216	Easton	96.8	70.9	86.2
217	Hagerstown	95.8	86.3	91.9
218	Salisbury	97.5	63.5	83.6
219	Elkton	94.3	81.0	88.9
MASSACHUSETTS				
010-011	Springfield	96.8	107.9	101.3
012	Pittsfield	95.8	102.4	98.5
013	Greenfield	93.9	106.7	99.1
014	Fitchburg	92.5	110.2	99.7
015-016	Worcester	96.7	115.6	104.4
017	Framingham	92.2	119.3	103.2
018	Lowell	96.0	123.1	107.0
019	Lawrence	96.8	121.7	106.9
020-022, 024	Boston	98.5	134.5	113.1
023	Brockton	96.1	114.7	103.7
025	Buzzards Bay	90.4	111.2	98.9
026	Hyannis	92.8	113.9	101.4
027	New Bedford	95.4	113.3	102.7
MICHIGAN				
480,483	Royal Oak	93.4	94.8	94.0
481	Ann Arbor	95.6	99.5	97.2
482	Detroit	100.0	100.3	100.1
484-485	Flint	95.5	89.9	93.2
486	Saginaw	95.1	86.1	91.5
487	Bay City	95.1	84.1	90.7
488-489	Lansing	97.2	89.7	94.1
490	Battle Creek	94.6	78.2	87.9
491	Kalamazoo	94.8	80.3	88.9
492	Jackson	92.9	85.9	90.1
493,495	Grand Rapids	97.2	80.7	90.5
494	Muskegon	93.6	80.3	88.2

STATE/ZIP	CITY	MAT.	INST.	TOTAL
MICHIGAN (CONT'D)				
496	Traverse City	92.5	73.5	84.8
497	Gaylord	93.7	76.3	86.6
498-499	Iron Mountain	95.2	77.1	87.8
MINNESOTA				
550-551	Saint Paul	100.4	116.7	107.0
553-555	Minneapolis	101.2	117.8	108.0
556-558	Duluth	101.3	104.4	102.6
559	Rochester	99.0	104.3	101.2
560	Mankato	94.6	102.4	97.7
561	Windom	92.8	89.4	91.4
562	Willmar	92.8	95.2	93.8
563	St. Cloud	94.0	114.1	102.2
564	Brainerd	94.6	96.2	95.3
565	Detroit Lakes	95.7	88.4	92.7
566	Bemidji	95.2	92.6	94.1
567	Thief River Falls	94.9	87.5	91.9
MISSISSIPPI				
386	Clarksdale	96.0	52.6	78.3
387	Greenville	99.2	63.8	84.8
388	Tupelo	97.2	55.1	80.0
389	Greenwood	97.5	52.3	79.1
390-392	Jackson	98.4	66.8	85.5
393	Meridian	94.8	66.5	83.3
394	Laurel	96.2	55.1	79.5
395	Biloxi	96.9	65.2	84.0
396	McComb	94.4	52.6	77.4
397	Columbus	96.1	55.8	79.7
MISSOURI				
630-631	St. Louis	98.4	105.4	101.3
633	Bowling Green	94.5	90.2	92.7
634	Hannibal	93.4	86.6	90.6
635	Kirksville	96.4	81.8	90.5
636	Flat River	95.4	88.5	92.6
637	Cape Girardeau	95.1	88.5	92.4
638	Sikeston	93.8	82.4	89.2
639	Poplar Bluff	93.2	82.4	88.8
640-641	Kansas City	98.6	101.6	99.8
644-645	St. Joseph	95.2	91.2	93.6
646	Chillicothe	92.5	88.7	90.9
647	Harrisonville	91.9	95.2	93.2
648	Joplin	94.4	78.4	87.9
650-651	Jefferson City	95.1	86.8	91.7
652	Columbia	94.4	90.9	93.0
653	Sedalia	94.7	86.1	91.2
654-655	Rolla	92.5	94.0	93.1
656-658	Springfield	96.0	79.6	89.3
MONTANA				
590-591	Billings	102.1	77.4	92.0
592	Wolf Point	101.3	73.3	89.9
593	Miles City	99.3	73.3	88.7
594	Great Falls	103.3	75.7	92.0
595	Havre	100.1	71.3	88.4
596	Helena	101.4	73.3	90.0
597	Butte	101.2	73.0	89.7
598	Missoula	98.4	72.9	88.0
599	Kalispell	97.8	72.2	87.4
NEBRASKA				
680-681	Omaha	97.0	80.7	90.4
683-685	Lincoln	98.1	78.2	90.0
686	Columbus	94.2	76.0	86.8
687	Norfolk	95.4	72.9	86.2
688	Grand Island	95.6	78.3	88.6
689	Hastings	95.4	73.6	86.5
690	McCook	94.5	68.8	84.1
691	North Platte	94.8	74.2	86.4
692	Valentine	97.0	66.0	84.4
693	Alliance	97.1	68.9	85.6
NEVADA				
889-891	Las Vegas	103.0	107.2	104.7
893	Ely	101.1	86.1	95.0
894-895	Reno	101.0	83.6	93.9
897	Carson City	101.5	83.9	94.3
898	Elko	100.1	78.6	91.4
NEW HAMPSHIRE				
030	Nashua	97.4	91.8	95.1
031	Manchester	98.2	92.6	95.9

STATE/ZIP	CITY	MAT.	INST.	TOTAL
NEW HAMPSHIRE (CONT'D)				
032-033	Concord	98.6	92.3	96.0
034	Keene	93.5	84.2	89.7
035	Littleton	93.7	75.9	86.5
036	Charleston	93.0	83.6	89.2
037	Claremont	92.4	83.6	88.8
038	Portsmouth	94.0	90.5	92.6
NEW JERSEY				
070-071	Newark	98.8	136.3	114.1
072	Elizabeth	95.1	136.2	111.8
073	Jersey City	94.8	135.2	111.3
074-075	Paterson	96.0	136.3	112.4
076	Hackensack	93.7	135.5	110.7
077	Long Branch	93.4	125.7	106.6
078	Dover	93.8	136.0	111.0
079	Summit	93.9	135.3	110.8
080,083	Vineland	94.6	123.7	106.4
081	Camden	97.1	133.3	111.9
082,084	Atlantic City	95.4	129.2	109.1
085-086	Trenton	98.7	133.0	112.6
087	Point Pleasant	96.3	125.4	108.1
088-089	New Brunswick	96.9	131.4	111.0
NEW MEXICO				
870-872	Albuquerque	96.8	71.0	86.3
873	Gallup	96.8	71.0	86.3
874	Farmington	97.0	71.0	86.4
875	Santa Fe	98.6	71.5	87.6
877	Las Vegas	95.2	71.0	85.4
878	Socorro	95.0	71.0	85.2
879	Truth/Consequences	94.6	68.0	83.8
880	Las Cruces	94.8	69.1	84.3
881	Clovis	96.9	70.9	86.4
882	Roswell	98.4	71.0	87.2
883	Carrizozo	98.9	71.0	87.6
884	Tucumcari	97.4	70.9	86.6
NEW YORK				
100-102	New York	100.1	171.3	129.1
103	Staten Island	93.9	167.8	124.0
104	Bronx	92.7	167.1	122.9
105	Mount Vernon	92.5	143.6	113.3
106	White Plains	92.7	146.7	114.7
107	Yonkers	97.2	146.9	117.4
108	New Rochelle	93.2	138.1	111.5
109	Suffern	92.4	122.1	104.5
110	Queens	99.2	168.8	127.5
111	Long Island City	101.0	168.8	128.6
112	Brooklyn	101.5	168.8	128.9
113	Flushing	101.1	168.8	128.7
114	Jamaica	99.6	168.8	127.8
115,117,118	Hicksville	99.2	149.6	119.7
116	Far Rockaway	101.1	168.8	128.7
119	Riverhead	100.0	154.4	122.1
120-122	Albany	97.8	108.5	102.1
123	Schenectady	97.1	107.6	101.4
124	Kingston	100.1	125.4	110.4
125-126	Poughkeepsie	99.3	128.1	111.1
127	Monticello	98.9	126.1	110.0
128	Glens Falls	91.8	100.5	95.4
129	Plattsburgh	96.3	90.4	93.9
130-132	Syracuse	97.5	100.0	98.5
133-135	Utica	95.6	100.7	97.7
136	Watertown	97.0	98.4	97.6
137-139	Binghamton	97.0	99.2	97.9
140-142	Buffalo	102.6	106.8	104.3
143	Niagara Falls	97.4	100.9	98.8
144-146	Rochester	100.8	99.5	100.3
147	Jamestown	96.3	90.2	93.8
148-149	Elmira	96.3	97.7	96.9
NORTH CAROLINA				
270,272-274	Greensboro	99.7	66.0	86.0
271	Winston-Salem	99.5	66.0	85.9
275-276	Raleigh	98.9	66.3	85.6
277	Durham	101.7	66.0	87.2
278	Rocky Mount	96.8	65.5	84.1
279	Elizabeth City	97.6	66.6	85.0
280	Gastonia	97.8	69.3	86.2
281-282	Charlotte	98.3	71.0	87.2
283	Fayetteville	101.3	64.4	86.3
284	Wilmington	96.7	63.6	83.2
285	Kinston	95.0	64.2	82.5

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STATE/ZIP	CITY	MAT.	INST.	TOTAL
NORTH CAROLINA (CONT'D)				
286	Hickory	95.4	69.8	85.0
287-288	Asheville	96.9	65.3	84.0
289	Murphy	96.2	62.7	82.6
NORTH DAKOTA				
580-581	Fargo	98.8	77.2	90.0
582	Grand Forks	97.7	79.0	90.1
583	Devils Lake	97.9	75.8	88.9
584	Jamestown	97.7	75.0	88.5
585	Bismarck	98.9	81.2	91.7
586	Dickinson	97.8	74.4	88.3
587	Minot	97.7	74.7	88.3
588	Williston	96.9	78.0	89.2
OHIO				
430-432	Columbus	98.5	84.6	92.8
433	Marion	93.5	81.7	88.7
434-436	Toledo	96.8	90.3	94.2
437-438	Zanesville	94.1	81.1	88.8
439	Steubenville	94.5	85.4	90.8
440	Lorain	97.3	82.7	91.4
441	Cleveland	99.3	92.0	96.3
442-443	Akron	98.2	85.9	93.2
444-445	Youngstown	97.6	83.1	91.7
446-447	Canton	97.8	80.3	90.6
448-449	Mansfield	95.1	80.5	89.2
450	Hamilton	95.4	75.0	87.1
451-452	Cincinnati	98.3	79.8	90.8
453-454	Dayton	95.4	77.8	88.3
455	Springfield	95.4	79.1	88.8
456	Chillicothe	94.6	83.2	90.0
457	Athens	97.5	79.8	90.3
458	Lima	97.7	77.5	89.5
OKLAHOMA				
730-731	Oklahoma City	95.4	68.5	84.5
734	Ardmore	93.3	65.2	81.9
735	Lawton	95.7	66.4	83.8
736	Clinton	94.4	65.1	82.5
737	Enid	95.2	65.7	83.2
738	Woodward	93.4	66.3	82.3
739	Guymon	94.4	60.6	80.6
740-741	Tulsa	94.9	65.0	82.7
743	Miami	91.4	63.0	79.8
744	Muskogee	93.8	67.0	82.9
745	McAlester	90.8	63.3	79.6
746	Ponca City	91.8	60.9	79.2
747	Durant	91.5	62.1	79.6
748	Shawnee	92.8	63.5	80.9
749	Poteau	90.8	62.9	79.5
OREGON				
970-972	Portland	103.1	102.2	102.7
973	Salem	104.7	100.8	103.1
974	Eugene	102.5	101.2	101.9
975	Medford	103.6	96.9	100.9
976	Klamath Falls	103.9	95.4	100.4
977	Bend	103.2	98.1	101.1
978	Pendleton	100.1	98.4	99.4
979	Vale	97.6	85.7	92.8
PENNSYLVANIA				
150-152	Pittsburgh	99.1	102.0	100.3
153	Washington	94.4	99.6	96.5
154	Uniontown	94.7	96.9	95.6
155	Bedford	95.7	88.1	92.6
156	Greensburg	95.6	93.6	94.8
157	Indiana	94.6	94.0	94.3
158	Dubois	96.0	91.9	94.3
159	Johnstown	95.7	95.4	95.6
160	Butler	90.8	96.2	93.0
161	New Castle	90.9	96.6	93.2
162	Kittanning	91.3	94.3	92.5
163	Oil City	90.7	92.2	91.3
164-165	Erie	93.0	95.0	93.8
166	Altoona	92.8	95.5	93.9
167	Bradford	94.3	92.8	93.7
168	State College	93.9	97.1	95.2
169	Wellsboro	94.7	87.1	91.6
170-171	Harrisburg	97.6	97.6	97.6
172	Chambersburg	94.1	83.9	89.9
173-174	York	94.8	93.9	94.4
175-176	Lancaster	92.9	95.6	94.0

STATE/ZIP	CITY	MAT.	INST.	TOTAL
PENNSYLVANIA (CONT'D)				
177	Williamsport	91.6	91.9	91.8
178	Sunbury	93.7	87.1	91.0
179	Pottsville	92.6	90.2	91.6
180	Lehigh Valley	94.4	104.8	98.6
181	Allentown	96.3	107.4	100.8
182	Hazleton	93.7	90.1	92.3
183	Stroudsburg	93.8	98.4	95.7
184-185	Scranton	97.1	96.6	96.9
186-187	Wilkes-Barre	93.6	94.6	94.0
188	Montrose	93.3	90.9	92.4
189	Doylestown	93.2	119.4	103.9
190-191	Philadelphia	99.9	137.6	115.2
193	Westchester	95.4	120.0	105.4
194	Norristown	94.2	120.2	104.8
195-196	Reading	96.3	101.8	98.6
PUERTO RICO				
009	San Juan	117.0	28.6	81.0
RHODE ISLAND				
028	Newport	94.5	111.3	101.3
029	Providence	98.2	112.0	103.8
SOUTH CAROLINA				
290-292	Columbia	98.8	65.7	85.3
293	Spartanburg	97.3	68.0	85.4
294	Charleston	99.1	65.5	85.4
295	Florence	96.8	64.9	83.8
296	Greenville	97.1	67.9	85.2
297	Rock Hill	96.7	66.2	84.3
298	Aiken	97.7	63.2	83.7
299	Beaufort	98.3	65.1	84.8
SOUTH DAKOTA				
570-571	Sioux Falls	97.8	80.1	90.6
572	Watertown	95.7	65.7	83.5
573	Mitchell	95.2	59.6	80.7
574	Aberdeen	97.4	74.1	88.0
575	Pierre	99.3	77.1	90.3
576	Mobridge	95.4	60.7	81.3
577	Rapid City	97.2	69.2	85.8
TENNESSEE				
370-372	Nashville	99.0	75.2	89.3
373-374	Chattanooga	98.0	67.1	85.4
375,380-381	Memphis	98.2	70.8	87.1
376	Johnson City	97.3	59.1	81.7
377-379	Knoxville	94.8	65.9	83.0
382	McKenzie	96.7	53.8	79.2
383	Jackson	98.4	68.8	86.4
384	Columbia	95.0	63.1	82.0
385	Cookeville	96.5	55.1	79.6
TEXAS				
750	McKinney	96.8	60.6	82.0
751	Waxahachie	96.9	60.8	82.2
752-753	Dallas	99.3	67.1	86.2
754	Greenville	97.1	60.1	82.0
755	Texarkana	95.8	59.2	80.9
756	Longview	96.7	58.2	81.0
757	Tyler	97.4	59.0	81.8
758	Palestine	93.8	57.8	79.1
759	Lufkin	94.4	59.2	80.1
760-761	Fort Worth	97.3	63.9	83.8
762	Denton	96.9	60.3	82.0
763	Wichita Falls	95.1	62.0	81.6
764	Eastland	94.2	57.7	79.3
765	Temple	92.5	55.3	77.4
766-767	Waco	94.4	62.9	81.6
768	Brownwood	97.0	56.1	80.4
769	San Angelo	96.6	56.3	80.2
770-772	Houston	97.8	66.6	85.1
773	Huntsville	95.0	59.7	80.7
774	Wharton	95.9	60.6	81.6
775	Galveston	94.4	62.9	81.6
776-777	Beaumont	94.7	66.0	83.0
778	Bryan	91.9	61.4	79.5
779	Victoria	95.9	59.8	81.2
780	Laredo	95.0	61.5	81.3
781-782	San Antonio	97.4	63.6	83.7
783-784	Corpus Christi	97.4	63.3	83.5
785	McAllen	97.8	54.4	80.2
786-787	Austin	96.5	61.5	82.2

STATE/ZIP	CITY	MAT.	INST.	TOTAL
TEXAS (CONT'D)				
788	Del Rio	97.5	56.9	81.0
789	Giddings	94.4	57.6	79.4
790-791	Amarillo	97.8	61.7	83.1
792	Childress	96.8	58.2	81.1
793-794	Lubbock	98.9	60.8	83.4
795-796	Abilene	97.4	60.6	82.4
797	Midland	99.2	64.0	84.9
798-799,885	El Paso	96.9	63.8	83.5
UTAH				
840-841	Salt Lake City	101.4	72.9	89.8
842,844	Ogden	96.9	72.9	87.2
843	Logan	98.7	72.9	88.2
845	Price	98.9	67.5	86.1
846-847	Provo	99.0	72.4	88.2
VERMONT				
050	White River Jct.	94.7	78.2	88.0
051	Bellows Falls	93.5	88.8	91.6
052	Bennington	93.8	85.4	90.4
053	Brattleboro	94.1	88.8	92.0
054	Burlington	99.8	82.4	92.7
056	Montpelier	98.0	85.3	92.8
057	Rutland	96.5	81.7	90.5
058	St. Johnsbury	94.8	77.8	87.9
059	Guildhall	93.8	77.9	87.3
VIRGINIA				
220-221	Fairfax	99.3	80.3	91.6
222	Arlington	100.5	81.3	92.7
223	Alexandria	99.8	83.0	93.0
224-225	Fredericksburg	98.2	78.1	90.0
226	Winchester	98.7	74.5	88.9
227	Culpeper	98.4	80.2	91.0
228	Harrisonburg	98.8	74.2	88.8
229	Charlottesville	99.2	72.7	88.4
230-232	Richmond	99.4	73.2	88.7
233-235	Norfolk	101.0	66.7	87.1
236	Newport News	99.1	67.8	86.4
237	Portsmouth	98.3	66.2	85.3
238	Petersburg	98.6	73.0	88.2
239	Farmville	98.1	64.6	84.5
240-241	Roanoke	100.5	67.7	87.2
242	Bristol	98.1	58.4	81.9
243	Pulaski	97.7	68.1	85.7
244	Staunton	98.5	66.5	85.5
245	Lynchburg	98.5	71.6	87.5
246	Grundy	97.9	61.9	83.3
WASHINGTON				
980-981,987	Seattle	104.3	110.8	106.9
982	Everett	103.6	106.0	104.6
983-984	Tacoma	104.1	104.8	104.4
985	Olympia	103.3	104.5	103.8
986	Vancouver	106.1	102.0	104.4
988	Wenatchee	104.1	85.1	96.4
989	Yakima	104.2	96.4	101.0
990-992	Spokane	98.6	86.9	93.8
993	Richland	97.9	92.7	95.8
994	Clarkston	97.2	77.8	89.3
WEST VIRGINIA				
247-248	Bluefield	96.9	83.1	91.3
249	Lewisburg	98.5	84.8	92.9
250-253	Charleston	97.2	89.0	93.9
254	Martinsburg	96.6	78.8	89.4
255-257	Huntington	98.3	89.4	94.7
258-259	Beckley	95.4	85.6	91.4
260	Wheeling	99.6	89.3	95.4
261	Parkersburg	98.6	88.3	94.4
262	Buckhannon	98.1	88.9	94.4
263-264	Clarksburg	98.8	89.8	95.1
265	Morgantown	98.4	90.4	95.2
266	Gassaway	98.1	86.1	93.3
267	Romney	97.9	84.0	92.2
268	Petersburg	97.7	84.3	92.2
WISCONSIN				
530,532	Milwaukee	96.9	108.0	101.4
531	Kenosha	97.0	105.3	100.4
534	Racine	96.2	105.2	99.8
535	Beloit	95.4	95.5	95.4
537	Madison	96.1	103.5	99.1

STATE/ZIP	CITY	MAT.	INST.	TOTAL
WISCONSIN (CONT'D)				
538	Lancaster	93.3	90.8	92.3
539	Portage	91.8	94.3	92.8
540	New Richmond	93.9	90.5	92.5
541-543	Green Bay	98.3	102.6	100.1
544	Wausau	93.1	90.5	92.1
545	Rhinelander	96.4	88.9	93.4
546	La Crosse	93.9	99.0	96.0
547	Eau Claire	95.8	99.0	97.1
548	Superior	93.5	92.5	93.0
549	Oshkosh	94.0	91.0	92.7
WYOMING				
820	Cheyenne	99.7	72.6	88.7
821	Yellowstone Nat'l Park	97.6	70.7	86.7
822	Wheatland	98.6	69.0	86.5
823	Rawlins	100.1	70.4	88.0
824	Worland	98.1	71.0	87.1
825	Riverton	99.1	70.4	87.5
826	Casper	101.0	72.0	89.2
827	Newcastle	97.9	70.4	86.7
828	Sheridan	101.0	70.6	88.6
829-831	Rock Springs	101.6	71.1	89.2
CANADIAN FACTORS (reflect Canadian currency)				
ALBERTA				
	Calgary	114.8	89.0	104.3
	Edmonton	117.7	89.2	106.1
	Fort McMurray	117.4	84.1	103.9
	Lethbridge	112.3	83.6	100.6
	Lloydminster	107.1	80.6	96.3
	Medicine Hat	107.2	79.9	96.1
	Red Deer	107.6	79.9	96.3
BRITISH COLUMBIA				
	Kamloops	108.3	80.2	96.8
	Prince George	109.5	79.6	97.3
	Vancouver	115.3	91.0	105.4
	Victoria	109.9	85.2	99.8
MANITOBA				
	Brandon	115.3	67.8	96.0
	Portage la Prairie	107.3	66.3	90.6
	Winnipeg	119.7	67.7	98.5
NEW BRUNSWICK				
	Bathurst	105.3	59.7	86.7
	Dalhousie	105.8	60.0	87.1
	Fredericton	118.1	67.3	97.4
	Moncton	105.3	74.6	92.8
	Newcastle	105.3	60.3	87.0
	St. John	108.0	74.7	94.4
NEWFOUNDLAND				
	Corner Brook	119.1	65.7	97.3
	St. Johns	118.2	83.8	104.2
NORTHWEST TERRITORIES				
	Yellowknife	127.8	79.6	108.2
NOVA SCOTIA				
	Bridgewater	106.7	67.5	90.8
	Dartmouth	115.9	67.6	96.2
	Halifax	116.1	83.8	103.0
	New Glasgow	114.1	67.6	95.1
	Sydney	111.9	67.6	93.8
	Truro	106.3	67.5	90.5
	Yarmouth	114.0	67.6	95.1
ONTARIO				
	Barrie	116.1	83.8	102.9
	Brantford	109.0	87.2	100.1
	Cornwall	108.7	84.0	98.6
	Hamilton	114.4	94.8	106.4
	Kingston	109.8	84.0	99.3
	Kitchener	104.9	91.3	99.4
	London	113.6	93.0	105.2
	North Bay	117.4	82.0	103.0
	Oshawa	107.7	93.6	102.0
	Ottawa	113.6	94.8	106.0
	Owen Sound	116.3	82.1	102.4
	Peterborough	109.0	83.8	98.7
	Sarnia	109.1	87.8	100.4

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STATE/ZIP	CITY	MAT.	INST.	TOTAL
ONTARIO (CONT'D)				
	Sault Ste. Marie	104.2	85.5	96.6
	St. Catharines	103.1	91.3	98.3
	Sudbury	102.5	89.6	97.3
	Thunder Bay	104.6	90.8	99.0
	Timmins	109.2	82.0	98.1
	Toronto	113.4	100.9	108.3
	Windsor	103.9	91.1	98.7
PRINCE EDWARD ISLAND				
	Charlottetown	115.9	58.3	92.5
	Summerside	116.1	55.6	91.5
QUEBEC				
	Cap-de-la-Madeleine	106.2	76.9	94.3
	Charlesbourg	106.2	76.9	94.3
	Chicoutimi	105.4	86.2	97.6
	Gatineau	106.0	76.7	94.1
	Granby	106.3	76.6	94.2
	Hull	106.2	76.7	94.2
	Joliette	106.5	76.9	94.4
	Laval	106.4	77.2	94.5
	Montreal	114.4	88.7	103.9
	Quebec City	114.2	89.2	104.1
	Rimouski	106.0	86.2	97.9
	Rouyn-Noranda	106.0	76.7	94.1
	Saint-Hyacinthe	105.5	76.7	93.8
	Sherbrooke	106.3	76.7	94.3
	Sorel	106.5	76.9	94.4
	Saint-Jerome	106.1	76.7	94.1
	Trois-Rivieres	115.1	76.9	99.6
SASKATCHEWAN				
	Moose Jaw	104.6	61.3	87.0
	Prince Albert	103.7	59.7	85.8
	Regina	120.4	87.1	106.9
	Saskatoon	105.8	83.3	96.6
YUKON				
	Whitehorse	128.4	66.2	103.1

R011105-05 Tips for Accurate Estimating

1. Use pre-printed or columnar forms for orderly sequence of dimensions and locations and for recording telephone quotations.
2. Use only the front side of each paper or form except for certain pre-printed summary forms.
3. Be consistent in listing dimensions: For example, length x width x height. This helps in rechecking to ensure that, the total length of partitions is appropriate for the building area.
4. Use printed (rather than measured) dimensions where given.
5. Add up multiple printed dimensions for a single entry where possible.
6. Measure all other dimensions carefully.
7. Use each set of dimensions to calculate multiple related quantities.
8. Convert foot and inch measurements to decimal feet when listing. Memorize decimal equivalents to .01 parts of a foot (1/8″ equals approximately .01′).
9. Do not "round off" quantities until the final summary.
10. Mark drawings with different colors as items are taken off.
11. Keep similar items together, different items separate.
12. Identify location and drawing numbers to aid in future checking for completeness.
13. Measure or list everything on the drawings or mentioned in the specifications.
14. It may be necessary to list items not called for to make the job complete.
15. Be alert for: Notes on plans such as N.T.S. (not to scale); changes in scale throughout the drawings; reduced size drawings; discrepancies between the specifications and the drawings.
16. Develop a consistent pattern of performing an estimate. For example:
    a. Start the quantity takeoff at the lower floor and move to the next higher floor.
    b. Proceed from the main section of the building to the wings.
    c. Proceed from south to north or vice versa, clockwise or counterclockwise.
    d. Take off floor plan quantities first, elevations next, then detail drawings.
17. List all gross dimensions that can be either used again for different quantities, or used as a rough check of other quantities for verification (exterior perimeter, gross floor area, individual floor areas, etc.).
18. Utilize design symmetry or repetition (repetitive floors, repetitive wings, symmetrical design around a center line, similar room layouts, etc.). Note: Extreme caution is needed here so as not to omit or duplicate an area.
19. Do not convert units until the final total is obtained. For instance, when estimating concrete work, keep all units to the nearest cubic foot, then summarize and convert to cubic yards.
20. When figuring alternatives, it is best to total all items involved in the basic system, then total all items involved in the alternates. Therefore you work with positive numbers in all cases. When adds and deducts are used, it is often confusing whether to add or subtract a portion of an item; especially on a complicated or involved alternate.

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R011105-50 Metric Conversion Factors

Description: This table is primarily for converting customary U.S. units in the left hand column to SI metric units in the right hand column. In addition, conversion factors for some commonly encountered Canadian and non-SI metric units are included.

If You Know		Multiply By		To Find
Length	Inches	x 25.4[a]	=	Millimeters
	Feet	x 0.3048[a]	=	Meters
	Yards	x 0.9144[a]	=	Meters
	Miles (statute)	x 1.609	=	Kilometers
Area	Square inches	x 645.2	=	Square millimeters
	Square feet	x 0.0929	=	Square meters
	Square yards	x 0.8361	=	Square meters
Volume (Capacity)	Cubic inches	x 16,387	=	Cubic millimeters
	Cubic feet	x 0.02832	=	Cubic meters
	Cubic yards	x 0.7646	=	Cubic meters
	Gallons (U.S. liquids)[b]	x 0.003785	=	Cubic meters[c]
	Gallons (Canadian liquid)[b]	x 0.004546	=	Cubic meters[c]
	Ounces (U.S. liquid)[b]	x 29.57	=	Milliliters[c, d]
	Quarts (U.S. liquid)[b]	x 0.9464	=	Liters[c, d]
	Gallons (U.S. liquid)[b]	x 3.785	=	Liters[c, d]
Force	Kilograms force[d]	x 9.807	=	Newtons
	Pounds force	x 4.448	=	Newtons
	Pounds force	x 0.4536	=	Kilograms force[d]
	Kips	x 4448	=	Newtons
	Kips	x 453.6	=	Kilograms force[d]
Pressure, Stress, Strength (Force per unit area)	Kilograms force per square centimeter[d]	x 0.09807	=	Megapascals
	Pounds force per square inch (psi)	x 0.006895	=	Megapascals
	Kips per square inch	x 6.895	=	Megapascals
	Pounds force per square inch (psi)	x 0.07031	=	Kilograms force per square centimeter[d]
	Pounds force per square foot	x 47.88	=	Pascals
	Pounds force per square foot	x 4.882	=	Kilograms force per square meter[d]
Flow	Cubic feet per minute	x 0.4719	=	Liters per second
	Gallons per minute	x 0.0631	=	Liters per second
	Gallons per hour	x 1.05	=	Milliliters per second
Bending Moment Or Torque	Inch-pounds force	x 0.01152	=	Meter-kilograms force[d]
	Inch-pounds force	x 0.1130	=	Newton-meters
	Foot-pounds force	x 0.1383	=	Meter-kilograms force[d]
	Foot-pounds force	x 1.356	=	Newton-meters
	Meter-kilograms force[d]	x 9.807	=	Newton-meters
Mass	Ounces (avoirdupois)	x 28.35	=	Grams
	Pounds (avoirdupois)	x 0.4536	=	Kilograms
	Tons (metric)	x 1000	=	Kilograms
	Tons, short (2000 pounds)	x 907.2	=	Kilograms
	Tons, short (2000 pounds)	x 0.9072	=	Megagrams[e]
Mass per Unit Volume	Pounds mass per cubic foot	x 16.02	=	Kilograms per cubic meter
	Pounds mass per cubic yard	x 0.5933	=	Kilograms per cubic meter
	Pounds mass per gallon (U.S. liquid)[b]	x 119.8	=	Kilograms per cubic meter
	Pounds mass per gallon (Canadian liquid)[b]	x 99.78	=	Kilograms per cubic meter
Temperature	Degrees Fahrenheit	(F-32)/1.8	=	Degrees Celsius
	Degrees Fahrenheit	(F+459.67)/1.8	=	Degrees Kelvin
	Degrees Celsius	C+273.15	=	Degrees Kelvin

[a]The factor given is exact
[b]One U.S. gallon = 0.8327 Canadian gallon
[c]1 liter = 1000 milliliters = 1000 cubic centimeters
1 cubic decimeter = 0.001 cubic meter
[d]Metric but not SI unit
[e]Called "tonne" in England and "metric ton" in other metric countries

R011105-60 Weights and Measures

Measures of Length
1 Mile = 1760 Yards = 5280 Feet
1 Yard = 3 Feet = 36 inches
1 Foot = 12 Inches
1 Mil = 0.001 Inch
1 Fathom = 2 Yards = 6 Feet
1 Rod = 5.5 Yards = 16.5 Feet
1 Hand = 4 Inches
1 Span = 9 Inches
1 Micro-inch = One Millionth Inch or 0.000001 Inch
1 Micron = One Millionth Meter + 0.00003937 Inch

Surveyor's Measure
1 Mile = 8 Furlongs = 80 Chains
1 Furlong = 10 Chains = 220 Yards
1 Chain = 4 Rods = 22 Yards = 66 Feet = 100 Links
1 Link = 7.92 Inches

Square Measure
1 Square Mile = 640 Acres = 6400 Square Chains
1 Acre = 10 Square Chains = 4840 Square Yards = 43,560 Sq. Ft.
1 Square Chain = 16 Square Rods = 484 Square Yards = 4356 Sq. Ft.
1 Square Rod = 30.25 Square Yards = 272.25 Square Feet = 625 Square Lines
1 Square Yard = 9 Square Feet
1 Square Foot = 144 Square Inches
An Acre equals a Square 208.7 Feet per Side

Cubic Measure
1 Cubic Yard = 27 Cubic Feet
1 Cubic Foot = 1728 Cubic Inches
1 Cord of Wood = 4 x 4 x 8 Feet = 128 Cubic Feet
1 Perch of Masonry = 16½ x 1½ x 1 Foot = 24.75 Cubic Feet

Avoirdupois or Commercial Weight
1 Gross or Long Ton = 2240 Pounds
1 Net or Short Ton = 2000 Pounds
1 Pound = 16 Ounces = 7000 Grains
1 Ounce = 16 Drachms = 437.5 Grains
1 Stone = 14 Pounds

Power
1 British Thermal Unit per Hour = 0.2931 Watts
1 Ton (Refrigeration) = 3.517 Kilowatts
1 Horsepower (Boiler) = 9.81 Kilowatts
1 Horsepower (550 ft-lb/s) = 0.746 Kilowatts

Shipping Measure
For Measuring Internal Capacity of a Vessel:
1 Register Ton = 100 Cubic Feet

For Measurement of Cargo:
Approximately 40 Cubic Feet of Merchandise is considered a Shipping Ton, unless that bulk would weigh more than 2000 Pounds, in which case Freight Charge may be based upon weight.

40 Cubic Feet = 32.143 U.S. Bushels = 31.16 Imp. Bushels

Liquid Measure
1 Imperial Gallon = 1.2009 U.S. Gallon = 277.42 Cu. In.
1 Cubic Foot = 7.48 U.S. Gallons

R011110-10 Architectural Fees

Tabulated below are typical percentage fees by project size, for good professional architectural service. Fees may vary from those listed depending upon degree of design difficulty and economic conditions in any particular area.

Rates can be interpolated horizontally and vertically. Various portions of the same project requiring different rates should be adjusted proportionately. For alterations, add 50% to the fee for the first $500,000 of project cost and add 25% to the fee for project cost over $500,000.

Architectural fees tabulated below include Structural, Mechanical and Electrical Engineering Fees. They do not include the fees for special consultants such as kitchen planning, security, acoustical, interior design, etc

Civil Engineering fees are included in the Architectural fee for project sites requiring minimal design such as city sites. However, separate Civil Engineering fees must be added when utility connections require design, drainage calculations are needed, stepped foundations are required, or provisions are required to protect adjacent wetlands.

Building Types	Total Project Size in Thousands of Dollars						
	100	250	500	1,000	5,000	10,000	50,000
Factories, garages, warehouses, repetitive housing	9.0%	8.0%	7.0%	6.2%	5.3%	4.9%	4.5%
Apartments, banks, schools, libraries, offices, municipal buildings	12.2	12.3	9.2	8.0	7.0	6.6	6.2
Churches, hospitals, homes, laboratories, museums, research	15.0	13.6	12.7	11.9	9.5	8.8	8.0
Memorials, monumental work, decorative furnishings	—	16.0	14.5	13.1	10.0	9.0	8.3

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R011110-30 Engineering Fees

Typical **Structural Engineering Fees** based on type of construction and total project size. These fees are included in Architectural Fees.

Type of Construction	Total Project Size (in thousands of dollars)			
	$500	$500-$1,000	$1,000-$5,000	Over $5000
Industrial buildings, factories & warehouses	Technical payroll times 2.0 to 2.5	1.60%	1.25%	1.00%
Hotels, apartments, offices, dormitories, hospitals, public buildings, food stores		2.00%	1.70%	1.20%
Museums, banks, churches and cathedrals		2.00%	1.75%	1.25%
Thin shells, prestressed concrete, earthquake resistive		2.00%	1.75%	1.50%
Parking ramps, auditoriums, stadiums, convention halls, hangars & boiler houses		2.50%	2.00%	1.75%
Special buildings, major alterations, underpinning & future expansion	▼	Add to above 0.5%	Add to above 0.5%	Add to above 0.5%

For complex reinforced concrete or unusually complicated structures, add 20% to 50%.

Typical **Mechanical and Electrical Engineering Fees** are based on the size of the subcontract. The fee structure for both is shown below. These fees are included in Architectural Fees.

Type of Construction	Subcontract Size							
	$25,000	$50,000	$100,000	$225,000	$350,000	$500,000	$750,000	$1,000,000
Simple structures	6.4%	5.7%	4.8%	4.5%	4.4%	4.3%	4.2%	4.1%
Intermediate structures	8.0	7.3	6.5	5.6	5.1	5.0	4.9	4.8
Complex structures	10.1	9.0	9.0	8.0	7.5	7.5	7.0	7.0

For renovations, add 15% to 25% to applicable fee.

R012153-60 Security Factors

Contractors entering, working in, and exiting secure facilities often lose productive time during a normal workday. The recommended allowances in this section are intended to provide for the loss of productivity by increasing labor costs. Note that different costs are associated with searches upon entry only and searches upon entry and exit. Time spent in a queue is unpredictable and not part of these allowances. Contractors should plan ahead for this situation.

Security checkpoints are designed to reflect the level of security required to gain access or egress. An extreme example is when contractors, along with any materials, tools, equipment, and vehicles, must be physically searched and have all materials, tools, equipment, and vehicles inventoried and documented prior to both entry and exit.

Physical searches without going through the documentation process represent the next level and take up less time.

Electronic searches—passing through a detector or x-ray machine with no documentation of materials, tools, equipment, and vehicles—take less time than physical searches.

Visual searches of materials, tools, equipment, and vehicles represent the next level of security.

Finally, access by means of an ID card or displayed sticker takes the least amount of time.

Another consideration is if the searches described above are performed each and every day, or if they are performed only on the first day with access granted by ID card or displayed sticker for the remainder of the project. The figures for this situation have been calculated to represent the initial check-in as described and subsequent entry by ID card or displayed sticker for up to 20 days on site. For the situation described above, where the time period is beyond 20 days, the impact on labor cost is negligible.

There are situations where tradespeople must be accompanied by an escort and observed during the work day. The loss of freedom of movement will slow down productivity for the tradesperson. Costs for the observer have not been included. Those costs are normally born by the owner.

R012153-65 Infectious Disease Precautions

Contractors entering and working on job sites may be required to take precautions to prevent the spread of infectious diseases. Those precautions will reduce the amount of productive time during a normal workday. The recommended allowances in this section are intended to provide for the loss of productive time by increasing labor costs.

The estimator should be aware that one, many or none of these precautions apply to the line items in an estimate. Job site requirements and sound judgement must be applied.

Labor cost implications are based upon:

Temperature checks	Once per day
Donning/doffing masks and gloves	Four times per day (2 times each)
Washing hands (additional over normal)	Eight times per day
Informational meetings	Once per day
Maintaining social distance	Throughout the day
Disinfecting tools or equipment	Throughout the day

General Requirements R0121 Allowances

R012157-20 Construction Time Requirements

The table below lists the construction durations for various building types along with their respective project sizes and project values. Design time runs 25% to 40% of construction time.

Building Type	Size S.F.	Project Value	Construction Duration
Industrial/Warehouse	100,000	$8,000,000	14 months
	500,000	$32,000,000	19 months
	1,000,000	$75,000,000	21 months
Offices/Retail	50,000	$7,000,000	15 months
	250,000	$28,000,000	23 months
	500,000	$58,000,000	34 months
Institutional/Hospitals/Laboratory	200,000	$45,000,000	31 months
	500,000	$110,000,000	52 months
	750,000	$160,000,000	55 months
	1,000,000	$210,000,000	60 months

General Requirements R0129 Payment Procedures

R012909-80 Sales Tax by State

State sales tax on materials is tabulated below (5 states have no sales tax). Many states allow local jurisdictions, such as a county or city, to levy additional sales tax.

Some projects may be sales tax exempt, particularly those constructed with public funds.

State	Tax (%)	State	Tax (%)	State	Tax (%)	State	Tax (%)
Alabama	4	Illinois	6.25	Montana	0	Rhode Island	7
Alaska	0	Indiana	7	Nebraska	5.5	South Carolina	6
Arizona	5.6	Iowa	6	Nevada	6.85	South Dakota	4.5
Arkansas	6.5	Kansas	6.5	New Hampshire	0	Tennessee	7
California	7.25	Kentucky	6	New Jersey	6.625	Texas	6.25
Colorado	2.9	Louisiana	4.45	New Mexico	5.125	Utah	6.10
Connecticut	6.35	Maine	5.5	New York	4	Vermont	6
Delaware	0	Maryland	6	North Carolina	4.75	Virginia	5.3
District of Columbia	6	Massachusetts	6.25	North Dakota	5	Washington	6.5
Florida	6	Michigan	6	Ohio	5.75	West Virginia	6
Georgia	4	Minnesota	6.875	Oklahoma	4.5	Wisconsin	5
Hawaii	4	Mississippi	7	Oregon	0	Wyoming	4
Idaho	6	Missouri	4.225	Pennsylvania	6	Average	5.11 %

Sales Tax by Province (Canada)

GST - a value-added tax, which the government imposes on most goods and services provided in or imported into Canada. PST - a retail sales tax, which five of the provinces impose on the prices of most goods and some services. QST - a value-added tax, similar to the federal GST, which Quebec imposes. HST - Three provinces have combined their retail sales taxes with the federal GST into one harmonized tax.

Province	PST (%)	QST(%)	GST(%)	HST(%)
Alberta	0	0	5	0
British Columbia	7	0	5	0
Manitoba	7	0	5	0
New Brunswick	0	0	0	15
Newfoundland	0	0	0	15
Northwest Territories	0	0	5	0
Nova Scotia	0	0	0	15
Ontario	0	0	0	13
Prince Edward Island	0	0	0	15
Quebec	9.975	0	5	0
Saskatchewan	6	0	5	0
Yukon	0	0	5	0

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R012909-85 Unemployment Taxes and Social Security Taxes

State unemployment tax rates vary not only from state to state, but also with the experience rating of the contractor. The federal unemployment tax rate is 6.2% of the first $7,000 of wages. This is reduced by a credit of up to 5.4% for timely payment to the state. The minimum federal unemployment tax is 0.6% after all credits.

Social security (FICA) for 2022 is estimated at time of publication to be 7.65% of wages up to $142,800.

R012909-86 Unemployment Tax by State

Information is from the U.S. Department of Labor, state unemployment tax rates.

State	Tax (%)	State	Tax (%)	State	Tax (%)	State	Tax (%)
Alabama	6.80	Illinois	6.40	Montana	6.12	Rhode Island	9.80
Alaska	5.9	Indiana	7.4	Nebraska	5.4	South Carolina	5.46
Arizona	20.6	Iowa	7.5	Nevada	5.4	South Dakota	9.5
Arkansas	14.2	Kansas	7.6	New Hampshire	7.5	Tennessee	10.0
California	6.2	Kentucky	10.0	New Jersey	5.4	Texas	6.5
Colorado	9.64	Louisiana	6.2	New Mexico	5.4	Utah	7.2
Connecticut	6.8	Maine	6.01	New York	7.9	Vermont	5.4
Delaware	8.20	Maryland	13.50	North Carolina	5.76	Virginia	6.20
District of Columbia	2.7	Massachusetts	12.65	North Dakota	9.69	Washington	6.86
Florida	5.4	Michigan	8.1	Ohio	9.3	West Virginia	8.5
Georgia	7.6	Minnesota	0.5	Oklahoma	7.5	Wisconsin	12.0
Hawaii	6.6	Mississippi	5.4	Oregon	5.4	Wyoming	9.8
Idaho	5.4	Missouri	6	Pennsylvania	9.93	Median	6.86 %

General Requirements R0129 Payment Procedures

R012909-90 Overtime

One way to improve the completion date of a project or eliminate negative float from a schedule is to compress activity duration times. This can be achieved by increasing the crew size or working overtime with the proposed crew.

To determine the costs of working overtime to compress activity duration times, consider the following examples. Below is an overtime efficiency and cost chart based on a five, six, or seven day week with an eight through twelve hour day. Payroll percentage increases for time and one half and double times are shown for the various working days.

Days per Week	Hours per Day	Production Efficiency					Payroll Cost Factors	
		1st Week	2nd Week	3rd Week	4th Week	Average 4 Weeks	@ 1-1/2 Times	@ 2 Times
5	8	100%	100%	100%	100%	100%	1.000	1.000
	9	100	100	95	90	96	1.056	1.111
	10	100	95	90	85	93	1.100	1.200
	11	95	90	75	65	81	1.136	1.273
	12	90	85	70	60	76	1.167	1.333
6	8	100	100	95	90	96	1.083	1.167
	9	100	95	90	85	93	1.130	1.259
	10	95	90	85	80	88	1.167	1.333
	11	95	85	70	65	79	1.197	1.394
	12	90	80	65	60	74	1.222	1.444
7	8	100	95	85	75	89	1.143	1.286
	9	95	90	80	70	84	1.183	1.365
	10	90	85	75	65	79	1.214	1.429
	11	85	80	65	60	73	1.240	1.481
	12	85	75	60	55	69	1.262	1.524

General Requirements R0131 Project Management & Coordination

R013113-40 Builder's Risk Insurance

Builder's risk insurance is insurance on a building during construction. Premiums are paid by the owner or the contractor. Blasting, collapse and underground insurance would raise total insurance costs.

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R013113-50 General Contractor's Overhead

There are two distinct types of overhead on a construction project: Project overhead and main office overhead. Project overhead includes those costs at a construction site not directly associated with the installation of construction materials. Examples of project overhead costs include the following:

1. Superintendent
2. Construction office and storage trailers
3. Temporary sanitary facilities
4. Temporary utilities
5. Security fencing
6. Photographs
7. Cleanup
8. Performance and payment bonds

The above project overhead items are also referred to as general requirements and therefore are estimated in Division 1. Division 1 is the first division listed in the CSI MasterFormat but it is usually the last division estimated. The sum of the costs in Divisions 1 through 49 is referred to as the sum of the direct costs.

All construction projects also include indirect costs. The primary components of indirect costs are the contractor's main office overhead and profit. The amount of the main office overhead expense varies depending on the following:

1. Owner's compensation
2. Project managers' and estimators' wages
3. Clerical support wages
4. Office rent and utilities
5. Corporate legal and accounting costs
6. Advertising
7. Automobile expenses
8. Association dues
9. Travel and entertainment expenses

These costs are usually calculated as a percentage of annual sales volume. This percentage can range from 35% for a small contractor doing less than $500,000 to 5% for a large contractor with sales in excess of $100 million.

R013113-55 Installing Contractor's Overhead

Installing contractors (subcontractors) also incur costs for general requirements and main office overhead.

Included within the total incl. overhead and profit costs is a percent mark-up for overhead that includes:

1. Compensation and benefits for office staff and project managers
2. Office rent, utilities, business equipment, and maintenance
3. Corporate legal and accounting costs
4. Advertising
5. Vehicle expenses (for office staff and project managers)
6. Association dues
7. Travel, entertainment
8. Insurance
9. Small tools and equipment

R013113-60 Workers' Compensation Insurance Rates by Trade

The table below tabulates the national averages for Workers' Compensation insurance rates by trade and type of building. The average "Insurance Rate" is multiplied by the "% of Building Cost" for each trade. This produces the "Workers' Compensation Cost" by % of total labor cost, to be added for each trade by building type to determine the weighted average Workers' Compensation rate for the building types analyzed.

Trade	Insurance Rate (% Labor Cost)			% of Building Cost			Workers' Compensation		
	Range		Average	Office Bldgs.	Schools & Apts.	Mfg.	Office Bldgs.	Schools & Apts.	Mfg.
Excavation, Grading, etc.	1.9 % to	14.7%	8.3%	4.8%	4.9%	4.5%	0.40%	0.41%	0.37%
Piles & Foundations	2.2 to	33.0	17.6	7.1	5.2	8.7	1.25	0.92	1.53
Concrete	2.7 to	25.1	13.9	5.0	14.8	3.7	0.70	2.06	0.51
Masonry	2.6 to	48.0	25.3	6.9	7.5	1.9	1.75	1.90	0.48
Structural Steel	2.3 to	30.9	16.6	10.7	3.9	17.6	1.78	0.65	2.92
Miscellaneous & Ornamental Metals	2.2 to	22.6	12.4	2.8	4.0	3.6	0.35	0.50	0.45
Carpentry & Millwork	2.6 to	26.8	14.7	3.7	4.0	0.5	0.54	0.59	0.07
Metal or Composition Siding	4.4 to	129.7	67.0	2.3	0.3	4.3	1.54	0.20	2.88
Roofing	4.4 to	101.9	53.2	2.3	2.6	3.1	1.22	1.38	1.65
Doors & Hardware	3.0 to	26.8	14.9	0.9	1.4	0.4	0.13	0.21	0.06
Sash & Glazing	3.3 to	20.1	11.7	3.5	4.0	1.0	0.41	0.47	0.12
Lath & Plaster	2.1 to	32.4	17.3	3.3	6.9	0.8	0.57	1.19	0.14
Tile, Marble & Floors	2.1 to	19.2	10.6	2.6	3.0	0.5	0.28	0.32	0.05
Acoustical Ceilings	1.7 to	21.5	11.6	2.4	0.2	0.3	0.28	0.02	0.03
Painting	2.7 to	35.8	19.2	1.5	1.6	1.6	0.29	0.31	0.31
Interior Partitions	2.6 to	26.8	14.7	3.9	4.3	4.4	0.57	0.63	0.65
Miscellaneous Items	1.4 to	97.7	49.6	5.2	3.7	9.7	2.58	1.84	4.81
Elevators	1.2 to	8.3	4.8	2.1	1.1	2.2	0.10	0.05	0.11
Sprinklers	1.6 to	13.2	7.4	0.5	—	2.0	0.04	—	0.15
Plumbing	1.3 to	12.3	6.8	4.9	7.2	5.2	0.33	0.49	0.35
Heat., Vent., Air Conditioning	2.3 to	14.7	8.5	13.5	11.0	12.9	1.15	0.94	1.10
Electrical	1.5 to	10.6	6.1	10.1	8.4	11.1	0.62	0.51	0.68
Total	1.2 % to	129.7%	65.5	100.0%	100.0%	100.0%	16.88%	15.59%	19.42%
Overall Weighted Average 17.30%									

Workers' Compensation Insurance Rates by States

The table below lists the weighted average Workers' Compensation base rate for each state with a factor comparing this with the national average of 15.1%.

State	Weighted Average	Factor	State	Weighted Average	Factor	State	Weighted Average	Factor
Alabama	20.5%	174	Kentucky	20.4%	174	North Dakota	7.4%	63
Alaska	12.9	110	Louisiana	30.1	256	Ohio	7.5	64
Arizona	12.2	104	Maine	15.4	131	Oklahoma	14.2	121
Arkansas	8.1	69	Maryland	16.9	144	Oregon	12.2	104
California	35.7	304	Massachusetts	14.0	119	Pennsylvania	33.9	289
Colorado	7.0	60	Michigan	10.4	89	Rhode Island	12.8	109
Connecticut	23.3	198	Minnesota	23.6	201	South Carolina	28.7	244
Delaware	19.2	163	Mississippi	14.7	125	South Dakota	13.1	111
District of Columbia	12.5	106	Missouri	22.4	191	Tennessee	10.3	88
Florida	13.9	118	Montana	14.2	121	Texas	9.4	80
Georgia	53.7	457	Nebraska	17.6	150	Utah	10.7	91
Hawaii	16.3	139	Nevada	13.1	111	Vermont	15.8	134
Idaho	14.9	127	New Hampshire	14.5	123	Virginia	11.5	98
Illinois	33.5	285	New Jersey	25.0	213	Washington	12.2	104
Indiana	5.6	48	New Mexico	23.0	196	West Virginia	7.8	66
Iowa	16.8	143	New York	26.0	221	Wisconsin	18.6	158
Kansas	10.0	85	North Carolina	30.1	256	Wyoming	8.2	70
Weighted Average for U.S. is 17.3% of payroll = 100%								

The weighted average skilled worker rate for 35 trades is 17.3%. For bidding purposes, apply the full value of Workers' Compensation directly to total labor costs, or if labor is 38%, materials 42% and overhead and profit 20% of total cost, carry 38/80 x 17.3% = 8.22% of cost (before overhead and profit) into overhead. Rates vary not only from state to state but also with the experience rating of the contractor.

Rates are the most current available at the time of publication.

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R013113-80 Performance Bond

This table shows the cost of a performance bond for a construction job scheduled to be completed in 12 months. Add 1% of the premium cost per month for jobs requiring more than 12 months to complete. The rates are "standard" rates offered to contractors that the bonding company considers financially sound and capable of doing the work. Preferred rates are offered by some bonding companies based upon financial strength of the contractor. Actual rates vary from contractor to contractor and from bonding company to bonding company. Contractors should prequalify through a bonding agency before submitting a bid on a contract that requires a bond.

Contract Amount	Building Construction Class B Projects	Highways & Bridges Class A New Construction	Highways & Bridges Class A-1 Highway Resurfacing
First $ 100,000 bid	$25.00 per M	$15.00 per M	$9.40 per M
Next 400,000 bid	$ 2,500 plus $15.00 per M	$ 1,500 plus $10.00 per M	$ 940 plus $7.20 per M
Next 2,000,000 bid	8,500 plus 10.00 per M	5,500 plus 7.00 per M	3,820 plus 5.00 per M
Next 2,500,000 bid	28,500 plus 7.50 per M	19,500 plus 5.50 per M	15,820 plus 4.50 per M
Next 2,500,000 bid	47,250 plus 7.00 per M	33,250 plus 5.00 per M	28,320 plus 4.50 per M
Over 7,500,000 bid	64,750 plus 6.00 per M	45,750 plus 4.50 per M	39,570 plus 4.00 per M

R015113-65 Temporary Power Equipment

Cost data for the temporary equipment was developed utilizing the following information.

1) Re-usable material-services, transformers, equipment and cords are based on new purchase and prorated to three projects.
2) PVC feeder includes trench and backfill.
3) Connections include disconnects and fuses.
4) Labor units include an allowance for removal.
5) No utility company charges or fees are included.
6) Concrete pads or vaults are not included.
7) Utility company conduits not included.

R015423-10 Steel Tubular Scaffolding

On new construction, tubular scaffolding is efficient up to 60′ high or five stories. Above this it is usually better to use a hung scaffolding if construction permits. Swing scaffolding operations may interfere with tenants. In this case, the tubular is more practical at all heights.

In repairing or cleaning the front of an existing building the cost of tubular scaffolding per S.F. of building front increases as the height increases above the first tier. The first tier cost is relatively high due to leveling and alignment.

The minimum efficient crew for erecting and dismantling is three workers. They can set up and remove 18 frame sections per day up to 5 stories high. For 6 to 12 stories high, a crew of four is most efficient. Use two or more on top and two on the bottom for handing up or hoisting. They can also set up and remove 18 frame sections per day. At 7′ horizontal spacing, this will run about 800 S.F. per day of erecting and dismantling. Time for placing and removing planks must be added to the above. A crew of three can place and remove 72 planks per day up to 5 stories. For over 5 stories, a crew of four can place and remove 80 planks per day.

The table below shows the number of pieces required to erect tubular steel scaffolding for 1000 S.F. of building frontage. This area is made up of a scaffolding system that is 12 frames (11 bays) long by 2 frames high.

For jobs under twenty-five frames, add 50% to rental cost. Rental rates will be lower for jobs over three months duration. Large quantities for long periods can reduce rental rates by 20%.

	Number of Pieces for	
Description of Component	1000 S.F. of Building Front	Unit
5′ Wide Standard Frame, 6′-4″ High	24	Ea.
Leveling Jack & Plate	24	↓
Cross Brace	44	↓
Side Arm Bracket, 21″	12	↓
Guardrail Post	12	↓
Guardrail, 7′ section	22	↓
Stairway Section	2	↓
Stairway Starter Bar	1	↓
Stairway Inside Handrail	2	↓
Stairway Outside Handrail	2	↓
Walk-Thru Frame Guardrail	2	↓

Scaffolding is often used as falsework over 15′ high during construction of cast-in-place concrete beams and slabs. Two foot wide scaffolding is generally used for heavy beam construction. The span between frames depends upon the load to be carried with a maximum span of 5′.

Heavy duty shoring frames with a capacity of 10,000#/leg can be spaced up to 10′ O.C. depending upon form support design and loading.

Scaffolding used as horizontal shoring requires less than half the material required with conventional shoring.

On new construction, erection is done by carpenters.

Rolling towers supporting horizontal shores can reduce labor and speed the job. For maintenance work, catwalks with spans up to 70′ can be supported by the rolling towers.

R015423-20 Pump Staging

Pump staging is generally not available for rent. The table below shows the number of pieces required to erect pump staging for 2400 S.F. of building frontage. This area is made up of a pump jack system that is 3 poles (2 bays) wide by 2 poles high.

	Number of Pieces for	
Item	2400 S.F. of Building Front	Unit
Aluminum pole section, 24′ long	6	Ea.
Aluminum splice joint, 6′ long	3	↓
Aluminum foldable brace	3	↓
Aluminum pump jack	3	↓
Aluminum support for workbench/back safety rail	3	↓
Aluminum scaffold plank/workbench, 14″ wide x 24′ long	4	↓
Safety net, 22′ long	2	↓
Aluminum plank end safety rail	2	↓

The cost in place for this 2400 S.F. will depend on how many uses are realized during the life of the equipment.

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R015433-10 Contractor Equipment

Rental Rates shown elsewhere in the book pertain to late model high quality machines in excellent working condition, rented from equipment dealers. Rental rates from contractors may be substantially lower than the rental rates from equipment dealers depending upon economic conditions; for older, less productive machines, reduce rates by a maximum of 15%. Any overtime must be added to the base rates. For shift work, rates are lower. Usual rule of thumb is 150% of one shift rate for two shifts; 200% for three shifts.

For periods of less than one week, operated equipment is usually more economical to rent than renting bare equipment and hiring an operator.

Costs to move equipment to a job site (mobilization) or from a job site (demobilization) are not included in rental rates, nor in any Equipment costs on any Unit Price line items or crew listings. These costs can be found elsewhere. If a piece of equipment is already at a job site, it is not appropriate to utilize mob/demob costs in an estimate again.

Rental rates vary throughout the country with larger cities generally having lower rates. Lease plans for new equipment are available for periods in excess of six months with a percentage of payments applying toward purchase.

Rental rates can also be treated as reimbursement costs for contractor-owned equipment. Owned equipment costs include depreciation, loan payments, interest, taxes, insurance, storage, and major repairs.

Monthly rental rates vary from 2% to 5% of the cost of the equipment depending on the anticipated life of the equipment and its wearing parts. Weekly rates are about 1/3 the monthly rates and daily rental rates are about 1/3 the weekly rates.

The hourly operating costs for each piece of equipment include costs to the user such as fuel, oil, lubrication, normal expendables for the equipment, and a percentage of the mechanic's wages chargeable to maintenance. The hourly operating costs listed do not include the operator's wages.

The daily cost for equipment used in the standard crews is figured by dividing the weekly rate by five, then adding eight times the hourly operating cost to give the total daily equipment cost, not including the operator. This figure is in the right hand column of the Equipment listings under Equipment Cost/Day.

Pile Driving rates shown for the pile hammer and extractor do not include leads, cranes, boilers or compressors. Vibratory pile driving requires an added field specialist during set-up and pile driving operation for the electric model. The hydraulic model requires a field specialist for set-up only. Up to 125 reuses of sheet piling are possible using vibratory drivers. For normal conditions, crane capacity for hammer type and size is as follows.

Crane Capacity	Hammer Type and Size		
	Air or Steam	Diesel	Vibratory
25 ton	to 8,750 ft.-lb.		70 H.P.
40 ton	15,000 ft.-lb.	to 32,000 ft.-lb.	170 H.P.
60 ton	25,000 ft.-lb.		300 H.P.
100 ton		112,000 ft.-lb.	

Cranes should be specified for the job by size, building and site characteristics, availability, performance characteristics, and duration of time required.

Backhoes & Shovels rent for about the same as equivalent size cranes but maintenance and operating expenses are higher. The crane operator's rate must be adjusted for high boom heights. Average adjustments: for 150′ boom add 2% per hour; over 185′, add 4% per hour; over 210′, add 6% per hour; over 250′, add 8% per hour and over 295′, add 12% per hour.

Tower Cranes of the climbing or static type have jibs from 50′ to 200′ and capacities at maximum reach range from 4,000 to 14,000 pounds. Lifting capacities increase up to maximum load as the hook radius decreases.

Typical rental rates, based on purchase price, are about 2% to 3% per month.

Erection and dismantling run between 500 and 2000 labor hours. Climbing operation takes 10 labor hours per 20′ climb. Crane dead time is about 5 hours per 40′ climb. If crane is bolted to side of the building add cost of ties and extra mast sections. Climbing cranes have from 80′ to 180′ of mast while static cranes have 80′ to 800′ of mast.

Truck Cranes can be converted to tower cranes by using tower attachments. Mast heights over 400′ have been used.

A single 100′ high material **Hoist and Tower** can be erected and dismantled in about 400 labor hours; a double 100′ high hoist and tower in about 600 labor hours. Erection times for additional heights are 3 and 4 labor hours per vertical foot respectively up to 150′, and 4 to 5 labor hours per vertical foot over 150′ high. A 40′ high portable Buck hoist takes about 160 labor hours to erect and dismantle. Additional heights take 2 labor hours per vertical foot to 80′ and 3 labor hours per vertical foot for the next 100′. Most material hoists do not meet local code requirements for carrying personnel.

A 150′ high **Personnel Hoist** requires about 500 to 800 labor hours to erect and dismantle. Budget erection time at 5 labor hours per vertical foot for all trades. Local code requirements or labor scarcity requiring overtime can add up to 50% to any of the above erection costs.

Earthmoving Equipment: The selection of earthmoving equipment depends upon the type and quantity of material, moisture content, haul distance, haul road, time available, and equipment available. Short haul cut and fill operations may require dozers only, while another operation may require excavators, a fleet of trucks, and spreading and compaction equipment. Stockpiled material and granular material are easily excavated with front end loaders. Scrapers are most economically used with hauls between 300′ and 1-1/2 miles if adequate haul roads can be maintained. Shovels are often used for blasted rock and any material where a vertical face of 8′ or more can be excavated. Special conditions may dictate the use of draglines, clamshells, or backhoes. Spreading and compaction equipment must be matched to the soil characteristics, the compaction required and the rate the fill is being supplied.

R015433-15 Heavy Lifting

Hydraulic Climbing Jacks

The use of hydraulic heavy lift systems is an alternative to conventional type crane equipment. The lifting, lowering, pushing, or pulling mechanism is a hydraulic climbing jack moving on a square steel jackrod from 1-5/8″ to 4″ square, or a steel cable. The jackrod or cable can be vertical or horizontal, stationary or movable, depending on the individual application. When the jackrod is stationary, the climbing jack will climb the rod and push or pull the load along with itself. When the climbing jack is stationary, the jackrod is movable with the load attached to the end and the climbing jack will lift or lower the jackrod with the attached load. The heavy lift system is normally operated by a single control lever located at the hydraulic pump.

The system is flexible in that one or more climbing jacks can be applied wherever a load support point is required, and the rate of lift synchronized.

Economic benefits have been demonstrated on projects such as: erection of ground assembled roofs and floors, complete bridge spans, girders and trusses, towers, chimney liners and steel vessels, storage tanks, and heavy machinery. Other uses are raising and lowering offshore work platforms, caissons, tunnel sections and pipelines.

R015436-50 Mobilization

Costs to move rented construction equipment to a job site from an equipment dealer's or contractor's yard (mobilization) or off the job site (demobilization), are not included in the rental or operating rates, nor in the equipment cost on a unit price line or in a crew listing. These costs can be found consolidated in the Mobilization section of the data and elsewhere in particular site work sections. If a piece of equipment is already on the job site, it is not appropriate to include mob/demob costs in a new estimate that requires use of that equipment. The following table identifies approximate sizes of rented construction equipment that would be hauled on a towed trailer. Because this listing is not all-encompassing, the user can infer as to what size trailer might be required for a piece of equipment not listed.

3-ton Trailer	20-ton Trailer	40-ton Trailer	50-ton Trailer
20 H.P. Excavator	110 H.P. Excavator	200 H.P. Excavator	270 H.P. Excavator
50 H.P. Skid Steer	165 H.P. Dozer	300 H.P. Dozer	Small Crawler Crane
35 H.P. Roller	150 H.P. Roller	400 H.P. Scraper	500 H.P. Scraper
40 H.P. Trencher	Backhoe	450 H.P. Art. Dump Truck	500 H.P. Art. Dump Truck

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R024119-10 Demolition Defined

Whole Building Demolition - Demolition of the whole building with no concern for any particular building element, component, or material type being demolished. This type of demolition is accomplished with large pieces of construction equipment that break up the structure, load it into trucks and haul it to a disposal site, but disposal or dump fees are not included. Demolition of below-grade foundation elements, such as footings, foundation walls, grade beams, slabs on grade, etc., is not included. Certain mechanical equipment containing flammable liquids or ozone-depleting refrigerants, electric lighting elements, communication equipment components, and other building elements may contain hazardous waste, and must be removed, either selectively or carefully, as hazardous waste before the building can be demolished.

Foundation Demolition - Demolition of below-grade foundation footings, foundation walls, grade beams, and slabs on grade. This type of demolition is accomplished by hand or pneumatic hand tools, and does not include saw cutting, or handling, loading, hauling, or disposal of the debris.

Gutting - Removal of building interior finishes and electrical/mechanical systems down to the load-bearing and sub-floor elements of the rough building frame, with no concern for any particular building element, component, or material type being demolished. This type of demolition is accomplished by hand or pneumatic hand tools, and includes loading into trucks, but not hauling, disposal or dump fees, scaffolding, or shoring. Certain mechanical equipment containing flammable liquids or ozone-depleting refrigerants, electric lighting elements, communication equipment components, and other building elements may contain hazardous waste, and must be removed, either selectively or carefully, as hazardous waste, before the building is gutted.

Selective Demolition - Demolition of a selected building element, component, or finish, with some concern for surrounding or adjacent elements, components, or finishes (see the first Subdivision (s) at the beginning of appropriate Divisions). This type of demolition is accomplished by hand or pneumatic hand tools, and does not include handling, loading, storing, hauling, or disposal of the debris, scaffolding, or shoring. "Gutting" methods may be used in order to save time, but damage that is caused to surrounding or adjacent elements, components, or finishes may have to be repaired at a later time.

Careful Removal - Removal of a piece of service equipment, building element or component, or material type, with great concern for both the removed item and surrounding or adjacent elements, components or finishes. The purpose of careful removal may be to protect the removed item for later re-use, preserve a higher salvage value of the removed item, or replace an item while taking care to protect surrounding or adjacent elements, components, connections, or finishes from cosmetic and/or structural damage. An approximation of the time required to perform this type of removal is 1/3 to 1/2 the time it would take to install a new item of like kind (see Reference Number R220105-10). This type of removal is accomplished by hand or pneumatic hand tools, and does not include loading, hauling, or storing the removed item, scaffolding, shoring, or lifting equipment.

Cutout Demolition - Demolition of a small quantity of floor, wall, roof, or other assembly, with concern for the appearance and structural integrity of the surrounding materials. This type of demolition is accomplished by hand or pneumatic hand tools, and does not include saw cutting, handling, loading, hauling, or disposal of debris, scaffolding, or shoring.

Rubbish Handling - Work activities that involve handling, loading or hauling of debris. Generally, the cost of rubbish handling must be added to the cost of all types of demolition, with the exception of whole building demolition.

Minor Site Demolition - Demolition of site elements outside the footprint of a building. This type of demolition is accomplished by hand or pneumatic hand tools, or with larger pieces of construction equipment, and may include loading a removed item onto a truck (check the Crew for equipment used). It does not include saw cutting, hauling or disposal of debris, and, sometimes, handling or loading.

R024119-20 Dumpsters

Dumpster rental costs on construction sites are presented in two ways:

The cost per week rental includes the delivery of the dumpster; its pulling or emptying once per week, and its final removal. The assumption is made that the dumpster contractor could choose to empty a dumpster by simply bringing in an empty unit and removing the full one. These costs also include the disposal of the materials in the dumpster.

The alternate pricing can be used when actual planned conditions are not approximated by the weekly numbers. For example, these lines can be used when a dumpster is needed for 4 weeks and will need to be emptied 2 or 3 times per week. Conversely the alternate pricing lines can be used when a dumpster will be rented for several weeks or months but needs to be emptied only a few times over this period.

R024119-30 Rubbish Handling Chutes

To correctly estimate the cost of rubbish handling chute systems, the individual components must be priced separately. First choose the size of the system; a 30-inch diameter chute is quite common, but the sizes range from 18 to 36 inches in diameter. The 30-inch chute comes in a standard weight and two thinner weights. The thinner weight chutes are sometimes chosen for cost savings, but they are more easily damaged.

There are several types of major chute pieces that make up the chute system. The first component to consider is the top chute section (top intake hopper) where the material is dropped into the chute at the highest point. After determining the top chute, the intermediate chute pieces called the regular chute sections are priced. Next, the number of chute control door sections (intermediate intake hoppers) must be determined. In the more complex systems, a chute control door section is provided at each floor level. The last major component to consider is bolt down frames; these are usually provided at every other floor level.

There are a number of accessories to consider for safe operation and control. There are covers for the top chute and the chute door sections. The top chute can have a trough that allows for better loading of the chute. For the safest operation, a chute warning light system can be added that will warn the other chute intake locations not to load while another is being used. There are dust control devices that spray a water mist to keep down the dust as the debris is loaded into a dumpster. There are special breakaway cords that are used to prevent damage to the chute if the dumpster is removed without disconnecting from the chute. There are chute liners that can be installed to protect the chute structure from physical damage from rough abrasive materials. Warning signs can be posted at each floor level that is provided with a chute control door section.

In summary, a complete rubbish handling chute system will include one top section, several intermediate regular sections, several intermediate control door (intake hopper) sections and bolt down frames at every other floor level starting with the top floor. If so desired, the system can also include covers and a light warning system for a safer operation. The bottom of the chute should always be above the Dumpster and should be tied off with a breakaway cord to the Dumpster.

Existing Conditions R0265 Underground Storage Tank Removal

R026510-20 Underground Storage Tank Removal

Underground storage tank removal can be divided into two categories: non-leaking and leaking. Prior to removing an underground storage tank, tests should be made, with the proper authorities present, to determine whether a tank has been leaking or the surrounding soil has been contaminated.

To safely remove liquid underground storage tanks:

1. Excavate to the top of the tank.
2. Disconnect all piping.
3. Open all tank vents and access ports.
4. Remove all liquids and/or sludge.
5. Purge the tank with an inert gas.
6. Provide access to the inside of the tank and clean out the interior using proper personal protective equipment (PPE).
7. Excavate soil surrounding the tank using proper PPE for on-site personne
8. Pull and properly dispose of the tank.
9. Clean up the site of all contaminated material.
10. Install new tanks or close the excavation.

Existing Conditions R0282 Asbestos Remediation

R028213-20 Asbestos Removal Process

Asbestos removal is accomplished by a specialty contractor who understands the federal and state regulations regarding the handling and disposal of the material. The process of asbestos removal is divided into many individual steps. An accurate estimate can be calculated only after all the steps have been priced.

The steps are generally as follows:

1. Obtain an asbestos abatement plan from an industrial hygienist.
2. Monitor the air quality in and around the removal area and along the path of travel between the removal area and transport area. This establishes the background contamination.
3. Construct a two part decontamination chamber at entrance to removal area.
4. Install a HEPA filter to create a negative pressure in the removal area.
5. Install wall, floor and ceiling protection as required by the plan, usually 2 layers of fireproof 6 mil polyethylene.
6. Industrial hygienist visually inspects work area to verify compliance wit plan.
7. Provide temporary supports for conduit and piping affected by the removal process.
8. Proceed with asbestos removal and bagging process. Monitor air quality as described in Step #2. Discontinue operations when contaminate leve exceed applicable standards.
9. Document the legal disposal of materials in accordance with EPA standards.
10. Thoroughly clean removal area including all ledges, crevices and surface
11. Post abatement inspection by industrial hygienist to verify plan compliance.
12. Provide a certificate from a licensed industrial hygienist attesting that contaminate levels are within acceptable standards before returning area to regular use.

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R028319-60 Lead Paint Remediation Methods

Lead paint remediation can be accomplished by the following methods.

1. Abrasive blast
2. Chemical stripping
3. Power tool cleaning with vacuum collection system
4. Encapsulation
5. Remove and replace
6. Enclosure

Each of these methods has strengths and weaknesses depending on the specific circumstances of the project. The following is an overview of each method.

1. **Abrasive blasting** is usually accomplished with sand or recyclable metallic blast. Before work can begin, the area must be contained to ensure the blast material with lead does not escape to the atmosphere. The use of vacuum blast greatly reduces the containment requirements. Lead abatement equipment that may be associated with this work includes a negative air machine. In addition, it is necessary to have an industrial hygienist monitor the project on a continual basis. When the work is complete, the spent blast sand with lead must be disposed of as a hazardous material. If metallic shot was used, the lead is separated from the shot and disposed of as hazardous material. Worker protection includes disposable clothing and respiratory protection.
2. **Chemical stripping** requires strong chemicals to be applied to the surface to remove the lead paint. Before the work can begin, the area under/adjacent to the work area must be covered to catch the chemical and removed lead. After the chemical is applied to the painted surface it is usually covered with paper. The chemical is left in place for the specified period, then the paper with lead paint is pulled or scraped off. The process may require several chemical applications. The paper with chemicals and lead paint adhered to it, plus the containment and loose scrapings collected by a HEPA (high efficiency particulate air filter) vac, must be disposed of as hazardous material. The chemical stripping process usually requires a neutralizing agent and several wash downs after the paint is removed. Worker protection includes a neoprene or other compatible protective clothing and respiratory protection with face shield. An industrial hygienist is required intermittently during the process.
3. **Power tool cleaning** is accomplished using shrouded needle blasting guns. The shrouding with different end configurations is held up against the surface to be cleaned. The area is blasted with hardened needles and the shroud captures the lead with a HEPA vac and deposits it in a holding tank. An industrial hygienist monitors the project. Protective clothing and a respirator are required until air samples prove otherwise. When the work is complete the lead must be disposed of as hazardous material.
4. **Encapsulation** is a method that leaves the well bonded lead paint in place after the peeling paint has been removed. Before the work can begin, the area under/adjacent to the work must be covered to catch the scrapings. The scraped surface is then washed with a detergent and rinsed. The prepared surface is covered with approximately 10 mils of paint. A reinforcing fabric can also be embedded in the paint covering. The scraped paint and containment must be disposed of as hazardous material. Workers must wear protective clothing and respirators.
5. **Removing and replacing** are effective ways to remove lead paint from windows, gypsum walls and concrete masonry surfaces. The painted materials are removed and new materials are installed. Workers should wear a respirator and tyvek suit. The demolished materials must be disposed of as hazardous waste if it fails the TCLP (toxicity characteristic leachate process) test.
6. **Enclosure** is the process that permanently seals lead painted materials in place. This process has many applications such as covering lead painted drywall with new drywall, covering exterior construction with tyvek paper then residing, or covering lead painted structural members with aluminum or plastic. The seams on all enclosing materials must be securely sealed. An industrial hygienist monitors the project, and protective clothing and a respirator are required until air samples prove otherwise.

All the processes require clearance monitoring and wipe testing as required by the hygienist.

R031113-10 Wall Form Materials

Aluminum Forms

Approximate weight is 3 lbs. per S.F.C.A. Standard widths are available from 4″ to 36″ with 36″ most common. Standard lengths of 2′, 4′, 6′ to 8′ are available. Forms are lightweight and fewer ties are needed with the wider widths. The form face is either smooth or textured.

Metal Framed Plywood Forms

Manufacturers claim over 75 reuses of plywood and over 300 reuses of steel frames. Many specials such as corners, fillers, pilasters, etc. are available. Monthly rental is generally about 15% of purchase price for first month and 9% per month thereafter with 90% of rental applied to purchase for the first month and decreasing percentages thereafter. Aluminum framed forms cost 25% to 30% more than steel framed.

After the first month, extra days may be prorated from the monthly charge. Rental rates do not include ties, accessories, cleaning, loss of hardware or freight in and out. Approximate weight is 5 lbs. per S.F. for steel; 3 lbs. per S.F. for aluminum.

Forms can be rented with option to buy.

Plywood Forms, Job Fabricated

There are two types of plywood used for concrete forms.

1. Exterior plyform is completely waterproof. This is face oiled to facilitate stripping. Ten reuses can be expected with this type with 25 reuses possible.
2. An overlaid type consists of a resin fiber fused to exterior plyform. No oiling is required except to facilitate cleaning. This is available in both high density (HDO) and medium density overlaid (MDO). Using HDO, 50 reuses can be expected with 200 possible.

Plyform is available in 5/8″ and 3/4″ thickness. High density overlaid is available in 3/8″, 1/2″, 5/8″ and 3/4″ thickness.

5/8″ thick is sufficient for most building forms, while 3/4″ is best on heavy construction.

Plywood Forms, Modular, Prefabricated

There are many plywood forming systems without frames. Most of these are manufactured from 1-1/8″ (HDO) plywood and have some hardware attached. These are used principally for foundation walls 8′ or less high. With care and maintenance, 100 reuses can be attained with decreasing quality of surface finish.

Steel Forms

Approximate weight is 6-1/2 lbs. per S.F.C.A. including accessories. Standard widths are available from 2″ to 24″, with 24″ the most common. Standard lengths are from 2′ to 8′, with 4′ the most common. Forms are easily ganged into modular units.

Forms are usually leased for 15% of the purchase price per month prorated daily over 30 days.

Rental may be applied to sale price, and usually rental forms are bought. With careful handling and cleaning 200 to 400 reuses are possible.

Straight wall gang forms up to 12′ x 20′ or 8′ x 30′ can be fabricated. These crane handled forms usually lease for approx. 9% per month.

Individual job analysis is available from the manufacturer at no charge.

R031113-40 Forms for Reinforced Concrete

Design Economy

Avoid many sizes in proportioning beams and columns.

From story to story avoid changing column dimensions. Gain strength by adding steel or using a richer mix. If a change in size of column is necessary, vary one dimension only to minimize form alterations. Keep beams and columns the same width.

From floor to floor in a multi-story building vary beam depth, not width, as that will leave the slab panel form unchanged. It is cheaper to vary the strength of a beam from floor to floor by means of a steel area than by 2″ changes in either width or depth.

Cost Factors

Material includes the cost of lumber, cost of rent for metal pans or forms if used, nails, form ties, form oil, bolts and accessories.

Labor includes the cost of carpenters to make up, erect, remove and repair, plus common labor to clean and move. Having carpenters remove forms minimizes repairs.

Improper alignment and condition of forms will increase finishing cost. When forms are heavily oiled, concrete surfaces must be neutralized before finishing. Special curing compounds will cause spillages to spall off in first frost. Gang forming methods will reduce costs on large projects.

Materials Used

Boards are seldom used unless their architectural finish is required. Generally, steel, fiberglass and plywood are used for contact surfaces. Labor on plywood is 10% less than with boards. The plywood is backed up with 2 × 4′s at 12″ to 32″ O.C. Walers are generally 2 - 2 × 4′s. Column forms are held together with steel yokes or bands. Shoring is with adjustable shoring or scaffolding for high ceilings.

Reuse

Floor and column forms can be reused four or possibly five times without excessive repair. Remember to allow for 10% waste on each reuse.

When modular sized wall forms are made, up to twenty uses can be expected with exterior plyform.

When forms are reused, the cost to erect, strip, clean and move will not be affected. 10% replacement of lumber should be included and about one hour of carpenter time for repairs on each reuse per 100 S.F.

The reuse cost for certain accessory items normally rented on a monthly basis will be lower than the cost for the first use.

After the fifth use, new material required plus time needed for repair prevent the form cost from dropping further; it may go up. Much depends on care in stripping, the number of special bays, changes in beam or column sizes and other factors.

Costs for multiple use of formwork may be developed as follows:

2 Uses	3 Uses	4 Uses
$\frac{(\text{1st Use + Reuse})}{2}$ = avg. cost/2 uses	$\frac{(\text{1st Use + 2 Reuses})}{3}$ = avg. cost/3 uses	$\frac{(\text{1st use + 3 Reuses})}{4}$ = avg. cost/4 uses

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R031113-60 Formwork Labor-Hours

Item	Unit	Hours Required: Fabricate	Hours Required: Erect & Strip	Hours Required: Clean & Move	Total Hours: 1 Use	Multiple Use: 2 Use	Multiple Use: 3 Use	Multiple Use: 4 Use
Beam and Girder, interior beams, 12" wide	100 S.F.	6.4	8.3	1.3	16.0	13.3	12.4	12.0
Hung from steel beams		5.8	7.7	1.3	14.8	12.4	11.6	11.2
Beam sides only, 36" high		5.8	7.2	1.3	14.3	11.9	11.1	10.7
Beam bottoms only, 24" wide		6.6	13.0	1.3	20.9	18.1	17.2	16.7
Box out for openings		9.9	10.0	1.1	21.0	16.6	15.1	14.3
Buttress forms, to 8' high		6.0	6.5	1.2	13.7	11.2	10.4	10.0
Centering, steel, 3/4" rib lath			1.0		1.0			
3/8" rib lath or slab form			0.9		0.9			
Chamfer strip or keyway	100 L.F.		1.5		1.5	1.5	1.5	1.5
Columns, fiber tube 8" diameter			20.6		20.6			
12"			21.3		21.3			
16"			22.9		22.9			
20"			23.7		23.7			
24"			24.6		24.6			
30"			25.6		25.6			
Columns, round steel, 12" diameter			22.0		22.0	22.0	22.0	22.0
16"			25.6		25.6	25.6	25.6	25.6
20"			30.5		30.5	30.5	30.5	30.5
24"			37.7		37.7	37.7	37.7	37.7
Columns, plywood 8" x 8"	100 S.F.	7.0	11.0	1.2	19.2	16.2	15.2	14.7
12" x 12"		6.0	10.5	1.2	17.7	15.2	14.4	14.0
16" x 16"		5.9	10.0	1.2	17.1	14.7	13.8	13.4
24" x 24"		5.8	9.8	1.2	16.8	14.4	13.6	13.2
Columns, steel framed plywood 8" x 8"			10.0	1.0	11.0	11.0	11.0	11.0
12" x 12"			9.3	1.0	10.3	10.3	10.3	10.3
16" x 16"			8.5	1.0	9.5	9.5	9.5	9.5
24" x 24"			7.8	1.0	8.8	8.8	8.8	8.8
Drop head forms, plywood		9.0	12.5	1.5	23.0	19.0	17.7	17.0
Coping forms		8.5	15.0	1.5	25.0	21.3	20.0	19.4
Culvert, box			14.5	4.3	18.8	18.8	18.8	18.8
Curb forms, 6" to 12" high, on grade		5.0	8.5	1.2	14.7	12.7	12.1	11.7
On elevated slabs		6.0	10.8	1.2	18.0	15.5	14.7	14.3
Edge forms to 6" high, on grade	100 L.F.	2.0	3.5	0.6	6.1	5.6	5.4	5.3
7" to 12" high	100 S.F.	2.5	5.0	1.0	8.5	7.8	7.5	7.4
Equipment foundations		10.0	18.0	2.0	30.0	25.5	24.0	23.3
Flat slabs, including drops		3.5	6.0	1.2	10.7	9.5	9.0	8.8
Hung from steel		3.0	5.5	1.2	9.7	8.7	8.4	8.2
Closed deck for domes		3.0	5.8	1.2	10.0	9.0	8.7	8.5
Open deck for pans		2.2	5.3	1.0	8.5	7.9	7.7	7.6
Footings, continuous, 12" high		3.5	3.5	1.5	8.5	7.3	6.8	6.6
Spread, 12" high		4.7	4.2	1.6	10.5	8.7	8.0	7.7
Pile caps, square or rectangular		4.5	5.0	1.5	11.0	9.3	8.7	8.4
Grade beams, 24" deep		2.5	5.3	1.2	9.0	8.3	8.0	7.9
Lintel or Sill forms		8.0	17.0	2.0	27.0	23.5	22.3	21.8
Spandrel beams, 12" wide		9.0	11.2	1.3	21.5	17.5	16.2	15.5
Stairs			25.0	4.0	29.0	29.0	29.0	29.0
Trench forms in floor		4.5	14.0	1.5	20.0	18.3	17.7	17.4
Walls, Plywood, at grade, to 8' high		5.0	6.5	1.5	13.0	11.0	9.7	9.5
8' to 16'		7.5	8.0	1.5	17.0	13.8	12.7	12.1
16' to 20'		9.0	10.0	1.5	20.5	16.5	15.2	14.5
Foundation walls, to 8' high		4.5	6.5	1.0	12.0	10.3	9.7	9.4
8' to 16' high		5.5	7.5	1.0	14.0	11.8	11.0	10.6
Retaining wall to 12' high, battered		6.0	8.5	1.5	16.0	13.5	12.7	12.3
Radial walls to 12' high, smooth		8.0	9.5	2.0	19.5	16.0	14.8	14.3
2' chords		7.0	8.0	1.5	16.5	13.5	12.5	12.0
Prefabricated modular, to 8' high		—	4.3	1.0	5.3	5.3	5.3	5.3
Steel, to 8' high		—	6.8	1.2	8.0	8.0	8.0	8.0
8' to 16' high		—	9.1	1.5	10.6	10.3	10.2	10.2
Steel framed plywood to 8' high		—	6.8	1.2	8.0	7.5	7.3	7.2
8' to 16' high		—	9.3	1.2	10.5	9.5	9.2	9.0

R032110-10 Reinforcing Steel Weights and Measures

Bar Designation No.**	Nominal Weight Lb./Ft.	U.S. Customary Units			SI Units			
		Nominal Dimensions*			Nominal Dimensions*			
		Diameter in.	Cross Sectional Area, in.^{2}	Perimeter in.	Nominal Weight kg/m	Diameter mm	Cross Sectional Area, cm^2	Perimeter mm
3	.376	.375	.11	1.178	.560	9.52	.71	29.9
4	.668	.500	.20	1.571	.994	12.70	1.29	39.9
5	1.043	.625	.31	1.963	1.552	15.88	2.00	49.9
6	1.502	.750	.44	2.356	2.235	19.05	2.84	59.8
7	2.044	.875	.60	2.749	3.042	22.22	3.87	69.8
8	2.670	1.000	.79	3.142	3.973	25.40	5.10	79.8
9	3.400	1.128	1.00	3.544	5.059	28.65	6.45	90.0
10	4.303	1.270	1.27	3.990	6.403	32.26	8.19	101.4
11	5.313	1.410	1.56	4.430	7.906	35.81	10.06	112.5
14	7.650	1.693	2.25	5.320	11.384	43.00	14.52	135.1
18	13.600	2.257	4.00	7.090	20.238	57.33	25.81	180.1

* The nominal dimensions of a deformed bar are equivalent to those of a plain round bar having the same weight per foot as the deformed bar.
** Bar numbers are based on the number of eighths of an inch included in the nominal diameter of the bars.

R032110-20 Metric Rebar Specification - ASTM A615-81

Grade 300 (300 MPa* = 43,560 psi; +8.7% vs. Grade 40)				
Grade 400 (400 MPa* = 58,000 psi; –3.4% vs. Grade 60)				
Bar No.	Diameter mm	Area mm^2	Equivalent in.^{2}	Comparison with U.S. Customary Bars
10M	11.3	100	.16	Between #3 & #4
15M	16.0	200	.31	#5 (.31 in.^{2})
20M	19.5	300	.47	#6 (.44 in.^{2})
25M	25.2	500	.78	#8 (.79 in.^{2})
30M	29.9	700	1.09	#9 (1.00 in.^{2})
35M	35.7	1000	1.55	#11 (1.56 in.^{2})
45M	43.7	1500	2.33	#14 (2.25 in.^{2})
55M	56.4	2500	3.88	#18 (4.00 in.^{2})

* MPa = megapascals

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R032110-40 Weight of Steel Reinforcing Per Square Foot of Wall (PSF)

Reinforced weights: The table below suggests the weights per square foot for reinforcing steel in walls. Weights are approximate and will be the same for all grades of steel bars. For bars in two directions, add weights for each size and spacing.

C/C Spacing in Inches	Bar Size								
	#3 Wt. (PSF)	#4 Wt. (PSF)	#5 Wt. (PSF)	#6 Wt. (PSF)	#7 Wt. (PSF)	#8 Wt. (PSF)	#9 Wt. (PSF)	#10 Wt. (PSF)	#11 Wt. (PSF)
2"	2.26	4.01	6.26	9.01	12.27				
3"	1.50	2.67	4.17	6.01	8.18	10.68	13.60	17.21	21.25
4"	1.13	2.01	3.13	4.51	6.13	8.10	10.20	12.91	15.94
5"	.90	1.60	2.50	3.60	4.91	6.41	8.16	10.33	12.75
6"	.752	1.34	2.09	3.00	4.09	5.34	6.80	8.61	10.63
8"	.564	1.00	1.57	2.25	3.07	4.01	5.10	6.46	7.97
10"	.451	.802	1.25	1.80	2.45	3.20	4.08	5.16	6.38
12"	.376	.668	1.04	1.50	2.04	2.67	3.40	4.30	5.31
18"	.251	.445	.695	1.00	1.32	1.78	2.27	2.86	3.54
24"	.188	.334	.522	.751	1.02	1.34	1.70	2.15	2.66
30"	.150	.267	.417	.600	.817	1.07	1.36	1.72	2.13
36"	.125	.223	.348	.501	.681	.890	1.13	1.43	1.77
42"	.107	.191	.298	.429	.584	.753	.97	1.17	1.52
48"	.094	.167	.261	.376	.511	.668	.85	1.08	1.33

R032110-50 Minimum Wall Reinforcement Weight (PSF)

This table lists the approximate minimum wall reinforcement weights per S.F. according to the specification of .12% of gross area for vertical bars and .20% of gross area for horizontal bars.

Location	Wall Thickness	Bar Size	Horizontal Steel Spacing C/C	Sq. In. Req'd per S.F.	Total Wt. per S.F.	Bar Size	Vertical Steel Spacing C/C	Sq. In. Req'd per S.F.	Total Wt. per S.F.	Horizontal & Vertical Steel Total Weight per S.F.
Both Faces	10"	#4	18"	.24	.89#	#3	18"	.14	.50#	1.39#
	12"	#4	16"	.29	1.00	#3	16"	.17	.60	1.60
	14"	#4	14"	.34	1.14	#3	13"	.20	.69	1.84
	16"	#4	12"	.38	1.34	#3	11"	.23	.82	2.16
	18"	#5	17"	.43	1.47	#4	18"	.26	.89	2.36
One Face	6"	#3	9"	.15	.50	#3	18"	.09	.25	.75
	8"	#4	12"	.19	.67	#3	11"	.12	.41	1.08
	10"	#5	15"	.24	.83	#4	16"	.14	.50	1.34

R032110-70 Bend, Place, and Tie Reinforcing

Placing and tying by rodmen for footings and slabs run from nine hrs. per ton for heavy bars to fifteen hrs. per ton for light bars. For beams, columns, and walls, production runs from eight hrs. per ton for heavy bars to twenty hrs. per ton for light bars. The overall average for typical reinforced concrete buildings is about fourteen hrs. per ton. These production figures include the time for placing accessories and usual inserts, but not their material cost (allow 15% of the cost of delivered bent rods). Equipment handling is necessary for the larger-sized bars so that installation costs for the very heavy bars will not decrease proportionately.

Installation costs for splicing reinforcing bars include allowance for equipment to hold the bars in place while splicing as well as necessary scaffolding for iron workers.

R032110-80 Shop-Fabricated Reinforcing Steel

The material prices for reinforcing, shown in the unit cost sections of the data set, are for 50 tons or more of shop-fabricated reinforcing steel and include:

1. Mill base price of reinforcing steel
2. Mill grade/size/length extras
3. Mill delivery to the fabrication shop
4. Shop storage and handling
5. Shop drafting/detailing
6. Shop shearing and bending
7. Shop listing
8. Shop delivery to the job site

Both material and installation costs can be considerably higher for small jobs consisting primarily of smaller bars, while material costs may be slightly lower for larger jobs.

Concrete — R0322 Welded Wire Fabric Reinforcing

R032205-30 Common Stock Styles of Welded Wire Fabric

This table provides some of the basic specifications, sizes, and weights of welded wire fabric used for reinforcing concrete.

New Designation		Old Designation		Steel Area per Foot				Approximate Weight per 100 S.F.	
Spacing — Cross Sectional Area (in.) — (Sq. in. 100)		Spacing — Wire Gauge (in.) — (AS & W)		Longitudinal		Transverse			
				in.	cm	in.	cm	lbs	kg
Rolls	6 x 6 — W1.4 x W1.4	6 x 6 — 10 x 10		.028	.071	.028	.071	21	9.53
	6 x 6 — W2.0 x W2.0	6 x 6 — 8 x 8	1	.040	.102	.040	.102	29	13.15
	6 x 6 — W2.9 x W2.9	6 x 6 — 6 x 6		.058	.147	.058	.147	42	19.05
	6 x 6 — W4.0 x W4.0	6 x 6 — 4 x 4		.080	.203	.080	.203	58	26.91
	4 x 4 — W1.4 x W1.4	4 x 4 — 10 x 10		.042	.107	.042	.107	31	14.06
	4 x 4 — W2.0 x W2.0	4 x 4 — 8 x 8	1	.060	.152	.060	.152	43	19.50
	4 x 4 — W2.9 x W2.9	4 x 4 — 6 x 6		.087	.227	.087	.227	62	28.12
	4 x 4 — W4.0 x W4.0	4 x 4 — 4 x 4		.120	.305	.120	.305	85	38.56
Sheets	6 x 6 — W2.9 x W2.9	6 x 6 — 6 x 6		.058	.147	.058	.147	42	19.05
	6 x 6 — W4.0 x W4.0	6 x 6 — 4 x 4		.080	.203	.080	.203	58	26.31
	6 x 6 — W5.5 x W5.5	6 x 6 — 2 x 2	2	.110	.279	.110	.279	80	36.29
	4 x 4 — W1.4 x W1.4	4 x 4 — 4 x 4		.120	.305	.120	.305	85	38.56

NOTES: 1. Exact W—number size for 8 gauge is W2.1
2. Exact W—number size for 2 gauge is W5.4

The above table was compiled with the following excerpts from the WRI Manual of Standard Practices, 7th Edition, Copyright 2006. Reproduced with permission of the Wire Reinforcement Institute, Inc.:

1. Chapter 3, page 7, Table 1 Common Styles of Metric Wire Reinforcement (WWR) With Equivalent US Customary Units
2. Chapter 6, page 19, Table 5 Customary Units
3. Chapter 6, Page 23, Table 7 Customary Units (in.) Welded Plain Wire Reinforcement
4. Chapter 6, Page 25 Table 8 Wire Size Comparison
5. Chapter 9, Page 30, Table 9 Weight of Longitudinal Wires Weight (Mass) Estimating Tables
6. Chapter 9, Page 31, Table 9M Weight of Longitudinal Wires Weight (Mass) Estimating Tables
7. Chapter 9, Page 32, Table 10 Weight of Transverse Wires Based on 62″ lengths of transverse wire (60″ width plus 1″ overhand each side)
8. Chapter 9, Page 33, Table 10M Weight of Transverse Wires

Concrete — R0330 Cast-In-Place Concrete

R033053-50 Industrial Chimneys

Foundation requirements in C.Y. of concrete for various sized chimneys.

Size Chimney	2 Ton Soil	3 Ton Soil	Size Chimney	2 Ton Soil	3 Ton Soil	Size Chimney	2 Ton Soil	3 Ton Soil
75′ x 3′-0″	13 C.Y.	11 C.Y.	160′ x 6′-6″	86 C.Y.	76 C.Y.	300′ x 10′-0″	325 C.Y.	245 C.Y.
85′ x 5′-6″	19	16	175′ x 7′-0″	108	95	350′ x 12′-0″	422	320
100′ x 5′-0″	24	20	200′ x 6′-0″	125	105	400′ x 14′-0″	520	400
125′ x 5′-6″	43	36	250′ x 8′-0″	230	175	500′ x 18′-0″	725	575

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R033105-10 Proportionate Quantities

The tables below show both quantities per S.F. of floor areas as well as form and reinforcing quantities per C.Y. Unusual structural requirements would increase the ratios below. High strength reinforcing would reduce the steel weights. Figures are for 3000 psi concrete and 60,000 psi reinforcing unless specified otherwise.

Type of Construction	Live Load	Span	Per S.F. of Floor Area				Per C.Y. of Concrete		
			Concrete	Forms	Reinf.	Pans	Forms	Reinf.	Pans
Flat Plate	50 psf	15 Ft.	.46 C.F.	1.06 S.F.	1.71lb.		62 S.F.	101 lb.	
		20	.63	1.02	2.40		44	104	
		25	.79	1.02	3.03		35	104	
	100	15	.46	1.04	2.14		61	126	
		20	.71	1.02	2.72		39	104	
		25	.83	1.01	3.47		33	113	
Flat Plate (waffle construction) 20" domes	50	20	.43	1.00	2.10	.84 S.F.	63	135	53 S.F.
		25	.52	1.00	2.90	.89	52	150	46
		30	.64	1.00	3.70	.87	42	155	37
	100	20	.51	1.00	2.30	.84	53	125	45
		25	.64	1.00	3.20	.83	42	135	35
		30	.76	1.00	4.40	.81	36	160	29
Waffle Construction 30" domes	50	25	.69	1.06	1.83	.68	42	72	40
		30	.74	1.06	2.39	.69	39	87	39
		35	.86	1.05	2.71	.69	33	85	39
		40	.78	1.00	4.80	.68	35	165	40
Flat Slab (two way with drop panels)	50	20	.62	1.03	2.34		45	102	
		25	.77	1.03	2.99		36	105	
		30	.95	1.03	4.09		29	116	
	100	20	.64	1.03	2.83		43	119	
		25	.79	1.03	3.88		35	133	
		30	.96	1.03	4.66		29	131	
	200	20	.73	1.03	3.03		38	112	
		25	.86	1.03	4.23		32	133	
		30	1.06	1.03	5.30		26	135	
One Way Joists 20" Pans	50	15	.36	1.04	1.40	.93	78	105	70
		20	.42	1.05	1.80	.94	67	120	60
		25	.47	1.05	2.60	.94	60	150	54
	100	15	.38	1.07	1.90	.93	77	140	66
		20	.44	1.08	2.40	.94	67	150	58
		25	.52	1.07	3.50	.94	55	185	49
One Way Joists 8" x 16" filler blocks	50	15	.34	1.06	1.80	.81 Ea.	84	145	64 Ea.
		20	.40	1.08	2.20	.82	73	145	55
		25	.46	1.07	3.20	.83	63	190	49
	100	15	.39	1.07	1.90	.81	74	130	56
		20	.46	1.09	2.80	.82	64	160	48
		25	.53	1.10	3.60	.83	56	190	42
One Way Beam & Slab	50	15	.42	1.30	1.73		84	111	
		20	.51	1.28	2.61		68	138	
		25	.64	1.25	2.78		53	117	
	100	15	.42	1.30	1.90		84	122	
		20	.54	1.35	2.69		68	154	
		25	.69	1.37	3.93		54	145	
	200	15	.44	1.31	2.24		80	137	
		20	.58	1.40	3.30		65	163	
		25	.69	1.42	4.89		53	183	
Two Way Beam & Slab	100	15	.47	1.20	2.26		69	130	
		20	.63	1.29	3.06		55	131	
		25	.83	1.33	3.79		43	123	
	200	15	.49	1.25	2.70		41	149	
		20	.66	1.32	4.04		54	165	
		25	.88	1.32	6.08		41	187	

R033105-10 Proportionate Quantities (cont.)

4000 psi Concrete and 60,000 psi Reinforcing—Form and Reinforcing Quantities per C.Y.					
Item	Size	Forms	Reinforcing	Minimum	Maximum
Columns (square tied)	10" x 10"	130 S.F.C.A.	#5 to #11	220 lbs.	875 lbs.
	12" x 12"	108	#6 to #14	200	955
	14" x 14"	92	#7 to #14	190	900
	16" x 16"	81	#6 to #14	187	1082
	18" x 18"	72	#6 to #14	170	906
	20" x 20"	65	#7 to #18	150	1080
	22" x 22"	59	#8 to #18	153	902
	24" x 24"	54	#8 to #18	164	884
	26" x 26"	50	#9 to #18	169	994
	28" x 28"	46	#9 to #18	147	864
	30" x 30"	43	#10 to #18	146	983
	32" x 32"	40	#10 to #18	175	866
	34" x 34"	38	#10 to #18	157	772
	36" x 36"	36	#10 to #18	175	852
	38" x 38"	34	#10 to #18	158	765
	40" x 40"	32	#10 to #18	143	692

Item	Size	Form	Spiral	Reinforcing	Minimum	Maximum
Columns (spirally reinforced)	12" diameter	34.5 L.F.	190 lbs.	#4 to #11	165 lbs.	1505 lb.
		34.5	190	#14 & #18	—	1100
	14"	25	170	#4 to #11	150	970
		25	170	#14 & #18	800	1000
	16"	19	160	#4 to #11	160	950
		19	160	#14 & #18	605	1080
	18"	15	150	#4 to #11	160	915
		15	150	#14 & #18	480	1075
	20"	12	130	#4 to #11	155	865
		12	130	#14 & #18	385	1020
	22"	10	125	#4 to #11	165	775
		10	125	#14 & #18	320	995
	24"	9	120	#4 to #11	195	800
		9	120	#14 & #18	290	1150
	26"	7.3	100	#4 to #11	200	729
		7.3	100	#14 & #18	235	1035
	28"	6.3	95	#4 to #11	175	700
		6.3	95	#14 & #18	200	1075
	30"	5.5	90	#4 to #11	180	670
		5.5	90	#14 & #18	175	1015
	32"	4.8	85	#4 to #11	185	615
		4.8	85	#14 & #18	155	955
	34"	4.3	80	#4 to #11	180	600
		4.3	80	#14 & #18	170	855
	36"	3.8	75	#4 to #11	165	570
		3.8	75	#14 & #18	155	865
	40"	3.0	70	#4 to #11	165	500
		3.0	70	#14 & #18	145	765

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R033105-10 Proportionate Quantities (cont.)

3000 psi Concrete and 60,000 psi Reinforcing—Form and Reinforcing Quantities per C.Y.

Item	Type	Loading	Height	C.Y./L.F.	Forms/C.Y.	Reinf./C.Y.
Retaining Walls	Cantilever	Level Backfill	4 Ft.	0.2 C.Y.	49 S.F.	35 lbs.
			8	0.5	42	45
			12	0.8	35	70
			16	1.1	32	85
			20	1.6	28	105
		Highway Surcharge	4	0.3	41	35
			8	0.5	36	55
			12	0.8	33	90
			16	1.2	30	120
			20	1.7	27	155
		Railroad Surcharge	4	0.4	28	45
			8	0.8	25	65
			12	1.3	22	90
			16	1.9	20	100
			20	2.6	18	120
	Gravity, with Vertical Face	Level Backfill	4	0.4	37	None
			7	0.6	27	↓
			10	1.2	20	↓
		Sloping Backfill	4	0.3	31	↓
			7	0.8	21	↓
			10	1.6	15	↓

	Span	Live Load in Kips per Linear Foot							
		Under 1 Kip		2 to 3 Kips		4 to 5 Kips		6 to 7 Kips	
		Forms	Reinf.	Forms	Reinf.	Forms	Reinf.	Forms	Reinf.
Beams	10 Ft.	—	—	90 S.F.	170 #	85 S.F.	175 #	75 S.F.	185 #
	16	130 S.F.	165 #	85	180	75	180	65	225
	20	110	170	75	185	62	200	51	200
	26	90	170	65	215	62	215	—	—
	30	85	175	60	200	—	—	—	—

Item	Size	Type	Forms per C.Y.	Reinforcing per C.Y.
Spread Footings	Under 1 C.Y.	1,000 psf soil	24 S.F.	44 lbs.
		5,000	24	42
		10,000	24	52
	1 C.Y. to 5 C.Y.	1,000	14	49
		5,000	14	50
		10,000	14	50
	Over 5 C.Y.	1,000	9	54
		5,000	9	52
		10,000	9	56
Pile Caps (30 Ton Concrete Piles)	Under 5 C.Y.	shallow caps	20	65
		medium	20	50
		deep	20	40
	5 C.Y. to 10 C.Y.	shallow	14	55
		medium	15	45
		deep	15	40
	10 C.Y. to 20 C.Y.	shallow	11	60
		medium	11	45
		deep	12	35
	Over 20 C.Y.	shallow	9	60
		medium	9	45
		deep	10	40

R033105-10 Proportionate Quantities (cont.)

3000 psi Concrete and 60,000 psi Reinforcing — Form and Reinforcing Quantities per C.Y.						
Item	Size	Pile Spacing	50 T Pile	100 T Pile	50 T Pile	100 T Pile
Pile Caps (Steel H Piles)	Under 5 C.Y.	24″ O.C.	24 S.F.	24 S.F.	75 lbs.	90 lbs.
		30″	25	25	80	100
		36″	24	24	80	110
	5 C.Y. to 10 C.Y.	24″	15	15	80	110
		30″	15	15	85	110
		36″	15	15	75	90
	Over 10 C.Y.	24″	13	13	85	90
		30″	11	11	85	95
		36″	10	10	85	90

Basement Walls		8″ Thick		10″ Thick		12″ Thick		15″ Thick	
	Height	Forms	Reinf.	Forms	Reinf.	Forms	Reinf.	Forms	Reinf.
	7 Ft.	81 S.F.	44 lbs.	65 S.F.	45 lbs.	54 S.F.	44 lbs.	41 S.F.	43 lbs.
	8	↓	44	↓	45	↓	44	↓	43
	9	↓	46	↓	45	↓	44	↓	43
	10	↓	57	↓	45	↓	44	↓	43
	12	↓	83	↓	50	↓	52	↓	43
	14	↓	116	↓	65	↓	64	↓	51
	16	↓		↓	86	↓	90	↓	65
	18	↓		↓		↓	106	↓	70

R033105-20 Materials for One C.Y. of Concrete

This is an approximate method of figuring quantities of cement, sand and coarse aggregate for a field mix with waste allowance included.

With crushed gravel as coarse aggregate, to determine barrels of cement required, divide 10 by total mix; that is, for 1:2:4 mix, 10 divided by 7 = 1-3/7 barrels.

If the coarse aggregate is crushed stone, use 10-1/2 instead of 10 as given for gravel.

To determine tons of sand required, multiply barrels of cement by parts of sand and then by 0.2; that is, for the 1:2:4 mix, as above, 1-3/7 x 2 x .2 = .57 tons.

Tons of crushed gravel are in the same ratio to tons of sand as parts in the mix, or 4/2 x .57 = 1.14 tons.

1 bag cement = 94#
4 bags = 1 barrel

1 C.Y. sand or crushed gravel = 2700#
1 ton sand or crushed gravel = 20 C.F.

1 C.Y. crushed stone = 2575#
1 ton crushed stone = 21 C.F.

Average carload of cement is 692 bags; of sand or gravel is 56 tons.

Do not stack stored cement over 10 bags high.

R033105-30 Metric Equivalents of Cement Content for Concrete Mixes

94 Pound Bags per Cubic Yard	Kilograms per Cubic Meter	94 Pound Bags per Cubic Yard	Kilograms per Cubic Meter
1.0	55.77	7.0	390.4
1.5	83.65	7.5	418.3
2.0	111.5	8.0	446.2
2.5	139.4	8.5	474.0
3.0	167.3	9.0	501.9
3.5	195.2	9.5	529.8
4.0	223.1	10.0	557.7
4.5	251.0	10.5	585.6
5.0	278.8	11.0	613.5
5.5	306.7	11.5	641.3
6.0	334.6	12.0	669.2
6.5	362.5	12.5	697.1

a. If you know the cement content in pounds per cubic yard, multiply by .5933 to obtain kilograms per cubic meter.

b. If you know the cement content in 94 pound bags per cubic yard, multiply by 55.77 to obtain kilograms per cubic meter.

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R033105-40 Metric Equivalents of Common Concrete Strengths (to convert other psi values to megapascals, multiply by 0.006895)

U.S. Values psi	SI Values Megapascals	Non-SI Metric Values kgf/cm²*
2000	14	140
2500	17	175
3000	21	210
3500	24	245
4000	28	280
4500	31	315
5000	34	350
6000	41	420
7000	48	490
8000	55	560
9000	62	630
10,000	69	705

* kilograms force per square centimeter

R033105-50 Quantities of Cement, Sand and Stone for One C.Y. of Concrete per Various Mixes

This table can be used to determine the quantities of the ingredients for smaller quantities of site mixed concrete.

Concrete (C.Y.)	Mix = 1:1:1-3/4			Mix = 1:2:2.25			Mix = 1:2.25:3			Mix = 1:3:4		
	Cement (sacks)	Sand (C.Y.)	Stone (C.Y.)	Cement (sacks)	Sand (C.Y.)	Stone (C.Y.)	Cement (sacks)	Sand (C.Y.)	Stone (C.Y.)	Cement (sacks)	Sand (C.Y.)	Stone (C.Y.)
1	10	.37	.63	7.75	.56	.65	6.25	.52	.70	5	.56	.74
2	20	.74	1.26	15.50	1.12	1.30	12.50	1.04	1.40	10	1.12	1.48
3	30	1.11	1.89	23.25	1.68	1.95	18.75	1.56	2.10	15	1.68	2.22
4	40	1.48	2.52	31.00	2.24	2.60	25.00	2.08	2.80	20	2.24	2.96
5	50	1.85	3.15	38.75	2.80	3.25	31.25	2.60	3.50	25	2.80	3.70
6	60	2.22	3.78	46.50	3.36	3.90	37.50	3.12	4.20	30	3.36	4.44
7	70	2.59	4.41	54.25	3.92	4.55	43.75	3.64	4.90	35	3.92	5.18
8	80	2.96	5.04	62.00	4.48	5.20	50.00	4.16	5.60	40	4.48	5.92
9	90	3.33	5.67	69.75	5.04	5.85	56.25	4.68	6.30	45	5.04	6.66
10	100	3.70	6.30	77.50	5.60	6.50	62.50	5.20	7.00	50	5.60	7.40
11	110	4.07	6.93	85.25	6.16	7.15	68.75	5.72	7.70	55	6.16	8.14
12	120	4.44	7.56	93.00	6.72	7.80	75.00	6.24	8.40	60	6.72	8.88
13	130	4.82	8.20	100.76	7.28	8.46	81.26	6.76	9.10	65	7.28	9.62
14	140	5.18	8.82	108.50	7.84	9.10	87.50	7.28	9.80	70	7.84	10.36
15	150	5.56	9.46	116.26	8.40	9.76	93.76	7.80	10.50	75	8.40	11.10
16	160	5.92	10.08	124.00	8.96	10.40	100.00	8.32	11.20	80	8.96	11.84
17	170	6.30	10.72	131.76	9.52	11.06	106.26	8.84	11.90	85	9.52	12.58
18	180	6.66	11.34	139.50	10.08	11.70	112.50	9.36	12.60	90	10.08	13.32
19	190	7.04	11.98	147.26	10.64	12.36	118.76	9.84	13.30	95	10.64	14.06
20	200	7.40	12.60	155.00	11.20	13.00	125.00	10.40	14.00	100	11.20	14.80
21	210	7.77	13.23	162.75	11.76	13.65	131.25	10.92	14.70	105	11.76	15.54
22	220	8.14	13.86	170.05	12.32	14.30	137.50	11.44	15.40	110	12.32	16.28
23	230	8.51	14.49	178.25	12.88	14.95	143.75	11.96	16.10	115	12.88	17.02
24	240	8.88	15.12	186.00	13.44	15.60	150.00	12.48	16.80	120	13.44	17.76
25	250	9.25	15.75	193.75	14.00	16.25	156.25	13.00	17.50	125	14.00	18.50
26	260	9.64	16.40	201.52	14.56	16.92	162.52	13.52	18.20	130	14.56	19.24
27	270	10.00	17.00	209.26	15.12	17.56	168.76	14.04	18.90	135	15.02	20.00
28	280	10.36	17.64	217.00	15.68	18.20	175.00	14.56	19.60	140	15.68	20.72
29	290	10.74	18.28	224.76	16.24	18.86	181.26	15.08	20.30	145	16.24	21.46

R033105-65 Field-Mix Concrete

Presently most building jobs are built with ready-mixed concrete except at isolated locations and some larger jobs requiring over 10,000 C.Y. where land is readily available for setting up a temporary batch plant.

The most economical mix is a controlled mix using local aggregate proportioned by trial to give the required strength with the least cost of material.

R033105-70 Placing Ready-Mixed Concrete

For ground pours allow for 5% waste when figuring quantities.

Prices in the front of the data set assume normal deliveries. If deliveries are made before 8 A.M. or after 5 P.M. or on Saturday afternoons add 30%. Negotiated discounts for large volumes are not included in prices in front of the data set.

For the lower floors without truck access, concrete may be wheeled in rubber-tired buggies, conveyer handled, crane handled or pumped. Pumping is economical if there is top steel. Conveyers are more efficient for thick slabs.

At higher floors the rubber-tired buggies may be hoisted by a hoisting tower and wheeled to the location. Placement by a conveyer is limited to three floors and is best for high-volume pours. Pumped concrete is best when the building has no crane access. Concrete may be pumped directly as high as thirty-six stories using special pumping techniques. Normal maximum height is about fifteen stories.

The best pumping aggregate is screened and graded bank gravel rather than crushed stone.

Pumping downward is more difficult than pumping upward. The horizontal distance from pump to pour may increase preparation time prior to pour. Placing by cranes, either mobile, climbing or tower types, continues as the most efficient method for high-rise concrete buildings.

R033105-85 Lift Slabs

The cost advantage of the lift slab method is due to placing all concrete, reinforcing steel, inserts and electrical conduit at ground level and in reduction of formwork. Minimum economical project size is about 30,000 S.F. Slabs may be tilted for parking garage ramps.

It is now used in all types of buildings and has gone up to 22 stories high in apartment buildings. The current trend is to use post-tensioned flat plate slabs with spans from 22′ to 35′. Cylindrical void forms are used when deep slabs are required. One pound of prestressing steel is about equal to seven pounds of conventional reinforcing.

To be considered cured for stressing and lifting, a slab must have attained 75% of design strength. Seven days are usually sufficient with four to five days possible if high early strength cement is used. Slabs can be stacked using two coats of a non-bonding agent to insure that slabs do not stick to each other. Lifting is done by companies specializing in this work. Lift rate is 5′ to 15′ per hour with an average of 10′ per hour. Total areas up to 33,000 S.F. have been lifted at one time. 24 to 36 jacking columns are common. Most economical bay sizes are 24′ to 28′ with four to fourteen stories most efficient. Continuous design reduces reinforcing steel cost. Use of post-tensioned slabs allows larger bay sizes.

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R033543-10 Polished Concrete Floors

A polished concrete floor has a glossy mirror-like appearance and is created by grinding the concrete floor with finer and finer diamond grits, similar to sanding wood, until the desired level of reflective clarity and sheen are achieved. The technical term for this type of polished concrete is bonded abrasive polished concrete. The basic piece of equipment used in the polishing process is a walk-behind planetary grinder for working large floor areas. This grinder drives diamond-impregnated abrasive discs, which progress from coarse- to fine-grit discs.

The process begins with the use of very coarse diamond segments or discs bonded in a metallic matrix. These segments are coarse enough to allow the removal of pits, blemishes, stains, and light coatings from the floor surface in preparation for final smoothing. The condition of the original concrete surface will dictate the grit coarseness of the initial grinding step which will generally end up being a three- to four-step process using ever finer grits. The purpose of this initial grinding step is to remove surface coatings and blemishes and to cut down into the cream for very fine aggregate exposure, or deeper into the fine aggregate layer just below the cream layer, or even deeper into the coarse aggregate layer. These initial grinding steps will progress up to the 100/120 grit. If wet grinding is done, a waste slurry is produced that must be removed between grit changes and disposed of properly. If dry grinding is done, a high performance vacuum will pick up the dust during grinding and collect it in bags which must be disposed of properly.

The process continues with honing the floor in a series of steps that progresses from 100-grit to 400-grit diamond abrasive discs embedded in a plastic or resin matrix. At some point during, or just prior to, the honing step, one or two coats of stain or dye can be sprayed onto the surface to give color to the concrete, and two coats of densifier/hardener must be applied to the floor surface and allowed to dry. This sprayed-on densifier/hardener will penetrate about 1/8″ into the concrete to make the surface harder, denser and more abrasion-resistant.

The process ends with polishing the floor surface in a series of steps that progresses from resin-impregnated 800-grit (medium polish) to 1500-grit (high polish) to 3000-grit (very high polish), depending on the desired level of reflective clarity and sheen.

The Concrete Polishing Association of America (CPAA) has defined the flooring options available when processing concrete to a desired finish. The first category is aggregate exposure, the grinding of a concrete surface with bonded abrasives, in as many abrasive grits necessary, to achieve one of the following classes:

A. Cream – very little surface cut depth; little aggregate exposure

B. Fine aggregate (salt and pepper) – surface cut depth of 1/16″; fine aggregate exposure with little or no medium aggregate exposure at random locations

C. Medium aggregate – surface cut depth of 1/8″; medium aggregate exposure with little or no large aggregate exposure at random locations

D. Large aggregate – surface cut depth of 1/4″; large aggregate exposure with little or no fine aggregate exposure at random locations

The second CPAA defined category is reflective clarity and sheen, the polishing of a concrete surface with the minimum number of bonded abrasives as indicated to achieve one of the following levels:

1. Ground – flat appearance with none to very slight diffused reflection; none to very low reflective sheen; using a minimum total of 4 grit levels up to 100-grit
2. Honed – matte appearance with or without slight diffused reflection; low to medium reflective sheen; using a minimum total of 5 grit levels up to 400-grit
3. Semi-polished – objects being reflected are not quite sharp and crisp but can be easily identified; medium to high reflective sheen; using a minimum total of 6 grit levels up to 800-grit
4. Highly-polished – objects being reflected are sharp and crisp as would be seen in a mirror-like reflection; high to highest reflective sheen; using a minimum total of up to 8 grit levels up to 1500-grit or 3000-grit

The CPAA defines reflective clarity as the degree of sharpness and crispness of the reflection of overhead objects when viewed 5′ above and perpendicular to the floor surface. Reflective sheen is the degree of gloss reflected from a surface when viewed at least 20′ from and at an angle to the floor surface. These terms are relatively subjective. The final outcome depends on the internal makeup and surface condition of the original concrete floor, the experience of the floor polishing crew, and the expectations of the owner. Before the grinding, honing, and polishing work commences on the main floor area, it might be beneficial to do a mock-up panel in the same floor but in an out of the way place to demonstrate the sequence of steps with increasingly fine abrasive grits and to demonstrate the final reflective clarity and reflective sheen. This mock-up panel will be within the area of, and part of, the final work.

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R034105-30 Prestressed Precast Concrete Structural Units

Type	Location	Depth	Span in Ft.		Live Load Lb. per S.F.
Double Tee	Floor	28″ to 34″	60 to 80		50 to 80
	Roof	12″ to 24″	30 to 50		40
	Wall	Width 8′	Up to 55′ high		Wind
Multiple Tee	Roof	8″ to 12″	15 to 40		40
	Floor	8″ to 12″	15 to 30		100
Plank or	Roof or Floor		Roof	Floor	
		4″	13	12	40 for Roof
		6″	22	18	
		8″	26	25	
		10″	33	29	100 for Floor
		12″	42	32	
Single Tee	Roof	28″	40		40
		32″	80		
		36″	100		
		48″	120		
AASHTO Girder	Bridges	Type 4	100		Highway
		5	110		
		6	125		
Box Beam	Bridges	15″	40 to 100		Highway
		27″			
		33″			

The majority of precast projects today utilize double tees rather than single tees because of speed and ease of installation. As a result casting beds at manufacturing plants are normally formed for double tees. Single tee projects will therefore require an initial set up charge to be spread over the individual single tee costs.

For floors, a 2″ to 3″ topping is field cast over the shapes. For roofs, insulating concrete or rigid insulation is placed over the shapes.

Member lengths up to 40′ are standard haul, 40′ to 60′ require special permits and lengths over 60′ must be escorted. Excessive width and/or length can add up to 100% on hauling costs.

Large heavy members may require two cranes for lifting which would increase erection costs by about 45%. An eight man crew can install 12 to 20 double tees, or 45 to 70 quad tees or planks per day.

Grouting of connections must also be included.

Several system buildings utilizing precast members are available. Heights can go up to 22 stories for apartment buildings. The optimum design ratio is 3 S.F. of surface to 1 S.F. of floor area.

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R034136-90 Prestressed Concrete, Post-Tensioned

In post-tensioned concrete the steel tendons are tensioned after the concrete has reached about 3/4 of its ultimate strength. The cableways are grouted after tensioning to provide bond between the steel and concrete. If bond is to be prevented, the tendons are coated with a corrosion-preventative grease and wrapped with waterproofed paper or plastic. Bonded tendons are usually used when ultimate strength (beams & girders) are controlling factors.

High strength concrete is used to fully utilize the steel, thereby reducing the size and weight of the member. A plasticizing agent may be added to reduce water content. Maximum size aggregate ranges from 1/2″ to 1-1/2″ depending on the spacing of the tendons.

The types of steel commonly used are bars and strands. Job conditions determine which is best suited. Bars are best for vertical prestresses since they are easy to support. The trend is for steel manufacturers to supply a finished package, cut to length, which reduces field preparation to a minimum.

Bars vary from 3/4″ to 1-3/8″ diameter. The table below gives time in labor-hours per tendon for placing, tensioning and grouting (if required) a 75′ beam. Tendons used in buildings are not usually grouted; tendons for bridges usually are grouted. For strands the table indicates the labor-hours per pound for typical prestressed units 100′ long. Simple span beams usually require one-end stressing regardless of lengths. Continuous beams are usually stressed from two ends. Long slabs are poured from the center outward and stressed in 75′ increments after the initial 150′ center pour.

Labor Hours per Tendon and per Pound of Prestressed Steel						
Length	**100′ Beam**		**75′ Beam**		**100′ Slab**	
Type Steel	**Strand**		**Bars**		**Strand**	
Diameter	**0.5″**		**3/4″**	**1-3/8″**	**0.5″**	**0.6″**
Number	**4**	**12**	**1**	**1**	**1**	**1**
Force in Kips	**100**	**300**	**42**	**143**	**25**	**35**
Preparation & Placing Cables	3.6	7.4	0.9	2.9	0.9	1.1
Stressing Cables	2.0	2.4	0.8	1.6	0.5	0.5
Grouting, if required	2.5	3.0	0.6	1.3		
Total Labor Hours	8.1	12.8	2.3	5.8	1.4	1.6
Prestressing Steel Weights (Lbs.)	215	640	115	380	53	74
Labor-hours per Lb. Bonded	0.038	0.020	0.020	0.015		
Non-bonded					0.026	0.022

Flat slab construction — 4000 psi concrete with span-to-depth ratio between 36 and 44. Two way post-tensioned steel averages 1.0 lb. per S.F. for 24′ to 28′ bays (usually strand) and additional reinforcing steel averages .5 lb. per S.F.

Pan and joist construction — 4000 psi concrete with span-to-depth ratio between 28 to 30. Post-tensioned steel averages .8 lb. per S.F. and reinforcing steel about 1.0 lb. per S.F. Placing and stressing average 40 hours per ton of total material.

Beam construction — 4000 to 5000 psi concrete. Steel weights vary greatly.

Labor cost per pound goes down as the size and length of the tendon increase. The primary economic consideration is the cost per kip for the member.

Post-tensioning becomes feasible for beams and girders over 30′ long; for continuous two-way slabs over 20′ clear; and for transferring upper building loads over longer spans at lower levels. Post-tension suppliers will provide engineering services at no cost to the user. Substantial economies are possible by using post-tensioned lift slabs.

Concrete — R0345 Precast Architectural Concrete

R034513-10 Precast Concrete Wall Panels

Panels are either solid or insulated with plain, colored or textured finishes. Transportation is an important cost factor. Prices shown in the unit cost section of the data set are based on delivery within 50 miles of a plant including fabricators' overhead and profit. Engineering data is available from fabricators to assist with construction details. Usual minimum job size for economical use of panels is about 5000 S.F. Small jobs can double the prices shown. For large, highly repetitive jobs, deduct up to 15% from the prices shown.

2″ thick panels cost about the same as 3″ thick panels, and maximum panel size is less. For building panels faced with granite, marble or stone, add the material prices from those unit cost sections to the plain panel price shown. There is a growing trend toward aggregate facings and broken rib finishes rather than plain gray concrete panels.

No allowance has been made in the unit cost section for supporting steel framework. On one story buildings, panels may rest on grade beams and require only wind bracing and fasteners. On multi-story buildings panels can span from column to column and floor to floor. Plastic-designed steel-framed structures may have large deflections which slow down erection and raise costs.

Large panels are more economical than small panels on a S.F. basis. When figuring areas include all protrusions, returns, etc. Overhangs can triple erection costs. Panels over 45′ have been produced. Larger flat units should be prestressed. Vacuum lifting of smooth finish panels eliminates inserts and can speed erection.

Concrete — R0347 Site-Cast Concrete

R034713-20 Tilt Up Concrete Panels

The advantage of tilt up construction is in the low cost of forms and the placing of concrete and reinforcing. Panels up to 75′ high and 5-1/2″ thick have been tilted using strongbacks. Tilt up has been used for one to five story buildings and is well-suited for warehouses, stores, offices, schools and residences.

The panels are cast in forms on the floor slab. Most jobs use 5-1/2″ thick solid reinforced concrete panels. Sandwich panels with a layer of insulating materials are also used. Where dampness is a factor, lightweight aggregate is used. Optimum panel size is 300 to 500 S.F.

Slabs are usually poured with 3000 psi concrete which permits tilting seven days after pouring. Slabs may be stacked on top of each other and are separated from each other by either two coats of bond breaker or a film of polyethylene. Use of high early-strength cement allows tilting two days after a pour. Tilting up is done with a roller outrigger crane with a capacity of at least 1-1/2 times the weight of the panel at the required reach. Exterior precast columns can be set at the same time as the panels; interior precast columns can be set first and the panels clipped directly to them. The use of cast-in-place concrete columns is diminishing due to shrinkage problems. Structural steel columns are sometimes used if crane rails are planned. Panels can be clipped to the columns or lowered between the flanges. Steel channels with anchors may be used as edge forms for the slab. When the panels are lifted the channels form an integral steel column to take structural loads. Roof loads can be carried directly by the panels for wall heights to 14′.

Requirements of local building codes may be a limiting factor and should be checked. Building floor slabs should be poured first and should be a minimum of 5″ thick with 100% compaction of soil or 6″ thick with less than 100% compaction.

Setting times as fast as nine minutes per panel have been observed, but a safer expectation would be four panels per hour with a crane and a four-man setting crew. If a crane erects from inside a building, some provision must be made to get the crane out after walls are erected. Good yarding procedure is important to minimize delays. Equalizing three-point lifting beams and self-releasing pick-up hooks speed erection. If panels must be carried to their final location, setting time per panel will be increased and erection costs may approach the erection cost range of architectural precast wall panels. Placing panels into slots formed in continuous footers will speed erection.

Reinforcing should be with #5 bars with vertical bars on the bottom. If surface is to be sandblasted, stainless steel chairs should be used to prevent rust staining.

Use of a broom finish is popular since the unavoidable surface blemishes are concealed.

Precast columns run from three to five times the C.Y. price of the panels only.

Concrete — R0352 Lightweight Concrete Roof Insulation

R035216-10 Lightweight Concrete

Lightweight aggregate concrete is usually purchased ready mixed, but it can also be field mixed.

Vermiculite or Perlite comes in bags of 4 C.F. under various trade names. The weight is about 8 lbs. per C.F. For insulating roof fill use 1:6 mix. For a structural deck use 1:4 mix over gypsum boards, steeltex, steel centering, etc., supported by closely spaced joists or bulb trees. For structural slabs use 1:3:2 vermiculite sand concrete over steeltex, metal lath, steel centering, etc., on joists spaced 2′-0″ O.C. for maximum L.L. of 80 P.S.F. Use same mix for slab base fill over steel flooring or regular reinforced concrete slab when tile, terrazzo or other finish is to be laid over.

For slabs on grade use 1:3:2 mix when tile, etc., finish is to be laid over. If radiant heating units are installed use a 1:6 mix for a base. After coils are in place, cover with a regular granolithic finish (mix 1:3:2) to a minimum depth of 1-1/2″ over top of units.

Reinforce all slabs with 6 × 6 or 10 × 10 welded wire mesh.

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R040130-10 Cleaning Face Brick

On smooth brick a person can clean 70 S.F. an hour; on rough brick 50 S.F. per hour. Use one gallon muriatic acid to 20 gallons of water for 1000 S.F. Do not use acid solution until wall is at least seven days old, but a mild soap solution may be used after two days.

Time has been allowed for cleanup in brick prices.

R040513-10 Cement Mortar (material only)

Type N - 1:1:6 mix by volume. Use everywhere above grade except as noted below. - 1:3 mix using conventional masonry cement which saves handling two separate bagged materials.

Type M - 1:1/4:3 mix by volume, or 1 part cement, 1/4 (10% by wt.) lime, 3 parts sand. Use for heavy loads and where earthquakes or hurricanes may occur. Also for reinforced brick, sewers, manholes and everywhere below grade.

Mix Proportions by Volume and Compressive Strength of Mortar

Where Used	Allowable Proportions by Volume					Compressive Strength @ 28 days
	Mortar Type	Portland Cement	Masonry Cement	Hydrated Lime	Masonry Sand	
Plain Masonry		1	1	—	6	
	M	1	—	1/4	3	2500 psi
		1/2	1	—	4	
	S	1	—	1/4 to 1/2	4	1800 psi
		—	1	—	3	
	N	1	—	1/2 to 1-1/4	6	750 psi
		—	1	—	3	
	O	1	—	1-1/4 to 2-1/2	9	350 psi
	K	1	—	2-1/2 to 4	12	75 psi
Reinforced Masonry	PM	1	1	—	6	2500 psi
	PL	1	—	1/4 to 1/2	4	2500 psi

Note: The total aggregate should be between 2.25 to 3 times the sum of the cement and lime used.

The labor cost to mix the mortar is included in the productivity and labor cost of unit price lines in unit cost sections for brickwork, blockwork and stonework.

The material cost of mixed mortar is included in the material cost of those same unit price lines and includes the cost of renting and operating a 10 C.F. mixer at the rate of 200 C.F. per day.

There are two types of mortar color used. One type is the inert additive type with about 100 lbs. per M brick as the typical quantity required. These colors are also available in smaller-batch-sized bags (1 lb. to 15 lb.) which can be placed directly into the mixer without measuring. The other type is premixed and replaces the masonry cement. Dark green color has the highest cost.

R040519-50 Masonry Reinforcing

Horizontal joint reinforcing helps prevent wall cracks where wall movement may occur and in many locations is required by code. Horizontal joint reinforcing is generally not considered to be structural reinforcing and an unreinforced wall may still contain joint reinforcing.

Reinforcing strips come in 10′ and 12′ lengths and in truss and ladder shapes, with and without drips. Field labor runs between 2.7 to 5.3 hours per 1000 L.F. for wall thicknesses up to 12″.

The wire meets ASTM A82 for cold drawn steel wire and the typical size is 9 ga. sides and ties with 3/16″ diameter also available. Typical finish is mill galvanized with zinc coating at .10 oz. per S.F. Class I (.40 oz. per S.F.) and Class III (.80 oz. per S.F.) are also available, as is hot dipped galvanizing at 1.50 oz. per S.F.

R042110-10 Economy in Bricklaying

Have adequate supervision. Be sure bricklayers are always supplied with materials so there is no waiting. Place experienced bricklayers at corners and openings.

Use only screened sand for mortar. Otherwise, labor time will be wasted picking out pebbles. Use seamless metal tubs for mortar as they do not leak or catch the trowel. Locate stack and mortar for easy wheeling.

Have brick delivered for stacking. This makes for faster handling, reduces chipping and breakage, and requires less storage space. Many dealers will deliver select common in 2′ × 3′ × 4′ pallets or face brick packaged. This affords quick handling with a crane or forklift and easy tonging in units of ten, which reduces waste.

Use wider bricks for one wythe wall construction. Keep scaffolding away from the wall to allow mortar to fall clear and not stain the wall.

On large jobs develop specialized crews for each type of masonry unit.

Consider designing for prefabricated panel construction on high rise projects.

Avoid excessive corners or openings. Each opening adds about 50% to the labor cost for area of opening.

Bolting stone panels and using window frames as stops reduce labor costs and speed up erection.

R042110-20 Common and Face Brick

Common building brick manufactured according to ASTM C62 and facing brick manufactured according to ASTM C216 are the two standard bricks available for general building use.

Building brick is made in three grades: SW, where high resistance to damage caused by cyclic freezing is required; MW, where moderate resistance to cyclic freezing is needed; and NW, where little resistance to cyclic freezing is needed. Facing brick is made in only the two grades SW and MW. Additionally, facing brick is available in three types: FBS, for general use; FBX, for general use where a higher degree of precision and lower permissible variation in size than FBS are needed; and FBA, for general use to produce characteristic architectural effects resulting from non-uniformity in size and texture of the units.

In figuring the material cost of brickwork, an allowance of 25% mortar waste and 3% brick breakage was included. If bricks are delivered palletized with 280 to 300 per pallet, or packaged, allow only 1-1/2% for breakage. Packaged or palletized delivery is practical when a job is big enough to have a crane or other equipment available to handle a package of brick. This is so on all industrial work but not always true on small commercial buildings.

The use of buff and gray face is increasing, and there is a continuing trend to the Norman, Roman, Jumbo and SCR brick.

Common red clay brick for backup is not used that often. Concrete block is the most usual backup material with occasional use of sand lime or cement brick. Building brick is commonly used in solid walls for strength and as a fire stop.

Brick panels built on the ground and then crane erected to the upper floors have proven to be economical. This allows the work to be done under cover and without scaffolding.

R042110-50 Brick, Block & Mortar Quantities

Running Bond						For Other Bonds Standard Size Add to S.F. Quantities in Table to Left		
Number of Brick per S.F. of Wall - Single Wythe with 3/8″ Joints				C.F. of Mortar per M Bricks, Waste Included				
Type Brick	Nominal Size (incl. mortar) L H W	Modular Coursing	Number of Brick per S.F.	3/8″ Joint	1/2″ Joint	Bond Type	Description	Factor
Standard	8 x 2-2/3 x 4	3C=8″	6.75	8.1	10.3	Common	full header every fifth course	+20%
Economy	8 x 4 x 4	1C=4″	4.50	9.1	11.6		full header every sixth course	+16.7%
Engineer	8 x 3-1/5 x 4	5C=16″	5.63	8.5	10.8	English	full header every second course	+50%
Fire	9 x 2-1/2 x 4-1/2	2C=5″	6.40	550 # Fireclay	—	Flemish	alternate headers every course	+33.3%
Jumbo	12 x 4 x 6 or 8	1C=4″	3.00	22.5	29.2		every sixth course	+5.6%
Norman	12 x 2-2/3 x 4	3C=8″	4.50	11.2	14.3	Header = W x H exposed		+100%
Norwegian	12 x 3-1/5 x 4	5C=16″	3.75	11.7	14.9	Rowlock = H x W exposed		+100%
Roman	12 x 2 x 4	2C=4″	6.00	10.7	13.7	Rowlock stretcher = L x W exposed		+33.3%
SCR	12 x 2-2/3 x 6	3C=8″	4.50	21.8	28.0	Soldier = H x L exposed		—
Utility	12 x 4 x 4	1C=4″	3.00	12.3	15.7	Sailor = W x L exposed		-33.3%

Concrete Blocks Nominal Size	Approximate Weight per S.F. Standard	Approximate Weight per S.F. Lightweight	Blocks per 100 S.F.	Mortar per M block, waste included Partitions	Mortar per M block, waste included Back up
2″ x 8″ x 16″	20 PSF	15 PSF	113	27 C.F.	36 C.F.
4″	30	20		41	51
6″	42	30		56	66
8″	55	38		72	82
10″	70	47		87	97
12″	85	55		102	112

Brick & Mortar Quantities
3Brick Industry Association. 2009 Feb. Technical Notes on Brick Construction 10
Dimensioning and Estimating Brick Masonry. Reston (VA): BIA. Table 1 Modular Brick Sizes and Table 4 Quantity Estimates for Brick Masonry.

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R042210-20 Concrete Block

The material cost of special block such as corner, jamb and head block can be figured at the same price as ordinary block of equal size. Labor on specials is about the same as equal-sized regular block.

Bond beams and 16″ high lintel blocks are more expensive than regular units of equal size. Lintel blocks are 8″ long and either 8″ or 16″ high.

Use of a motorized mortar spreader box will speed construction of continuous walls.

Hollow non-load-bearing units are made according to ASTM C129 and hollow load-bearing units according to ASTM C90.

R050516-30 Coating Structural Steel

On field-welded jobs, the shop-applied primer coat is necessarily omitted. All painting must be done in the field and usually consists of red oxide rust inhibitive paint or an aluminum paint. The table below shows paint coverage and daily production for field painting.

See Division 05 05 13.50 for hot-dipped galvanizing and Division 09 97 13.23 for field-applied cold galvanizing and other paints and protective coatings.

See Division 05 01 10.51 for steel surface preparation treatments such as wire brushing, pressure washing and sand blasting.

Type Construction	Surface Area per Ton	Coat	One Gallon Covers		In 8 Hrs. Person Covers		Average per Ton Spray	
			Brush	Spray	Brush	Spray	Gallons	Labor-hours
Light Structural	300 S.F. to 500 S.F.	1st	500 S.F.	455 S.F.	640 S.F.	2000 S.F.	0.9 gals.	1.6 L.H.
		2nd	450	410	800	2400	1.0	1.3
		3rd	450	410	960	3200	1.0	1.0
Medium	150 S.F. to 300 S.F.	All	400	365	1600	3200	0.6	0.6
Heavy Structural	50 S.F. to 150 S.F.	1st	400	365	1920	4000	0.2	0.2
		2nd	400	365	2000	4000	0.2	0.2
		3rd	400	365	2000	4000	0.2	0.2
Weighted Average	225 S.F.	All	400	365	1350	3000	0.6	0.6

R050521-20 Welded Structural Steel

Usual weight reductions with welded design run 10% to 20% compared with bolted or riveted connections. This amounts to about the same total cost compared with bolted structures since field welding is more expensive than bolts. For normal spans of 18′ to 24′ figure 6 to 7 connections per ton.

Trusses — For welded trusses add 4% to weight of main members for connections. Up to 15% less steel can be expected in a welded truss compared to one that is shop bolted. Cost of erection is the same whether shop bolted or welded.

General — Typical electrodes for structural steel welding are E6010, E6011, E60T and E70T. Typical buildings vary between 2# to 8# of weld rod per ton of steel. Buildings utilizing continuous design require about three times as much welding as conventional welded structures. In estimating field erection by welding, it is best to use the average linear feet of weld per ton to arrive at the welding cost per ton. The type, size and position of the weld will have a direct bearing on the cost per linear foot. A typical field welder will deposit 1.8# to 2# of weld rod per hour manually. Using semiautomatic methods can increase production by as much as 50% to 75%.

R050523-10 High Strength Bolts

Common bolts (A307) are usually used in secondary connections (see Division 05 05 23.10).

High strength bolts (A325 and A490) are usually specified for primary connections such as column splices, beam and girder connections to columns, column bracing, connections for supports of operating equipment or of other live loads which produce impact or reversal of stress, and in structures carrying cranes of over 5-ton capacity.

Allow 20 field bolts per ton of steel for a 6 story office building, apartment house or light industrial building. For 6 to 12 stories allow 25 bolts per ton, and above 12 stories, 30 bolts per ton. On power stations, 20 to 25 bolts per ton are needed.

R051223-10 Structural Steel

The bare material prices for structural steel, shown in the unit cost sections of the data set, are for 100 tons of shop-fabricated structural steel and include:

1. Mill base price of structural steel
2. Mill scrap/grade/size/length extras
3. Mill delivery to a metals service center (warehouse)
4. Service center storage and handling
5. Service center delivery to a fabrication shop
6. Shop storage and handling
7. Shop drafting/detailing
8. Shop fabrication
9. Shop coat of primer paint
10. Shop listing
11. Shop delivery to the job site

In unit cost sections of the data set that contain items for field fabrication of steel components, the bare material cost of steel includes:

1. Mill base price of structural steel
2. Mill scrap/grade/size/length extras
3. Mill delivery to a metals service center (warehouse)
4. Service center storage and handling
5. Service center delivery to the job site

R051223-20 Steel Estimating Quantities

One estimate on erection is that a crane can handle 35 to 60 pieces per day. Say the average is 45. With usual sizes of beams, girders, and columns, this would amount to about 20 tons per day. The type of connection greatly affects the speed of erection. Moment connections for continuous design slow down production and increase erection costs.

Short open web bar joists can be set at the rate of 75 to 80 per day, with 50 per day being the average for setting long span joists.

After main members are calculated, add the following for usual allowances: base plates 2% to 3%; column splices 4% to 5%; and miscellaneous details 4% to 5%, for a total of 10% to 13% in addition to main members.

The ratio of column to beam tonnage varies depending on type of steels used, typical spans, story heights and live loads.

It is more economical to keep the column size constant and to vary the strength of the column by using high strength steels. This also saves floor space. Buildings have recently gone as high as ten stories with 8″ high strength columns. For light columns under W8X31 lb. sections, concrete filled steel columns are economical.

High strength steels may be used in columns and beams to save floor space and to meet head room requirements. High strength steels in some sizes sometimes require long lead times.

Round, square and rectangular columns, both plain and concrete filled, are readily available and save floor area, but are higher in cost per pound than rolled columns. For high unbraced columns, tube columns may be less expensive.

Below are average minimum figures for the weights of the structural steel frame for different types of buildings using A36 steel, rolled shapes and simple joints. For economy in domes, rise to span ratio = .13. Open web joist framing systems will reduce weights by 10% to 40%. Composite design can reduce steel weight by up to 25% but additional concrete floor slab thickness may be required. Continuous design can reduce the weights up to 20%. There are many building codes with different live load requirements and different structural requirements, such as hurricane and earthquake loadings, which can alter the figures.

Structural Steel Weights per S.F. of Floor Area

Type of Building	No. of Stories	Avg. Spans	L.L. #/S.F.	Lbs. Per S.F.	Type of Building	No. of Stories	Avg. Spans	L.L. #/S.F.	Lbs. Per S.F.
Steel Frame Mfg.	1	20′x20′	40	8	Apartments	2-8	20′x20′	40	8
		30′x30′		13		9-25			14
		40′x40′		18	Office	to 10	Various	80	10
Parking garage	4	Various	80	8.5		20			18
Domes	1	200′	30	10		30			26
(Schwedler)*		300′		15		over 50			35

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R051223-25 Common Structural Steel Specifications

ASTM A992 (formerly A36, then A572 Grade 50) is the all-purpose carbon grade steel widely used in building and bridge construction.

The other high-strength steels listed below may each have certain advantages over ASTM A992 structural carbon steel, depending on the application. They have proven to be economical choices where, due to lighter members, the reduction of dead load and the associated savings in shipping cost can be significant.

ASTM A588 atmospheric weathering, high-strength, low-alloy steels can be used in the bare (uncoated) condition, where exposure to normal atmosphere causes a tightly adherant oxide to form on the surface, protecting the steel from further oxidation. ASTM A242 corrosion-resistant, high-strength, low-alloy steels have enhanced atmospheric corrosion resistance of at least two times that of carbon structural steels with copper, or four times that of carbon structural steels without copper. The reduction or elimination of maintenance resulting from the use of these steels often offsets their higher initial cost.

Steel Type	ASTM Designation	Minimum Yield Stress in KSI	Shapes Available
Carbon	A36	36	All structural shape groups, and plates & bars up through 8" thick
	A529	50	Structural shape group 1, and plates & bars up through 2" thick
High-Strength Low-Alloy Quenched & Self-Tempered	A913	50	All structural shape groups
		60	
		65	
		70	
High-Strength Low-Alloy Columbium-Vanadium	A572	42	All structural shape groups, and plates & bars up through 6" thick
		50	All structural shape groups, and plates & bars up through 4" thick
		55	Structural shape groups 1 & 2, and plates & bars up through 2" thick
		60	Structural shape groups 1 & 2, and plates & bars up through 1-1/4" thick
		65	Structural shape group 1, and plates & bars up through 1-1/4" thick
High-Strength Low-Alloy Columbium-Vanadium	A992	50	All structural shape groups
Weathering High-Strength Low-Alloy	A242	42	Structural shape groups 4 & 5, and plates & bars over 1-1/2" up through 4" thick
		46	Structural shape group 3, and plates & bars over 3/4" up through 1-1/2" thick
		50	Structural shape groups 1 & 2, and plates & bars up through 3/4" thick
Weathering High-Strength Low-Alloy	A588	42	Plates & bars over 5" up through 8" thick
		46	Plates & bars over 4" up through 5" thick
		50	All structural shape groups, and plates & bars up through 4" thick
Quenched and Tempered Low-Alloy	A852	70	Plates & bars up through 4" thick
Quenched and Tempered Alloy	A514	90	Plates & bars over 2-1/2" up through 6" thick
		100	Plates & bars up through 2-1/2" thick

R051223-30 High Strength Steels

The mill price of high strength steels may be higher than A992 carbon steel but their proper use can achieve overall savings through total reduced weights. For columns with L/r over 100, A992 steel is best; under 100, high strength steels are economical. For heavy columns, high strength steels are economical when cover plates are eliminated. There is no economy using high strength steels for clip angles or supports or for beams where deflection governs. Thinner members are more economical than thick.

The per ton erection and fabricating costs of the high strength steels will be higher than for A992 since the same number of pieces, but less weight, will be installed.

R051223-35 Common Steel Sections

The upper portion of this table shows the name, shape, common designation and basic characteristics of commonly used steel sections. The lower portion explains how to read the designations used for the above illustrated common sections.

Shape & Designation	Name & Characteristics	Shape & Designation	Name & Characteristics
W	W Shape Parallel flange surfaces	MC	Miscellaneous Channel Infrequently rolled by some producers
S	American Standard Beam (I Beam) Sloped inner flange	L	Angle Equal or unequal legs, constant thickness
M	Miscellaneous Beams Cannot be classified as W, HP or S; infrequently rolled by some producers	T	Structural Tee Cut from W, M or S on center of web
C	American Standard Channel Sloped inner flange	HP	Bearing Pile Parallel flanges and equal flange and web thickness

Common drawing designations follow:

W Shape
W 18 × 35
- 18 × 35 — Nominal Depth in Inches (Actual 17-3/4″)
- 35 — Weight in Pounds per Foot

American Standard Beam
S 12 × 31.8
- 12 × 31.8 — Depth in Inches
- 31.8 — Weight in Pounds per Foot

Miscellaneous Beam
M 8 × 6.5
- 8 × 6.5 — Depth in Inches
- 6.5 — Weight in Pounds per Foot

American Standard Channel
C 8 × 11.5
- 8 × 11.5 — Depth in Inches
- 11.5 — Weight in Pounds per Foot

Miscellaneous Channel
MC 8 × 22.8
- 8 × 22.8 — Depth in Inches
- 22.8 — Weight in Pounds per Foot

Angle
L 6 × 3-1/2 × 3/8
- L — Angle
- 6 — Length of Long Leg in Inches
- 3-1/2 — Length of Other Leg in Inches
- 3/8 — Thickness of Each Leg in Inches

Tee Cut from W16 × 100
WT 8 × 50
- 8 × 50 — Nominal Depth in Inches (Actual 8-1/2″)
- 50 — Weight in Pounds per Foot

Tee Cut from S12 × 35
ST 6 × 17.5
- 6 × 17.5 — Depth in Inches (Actual 6-1/4″)
- 17.5 — Weight in Pounds per Foot

Tee Cut from M10 × 9
MT 5 × 4.5
- 5 × 4.5 — Depth in Inches
- 4.5 — Weight in Pounds per Foot

Bearing Pile
HP 12 × 84
- 12 × 84 — Nominal Depth in Inches (Actual 12-1/4″)
- 84 — Weight in Pounds per Foot

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R051223-45 Installation Time for Structural Steel Building Components

The following tables show the expected average installation times for various structural steel shapes. Table A presents installation times for columns, Table B for beams, Table C for light framing and bolts, and Table D for structural steel for various project types.

Table A

Description	Labor-Hours	Unit
Columns		
Steel, Concrete Filled		
3-1/2" Diameter	.933	Ea.
6-5/8" Diameter	1.120	Ea.
Steel Pipe		
3" Diameter	.933	Ea.
8" Diameter	1.120	Ea.
12" Diameter	1.244	Ea.
Structural Tubing		
4" x 4"	.966	Ea.
8" x 8"	1.120	Ea.
12" x 8"	1.167	Ea.
W Shape 2 Tier		
W8 x 31	.052	L.F.
W8 x 67	.057	L.F.
W10 x 45	.054	L.F.
W10 x 112	.058	L.F.
W12 x 50	.054	L.F.
W12 x 190	.061	L.F.
W14 x 74	.057	L.F.
W14 x 176	.061	L.F.

Table B

Description	Labor-Hours	Unit	Labor-Hours	Unit
Beams, W Shape				
W6 x 9	.949	Ea.	.093	L.F.
W10 x 22	1.037	Ea.	.085	L.F.
W12 x 26	1.037	Ea.	.064	L.F.
W14 x 34	1.333	Ea.	.069	L.F.
W16 x 31	1.333	Ea.	.062	L.F.
W18 x 50	2.162	Ea.	.088	L.F.
W21 x 62	2.222	Ea.	.077	L.F.
W24 x 76	2.353	Ea.	.072	L.F.
W27 x 94	2.581	Ea.	.067	L.F.
W30 x 108	2.857	Ea.	.067	L.F.
W33 x 130	3.200	Ea.	.071	L.F.
W36 x 300	3.810	Ea.	.077	L.F.

Table C

Description	Labor-Hours	Unit
Light Framing		
Angles 4" and Larger	.055	lbs.
Less than 4"	.091	lbs.
Channels 8" and Larger	.048	lbs.
Less than 8"	.072	lbs.
Cross Bracing Angles	.055	lbs.
Rods	.034	lbs.
Hanging Lintels	.069	lbs.
High Strength Bolts in Place		
3/4" Bolts	.070	Ea.
7/8" Bolts	.076	Ea.

Table D

Description	Labor-Hours	Unit	Labor-Hours	Unit
Apartments, Nursing Homes, etc.				
1-2 Stories	4.211	Piece	7.767	Ton
3-6 Stories	4.444	Piece	7.921	Ton
7-15 Stories	4.923	Piece	9.014	Ton
Over 15 Stories	5.333	Piece	9.209	Ton
Offices, Hospitals, etc.				
1-2 Stories	4.211	Piece	7.767	Ton
3-6 Stories	4.741	Piece	8.889	Ton
7-15 Stories	4.923	Piece	9.014	Ton
Over 15 Stories	5.120	Piece	9.209	Ton
Industrial Buildings				
1 Story	3.478	Piece	6.202	Ton

R051223-50 Subpurlins

Bulb tee subpurlins are structural members designed to support and reinforce a variety of roof deck systems such as precast cement fiber roof deck tiles, monolithic roof deck systems, and gypsum or lightweight concrete over formboard. Other uses include interstitial service ceiling systems, wall panel systems, and joist anchoring in bond beams. See the Unit Price section for pricing on a square foot basis at 32-5/8" O.C. Maximum span is based on a 3-span condition with a total allowable vertical load of 40 psf.

R051223-80 Dimensions and Weights of Sheet Steel

Gauge No.	Approximate Thickness: Inches (in fractions) Wrought Iron	Approximate Thickness: Inches (in decimal parts) Wrought Iron	Approximate Thickness: Inches (in decimal parts) Steel	Approximate Thickness: Millimeters Steel	Weight: per S.F. in Ounces	Weight: per S.F. in Lbs.	Weight: per Square Meter in Kg.
0000000	1/2"	.5	.4782	12.146	320	20.000	97.650
000000	15/32"	.46875	.4484	11.389	300	18.750	91.550
00000	7/16"	.4375	.4185	10.630	280	17.500	85.440
0000	13/32"	.40625	.3886	9.870	260	16.250	79.330
000	3/8"	.375	.3587	9.111	240	15.000	73.240
00	11/32"	.34375	.3288	8.352	220	13.750	67.130
0	5/16"	.3125	.2989	7.592	200	12.500	61.030
1	9/32"	.28125	.2690	6.833	180	11.250	54.930
2	17/64"	.265625	.2541	6.454	170	10.625	51.880
3	1/4"	.25	.2391	6.073	160	10.000	48.820
4	15/64"	.234375	.2242	5.695	150	9.375	45.770
5	7/32"	.21875	.2092	5.314	140	8.750	42.720
6	13/64"	.203125	.1943	4.935	130	8.125	39.670
7	3/16"	.1875	.1793	4.554	120	7.500	36.320
8	11/64"	.171875	.1644	4.176	110	6.875	33.570
9	5/32"	.15625	.1495	3.797	100	6.250	30.520
10	9/64"	.140625	.1345	3.416	90	5.625	27.460
11	1/8"	.125	.1196	3.038	80	5.000	24.410
12	7/64"	.109375	.1046	2.657	70	4.375	21.360
13	3/32"	.09375	.0897	2.278	60	3.750	18.310
14	5/64"	.078125	.0747	1.897	50	3.125	15.260
15	9/128"	.0713125	.0673	1.709	45	2.813	13.730
16	1/16"	.0625	.0598	1.519	40	2.500	12.210
17	9/160"	.05625	.0538	1.367	36	2.250	10.990
18	1/20"	.05	.0478	1.214	32	2.000	9.765
19	7/160"	.04375	.0418	1.062	28	1.750	8.544
20	3/80"	.0375	.0359	.912	24	1.500	7.324
21	11/320"	.034375	.0329	.836	22	1.375	6.713
22	1/32"	.03125	.0299	.759	20	1.250	6.103
23	9/320"	.028125	.0269	.683	18	1.125	5.490
24	1/40"	.025	.0239	.607	16	1.000	4.882
25	7/320"	.021875	.0209	.531	14	.875	4.272
26	3/160"	.01875	.0179	.455	12	.750	3.662
27	11/640"	.0171875	.0164	.417	11	.688	3.357
28	1/64"	.015625	.0149	.378	10	.625	3.052

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R053100-10 Decking Descriptions

General - All Deck Products

A steel deck is made by cold forming structural grade sheet steel into a repeating pattern of parallel ribs. The strength and stiffness of the panels are the result of the ribs and the material properties of the steel. Deck lengths can be varied to suit job conditions, but because of shipping considerations, are usually less than 40 feet. Standard deck width varies with the product used but full sheets are usually 12″, 18″, 24″, 30″, or 36″. The deck is typically furnished in a standard width with the ends cut square. Any cutting for width, such as at openings or for angular fit, is done at the job site.

The deck is typically attached to the building frame with arc puddle welds, self-drilling screws, or powder or pneumatically driven pins. Sheet to sheet fastening is done with screws, button punching (crimping), or welds.

Composite Floor Deck

After installation and adequate fastening, a floor deck serves several purposes. It (a) acts as a working platform, (b) stabilizes the frame, (c) serves as a concrete form for the slab, and (d) reinforces the slab to carry the design loads applied during the life of the building. Composite decks are distinguished by the presence of shear connector devices as part of the deck. These devices are designed to mechanically lock the concrete and deck together so that the concrete and the deck work together to carry subsequent floor loads. These shear connector devices can be rolled-in embossments, lugs, holes, or wires welded to the panels. The deck profile can also be used to interlock concrete and steel.

Composite deck finishes are either galvanized (zinc coated) or phosphatized/painted. Galvanized deck has a zinc coating on both the top and bottom surfaces. The phosphatized/painted deck has a bare (phosphatized) top surface that will come into contact with the concrete. This bare top surface can be expected to develop rust before the concrete is placed. The bottom side of the deck has a primer coat of paint.

A composite floor deck is normally installed so the panel ends do not overlap on the supporting beams. Shear lugs or panel profile shapes often prevent a tight metal to metal fit if the panel ends overlap; the air gap caused by overlapping will prevent proper fusion with the structural steel supports when the panel end laps are shear stud welded.

Adequate end bearing of the deck must be obtained as shown on the drawings. If bearing is actually less in the field than shown on the drawings, further investigation is required.

Roof Deck

A roof deck is not designed to act compositely with other materials. A roof deck acts alone in transferring horizontal and vertical loads into the building frame. Roof deck rib openings are usually narrower than floor deck rib openings. This provides adequate support of the rigid thermal insulation board.

A roof deck is typically installed to endlap approximately 2″ over supports. However, it can be butted (or lapped more than 2″) to solve field fit problems. Since designers frequently use the installed deck system as part of the horizontal bracing system (the deck as a diaphragm), any fastening substitution or change should be approved by the designer. Continuous perimeter support of the deck is necessary to limit edge deflection in the finished roof and may be required for diaphragm shear transfer.

Standard roof deck finishes are galvanized or primer painted. The standard factory applied paint for roof decks is a primer paint and is not intended to weather for extended periods of time. Field painting or touching up of abrasions and deterioration of the primer coat or other protective finishes is the responsibility of the contractor.

Cellular Deck

A cellular deck is made by attaching a bottom steel sheet to a roof deck or composite floor deck panel. A cellular deck can be used in the same manner as a floor deck. Electrical, telephone, and data wires are easily run through the chase created between the deck panel and the bottom sheet.

When used as part of the electrical distribution system, the cellular deck must be installed so that the ribs line up and create a smooth cell transition at abutting ends. The joint that occurs at butting cell ends must be taped or otherwise sealed to prevent wet concrete from seeping into the cell. Cell interiors must be free of welding burrs, or other sharp intrusions, to prevent damage to wires.

When used as a roof deck, the bottom flat plate is usually left exposed to view. Care must be maintained during erection to keep good alignment and prevent damage.

A cellular deck is sometimes used with the flat plate on the top side to provide a flat working surface. Installation of the deck for this purpose requires special methods for attachment to the frame because the flat plate, now on the top, can prevent direct access to the deck material that is bearing on the structural steel. It may be advisable to treat the flat top surface to prevent slipping.

A cellular deck is always furnished galvanized or painted over galvanized.

Form Deck

A form deck can be any floor or roof deck product used as a concrete form. Connections to the frame are by the same methods used to anchor floor and roof decks. Welding washers are recommended when welding a deck that is less than 20 gauge thickness.

A form deck is furnished galvanized, prime painted, or uncoated. A galvanized deck must be used for those roof deck systems where a form deck is used to carry a lightweight insulating concrete fill.

Wood, Plastics & Comp. R0611 Wood Framing

R061110-30 Lumber Product Material Prices

The price of forest products fluctuates widely from location to location and from season to season depending upon economic conditions. The bare material prices in the unit cost sections of the data set show the National Average material prices in effect Jan. 1 of this data year. It must be noted that lumber prices in general may change significantly during the year.

Availability of certain items depends upon geographic location and must be checked prior to firm-price bidding.

Wood, Plastics & Comp. R0616 Sheathing

R061636-20 Plywood

There are two types of plywood used in construction: interior, which is moisture-resistant but not waterproofed, and exterior, which is waterproofed.

The grade of the exterior surface of the plywood sheets is designated by the first letter: A, for smooth surface with patches allowed; B, for solid surface with patches and plugs allowed; C, which may be surface plugged or may have knot holes up to 1″ wide; and D, which is used only for interior type plywood and may have knot holes up to 2-1/2″ wide. "Structural Grade" is specifically designed for engineered applications such as box beams. All CC & DD grades have roof and floor spans marked on them.

Underlayment-grade plywood runs from 1/4″ to 1-1/4″ thick. Thicknesses 5/8″ and over have optional tongue and groove joints which eliminate the need for blocking the edges. Underlayment 19/32″ and over may be referred to as Sturd-i-Floor.

The price of plywood can fluctuate widely due to geographic and economic conditions.

Typical uses for various plywood grades are as follows:

AA-AD Interior — cupboards, shelving, paneling, furniture

BB Plyform — concrete form plywood

CDX — wall and roof sheathing

Structural — box beams, girders, stressed skin panels

AA-AC Exterior — fences, signs, siding, soffits, etc.

Underlayment — base for resilient floor coverings

Overlaid HDO — high density for concrete forms & highway signs

Overlaid MDO — medium density for painting, siding, soffits & signs

303 Siding — exterior siding, textured, striated, embossed, etc.

Thermal & Moist. Protec. R0731 Shingles & Shakes

R073126-20 Roof Slate

16″, 18″ and 20″ are standard lengths, and slate usually comes in random widths. For standard 3/16″ thickness use 1-1/2″ copper nails. Allow for 3% breakage.

Thermal & Moist. Protec. R0751 Built-Up Bituminous Roofing

R075113-20 Built-Up Roofing

Asphalt is available in kegs of 100 lbs. each; coal tar pitch in 560 lb. kegs. Prepared roofing felts are available in a wide range of sizes, weights and characteristics. However, the most commonly used are #15 (432 S.F. per roll, 13 lbs. per square) and #30 (216 S.F. per roll, 27 lbs. per square).

Inter-ply bitumen varies from 24 lbs. per sq. (asphalt) to 30 lbs. per sq. (coal tar) per ply, MF4@ 25%. Flood coat bitumen also varies from 60 lbs. per sq. (asphalt) to 75 lbs. per sq. (coal tar), MF4@ 25%. Expendable equipment (mops, brooms, screeds, etc.) runs about 16% of the bitumen cost. For new, inexperienced crews this factor may be much higher.

A rigid insulation board is typically applied in two layers. The first is mechanically attached to nailable decks or spot or solid mopped to non-nailable decks; the second layer is then spot or solid mopped to the first layer. Membrane application follows the insulation, except in protected membrane roofs, where the membrane goes down first and the insulation on top, followed with ballast (stone or concrete pavers). Insulation and related labor costs are NOT included in prices for built-up roofing.

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R075213-30 Modified Bitumen Roofing

The cost of modified bitumen roofing is highly dependent on the type of installation that is planned. Installation is based on the type of modifier used in the bitumen. The two most popular modifiers are atactic polypropylene (APP) and styrene butadiene styrene (SBS). The modifiers are added to heated bitumen during the manufacturing process to change its characteristics. A polyethylene, polyester or fiberglass reinforcing sheet is then sandwiched between layers of this bitumen. When completed, the result is a pre-assembled, built-up roof that has increased elasticity and weatherability. Some manufacturers include a surfacing material such as ceramic or mineral granules, metal particles or sand.

The preferred method of adhering SBS-modified bitumen roofing to the substrate is with hot-mopped asphalt (much the same as built-up roofing). This installation method requires a tar kettle/pot to heat the asphalt, as well as the labor, tools and equipment necessary to distribute and spread the hot asphalt.

The alternative method for applying APP and SBS modified bitumen is as follows. A skilled installer uses a torch to melt a small pool of bitumen off the membrane. This pool must form across the entire roll for proper adhesion. The installer must unroll the roofing at a pace slow enough to melt the bitumen, but fast enough to prevent damage to the rest of the membrane.

Modified bitumen roofing provides the advantages of both built-up and single-ply roofing. Labor costs are reduced over those of built-up roofing because only a single ply is necessary. The elasticity of single-ply roofing is attained with the reinforcing sheet and polymer modifiers. Modifieds have some self-healing characteristics and because of their multi-layer construction, they offer the reliability and safety of built-up roofing.

Thermal & Moist. Protec. R0784 Firestopping

R078413-30 Firestopping

Firestopping is the sealing of structural, mechanical, electrical and other penetrations through fire-rated assemblies. The basic components of firestop systems are safing insulation and firestop sealant on both sides of wall penetrations and the top side of floor penetrations.

Pipe penetrations are assumed to be through concrete, grout, or joint compound and can be sleeved or unsleeved. Costs for the penetrations and sleeves are not included. An annular space of 1″ is assumed. Escutcheons are not included.

A metallic pipe is assumed to be copper, aluminum, cast iron or similar metallic material. An insulated metallic pipe is assumed to be covered with a thermal insulating jacket of varying thickness and materials.

A non-metallic pipe is assumed to be PVC, CPVC, FR Polypropylene or similar plastic piping material. Intumescent firestop sealants or wrap strips are included. Collars on both sides of wall penetrations and a sheet metal plate on the underside of floor penetrations are included.

Ductwork is assumed to be sheet metal, stainless steel or similar metallic material. Duct penetrations are assumed to be through concrete, grout or joint compound. Costs for penetrations and sleeves are not included. An annular space of 1/2″ is assumed.

Multi-trade openings include costs for sheet metal forms, firestop mortar, wrap strips, collars and sealants as necessary.

Structural penetrations joints are assumed to be 1/2″ or less. CMU walls are assumed to be within 1-1/2″ of the metal deck. Drywall walls are assumed to be tight to the underside of metal decking.

Metal panel, glass or curtain wall systems include a spandrel area of 5′ filled with mineral wool foil-faced insulation. Fasteners and stiffeners are included.

Openings R0813 Metal Doors

R081313-20 Steel Door Selection Guide

Standard steel doors are classified into four levels, as recommended by the Steel Door Institute in the chart below. Each of the four levels offers a range of construction models and designs to meet architectural requirements for preference and appearance, including full flush, seamless, and stile & rail. Recommended minimum gauge requirements are also included.

For complete standard steel door construction specifications and available sizes, refer to the Steel Door Institute Technical Data Series, ANSI A250.8-98 (SDI-100), and ANSI A250.4-94 Test Procedure and Acceptance Criteria for Physical Endurance of Steel Door and Hardware Reinforcements.

Level		Model	Construction	For Full Flush or Seamless		
				Min. Gauge	Thickness (in)	Thickness (mm)
I	Standard Duty	1 2	Full Flush Seamless	20	0.032	0.8
II	Heavy Duty	1 2	Full Flush Seamless	18	0.042	1.0
III	Extra Heavy Duty	1 2 3	Full Flush Seamless *Stile & Rail	16	0.053	1.3
IV	Maximum Duty	1 2	Full Flush Seamless	14	0.067	1.6

*Stiles & rails are 16 gauge; flush panels, when specified, are 18 gauge

Openings R0851 Metal Windows

R085123-10 Steel Sash

An ironworker crew will erect 25 S.F. or 1.3 sash unit per hour, whichever is less.

A mechanic will point 30 L.F. per hour.

A painter will paint 90 S.F. per coat per hour.

A glazier production depends on light size.

Allow 1 lb. special steel sash putty per 16″ x 20″ light.

Openings R0852 Wood Windows

R085216-10 Window Estimates

To ensure a complete window estimate, be sure to include the material and labor costs for each window, as well as the material and labor costs for an interior wood trim set.

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R087110-10 Hardware Finishes

This table describes hardware finishes used throughout the industry. It also shows the base metal and the respective symbols in the three predominate systems of identification. Many of these are used in pricing descriptions in Division Eight.

US″	BMHA*	CDN^	Base	Description
US P	600	CP	Steel	Primed for Painting
US 1B	601	C1B	Steel	Bright Black Japanned
US 2C	602	C2C	Steel	Zinc Plated
US 2G	603	C2G	Steel	Zinc Plated
US 3	605	C3	Brass	Bright Brass, Clear Coated
US 4	606	C4	Brass	Satin Brass, Clear Coated
US 5	609	C5	Brass	Satin Brass, Blackened, Satin Relieved, Clear Coated
US 7	610	C7	Brass	Satin Brass, Blackened, Bright Relieved, Clear Coated
US 9	611	C9	Bronze	Bright Bronze, Clear Coated
US 10	612	C10	Bronze	Satin Bronze, Clear Coated
US 10A	641	C10A	Steel	Antiqued Bronze, Oiled and Lacquered
US 10B	613	C10B	Bronze	Antiqued Bronze, Oiled
US 11	616	C11	Bronze	Satin Bronze, Blackened, Satin Relieved, Clear Coated
US 14	618	C14	Brass/Bronze	Bright Nickel Plated, Clear Coated
US 15	619	C15	Brass/Bronze	Satin Nickel, Clear Coated
US 15A	620	C15A	Brass/Bronze	Satin Nickel Plated, Blackened, Satin Relieved, Clear Coated
US 17A	621	C17A	Brass/Bronze	Nickel Plated, Blackened, Relieved, Clear Coated
US 19	622	C19	Brass/Bronze	Flat Black Coated
US 20	623	C20	Brass/Bronze	Statuary Bronze, Light
US 20A	624	C20A	Brass/Bronze	Statuary Bronze, Dark
US 26	625	C26	Brass/Bronze	Bright Chromium
US 26D	626	C26D	Brass/Bronze	Satin Chromium
US 20	627	C27	Aluminum	Satin Aluminum Clear
US 28	628	C28	Aluminum	Anodized Dull Aluminum
US 32	629	C32	Stainless Steel	Bright Stainless Steel
US 32D	630	C32D	Stainless Steel	Stainless Steel
US 3	632	C3	Steel	Bright Brass Plated, Clear Coated
US 4	633	C4	Steel	Satin Brass, Clear Coated
US 7	636	C7	Steel	Satin Brass Plated, Blackened, Bright Relieved, Clear Coated
US 9	637	C9	Steel	Bright Bronze Plated, Clear Coated
US 5	638	C5	Steel	Satin Brass Plated, Blackened, Bright Relieved, Clear Coated
US 10	639	C10	Steel	Satin Bronze Plated, Clear Coated
US 10B	640	C10B	Steel	Antique Bronze, Oiled
US 10A	641	C10A	Steel	Antiqued Bronze, Oiled and Lacquered
US 11	643	C11	Steel	Satin Bronze Plated, Blackened, Bright Relieved, Clear Coated
US 14	645	C14	Steel	Bright Nickel Plated, Clear Coated
US 15	646	C15	Steel	Satin Nickel Plated, Clear Coated
US 15A	647	C15A	Steel	Nickel Plated, Blackened, Bright Relieved, Clear Coated
US 17A	648	C17A	Steel	Nickel Plated, Blackened, Relieved, Clear Coated
US 20	649	C20	Steel	Statuary Bronze, Light
US 20A	650	C20A	Steel	Statuary Bronze, Dark
US 26	651	C26	Steel	Bright Chromium Plated
US 26D	652	C26D	Steel	Satin Chromium Plated

* - BMHA Builders Hardware Manufacturing Association
″ - US Equivalent
^ - Canadian Equivalent
Japanning is imitating Asian lacquer work

R088110-10 Glazing Productivity

Some glass sizes are estimated by the "united inch" (height + width). The table below shows the number of lights glazed in an eight-hour period by the crew size indicated, for glass up to 1/4″ thick. Square or nearly square lights are more economical on a S.F. basis. Long slender lights will have a high S.F. installation cost. For insulated glass reduce production by 33%. For 1/2″ float glass reduce production by 50%. Production time for glazing with two glaziers per day averages: 1/4″ float glass 120 S.F.; 1/2″ float glass 55 S.F.; 1/2″ insulated glass 95 S.F.; 3/4″ insulated glass 75 S.F.

Glazing Method	United Inches per Light							
	40″	60″	80″	100″	135″	165″	200″	240″
Number of Men in Crew	1	1	1	1	2	3	3	4
Industrial sash, putty	60	45	24	15	18	—	—	—
With stops, putty bed	50	36	21	12	16	8	4	3
Wood stops, rubber	40	27	15	9	11	6	3	2
Metal stops, rubber	30	24	14	9	9	6	3	2
Structural glass	10	7	4	3	—	—	—	—
Corrugated glass	12	9	7	4	4	4	3	—
Storefronts	16	15	13	11	7	6	4	4
Skylights, putty glass	60	36	21	12	16	—	—	—
Thiokol set	15	15	11	9	9	6	3	2
Vinyl set, snap on	18	18	13	12	12	7	5	4
Maximum area per light	2.8 S.F.	6.3 S.F.	11.1 S.F.	17.4 S.F.	31.6 S.F.	47 S.F.	69 S.F.	100 S.F.

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R092000-50 Lath, Plaster and Gypsum Board

Gypsum board lath is available in 3/8″ thick × 16″ wide × 4′ long sheets as a base material for multi-layer plaster applications. It is also available as a base for either multi-layer or veneer plaster applications in 1/2″ and 5/8″ thick–4′ wide × 8′, 10′ or 12′ long sheets. Fasteners are screws or blued ring shank nails for wood framing and screws for metal framing.

Metal lath is available in diamond mesh patterns with flat or self-furring profiles. Paper backing is available for applications where excessive plaster waste needs to be avoided. A slotted mesh ribbed lath should be used in areas where the span between structural supports is greater than normal. Most metal lath comes in 27″ × 96″ sheets. Diamond mesh weighs 1.75, 2.5 or 3.4 pounds per square yard, slotted mesh lath weighs 2.75 or 3.4 pounds per square yard. Metal lath can be nailed, screwed or tied in place.

Many **accessories** are available. Corner beads, flat reinforcing strips, casing beads, control and expansion joints, furring brackets and channels are some examples. Note that accessories are not included in plaster or stucco line items.

Plaster is defined as a material or combination of materials that when mixed with a suitable amount of water, forms a plastic mass or paste. When applied to a surface, the paste adheres to it and subsequently hardens, preserving in a rigid state the form or texture imposed during the period of elasticity.

Gypsum plaster is made from ground calcined gypsum. It is mixed with aggregates and water for use as a base coat plaster.

Vermiculite plaster is a fire-retardant plaster covering used on steel beams, concrete slabs and other heavy construction materials. Vermiculite is a group name for certain clay minerals, hydrous silicates or aluminum, magnesium and iron that have been expanded by heat.

Perlite plaster is a plaster using perlite as an aggregate instead of sand. Perlite is a volcanic glass that has been expanded by heat.

Gauging plaster is a mix of gypsum plaster and lime putty that when applied produces a quick drying finish coat.

Veneer plaster is a one or two component gypsum plaster used as a thin finish coat over special gypsum board.

Keenes cement is a white cementitious material manufactured from gypsum that has been burned at a high temperature and ground to a fine powder. Alum is added to accelerate the set. The resulting plaster is hard and strong and accepts and maintains a high polish, hence it is used as a finishing plaster.

Stucco is a Portland cement based plaster used primarily as an exterior finish.

Plaster is used on both interior and exterior surfaces. Generally it is applied in multiple-coat systems. A three-coat system uses the terms scratch, brown and finish to identify each coat. A two-coat system uses base and finish to describe each coat. Each type of plaster and application system has attributes that are chosen by the designer to best fit the intended use.

Gypsum Plaster	2 Coat, 5/8″ Thick		3 Coat, 3/4″ Thick		
	Base	Finish	Scratch	Brown	Finish
Quantities for 100 S.Y.	1:3 Mix	2:1 Mix	1:2 Mix	1:3 Mix	2:1 Mix
Gypsum plaster	1,300 lb.		1,350 lb.	650 lb.	
Sand	1.75 C.Y.		1.85 C.Y.	1.35 C.Y.	
Finish hydrated lime		340 lb.			340 lb.
Gauging plaster		170 lb.			170 lb.

Vermiculite or Perlite Plaster	2 Coat, 5/8″ Thick		3 Coat, 3/4″ Thick		
Quantities for 100 S.Y.	Base	Finish	Scratch	Brown	Finish
Gypsum plaster	1,250 lb.		1,450 lb.	800 lb.	
Vermiculite or perlite	7.8 bags		8.0 bags	3.3 bags	
Finish hydrated lime		340 lb.			340 lb.
Gauging plaster		170 lb.			170 lb.

Stucco–Three-Coat System Quantities for 100 S.Y.	On Wood Frame	On Masonry
Portland cement	29 bags	21 bags
Sand	2.6 C.Y.	2.0 C.Y.
Hydrated lime	180 lb.	120 lb.

R092910-10 Levels of Gypsum Drywall Finish

In the past, contract documents often used phrases such as "industry standard" and "workmanlike finish" to specify the expected quality of gypsum board wall and ceiling installations. The vagueness of these descriptions led to unacceptable work and disputes.

In order to resolve this problem, four major trade associations concerned with the manufacture, erection, finish, and decoration of gypsum board wall and ceiling systems developed an industry-wide *Recommended Levels of Gypsum Board Finish*.

The finish of gypsum board walls and ceilings for specific final decoration is dependent on a number of factors. A primary consideration is the location of the surface and the degree of decorative treatment desired. Painted and unpainted surfaces in warehouses and other areas where appearance is normally not critical may simply require the taping of wallboard joints and 'spotting' of fastener heads. Blemish-free, smooth, monolithic surfaces often intended for painted and decorated walls and ceilings in habitated structures, ranging from single-family dwellings through monumental buildings, require additional finishing prior to the application of the final decoration.

Other factors to be considered in determining the level of finish of the gypsum board surface are (1) the type of angle of surface illumination (both natural and artificial lighting), and (2) the paint and method of application or the type and finish of wallcovering specified as the final decoration. Critical lighting conditions, gloss paints, and thin wall coverings require a higher level of gypsum board finish than heavily textured surfaces which are subsequently painted or surfaces which are to be decorated with heavy grade wall coverings.

The following descriptions were developed by the Association of the Wall and Ceiling Industries-International (AWCI), Ceiling & Interior Systems Construction Association (CISCA), Gypsum Association (GA), and Painting and Decorating Contractors of America (PDCA) as a guide.

Level 0: Used in temporary construction or wherever the final decoration has not been determined. Unfinished. No taping, finishing or corner beads are required. Also could be used where non-predecorated panels will be used in demountable-type partitions that are to be painted as a final finish.

Level 1: Frequently used in plenum areas above ceilings, in attics, in areas where the assembly would generally be concealed, or in building service corridors and other areas not normally open to public view. Some degree of sound and smoke control is provided; in some geographic areas, this level is referred to as "fire-taping," although this level of finish does not typically meet fire-resistant assembly requirements. Where a fire resistance rating is required for the gypsum board assembly, details of construction should be in accordance with reports of fire tests of assemblies that have met the requirements of the fire rating acceptable.

All joints and interior angles shall have tape embedded in joint compound. Accessories are optional at specifier discretion in corridors and other areas with pedestrian traffic. Tape and fastener heads need not be covered with joint compound. Surface shall be free of excess joint compound. Tool marks and ridges are acceptable.

Level 2: It may be specified for standard gypsum board surfaces in garages, warehouse storage, or other similar areas where surface appearance is not of primary importance.

All joints and interior angles shall have tape embedded in joint compound and shall be immediately wiped with a joint knife or trowel, leaving a thin coating of joint compound over all joints and interior angles. Fastener heads and accessories shall be covered with a coat of joint compound. Surface shall be free of excess joint compound. Tool marks and ridges are acceptable.

Level 3: Typically used in areas receiving heavy texture (spray or hand applied) finishes before final painting, or where commercial-grade (heavy duty) wall coverings are to be applied as the final decoration. This level of finish should not be used where smooth painted surfaces or where lighter weight wall coverings are specified. The prepared surface shall be coated with a drywall primer prior to the application of final finishes.

All joints and interior angles shall have tape embedded in joint compound and shall be immediately wiped with a joint knife or trowel, leaving a thin coating of joint compound over all joints and interior angles. One additional coat of joint compound shall be applied over all joints and interior angles. Fastener heads and accessories shall be covered with two separate coats of joint compound. All joint compounds shall be smooth and free of tool marks and ridges. The prepared surface shall be covered with a drywall primer prior to the application of the final decoration.

Level 4: This level should be used where residential grade (light duty) wall coverings, flat paints, or light textures are to be applied. The prepared surface shall be coated with a drywall primer prior to the application of final finishes. Release agents for wall coverings are specifically formulated to minimize damage if coverings are subsequently removed.

The weight, texture, and sheen level of the wall covering material selected should be taken into consideration when specifying wall coverings over this level of drywall treatment. Joints and fasteners must be sufficiently concealed if the wall covering material is lightweight, contains limited pattern, has a glossy finish, or has any combination of these features. In critical lighting areas, flat paints applied over light textures tend to reduce joint photographing. Gloss, semi-gloss, and enamel paints are not recommended over this level of finish.

All joints and interior angles shall have tape embedded in joint compound and shall be immediately wiped with a joint knife or trowel, leaving a thin coating of joint compound over all joints and interior angles. In addition, two separate coats of joint compound shall be applied over all flat joints and one separate coat of joint compound applied over interior angles. Fastener heads and accessories shall be covered with three separate coats of joint compound. All joint compounds shall be smooth and free of tool marks and ridges. The prepared surface shall be covered with a drywall primer like Sheetrock® First Coat prior to the application of the final decoration.

Level 5: The highest quality finish is the most effective method to provide a uniform surface and minimize the possibility of joint photographing and of fasteners showing through the final decoration. This level of finish is required where gloss, semi-gloss, or enamel is specified; when flat joints are specified over an untextured surface; or where critical lighting conditions occur. The prepared surface shall be coated with a drywall primer prior to the application of the final decoration.

All joints and interior angles shall have tape embedded in joint compound and be immediately wiped with a joint knife or trowel, leaving a thin coating of joint compound over all joints and interior angles. Two separate coats of joint compound shall be applied over all flat joints and one separate coat of joint compound applied over interior angles. Fastener heads and accessories shall be covered with three separate coats of joint compound.

A thin skim coat of joint compound shall be trowel applied to the entire surface. Excess compound is immediately troweled off, leaving a film or skim coating of compound completely covering the paper. As an alternative to a skim coat, a material manufactured especially for this purpose may be applied such as Sheetrock® Tuff-Hide primer surfacer. The surface must be smooth and free of tool marks and ridges. The prepared surface shall be covered with a drywall primer prior to the application of the final decoration.

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R096613-10 Terrazzo Floor

The table below lists quantities required for 100 S.F. of 5/8″ terrazzo topping, either bonded or not bonded.

Description	Bonded to Concrete 1-1/8″ Bed, 1:4 Mix	Not Bonded 2-1/8″ Bed and 1/4″ Sand
Portland cement, 94 lb. Bag	6 bags	8 bags
Sand	10 C.F.	20 C.F.
Divider strips, 4′ squares	50 L.F.	50 L.F.
Terrazzo fill, 50 lb. Bag	12 bags	12 bags
15 Lb. tarred felt		1 C.S.F.
Mesh 2 x 2 #14 galvanized		1 C.S.F.
Crew J-3	0.77 days	0.87 days

2′ × 2′ panels require 1.00 L.F. divider strip per S.F.
3′ × 3′ panels require 0.67 L.F. divider strip per S.F.
4′ × 4′ panels require 0.50 L.F. divider strip per S.F.
5′ × 5′ panels require 0.40 L.F. divider strip per S.F.
6′ × 6′ panels require 0.33 L.F. divider strip per S.F.

R097223-10 Wall Covering

The table below lists the quantities required for 100 S.F. of wall covering.

Description	Medium-Priced Paper	Expensive Paper
Paper	1.6 dbl. rolls	1.6 dbl. rolls
Wall sizing	0.25 gallon	0.25 gallon
Vinyl wall paste	0.6 gallon	0.6 gallon
Apply sizing	0.3 hour	0.3 hour
Apply paper	1.2 hours	1.5 hours

Most wallpapers now come in double rolls only.
To remove old paper, allow 1.3 hours per 100 S.F.

Finishes R0991 Painting

R099100-10 Painting Estimating Techniques

Proper estimating methodology is needed to obtain an accurate painting estimate. There is no known reliable shortcut or square foot method. The following steps should be followed:

- List all surfaces to be painted, with an accurate quantity (area) of each. Items having similar surface condition, finish, application method and accessibility may be grouped together.
- List all the tasks required for each surface to be painted, including surface preparation, masking, and protection of adjacent surfaces. Surface preparation may include minor repairs, washing, sanding and puttying.
- Select the proper Means line for each task. Review and consider all adjustments to labor and materials for type of paint and location of work. Apply the height adjustment carefully. For instance, when applying the adjustment for work over 8' high to a wall that is 12' high, apply the adjustment only to the area between 8' and 12' high, and not to the entire wall.

When applying more than one percent (%) adjustment, apply each to the base cost of the data, rather than applying one percentage adjustment on top of the other.

When estimating the cost of painting walls and ceilings remember to add the brushwork for all cut-ins at inside corners and around windows and doors as a LF measure. One linear foot of cut-in with a brush equals one square foot of painting.

All items for spray painting include the labor for roll-back.

Deduct for openings greater than 100 SF or openings that extend from floor to ceiling and are greater than 5' wide. Do not deduct small openings.

The cost of brushes, rollers, ladders and spray equipment are considered part of a painting contractor's overhead, and should not be added to the estimate. The cost of rented equipment such as scaffolding and swing staging should be added to the estimate.

R099100-20 Painting

Item	Coat	One Gallon Covers			In 8 Hours a Laborer Covers			Labor-Hours per 100 S.F.		
		Brush	Roller	Spray	Brush	Roller	Spray	Brush	Roller	Spray
Paint wood siding	prime	250 S.F.	225 S.F.	290 S.F.	1150 S.F.	1300 S.F.	2275 S.F.	.695	.615	.351
	others	270	250	290	1300	1625	2600	.615	.492	.307
Paint exterior trim	prime	400	—	—	650	—	—	1.230	—	—
	1st	475	—	—	800	—	—	1.000	—	—
	2nd	520	—	—	975	—	—	.820	—	—
Paint shingle siding	prime	270	255	300	650	975	1950	1.230	.820	.410
	others	360	340	380	800	1150	2275	1.000	.695	.351
Stain shingle siding	1st	180	170	200	750	1125	2250	1.068	.711	.355
	2nd	270	250	290	900	1325	2600	.888	.603	.307
Paint brick masonry	prime	180	135	160	750	800	1800	1.066	1.000	.444
	1st	270	225	290	815	975	2275	.981	.820	.351
	2nd	340	305	360	815	1150	2925	.981	.695	.273
Paint interior plaster or drywall	prime	400	380	495	1150	2000	3250	.695	.400	.246
	others	450	425	495	1300	2300	4000	.615	.347	.200
Paint interior doors and windows	prime	400	—	—	650	—	—	1.230	—	—
	1st	425	—	—	800	—	—	1.000	—	—
	2nd	450	—	—	975	—	—	.820	—	—

Special Construction R1311 Swimming Pools

R131113-20 Swimming Pools

Pool prices given per square foot of surface area include pool structure, filter and chlorination equipment, pumps, related piping, ladders/steps, maintenance kit, skimmer and vacuum system. Decks and electrical service to equipment are not included.

Residential in-ground pool construction can be divided into two categories: vinyl lined and gunite. Vinyl lined pool walls are constructed of different materials including wood, concrete, plastic or metal. The bottom is often graded with sand over which the vinyl liner is installed. Vermiculite or soil cement bottoms may be substituted for an added cost.

Gunite pool construction is used both in residential and municipal installations. These structures are steel reinforced for strength and finished with a white cement limestone plaster.

Municipal pools will have a higher cost because plumbing codes require more expensive materials, chlorination equipment and higher filtration rates.

Municipal pools greater than 1,800 S.F. require gutter systems to control waves. This gutter may be formed into the concrete wall. Often a vinyl/stainless steel gutter or gutter/wall system is specified, which will raise the pool cost.

Competition pools usually require tile bottoms and sides with contrasting lane striping, which will also raise the pool cost.

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R133113-10 Air Supported Structures

Air supported structures are made from fabrics that can be classified into two groups: temporary and permanent. Temporary fabrics include nylon, woven polyethylene, vinyl film, and vinyl coated dacron. These have lifespans that range from five to fifteen plus years. The cost per square foot includes a fabric shell, tension cables, primary and back-up inflation systems and doors. The lower cost structures are used for construction shelters, bulk storage and pond covers. The more expensive are used for recreational structures and warehouses.

Permanent fabrics are teflon coated fiberglass. The life of this structure is twenty plus years. The high cost limits its application to architectural designed structures which call for a clear span covered area, such as stadiums and convention centers. Both temporary and permanent structures are available in translucent fabrics which eliminate the need for daytime lighting.

Areas to be covered vary from 10,000 S.F. to any area up to 1000 feet wide by any length. Height restrictions range from a maximum of 1/2 of the width to a minimum of 1/6 of the width. Erection of even the largest of the temporary structures requires no more than a week.

Centrifugal fans provide the inflation necessary to support the structure during application of live loads. Airlocks are usually used at large entrances to prevent loss of static pressure. Some manufacturers employ propeller fans which generate sufficient airflow (30,000 CFM) to eliminate the need for airlocks. These fans may also be automatically controlled to resist high wind conditions, regulate humidity (air changes), and provide cooling and heat.

Insulation can be provided with the addition of a second or even third interior liner, creating a dead air space with an "R" value of four to nine. Some structures allow for the liner to be collapsed into the outer shell to enable the internal heat to melt accumulated snow. For cooling or air conditioning, the exterior face of the liner can be aluminized to reflect the sun's heat.

R133113-90 Seismic Bracing

Sometimes referred to as anti-sway bracing, this support system is required in earthquake areas. The individual components must be assembled to make a required system.

Example

C-Clamp 3/8" rod	2 ea.
Rod, continuous thread 3/8"	10 L.F.
Field, weld 1"	2 ea.

Additionally, height factors must be taken into account. Add the following percentages to labor for elevated installations:

15' to 20' high	10%
21' to 25' high	20%
26' to 30' high	30%
31' to 35' high	40%
36' to 40' high	50%
41' to 50' high	60%

R133419-10 Pre-Engineered Steel Buildings

These buildings are manufactured by many companies and normally erected by franchised dealers throughout the U.S. The four basic types are: Rigid Frames, Truss type, Post and Beam and the Sloped Beam type. The most popular roof slope is a low pitch of 1" in 12". The minimum economical area of these buildings is about 3000 S.F. of floor area. Bay sizes are usually 20' to 24' but can go as high as 30' with heavier girts and purlins. Eave heights are usually 12' to 24' with 18' to 20' most typical.

Material prices shown in the Unit Price section are bare costs for the building shell only and do not include floors, foundations, anchor bolts, interior finishes or utilities. Costs assume at least three bays of 24' each, a 1" in 12" roof slope, and they are based on a 30 psf roof load and a 20 psf wind load (wind load is a function of wind speed, building height, and terrain characteristics; this should be determined by a Registered Structural Engineer) and no unusual requirements. Costs include the structural frame, 26 ga. non-insulated colored corrugated or ribbed roofing and siding panels, fasteners, closures, trim and flashing but no allowance for insulation, doors, windows, skylights, gutters or downspouts. Very large projects would generally cost less for materials than the prices shown. For roof panel substitutions and wall panel substitutions, see appropriate Unit Price sections.

Conditions at the site, weather, shape and size of the building, and labor availability will affect the erection cost of the building.

R133423-30 Dome Structures

Steel — The four types are Lamella, Schwedler, Arch and Geodesic. For maximum economy, the rise should be about 15 to 20% of the diameter. Most common diameters are in the 200' to 300' range. Lamella domes weigh about 5 P.S.F. of floor area less than Schwedler domes. The Schwedler dome weight in lbs. per S.F. approaches .046 times the diameter. Domes below 125' diameter weigh .07 times the diameter and the cost per ton of steel is higher. See R051223-20 for estimating weight.

Wood — Small domes are of sawn lumber. Larger ones are laminated. In larger sizes, triaxial and triangular cost about the same; radial domes cost more. Radial domes are economical in the 60' to 70' diameter range. The most economical range of all types is 80' to 200' diameters. Diameters can run over 400'. All costs are quoted above the foundation. Prices include 2" decking and a tension tie ring in place.

Plywood — Stock prefab geodesic domes are available with diameters from 24' to 60'.

Fiberglass — Aluminum framed translucent sandwich panels with spans from 5' to 45' are commercially available.

Aluminum — Stressed skin aluminum panels form geodesic domes with spans ranging from 82' to 232'. An aluminum space truss, triangulated or nontriangulated, with aluminum or clear acrylic closure panels can be used for clear spans of 40' to 415'.

R142000-10 Freight Elevators

Capacities run from 2,000 lbs. to over 100,000 lbs. with 3,000 lbs. to 10,000 lbs. most common. Travel speeds are generally lower and the control is less intricate than on passenger elevators. Costs in the Unit Price sections are for hydraulic and geared elevators.

R142000-20 Elevator Selective Costs See R142000-40 for cost development.

	Passenger		Freight		Hospital	
A. Base Unit	Hydraulic	Electric	Hydraulic	Electric	Hydraulic	Electric
Capacity	1,500 lb.	2,000 lb.	2,000 lb.	4,000 lb.	4,000 lb.	4,000 lb.
Speed	100 F.P.M.	200 F.P.M.	100 F.P.M.	200 F.P.M.	100 F.P.M.	200 F.P.M.
#Stops/Travel Ft.	2/12	4/40	2/20	4/40	2/20	4/40
Push Button Oper.	Yes	Yes	Yes	Yes	Yes	Yes
Telephone Box & Wire	"	"	"	"	"	"
Emergency Lighting	"	"	No	No	"	"
Cab	Plastic Lam. Walls	Plastic Lam. Walls	Painted Steel	Painted Steel	Plastic Lam. Walls	Plastic Lam. Walls
Cove Lighting	Yes	Yes	No	No	Yes	Yes
Floor	V.C.T.	V.C.T.	Wood w/Safety Treads	Wood w/Safety Treads	V.C.T.	V.C.T.
Doors, & Speedside Slide	Yes	Yes	Yes	Yes	Yes	Yes
Gates, Manual	No	No	No	No	No	No
Signals, Lighted Buttons	Car and Hall	Car and Hall	Car and Hall	Car and Hall	Car and Hall	Car and Hall
O.H. Geared Machine	N.A.	Yes	N.A.	Yes	N.A.	Yes
Variable Voltage Contr.	"	"	N.A.	"	"	"
Emergency Alarm	Yes	"	Yes	"	Yes	"
Class "A" Loading	N.A.	N.A.	"	"	N.A.	N.A.

R142000-30 Passenger Elevators

Electric elevators are used generally but hydraulic elevators can be used for lifts up to 70′ and where large capacities are required. Hydraulic speeds are limited to 200 F.P.M. but cars are self leveling at the stops. On low rises, hydraulic installation runs about 15% less than standard electric types but on higher rises this installation cost advantage is reduced. Maintenance of hydraulic elevators is about the same as the electric type but the underground portion is not included in the maintenance contract.

In electric elevators there are several control systems available, the choice of which will be based upon elevator use, size, speed and cost criteria. The two types of drives are geared for low speeds and gearless for 450 F.P.M. and over.

The tables on the preceding pages illustrate typical installed costs of the various types of elevators available.

R142000-40 Elevator Cost Development

To price a new car or truck from the factory, you must start with the manufacturer's basic model, then add or exchange optional equipment and features. The same is true for pricing elevators.

Example:

Requirement: One-passenger elevator, five-story hydraulic, 2,500 lb. capacity, 12′ floor to floor, speed 150 F.P.M., emergency power switching and maintenance contract.

Description	Adjustment
A. Base Elevator: Hydraulic Passenger, 1500 lb. Capacity, 100 fpm, 2 Stops, Standard Finish	1 Ea.
B. Capacity Adjustment (2,500 lb.)	1 Ea.
C. Excess Travel Adjustment: 48′ Total Travel (4 x 12′) minus 12′ Base Unit Travel =	36 V.L.F.
D. Stops Adjustment: 5 Total Stops minus 2 Stops (Base Unit) =	3 Stops
E. Speed Adjustment (150 F.P.M.)	1 Ea.
F. Options:	
1. Intercom Service	1 Ea.
2. Emergency Power Switching, Automatic	1 Ea.
3. Stainless Steel Entrance Doors	5 Ea.
4. Maintenance Contract (12 Months)	1 Ea.
5. Position Indicator for main floor level (none indicated in Base Unit)	1 Ea.

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R143210-20 Moving Ramps and Walks

These are a specialized form of conveyor 3′ to 6′ wide with capacities of 3,600 to 18,000 persons per hour. Maximum speed is 140 F.P.M. and normal incline is 0° to 15°.

Local codes will determine the maximum angle. Outdoor units would require additional weather protection.

R220102-20 Labor Adjustment Factors

Labor Adjustment Factors are provided for Divisions 21, 22, and 23 to assist the mechanical estimator account for the various complexities and special conditions of any particular project. While a single percentage has been entered on each line of Division 22 01 02.20, it should be understood that these are just suggested midpoints of ranges of values commonly used by mechanical estimators. They may be increased or decreased depending on the severity of the special conditions.

The group for "existing occupied buildings" has been the subject of requests for explanation. Actually there are two stages to this group: buildings that are existing and "finished" but unoccupied, and those that also are occupied. Buildings that are "finished" may result in higher labor costs due to the workers having to be more careful not to damage finished walls, ceilings, floors, etc. and may necessitate special protective coverings and barriers. Also corridor bends and doorways may not accommodate long pieces of pipe or larger pieces of equipment. Work above an already hung ceiling can be very time consuming. The addition of occupants may force the work to be done on premium time (nights and/or weekends), eliminate the possible use of some preferred tools such as pneumatic drivers, powder charged drivers, etc. The estimator should evaluate the access to the work area and just how the work is going to be accomplished to arrive at an increase in labor costs over "normal" new construction productivity.

R220105-10 Demolition (Selective vs. Removal for Replacement)

Demolition can be divided into two basic categories.

One type of demolition involves the removal of material with no concern for its replacement. The labor-hours to estimate this work are found under "Selective Demolition" in the Fire Protection, Plumbing and HVAC Divisions. It is selective in that individual items or all the material installed as a system or trade grouping such as plumbing or heating systems are removed. This may be accomplished by the easiest way possible, such as sawing, torch cutting, or sledge hammering as well as simple unbolting.

The second type of demolition is the removal of some items for repair or replacement. This removal may involve careful draining, opening of unions, disconnecting and tagging electrical connections, capping pipes/ducts to prevent entry of debris or leakage of the material contained as well as transporting the item away from its in-place location to a truck/dumpster. An approximation of the time required to accomplish this type of demolition is to use half of the time indicated as necessary to install a new unit. For example: installation of a new pump might be listed as requiring 6 labor-hours so if we had to estimate the removal of the old pump we would allow an additional 3 hours for a total of 9 hours. That is, the complete replacement of a defective pump with a new pump would be estimated to take 9 labor-hours.

R221113-50 Pipe Material Considerations

1. Malleable fittings should be used for gas service.
2. Malleable fittings are used where there are stresses/strains due to expansion and vibration.
3. Cast fittings may be broken as an aid to disassembling heating lines frozen by long use, temperature and minerals.
4. A cast iron pipe is extensively used for underground and submerged service.
5. Type M (light wall) copper tubing is available in hard temper only and is used for nonpressure and less severe applications than K and L.
6. Type L (medium wall) copper tubing, available hard or soft for interior service.
7. Type K (heavy wall) copper tubing, available in hard or soft temper for use where conditions are severe. For underground and interior service.
8. Hard drawn tubing requires fewer hangers or supports but should not be bent. Silver brazed fittings are recommended, but soft solder is normally used.
9. Type DMV (very light wall) copper tubing designed for drainage, waste and vent plus other non-critical pressure services.

Domestic/Imported Pipe and Fittings Costs

The prices shown in this publication for steel/cast iron pipe and steel, cast iron, and malleable iron fittings are based on domestic production sold at the normal trade discounts. The above listed items of foreign manufacture may be available at prices 1/3 to 1/2 of those shown. Some imported items after minor machining or finishing operations are being sold as domestic to further complicate the system.

Caution: Most pipe prices in this data set also include a coupling and pipe hangers which for the larger sizes can add significantly to the per foot cost and should be taken into account when comparing "book cost" with the quoted supplier's cost.

Heating, Ventilating & A.C. R2356 Solar Energy Heating Equipment

R235616-60 Solar Heating (Space and Hot Water)

Collectors should face as close to due South as possible, but variations of up to 20 degrees on either side of true South are acceptable. Local climate and collector type may influence the choice between east or west deviations. Obviously they should be located so they are not shaded from the sun's rays. Incline collectors at a slope of latitude minus 5 degrees for domestic hot water and latitude plus 15 degrees for space heating.

Flat plate collectors consist of a number of components as follows: Insulation to reduce heat loss through the bottom and sides of the collector. The enclosure which contains all the components in this assembly is usually weatherproof and prevents dust, wind and water from coming in contact with the absorber plate. The cover plate usually consists of one or more layers of a variety of glass or plastic and reduces the reradiation by creating an air space which traps the heat between the cover and the absorber plates.

The absorber plate must have a good thermal bond with the fluid passages. The absorber plate is usually metallic and treated with a surface coating which improves absorptivity. Black or dark paints or selective coatings are used for this purpose, and the design of this passage and plate combination helps determine a solar system's effectiveness.

Heat transfer fluid passage tubes are attached above and below or integral with an absorber plate for the purpose of transferring thermal energy from the absorber plate to a heat transfer medium. The heat exchanger is a device for transferring thermal energy from one fluid to another.

Piping and storage tanks should be well insulated to minimize heat losses.

Size domestic water heating storage tanks to hold 20 gallons of water per user, minimum, plus 10 gallons per dishwasher or washing machine. For domestic water heating an optimum collector size is approximately 3/4 square foot of area per gallon of water storage. For space heating of residences and small commercial applications the collector is commonly sized between 30% and 50% of the internal floor area. For space heating of large commercial applications, collector areas less than 30% of the internal floor area can still provide significant heat reductions.

A supplementary heat source is recommended for Northern states for December through February.

The solar energy transmission per square foot of collector surface varies greatly with the material used. Initial cost, heat transmittance and useful life are obviously interrelated.

Heating, Ventilating & A.C. R2360 Central Cooling Equipment

R236000-20 Air Conditioning Requirements

BTUs per hour per S.F. of floor area and S.F. per ton of air conditioning.

Type of Building	BTU/Hr per S.F.	S.F. per Ton	Type of Building	BTU/Hr per S.F.	S.F. per Ton	Type of Building	BTU/Hr per S.F.	S.F. per Ton
Apartments, Individual	26	450	Dormitory, Rooms	40	300	Libraries	50	240
Corridors	22	550	Corridors	30	400	Low Rise Office, Exterior	38	320
Auditoriums & Theaters	40	300/18*	Dress Shops	43	280	Interior	33	360
Banks	50	240	Drug Stores	80	150	Medical Centers	28	425
Barber Shops	48	250	Factories	40	300	Motels	28	425
Bars & Taverns	133	90	High Rise Office—Ext. Rms.	46	263	Office (small suite)	43	280
Beauty Parlors	66	180	Interior Rooms	37	325	Post Office, Individual Office	42	285
Bowling Alleys	68	175	Hospitals, Core	43	280	Central Area	46	260
Churches	36	330/20*	Perimeter	46	260	Residences	20	600
Cocktail Lounges	68	175	Hotel, Guest Rooms	44	275	Restaurants	60	200
Computer Rooms	141	85	Corridors	30	400	Schools & Colleges	46	260
Dental Offices	52	230	Public Spaces	55	220	Shoe Stores	55	220
Dept. Stores, Basement	34	350	Industrial Plants, Offices	38	320	Shop'g. Ctrs., Supermarkets	34	350
Main Floor	40	300	General Offices	34	350	Retail Stores	48	250
Upper Floor	30	400	Plant Areas	40	300	Specialty	60	200

*Persons per ton
12,000 BTU = 1 ton of air conditioning

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R260519-90 Wire

Wire quantities are taken off by either measuring each cable run or by extending the conduit and raceway quantities times the number of conductors in the raceway. Ten percent should be added for waste and tie-ins. Keep in mind that the unit of measure of wire is C.L.F. not L.F. as in raceways so the formula would read:

$$\frac{(\text{L.F. Raceway x No. of Conductors}) \times 1.10}{100} = \text{C.L.F.}$$

Price per C.L.F. of wire includes:
1. Setting up wire coils or spools on racks
2. Attaching wire to pull in means
3. Measuring and cutting wire
4. Pulling wire into a raceway
5. Identifying and tagging

Price does not include:
1. Connections to breakers, panelboards, or equipment
2. Splices

Job Conditions: Productivity is based on new construction to a height of 15′ using rolling staging in an unobstructed area. Material staging is assumed to be within 100′ of work being performed.

Economy of Scale: If more than three wires at a time are being pulled, deduct the following percentages from the labor of that grouping:

4-5 wires	25%
6-10 wires	30%
11-15 wires	35%
over 15	40%

If a wire pull is less than 100′ in length and is interrupted several times by boxes, lighting outlets, etc., it may be necessary to add the following lengths to each wire being pulled:

Junction box to junction box	2 L.F.
Lighting panel to junction box	6 L.F.
Distribution panel to sub panel	8 L.F.
Switchboard to distribution panel	12 L.F.
Switchboard to motor control center	20 L.F.
Switchboard to cable tray	40 L.F.

Measure of Drops and Riser: It is important when taking off wire quantities to include the wire for drops to electrical equipment. If heights of electrical equipment are not clearly stated, use the following guide:

	Bottom A.F.F.	Top A.F.F.	Inside Cabinet
Safety switch to 100A	5′	6′	2′
Safety switch 400 to 600A	4′	6′	3′
100A panel 12 to 30 circuit	4′	6′	3′
42 circuit panel	3′	6′	4′
Switch box	3′	3′6″	1′
Switchgear	0′	8′	8′
Motor control centers	0′	8′	8′
Transformers - wall mount	4′	8′	2′
Transformers - floor mount	0′	12′	4′

R260519-92 Minimum Copper and Aluminum Wire Size Allowed for Various Types of Insulation

Minimum Wire Sizes									
	Copper		Aluminum			Copper		Aluminum	
Amperes	THW THWN or XHHW	THHN XHHW *	THW XHHW	THHN XHHW *	Amperes	THW THWN or XHHW	THHN XHHW *	THW XHHW	THHN XHHW *
15A	#14	#14	#12	#12	195	3/0	2/0	250kcmil	4/0
20	#12	#12	#10	#10	200	3/0	3/0	250kcmil	4/0
25	#10	#10	#10	#10	205	4/0	3/0	250kcmil	4/0
30	#10	#10	# 8	# 8	225	4/0	3/0	300kcmil	250kcmil
40	# 8	# 8	# 8	# 8	230	4/0	4/0	300kcmil	250kcmil
45	# 8	# 8	# 6	# 8	250	250kcmil	4/0	350kcmil	300kcmil
50	# 8	# 8	# 6	# 6	255	250kcmil	4/0	400kcmil	300kcmil
55	# 6	# 8	# 4	# 6	260	300kcmil	4/0	400kcmil	350kcmil
60	# 6	# 6	# 4	# 6	270	300kcmil	250kcmil	400kcmil	350kcmil
65	# 6	# 6	# 4	# 4	280	300kcmil	250kcmil	500kcmil	350kcmil
75	# 4	# 6	# 3	# 4	285	300kcmil	250kcmil	500kcmil	400kcmil
85	# 4	# 4	# 2	# 3	290	350kcmil	250kcmil	500kcmil	400kcmil
90	# 3	# 4	# 2	# 2	305	350kcmil	300kcmil	500kcmil	400kcmil
95	# 3	# 4	# 1	# 2	310	350kcmil	300kcmil	500kcmil	500kcmil
100	# 3	# 3	# 1	# 2	320	400kcmil	300kcmil	600kcmil	500kcmil
110	# 2	# 3	1/0	# 1	335	400kcmil	350kcmil	600kcmil	500kcmil
115	# 2	# 2	1/0	# 1	340	500kcmil	350kcmil	600kcmil	500kcmil
120	# 1	# 2	1/0	1/0	350	500kcmil	350kcmil	700kcmil	500kcmil
130	# 1	# 2	2/0	1/0	375	500kcmil	400kcmil	700kcmil	600kcmil
135	1/0	# 1	2/0	1/0	380	500kcmil	400kcmil	750kcmil	600kcmil
150	1/0	# 1	3/0	2/0	385	600kcmil	500kcmil	750kcmil	600kcmil
155	2/0	1/0	3/0	3/0	420	600kcmil	500kcmil		700kcmil
170	2/0	1/0	4/0	3/0	430		500kcmil		750kcmil
175	2/0	2/0	4/0	3/0	435		600kcmil		750kcmil
180	3/0	2/0	4/0	4/0	475		600kcmil		

*Dry Locations Only

Notes:

1. Size #14 to 4/0 is in AWG units (American Wire Gauge).
2. Size 250 to 750 is in kcmil units (Thousand Circular Mils).
3. Use next higher ampere value if exact value is not listed in table.
4. For loads that operate continuously increase ampere value by 25% to obtain proper wire size.
5. Table R260519-92 has been written for estimating only. It is based on an ambient temperature of 30°C (86° F). For ambient temperature other than 30°C (86° F), ampacity correction factors will be applied.

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R260533-22 Conductors in Conduit

The table below lists the maximum number of conductors for various sized conduit using THW, TW or THWN insulations.

Copper Wire Size	Conduit Size																										
	½"			¾"			1"			1-¼"			1-½"			2"			2-½"			3"		3-½"		4"	
	TW	THW	THWN	TW	THW	THWN	TW	THW	THWN	TW	THW	THWN	TW	THW	THWN	TW	THW	THWN	TW	THW	THWN	THW	THWN	THW	THWN	THW	THWN
#14	9	6	13	15	10	24	25	16	39	44	29	69	60	40	94	99	65	154	142	93		143		192			
#12	7	4	10	12	8	18	19	13	29	35	24	51	47	32	70	78	53	114	111	76	164	117		157			
#10	5	4	6	9	6	11	15	11	18	26	19	32	36	26	44	60	43	73	85	61	104	95	160	127		163	
#8	2	1	3	4	3	5	7	5	9	12	10	16	17	13	22	28	22	36	40	32	51	49	79	66	106	85	136
#6		1	1		2	4		4	6		7	11		10	15		16	26		23	37	36	57	48	76	62	98
#4		1	1		1	2		3	4		5	7		7	9		12	16		17	22	27	35	36	47	47	60
#3		1	1		1	1		2	3		4	6		6	8		10	13		15	19	23	29	31	39	40	51
#2		1	1		1	1		2	3		4	5		5	7		9	11		13	16	20	25	27	33	34	43
#1					1	1		1	1		3	3		4	5		6	8		9	12	14	18	19	25	25	32
1/0					1	1		1	1		2	3		3	4		5	7		8	10	12	15	16	21	21	27
2/0					1	1		1	1		1	2		3	3		5	6		7	8	10	13	14	17	18	22
3/0					1	1		1	1		1	1		2	3		4	5		6	7	9	11	12	14	15	18
4/0						1		1	1		1	1		1	2		3	4		5	6	7	9	10	12	13	15
250 kcmil								1	1		1	1		1	1		2	3		4	4	6	7	8	10	10	12
300								1	1		1	1		1	1		2	3		3	4	5	6	7	8	9	11
350									1		1	1		1	1		1	2		3	3	4	5	6	7	8	9
400											1	1		1	1		1	1		2	3	4	5	5	6	7	8
500											1	1		1	1		1	1		1	2	3	4	4	5	6	7
600												1		1	1		1	1		1	1	3	3	4	4	5	5
700														1	1		1	1		1	1	2	3	3	4	4	5
750														1	1		1	1		1	1	2	2	3	3	4	4

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R312316-40 Excavating

The selection of equipment used for structural excavation and bulk excavation or for grading is determined by the following factors.

1. Quantity of material
2. Type of material
3. Depth or height of cut
4. Length of haul
5. Condition of haul road
6. Accessibility of site
7. Moisture content and dewatering requirements
8. Availability of excavating and hauling equipment

Some additional costs must be allowed for hand trimming the sides and bottom of concrete pours and other excavation below the general excavation.

When planning excavation and fill, the following should also be considered.

1. Swell factor
2. Compaction factor
3. Moisture content
4. Density requirements

A typical example for scheduling and estimating the cost of excavation of a 15′ deep basement on a dry site when the material must be hauled off the site is outlined below.

Assumptions:

1. Swell factor, 18%
2. No mobilization or demobilization
3. Allowance included for idle time and moving on job
4. No dewatering, sheeting, or bracing
5. No truck spotter or hand trimming

Number of B.C.Y. per truck = 1.5 C.Y. bucket × 8 passes = 12 loose C.Y.

$$= 12 \times \frac{100}{118} = 10.2 \text{ B.C.Y. per truck}$$

Truck Haul Cycle:

Load truck, 8 passes	=	4 minutes
Haul distance, 1 mile	=	9 minutes
Dump time	=	2 minutes
Return, 1 mile	=	7 minutes
Spot under machine	=	1 minute
		23 minute cycle

Fleet Haul Production per day in B.C.Y.

$$4 \text{ trucks} \times \frac{50 \text{ min. hour}}{23 \text{ min. haul cycle}} \times 8 \text{ hrs.} \times 10.2 \text{ B.C.Y.}$$

$$= 4 \times 2.2 \times 8 \times 10.2 = 718 \text{ B.C.Y./day}$$

Add the mobilization and demobilization costs to the total excavation costs. When equipment is rented for more than three days, there is often no mobilization charge by the equipment dealer. On larger jobs outside of urban areas, scrapers can move earth economically provided a dump site or fill area and adequate haul roads are available. Excavation within sheeting bracing or cofferdam bracing is usually done with a clamshell and production is low, since the clamshell may have to be guided by hand between the bracing. When excavating or filling an area enclosed with a wellpoint system, add 10% to 15% to the cost to allow for restricted access. When estimating earth excavation quantities for structures, allow work space outside the building footprint for construction of the foundation and a slope of 1:1 unless sheeting is used.

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R312316-45 Excavating Equipment

The table below lists theoretical hourly production in C.Y./hr. bank measure for some typical excavation equipment. Figures assume 50 minute hours, 83% job efficiency, 100% operator efficiency, 90° swing and properly sized hauling units, which must be modified for adverse digging and loading conditions. Actual production costs in the front of the data set average about 50% of the theoretical values listed here.

Equipment	Soil Type	B.C.Y. Weight	% Swell	1 C.Y.	1-1/2 C.Y.	2 C.Y.	2-1/2 C.Y.	3 C.Y.	3-1/2 C.Y.	4 C.Y.
Hydraulic Excavator "Backhoe" 15′ Deep Cut	Moist loam, sandy clay	3400 lb.	40%	165	195	200	275	330	385	440
	Sand and gravel	3100	18	140	170	225	240	285	330	380
	Common earth	2800	30	150	180	230	250	300	350	400
	Clay, hard, dense	3000	33	120	140	190	200	240	260	320
Power Shovel Optimum Cut (Ft.)	Moist loam, sandy clay	3400	40	170	245	295	335	385	435	475
				(6.0)	(7.0)	(7.8)	(8.4)	(8.8)	(9.1)	(9.4)
	Sand and gravel	3100	18	165	225	275	325	375	420	460
				(6.0)	(7.0)	(7.8)	(8.4)	(8.8)	(9.1)	(9.4)
	Common earth	2800	30	145	200	250	295	335	375	425
				(7.8)	(9.2)	(10.2)	(11.2)	(12.1)	(13.0)	(13.8)
	Clay, hard, dense	3000	33	120	175	220	255	300	335	375
				(9.0)	(10.7)	(12.2)	(13.3)	(14.2)	(15.1)	(16.0)
Drag Line Optimum Cut (Ft.)	Moist loam, sandy clay	3400	40	130	180	220	250	290	325	385
				(6.6)	(7.4)	(8.0)	(8.5)	(9.0)	(9.5)	(10.0)
	Sand and gravel	3100	18	130	175	210	245	280	315	375
				(6.6)	(7.4)	(8.0)	(8.5)	(9.0)	(9.5)	(10.0)
	Common earth	2800	30	110	160	190	220	250	280	310
				(8.0)	(9.0)	(9.9)	(10.5)	(11.0)	(11.5)	(12.0)
	Clay, hard, dense	3000	33	90	130	160	190	225	250	280
				(9.3)	(10.7)	(11.8)	(12.3)	(12.8)	(13.3)	(12.0)
Loading Tractors				Wheel Loaders				Track Loaders		
				3 C.Y.	4 C.Y.	6 C.Y.	8 C.Y.	2-1/4 C.Y.	3 C.Y.	4 C.Y.
	Moist loam, sandy clay	3400	40	260	340	510	690	135	180	250
	Sand and gravel	3100	18	245	320	480	650	130	170	235
	Common earth	2800	30	230	300	460	620	120	155	220
	Clay, hard, dense	3000	33	200	270	415	560	110	145	200
	Rock, well-blasted	4000	50	180	245	380	520	100	130	180

R312319-90 Wellpoints

A single stage wellpoint system is usually limited to dewatering an average 15′ depth below normal ground water level. Multi-stage systems are employed for greater depth with the pumping equipment installed only at the lowest header level. Ejectors with unlimited lift capacity can be economical when two or more stages of wellpoints can be replaced or when horizontal clearance is restricted, such as in deep trenches or tunneling projects, and where low water flows are expected. Wellpoints are usually spaced on 2-1/2′ to 10′ centers along a header pipe. Wellpoint spacing, header size, and pump size are all determined by the expected flow as dictated by soil conditions.

In almost all soils encountered in wellpoint dewatering, the wellpoints may be jetted into place. Cemented soils and stiff clays may require sand wicks about 12″ in diameter around each wellpoint to increase efficiency and eliminate weeping into the excavation. These sand wicks require 1/2 to 3 C.Y. of washed filter sand and are installed by using a 12″ diameter steel casing and hole puncher jetted into the ground 2′ deeper than the wellpoint. Rock may require predrilled holes.

Labor required for the complete installation and removal of a single stage wellpoint system is in the range of 3/4 to 2 labor-hours per linear foot of header, depending upon jetting conditions, wellpoint spacing, etc.

Continuous pumping is necessary except in some free draining soil where temporary flooding is permissible (as in trenches which are backfilled after each day's work). Good practice requires provision of a stand-by pump during the continuous pumping operation.

Systems for continuous trenching below the water table should be installed three to four times the length of expected daily progress to ensure uninterrupted digging, and header pipe size should not be changed during the job.

For pervious free draining soils, deep wells in place of wellpoints may be economical because of lower installation and maintenance costs. Daily production ranges between two to three wells per day, for 25′ to 40′ depths, to one well per day for depths over 50′.

Detailed analysis and estimating for any dewatering problem is available at no cost from wellpoint manufacturers. Major firms will quote "sufficient equipment" quotes or their affiliates will offer lump sum proposals to cover complete dewatering responsibility.

Description for 200′ System with 8″ Header		Quantities
Equipment & Material	Wellpoints 25′ long, 2″ diameter @ 5′ O.C.	40 Each
	Header pipe, 8″ diameter	200 L.F.
	Discharge pipe, 8″ diameter	100 L.F.
	8″ valves	3 Each
	Combination jetting & wellpoint pump (standby)	1 Each
	Wellpoint pump, 8″ diameter	1 Each
	Transportation to and from site	1 Day
	Fuel for 30 days x 60 gal./day	1800 Gallons
	Lubricants for 30 days x 16 lbs./day	480 Lbs.
	Sand for points	40 C.Y.
Labor	Technician to supervise installation	1 Week
	Labor for installation and removal of system	300 Labor-hours
	4 Operators straight time 40 hrs./wk. for 4.33 wks.	693 Hrs.
	4 Operators overtime 2 hrs./wk. for 4.33 wks.	35 Hrs.

R312323-30 Compacting Backfill

Compaction of fill in embankments, around structures, in trenches, and under slabs is important to control settlement. Factors affecting compaction are:

1. Soil gradation
2. Moisture content
3. Equipment used
4. Depth of fill per lift
5. Density required

Production Rate:

$$\frac{1.75' \text{ plate width} \times 50 \text{ F.P.M.} \times 50 \text{ min./hr.} \times .67' \text{ lift}}{27 \text{ C.F. per C.Y.}} = 108.5 \text{ C.Y./hr.}$$

Production Rate for 4 Passes:

$$\frac{108.5 \text{ C.Y.}}{4 \text{ passes}} = 27.125 \text{ C.Y./hr.} \times 8 \text{ hrs.} = 217 \text{ C.Y./day}$$

Example:

Compact granular fill around a building foundation using a 21″ wide x 24″ vibratory plate in 8″ lifts. Operator moves at 50 F.P.M. working a 50 minute hour to develop 95% Modified Proctor Density with 4 passes.

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R314116-40 Wood Sheet Piling

Wood sheet piling may be used for depths to 20′ where there is no ground water. If moderate ground water is encountered Tongue & Groove sheeting will help to keep it out. When considerable ground water is present, steel sheeting must be used.

For estimating purposes on trench excavation, sizes are as follows:

Depth	Sheeting	Wales	Braces	B.F. per S.F.
To 8′	3 x 12′s	6 x 8′s, 2 line	6 x 8′s, @ 10′	4.0 @ 8′
8′ x 12′	3 x 12′s	10 x 10′s, 2 line	10 x 10′s, @ 9′	5.0 average
12′ to 20′	3 x 12′s	12 x 12′s, 3 line	12 x 12′s, @ 8′	7.0 average

Sheeting to be toed in at least 2′ depending upon soil conditions. A five person crew with an air compressor and sheeting driver can drive and brace 440 SF/day at 8′ deep, 360 SF/day at 12′ deep, and 320 SF/day at 16′ deep.

For normal soils, piling can be pulled in 1/3 the time to install. Pulling difficulty increases with the time in the ground. Production can be increased by high pressure jetting.

R314116-45 Steel Sheet Piling

Limiting weights are 22 to 38#/S.F. of wall surface with 27#/S.F. average for usual types and sizes. (Weights of piles themselves are from 30.7#/L.F. to 57#/L.F. but they are 15″ to 21″ wide.) Lightweight sections 12″ to 28″ wide from 3 ga. to 12 ga. thick are also available for shallow excavations. Piles may be driven two at a time with an impact or vibratory hammer (use vibratory to pull) hung from a crane without leads. A reasonable estimate of the life of steel sheet piling is 10 uses with up to 125 uses possible if a vibratory hammer is used. Used piling costs from 50% to 80% of new piling depending on location and market conditions. Sheet piling and H piles can be rented for about 30% of the delivered mill price for the first month and 5% per month thereafter. Allow 1 labor-hour per pile for cleaning and trimming after driving. These costs increase with depth and hydrostatic head. Vibratory drivers are faster in wet granular soils and are excellent for pile extraction. Pulling difficulty increases with the time in the ground and may cost more than driving. It is often economical to abandon the sheet piling, especially if it can be used as the outer wall form. Allow about 1/3 additional length or more for toeing into ground. Add bracing, waler and strut costs. Waler costs can equal the cost per ton of sheeting.

R314513-90 Vibroflotation and Vibro Replacement Soil Compaction

Vibroflotation is a proprietary system of compacting sandy soils in place to increase relative density to about 70%. Typical bearing capacities attained will be 6000 psf for saturated sand and 12,000 psf for dry sand. Usual range is 4000 to 8000 psf capacity. Costs in the front of the data set are for a vertical foot of compacted cylinder 6′ to 10′ in diameter.

Vibro replacement is a proprietary system of improving cohesive soils in place to increase bearing capacity. Most silts and clays above or below the water table can be strengthened by installation of stone columns. The process consists of radial displacement of the soil by vibration. The created hole is then backfilled in stages with coarse granular fill which is thoroughly compacted and displaced into the surrounding soil in the form of a column.

The total project cost would depend on the number and depth of the compacted cylinders. The installing company guarantees relative soil density of the sand cylinders after compaction and the bearing capacity of the soil after the replacement process. Detailed estimating information is available from the installer at no cost.

Earthwork — R3163 Drilled Caissons

R316326-60 Caissons

The three principal types of caissons are:

(1) Belled Caissons, which except for shallow depths and poor soil conditions, are generally recommended. They provide more bearing than shaft area. Because of its conical shape, no horizontal reinforcement of the bell is required.

(2) Straight Shaft Caissons are used where relatively light loads are to be supported by caissons that rest on high value bearing strata. While the shaft is larger in diameter than for belled types this is more than offset by the savings in time and labor.

(3) Keyed Caissons are used when extremely heavy loads are to be carried. A keyed or socketed caisson transfers its load into rock by a combination of end-bearing and shear reinforcing of the shaft. The most economical shaft often consists of a steel casing, a steel wide flange core and concrete. Allowable compressive stresses of .225 f'c for concrete, 16,000 psi for the wide flange core, and 9,000 psi for the steel casing are commonly used. The usual range of shaft diameter is 18″ to 84″. The number of sizes specified for any one project should be limited due to the problems of casing and auger storage. When hand work is to be performed, shaft diameters should not be less than 32″. When inspection of borings is required a minimum shaft diameter of 30″ is recommended. Concrete caissons are intended to be poured against earth excavation so permanent forms, which add to cost, should not be used if the excavation is clean and the earth is sufficiently impervious to prevent excessive loss of concrete.

Soil Conditions for Belling		
Good	Requires Handwork	Not Recommended
Clay	Hard Shale	Silt
Sandy Clay	Limestone	Sand
Silty Clay	Sandstone	Gravel
Clayey Silt	Weathered Mica	Igneous Rock
Hard-pan		
Soft Shale		
Decomposed Rock		

Exterior Improvements — R3292 Turf & Grasses

R329219-50 Seeding

The type of grass is determined by light, shade and moisture content of soil plus intended use. Fertilizer should be disked 4″ before seeding. For steep slopes disk five tons of mulch and lay two tons of hay or straw on surface per acre after seeding. Surface mulch can be staked, lightly disked or tar emulsion sprayed. Material for mulch can be wood chips, peat moss, partially rotted hay or straw, wood fibers and sprayed emulsions. Hemp seed blankets with fertilizer are also available. For spring seeding, watering is necessary. Late fall seeding may have to be reseeded in the spring. Hydraulic seeding, power mulching, and aerial seeding can be used on large areas.

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R331113-80 Piping Designations

There are several systems currently in use to describe pipe and fittings. The following paragraphs will help to identify and clarify classifications of piping systems used for water distribution.

Piping may be classified by schedule. Piping schedules include 5S, 10S, 10, 20, 30, Standard, 40, 60, Extra Strong, 80, 100, 120, 140, 160 and Double Extra Strong. These schedules are dependent upon the pipe wall thickness. The wall thickness of a particular schedule may vary with pipe size.

Ductile iron pipe for water distribution is classified by Pressure Classes such as Class 150, 200, 250, 300 and 350. These classes are actually the rated water working pressure of the pipe in pounds per square inch (psi). The pipe in these pressure classes is designed to withstand the rated water working pressure plus a surge allowance of 100 psi.

The American Water Works Association (AWWA) provides standards for various types of **plastic pipe.** C-900 is the specification for polyvinyl chloride (PVC) piping used for water distribution in sizes ranging from 4″ through 12″. C-901 is the specification for polyethylene (PE) pressure pipe, tubing and fittings used for water distribution in sizes ranging from 1/2″ through 3″. C-905 is the specification for PVC piping sizes 14″ and greater.

PVC pressure-rated pipe is identified using the standard dimensional ratio (SDR) method. This method is defined by the American Society for Testing and Materials (ASTM) Standard D 2241. This pipe is available in SDR numbers 64, 41, 32.5, 26, 21, 17, and 13.5. A pipe with an SDR of 64 will have the thinnest wall while a pipe with an SDR of 13.5 will have the thickest wall. When the pressure rating (PR) of a pipe is given in psi, it is based on a line supplying water at 73 degrees F.

The National Sanitation Foundation (NSF) seal of approval is applied to products that can be used with potable water. These products have been tested to ANSI/NSF Standard 14.

Valves and strainers are classified by American National Standards Institute (ANSI) Classes. These Classes are 125, 150, 200, 250, 300, 400, 600, 900, 1500 and 2500. Within each class there is an operating pressure range dependent upon temperature. Design parameters should be compared to the appropriate material dependent, pressure-temperature rating chart for accurate valve selection.

R347216-10 Single Track R.R. Siding

The costs for a single track RR siding in the Unit Price Section include the components shown in the table below.

Description of Component	Qty. per L.F. of Track	Unit
Ballast, 1-1/2″ crushed stone	.667	C.Y.
6″ x 8″ x 8′-6″ Treated timber ties, 22″ O.C.	.545	Ea.
Tie plates, 2 per tie	1.091	Ea.
Track rail	2.000	L.F.
Spikes, 6″, 4 per tie	2.182	Ea.
Splice bars w/ bolts, lock washers & nuts, @ 33′ O.C.	.061	Pair
Crew B-14 @ 57 L.F./Day	.018	Day

R347216-20 Single Track, Steel Ties, Concrete Bed

The costs for a R.R. siding with steel ties and a concrete bed in the Unit Price section include the components shown in the table below.

Description of Component	Qty. per L.F. of Track	Unit
Concrete bed, 9′ wide, 10″ thick	.278	C.Y.
Ties, W6x16 x 6′-6″ long, @ 30″ O.C.	.400	Ea.
Tie plates, 4 per tie	1.600	Ea.
Track rail	2.000	L.F.
Tie plate bolts, 1″, 8 per tie	3.200	Ea.
Splice bars w/bolts, lock washers & nuts, @ 33′ O.C.	.061	Pair
Crew B-14 @ 22 L.F./Day	.045	Day

Change Orders

Change Order Considerations

A change order is a written document usually prepared by the design professional and signed by the owner, the architect/engineer, and the contractor. A change order states the agreement of the parties to: an addition, deletion, or revision in the work; an adjustment in the contract sum, if any; or an adjustment in the contract time, if any. Change orders, or "extras", in the construction process occur after execution of the construction contract and impact architects/engineers, contractors, and owners.

Change orders that are properly recognized and managed can ensure orderly, professional, and profitable progress for everyone involved in the project. There are many causes for change orders and change order requests. In all cases, change orders or change order requests should be addressed promptly and in a precise and prescribed manner. The following paragraphs include information regarding change order pricing and procedures.

The Causes of Change Orders

Reasons for issuing change orders include:

- Unforeseen field conditions that require a change in the work
- Correction of design discrepancies, errors, or omissions in the contract documents
- Owner-requested changes, either by design criteria, scope of work, or project objectives
- Completion date changes for reasons unrelated to the construction process
- Changes in building code interpretations, or other public authority requirements that require a change in the work
- Changes in availability of existing or new materials and products

Procedures

Properly written contract documents must include the correct change order procedures for all parties—owners, design professionals, and contractors—to follow in order to avoid costly delays and litigation.

Being "in the right" is not always a sufficient or acceptable defense. The contract provisions requiring notification and documentation must be adhered to within a defined or reasonable time frame.

The appropriate method of handling change orders is by a written proposal and acceptance by all parties involved. Prior to starting work on a project, all parties should identify their authorized agents who may sign and accept change orders, as well as any limits placed on their authority.

Time may be a critical factor when the need for a change arises. For such cases, the contractor might be directed to proceed on a "time and materials" basis, rather than wait for all paperwork to be processed—a delay that could impede progress. In this situation, the contractor must still follow the prescribed change order procedures including, but not limited to, notification and documentation.

Lack of documentation can be very costly, especially if legal judgments are to be made, and if certain field personnel are no longer available. For time and material change orders, the contractor should keep accurate daily records of all labor and material allocated to the change.

Owners or awarding authorities who do considerable and continual building construction (such as the federal government) realize the inevitability of change orders for numerous reasons, both predictable and unpredictable. As a result, the federal government, the American Institute of Architects (AIA), the Engineers Joint Contract Documents Committee (EJCDC), and other contractor, legal, and technical organizations have developed standards and procedures to be followed by all parties to achieve contract continuance and timely completion, while being financially fair to all concerned.

Pricing Change Orders

When pricing change orders, regardless of their cause, the most significant factor is when the change occurs. The need for a change may be perceived in the field or requested by the architect/engineer *before* any of the actual installation has begun, or may evolve or appear *during* construction when the item of work in question is partially installed. In the latter cases, the original sequence of construction is disrupted, along with all contiguous and supporting systems. Change orders cause the greatest impact when they occur *after* the installation has been completed and must be uncovered, or even replaced. Post-completion changes may be caused by necessary design changes, product failure, or changes in the owner's requirements that are not discovered until the building or the systems begin to function.

Specified procedures of notification and record keeping must be adhered to and enforced regardless of the stage of construction: *before, during,* or *after* installation. Some bidding documents anticipate change orders by requiring that unit prices including overhead and profit percentages—for additional as well as deductible changes—be listed. Generally these unit prices do not fully take into account the ripple effect, or impact on other trades, and should be used for general guidance only.

When pricing change orders, it is important to classify the time frame in which the change occurs. There are two basic time frames for change orders: *pre-installation change orders,* which occur before the start of construction, and *post-installation change orders,* which involve reworking after the original installation. Change orders that occur between these stages may be priced according to the extent of work completed using a combination of techniques developed for pricing *pre-* and *post-installation* changes.

Factors To Consider When Pricing Change Orders

As an estimator begins to prepare a change order, the following questions should be reviewed to determine their impact on the final price.

General

- *Is the change order work* pre-installation *or* post-installation?

  Change order work costs vary according to how much of the installation has been completed. Once workers have the project scoped in their minds, even though they have not started, it can be difficult to refocus. Consequently they may spend more than the normal amount of time understanding the change. Also, modifications to work in place, such as trimming or refitting, usually take more time than was initially estimated. The greater the amount of work in place, the more reluctant workers are to change it. Psychologically they may resent the change and as a result the rework takes longer than normal. Post-installation change order estimates must include demolition of existing work as required to accomplish the change. If the work is performed at a later time, additional obstacles, such as building finishes, may be present which must be protected. Regardless of whether the change occurs

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pre-installation or post-installation, attempt to isolate the identifiable factors and price them separately. For example, add shipping costs that may be required pre-installation or any demolition required post-installation. Then analyze the potential impact on productivity of psychological and/or learning curve factors and adjust the output rates accordingly. One approach is to break down the typical workday into segments and quantify the impact on each segment.

Change Order Installation Efficiency

The labor-hours expressed (for new construction) are based on average installation time, using an efficiency level. For change order situations, adjustments to this efficiency level should reflect the daily labor-hour allocation for that particular occurrence.

- *Will the change substantially delay the original completion date?*

  A significant change in the project may cause the original completion date to be extended. The extended schedule may subject the contractor to new wage rates dictated by relevant labor contracts. Project supervision and other project overhead must also be extended beyond the original completion date. The schedule extension may also put installation into a new weather season. For example, underground piping scheduled for October installation was delayed until January. As a result, frost penetrated the trench area, thereby changing the degree of difficulty of the task. Changes and delays may have a ripple effect throughout the project. This effect must be analyzed and negotiated with the owner.

- *What is the net effect of a deduct change order?*

  In most cases, change orders resulting in a deduction or credit reflect only bare costs. The contractor may retain the overhead and profit based on the original bid.

Materials

- *Will you have to pay more or less for the new material, required by the change order, than you paid for the original purchase?*

  The same material prices or discounts will usually apply to materials purchased for change orders as new construction. In some instances, however, the contractor may forfeit the advantages of competitive pricing for change orders. Consider the following example:

  A contractor purchased over $20,000 worth of fan coil units for an installation and obtained the maximum discount. Some time later it was determined the project required an additional matching unit. The contractor has to purchase this unit from the original supplier to ensure a match. The supplier at this time may not discount the unit because of the small quantity, and he is no longer in a competitive situation. The impact of quantity on purchase can add between 0% and 25% to material prices and/or subcontractor quotes.

- *If materials have been ordered or delivered to the job site, will they be subject to a cancellation charge or restocking fee?*

  Check with the supplier to determine if ordered materials are subject to a cancellation charge. Delivered materials not used as a result of a change order may be subject to a restocking fee if returned to the supplier. Common restocking charges run between 20% and 40%. Also, delivery charges to return the goods to the supplier must be added.

Labor

- *How efficient is the existing crew at the actual installation?*

  Is the same crew that performed the initial work going to do the change order? Possibly the change consists of the installation of a unit identical to one already installed; therefore, the change should take less time. Be sure to consider this potential productivity increase and modify the productivity rates accordingly.

- *If the crew size is increased, what impact will that have on supervision requirements?*

  Under most bargaining agreements or management practices, there is a point at which a working foreman is replaced by a nonworking foreman. This replacement increases project overhead by adding a nonproductive worker. If additional workers are added to accelerate the project or to perform changes while maintaining the schedule, be sure to add additional supervision time if warranted. Calculate the hours involved and the additional cost directly if possible.

- *What are the other impacts of increased crew size?*

  The larger the crew, the greater the potential for productivity to decrease. Some of the factors that cause this productivity loss are: overcrowding (producing restrictive conditions in the working space) and possibly a shortage of any special tools and equipment required. Such factors affect not only the crew working on the elements directly involved in the change order, but other crews whose movements may also be hampered. As the crew increases, check its basic composition for changes by the addition or deletion of apprentices or nonworking foreman, and quantify the potential effects of equipment shortages or other logistical factors.

- *As new crews, unfamiliar with the project, are brought onto the site, how long will it take them to become oriented to the project requirements?*

  The orientation time for a new crew to become 100% effective varies with the site and type of project. Orientation is easiest at a new construction site and most difficult at existing, very restrictive renovation sites. The type of work also affects orientation time. When all elements of the work are exposed, such as concrete or masonry work, orientation is decreased. When the work is concealed or less visible, such as existing electrical systems, orientation takes longer. Usually orientation can be accomplished in one day or less. Costs for added orientation should be itemized and added to the total estimated cost.

- *How much actual production can be gained by working overtime?*

  Short term overtime can be used effectively to accomplish more work in a day. However, as overtime is scheduled to run beyond several weeks, studies have shown marked decreases in output. The following chart shows the effect of long term overtime on worker efficiency. If the anticipated change requires extended overtime to keep the job on schedule, these factors can be used as a guide to predict the impact on time and cost. Add project overhead, particularly supervision, that may also be incurred.

Days per Week	Hours per Day	Production Efficiency					Payroll Cost Factors	
		1st Week	2nd Week	3rd Week	4th Week	Average 4 Weeks	@ 1-1/2 Times	@ 2 Times
5	8	100%	100%	100%	100%	100%	100%	100%
	9	100	100	95	90	96	1.056	1.111
	10	100	95	90	85	93	1.100	1.200
	11	95	90	75	65	81	1.136	1.273
	12	90	85	70	60	76	1.167	1.333
6	8	100	100	95	90	96	1.083	1.167
	9	100	95	90	85	93	1.130	1.259
	10	95	90	85	80	88	1.167	1.333
	11	95	85	70	65	79	1.197	1.394
	12	90	80	65	60	74	1.222	1.444
7	8	100	95	85	75	89	1.143	1.286
	9	95	90	80	70	84	1.183	1.365
	10	90	85	75	65	79	1.214	1.429
	11	85	80	65	60	73	1.240	1.481
	12	85	75	60	55	69	1.262	1.524

Effects of Overtime

Caution: Under many labor agreements, Sundays and holidays are paid at a higher premium than the normal overtime rate.

The use of long-term overtime is counterproductive on almost any construction job; that is, the longer the period of overtime, the lower the actual production rate. Numerous studies have been conducted, and while they have resulted in slightly different numbers, all reach the same conclusion. The figure above tabulates the effects of overtime work on efficiency.

As illustrated, there can be a difference between the *actual* payroll cost per hour and the *effective* cost per hour for overtime work. This is due to the reduced production efficiency with the increase in weekly hours beyond 40. This difference between actual and effective cost results from overtime work over a prolonged period. Short-term overtime work does not result in as great a reduction in efficiency and, in such cases, effective cost may not vary significantly from the actual payroll cost. As the total hours per week are increased on a regular basis, more time is lost due to fatigue, lowered morale, and an increased accident rate.

As an example, assume a project where workers are working 6 days a week, 10 hours per day. From the figure above (based on productivity studies), the average effective productive hours over a 4-week period are:

$$0.875 \times 60 = 52.5$$

Depending upon the locale and day of week, overtime hours may be paid at time and a half or double time. For time and a half, the overall (average) *actual* payroll cost (including regular and overtime hours) is determined as follows:

$$\frac{40 \text{ reg. hrs.} + (20 \text{ overtime hrs.} \times 1.5)}{60 \text{ hrs.}} = 1.167$$

Based on 60 hours, the payroll cost per hour will be 116.7% of the normal rate at 40 hours per week. However, because the effective production (efficiency) for 60 hours is reduced to the equivalent of 52.5 hours, the effective cost of overtime is calculated as follows:

For time and a half:

$$\frac{40 \text{ reg. hrs.} + (20 \text{ overtime hrs.} \times 1.5)}{52.5 \text{ hrs.}} = 1.33$$

The installed cost will be 133% of the normal rate (for labor).

Thus, when figuring overtime, the actual cost per unit of work will be higher than the apparent overtime payroll dollar increase, due to the reduced productivity of the longer work week. These efficiency calculations are true only for those cost factors determined by hours worked. Costs that are applied weekly or monthly, such as equipment rentals, will not be similarly affected.

Equipment

- *What equipment is required to complete the change order?*

  Change orders may require extending the rental period of equipment already on the job site, or the addition of special equipment brought in to accomplish the change work. In either case, the additional rental charges and operator labor charges must be added.

Summary

The preceding considerations and others you deem appropriate should be analyzed and applied to a change order estimate. The impact of each should be quantified and listed on the estimate to form an audit trail.

Change orders that are properly identified, documented, and managed help to ensure the orderly, professional, and profitable progress of the work. They also minimize potential claims or disputes at the end of the project.

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Back by customer demand!

You asked and we listened. For customer convenience and estimating ease, we have made the 2022 Project Costs available for download at **RSMeans.com/2022books**. You will also find sample estimates, an RSMeans data overview video, and a book registration form to receive quarterly data updates throughout 2022.

Estimating Tips

- The cost figures available in the download were derived from hundreds of projects contained in the RSMeans database of completed construction projects. They include the contractor's overhead and profit. The figures have been adjusted to January of the current year.
- These projects were located throughout the U.S. and reflect a tremendous variation in square foot (S.F.) costs. This is due to differences, not only in labor and material costs, but also in individual owners' requirements. For instance, a bank in a large city would have different features than one in a rural area. This is true of all the different types of buildings analyzed. Therefore, caution should be exercised when using these Project Costs. For example, for courthouses, costs in the database are local courthouse costs and will not apply to the larger, more elaborate federal courthouses.
- None of the figures "go with" any others. All individual cost items were computed and tabulated separately. Thus, the sum of the median figures for plumbing, HVAC, and electrical will not normally total up to the total mechanical and electrical costs arrived at by separate analysis and tabulation of the projects.
- Each building was analyzed as to total and component costs and percentages. The figures were arranged in ascending order with the results tabulated as shown. The 1/4 column shows that 25% of the projects had lower costs and 75% had higher. The 3/4 column shows that 75% of the projects had lower costs and 25% had higher. The median column shows that 50% of the projects had lower costs and 50% had higher.
- Project Costs are useful in the conceptual stage when no details are available. As soon as details become available in the project design, the square foot approach should be discontinued and the project should be priced as to its particular components. When more precision is required, or for estimating the replacement cost of specific buildings, the current edition of *Square Foot Costs with RSMeans data* should be used.
- In using the figures in this section, it is recommended that the median column be used for preliminary figures if no additional information is available. The median figures, when multiplied by the total city construction cost index figures (see City Cost Indexes) and then multiplied by the project size modifier at the end of this section, should present a fairly accurate base figure, which would then have to be adjusted in view of the estimator's experience, local economic conditions, code requirements, and the owner's particular requirements. There is no need to factor in the percentage figures, as these should remain constant from city to city.
- The editors of this data would greatly appreciate receiving cost figures on one or more of your recent projects, which would then be included in the averages for next year. All cost figures received will be kept confidential, except that they will be averaged with other similar projects to arrive at square foot cost figures for next year.

See the website above for details and the discount available for submitting one or more of your projects.

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			UNIT	UNIT COSTS 1/4	UNIT COSTS MEDIAN	UNIT COSTS 3/4	% OF TOTAL 1/4	% OF TOTAL MEDIAN	% OF TOTAL 3/4	
01	0000	**Auto Sales with Repair**	S.F.							01
	0100	Architectural		119	134	145	58%	64%	67%	
	0200	Plumbing		10	10.45	14	4.84%	5.20%	6.80%	
	0300	Mechanical		13.40	17.95	19.80	6.40%	8.70%	10.15%	
	0400	Electrical		20.50	25.50	32	9.05%	11.70%	15.90%	
	0500	Total Project Costs		201	209	215				
02	0000	**Banking Institutions**	S.F.							02
	0100	Architectural		180	222	270	59%	65%	69%	
	0200	Plumbing		7.25	10.15	14.10	2.12%	3.39%	4.19%	
	0300	Mechanical		14.45	19.95	23.50	4.41%	5.10%	10.75%	
	0400	Electrical		35.50	42.50	65.50	10.45%	13.05%	15.90%	
	0500	Total Project Costs		300	335	415				
03	0000	**Court House**	S.F.							03
	0100	Architectural		95	187	261	54.50%	58.50%	61%	
	0200	Plumbing		3.59	13.40	13.40	2.07%	3.13%	3.13%	
	0300	Mechanical		22.50	27	27	6.25%	12.95%	12.95%	
	0400	Electrical		29	32.50	32.50	7.65%	16.60%	16.60%	
	0500	Total Project Costs		173	320	425				
04	0000	**Data Centers**	S.F.							04
	0100	Architectural		215	215	215	68%	68%	68%	
	0200	Plumbing		11.75	11.75	11.75	3.71%	3.71%	3.71%	
	0300	Mechanical		30	30	30	9.45%	9.45%	9.45%	
	0400	Electrical		28.50	28.50	28.50	9%	9%	9%	
	0500	Total Project Costs		315	315	315				
05	0000	**Detention Centers**	S.F.							05
	0100	Architectural		199	210	223	52%	53%	60.50%	
	0200	Plumbing		21	25.50	31	5.15%	7.10%	7.25%	
	0300	Mechanical		26.50	38	45.50	7.55%	9.50%	13.80%	
	0400	Electrical		43.50	51.50	67.50	10.90%	14.85%	17.95%	
	0500	Total Project Costs		335	355	420				
06	0000	**Fire Stations**	S.F.							06
	0100	Architectural		113	145	212	46%	54.50%	61.50%	
	0200	Plumbing		11.45	15.70	20.50	4.59%	5.60%	6.30%	
	0300	Mechanical		16.85	24.50	33	6.05%	8.25%	10.20%	
	0400	Electrical		26	33.50	45	10.75%	12.55%	14.95%	
	0500	Total Project Costs		236	269	375				
07	0000	**Gymnasium**	S.F.							07
	0100	Architectural		99.50	131	131	57%	64.50%	64.50%	
	0200	Plumbing		2.44	8	8	1.58%	3.48%	3.48%	
	0300	Mechanical		3.74	33.50	33.50	2.42%	14.65%	14.65%	
	0400	Electrical		12.25	24	24	7.95%	10.35%	10.35%	
	0500	Total Project Costs		155	230	230				
08	0000	**Hospitals**	S.F.							08
	0100	Architectural		121	198	215	41.50%	47.50%	48%	
	0200	Plumbing		8.85	36.50	43.50	6%	7.65%	10.35%	
	0300	Mechanical		53.50	66	86	12.55%	17.95%	23.50%	
	0400	Electrical		26.50	60	69.50	10.95%	14.10%	16.85%	
	0500	Total Project Costs		282	425	455				
09	0000	**Industrial Buildings**	S.F.							09
	0100	Architectural		66	130	262	52%	56%	82%	
	0200	Plumbing		1.90	5.15	14.90	1.57%	2.11%	6.30%	
	0300	Mechanical		5.40	10.30	49	4.77%	5.55%	14.80%	
	0400	Electrical		8.25	9.45	78.50	7.85%	13.55%	16.20%	
	0500	Total Project Costs		98	149	485				
10	0000	**Medical Clinics & Offices**	S.F.							10
	0100	Architectural		101	133	179	48.50%	54%	62%	
	0200	Plumbing		10.05	15.05	25	4.47%	6.65%	8.75%	
	0300	Mechanical		16.30	25	46.50	7.80%	10.90%	16.05%	
	0400	Electrical		22	27.50	42	9%	11.40%	13.85%	
	0500	Total Project Costs		188	250	330				

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			UNIT	UNIT COSTS 1/4	UNIT COSTS MEDIAN	UNIT COSTS 3/4	% OF TOTAL 1/4	% OF TOTAL MEDIAN	% OF TOTAL 3/4	
11	0000	**Mixed Use**	S.F.							11
	0100	Architectural		124	171	234	45.50%	52.50%	61.50%	
	0200	Plumbing		7	12.75	13.60	3.31%	3.47%	4.18%	
	0300	Mechanical		18.50	40	53.50	6.10%	13.60%	17.05%	
	0400	Electrical		24.50	41.50	59.50	8.60%	11.65%	15.65%	
	0500	Total Project Costs		216	375	385				
12	0000	**Multi-Family Housing**	S.F.							12
	0100	Architectural		86.50	128	191	54.50%	62%	68.50%	
	0200	Plumbing		7.70	12.40	16.85	5.25%	6.65%	8%	
	0300	Mechanical		8	10.65	30.50	4.92%	6.05%	10.25%	
	0400	Electrical		11.20	17.50	25.50	6%	7.90%	10.25%	
	0500	Total Project Costs		143	238	305				
13	0000	**Nursing Home & Assisted Living**	S.F.							13
	0100	Architectural		81	106	133	51.50%	55.50%	63.50%	
	0200	Plumbing		8.70	13.10	14.40	6.25%	7.40%	8.80%	
	0300	Mechanical		7.15	10.55	20.50	4.04%	6.70%	9.55%	
	0400	Electrical		11.80	18.65	26	7%	10.75%	13.10%	
	0500	Total Project Costs		138	180	217				
14	0000	**Office Buildings**	S.F.							14
	0100	Architectural		104	145	200	54.50%	61%	69%	
	0200	Plumbing		5.75	9.05	16.95	2.70%	3.78%	5.85%	
	0300	Mechanical		11.25	19.15	29.50	5.60%	8.20%	11.10%	
	0400	Electrical		14.40	24.50	38	7.75%	10%	12.70%	
	0500	Total Project Costs		178	225	320				
15	0000	**Parking Garage**	S.F.							15
	0100	Architectural		35.50	43.50	45.50	70%	79%	88%	
	0200	Plumbing		1.18	1.23	2.30	2.05%	2.70%	2.83%	
	0300	Mechanical		.91	1.40	5.30	2.11%	3.62%	3.81%	
	0400	Electrical		3.13	3.44	7.20	5.30%	6.35%	7.95%	
	0500	Total Project Costs		43.50	53	57.50				
16	0000	**Parking Garage/Mixed Use**	S.F.							16
	0100	Architectural		116	126	129	61%	62%	65.50%	
	0200	Plumbing		3.71	4.86	7.45	2.47%	2.72%	3.66%	
	0300	Mechanical		15.90	17.85	25.50	7.80%	13.10%	13.60%	
	0400	Electrical		16.65	24	25	8.20%	12.65%	18.15%	
	0500	Total Project Costs		189	197	203				
17	0000	**Police Stations**	S.F.							17
	0100	Architectural		131	185	227	49%	61%	61.50%	
	0200	Plumbing		17.25	20.50	21	5.05%	5.55%	7.70%	
	0300	Mechanical		39	54.50	56.50	12.35%	14.55%	16.55%	
	0400	Electrical		29.50	34	50.50	9.15%	12.10%	14%	
	0500	Total Project Costs		244	340	375				
18	0000	**Police/Fire**	S.F.							18
	0100	Architectural		127	127	390	55.50%	66%	68%	
	0200	Plumbing		10.20	10.55	39	5.45%	5.50%	5.55%	
	0300	Mechanical		15.60	24.50	89	8.35%	12.70%	12.80%	
	0400	Electrical		17.75	22.50	102	9.50%	11.75%	14.55%	
	0500	Total Project Costs		187	193	700				
19	0000	**Public Assembly Buildings**	S.F.							19
	0100	Architectural		129	179	268	57.50%	61.50%	66%	
	0200	Plumbing		6.85	10.05	15.10	2.60%	3.36%	4.79%	
	0300	Mechanical		14.45	26	40	6.55%	8.95%	12.45%	
	0400	Electrical		21.50	29	46.50	8.60%	10.75%	13%	
	0500	Total Project Costs		208	285	420				
20	0000	**Recreational**	S.F.							20
	0100	Architectural		125	196	266	49.50%	59%	64.50%	
	0200	Plumbing		9.30	15.65	24.50	3.08%	4.67%	6.85%	
	0300	Mechanical		14.85	22.50	33.50	5.15%	6.65%	11.35%	
	0400	Electrical		21.50	31	47.50	7.15%	9.05%	10.95%	
	0500	Total Project Costs		226	330	500				

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			UNIT	UNIT COSTS			% OF TOTAL			
				1/4	MEDIAN	3/4	1/4	MEDIAN	3/4	
21	0000	**Restaurants**	S.F.							21
	0100	Architectural		141	221	280	57.50%	60%	63.50%	
	0200	Plumbing		15.55	31	41	7.35%	7.70%	8.75%	
	0300	Mechanical		16.75	22	41.50	6.50%	8.15%	11.15%	
	0400	Electrical		16.65	27	54.50	6.75%	10.30%	11.60%	
	0500	Total Project Costs		234	385	470				
22	0000	**Retail**	S.F.							22
	0100	Architectural		63	98.50	203	54.50%	60%	64.50%	
	0200	Plumbing		7.90	11	13.65	4.18%	5.45%	8.45%	
	0300	Mechanical		7.40	10.45	19.20	4.98%	6.15%	7.05%	
	0400	Electrical		11.75	23.50	35.50	7.90%	11.25%	12.45%	
	0500	Total Project Costs		96	171	325				
23	0000	**Schools**	S.F.							23
	0100	Architectural		109	138	185	50.50%	55.50%	60.50%	
	0200	Plumbing		8.70	11.95	17.45	3.66%	4.57%	6.95%	
	0300	Mechanical		20.50	29.50	43	8.90%	11.95%	14.55%	
	0400	Electrical		20.50	28	36.50	9.45%	11.25%	13.30%	
	0500	Total Project Costs		199	254	340				
24	0000	**University, College & Private School Classroom & Admin Buildings**	S.F.							24
	0100	Architectural		140	173	203	50.50%	55%	59%	
	0200	Plumbing		9.45	12.35	17.40	3.02%	4.46%	6.35%	
	0300	Mechanical		28	42	52	9.95%	11.95%	14.70%	
	0400	Electrical		22.50	31.50	38.50	7.70%	9.90%	11.50%	
	0500	Total Project Costs		231	320	405				
25	0000	**University, College & Private School Dormitories**	S.F.							25
	0100	Architectural		91	160	170	53%	61.50%	68%	
	0200	Plumbing		12.05	17.05	19.55	6.35%	6.65%	8.95%	
	0300	Mechanical		5.40	23	36.50	4.13%	9%	11.80%	
	0400	Electrical		6.40	22.50	34	4.75%	7.35%	10.60%	
	0500	Total Project Costs		135	256	300				
26	0000	**University, College & Private School Science, Eng. & Lab Buildings**	S.F.							26
	0100	Architectural		157	185	274	48%	54.50%	58%	
	0200	Plumbing		10.80	16.35	27.50	3.29%	3.77%	5%	
	0300	Mechanical		41.50	77.50	79	11.70%	19.40%	23.50%	
	0400	Electrical		32.50	42.50	43.50	9%	12.05%	13.15%	
	0500	Total Project Costs		325	355	480				
27	0000	**University, College & Private School Student Union Buildings**	S.F.							27
	0100	Architectural		124	325	325	54.50%	54.50%	59.50%	
	0200	Plumbing		18.75	18.75	28	3.13%	4.27%	11.45%	
	0300	Mechanical		35.50	57.50	57.50	9.60%	9.60%	14.55%	
	0400	Electrical		31	54.50	54.50	9.05%	12.80%	13.15%	
	0500	Total Project Costs		244	600	600				
28	0000	**Warehouses**	S.F.							28
	0100	Architectural		53	81	148	60.50%	67%	71.50%	
	0200	Plumbing		2.76	5.90	11.40	2.82%	3.72%	5%	
	0300	Mechanical		3.27	18.65	29	4.56%	8.15%	10.70%	
	0400	Electrical		6.90	22.50	37	7.75%	10.10%	18.30%	
	0500	Total Project Costs		79	126	254				

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Square Foot Project Size Modifier

One factor that affects the S.F. cost of a particular building is the size. In general, for buildings built to the same specifications in the same locality, the larger building will have the lower S.F. cost. This is due mainly to the decreasing contribution of the exterior walls plus the economy of scale usually achievable in larger buildings. The Area Conversion Scale shown below will give a factor to convert costs for the typical size building to an adjusted cost for the particular project.

The Square Foot Base Size lists the median costs, most typical project size in our accumulated data, and the range in size of the projects.

The Size Factor for your project is determined by dividing your project area in S.F. by the typical project size for the particular Building Type. With this factor, enter the Area Conversion Scale at the appropriate Size Factor and determine the appropriate Cost Multiplier for your building size.

Example: Determine the cost per S.F. for a 103,600 S.F. Multi-family housing.

$$\frac{\text{Proposed building area} = 103{,}600 \text{ S.F.}}{\text{Typical size from below} = 51{,}800 \text{ S.F.}} = 2.00$$

Enter Area Conversion Scale at 2.0, intersect curve, read horizontally the appropriate cost multiplier of .94. Size adjusted cost becomes .94 x $238.00 = $223.72 based on national average costs.

Note: For Size Factors less than .50, the Cost Multiplier is 1.1
For Size Factors greater than 3.5, the Cost Multiplier is .90

System	Median Cost (Total Project Costs)	Typical Size Gross S.F. (Median of Projects)	Typical Range (Low – High) (Projects)
Auto Sales with Repair	$209.00	24,900	4,700 – 29,300
Banking Institutions	335.00	9,300	3,300 – 38,100
Court House	320.00	56,000	24,700 – 70,500
Data Centers	315.00	14,400	14,400 – 14,400
Detention Centers	355.00	37,800	12,300 – 183,330
Fire Stations	269.00	12,600	6,300 – 49,600
Gymnasium	230.00	52,400	22,800 – 82,000
Hospitals	425.00	73,300	12,700 – 410,300
Industrial Buildings	149.00	21,100	5,100 – 200,600
Medical Clinics & Offices	250.00	24,100	2,300 – 327,000
Mixed Use	375.00	31,800	7,200 – 188,900
Multi-Family Housing	238.00	51,800	2,500 – 1,161,500
Nursing Home & Assisted Living	180.00	38,200	1,500 – 242,600
Office Buildings	225.00	20,600	1,100 – 930,000
Parking Garage	53.00	151,800	99,900 – 287,000
Parking Garage/Mixed Use	197.00	254,200	5,300 – 318,000
Police Stations	340.00	25,200	12,700 – 88,600
Police/Fire	193.00	44,300	8,600 – 50,300
Public Assembly Buildings	285.00	21,000	2,200 – 235,300
Recreational	330.00	25,300	1,000 – 223,800
Restaurants	385.00	5,900	2,100 – 42,000
Retail	171.00	26,000	4,000 – 84,300
Schools	254.00	69,400	1,300 – 410,800
University, College & Private School Classroom & Admin Buildings	320.00	48,000	2,400 – 196,200
University, College & Private School Dormitories	256.00	39,200	1,500 – 126,900
University, College & Private School Science, Eng. & Lab Buildings	355.00	60,000	5,300 – 117,600
University, College & Private School Student Union Buildings	600.00	48,700	42,100 – 50,000
Warehouses	126.00	10,900	600 – 303,800

A	Area Square Feet; Ampere
AAFES	Army and Air Force Exchange Service
ABS	Acrylonitrile Butadiene Stryrene; Asbestos Bonded Steel
A.C., AC	Alternating Current; Air-Conditioning; Asbestos Cement; Plywood Grade A & C
ACI	American Concrete Institute
ACR	Air Conditioning Refrigeration
ADA	Americans with Disabilities Act
AD	Plywood, Grade A & D
Addit.	Additional
Adh.	Adhesive
Adj.	Adjustable
af	Audio-frequency
AFFF	Aqueous Film Forming Foam
AFUE	Annual Fuel Utilization Efficiency
AGA	American Gas Association
Agg.	Aggregate
A.H., Ah	Ampere Hours
A hr.	Ampere-hour
A.H.U., AHU	Air Handling Unit
A.I.A.	American Institute of Architects
AIC	Ampere Interrupting Capacity
Allow.	Allowance
alt., alt	Alternate
Alum.	Aluminum
a.m.	Ante Meridiem
Amp.	Ampere
Anod.	Anodized
ANSI	American National Standards Institute
APA	American Plywood Association
Approx.	Approximate
Apt.	Apartment
Asb.	Asbestos
A.S.B.C.	American Standard Building Code
Asbe.	Asbestos Worker
ASCE	American Society of Civil Engineers
A.S.H.R.A.E.	American Society of Heating, Refrig. & AC Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
Attchmt.	Attachment
Avg., Ave.	Average
AWG	American Wire Gauge
AWWA	American Water Works Assoc.
Bbl.	Barrel
B&B, BB	Grade B and Better; Balled & Burlapped
B&S	Bell and Spigot
B.&W.	Black and White
b.c.c.	Body-centered Cubic
B.C.Y.	Bank Cubic Yards
BE	Bevel End
B.F.	Board Feet
Bg. cem.	Bag of Cement
BHP	Boiler Horsepower; Brake Horsepower
B.I.	Black Iron
bidir.	bidirectional
Bit., Bitum.	Bituminous
Bit., Conc.	Bituminous Concrete
Bk.	Backed
Bkrs.	Breakers
Bldg., bldg	Building
Blk.	Block
Bm.	Beam
Boil.	Boilermaker
bpm	Blows per Minute
BR	Bedroom
Brg., brng.	Bearing
Brhe.	Bricklayer Helper
Bric.	Bricklayer
Brk., brk	Brick
brkt	Bracket
Brs.	Brass
Brz.	Bronze
Bsn.	Basin
Btr.	Better
BTU	British Thermal Unit
BTUH	BTU per Hour
Bu.	Bushels
BUR	Built-up Roofing
BX	Interlocked Armored Cable
°C	Degree Centigrade
c	Conductivity, Copper Sweat
C	Hundred; Centigrade
C/C	Center to Center, Cedar on Cedar
C-C	Center to Center
Cab	Cabinet
Cair.	Air Tool Laborer
Cal.	Caliper
Calc	Calculated
Cap.	Capacity
Carp.	Carpenter
C.B.	Circuit Breaker
C.C.A.	Chromate Copper Arsenate
C.C.F.	Hundred Cubic Feet
cd	Candela
cd/sf	Candela per Square Foot
CD	Grade of Plywood Face & Back
CDX	Plywood, Grade C & D, exterior glue
Cefi.	Cement Finisher
Cem.	Cement
CF	Hundred Feet
C.F.	Cubic Feet
CFM	Cubic Feet per Minute
CFRP	Carbon Fiber Reinforced Plastic
c.g.	Center of Gravity
CHW	Chilled Water; Commercial Hot Water
C.I., CI	Cast Iron
C.I.P., CIP	Cast in Place
Circ.	Circuit
C.L.	Carload Lot
CL	Chain Link
Clab.	Common Laborer
Clam	Common Maintenance Laborer
C.L.F.	Hundred Linear Feet
CLF	Current Limiting Fuse
CLP	Cross Linked Polyethylene
cm	Centimeter
CMP	Corr. Metal Pipe
CMU	Concrete Masonry Unit
CN	Change Notice
Col.	Column
CO_2	Carbon Dioxide
Comb.	Combination
comm.	Commercial, Communication
Compr.	Compressor
Conc.	Concrete
Cont., cont	Continuous; Continued, Container
Corkbd.	Cork Board
Corr.	Corrugated
Cos	Cosine
Cot	Cotangent
Cov.	Cover
C/P	Cedar on Paneling
CPA	Control Point Adjustment
Cplg.	Coupling
CPM	Critical Path Method
CPVC	Chlorinated Polyvinyl Chloride
C.Pr.	Hundred Pair
CRC	Cold Rolled Channel
Creos.	Creosote
Crpt.	Carpet & Linoleum Layer
CRT	Cathode-ray Tube
CS	Carbon Steel, Constant Shear Bar Joist
Csc	Cosecant
C.S.F.	Hundred Square Feet
CSI	Construction Specifications Institute
CT	Current Transformer
CTS	Copper Tube Size
Cu	Copper, Cubic
Cu. Ft.	Cubic Foot
cw	Continuous Wave
C.W.	Cool White; Cold Water
Cwt.	100 Pounds
C.W.X.	Cool White Deluxe
C.Y.	Cubic Yard (27 cubic feet)
C.Y./Hr.	Cubic Yard per Hour
Cyl.	Cylinder
d	Penny (nail size)
D	Deep; Depth; Discharge
Dis., Disch.	Discharge
Db	Decibel
Dbl.	Double
DC	Direct Current
DDC	Direct Digital Control
Demob.	Demobilization
d.f.t.	Dry Film Thickness
d.f.u.	Drainage Fixture Units
D.H.	Double Hung
DHW	Domestic Hot Water
DI	Ductile Iron
Diag.	Diagonal
Diam., Dia	Diameter
Distrib.	Distribution
Div.	Division
Dk.	Deck
D.L.	Dead Load; Diesel
DLH	Deep Long Span Bar Joist
dlx	Deluxe
Do.	Ditto
DOP	Dioctyl Phthalate Penetration Test (Air Filters)
Dp., dp	Depth
D.P.S.T.	Double Pole, Single Throw
Dr.	Drive
DR	Dimension Ratio
Drink.	Drinking
D.S.	Double Strength
D.S.A.	Double Strength A Grade
D.S.B.	Double Strength B Grade
Dty.	Duty
DWV	Drain Waste Vent
DX	Deluxe White, Direct Expansion
dyn	Dyne
e	Eccentricity
E	Equipment Only; East; Emissivity
Ea.	Each
EB	Encased Burial
Econ.	Economy
E.C.Y	Embankment Cubic Yards
EDP	Electronic Data Processing
EIFS	Exterior Insulation Finish System
E.D.R.	Equiv. Direct Radiation
Eq.	Equation
EL	Elevation
Elec.	Electrician; Electrical
Elev.	Elevator; Elevating
EMT	Electrical Metallic Conduit; Thin Wall Conduit
Eng.	Engine, Engineered
EPDM	Ethylene Propylene Diene Monomer
EPS	Expanded Polystyrene
Eqhv.	Equip. Oper., Heavy
Eqlt.	Equip. Oper., Light
Eqmd.	Equip. Oper., Medium
Eqmm.	Equip. Oper., Master Mechanic
Eqol.	Equip. Oper., Oilers
Equip.	Equipment
ERW	Electric Resistance Welded

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E.S.	Energy Saver
Est.	Estimated
esu	Electrostatic Units
E.W.	Each Way
EWT	Entering Water Temperature
Excav.	Excavation
excl	Excluding
Exp., exp	Expansion, Exposure
Ext., ext	Exterior; Extension
Extru.	Extrusion
f.	Fiber Stress
F	Fahrenheit; Female; Fill
Fab., fab	Fabricated; Fabric
FBGS	Fiberglass
F.C.	Footcandles
f.c.c.	Face-centered Cubic
f'c.	Compressive Stress in Concrete; Extreme Compressive Stress
F.E.	Front End
FEP	Fluorinated Ethylene Propylene (Teflon)
F.G.	Flat Grain
F.H.A.	Federal Housing Administration
Fig.	Figure
Fin.	Finished
FIPS	Female Iron Pipe Size
Fixt.	Fixture
FJP	Finger jointed and primed
Fl. Oz.	Fluid Ounces
Flr.	Floor
Flrs.	Floors
FM	Frequency Modulation; Factory Mutual
Fmg.	Framing
FM/UL	Factory Mutual/Underwriters Labs
Fdn.	Foundation
FNPT	Female National Pipe Thread
Fori.	Foreman, Inside
Foro.	Foreman, Outside
Fount.	Fountain
fpm	Feet per Minute
FPT	Female Pipe Thread
Fr	Frame
F.R.	Fire Rating
FRK	Foil Reinforced Kraft
FSK	Foil/Scrim/Kraft
FRP	Fiberglass Reinforced Plastic
FS	Forged Steel
FSC	Cast Body; Cast Switch Box
Ft., ft	Foot; Feet
Ftng.	Fitting
Ftg.	Footing
Ft lb.	Foot Pound
Furn.	Furniture
FVNR	Full Voltage Non-Reversing
FVR	Full Voltage Reversing
FXM	Female by Male
Fy.	Minimum Yield Stress of Steel
g	Gram
G	Gauss
Ga.	Gauge
Gal., gal.	Gallon
Galv., galv	Galvanized
GC/MS	Gas Chromatograph/Mass Spectrometer
Gen.	General
GFI	Ground Fault Interrupter
GFRC	Glass Fiber Reinforced Concrete
Glaz.	Glazier
GPD	Gallons per Day
gpf	Gallon per Flush
GPH	Gallons per Hour
gpm, GPM	Gallons per Minute
GR	Grade
Gran.	Granular
Grnd.	Ground
GVW	Gross Vehicle Weight
GWB	Gypsum Wall Board
H	High Henry
HC	High Capacity
H.D., HD	Heavy Duty; High Density
H.D.O.	High Density Overlaid
HDPE	High Density Polyethylene Plastic
Hdr.	Header
Hdwe.	Hardware
H.I.D., HID	High Intensity Discharge
Help.	Helper Average
HEPA	High Efficiency Particulate Air Filter
Hg	Mercury
HIC	High Interrupting Capacity
HM	Hollow Metal
HMWPE	High Molecular Weight Polyethylene
HO	High Output
Horiz.	Horizontal
H.P., HP	Horsepower; High Pressure
H.P.F.	High Power Factor
Hr.	Hour
Hrs./Day	Hours per Day
HSC	High Short Circuit
Ht.	Height
Htg.	Heating
Htrs.	Heaters
HVAC	Heating, Ventilation & Air-Conditioning
Hvy.	Heavy
HW	Hot Water
Hyd.; Hydr.	Hydraulic
Hz	Hertz (cycles)
I.	Moment of Inertia
IBC	International Building Code
I.C.	Interrupting Capacity
ID	Inside Diameter
I.D.	Inside Dimension; Identification
I.F.	Inside Frosted
I.M.C.	Intermediate Metal Conduit
In.	Inch
Incan.	Incandescent
Incl.	Included; Including
Int.	Interior
Inst.	Installation
Insul., insul	Insulation/Insulated
I.P.	Iron Pipe
I.P.S., IPS	Iron Pipe Size
IPT	Iron Pipe Threaded
I.W.	Indirect Waste
J	Joule
J.I.C.	Joint Industrial Council
K	Thousand; Thousand Pounds; Heavy Wall Copper Tubing, Kelvin
K.A.H.	Thousand Amp. Hours
kcmil	Thousand Circular Mils
KD	Knock Down
K.D.A.T.	Kiln Dried After Treatment
kg	Kilogram
kG	Kilogauss
kgf	Kilogram Force
kHz	Kilohertz
Kip	1000 Pounds
KJ	Kilojoule
K.L.	Effective Length Factor
K.L.F.	Kips per Linear Foot
Km	Kilometer
KO	Knock Out
K.S.F.	Kips per Square Foot
K.S.I.	Kips per Square Inch
kV	Kilovolt
kVA	Kilovolt Ampere
kVAR	Kilovar (Reactance)
KW	Kilowatt
KWh	Kilowatt-hour
L	Labor Only; Length; Long; Medium Wall Copper Tubing
Lab.	Labor
lat	Latitude
Lath.	Lather
Lav.	Lavatory
lb.; #	Pound
L.B., LB	Load Bearing; L Conduit Body
L. & E.	Labor & Equipment
lb./hr.	Pounds per Hour
lb./L.F.	Pounds per Linear Foot
lbf/sq.in.	Pound-force per Square Inch
L.C.L.	Less than Carload Lot
L.C.Y.	Loose Cubic Yard
Ld.	Load
LE	Lead Equivalent
LED	Light Emitting Diode
L.F.	Linear Foot
L.F. Hdr	Linear Feet of Header
L.F. Nose	Linear Foot of Stair Nosing
L.F. Rsr	Linear Foot of Stair Riser
Lg.	Long; Length; Large
L & H	Light and Heat
LH	Long Span Bar Joist
L.H.	Labor Hours
L.L., LL	Live Load
L.L.D.	Lamp Lumen Depreciation
lm	Lumen
lm/sf	Lumen per Square Foot
lm/W	Lumen per Watt
LOA	Length Over All
log	Logarithm
L-O-L	Lateralolet
long.	Longitude
L.P., LP	Liquefied Petroleum; Low Pressure
L.P.F.	Low Power Factor
LR	Long Radius
L.S.	Lump Sum
Lt.	Light
Lt. Ga.	Light Gauge
L.T.L.	Less than Truckload Lot
Lt. Wt.	Lightweight
L.V.	Low Voltage
M	Thousand; Material; Male; Light Wall Copper Tubing
M^2CA	Meters Squared Contact Area
m/hr.; M.H.	Man-hour
mA	Milliampere
Mach.	Machine
Mag. Str.	Magnetic Starter
Maint.	Maintenance
Marb.	Marble Setter
Mat; Mat'l.	Material
Max.	Maximum
MBF	Thousand Board Feet
MBH	Thousand BTU's per hr.
MC	Metal Clad Cable
MCC	Motor Control Center
M.C.F.	Thousand Cubic Feet
MCFM	Thousand Cubic Feet per Minute
M.C.M.	Thousand Circular Mils
MCP	Motor Circuit Protector
MD	Medium Duty
MDF	Medium-density fibreboard
M.D.O.	Medium Density Overlaid
Med.	Medium
MF	Thousand Feet
M.F.B.M.	Thousand Feet Board Measure
Mfg.	Manufacturing
Mfrs.	Manufacturers
mg	Milligram
MGD	Million Gallons per Day
MGPH	Million Gallons per Hour
MH, M.H.	Manhole; Metal Halide; Man-Hour
MHz	Megahertz
Mi.	Mile
MI	Malleable Iron; Mineral Insulated
MIPS	Male Iron Pipe Size
mj	Mechanical Joint
m	Meter
mm	Millimeter
Mill.	Millwright
Min., min.	Minimum, Minute

Misc.	Miscellaneous
ml	Milliliter, Mainline
M.L.F.	Thousand Linear Feet
Mo.	Month
Mobil.	Mobilization
Mog.	Mogul Base
MPH	Miles per Hour
MPT	Male Pipe Thread
MRGWB	Moisture Resistant Gypsum Wallboard
MRT	Mile Round Trip
ms	Millisecond
M.S.F.	Thousand Square Feet
Mstz.	Mosaic & Terrazzo Worker
M.S.Y.	Thousand Square Yards
Mtd., mtd., mtd	Mounted
Mthe.	Mosaic & Terrazzo Helper
Mtng.	Mounting
Mult.	Multi; Multiply
MUTCD	Manual on Uniform Traffic Control Devices
M.V.A.	Million Volt Amperes
M.V.A.R.	Million Volt Amperes Reactance
MV	Megavolt
MW	Megawatt
MXM	Male by Male
MYD	Thousand Yards
N	Natural; North
nA	Nanoampere
NA	Not Available; Not Applicable
N.B.C.	National Building Code
NC	Normally Closed
NEMA	National Electrical Manufacturers Assoc.
NEHB	Bolted Circuit Breaker to 600V.
NFPA	National Fire Protection Association
NLB	Non-Load-Bearing
NM	Non-Metallic Cable
nm	Nanometer
No.	Number
NO	Normally Open
N.O.C.	Not Otherwise Classified
Nose.	Nosing
NPT	National Pipe Thread
NQOD	Combination Plug-on/Bolt on Circuit Breaker to 240V.
N.R.C., NRC	Noise Reduction Coefficient/ Nuclear Regulator Commission
N.R.S.	Non Rising Stem
ns	Nanosecond
NTP	Notice to Proceed
nW	Nanowatt
OB	Opposing Blade
OC	On Center
OD	Outside Diameter
O.D.	Outside Dimension
ODS	Overhead Distribution System
O.G.	Ogee
O.H.	Overhead
O&P	Overhead and Profit
Oper.	Operator
Opng.	Opening
Orna.	Ornamental
OSB	Oriented Strand Board
OS&Y	Outside Screw and Yoke
OSHA	Occupational Safety and Health Act
Ovhd.	Overhead
OWG	Oil, Water or Gas
Oz.	Ounce
P.	Pole; Applied Load; Projection
p.	Page
Pape.	Paperhanger
P.A.P.R.	Powered Air Purifying Respirator
PAR	Parabolic Reflector
P.B., PB	Push Button
Pc., Pcs.	Piece, Pieces
P.C.	Portland Cement; Power Connector
P.C.F.	Pounds per Cubic Foot
PCM	Phase Contrast Microscopy
PDCA	Painting and Decorating Contractors of America
P.E., PE	Professional Engineer; Porcelain Enamel; Polyethylene; Plain End
P.E.C.I.	Porcelain Enamel on Cast Iron
Perf.	Perforated
PEX	Cross Linked Polyethylene
Ph.	Phase
P.I.	Pressure Injected
Pile.	Pile Driver
Pkg.	Package
Pl.	Plate
Plah.	Plasterer Helper
Plas.	Plasterer
plf	Pounds Per Linear Foot
Pluh.	Plumber Helper
Plum.	Plumber
Ply.	Plywood
p.m.	Post Meridiem
Pntd.	Painted
Pord.	Painter, Ordinary
pp	Pages
PP, PPL	Polypropylene
P.P.M.	Parts per Million
Pr.	Pair
P.E.S.B.	Pre-engineered Steel Building
Prefab.	Prefabricated
Prefin.	Prefinished
Prop.	Propelled
PSF, psf	Pounds per Square Foot
PSI, psi	Pounds per Square Inch
PSIG	Pounds per Square Inch Gauge
PSP	Plastic Sewer Pipe
Pspr.	Painter, Spray
Psst.	Painter, Structural Steel
P.T.	Potential Transformer
P. & T.	Pressure & Temperature
Ptd.	Painted
Ptns.	Partitions
Pu	Ultimate Load
PVC	Polyvinyl Chloride
Pvmt.	Pavement
PRV	Pressure Relief Valve
Pwr.	Power
Q	Quantity Heat Flow
Qt.	Quart
Quan., Qty.	Quantity
Q.C.	Quick Coupling
r	Radius of Gyration
R	Resistance
R.C.P.	Reinforced Concrete Pipe
Rect.	Rectangle
recpt.	Receptacle
Reg.	Regular
Reinf.	Reinforced
Req'd.	Required
Res.	Resistant
Resi.	Residential
RF	Radio Frequency
RFID	Radio-frequency Identification
Rgh.	Rough
RGS	Rigid Galvanized Steel
RHW	Rubber, Heat & Water Resistant; Residential Hot Water
rms	Root Mean Square
Rnd.	Round
Rodm.	Rodman
Rofc.	Roofer, Composition
Rofp.	Roofer, Precast
Rohe.	Roofer Helpers (Composition)
Rots.	Roofer, Tile & Slate
R.O.W.	Right of Way
RPM	Revolutions per Minute
R.S.	Rapid Start
Rsr	Riser
RT	Round Trip
S.	Suction; Single Entrance; South
SBS	Styrene Butadiere Styrene
SC	Screw Cover
SCFM	Standard Cubic Feet per Minute
Scaf.	Scaffold
Sch., Sched.	Schedule
S.C.R.	Modular Brick
S.D.	Sound Deadening
SDR	Standard Dimension Ratio
S.E.	Surfaced Edge
Sel.	Select
SER, SEU	Service Entrance Cable
S.F.	Square Foot
S.F.C.A.	Square Foot Contact Area
S.F. Flr.	Square Foot of Floor
S.F.G.	Square Foot of Ground
S.F. Hor.	Square Foot Horizontal
SFR	Square Feet of Radiation
S.F. Shlf.	Square Foot of Shelf
S4S	Surface 4 Sides
Shee.	Sheet Metal Worker
Sin.	Sine
Skwk.	Skilled Worker
SL	Saran Lined
S.L.	Slimline
Sldr.	Solder
SLH	Super Long Span Bar Joist
S.N.	Solid Neutral
SO	Stranded with oil resistant inside insulation
S-O-L	Socketolet
sp	Standpipe
S.P.	Static Pressure; Single Pole; Self-Propelled
Spri.	Sprinkler Installer
spwg	Static Pressure Water Gauge
S.P.D.T.	Single Pole, Double Throw
SPF	Spruce Pine Fir; Sprayed Polyurethane Foam
S.P.S.T.	Single Pole, Single Throw
SPT	Standard Pipe Thread
Sq.	Square; 100 Square Feet
Sq. Hd.	Square Head
Sq. In.	Square Inch
S.S.	Single Strength; Stainless Steel
S.S.B.	Single Strength B Grade
sst, ss	Stainless Steel
Sswk.	Structural Steel Worker
Sswl.	Structural Steel Welder
St.; Stl.	Steel
STC	Sound Transmission Coefficient
Std.	Standard
Stg.	Staging
STK	Select Tight Knot
STP	Standard Temperature & Pressure
Stpi.	Steamfitter, Pipefitter
Str.	Strength; Starter; Straight
Strd.	Stranded
Struct.	Structural
Sty.	Story
Subj.	Subject
Subs.	Subcontractors
Surf.	Surface
Sw.	Switch
Swbd.	Switchboard
S.Y.	Square Yard
Syn.	Synthetic
S.Y.P.	Southern Yellow Pine
Sys.	System
t.	Thickness
T	Temperature; Ton
Tan	Tangent
T.C.	Terra Cotta
T & C	Threaded and Coupled
T.D.	Temperature Difference
TDD	Telecommunications Device for the Deaf
T.E.M.	Transmission Electron Microscopy
temp	Temperature, Tempered, Temporary
TFFN	Nylon Jacketed Wire

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TFE	Tetrafluoroethylene (Teflon)
T. & G.	Tongue & Groove; Tar & Gravel
Th., Thk.	Thick
Thn.	Thin
Thrded	Threaded
Tilf.	Tile Layer, Floor
Tilh.	Tile Layer, Helper
THHN	Nylon Jacketed Wire
THW.	Insulated Strand Wire
THWN	Nylon Jacketed Wire
T.L., TL	Truckload
T.M.	Track Mounted
Tot.	Total
T-O-L	Threadolet
tmpd	Tempered
TPO	Thermoplastic Polyolefin
T.S.	Trigger Start
Tr.	Trade
Transf.	Transformer
Trhv.	Truck Driver, Heavy
Trlr	Trailer
Trlt.	Truck Driver, Light
TTY	Teletypewriter
TV	Television
T.W.	Thermoplastic Water Resistant Wire
UCI	Uniform Construction Index
UF	Underground Feeder
UGND	Underground Feeder
UHF	Ultra High Frequency
U.I.	United Inch
U.L., UL	Underwriters Laboratory
Uld.	Unloading
Unfin.	Unfinished
UPS	Uninterruptible Power Supply
URD	Underground Residential Distribution
US	United States
USGBC	U.S. Green Building Council
USP	United States Primed
UTMCD	Uniform Traffic Manual For Control Devices
UTP	Unshielded Twisted Pair
V	Volt
VA	Volt Amperes
VAT	Vinyl Asbestos Tile
V.C.T.	Vinyl Composition Tile
VAV	Variable Air Volume
VC	Veneer Core
VDC	Volts Direct Current
Vent.	Ventilation
Vert.	Vertical
V.F.	Vinyl Faced
V.G.	Vertical Grain
VHF	Very High Frequency
VHO	Very High Output
Vib.	Vibrating
VLF	Vertical Linear Foot
VOC	Volatile Organic Compound
Vol.	Volume
VRP	Vinyl Reinforced Polyester
W	Wire; Watt; Wide; West
w/	With
W.C., WC	Water Column; Water Closet
W.F.	Wide Flange
W.G.	Water Gauge
Wldg.	Welding
W. Mile	Wire Mile
W-O-L	Weldolet
W.R.	Water Resistant
Wrck.	Wrecker
WSFU	Water Supply Fixture Unit
W.S.P.	Water, Steam, Petroleum
WT., Wt.	Weight
WWF	Welded Wire Fabric
XFER	Transfer
XFMR	Transformer
XHD	Extra Heavy Duty
XHHW	Cross-Linked Polyethylene Wire
XLPE	Insulation
XLP	Cross-linked Polyethylene
Xport	Transport
Y	Wye
yd	Yard
yr	Year
Δ	Delta
%	Percent
~	Approximately
Ø	Phase; diameter
@	At
#	Pound; Number
<	Less Than
>	Greater Than
Z	Zone

A

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For customer support on your Building Construction Costs with RSMeans data, call 800.448.8182.

Notes

Division Notes

	CREW	DAILY OUTPUT	LABOR-HOURS	UNIT	BARE COSTS MAT.	BARE COSTS LABOR	BARE COSTS EQUIP.	BARE COSTS TOTAL	TOTAL INCL O&P

Division Notes

	CREW	DAILY OUTPUT	LABOR-HOURS	UNIT	BARE COSTS MAT.	BARE COSTS LABOR	BARE COSTS EQUIP.	BARE COSTS TOTAL	TOTAL INCL O&P

Virtual classes offered monthly. Call for the schedule. 877.620.6245

RSMeans offers training classes in a variety of formats—eLearning training modules, instructor-led classes, on-site training, and virtual training classes, as well as custom solutions. Due to our current COVID-19 situation, RSMeans has adjusted our current training offerings and instructor-led classes for 2022 have not been determined. Please visit our website at rsmeans.com/products/training/seminars for our current schedule of class offerings.

Training classes that are offered in one or more of our formats are: Building Systems and the Construction Process; Construction Cost Estimating: Concepts & Practice; Introduction to Estimating; Scope of Work for Facilities Estimating; Facilities Construction Estimating; Fundamentals to Construction Cost Estimating; Maintenance & Repair Estimating for Facilities; Mechanical & Electrical Estimating; RSMeans CostWorks CD; and RSMeans Online Training.

Registration Information

How to register

By Phone

Register by phone at 877.620.6245

Online

Register online at RSMeans.com/products/services/training

Note: Purchase orders or credits cards are required to register.

Instructor-led Government Pricing

All federal government employees save off the regular seminar price. Other promotional discounts cannot be combined with the government discount. Call 781.422.5115 for government pricing.

If you have any questions or you would like to register for any class or purchase a training module, call us at 877.620.6245.

Construction Cost Estimating: Concepts and Practice

This one- or two-day introductory course to improve estimating skills and effectiveness starts with the details of interpreting bid documents and ends with the summary of the estimate and bid submission.

Some of what you'll learn:

- Using the plans and specifications to create estimates
- The takeoff process—deriving all tasks with correct quantities
- Summarizing the estimate to arrive at the final number
- Formulas for area and cubic measure, adding waste and adjusting productivity to specific projects
- Evaluating subcontractors' proposals and prices
- Adding insurance and bonds
- Understanding how labor costs are calculated
- Submitting bids and proposals

Who should attend: project managers, architects, engineers, owners' representatives, contractors, and anyone who's responsible for budgeting or estimating construction projects.

Fundamentals to Construction Cost Estimating

This self-paced course focuses on unit price estimating for facilities renovation, repair, and remodeling. Combining hands-on skill building with a discussion of best estimating practices and real-life problems, this informative online course will boost your estimating skills, bring you up to date with key concepts, and provide tips and guidelines that can save you time and help you avoid costly estimating oversights and errors.

Some of what you'll learn:

- The three phases of estimating
- Bid document review
- How to perform quantity takeoffs
- How to price the work

Who should attend: facilities professionals and anyone involved in facilities planning, design, and construction. For novice estimators, this course can serve as a primer to Facilities Construction Estimating Self-Paced Training or the following live training courses: Facilities Construction Estimating, Mechanical & Electrical Estimating, Assessing Scope of Work for Facilities Estimating, or Maintenance & Repair Estimating.

Mechanical & Electrical Estimating

This two-day course teaches attendees how to prepare more accurate and complete mechanical/electrical estimates, avoid the pitfalls of omission and double-counting, and understand the composition and rationale within the RSMeans mechanical/electrical database.

Some of what you'll learn:

- The unique way mechanical and electrical systems are interrelated
- M&E estimates—conceptual, planning, budgeting, and bidding stages
- Order of magnitude, square foot, assemblies, and unit price estimating
- Comparative cost analysis of equipment and design alternatives

Who should attend: architects, engineers, facilities managers, mechanical and electrical contractors, and others who need a highly reliable method for developing, understanding, and evaluating mechanical and electrical contracts.

Facilities Construction Estimating

In this two-day course, professionals working in facilities management can get help with their daily challenges to establish budgets for all phases of a project.

Some of what you'll learn:

- Determining the full scope of a project
- Understanding of RSMeans data and what is included in prices
- Identifying appropriate factors to be included in your estimate
- Creative solutions to estimating issues
- Organizing estimates for presentation and discussion
- Special estimating techniques for repair/remodel and maintenance projects
- Appropriate use of contingency, city cost indexes, and reference notes
- Techniques to get to the correct estimate quickly

Who should attend: facility managers, engineers, contractors, facility tradespeople, planners, and project managers.

Assessing Scope of Work for Facilities Construction Estimating

This two-day practical training program addresses the vital importance of understanding the scope of projects in order to produce accurate cost estimates for facilities repair and remodeling.

Some of what you'll learn:

- Discussions of site visits, plans/specs, record drawings of facilities, and site-specific lists
- Review of CSI divisions, including means, methods, materials, and the challenges of scoping each topic
- Exercises in scope identification and scope writing for accurate estimating of projects
- Hands-on exercises that require scope, takeoff, and pricing

Who should attend: corporate and government estimators, planners, facility managers, and others who need to produce accurate project estimates.

CostWorks CD Self-Paced Training Course

This self-paced course helps users become more familiar with the functionality of the CD. Each menu, icon, screen, and function found in the program is explained in depth. Time is devoted to hands-on estimating exercises.

Some of what you'll learn:

- Searching the database using all navigation methods
- Exporting RSMeans data to your preferred spreadsheet format
- Viewing crews, assembly components, and much more
- Automatically regionalizing the database

This training session requires users to bring a laptop computer to class and to follow along using a purchased copy of RSMeans CostWorks CD.

When you register for this course you will receive an outline for your laptop requirements.

Maintenance & Repair Estimating for Facilities

This two-day course teaches attendees how to plan, budget, and estimate the cost of ongoing and preventive maintenance and repair for existing buildings and grounds.

Some of what you'll learn:

- The most financially favorable maintenance, repair, and replacement scheduling and estimating
- Preventive planning and facilities upgrading
- Determining both in-house and contract-out service costs
- Annual, asset-protecting M&R plan

Who should attend: facility managers, maintenance supervisors, buildings and grounds superintendents, plant managers, planners, estimators, and others involved in facilities planning and budgeting.

RSMeans Online Training

Construction estimating is vital to the decision-making process at each state of every project. Our online solution works the way you do. It's systematic, flexible, and intuitive. In this self-paced course you will see how you can estimate any phase of any project faster and better.

Some of what you'll learn:

- Customizing our online estimating solution
- Making the most of RSMeans "Circle Reference" numbers
- How to integrate your cost data
- Generating reports, exporting estimates to MS Excel, sharing, collaborating, and more

Also offered as a self-paced or on-site training program!

RSMeans Training Cancellation Policy

Virtual Training (Individual)

If you are unable to attend a training class, a colleague may substitute at any time before the session starts by notifying the training registrar at 1.781.422.5115 or your sales representative. Gordian is not responsible for sending duplicate materials to the substitute colleague.

If you are unable to find a substitute and cancel fewer than ten (10) business days prior to the training class, you will either forfeit the registration fee or be allowed to apply your registration fee to the same class only once within the same calendar year. No-shows will forfeit their registration fees and no rescheduling is permitted. In the unfortunate circumstance that Gordian must cancel your event, Gordian will work with you to reschedule your attendance in the same training class at a later date or will fully refund your registration fee.

Any on-demand (self-paced) training modules are not eligible for cancellation, substitution, transfer, return, or refund.

Virtual Training (Private Group)

If you provide notice more than ten (10) business days prior to the training class, Gordian will work to reschedule your event. If you cancel your event fewer than ten (10) business days prior to the training class, you are responsible for paying for the trainers' time for the cancelled training, as well as the full cost of materials and shipping. In the unfortunate circumstance that Gordian must cancel your event, Gordian will work with you to reschedule your attendance in the same training class at a later date or will fully refund your registration fee.

Public Training Events (Individual)

If you are unable to attend a training conference, a colleague may substitute no fewer than ten (10) business days before the session starts by notifying the training registrar at 1.781.422.5115 or your sales representative. Gordian is not responsible for sending duplicate materials to the substitute colleague.

If you are unable to find a substitute and cancel fewer than ten (10) business days prior to the conference, you will forfeit the registration fee. No-shows will forfeit their registration fees and no rescheduling is permitted. In the unfortunate circumstance that Gordian must cancel your event, Gordian will fully refund your registration fee.

On-Site Training (Private Group)

If you provide notice more than ten (10) business days prior to the training class, Gordian will work with you to reschedule your event, but you are responsible for rescheduling fees associated with the trainer's time, airfare, and lodging. If you cancel fewer than ten (10) business days before your event, you are responsible for the full cost of the event. In the unfortunate event that Gordian must cancel your event, Gordian will work with you to reschedule your attendance at a later date or will fully refund your registration fee.

AACE Approved Courses

The AACE recognizes .1 CEUs per hour of training attended for all of Gordian's virtual training courses.

AIA Continuing Education

We are registered with the AIA Continuing Education System (AIA/CES) and are committed to developing quality learning activities in accordance with the CES criteria. Many seminars meet the AIA/CES criteria for Quality Level 2. AIA members may receive 14 learning units (LUs) for each two-day RSMeans course.

Daily Course Schedule

The first day of each seminar session begins at 8:30 a.m. and ends at 4:30 p.m. The second day begins at 8:00 a.m. and ends at 4:00 p.m. Participants are urged to bring a hand-held calculator since many actual problems will be worked out in each session.

Continental Breakfast

Your registration includes the cost of a continental breakfast and a morning and afternoon refreshment break. These informal segments allow you to discuss topics of mutual interest with other seminar attendees. You are free to make your own lunch and dinner arrangements.

Hotel/Transportation Arrangements

We arrange to hold a block of rooms at most host hotels. To take advantage of special group rates when making your reservation, be sure to mention that you are attending the RSMeans Institute data seminar. You are, of course, free to stay at the lodging place of your choice. Hotel reservations and transportation arrangements should be made directly by seminar attendees.

Important

Class sizes are limited, so please register as soon as possible.

Installing Contractor's Overhead & Profit

Below are the average installing contractor's percentage markups applied to base labor rates to arrive at typical billing rates.

Column A: Labor rates are based on union wages averaged for 30 major U.S. cities. Base rates, including fringe benefits, are listed hourly and daily. These figures are the sum of the wage rate and employer-paid fringe benefits such as vacation pay, employer-paid health and welfare costs, and pension costs, plus appropriate training and industry advancement funds costs.

Column B: Workers' compensation rates are the national average of state rates established for each trade.

Column C: Column C lists average fixed overhead figures for all trades. Included are federal and state unemployment costs set at 8%; social security taxes (FICA) set at 7.65%; builder's risk insurance costs set at 0.80%; and public liability costs set at 2.02%. All percentages, except those for social security taxes, vary from state to state as well as from company to company.

Columns D and E: Percentages in Columns D and E are based on the presumption that the installing contractor has annual billing of $4,000,000 and up. Overhead percentages may increase with smaller annual billing. The overhead percentages for any given contractor may vary greatly and depend on a number of factors such as the contractor's annual volume, engineering and logistical support costs, and staff requirements. The figures for overhead and profit will also vary depending on the type of job, the job location, and the prevailing economic conditions. All factors should be examined very carefully for each job.

Column F: Column F lists the total of Columns B, C, D, and E.

Column G: Column G is Column A (hourly base labor rate) multiplied by the percentage in Column F (O&P percentage).

Column H: Column H is the total of Column A (hourly base labor rate) plus Column G (Total O&P).

Column I: Column I is Column H multiplied by eight hours.

		A		B	C	D	E	F	G	H	I
		Base Rate Incl. Fringes		Work-ers' Comp. Ins.	Average Fixed Over-head	Over-head	Profit	Total Overhead & Profit		Rate with O & P	
Abbr.	Trade	Hourly	Daily					%	Amount	Hourly	Daily
Skwk	Skilled Workers Average (35 trades)	$58.90	$471.20	8.7%	18.5%	13.0%	10%	50.2%	$29.55	$ 88.45	$ 707.60
	Helpers Average (5 trades)	43.30	346.40	11.6		11.0		51.1	22.15	65.45	523.60
	Foreman Average, Inside ($0.50 over trade)	59.40	475.20	8.7		13.0		50.2	29.80	89.20	713.60
	Foreman Average, Outside ($2.00 over trade)	60.90	487.20	8.7		13.0		50.2	30.60	91.50	732.00
Clab	Common Building Laborers	45.60	364.80	9.4		11.0		48.9	22.30	67.90	543.20
Asbe	Asbestos/Insulation Workers/Pipe Coverers	63.05	504.40	8.5		16.0		53.0	33.40	96.45	771.60
Boil	Boilermakers	70.50	564.00	4.8		16.0		49.3	34.75	105.25	842.00
Bric	Bricklayers	55.25	442.00	10.6		11.0		50.1	27.65	82.90	663.20
Brhe	Bricklayer Helpers	45.00	360.00	10.6		11.0		50.1	22.55	67.55	540.40
Carp	Carpenters	56.30	450.40	9.4		11.0		48.9	27.50	83.80	670.40
Cefi	Cement Finishers	53.15	425.20	6.8		11.0		46.3	24.60	77.75	622.00
Elec	Electricians	66.20	529.60	4.1		16.0		48.6	32.20	98.40	787.20
Elev	Elevator Constructors	93.55	748.40	3.5		16.0		48.0	44.95	138.50	1108.00
Eqhv	Equipment Operators, Crane or Shovel	63.40	507.20	6.3		14.0		48.8	30.95	94.35	754.80
Eqmd	Equipment Operators, Medium Equipment	60.40	483.20	6.3		14.0		48.8	29.45	89.85	718.80
Eqlt	Equipment Operators, Light Equipment	57.00	456.00	6.3		14.0		48.8	27.80	84.80	678.40
Eqol	Equipment Operators, Oilers	54.00	432.00	6.3		14.0		48.8	26.35	80.35	642.80
Eqmm	Equipment Operators, Master Mechanics	63.50	508.00	6.3		14.0		48.8	31.00	94.50	756.00
Glaz	Glaziers	54.00	432.00	9.1		11.0		48.6	26.25	80.25	642.00
Lath	Lathers	56.00	448.00	6.5		11.0		46.0	25.75	81.75	654.00
Marb	Marble Setters	55.05	440.40	10.6		11.0		50.1	27.55	82.60	660.80
Mill	Millwrights	60.55	484.40	5.0		11.0		44.5	26.95	87.50	700.00
Mstz	Mosaic & Terrazzo Workers	53.40	427.20	6.6		11.0		46.1	24.60	78.00	624.00
Pord	Painters, Ordinary	47.80	382.40	8.7		11.0		48.2	23.05	70.85	566.80
Psst	Painters, Structural Steel	48.90	391.20	20.1		11.0		59.6	29.15	78.05	624.40
Pape	Paper Hangers	48.05	384.40	8.7		11.0		48.2	23.15	71.20	569.60
Pile	Pile Drivers	58.20	465.60	10.2		16.0		54.7	31.85	90.05	720.40
Plas	Plasterers	51.40	411.20	9.1		11.0		48.6	25.00	76.40	611.20
Plah	Plasterer Helpers	45.85	366.80	9.1		11.0		48.6	22.30	68.15	545.20
Plum	Plumbers	69.80	558.40	4.6		16.0		49.1	34.30	104.10	832.80
Rodm	Rodmen (Reinforcing)	60.70	485.60	6.8		14.0		49.3	29.95	90.65	725.20
Rofc	Roofers, Composition	49.60	396.80	22.6		11.0		62.1	30.80	80.40	643.20
Rots	Roofers, Tile & Slate	49.60	396.80	22.6		11.0		62.1	30.80	80.40	643.20
Rohe	Roofers, Helpers (Composition)	37.25	298.00	22.6		11.0		62.1	23.15	60.40	483.20
Shee	Sheet Metal Workers	67.55	540.40	6.2		16.0		50.7	34.20	101.75	814.00
Spri	Sprinkler Installers	68.55	548.40	4.8		16.0		49.3	33.75	102.30	818.40
Stpi	Steamfitters or Pipefitters	70.35	562.80	4.6		16.0		49.1	34.55	104.90	839.20
Ston	Stone Masons	55.60	444.80	10.6		11.0		50.1	27.85	83.45	667.60
Sswk	Structural Steel Workers	61.85	494.80	11.5		14.0		54.0	33.40	95.25	762.00
Tilf	Tile Layers	53.15	425.20	6.6		11.0		46.1	24.50	77.65	621.20
Tilh	Tile Layers Helpers	42.80	342.40	6.6		11.0		46.1	19.75	62.55	500.40
Trlt	Truck Drivers, Light	50.40	403.20	9.9		11.0		49.4	24.90	75.30	602.40
Trhv	Truck Drivers, Heavy	53.05	424.40	9.9		11.0		49.4	26.20	79.25	634.00
Sswl	Welders, Structural Steel	61.95	495.60	11.5		14.0		54.0	33.45	95.40	763.20
Wrck	*Wrecking	45.60	364.80	11.6		11.0		51.1	23.30	68.90	551.20

*Not included in averages

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2022 Building Construction Costs with RSMeans data

A comprehensive collection of commercial new construction costs, the 80th edition of this cost book provides data for project types ranging from industrial and retail to multi-family housing and public buildings. Find material, union labor, and equipment prices for electrical, mechanical, site work, framing, and more. With adjustments for more than 930 locations across North America, costs can be localized for even greater accuracy.

Your 2022 cost guide features

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- New data management system and verification process for all cost information.
- Data collection and assimilation include the latest data science processes and methods.

Unit Prices (organized in MasterFormat® 2018)

1 General Requirements
2 Existing Conditions
3 Concrete
4 Masonry
5 Metals
6 Wood, Plastics & Composites
7 Thermal & Moisture Protection
8 Openings
9 Finishes
10 Specialties
11 Equipment
12 Furnishings
13 Special Construction
14 Conveying Equipment
21 Fire Suppression
22 Plumbing
23 Heating, Ventilating & Air Conditioning
26 Electrical
27 Communications
28 Electronic Safety & Security
31 Earthwork
32 Exterior Improvements
33 Utilities
34 Transportation
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