

GORDIAN®

Building Construction Costs

with RSMeans data



2020

78th annual edition

Save Time. Go Online.

The screenshot displays the RSMeans Data Online platform. On the left, there's a sidebar with navigation links like 'Search Data', 'Manage Estimates', 'Square Foot Estimator', 'Life Cycle Cost', and 'Cost Alerts'. Below this is a search bar with 'rsmeans.com/online' and a dropdown for 'Cost Data' set to 'Building Construction Costs'. A 'MasterFormat 2016' category tree is shown under 'General Requirements'. The main area has two main sections: 'Life Cycle Cost Estimator' and 'Square Foot Estimator - Predictive'. The 'Life Cycle Cost Estimator' section includes fields for 'Source' (RSMeans Data Online), 'Model' (Apartment, 1-3 Story with...), 'Stories' (3), 'Year Built' (2018), 'Gross Square Feet' (22,500), 'Story Height' (10), 'Start Year' (2018), 'Time Period' (10), and 'Replacement Value' (\$ 2,812,634.57). It also features a 'Calculate' button and a 'Life Cycle Cost' link. The 'Square Foot Estimator - Predictive' section shows a 3D building model and includes fields for 'Project Start Date' (01/2020), 'Baseline Quarter' (Year 2018 Quarter 2), and 'Construction Start Quarter' (Year 2018 Quarter 2, Year 2020 Quarter 2, Year 2020 Quarter 3, Year 2020 Quarter 4). It displays cost per square foot (\$168.76), floor area (22,500), and story height (10.00). Buttons for 'Save Estimate' and 'Export' are also present.

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For Reference

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Building Construction Costs with RSMeans data

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Cover photo © iStock.com/Ksene

Printed in the United States of America
ISSN 0068-3531
ISBN 978-1-950656-01-1

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2020

78th annual edition



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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

2020 Assemblies Costs with RSMeans data

2020 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

Seminars and In-House Training

Unit Price Estimating

Training for our online estimating solution

Practical Project Management for Construction Professionals

Scheduling with MSProject for Construction Professionals

Mechanical & Electrical Estimating

RSMeans data

For access to the latest cost data, an intuitive search, and an easy-to-use estimate builder, take advantage of the time savings available from our online application.

To learn more visit: RSMeans.com/online

Enterprise Solutions

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 originated in the spirit of innovation and a strong commitment to helping clients reach and exceed their construction goals. In 1982, Gordian's chairman and founder, Harry H. Mellon, created Job Order Contracting while serving as chief engineer at the Supreme Headquarters Allied Powers Europe. Job Order Contracting is a unique indefinite delivery/indefinite quantity (IDIQ) process, which enables facility owners to complete a substantial number of repair, maintenance, and

construction projects with a single, competitively awarded contract. Realizing facility and infrastructure owners across various industries could greatly benefit from the time and cost saving advantages of this innovative construction procurement solution, he established Gordian in 1990.

Continuing the commitment to providing the most relevant and accurate facility and construction data, software, and expertise in the industry, Gordian enhanced the fortitude of its data with the acquisition of RSMeans in 2014. And in an effort to expand its facility management capabilities, Gordian acquired Sightlines, the leading provider of facilities benchmarking data and analysis, in 2015.

Our Offerings

Gordian is the leader in facility and construction cost data, software, and expertise for all phases of the building life cycle. From planning to design, procurement, construction, and operations, Gordian's solutions help clients maximize efficiency, optimize cost savings, and increase building quality with its highly specialized data engineers, software, and unique proprietary data sets.

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.

MasterFormat® 2016/ MasterFormat® 2018 Comparison Table

This table compares the 2016 edition of the Construction Specifications Institute's MasterFormat® to the expanded 2018 edition. For your convenience, all revised 2016 numbers and titles are listed along with the corresponding 2018 numbers and titles.

CSI 2016 MF ID	CSI 2016 MF Description	CSI 2018 MF ID	CSI 2018 MF Description
015632	Temporary Security	015733	Temporary Security
019308	Facility Maintenance Equipment	019308	Facilities Maintenance, Equipment
024200	Removal and Salvage of Construction Materials	024200	Removal and Diversion of Construction Materials
026600	Landfill Construction and Storage	026600	Landfills
040130	Unit Masonry Cleaning	04012052	Cleaning Masonry
068010	Composite Decking	067300	Composite Decking
072127	Reflective Insulation	072153	Reflective Insulation
072610	Above-Grade Vapor Retarders	072613	Above-Grade Vapor Retarders
074473	Metal Faced Panels	074433	Metal Faced Panels
075430	Ketone Ethylene Ester Roofing	075416	Ketone Ethylene Ester Roofing
077280	Vents	077280	Vent Options
081410	Wood Doors	081410	Doors, Wood
083410	Special Function Doors	083410	Specialized Function Doors
087125	Weatherstripping	087125	Door Weatherstripping
087530	Weatherstripping	087530	Window Weatherstripping
096223	Bamboo Flooring	096436	Bamboo Flooring
096720	Epoxy-Marble Chip Flooring	096716	Epoxy-Marble Chip Flooring
099103	Paint Restoration	090190	Maintenance of Painting and Coating
102833	Laundry Accessories	102823	Laundry Accessories
114700	Ice Machines	114700	Ice Making Machines
117610	Operating Room Equipment	117610	Equipment for Operating Rooms
117710	Radiology Equipment	117710	Equipment for Radiology
122310	Wood Interior Shutters	122313	Wood Interior Shutters
123580	Commercial Kitchen Casework	123539	Commercial Kitchen Casework
124636	Desk Accessories	124113	Desk Accessories
125273	Multiple Seating	126000	Multiple Seating
141210	Dumbwaiters	141000	Dumbwaiters
211113	Facility Water Distribution Piping	211113	Facility Fire Suppression Piping
233715	Louvers	233715	Air Outlets and Inlets, HVAC Louvers
260580	Wiring Connections	260583	Wiring Connections
270110	Operation and Maintenance of Communications Systems	270110	Operation and Maintenance of Communication Systems
272123	Data Communications Switches and Hubs	272129	Data Communications Switches and Hubs
283149	Carbon-Monoxide Detection Sensors	284611	Carbon-Monoxide Detection Sensors
284621	Fire Alarm	284620	Fire Alarm
316233	Drilled Micropiles	316333	Drilled Micropiles
323420	Fabricated Pedestrian Bridges	323413	Fabricated Pedestrian Bridges
333633	Utility Septic Tank Drainage Field	333633	Ground-Level AWWA D110 Type III Prestressed Conc. Wastewater Storage Tanks
337543	Shunt Reactors	337253	Shunt Reactors
350100	Operation and Maint. of Waterway & Marine Construction	350100	Operation and Maintenance of Waterway and Marine Construction

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.

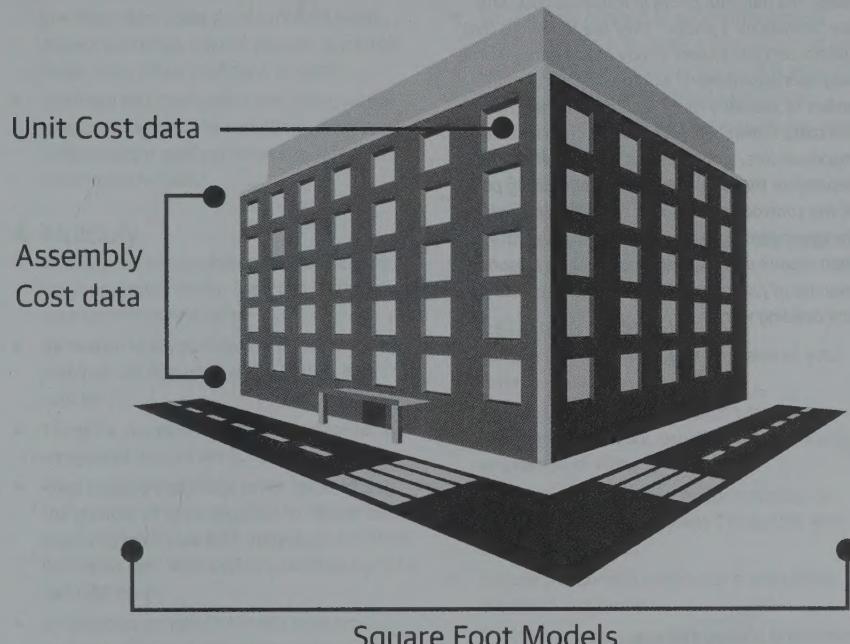
Green Commercial/Industrial/ Institutional Models*

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.



Square Foot Models

- **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 O2 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 O1 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 in order 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.

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Unit Price Section

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10 05	Specialties	11 75	Interior Shutters	438																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
10 11	Common Work Results for Specialties	11 76	Window Shades	438																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
10 13	Visual Display Units	11 77	Manufactured Wood Casework	439																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
10 14	Directories	11 78	Specialty Casing	440																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
10 17	Signage	11 79	Countertops	442																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
10 21	Telephone Specialties	11 80	Furnishing Accessories	444																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
10 22	Compartments and Cubicles	11 81	Interior Shutters	438																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
10 26	Partitions	11 82	Window Shades	438																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
10 28	Wall and Door Protection	11 83	Manufactured Wood Casework	439																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
10 31	Toilet, Bath, and Laundry Accessories	11 84	Specialty Casing	440																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
10 32	Manufactured Fireplaces	11 85	Countertops	442																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
10 35	Fireplace Specialties	11 86	Furnishing Accessories	444																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
10 43	Stoves	11 87	Interior Shutters	438																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
10 44	Emergency Aid Specialties	11 88	Window Shades	438																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
10 51	Fire Protection Specialties	11 89	Manufactured Wood Casework	439																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
10 55	Lockers	11 90	Specialty Casing	440																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
10 56	Postal Specialties	11 91	Countertops	442																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
10 57	Storage Assemblies	11 92	Furnishing Accessories	444																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
10 71	Wardrobe and Closet Specialties	11 93	Interior Shutters	438																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
10 73	Exterior Protection	11 94	Window Shades	438																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
10 74	Protective Covers	11 95	Manufactured Wood Casework	439																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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10 81	Flagpoles	11 97	Countertops	442																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
10 86	Pest Control Devices	11 98	Furnishing Accessories	444																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
10 88	Security Mirrors and Domes	11 99	Interior Shutters	438																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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11 12	Vehicle Service Equipment	11 103	Countertops	442																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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11 21	Pedestrian Control Equipment	11 106	Window Shades	438																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
11 22	Retail and Service Equipment	11 107	Manufactured Wood Casework	439																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
11 23	Banking Equipment	11 108	Specialty Casing	440																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
11 30	Residential Equipment	11 109	Countertops	442																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
11 32	Unit Kitchens	11 110	Furnishing Accessories	444																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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		13 11	Swimming Pools	457																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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		13 17	Tubs and Pools	459																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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		13 21	Controlled Environment Rooms	460																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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		13 28	Athletic and Recreational Special Construction	462																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
		13 31	Fabric Structures	463																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
		13 33	Geodesic Structures	464																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
		13 34	Fabricated Engineered Structures	465																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
		13 36	Towers	471																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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		13 48	Sound, Vibration, and Seismic Control	472																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
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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

1				4	R033105-10	Daily Crew Output	Labor- Hours Unit	Material	2020 Bare Costs	9	Total 10	Total Incl O&P 11
0010	CONCRETE IN PLACE	5	6	7	8							
0020	Including forms (4 uses), Grade 60 rebar, concrete (Portland cement Type I), placement and finishing unless otherwise indicated	R033105-20	G-14A	15.62	12.804	C.Y.	370	675	28	1,073		1,450
0050	Beams (3500 psi), 5 kip/L.F., 10' span	R033105-50	"	18.55	10.782		390	570	23.50	983.50		1,300
0300	,, 25' span	R033105-70	G-14C	32.22	3.476		178	175	.83	353.83		460
0350	Chimney foundations (5000 psi), over 5 C.Y. (3500 psi), under 5 C.Y.	R033105-85	"	23.71	4.724		208	238	1.13	447.13		585
0500	Columns, square (4000 psi), 12" x 12", up to 1% reinforcing by area	R033053-50	G-14A	11.96	16.722		410	885	36.50	1,331.50		1,825
0510	Equipment pad (3000 psi), 3' x 3' x 6" thick		G-14H	45	1.067	Ea.	50.50	55	.60	106.10		139
0700	4' x 4' x 6" thick			30	1.600		78	82.50	.90	161.40		210
3540	5' x 5' x 8" thick			18	2.667		138	138	1.49	277.49		360
3550	6' x 6' x 8" thick			14	3.429		190	177	1.92	368.92		475
3560	8' x 8' x 10" thick			8	6		395	310	3.36	708.36		905
3570	10' x 10' x 12" thick			5	9.600		695	495	5.40	1,195.40		1,500

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 (3000 psi), 4' x 4' x 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	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew C-14H						
1 Carpenter Foreman (outside)	\$55.15	\$441.20	\$82.85	\$662.80	\$51.65	\$77.36
2 Carpenters	53.15	850.40	79.85	1277.60		
1 Rodman (reinf.)	56.40	451.20	84.90	679.20		
1 Laborer	42.10	336.80	63.25	506.00		
1 Cement Finisher	49.95	399.60	73.45	587.60		
1 Gas Engine Vibrator		26.85		29.54	.56	.62
48 L.H., Daily Totals		\$2506.05		\$3742.74	\$52.21	\$77.97

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: $60 \times 1.6 = 96$

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

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 \$78 for material + \$82.50 for labor + \$.90 for equipment is \$161.40.

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.

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						01/01/20		STD
Location:	Anywhere, USA									
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.	\$2,565.00	\$1,770.00	\$8.40	\$0.00			
03 30 53.40 3950	Strip footing, 12" x 36", reinforced	34	C.Y.	\$5,610.00	\$3,196.00	\$15.30	\$0.00			
03 11 13.65 3000	Concrete slab edge forms	500	L.F.	\$165.00	\$1,345.00	\$0.00	\$0.00			
03 22 11.10 0200	Welded wire fabric reinforcing	150	C.S.F.	\$2,872.50	\$4,350.00	\$0.00	\$0.00			
03 31 13.35 0300	Ready mix concrete, 4000 psi for slab on grade	278	C.Y.	\$35,306.00	\$0.00	\$0.00	\$0.00			
03 31 13.70 4300	Place, strike off & consolidate concrete slab	278	C.Y.	\$0.00	\$5,309.80	\$136.22	\$0.00			
03 35 13.30 0250	Machine float & trowel concrete slab	15,000	S.F.	\$0.00	\$9,900.00	\$750.00	\$0.00			
03 15 16.20 0140	Cut control joints in concrete slab	950	L.F.	\$47.50	\$418.00	\$57.00	\$0.00			
03 39 23.13 0300	Sprayed concrete curing membrane	150	C.S.F.	\$1,867.50	\$1,065.00	\$0.00	\$0.00			
Division 03 Subtotal				\$48,433.50	\$27,353.80	\$966.92	\$0.00	\$76,754.22		
08 36 13.10 2850	Manual 10' x 10' steel sectional overhead door	8	Ea.	\$11,000.00	\$3,760.00	\$0.00	\$0.00			
08 36 13.10 2860	Insulation and steel back panel for OH door	800	S.F.	\$4,000.00	\$0.00	\$0.00	\$0.00			
Division 08 Subtotal				\$15,000.00	\$3,760.00	\$0.00	\$0.00	\$18,760.00		
13 34 19.50 1100	Pre-Engineered Steel Building, 100' x 150' x 24'	15,000	SF Flr.	\$0.00	\$0.00	\$0.00	\$0.00	\$367,500.00		
13 34 19.50 6050	Framing for PESB door opening, 3' x 7'	4	Opng.	\$0.00	\$0.00	\$0.00	\$0.00	\$2,320.00		
13 34 19.50 6100	Framing for PESB door opening, 10' x 10'	8	Opng.	\$0.00	\$0.00	\$0.00	\$0.00	\$9,600.00		
13 34 19.50 6200	Framing for PESB window opening, 4' x 3'	6	Opng.	\$0.00	\$0.00	\$0.00	\$0.00	\$3,450.00		
13 34 19.50 5750	PESB door, 3' x 7', single leaf	4	Opng.	\$2,920.00	\$736.00	\$0.00	\$0.00	\$0.00		
13 34 19.50 7750	PESB sliding window, 4' x 3' with screen	6	Opng.	\$2,940.00	\$630.00	\$67.80	\$0.00	\$0.00		
13 34 19.50 6550	PESB gutter, eave type, 26 ga., painted	300	L.F.	\$2,415.00	\$864.00	\$0.00	\$0.00	\$0.00		
13 34 19.50 8650	PESB roof vent, 12" wide x 10' long	15	Ea.	\$570.00	\$3,465.00	\$0.00	\$0.00	\$0.00		
13 34 19.50 6900	PESB insulation, vinyl faced, 4" thick	27,400	S.F.	\$11,782.00	\$10,138.00	\$0.00	\$0.00	\$0.00		
Division 13 Subtotal				\$20,627.00	\$15,833.00	\$67.80	\$382,870.00	\$419,397.80		
				Subtotal	\$84,060.50	\$46,946.80	\$1,034.72	\$382,870.00		\$514,912.02
Division 01 General Requirements @ 7%				5,884.24	3,286.28	72.43	26,800.90			
2	Estimate Subtotal			\$89,944.74	\$50,233.08	\$1,107.15	\$409,670.90	\$514,912.02		
	Sales Tax @ 5%			4,497.24		55.36	10,241.77			
	Subtotal A			94,441.97	50,233.08	1,162.51	419,912.67			
	GC O & P			9,444.20	25,769.57	116.25	41,991.27			
	Subtotal B			103,886.17	76,002.64	1,278.76	461,903.94	\$643,071.51		
	Contingency @ 5%						32,153.58			
	Subtotal C						\$675,225.09			
6	Bond @ \$12/1000 +10% O&P						8,912.97			
	Subtotal D						\$684,138.06			
7	Location Adjustment Factor				115.50		106,041.40			
	Grand Total						\$790,179.46			

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/2020books.

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.

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 Summary of Work

01 11 31 – Professional Consultants

01 11 31.10 Architectural Fees		R011110-10	Daily Crew	Labor-Output	Hours	Unit	Material	2020 Bare Costs	Total Labor	Equipment	Total	Total Ind Q&P
0010	ARCHITECTURAL FEES											
0020	For new construction											
0060	Minimum											4.90% 4.90%
0090	Maximum											16% 16%
0100	For alteration work, to \$500,000, add to new construction fee											50% 50%
0150	Over \$500,000, add to new construction fee											25% 25%
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											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											.50% .50%
0100	Maximum											2.50% 2.50%
0200	Electrical, minimum											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											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.	4,750			4,750	5,225
0510	Elaborate materials and details						"	30,900			30,900	34,000
01 11 31.75 Renderings												
0010	RENDERINGS Color, matted, 20" x 30", eye level,											
0020	1 building, minimum						Ea.	2,250			2,250	2,475
0050	Average							3,200			3,200	3,525
0100	Maximum							5,150			5,150	5,675
1000	5 buildings, minimum							4,250			4,250	4,675
1100	Maximum							8,525			8,525	9,375
2000	Aerial perspective, color, 1 building, minimum							3,100			3,100	3,425
2100	Maximum							8,450			8,450	9,300
3000	5 buildings, minimum							6,050			6,050	6,650
3100	Maximum							12,100			12,100	13,400

01 21 Allowances

01 21 16 – Contingency Allowances

01 21 16.50 Contingencies		Crew	Daily Output	Labor Hours	Unit	Material	2020 Labor	Bare Costs Equipment	Total	Total Incl O&P
0010 CONTINGENCIES, Add to estimate				Project				20%		20%
0020	Conceptual stage							15%		15%
0050	Schematic stage							10%		10%
0100	Preliminary working drawing stage (Design Dev.)							3%		3%
0150	Final working drawing stage									

01 21 53 – Factors Allowance

01 21 53.60 Security Factors

01 21 53.60 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				
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				
0240	At entry and exit										10%
0250	Physical search, at entry										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				
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				
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 55 – Job Conditions Allowance

01 21 55.50 Job Conditions

01 21 55.50 Job Conditions		R012157-20									
0010	JOB CONDITIONS Modifications to applicable										
0020	cost summaries			Project				2%		2%	
0100	Economic conditions, favorable, deduct							5%		5%	
0200	Unfavorable, add							2%		2%	
0300	Hoisting conditions, favorable, deduct							5%		5%	
0400	Unfavorable, add							2%		2%	
0500	General contractor management, experienced, deduct										

01 21 Allowances

01 21 55 – Job Conditions Allowance

01 21 55.50 Job Conditions		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
0600 Inexperienced, add					Project				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	Costs	100%							
0020 labor shortages exist, add to usual labor, up to										

01 21 63 – Taxes

01 21 63.10 Taxes

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

01 31 Project Management and Coordination

01 31 13 – Project Coordination

01 31 13.20 Field Personnel

0010 FIELD PERSONNEL		Week	495	495	750					
0020 Clerk, average										
0100 Field engineer, junior engineer										
0120 Engineer										
0140 Senior engineer										
0160 General purpose laborer, average										
0180 Project manager, minimum	1 Clab	.20	40							
0200 Average										
0220 Maximum										
0240 Superintendent, minimum										
0260 Average										
0280 Maximum										
0290 Timekeeper, average										

01 31 13.30 Insurance

0010 INSURANCE	R013113-40	Job		.24%	.24%					
0020 Builders risk, standard, minimum										
0050 Maximum	R013113-50									
0200 All-risk type, minimum										
0250 Maximum	R013113-60									
0400 Contractor's equipment floater, minimum										
0450 Maximum										
0600 Public liability, average										
0800 Workers' compensation & employer's liability, average										
0850 by trade, carpentry, general										
		Payroll		11.97%						

01 31 Project Management and Coordination

01 31 13 – Project Coordination

01 31 13.30 Insurance		Daily	Labor-	Bare Costs	Total	Ind O&P					
		Crew	Output	Hours	Unit		Material	Labor	Equipment	Total	
0900	Clerical					Payroll		.38%			
0950	Concrete							10.84%			
1000	Electrical							4.91%			
1050	Excavation							7.81%			
1100	Glazing							11.29%			
1150	Insulation							10.07%			
1200	Lofting							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										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%

01 31 13.80 Overhead and Profit

0010	OVERHEAD & PROFIT Allowance to add to items in this book that do not include Subs O&P, average	R013113-55									
0100	Allowance to add to items in this book that do include Subs O&P, minimum					%					25%
0110	Average										5% 5%
0150	Maximum										10% 10%
0300	Typical, by size of project, under \$100,000										15% 15%
0350	\$500,000 project										30%
0400	\$2,000,000 project										25%
0450	Over \$10,000,000 project										20%
											15%

01 31 Project Management and Coordination

01 31 13 – Project Coordination

01 31 13.90 Performance Bond		R013113-80	Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	Equipment	Total	Total Incl O&P
0010 PERFORMANCE BOND												
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

01 31 14.20 Lock Out / Tag Out												
0020	Miniature circuit breaker lock out device		1 Elec	220	.036	Ea.	24	2.23			26.23	30
0030	Miniature pin circuit breaker lock out device			220	.036		19.90	2.23			22.13	25.50
0040	Single circuit breaker lock out device			220	.036		21	2.23			23.23	26.50
0050	Multi-pole circuit breaker lock out device (15 to 225 Amp)			210	.038		19.90	2.34			22.24	25.50
0060	Large 3 pole circuit breaker lock out device (over 225 Amp)			210	.038		21	2.34			23.34	27
0080	Square D I-Line circuit breaker lock out device			210	.038		33	2.34			35.34	39.50
0090	Lock out disconnect switch, 30 to 100 Amp			330	.024		11	1.49			12.49	14.30
0100	100 to 400 Amp			330	.024		11	1.49			12.49	14.30
0110	Over 400 Amp			330	.024		11	1.49			12.49	14.30
0120	Lock out hasp for multiple lockout tags			200	.040		5.60	2.45			8.05	9.80
0130	Electrical cord plug lock out device			220	.036		10.50	2.23			12.73	14.85
0140	Electrical plug prong lock out device (3-wire grounding plug)			220	.036		6.95	2.23			9.18	10.95
0150	Wall switch lock out			200	.040		25	2.45			27.45	31.50
0160	Fire alarm pull station lock out		1 Spt	200	.040		18.75	2.62			21.37	24.50
0170	Sprinkler valve tamper and flow switch lock out device		1 Skwk	220	.036		16.60	1.99			18.59	21.50
0180	Lock out sign			330	.024		18.90	1.33			20.23	23
0190	Lock out tag			440	.018		5	1			6	7

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										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	545			545	600
0100	Hinged linen mounts							550			550	605
0200	8" x 10", 4 shots, 2 prints each, in color							535			535	590
0300	For I.D. slugs, add to all above							5.10			5.10	5.60
0500	Aerial photos, initial fly-over, 5 shots, digital images							455			455	500
0550	10 shots, digital images, 1 print							515			515	570
0600	For each additional print from fly-over							252			252	278
0700	For full color prints, add							40%				
0750	Add for traffic control area						Eq.	355			355	390
0900	For over 30 miles from airport, add per						Mile	7.55			7.55	8.30
1500	Time lapse equipment, camera and projector, buy						Eq.	2,800			2,800	3,100
1550	Rent per month							"	1,325		1,325	1,450
1700	Cameraman and processing, black & white						Day	1,300			1,300	1,425
1720	Color							"	1,500		1,500	1,650

01 41 Regulatory Requirements

01 41 26 – Permit Requirements

01 41 26.50 Permits		Daily Crew	Labor-Output	Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Ind O&P
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			27.50		27.50	41.50
1950	1 hour round trip, add to above		8	1			55		55	83
2000	2 hour round trip, add to above						110		110	166
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	↓	.65	55.50	8.15	64.30	93
2260	Technician for core drilling				Hr.				50	55
2300	Patching core holes, to 12" diameter	1 Cefi	22	.364	Ea.	36.50	18.15		54.65	66.50
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								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

01 45 Quality Control

01 45 23 – Testing and Inspecting Services

01 45 23.50 Testing		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
							Labor	Equipment	
3500	Moisture, block only				Ea.				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								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.	470			470 520
7530	12,000 – 29,999 gal.					610			610 675
7540	>= 30,000 gal.				↓	665			665 730
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
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		R015113-65	Daily	Labor-Hours	Unit	Material	2020 Bare Costs			Total
			Crew	Output	Unit		Labor	Equipment	Total	
0010	TEMPORARY UTILITIES									
0350	Lighting, lamps, wiring, outlets, 40,000 S.F. building, 8 strings		1 Elec	.34	.235	CSF Flr	5.85	14.45	20.30	28
0360	" 16 strings		"	.17	.471	"	11.75	29	40.75	56
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.	1,025			1,025	1,125

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.	9,525	880	10,405	11,800	
0250	Rent per month						195		195	214	
0300	32' x 8', buy		2 Skwk	.70	22.857		15,300	1,250	16,550	18,700	
0350	Rent per month						245		245	269	
0400	50' x 10', buy		[2 Skwk]	.60	26.667		30,300	1,475	31,775	35,500	
0450	Rent per month						355		355	390	
0500	50' x 12', buy		[2 Skwk]	.50	32		25,800	1,750	27,550	31,100	
0550	Rent per month						460		460	505	
0700	For air conditioning, rent per month, add						51.50		51.50	56.50	
0800	For delivery, add per mile					Mile	12.20		12.20	13.40	
0900	Bunk house trailer, 8' x 40' duplex dorm with kitchen, no hookups, buy		2 Corp	1	16	Ea.	89,000	850	89,850	99,000	
0910	9 man with kitchen and bath, no hookups, buy			1	16		91,000	850	91,850	101,500	
0920	18 man sleeper with bath, no hookups, buy			1	16		98,000	850	98,850	109,500	
1000	Portable buildings, prefab, on skids, economy, 8' x 8'			265	.060	S.F.	26.50	3.21	29.71	34	
1100	Deluxe, 8' x 12'			150	.107	"	29.50	5.65	35.15	40.50	
1200	Storage boxes, 20' x 8', buy		2 Skwk	1.80	8.889	Ea.	3,150	490	3,640	4,200	
1250	Rent per month						86		86	94.50	
1300	40' x 8', buy		2 Skwk	1.40	11.429		3,800	625	4,425	5,125	
1350	Rent per month						126		126	139	
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	209		209	230	
0120	Office supplies, average					"	87		87	96	
0125	Office trailer rental, see Section 01 52 13.20										
0140	Telephone bill; avg. bill/month incl. long dist.					Month	87		87	96	
0160	Lights & HVAC					"	163		163	179	

01 54 Construction Aids

01 54 09 – Protection Equipment

01 54 09.50 Personnel Protective Equipment		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
0010	PERSONNEL PROTECTIVE EQUIPMENT								
0015	Hazardous waste protection				Ea.	281		281	310
0020	Respirator mask only, full face, silicone					52.50		52.50	58
0030	Half face, silicone								
0040	Respirator cartridges, 2 req'd/mask, dust or asbestos					4.11		4.11	4.52
0050	Chemical vapor					4.55		4.55	5
0060	Combination vapor and dust					14.15		14.15	15.55
0100	Emergency escape breathing apparatus, 5 minutes					695		695	765
0110	10 minutes					855		855	940
0150	Self contained breathing apparatus with full face piece, 30 minutes					2,175		2,175	2,400
0160	60 minutes					2,975		2,975	3,275
0200	Encapsulating suits, limited use, level A					2,000		2,000	2,200
0210	Level B					405		405	445
0300	Over boots, latex				Pr.	8.15		8.15	8.95
0310	PVC					34.50		34.50	38
0320	Neoprene					37.50		37.50	41.50
0400	Gloves, nitrile/PVC					84		84	92.50
0410	Neoprene coated					50.50		50.50	55.50

01 54 09.60 Safety Nets

01 54 09.60 Safety Nets		S.F.							
0020	No supports, stock sizes, nylon, 3-1/2" mesh					3.16		3.16	3.48
0100	Polypropylene, 6" mesh					1.64		1.64	1.80
0200	Small-mesh debris nets, 1/4" mesh, stock sizes					.56		.56	.62
0220	Combined 3-1/2" mesh and 1/4" mesh, stock sizes					4.92		4.92	5.40
0300	Rental, 4" mesh, stock sizes, 3 months					.84		.84	.92
0320	6 month rental					1.03		1.03	1.13
0340	12 months					1.43		1.43	1.57

01 54 16 – Temporary Hoists

01 54 16.50 Weekly Forklift Crew

0010	WEEKLY FORKLIFT CREW	A-3P	.20	40	Week	2,125	1,875	4,000	5,225
0100	All-terrain forklift, 45' lift, 35' reach, 9000 lb. capacity								

01 54 19 – Temporary Cranes

0010	DAILY CRANE CREWS for small jobs, portal to portal	R015433-15	A-3H	1	8	Day	475	725	1,200	1,500
0100	12-ton truck-mounted hydraulic crane		A-3I	1	8		475	800	1,275	1,600
0200	25-ton		A-3J	1	8		475	1,275	1,750	2,100
0300	40-ton		A-3K	1	16		880	1,500	2,380	2,950
0400	55-ton		A-3L	1	16	Day	880	2,250	3,130	3,775
0500	80-ton									
0900	If crane is needed on a Saturday, Sunday or Holiday									
0910	At time-and-a-half, add									
0920	At double time, add									

01 54 19.60 Monthly Tower Crane Crew

0010	MONTHLY TOWER CRANE CREW, excludes concrete footing	A-3N	.05	176	Month	10,400	37,300	47,700	56,500
0100	Static tower crane, 130' high, 106' jib, 6200 lb. capacity								

01 54 23 – Temporary Scaffolding and Platforms

0010	PUMP STAGING	R015423-20	Ea.	380					
0200	24' long pole section, buy								
0300	18' long pole section, buy								

01 54 Construction Aids

01 54 23 – Temporary Scaffolding and Platforms

01 54 23.60 Pump Staging

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
				Ea.	Labor	Equipment	Total		
0400	12' long pole section, buy			Ea.	199		199		219
0500	6' long pole section, buy				125		125		138
0600	6' long splice joint section, buy				78		78		86
0700	Pump jack, buy				150		150		165
0900	Foldable brace, buy				56		56		61.50
1000	Workbench/back safety rail support, buy				76.50		76.50		84
1100	Scaffolding planks/workbench, 14" wide x 24' long, buy				675		675		745
1200	Plank end safety rail, buy				360		360		395
1250	Safety net, 22' long, buy				355		355		395
1300	System in place, 50' working height, per use based on 50 uses	2 Corp	84.80	.189	C.S.F.	6.25	10.05	16.30	22
1400	100 uses		84.80	.189		3.13	10.05	13.18	18.50
1500	150 uses		84.80	.189		2.09	10.05	12.14	17.35

01 54 23.70 Scaffolding

	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 Corp	8	3	C.S.F.	159		159	240
0200	6 to 12 stories	4 Corp	8	4		213		213	320
0301	13 to 20 stories	5 Clab	8	5		211		211	315
0460	Building interior, wall face area, up to 16' high	3 Corp	12	2		106		106	160
0560	16' to 40' high		10	2.400		128		128	192
0800	Building interior floor area, up to 30' high		150	.160	C.C.F.	8.50		8.50	12.80
0900	Over 30' high	4 Corp	160	.200	"	10.65		10.65	15.95
0906	Complete system for face of walls, no plank, material only rent/mo				C.S.F.	34		34	37.50
0908	Interior spaces, no plank, material only rent/mo				C.C.F.	3.88		3.88	4.27
0910	Steel tubular, heavy duty shoring, buy								
0920	Frames 5' high 2' wide				Ea.	89.50		89.50	98.50
0925	5' high 4' wide					106		106	116
0930	6' high 2' wide					107		107	118
0935	6' high 4' wide					115		115	126
0940	Accessories								
0945	Cross braces				Ea.	17.05		17.05	18.80
0950	U-head, 8" x 8"					20.50		20.50	22.50
0955	J-head, 4" x 8"					14.90		14.90	16.40
0960	Base plate, 8" x 8"					16.05		16.05	17.65
0965	Leveling jack					35		35	38
1000	Steel tubular, regular, buy								
1100	Frames 3' high 5' wide				Ea.	92.50		92.50	102
1150	5' high 5' wide					108		108	119
1200	6'-4" high 5' wide					90.50		90.50	99.50
1350	7'-6" high 6' wide					151		151	166
1500	Accessories, cross braces					18.85		18.85	20.50
1550	Guardrail post					23.50		23.50	25.50
1600	Guardrail 7' section					8.20		8.20	9.05
1650	Screw jacks & plates					26		26	28.50
1700	Sidearm brackets					23.50		23.50	26
1750	8" casters					37.50		37.50	41
1800	Plank 2" x 10" x 16'-0"					64.50		64.50	71
1900	Stairway section					292		292	320
1910	Stairway starter bar					32.50		32.50	35.50
1920	Stairway inside handrail					54.50		54.50	60
1930	Stairway outside handrail					87.50		87.50	96
1940	Walk-thru frame guardrail					42		42	46.50

01 54 Construction Aids

01 54 23 – Temporary Scaffolding and Platforms

01 54 23.70 Scaffolding		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl Q&P
2000	Steel tubular, regular, rent/mo.					Ea.	4.50	4.50	4.95
2100	Frames 3' high 5' wide						4.50	4.50	4.95
2150	5' high 5' wide						5.70	5.70	6.30
2200	6'-4" high 5' wide						9.90	9.90	10.90
2250	7'-6" high 6' wide						.90	.90	.99
2500	Accessories, cross braces						.90	.90	.99
2550	Guardrail post						.90	.90	.99
2600	Guardrail 7' section						.90	.90	.99
2650	Screw jacks & plates						1.80	1.80	1.98
2700	Sidearm brackets						1.80	1.80	1.98
2750	8" casters						7.20	7.20	7.90
2800	Outrigger for rolling tower						2.70	2.70	2.97
2850	Plank 2" x 10" x 16'-0"						9.95	9.95	10.90
2900	Stairway section						31.50	31.50	35
2940	Walk-thru frame guardrail						2.25	2.25	2.48
3000	Steel tubular, heavy duty shoring, rent/mo.								
3250	5' high 2' & 4' wide					Ea.	8.45	8.45	9.30
3300	6' high 2' & 4' wide						8.45	8.45	9.30
3500	Accessories, cross braces						.90	.90	.99
3600	U-head, 8" x 8"						2.50	2.50	2.75
3650	J-head, 4" x 8"						2.50	2.50	2.75
3700	Base plate, 8" x 8"						.90	.90	.99
3750	Leveling jack						2.47	2.47	2.72
5700	Planks, 2" x 10" x 16'-0", labor only to erect & remove to 50' H	3 Corp	72	.333			17.70	17.70	26.50
5800	Over 50' high	4 Corp	80	.400			21.50	21.50	32
6000	Heavy duty shoring for elevated slab forms to 8'-2" high, floor area								
6100	Labor only to erect & dismantle	4 Corp	16	2	C.S.F.		106	106	160
6110	Materials only, rent/mo.						43.50	43.50	48
6500	To 14'-8" high								
6600	Labor only to erect & dismantle	4 Corp	10	3.200	C.S.F.		170	170	256
6610	Materials only, rent/mo						63.50	63.50	70

01 54 23.75 Scaffolding Specialties

SCAFFOLDING SPECIALTIES									
1200	Sidewalk bridge, heavy duty steel posts & beams, including parapet protection & waterproofing (material cost is rent/month)								
1210	8' to 10' wide, 2 posts	3 Corp	15	1.600	L.F.	46	85	131	179
1230	3 posts	"	10	2.400	"	71	128	199	270
1500	Sidewalk bridge using tubular steel scaffold frames including planking (material cost is rent/month)	3 Corp	45	.533	L.F.	8.40	28.50	36.90	52
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.	153	153	168
2000	10' span, buy						213	213	234
3720	Putlog, standard, 8' span, with hangers, buy						80	80	88
3730	Rent per month						16.30	16.30	17.95
3750	12' span, buy						101	101	111
3755	Rent per month						20.50	20.50	22.50
3760	Trussed type, 16' span, buy						262	262	288
3770	Rent per month						24.50	24.50	27
3790	22' span, buy						284	284	315
3795	Rent per month						32.50	32.50	35.50
3800	Rolling ladders with handrails, 30" wide, buy, 2 step						320	320	355

01 54 Construction Aids

01 54 23 – Temporary Scaffolding and Platforms

01 54 23.75 Scaffolding Specialties		Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
					Material	Labor	Equipment		
4000	7 step			Ea.	1,125			1,125	1,250
4050	10 step			"	1,625			1,625	1,775
4100	Rolling towers, buy, 5' wide, 7' long, 10' high			"	1,375			1,375	1,500
4200	For additional 5' high sections, to buy			↓	255			255	280
4300	Complete incl. wheels, railings, outriggers,								
4350	21' high, to buy			Ea.	2,325			2,325	2,550
4400	Rent/month = 5% of purchase cost			"	116			116	128
5000	Motorized work platform, mast climber								
5050	Base unit, 50' W, less than 100' tall, rent/mo			Ea.	3,625			3,625	3,975
5100	Less than 200' tall, rent/mo			"	3,700			3,700	4,075
5150	Less than 300' tall, rent/mo			"	4,475			4,475	4,925
5200	Less than 400' tall, rent/mo			↓	5,225			5,225	5,750
5250	Set up and demob, per unit, less than 100' tall	B-68F	16.60	1,446	C.S.F.			80.50	16.85
5300	Less than 200' tall		.25	.960				53.50	11.20
5350	Less than 300' tall		.30	.800				44.50	9.35
5400	Less than 400' tall		.33	.727				40.50	8.50
5500	Mobilization (price includes freight in and out) per unit	B-34N	1	16	Ea.			845	680
								1,525	2,025

01 54 23.80 Staging Aids

0010	STAGING AIDS and fall protection equipment								
0100	Sidewall staging bracket, tubular, buy			Ea.	61.50			61.50	67.50
0110	Cost each per day, based on 250 days use			Day	.25			.25	.27
0200	Guard post, buy			Ea.	53.50			53.50	59
0210	Cost each per day, based on 250 days use			Day	.21			.21	.24
0300	End guard chains, buy per pair			Pair	.47			.47	.5150
0310	Cost per set per day, based on 250 days use			Day	.25			.25	.27
1000	Roof shingling bracket, steel, buy			Ea.	11.15			11.15	12.25
1010	Cost each per day, based on 250 days use			Day	.04			.04	.05
1100	Wood bracket, buy			Ea.	28			28	31
1110	Cost each per day, based on 250 days use			Day	.11			.11	.12
2000	Ladder jack, aluminum, buy per pair			Pair	139			139	153
2010	Cost per pair per day, based on 250 days use			Day	.56			.56	.61
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.	635			635	695
3110	Cost each per day, based on 250 days use			Day	2.53			2.53	2.79
4000	Nylon full body harness, lanyard and rope grab			Ea.	186			186	205
4010	Cost each per day, based on 250 days use			Day	.74			.74	.82
4100	Rope for safety line, 5/8" x 100' nylon, buy			Ea.	61.50			61.50	67.50
4110	Cost each per day, based on 250 days use			Day	.25			.25	.27
4200	Permanent U-Bolt roof anchor, buy			Ea.	31			31	34
4300	Temporary (one use) roof ridge anchor, buy			"	6.40			6.40	7
5000	Installation (setup and removal) of staging aids								
5010	Sidewall staging bracket	2 Carp	64	.250	Ea.			13.30	13.30
5020	Guard post with 2 wood rails	"	64	.250				13.30	13.30
5030	End guard chains, set	1 Carp	64	.125				6.65	6.65
5100	Roof shingling bracket		96	.083				4.43	4.43
5200	Ladder jack	↓	64	.125				6.65	6.65
5300	Wood plank, 2" x 10" x 16'	2 Carp	80	.200				10.65	10.65
5310	Aluminum scaffold plank, 20" x 24'	"	40	.400				21.50	21.50
5410	Safety rope	1 Carp	40	.200				10.65	10.65
5420	Permanent U-Bolt roof anchor (install only)	2 Carp	40	.400				21.50	21.50
5430	Temporary roof ridge anchor (install only)	1 Carp	64	.125				6.65	6.65

01 54 Construction Aids

01 54 26 – Temporary Swing Staging

01 54 26.50 Swing Staging		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	Total	Total Ind O&P
0010	SWING STAGING, 500 lb. cap., 2' wide to 24' long, hand operated									
0020	Steel cable type, with 60' cables, buy					Ea.	6,325		6,325	6,950
0030	Rent per month					"	630		630	695
0600	Lightweight (not for masons) 24' long for 150' height,									
0610	manual type, buy					Ea.	12,000		12,000	13,200
0620	Rent per month					"	1,200		1,200	1,325
0700	Powered, electric or air, to 150' high, buy						32,100		32,100	35,300
0710	Rent per month					"	2,250		2,250	2,475
0780	To 300' high, buy						32,600		32,600	35,900
0800	Rent per month					"	2,275		2,275	2,525
1000	Bosun's chair or work basket 3' x 3.5', to 300' high, electric, buy						13,400		13,400	14,700
1010	Rent per month					"	935		935	1,025
2200	Move swing staging (setup and remove)	E-4	2	16	Move		930	73.50	1,003.50	1,525

01 54 36 – Equipment Mobilization

01 54 36.50 Mobilization

01 54 36.50 Mobilization		R015436-50									
0010	MOBILIZATION (Use line item again for demobilization)										
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.		106	44	150	207	
1300	Equipment hauled on 3-ton capacity towed trailer	A-3Q	2.67	3			159	92.50	251.50	340	
1400	20-ton capacity	B-34U	2	8			410	221	631	855	
1500	40-ton capacity	B-34N	2	8			425	340	765	1,000	
1600	50-ton capacity	B-34V	1	24			1,300	985	2,285	3,000	
1700	Crane, truck-mounted, up to 75 ton (driver only)	1 Eqhv	4	2			118		118	177	
1800	Over 75 ton (with chase vehicle)	A-3E	2.50	6.400			345	70.50	415.50	600	
2400	Crane, large lattice boom, requiring assembly	B-34W	.50	144			7,425	7,025	14,450	18,800	
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

01 55 23.50 Roads and Sidewalks		Temporary	B-14	715	.067	S.Y.	3.38	2.97	.30	6.65	8.50
0050	Roads, gravel fill, no surfacing, 4" gravel depth										
0100	8" gravel depth		"	615	.078	"	6.75	3.45	.35	10.55	13.05
1000	Ramp, 3/4" plywood on 2" x 6" joists, 16" OC	2 Carp	300	.053	S.F.		1.62	2.83		4.45	6.05
1100	On 2" x 10" joists, 16" OC		"	275	.058	"	2.25	3.09		5.34	7.10

01 56 Temporary Barriers and Enclosures

01 56 13 – Temporary Air Barriers

		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
01 56 13.60 Tarpaulins					S.F.				.75	.83
0010 TARPAULINS									.63	.69
0020 Cotton duck, 10-13.13 oz./S.Y., 6' x 8'									1.49	1.49
0050 30' x 30'									1.49	1.64
0100 Polyvinyl coated nylon, 14-18 oz., minimum									1.49	1.64
0150 Maximum									1.49	1.64
0200 Reinforced polyethylene 3 mils thick, white									.05	.06
0300 4 mils thick, white, clear or black									.16	.18
0400 5.5 mils thick, clear									.19	.21
0500 White, fire retardant									.60	.66
0600 12 mils, oil resistant, fire retardant									.50	.55
0700 8.5 mils, black									.26	.29
0710 Woven polyethylene, 6 mils thick									.08	.09
0730 Polyester reinforced w/integral fastening system, 11 mils thick									.20	.22
0740 Polyethylene, reflective, 23 mils thick									1.34	1.47

01 56 13.90 Winter Protection

		2 Clab	500	.032	S.F.	.51	1.35		1.86	2.58
0100 Framing to close openings									.70	.95
0200 Tarpaulins hung over scaffolding, 8 uses, not incl. scaffolding			1500	.011		.25	.45		.70	.95
0250 Tarpaulin polyester reinf. w/integral fastening system, 11 mils thick			1600	.010		.22	.42		.64	.87
0300 Prefab fiberglass panels, steel frame, 8 uses			1200	.013		2.78	.56		3.34	3.90

01 56 16 – Temporary Dust Barriers

		1 Clab	240	.033	Ea.		1.40		1.40	2.11
0020 Spring loaded telescoping pole & head, to 12', erect and dismantle					Day		.22		.22	.24
0025 Cost per day (based upon 250 days)										
0030 To 21', erect and dismantle			1 Clab	240	.033	Ea.		1.40		1.40
0035 Cost per day (based upon 250 days)					Day		.72		.72	.79
0040 Accessories, caution tape reel, erect and dismantle			1 Clab	480	.017	Ea.		.70		.70
0045 Cost per day (based upon 250 days)					Day		.33		.33	.37
0060 Foam rail and connector, erect and dismantle			1 Clab	240	.033	Ea.		1.40		1.40
0065 Cost per day (based upon 250 days)					Day		.10		.10	.11
0070 Caution tape			1 Clab	384	.021	C.L.F.		.88		3.37
0080 Zipper, standard duty				60	.133	Ea.		10.55	5.60	16.15
0090 Heavy duty				48	.167	"		10.65	7	17.65
0100 Polyethylene sheet, 4 mil				37	.216	Sq.		2.62	9.10	11.72
0110 6 mil				37	.216	"		4	9.10	13.10
1000 Dust partition, 6 mil polyethylene, 1" x 3" frame		2 Carp	2000	.008	S.F.		.33	.43		.76
1080 2" x 4" frame			2000	.008	"		.39	.43		.82
1085 Negative air machine, 1800 CFM					Ea.		890			890
1090 Adhesive strip application, 2" width			1 Clab	192	.042	C.L.F.		6.75	1.75	8.50
4000 Dust & infectious control partition, adj. to 10' high, obscured, 4' panel		2 Carp	90	.178	Ea.		580	9.45		589.45
4010 3' panel				90	.178			550	9.45	559.45
4020 2' panel				90	.178			430	9.45	439.45
4030 1' panel			1 Carp	90	.089			285	4.72	289.72
4040 6" panel				90	.089			265	4.72	269.72
4050 2' panel with HEPA filtered discharge port		2 Carp	90	.178			500	9.45		509.45
4060 3' panel with 32" door				90	.178			895	9.45	904.45
4070 4' panel with 36" door				90	.178			995	9.45	1,004.45
4080 4'-6" panel with 44" door				90	.178			1,200	9.45	1,209.45
4090 Hinged corner				80	.200			185	10.65	
4100 Outside corner				80	.200			150	10.65	160.65
4110 T post				80	.200			150	10.65	181

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	Material	2020 Bare Costs		Total	Total Incl O&P
						Labor	Equipment			
4120	Accessories, ceiling grid clip		2 Corp	360	.044	Ea.	7.45	2.36		9.81
4130	Panel locking clip			360	.044		5.15	2.36		7.51
4140	Panel joint closure strip				360	.044	8	2.36		10.36
4150	Screw jack				360	.044	6.65	2.36		9.01
4160	Digital pressure difference guage						275			275
4180	Combination lockset		1 Corp	13	.615		200	32.50		232.50
4185	Sealant tape, 2" wide		1 Clab	192	.042	C.L.F.	6.75	1.75		8.50
4190	System in place, including door and accessories									10.10
4200	Based upon 25 uses		2 Corp	51	.314	L.F.	9.85	16.65		26.50
4210	Based upon 50 uses			51	.314		4.94	16.65		21.59
4230	Based upon 100 uses				51	.314	2.47	16.65		19.12
										27.50

01 56 23 – Temporary Barricades

01 56 23.10 Barricades

0010 BARRICADES										
0020	5' high, 3 rail @ 2" x 8", fixed	2 Corp	20	.800	L.F.	6.75	42.50			49.25
0150	Movable	"	30	.533	"	5.60	28.50			34.10
0300	Stock units, 58' high, 8' wide, reflective, buy				Ea.	211			211	232
0350	With reflective tape, buy				"	425			425	465
0400	Break-a-way 3" PVC pipe barricade				Ea.	153			153	168
0500	Barricades, plastic, 8" x 24" wide, foldable					61			61	67
0800	Traffic cones, PVC, 18" high						10.95		10.95	12.05
0850	28" high						23.50		23.50	25.50
1000	Guardrail, wooden, 3' high, 1" x 6" on 2" x 4" posts	2 Corp	200	.080	L.F.	1.44	4.25			5.69
1100	2" x 6" on 4" x 4" posts	"	165	.097		2.80	5.15			7.95
1200	Portable metal with base pads, buy					14.45			14.45	15.90
1250	Typical installation, assume 10 reuses	2 Corp	600	.027		2.31	1.42			3.73
1300	Barricade tape, polyethylene, 7 mil, 3" wide x 300' long roll	1 Clab	128	.063	Ea.	7.50	2.63			10.13
3000	Detour signs, set up and remove									12.20
3010	Reflective aluminum, MUTCD, 24" x 24", post mounted	1 Clab	20	.400	Ea.	2.80	16.85			19.65
4000	Roof edge portable barrier stands and warning flags, 50 uses	1 Rohe	9100	.001	L.F.	.07	.03			.10
4010	100 uses	"	9100	.001	"	.03	.03			.06
										.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	1.68			3.68
0100	6' high		300	.053		4.96	2.25			7.21
0200	Rented chain link, 6' high, to 1000' (up to 12 mo.)		400	.040		3.37	1.68			5.05
0250	Over 1000' (up to 12 mo.)		300	.053		4.14	2.25			6.39
0350	Plywood, painted, 2" x 4" frame, 4' high	A-4	135	.178		6.90	8.95			15.85
0400	4" x 4" frame, 8' high	"	110	.218		13.45	10.95			24.40
0500	Wire mesh on 4" x 4" posts, 4' high	2 Corp	100	.160		11.15	8.50			19.65
0550	8' high	"	80	.200		16.60	10.65			27.25
										34

01 56 29 – Temporary Protective Walkways

01 56 29.50 Protection

0010 PROTECTION										
0020	Stair tread, 2" x 12" planks, 1 use	1 Corp	75	.107	Tread	5.15	5.65			10.80
0100	Exterior plywood, 1/2" thick, 1 use		65	.123		2.05	6.55			8.60
0200	3/4" thick, 1 use		60	.133		2.84	7.10			9.94
2200	Sidewalks, 2" x 12" planks, 2 uses		350	.023	S.F.	.86	1.22			2.08
2300	Exterior plywood, 2 uses, 1/2" thick		750	.011		.34	.57			.91
										1.23

01 56 Temporary Barriers and Enclosures

01 56 29 – Temporary Protective Walkways

01 56 29.50 Protection		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
2400	5/8" thick	1 Carp	650	.012 S.F.	.38	.65			1.03	1.40
2500	3/4" thick		↓ 600	.013	↓ .47	↓ .71			1.18	1.58

01 57 33 – Temporary Security

01 57 33.50 Watchman

0010	WATCHMAN	Hr.	27.65	30.40
0020	Service, monthly basis, uniformed person, minimum			
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	Ea.	27	27	29.50
0020	High intensity reflectorized, no posts, buy				

01 66 Product Storage and Handling Requirements

01 66 19 – Material Handling

01 66 19.10 Material Handling

0010	MATERIAL HANDLING	2 Clab	.145	.110	C.Y.	4.65	4.65	7
0020	Above 2nd story, via stairs, per C.Y. of material per floor							
0030	Via elevator, per C.Y. of material		240	.067		2.81	2.81	4.22
0050	Distances greater than 200', per C.Y. of material per each addl 200'	↓ 300	.053	↓		2.25	2.25	3.37

01 71 Examination and Preparation

01 71 23 – Field Engineering

01 71 23.13 Construction Layout

0010	CONSTRUCTION LAYOUT	A-6	1	16	Day	845	31	876	1,300
1100	Crew for layout of building, trenching or pipe laying, 2 person crew								
1200	3 person crew	A-7	1	24		1,375	30.50	1,405.50	2,100
1400	Crew for roadway layout, 4 person crew	A-8	1	32	↓	1,775	30.50	1,805.50	2,700

01 71 23.19 Surveyor Stakes

0010	SURVEYOR STAKES	C	71	71	78
0020	Hardwood, 1" x 1" x 48" long				
0100	2" x 2" x 18" long		79	79	87
0150	2" x 2" x 24" long	↓	155	155	170

01 74 Cleaning and Waste Management

01 74 13 – Progress Cleaning

		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
01 74 13.20 Cleaning Up										
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.	2.47	32	2.04	36.51	53
0100 Final by GC at end of job		"	11.50	1.565	"	2.62	67	4.26	73.88	108
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 Corp	1500	.011	S.F.	.50	.57		1.07	1.40
0030 Peel away carpet protection	1 Clad	3200	.003	"	.13	.11		.24	.30

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%

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.

RO28213-20 and RO28319-60 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. ■

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

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02 21 Surveys

02 21 13 – Site Surveys

02 21 13.09 Topographical Surveys				Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Ind O&P
0010 TOPOGRAPHICAL SURVEYS												
0020 Topographical surveying, conventional, minimum				A-7	3.30	7,273	Acre	23.50	415	9.30	447.80	660
0100 Maximum				A-8	.60	53,333	"	63	2,975	51	3,089	4,600

02 21 13.13 Boundary and Survey Markers

02 21 13.13 Boundary and Survey Markers				Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Ind O&P
0010 BOUNDARY AND SURVEY MARKERS												
0300 Lot location and lines, large quantities, minimum				A-7	2	12	Acre	36	690	15.35	741.35	1,075
0320 Average				"	1.25	19,200		63.50	1,100	24.50	1,188	1,750
0400 Small quantities, maximum				A-8	1	32		76.50	1,775	30.50	1,882	2,800
0600 Monuments, 3' long				A-7	10	2,400	Ed.	35.50	138	3.07	176.57	249
0800 Property lines, perimeter, cleared land				"	1000	.024	L.F.	.08	1.38	.03	1.49	2.19
0900 Wooded land				A-8	875	.037	"	.10	2.04	.04	2.18	3.21

02 21 13.16 Aerial Surveys

02 21 13.16 Aerial Surveys				Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Ind O&P
0010 AERIAL SURVEYS												
1500 Aerial surveying, including ground control, minimum fee, 10 acres											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											470	470
1850 100 acres											94	94
2000 1000 acres											90	90
2050 10,000 acres											85	85

02 32 Geotechnical Investigations

02 32 13 – Subsurface Drilling and Sampling

02 32 13.10 Boring and Exploratory Drilling				Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Ind O&P	
0010 BORING AND EXPLORATORY DRILLING													
0020 Borings, initial field stake out & determination of elevations				A-6	1	16	Day	845	31	876	1,300		
0100 Drawings showing boring details								335		335	425		
0200 Report and recommendations from P.E.								775		775	970		
0300 Mobilization and demobilization				B-55	4	6	↓	263	305	568	730		
0350 For over 100 miles, per added mile					450	.053	Mile	2.34	2.69	5.03	6.45		
0600 Auger holes in earth, no samples, 2-1/2" diameter					78.60	.305	L.F.	13.40	15.40	28.80	37		
0650 4" diameter					67.50	.356		15.60	17.95	33.55	43.50		
0800 Cased borings in earth, with samples, 2-1/2" diameter					55.50	.432		20.50	18.95	22	61.45	75	
0850 4" diameter					32.60	.736		29	32.50	37	98.50	122	
1000 Drilling in rock, "BX" core, no sampling				B-56	34.90	.458			22	43.50	65.50	80.50	
1050 With casing & sampling					31.70	.505		20.50	24	48	92.50	111	
1200 "NX" core, no sampling					25.92	.617			29.50	58.50	88	109	
1250 With casing and sampling					25	.640	↓	21	30.50	60.50	112	136	
1400 Borings, earth, drill rig and crew with truck mounted auger				B-55	1	24	Day	1,050	1,200	2,250	2,900		
1450 Rock using crawler type drill				B-56	1	16	"		760	1,525	2,285	2,825	
1500 For inner city borings, add, minimum											10%	10%	
1510 Maximum											20%	20%	

02 32 19 – Exploratory Excavations

02 32 19.10 Test Pits				Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Ind O&P
0010 TEST PITS												
0020 Hand digging, light soil				1 Clb	4.50	1,778	C.Y.	75		75	112	
0100 Heavy soil					2.50	3,200		135		135	202	
0120 Loader-backhoe, light soil				B-TIM	28	.571		28.50	8.30	36.80	51.50	
0130 Heavy soil					"	20	.800	39.50	11.60	51.10	72	
1000 Subsurface exploration, mobilization											6.75	8.40

02 32 Geotechnical Investigations

02 32 19 – Exploratory Excavations

02 32 19.10 Test Pits		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Ind O&P
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		B-5E	1000	.064	S.F.					
0015 Hydrodemolition, concrete pavement										
0120 Includes removal but excludes disposal of concrete										
0130 2" depth										
0410 4" depth			800	.080					3.75	3.44
0420 6" depth			600	.107					5	4.59
0520 8" depth			300	.213					10	9.20

02 41 13.16 Hydroexcavation

0010 HYDROEXCAVATION		B-6D	8	2.500	Ea.					
0015 Hydroexcavation										
0110 Mobilization or Demobilization			48	.417	B.C.Y.				121	158
0130 Normal Conditions			30	.667	"				20	26.50
0140 Adverse Conditions			4	5	Ea.				32	42
0160 Minimum labor/equipment charge									242	315
										557
										705

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.			2.76	1.80
5050 4"-6" thick				420	.095				4.53	2.96
5100 Bituminous driveways				640	.063				2.98	1.94
5200 Concrete to 6" thick, hydraulic hammer, mesh reinforced				255	.157				7.45	4.87
5300 Rod reinforced				200	.200				9.50	6.20
5400 Concrete, 7"-24" thick, plain				33	1.212	C.Y.			57.50	37.50
5500 Reinforced				24	1.667	"			79.50	51.50
5600 With hand held air equipment, bituminous, to 6" thick			B-39	1900	.025	S.F.			1.12	.19
5700 Concrete to 6" thick, no reinforcing				1600	.030				1.33	.22
5800 Mesh reinforced				1400	.034				1.52	.26
5900 Rod reinforced				765	.063				2.78	.47
6000 Curbs, concrete, plain			B-6	360	.067	L.F.			3.05	.59
6100 Reinforced				275	.087				3.99	.78
6200 Granite				360	.067				3.05	.59
6300 Bituminous				528	.045				2.08	.41
										2.49
										3.57

02 41 13.23 Utility Line Removal

0010 UTILITY LINE REMOVAL										
0015 No hauling, abandon catch basin or manhole			B-6	7	3.429	Ea.			157	30.50
0020 Remove existing catch basin or manhole, masonry				4	6				274	53.50
0030 Catch basin or manhole frames and covers, stored				13	1.846				84.50	16.45
0040 Remove and reset				7	3.429				157	30.50
0900 Hydrants, fire, remove only			B-21A	5	8				420	85.50
0950 Remove and reset				"	2	20			1,050	214
2900 Pipe removal, sewer/water, no excavation, 12" diameter			B-6	175	.137	L.F.			6.25	1.22
2930 15"-18" diameter			B-12Z	150	.160				7.65	9.75
										17.40
										22

02 41 Demolition

02 41.13 – Selective Site Demolition

02 41 13.23 Utility Line Removal				Daily Crew	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl Q&P
				B-12Z	120	.200	L.F.	Labor	Equipment	Total		
2960	21"-24" diameter							9.55	12.20	21.75	28	
3000	27"-36" diameter							12.75	16.30	29.05	37	
3200	Steel, welded connections, 4" diameter			B-6	160	.150		6.85	1.34	8.19	11.75	
3300	10" diameter			"	80	.300		13.70	2.67	16.37	23.50	

02 41 13.30 Minor Site Demolition

0010 MINOR SITE DEMOLITION				R024119-10								
0100	Roadside delineators, remove only			B-80	175	.183	Ea.		8.50	5.85	14.35	19.20
0110	Remove and reset			"	100	.320	"		14.90	10.20	25.10	34
0800	Guiderail, corrugated steel, remove only			B-80A	100	.240	L.F.		10.10	8.20	18.30	24
0850	Remove and reset			"	40	.600	"		25.50	20.50	46	60.50
0860	Guide posts, remove only			B-80B	120	.267	Ea.		11.95	1.97	13.92	20
0870	Remove and reset			B-55	50	.480	"		21	24	45	58
1000	Masonry walls, block, solid			B-5	1800	.031	C.F.		1.45	.85	2.30	3.10
1200	Brick, solid				900	.062			2.90	1.70	4.60	6.20
1400	Stone, with mortar				900	.062			2.90	1.70	4.60	6.20
1500	Dry set				1500	.037			1.74	1.02	2.76	3.73
1600	Median barrier, precast concrete, remove and store			B-3	430	.112	L.F.		5.25	5.40	10.65	13.80
1610	Remove and reset			"	390	.123	"		5.80	5.95	11.75	15.25
4000	Sidewalk removal, bituminous, 2" thick			B-6	350	.069	S.Y.		3.14	.61	3.75	5.35
4010	2-1/2" thick				325	.074			3.38	.66	4.04	5.75
4050	Brick, set in mortar				185	.130			5.95	1.16	7.11	10.15
4100	Concrete, plain, 4"				160	.150			6.85	1.34	8.19	11.75
4110	Plain, 5"				140	.171			7.85	1.53	9.38	13.45
4120	Plain, 6"				120	.200			9.15	1.78	10.93	15.65
4200	Mesh reinforced, concrete, 4"				150	.160			7.30	1.43	8.73	12.50
4210	5" thick				131	.183			8.40	1.63	10.03	14.35
4220	6" thick				112	.214			9.80	1.91	11.71	16.80
4300	Slab on grade removal, plain			B-5	45	1.244	C.Y.		58	34	92	125
4310	Mesh reinforced				33	1.697			79	46	125	170
4320	Rod reinforced				25	2.240			104	61	165	223
4400	For congested sites or small quantities, add up to										200%	200%
4450	For disposal on site, add			B-11A	232	.069			3.41	6.50	9.91	12.25
4500	To 5 miles, add			B-34D	76	.105			5.15	8.50	13.65	17.05

02 41 13.33 Railtrack Removal

0010 RAILTRACK REMOVAL												
3500	Railroad track removal, ties and track			B-13	330	.170	L.F.		7.80	1.76	9.56	13.65
3600	Ballast			B-14	500	.096	C.Y.		4.25	.43	4.68	6.85
3700	Remove and re-install, ties & track using new bolts & spikes				50	.960	L.F.		42.50	4.27	46.77	68.50
3800	Turnouts using new bolts and spikes				1	.48	Ea.		2,125	214	2,339	3,425

02 41 13.60 Selective Demolition Fencing

0010 SELECTIVE DEMOLITION FENCING				R024119-10								
1600	Fencing, barbed wire, 3 strand			2 Clad	430	.037	L.F.		1.57		1.57	2.35
1650	5 strand			"	280	.057			2.41		2.41	3.61
1700	Chain link, posts & fabric, 8'-10' high, remove only			B-6	445	.054			2.47	.48	2.95	4.23

02 41 16 – Structure Demolition

02 41 16.13 Building Demolition				R024119-10								
0010	BUILDING DEMOLITION	Large urban projects, incl. 20 mi. haul										
0011	No foundation or dump fees, C.F. is vol. of building standing											
0020	Steel			B-8	21500	.003	C.F.		.15	.13	.28	.37
0050	Concrete				15300	.004			.20	.19	.39	.52
0080	Masonry				20100	.003			.16	.14	.30	.39

02 41 Demolition

02 41 16 – Structure Demolition

02 41 16.13 Building Demolition

		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
							Labor	Equipment	Total	
0100	Mixture of types	B-8	20100	.003	C.F.		.16	.14	.30	.39
0500	Small bldgs, or single bldgs, no salvage included, steel	B-3	14800	.003			.15	.16	.31	.40
0600	Concrete		11300	.004			.20	.21	.41	.53
0650	Masonry		14800	.003			.15	.16	.31	.40
0700	Wood		14800	.003			.15	.16	.31	.40
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.		2,275	2,325	4,600	5,950
1020	3200 S.F.			.50	96		4,525	4,625	9,150	11,900
1200	Demolition two family house, two story, wood 2400 S.F.			.67	71.964		3,400	3,475	6,875	8,925
1220	4200 S.F.			.38	128		6,025	6,175	12,200	15,900
1300	Demolition three family house, three story, wood 3200 S.F.			.50	96		4,525	4,625	9,150	11,900
1320	5400 S.F.			.30	160		7,550	7,725	15,275	19,800
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.		.15	.16	.31	.40
0100	Concrete building		16900	.003			.15	.16	.31	.40
0200	Masonry building		16900	.003			.15	.16	.31	.40
0400	Disposal of material, minimum	B-3	445	.108	C.Y.		5.10	5.20	10.30	13.35
0500	Maximum	"	365	.132	"		6.20	6.35	12.55	16.30

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.		.19	.42	.61	.74
0280	Reinforced, wire mesh		4000	.004			.24	.52	.76	.92
0300	Rods		4500	.004			.21	.46	.67	.83
0400	6" thick, plain concrete		4000	.004			.24	.52	.76	.92
0420	Reinforced, wire mesh		3200	.005			.30	.65	.95	1.15
0440	Rods		3600	.004			.26	.58	.84	1.02
1000	Footings, concrete, 1' thick, 2' wide		300	.053	L.F.		3.16	6.95	10.11	12.30
1080	1'-6" thick, 2' wide		250	.064			3.79	8.30	12.09	14.80
1120	3' wide		200	.080			4.74	10.40	15.14	18.55
1140	2' thick, 3' wide		175	.091			5.40	11.90	17.30	21
1200	Average reinforcing, add								10%	10%
1220	Heavy reinforcing, add								20%	20%
2000	Walls, block, 4" thick	B-13L	8000	.002	S.F.		.12	.26	.38	.47
2040	6" thick		6000	.003			.16	.35	.51	.62
2080	8" thick		4000	.004			.24	.52	.76	.92
2100	12" thick		3000	.005			.32	.69	1.01	1.23
2200	For horizontal reinforcing, add								10%	10%
2220	For vertical reinforcing, add								20%	20%
2400	Concrete, plain concrete, 6" thick	B-13L	4000	.004			.24	.52	.76	.92
2420	8" thick		3500	.005			.27	.59	.86	1.05
2440	10" thick		3000	.005			.32	.69	1.01	1.23
2500	12" thick		2500	.006			.38	.83	1.21	1.48
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.		3.41	6.50	9.91	12.25
4250	To five miles	B-30	220	.109	"		5.60	8.35	13.95	17.55

02 41 Demolition

02 41 19 – Selective Demolition

02 41 19.13 Selective Building Demolition		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Ind O&P
Line	Description						Labor	Equipment		
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.			26	5.50
0050	Light reinforcing, over 6 C.F.			75	.533	"			22.50	4.76
0200	Slab on grade to 6" thick, not reinforced, under 8 S.F.			85	.471	S.F.			20	4.20
0250	8-16 S.F.			175	.229	"			9.70	2.04
0255	For over 16 S.F. see Line 02 41 16.17 0400								11.74	16.85
0600	Walls, not reinforced, under 6 C.F.		B-9	60	.667	C.F.			28.50	5.95
0650	6-12 C.F.			80	.500	"			21.50	4.47
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.			38	7.95
1050	Bar reinforced, over 6 C.F.			50	.800	"			34	7.15
1200	Slab on grade to 6" thick, bar reinforced, under 8 S.F.			75	.533	S.F.			22.50	4.76
1250	8-16 S.F.			150	.267	"			11.35	2.38
1255	For over 16 S.F. see Line 02 41 16.17 0440								13.73	19.65
1400	Walls, bar reinforced, under 6 C.F.		B-9	50	.800	C.F.			34	7.15
1450	6-12 C.F.			70	.571	"			24.50	5.10
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		B-9	30	1.333	Ea.			56.50	11.90
2040	4" thick			18	2.222				94.50	19.85
2060	8" thick								114.35	164
2080	12" thick			10	4				170	35.50
2400	Concrete block, to 4 S.F. opening, 2" thick			35	1.143				48.50	10.20
2420	4" thick			30	1.333				56.50	11.90
2440	8" thick			27	1.481				63	13.25
2460	12" thick			24	1.667				71	14.90
2600	Gypsum block, to 4 S.F. opening, 2" thick			80	.500				21.50	4.47
2620	4" thick			70	.571				24.50	5.10
2640	8" thick			55	.727				31	6.50
2800	Terra cotta, to 4 S.F. opening, 4" thick			70	.571				24.50	5.10
2840	8" thick			65	.615				26	5.50
2880	12" thick			50	.800				34	7.15
3000	Toothing masonry cutouts, brick, soft old mortar	1 Brte	40	.200	V.L.F.				8.35	8.35
3100	Hard mortar			30	.267				11.15	11.15
3200	Block, soft old mortar			70	.114				4.77	4.77
3400	Hard mortar			50	.160				6.70	6.70
6000	Walls, interior, not including re-framing,									
6010	openings to 5 S.F.									
6100	Drywall to 5/8" thick	1 Clad	24	.333	Ea.				14.05	14.05
6200	Paneling to 3/4" thick			20	.400				16.85	16.85
6300	Plaster, on gypsum lath			20	.400				16.85	16.85
6340	On wire lath			14	.571				24	36
7000	Wood frame, not including re-framing, openings to 5 S.F.									
7200	Floors, sheathing and flooring to 2" thick	1 Clad	5	1.600	Ea.				67.50	67.50
7310	Roofs, sheathing to 1" thick, not including roofing			6	1.333				56	56
7410	Walls, sheathing to 1" thick, not including siding			7	1.143				48	48
										72.50

02 41 Demolition

02 41 19 – Selective Demolition

02 41 19.18 Selective Demolition, Disposal Only

		Daily Output	Labor Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
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.	5.25	5.40	10.65	13.80
0300	Concrete frame		365	.132		6.20	6.35	12.55	16.30
0400	Masonry construction		445	.108		5.10	5.20	10.30	13.35
0500	Wood frame		247	.194		9.15	9.35	18.50	24

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.	285	68.50	20.50
0102	23" diameter			15	1.600		310	68.50	20.50
0104	27" diameter			15	1.600		330	68.50	20.50
0106	30" diameter			15	1.600		355	68.50	20.50
0108	33" diameter			15	1.600		380	68.50	20.50
0110	36" diameter			15	1.600		405	68.50	20.50
0112	Regular chute, 18" diameter			15	1.600		214	68.50	20.50
0114	23" diameter			15	1.600		238	68.50	20.50
0116	27" diameter			15	1.600		262	68.50	20.50
0118	30" diameter			15	1.600		268	68.50	20.50
0120	33" diameter			15	1.600		310	68.50	20.50
0122	36" diameter			15	1.600		330	68.50	20.50
0124	Control door chute, 18" diameter			15	1.600		405	68.50	20.50
0126	23" diameter			15	1.600		430	68.50	20.50
0128	27" diameter			15	1.600		450	68.50	20.50
0130	30" diameter			15	1.600		475	68.50	20.50
0132	33" diameter			15	1.600		500	68.50	20.50
0134	36" diameter			15	1.600		520	68.50	20.50
0136	Chute liners, 14 ga., 18"-30" diameter			15	1.600		228	68.50	20.50
0138	33"-36" diameter			15	1.600		284	68.50	20.50
0140	17% thinner chute, 30" diameter			15	1.600		233	68.50	20.50
0142	33% thinner chute, 30" diameter			15	1.600		176	68.50	20.50
0144	Top chute cover		1 Clab	24	.333		155	14.05	169.05
0146	Door chute cover		"	24	.333		155	14.05	169.05
0148	Top chute trough		2 Clab	12	1.333		530	56	586
0150	Bolt down frame & counter weights, 250 lb.		B-1	4	6		4,325	257	4,582
0152	500 lb.			4	6		6,375	257	6,632
0154	750 lb.			4	6		11,100	257	11,357
0156	1000 lb.			2.67	8.989		12,000	385	12,385
0158	1500 lb.			2.67	8.989		14,000	385	14,385
0160	Chute warning light system, 5 stories		B-1C	4	6		8,525	257	8,859.50
0162	10 stories			2	12		14,800	515	15,470
0164	Dust control device for dumpsters		1 Clab	8	1		158	42	200
0166	Install or replace breakaway cord			8	1		28	42	70
0168	Install or replace warning sign			16	.500		11.10	21	32.10
0600	Dumpster, weekly rental, 1 dump/week, 6 C.Y. capacity (2 tons)					Week	415		415
0700	10 C.Y. capacity (3 tons)						480		480
0725	20 C.Y. capacity (5 tons)						565		565
0800	30 C.Y. capacity (7 tons)						730		730
0840	40 C.Y. capacity (10 tons)						775		775
2000	Load, haul, dump and return, 0'-50' haul, hand carried		2 Clab	24	.667	C.Y.	28	28	42

02 41 Demolition

02 41 19 – Selective Demolition

02 41 19.19 Selective Demolition		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
							Labor	Equipment	
2005	Wheeled	2 Clab	37	.432	C.Y.		18.20	18.20	27.50
2040	0'-100' haul, hand carried		16.50	.970			41	41	61.50
2045	Wheeled	↓	25	.640			27	27	40.50
2050	Forklift	A-3R	25	.320			16.95	10.25	27.20
2080	Haul and return, add per each extra 100' haul, hand carried	2 Clab	35.50	.451			18.95	18.95	28.50
2085	Wheeled		54	.296			12.45	12.45	18.75
2120	For travel in elevators, up to 10 floors, add		140	.114			4.81	4.81	7.25
2130	0'-50' haul, incl. up to 5 riser stairs, hand carried		23'	.696			29.50	29.50	44
2135	Wheeled		35	.457			19.25	19.25	29
2140	6-10 riser stairs, hand carried		22	.727			30.50	30.50	46
2145	Wheeled		34	.471			19.80	19.80	30
2150	11-20 riser stairs, hand carried		20	.800			33.50	33.50	50.50
2155	Wheeled		31	.516			21.50	21.50	32.50
2160	21-40 riser stairs, hand carried		16	1			42	42	63.50
2165	Wheeled		24	.667			28	28	42
2170	0'-100' haul, incl. 5 riser stairs, hand carried		15	1.067			45	45	67.50
2175	Wheeled		23	.696			29.50	29.50	44
2180	6-10 riser stairs, hand carried		14	1.143			48	48	72.50
2185	Wheeled		21	.762			32	32	48
2190	11-20 riser stairs, hand carried		12	1.333			56	56	84.50
2195	Wheeled		18	.889			37.50	37.50	56
2200	21-40 riser stairs, hand carried		8	2			84	84	127
2205	Wheeled		12	1.333			56	56	84.50
2210	Haul and return, add per each extra 100' haul, hand carried		35.50	.451			18.95	18.95	28.50
2215	Wheeled		54	.296	↓		12.45	12.45	18.75
2220	For each additional flight of stairs, up to 5 risers, add		550	.029	Flight		1.22	1.22	1.84
2225	6-10 risers, add		275	.058			2.45	2.45	3.68
2230	11-20 risers, add		138	.116			4.88	4.88	7.35
2235	21-40 risers, add		69	.232	↓		9.75	9.75	14.65
3000	Loading & trucking, including 2 mile haul, chute loaded	B-16	45	.711	C.Y.		31.50	12.75	44.25
3040	Hand loading truck, 50' haul	"	48	.667			29.50	11.95	41.45
3080	Machine loading truck	B-17	120	.267			12.40	5.35	17.75
5000	Haul, per mile, up to 8 C.Y. truck	B-34B	1165	.007			.34	.49	.83
5100	Over 8 C.Y. truck	"	1550	.005	↓		.25	.37	.62
									.79

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
0200	Trees, brush, lumber	63
0300	Rubbish only	63
0500	Reclamation station, usual charge	74
		74
		81
		69.50
		69.50
		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
0580	Maximum	" 360
0900	Commercial building	.080 .089 "
1000	Minimum	350 .091 SF Flr.
1020	Maximum	" 250 .128 "
		3.54 1.43 4.97 6.90
		3.94 1.59 5.58 7.65
		4.05 1.64 5.69 7.90
		5.65 2.29 7.94 11

02 41 Demolition

02 41 19 – Selective Demolition

02 41 19.25 Selective Demolition, Saw Cutting

			Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	Total	Total Incl O&P
0010	SELECTIVE DEMOLITION, SAW CUTTING	R024119-10								
0015	Asphalt, up to 3" deep		B-89	1050	.015	L.F.	.20	.76	.98	1.94
0020	Each additional inch of depth		"	1800	.009		.07	.45	.57	1.09
1200	Masonry walls, hydraulic saw, brick, per inch of depth		B-89B	300	.053		.07	2.67	5	7.74
1220	Block walls, solid, per inch of depth		"	250	.064		.07	3.21	6	9.28
2000	Brick or masonry w/hand held saw, per inch of depth		A-1	125	.064		.05	2.69	.89	3.63
5000	Wood sheathing to 1" thick, on walls		1 Corp	200	.040			2.13		2.13
5020	On roof		"	250	.032			1.70		1.70
										2.56

02 41 19.27 Selective Demolition, Torch Cutting

			Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	Total	Total Incl O&P
0010	SELECTIVE DEMOLITION, TORCH CUTTING	R024119-10								
0020	Steel, 1" thick plate		E-25	333	.024	L.F.	.90	1.43	.04	2.37
0040	1" diameter bar		"	600	.013	Ea.	.15	.79	.02	.96
1000	Oxygen lance cutting, reinforced concrete walls		1 Clab	10	.800	L.F.		33.50		33.50
1040	12"-16" thick walls		"	6	1.333	"		56		56
1080	24" thick walls									84.50

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.	1.70			1.70
0200	Brass salvage value	G					1.25			1.25
0250	Bronze						1.45			1.45
0300	Steel	G					.05			.05
0304	304 Stainless Steel						.30			.30
0316	316 Stainless Steel						.45			.45
0400	Cast Iron	G					.06			.06
0600	Aluminum siding	G					.33			.33
0610	Aluminum wire						.47			.47
										.52

02 42 10.20 Deconstruction of Building Components

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.		42		42
0110	Single or double compartment kitchen sink	G		14	1.143			48		48
0120	Wall hung urinal	G		14	1.143			48		48
0130	Floor mounted	G		8	2			84		84
0140	Floor mounted water closet	G		16	1			42		42
0150	Wall hung	G		14	1.143			48		48
0160	Water fountain, free standing	G		16	1			42		42
0170	Wall hung or deck mounted	G		12	1.333			56		84.50
0180	Bathtub, steel or fiberglass	G		10	1.600			67.50		67.50
0190	Cast iron	G		8	2			84		127
0200	Shower, single	G		6	2.667			112		112
0210	Group	G		7	2.286			96		145

02 42 Removal and Diversion of Construction Materials

02 42 10 – Building Deconstruction

02 42 10.20 Deconstruction of Building Components		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
							Labor	Equipment	Total		
0300	Deconstruction of electrical fixtures										
0310	Surface mounted incandescent fixtures	G	2 Clab	.48	.333	Ea.			14.05	14.05	21
0320	Fluorescent, 2 lamp	G		.32	.500				21	21	31.50
0330	4 lamp	G		.24	.667				28	28	42
0340	Strip fluorescent, 1 lamp	G		.40	.400				16.85	16.85	25.50
0350	2 lamp	G		.32	.500				21	21	31.50
0400	Recessed drop-in fluorescent fixture, 2 lamp	G		.27	.593				25	25	37.50
0410	4 lamp	G		.18	.889				37.50	37.50	56
0500	Deconstruction of appliances										
0510	Cooking stoves	G	2 Clab	.26	.615	Ea.			26	26	39
0520	Dishwashers	G	"	.26	.615	"			26	26	39
0600	Deconstruction of millwork and trim										
0610	Cabinets, wood	G	2 Carp	.40	.400	L.F.			21.50	21.50	32
0620	Countertops	G		.100	.160	"			8.50	8.50	12.80
0630	Wall paneling, 1" thick	G		.500	.032	S.F.			1.70	1.70	2.56
0640	Ceiling trim	G		.500	.032	L.F.			1.70	1.70	2.56
0650	Wainscoting	G		.500	.032	S.F.			1.70	1.70	2.56
0660	Base, 3/4"-1" thick	G		.600	.027	L.F.			1.42	1.42	2.13
0700	Deconstruction of doors and windows										
0710	Doors, wrap, interior, wood, single, no closers	G	2 Carp	.21	.762	Ea.			4.75	40.50	45.25
0720	Double	G		.13	1.231				9.50	65.50	75
0730	Solid core, single, exterior or interior	G		.10	1.600				4.75	85	89.75
0740	Double	G		.08	2				9.50	106	115.50
0810	Windows, wrap, wood, single	G	2 Carp	.21	.762	Ea.			4.75	40.50	45.25
0812	with no casement or cladding	G	"	.18	.889	"			4.75	47	51.75
0820	with casement and/or cladding	G									76.50
0900	Deconstruction of interior finishes										
0910	Drywall for recycling	G	2 Clab	1775	.009	S.F.			.38	.38	.57
0920	Plaster wall, first floor	G		1775	.009				.38	.38	.57
0930	Second floor	G		1330	.012				.51	.51	.76
1000	Deconstruction of roofing and accessories										
1010	Built-up roofs	G	2 Clab	.570	.028	S.F.			1.18	1.18	1.78
1020	Gutters, fascia and rakes	G	"	1140	.014	L.F.			.59	.59	.89
2000	Deconstruction of wood components										
2010	Roof sheathing	G	2 Clab	.570	.028	S.F.			1.18	1.18	1.78
2020	Main roof framing	G		.760	.021	L.F.			.89	.89	1.33
2030	Porch roof framing	G		.445	.036				1.51	1.51	2.27
2040	Beams 4" x 8"	G	B-1	.375	.064				2.74	2.74	4.11
2050	4" x 10"	G		.300	.080				3.42	3.42	5.15
2055	4" x 12"	G		.250	.096				4.11	4.11	6.15
2060	6" x 8"	G		.250	.096				4.11	4.11	6.15
2065	6" x 10"	G		.200	.120				5.15	5.15	7.70
2070	6" x 12"	G		.170	.141				6.05	6.05	9.05
2075	8" x 12"	G		.126	.190				8.15	8.15	12.25
2080	10" x 12"	G		.100	.240				10.25	10.25	15.40
2100	Ceiling joists	G	2 Clab	.800	.020				.84	.84	1.27
2150	Wall framing, interior	G		1230	.013				.55	.55	.82
2160	Sub-floor	G		2000	.008	S.F.			.34	.34	.51
2170	Floor joists	G		2000	.008	L.F.			.34	.34	.51
2200	Wood siding (no lead or asbestos)	G		1300	.012	S.F.			.52	.52	.78
2300	Wall framing, exterior	G		1600	.010	L.F.			.42	.42	.63
2400	Stair risers	G		.53	.302	Ea.			12.70	12.70	19.10
2500	Posts	G		800	.020	L.F.			.84	.84	1.27

02 42 Removal and Diversion of Construction Materials

02 42 10 – Building Deconstruction

02 42 10.20 Deconstruction of Building Components		Daily Crew Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
					Labor	Equipment			
3000	Deconstruction of exterior brick walls								
3010	Exterior brick walls, first floor	G	2 Clab	200	.080	S.F.		3.37	3.37
3020	Second floor	G		64	.250	"		10.55	10.55
3030	Brick chimney	G		100	.160	C.F.		6.75	10.10
4000	Deconstruction of concrete								
4010	Slab on grade, 4" thick, plain concrete	G	B-9	500	.080	S.F.		3.40	.71
4020	Wire mesh reinforced	G		470	.085			3.62	.76
4030	Rod reinforced	G		400	.100			4.25	.89
4110	Foundation wall, 6" thick, plain concrete	G		160	.250			10.65	2.23
4120	8" thick	G		140	.286			12.15	2.55
4130	10" thick	G		120	.333			14.15	2.98
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		475	725
9020	Daily use, skid steer and operator	G	A-3C	1	8			425	400
9030	Daily use, backhoe 48 HP, operator and labor	G	"	1	8			425	400
								825	1,075
								825	1,075

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.		.56	.56
0200	Haul 50' and load rough lumber up to 2" x 8" size	G		2000	.008	"		.34	.34
0210	Lumber larger than 2" x 8"	G		3200	.005	B.F.		.21	.21
0300	Finish wood for recycling stack and wrap per pallet	G		8	2	Ea.		84	122
0350	Light fixtures			6	2.667			68.50	169
0375	Windows			6	2.667			112	244
0400	Miscellaneous materials			8	2			64.50	176.50
1000	See Section 02 41 19.19 for bulk material handling							84	103
									148

02 43 Structure Moving

02 43 13 – Structure Relocation

02 43 13 Building Relocation									
0010	BUILDING RELOCATION								
0011	One day move, up to 24' wide								
0020	Reset on existing foundation								
0040	Wood or steel frame bldg., based on ground floor area	G	B-4	185	.259	S.F.		11.30	2.67
0060	Masonry bldg., based on ground floor area	G	"	137	.350			15.25	3.60
0200	For 24'-42' wide, add								
								18.85	27
								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.		1.37	15.90	13.60
0120	Labor crew to 6' deep	B-2	19	2.105			9.20	89.50	98.70
								30.87	40.50
								144	

02 56 Site Containment

02 56 13 – Waste Containment

02 56 13.10 Containment of Hazardous Waste		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	Equipment	Total	Total Incl O&P
0130	6'-12' deep	B-2	12	3.333	B.C.Y.	14.60	142			156.60	229
0200	Move contaminated soil/waste up to 150' on-site with 2.5 C.Y. loader	B-10T	300	.040	L.C.Y.	.23	2.07	2.34	4.64	5.95	
0210	300'	"	186	.065	"	.38	3.35	3.78	7.51	9.55	
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.	.58	.44	.21	1.23	1.53	
0420	80 mil liner	"	4000	.008	"	.85	.44	.21	1.50	1.84	
0500	Chlorosulfonated polyethylene										
0510	36 mil hypalon top cover	B-47H	4000	.008	S.F.	2.41	.44	.21	3.06	3.55	
0520	45 mil hypalon liner	"	4000	.008	"	2.89	.44	.21	3.54	4.08	
0600	Polyvinyl chloride (PVC)										
0610	60 mil top cover	B-47H	4000	.008	S.F.	1	.44	.21	1.65	1.99	
0620	80 mil liner	"	4000	.008	"	1.27	.44	.21	1.92	2.30	
0700	Rough textured H.D. polyethylene (HDPE)										
0710	40 mil top cover	B-47H	4000	.008	S.F.	.53	.44	.21	1.18	1.48	
0720	60 mil top cover		4000	.008		.66	.44	.21	1.31	1.62	
0722	60 mil liner		4000	.008		.62	.44	.21	1.27	1.58	
0730	80 mil liner		3800	.008		.77	.47	.22	1.46	1.79	
1000	3/4" crushed stone, 6' deep ballast around liner	B-6	30	.800	L.C.Y.	27.50	36.50	7.15	71.15	93.50	
1100	Hazardous waste, ballast cover with common borrow material	B-63	56	.714		12.60	31.50	3.17	47.27	65	
1110	Mixture of common borrow & topsoil		56	.714		19.55	31.50	3.17	54.22	72.50	
1120	Bank sand		56	.714		18.25	31.50	3.17	52.92	71	
1130	Medium priced clay		44	.909		26	40.50	4.04	70.54	94	
1140	Mixture of common borrow & medium priced clay		56	.714		19.40	31.50	3.17	54.07	72.50	

02 58 Snow Control

02 58 13 – Snow Fencing

02 58 13.10 Snow Fencing System

0010	SNOW FENCING SYSTEM	B-1	500	.048	L.F.	.39	2.05		2.44	3.51
7001	Snow fence on steel posts 10' OC, 4' high.									

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.		530	58.50	583.50	855
0120	6,000 gal. to 8,000 gal. tank	G	B-3A	3	13.333			600	229	829	1,150
0130	9,000 gal. to 12,000 gal. tank	G	"	2	20	↓ %		900	345	1,245	1,725
0190	Known leaking tank, add								100%	100%	
0200	Remove sludge, water and remaining product from bottom of tank with vacuum truck										
0300	3,000 gal. to 5,000 gal. tank	G	A-13	5	1.600	Ea.		85	148	233	289
0310	6,000 gal. to 8,000 gal. tank	G		4	2			106	184	290	360
0320	9,000 gal. to 12,000 gal. tank	G	↓	3	2.667	↓ Gal.		141	246	387	480
0390	Dispose of sludge off-site, average									6.25	6.80
0400	Insert inert solid CO ₂ "dry ice" into tank										

02 65 Underground Storage Tank Removal

02 65 10 – Underground Tank and Contaminated Soil Removal

	Description	Daily Output	Labor Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
					Material	Labor	Equipment		
02 65 10.30 Removal of Underground Storage Tanks									
0401	For cleaning/transporting tanks (1.5 lb./100 gal. cap)	[G] 1 Clab	500	.016	Lb.	1.22	.67	1.89	2.35
0503	Disconnect and remove piping	[G]	1 Plum	.160	.050	L.F.	3.22	3.22	4.82
0603	Transfer liquids, 10% of volume	[G]	"	1600	.005	Gal.	.32	.32	.48
0703	Cut accessway into underground storage tank	[G]	1 Clab	5.33	1.501	Ea.	63	63	95
0813	Remove sludge, wash and wipe tank, 500 gal.	[G]	1 Plum	8	1		64.50	64.50	96.50
0823	3,000 gal.	[G]		6.67	1.199		77.50	77.50	116
0833	5,000 gal.	[G]		6.15	1.301		84	84	125
0843	8,000 gal.	[G]		5.33	1.501		96.50	96.50	145
0853	10,000 gal.	[G]		4.57	1.751		113	113	169
0863	12,000 gal.	[G]		4.21	1.900		122	122	183
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				C.Y.			80	88
1130	Minimum				"			115	125
1131	Maximum								
1203	Excavate, pull, & load tank, backfill hole, 8,000 gal. +	[G] B-12C	.50	.32	Ea.	1,625	1,900	3,525	4,525
1213	Haul tank to certified dump, 100 miles rt, 8,000 gal. +	[G] B-34K	1	8		390	855	1,245	1,525
1223	Excavate, pull, & load tank, backfill hole, 500 gal.	[G] B-11C	1	16		790	214	1,004	1,400
1233	Excavate, pull, & load tank, backfill hole, 3,000-5,000 gal.	[G] B-11M	.50	.32		1,575	465	2,040	2,875
1243	Haul tank to certified dump, 100 miles rt, 500 gal.	[G] B-34L	1	8		425	196	621	850
1253	Haul tank to certified dump, 100 miles rt, 3,000-5,000 gal.	[G] B-34M	1	8		425	820	1,245	1,525
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.	7.65	7.90	2.14	17.69
2021	Maximum	[G]	"	100	.160		9.90	7.90	2.14
2050	Disposal of decontaminated soil, minimum							135	150
2055	Maximum							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

02 81 Transportation and Disposal of Hazardous Materials

02 81 20 – Hazardous Waste Handling

02 81 20.10 Hazardous Waste Cleanup/Pickup/Disposal		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
					Hr.		Labor + Equipment		
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 vacuумable 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.	950					950	1,050
0250	Large volume air sampling pump, minimum				315			315	350
0260	Maximum				345			345	380
0300	Airless sprayer unit, 2 gun				2,625			2,625	2,875
0350	Light stand, 500 watt				41			41	45
0400	Personal respirators								
0410	Negative pressure, 1/2 face, dual operation, minimum	Ea.	30					30	33
0420	Maximum				34			34	37.50
0450	P.A.P.R., full face, minimum				780			780	855
0460	Maximum				1,225			1,225	1,325
0470	Supplied air, full face, including air line, minimum				289			289	320
0480	Maximum				500			500	550
0500	Personnel sampling pump				237			237	261
1500	Power panel, 20 unit, including GFI				475			475	525
1600	Shower unit, including pump and filters				1,125			1,125	1,250
1700	Supplied air system (type C)				3,700			3,700	4,075
1750	Vacuum cleaner, HEPA, 16 gal., stainless steel, wet/dry				1,275			1,275	1,400
1760	55 gallon				1,475			1,475	1,600
1800	Vacuum loader, 9-18 ton/hr.				99,000			99,000	109,000
1900	Water atomizer unit, including 55 gal. drum				305			305	340
2000	Worker protection, whole body, foot, head cover & gloves, plastic				7.45			7.45	8.20
2500	Respirator, single use				30			30	33
2550	Cartridge for respirator				5.15			5.15	5.65
2570	Glove bag, 7 mil, 50" x 64"				8.75			8.75	9.60
2580	10 mil, 44" x 60"				7.90			7.90	8.65
2590	6 mil, 44" x 60"				4.83			4.83	5.30
6000	Disposable polyethylene bags, 6 mil, 3 C.F.				.77			.77	.85
6300	Disposable fiber drums, 3 C.F.				18.90			18.90	21
6400	Pressure sensitive caution labels, 3" x 5"				3.08			3.08	3.39
6450	11" x 17"				7.75			7.75	8.55
6500	Negative air machine, 1800 CFM				890			890	975

02 82 Asbestos Remediation

02 82 13 – Asbestos Abatement

02 82 13.42 Preparation of Asbestos Containment Area

		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	Total	Total Ind O&P
0010	PREPARATION OF ASBESTOS CONTAINMENT AREA									
0100	Pre-cleaning, HEPA vacuum and wet wipe, flat surfaces	A-9	12000	.005	S.F.	.01	.31		.32	.49
0200	Protect carpeted area, 2 layers 6 mil poly on 3/4" plywood	"	1000	.064		2.10	3.76		5.86	8.05
0300	Separation barrier, 2" x 4" @ 16", 1/2" plywood ea. side, 8' high	2 Carp	400	.040		3.08	2.13		5.21	6.60
0310	12' high		320	.050		3.02	2.66		5.68	7.30
0320	16' high		200	.080		2.99	4.25		7.24	9.70
0400	Personnel decontam. chamber, 2" x 4" @ 16", 3/4" ply ea. side		280	.057		3.55	3.04		6.59	8.45
0450	Waste decontam. chamber, 2" x 4" studs @ 16", 3/4" ply ea. side		360	.044		3.55	2.36		5.91	7.45
0500	Cover surfaces with polyethylene sheeting									
0501	Including glue and tape									
0550	Floors, each layer, 6 mil	A-9	8000	.008	S.F.	.04	.47		.51	.77
0551	4 mil		9000	.007		.03	.42		.45	.67
0560	Walls, each layer, 6 mil		6000	.011		.04	.63		.67	1.01
0561	4 mil		7000	.009		.03	.54		.57	.85
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.	13.90	4.25		18.15	21.50
0610	36 sq. in. to 72 sq. in.		125	.128		28	6.80		34.80	40.50
0615	72 sq. in. to 144 sq. in.		80	.200		55.50	10.65		66.15	77
0620	Wall penetrations, to 36 sq. in.		180	.089		13.90	4.72		18.62	22.50
0630	36 sq. in. to 72 sq. in.		100	.160		28	8.50		36.50	43.50
0640	72 sq. in. to 144 sq. in.		60	.267		55.50	14.15		69.65	82.50
0800	Caulk seams with latex	1 Carp	230	.035	L.F.	.17	1.85		2.02	2.97
0900	Set up neg. air machine, 1-2k CFM/25 M.C.F. volume	1 Asbe	4.30	1.860	Ea.		109		109	168
0950	Set up and remove portable shower unit	2 Asbe	4	4	"		235		235	360

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.	.68	16		16.68	25.50
0110	W 12 x 22		210	.305		.76	17.90		18.66	28.50
0120	W 14 x 26		180	.356		.89	21		21.89	33
0130	W 16 x 31		160	.400		1	23.50		24.50	37
0140	W 18 x 40		140	.457		1.15	27		28.15	42.50
0150	W 24 x 55		110	.582		1.46	34		35.46	54
0160	W 30 x 108		85	.753		1.89	44		45.89	70
0170	W 36 x 150		72	.889		2.23	52		54.23	82.50
0200	Boiler insulation		480	.133	S.F.	.40	7.85		8.25	12.45
0210	With metal lath, add					%			50%	50%
0300	Boiler breeching or flue insulation	A-9	520	.123	S.F.	.31	7.25		7.56	11.45
0310	For active boiler, add					%			100%	100%
0400	Duct or AHU insulation	A-10B	440	.073	S.F.	.18	4.28		4.46	6.75
0500	Duct vibration isolation joints, up to 24 sq. in. duct	A-9	56	1.143	Ea.	2.87	67		69.87	106
0520	25 sq. in. to 48 sq. in. duct		48	1.333		3.35	78.50		81.85	124
0530	49 sq. in. to 76 sq. in. duct		40	1.600		4.01	94		98.01	148
0600	Pipe insulation, air cell type, up to 4" diameter pipe		900	.071	L.F.	.18	4.17		4.35	6.60
0610	4" to 8" diameter pipe		800	.080		.20	4.70		4.90	7.40
0620	10" to 12" diameter pipe		700	.091		.23	5.35		5.58	8.50
0630	14" to 16" diameter pipe		550	.116		.29	6.85		7.14	10.80
0650	Over 16" diameter pipe		650	.098	S.F.	.25	5.80		6.05	9.15
0700	With glove bag up to 3" diameter pipe		200	.320	L.F.	9.40	18.80		28.20	39.50

02 82 Asbestos Remediation

02 82 13 – Asbestos Abatement

		Crew	Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
02 82 13.43 Bulk Asbestos Removal						Material	Labor	Equipment		
1000	Pipe fitting insulation up to 4" diameter pipe	A-9	320	.200	Eo.	.50	11.75		12.25	18.60
1100	6" to 8" diameter pipe		304	.211		.53	12.35		12.88	19.60
1110	10" to 12" diameter pipe		192	.333		.84	19.55		20.39	31
1120	14" to 16" diameter pipe		128	.500		1.25	29.50		30.75	46.50
1130	Over 16" diameter pipe		176	.364	S.F.	.91	21.50		22.41	34
1200	With glove bag, up to 8" diameter pipe		75	.853	L.F.	6.55	50		56.55	84
2000	Scrape foam fireproofing from flat surface		2400	.027	S.F.	.07	1.57		1.64	2.47
2100	Irregular surfaces		1200	.053		.13	3.13		3.26	4.96
3000	Remove cementitious material from flat surface		1800	.036		.09	2.09		2.18	3.31
3100	Irregular surface		1000	.064		.11	3.76		3.87	5.90
4000	Scrape acoustical coating/fireproofing, from ceiling		3200	.020		.05	1.17		1.22	1.86
5000	Remove VAT and mastic from floor by hand		2400	.027		.07	1.57		1.64	2.47
5100	By machine	A-11	4800	.013		.03	.78	.01	.82	1.25
5150	For 2 layers, add					%			50%	50%
6000	Remove contaminated soil from crawl space by hand	A-9	400	.160	C.F.	.40	9.40		9.80	14.85
6100	With large production vacuum loader	A-12	700	.091	"	.23	5.35	1.05	6.63	9.65
7000	Radiator backing, not including radiator removal	A-9	1200	.053	S.F.	.13	3.13		3.26	4.96
8000	Cement-asbestos transite board and cement wall board	2 Asbe	1000	.016		.16	.94		1.10	1.62
8100	Transite shingle siding	A-10B	750	.043		.21	2.51		2.72	4.08
8200	Shingle roofing		2000	.016		.08	.94		1.02	1.53
8250	Built-up, no gravel, non-friable	B-2	1400	.029		.08	1.21		1.29	1.91
8260	Bituminous flashing	1 Rofc	300	.027		.08	1.23		1.31	2.12
8300	Asbestos millboard, flat board and VAT contaminated plywood	2 Asbe	1000	.016		.08	.94		1.02	1.53
9000	For type B (supplied air) respirator equipment, add					%			10%	10%

02 82 13.44 Demolition in Asbestos Contaminated Area

		DEMOLITION IN ASBESTOS CONTAMINATED AREA									
0200	Ceiling, including suspension system, plaster and lath	A-9	2100	.030	S.F.	.08	1.79		1.87	2.83	
0210	Finished plaster, leaving wire lath		585	.109		.27	6.40		6.67	10.15	
0220	Suspended acoustical tile		3500	.018		.05	1.07		1.12	1.70	
0230	Concealed tile grid system		3000	.021		.05	1.25		1.30	1.98	
0240	Metal pan grid system		1500	.043		.11	2.51		2.62	3.97	
0250	Gypsum board		2500	.026		.06	1.50		1.56	2.38	
0260	Lighting fixtures up to 2' x 4'		72	.889	Eo.	2.23	52		54.23	82.50	
0400	Partitions, non load bearing										
0410	Plaster, lath, and studs	A-9	690	.093	S.F.	.90	5.45		6.35	9.35	
0450	Gypsum board and studs		"	1390	.046	"	.12	2.70		2.82	4.28
9000	For type B (supplied air) respirator equipment, add					%			10%	10%	

02 82 13.45 OSHA Testing

		OSHA TESTING								
0100	Certified technician, minimum				Day		340		340	340
0110	Maximum						670		670	670
0121	Industrial hygienist, minimum						385		385	385
0130	Maximum									
0200	Asbestos sampling and PCM analysis, NIOSH 7400, minimum	1 Asbe	8	1	Eo.	15.90	58.50		74.40	108
0210	Maximum		4	2		27	117		144	210
1000	Cleaned area samples		8	1		203	58.50		261.50	315
1100	PCM air sample analysis, NIOSH 7400, minimum		8	1		17.70	58.50		76.20	110
1110	Maximum		4	2		2.30	117		119.30	183
1200	TEM air sample analysis, NIOSH 7402, minimum								80	106
1210	Maximum								360	450

02 82 Asbestos Remediation

02 82 13 – Asbestos Abatement

02 82 13.46 Decontamination of Asbestos Containment Area			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
0010	DECONTAMINATION OF ASBESTOS CONTAINMENT AREA									
0100	Spray exposed substrate with surfactant, (bridging)									
0200	Flat surfaces	A-9	6000	.011	S.F.	.41	.63		1.04	1.41
0250	Irregular surfaces		4000	.016	"	.45	.94		1.39	1.94
0300	Pipes, beams, and columns		2000	.032	L.F.	.60	1.88		2.48	3.54
1000	Spray encapsulate polyethylene sheeting		8000	.008	S.F.	.41	.47		.88	1.17
1100	Roll down polyethylene sheeting		8000	.008	"		.47		.47	.72
1500	Bag polyethylene sheeting		400	.160	Ea.	1.01	9.40		10.41	15.50
2000	Fine clean exposed substrate, with nylon brush		2400	.027	S.F.		1.57		1.57	2.40
2500	Wet wipe substrate		4800	.013			.78		.78	1.20
2600	Vacuum surfaces, fine brush		6400	.010			.59		.59	.90
3000	Structural demolition									
3100	Wood stud walls	A-9	2800	.023	S.F.		1.34		1.34	2.06
3500	Window manifolds, not incl. window replacement		4200	.015			.89		.89	1.37
3600	Plywood carpet protection		2000	.032			1.88		1.88	2.88
4000	Remove custom decontamination facility	A-10A	8	3	Ea.	15.15	176		191.15	288
4100	Remove portable decontamination facility	3 Asbe	12	2	"	14.05	117		131.05	195
5000	HEPA vacuum, shampoo carpeting	A-9	4800	.013	S.F.	.11	.78		.89	1.32
9000	Final cleaning of protected surfaces	A-10A	8000	.003	"		.18		.18	.27

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

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.	.77	9.40		10.17	15.25
0200	Large production vacuum loader	A-12	880	.073		.99	4.27	.84	6.10	8.55
1000	Double bag and decontaminate	A-9	960	.067		.77	3.91		4.68	6.85
2000	Containerize bagged material in drums, per 3 C.F. drum		800	.080		18.90	4.70		23.60	28
3000	Cart bags 50' to dumpster	2 Asbe	400	.040			2.35		2.35	3.60
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

02 82 13.48 Asbestos Encapsulation With Sealants										
0010 ASBESTOS ENCAPSULATION WITH SEALANTS										
0100	Ceilings and walls, minimum	A-9	21000	.003	S.F.	.42	.18		.60	.73
0110	Maximum		10600	.006		.52	.35		.87	1.11
0200	Columns and beams, minimum		13300	.005		.42	.28		.70	.89
0210	Maximum		5325	.012		.63	.71		1.34	1.77
0300	Pipes to 12" diameter including minor repairs, minimum		800	.080	L.F.	.57	4.70		5.27	7.85
0310	Maximum		400	.160	"	1.27	9.40		10.67	15.80

02 83 Lead Remediation

02 83 19 – Lead-Based Paint Remediation

02 83 19.21 Lead Paint Remediation Plans and Methods

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

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.	2.45	1.48		3.93	4.90
0030	6"-12" wide		180	.044		3.19	1.97		5.16	6.45

02 83 Lead Remediation

02 83 19 – Lead-Based Paint Remediation

02 83 19.23 Encapsulation of Lead-Based Paint		Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
					Material	Labor	Equipment		
0040	Balustrades	1 Pord	300	.027 L.F.	2.07	1.18		3.25	4.04
0050	Pipe to 4" diameter		500	.016 "	1.27	.71		1.98	2.46
0060	To 8" diameter		375	.021 "	1.56	.95		2.51	3.13
0070	To 12" diameter		250	.032 "	2.36	1.42		3.78	4.71
0080	To 16" diameter		170	.047 "	3.50	2.09		5.59	6.95
0090	Cabinets, ornate design		200	.040 S.E.	3.19	1.78		4.97	6.15
0100	Simple design		250	.032 "	2.42	1.42		3.84	4.77
0110	Doors, 3' x 7', both sides, incl. frame & trim								
0120	Flush	1 Pord	6	1.333 Ea.	30	59		89	121
0130	French, 10-15 lite		3	2.667 "	6.45	118		124.45	183
0140	Panel		4	2 "	36.50	89		125.50	172
0150	Louvered		2.75	2.909 "	34.50	129		163.50	230
0160	Windows, per interior side, per 15 S.F.								
0170	1-6 lite	1 Pord	14	.571 Ea.	21.50	25.50		47	61
0180	7-10 lite		7.50	1.067 "	23.50	47.50		71	96
0190	12 lite		5.75	1.391 "	32	62		94	127
0200	Radiators		8	1 "	74.50	44.50		119	148
0210	Grilles, vents		275	.029 S.F.	2.11	1.29		3.40	4.24
0220	Walls, roller, drywall or plaster		1000	.008 "	.63	.36		.99	1.22
0230	With spunbonded reinforcing fabric		720	.011 "	.73	.49		1.22	1.53
0240	Wood		800	.010 "	.72	.44		1.16	1.45
0250	Ceilings, roller, drywall or plaster		900	.009 "	.73	.39		1.12	1.39
0260	Wood		700	.011 "	.87	.51		1.38	1.72
0270	Exterior, brushwork, gutters and downspouts		300	.027 L.F.	2.04	1.18		3.22	4
0280	Columns		400	.020 S.F.	1.48	.89		2.37	2.95
0290	Spray, siding		600	.013 "	1.06	.59		1.65	2.05
0300	Miscellaneous								
0310	Electrical conduit, brushwork, to 2" diameter	1 Pord	500	.016 L.F.	1.27	.71		1.98	2.46
0320	Brick, block or concrete, spray		500	.016 S.F.	1.27	.71		1.98	2.46
0330	Steel, flat surfaces and tanks to 12"		500	.016 "	1.27	.71		1.98	2.46
0340	Beams, brushwork		400	.020 "	1.48	.89		2.37	2.95
0350	Trusses		400	.020 "	1.48	.89		2.37	2.95

02 83 19.26 Removal of Lead-Based Paint

0010	REMOVAL OF LEAD-BASED PAINT	R028319-60							
0011	By chemicals, per application								
0050	Baseboard, to 6" wide	1 Pord	64	.125 L.F.	.84	5.55		6.39	9.15
0070	To 12" wide		32	.250 "	1.49	11.10		12.59	18.15
0200	Balustrades, one side		28	.286 S.F.	1.49	12.70		14.19	20.50
1400	Cabinets, simple design		32	.250 "	1.39	11.10		12.49	18.05
1420	Ornate design		25	.320 "	1.55	14.20		15.75	22.50
1600	Cornice, simple design		60	.133 "	1.59	5.90		7.49	10.55
1620	Ornate design		20	.400 "	5.50	17.75		23.25	32.50
2800	Doors, one side, flush		84	.095 "	1.88	4.23		6.11	8.35
2820	Two panel		80	.100 "	1.39	4.44		5.83	8.15
2840	Four panel		45	.178 "	1.40	7.90		9.30	13.30
2880	For trim, one side, add		64	.125 L.F.	.80	5.55		6.35	9.15
3000	Fence, picket, one side		30	.267 S.F.	1.39	11.85		13.24	19.15
3200	Grilles, one side, simple design		30	.267 "	1.40	11.85		13.25	19.15
3220	Ornate design		25	.320 "	1.46	14.20		15.66	22.50
3240	Handrails		90	.089 L.F.	1.40	3.95		5.35	7.40
4400	Pipes, to 4" diameter		90	.089 "	1.88	3.95		5.83	7.90
4420	To 8" diameter		50	.160 "	3.76	7.10		10.86	14.70

02 83 Lead Remediation

02 83 19 – Lead-Based Paint Remediation

02 83 19.26 Removal of Lead-Based Paint		Crew	Daily	Labor-	Unit	2020 Bare Costs			Total	Total
			Output	Hours		Material	Labor	Equipment		Incl O&P
4440	To 12" diameter	1 Pord	.36	.222	L.F.	5.65	9.85	15.50	15.50	21
4460	To 16" diameter		20	.400	↓	7.55	17.75	25.30	25.30	35
4500	For hangers, add		40	.200	Ea.	2.54	8.90	11.44	11.44	16
4800	Siding		90	.089	S.F.	1.36	3.95	5.31	5.31	7.35
5000	Trusses, open		55	.145	SF Face	2.05	6.45	8.50	8.50	11.85
6200	Windows, one side only, double-hung, 1/1 light, 24" x 48" high		4	2	Ea.	25.50	89	114.50	114.50	160
6220	30" x 60" high		3	2.667		33.50	118	151.50	151.50	213
6240	36" x 72" high		2.50	3.200		41	142	183	183	256
6280	40" x 80" high		2	2.4		51	178	229	229	320
6400	Colonial window, 6/6 light, 24" x 48" high		2	4		51	178	229	229	320
6420	30" x 60" high		1.50	5.333		67	237	304	304	425
6440	36" x 72" high		1	8		101	355	456	456	640
6480	40" x 80" high		1	8		101	355	456	456	640
6600	8/8 light, 24" x 48" high		2	4		51	178	229	229	320
6620	40" x 80" high		1	8		101	355	456	456	640
6800	12/12 light, 24" x 48" high		1	8		101	355	456	456	640
6820	40" x 80" high		.75	10.667		136	475	611	611	855
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.	.77	44.50	45.27	45.27	67
8000	Collect and bag bulk material, 3 C.F. bags, by hand	"	30	.267	"	.77	11.85	12.62	12.62	18.45

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
0030 Areas to 5,000 S.F.									440
0032 Areas to 10,000 S.F.									440
0040 Testing, air sample each									126
0050 Swab sample									115
0060 Tape sample									125
0070 Post remediation air test									126
0080 Mold abatement plan, area to 2,500 S.F.									1,225
0090 Areas to 5,000 S.F.									1,625
0095 Areas to 10,000 S.F.									2,550
0100 Pickup & removal of contents, average 3 bedroom home, excl. storage									8,150
0110 Average 5 bedroom home, excl. storage									15,300
0600 For demolition in mold contaminated areas, see Section 02 87 13.33									16,800
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
6300 Separation barrier, 2" x 4" @ 16", 1/2" plywood ea. side, 8' high								2 Corp	.005
6310 12' high									.01
6320 16' high									.31
6400 Personnel decontam. chamber, 2" x 4" @ 16", 3/4" ply ea. side									.32
6450 Waste decontam. chamber, 2" x 4" studs @ 16", 3/4" ply each side									.49
6500 Cover surfaces with polyethylene sheeting									7.25
6550 Including glue and tape									7.85
6550 Floors, each layer, 6 mil									9.05
6551 4 mil									8.55
6550 Floors, each layer, 6 mil									8.55
6551 4 mil									.51
6550 Floors, each layer, 6 mil									.77
6551 4 mil									.67

02 87 Biohazard Remediation

02 87 13 – Mold Remediation

02 87 13.16 Mold Remediation Preparation and Containment				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
								Labor	Equipment	
6560	Walls, each layer, 6 mil		A-9	6000	.011	S.F.	.04	.63	.67	1.01
6561	4 mil			7000	.009		.03	.54	.57	.85
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.	13.90	4.25	18.15	21.50
6610	36 sq. in. to 72 sq. in.			125	.128		28	6.80	34.80	40.50
6615	72 sq. in. to 144 sq. in.			80	.200		55.50	10.65	66.15	77
6620	Wall penetrations, to 36 sq. in.			180	.089		13.90	4.72	18.62	22.50
6630	36 sq. in. to 72 sq. in.			100	.160		28	8.50	36.50	43.50
6640	72 sq. in. to 144 sq. in.			60	.267		55.50	14.15	69.65	82.50
6800	Caulk seams with latex caulk		1 Corp	230	.035	L.F.	.17	1.85	2.02	2.97
6900	Set up neg. air machine, 1-2k CFM/25 M.C.F. volume		1 Asbe	4.80	1.860	Ea.		109	109	168

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		A-9	2100	.030	S.F.	.08	1.79	1.87	2.83
0200	Ceiling, including suspension system, plaster and lath			585	.109		.27	6.40	6.67	10.15
0210	Finished plaster, leaving wire lath			3500	.018		.05	1.07	1.12	1.70
0220	Suspended acoustical tile			3000	.021		.05	1.25	1.30	1.98
0230	Concealed tile grid system			1500	.043		.11	2.51	2.62	3.97
0240	Metal pan grid system			2500	.026		.06	1.50	1.56	2.38
0250	Gypsum board			2500	.026		.06	1.50	1.56	2.38
0255	Plywood			2500	.026		.06	1.50	1.56	2.38
0260	Lighting fixtures up to 2' x 4'			72	.889	Ea.	2.23	.52	54.23	82.50
0400	Partitions, non load bearing		A-9	690	.093	S.F.	.90	5.45	6.35	9.35
0410	Plaster, lath, and studs			1390	.046		.12	2.70	2.82	4.28
0450	Gypsum board and studs			1390	.046		.12	2.70	2.82	4.28
0465	Carpet & pad			900	.071	L.F.	.18	4.17	4.35	6.60
0600	Pipe insulation, air cell type, up to 4" diameter pipe			800	.080		.20	4.70	4.90	7.40
0610	4" to 8" diameter pipe			700	.091		.23	5.35	5.58	8.50
0620	10" to 12" diameter pipe			550	.116		.29	6.85	7.14	10.80
0630	14" to 16" diameter pipe			650	.098	S.F.	.25	5.80	6.05	9.15
9000	For type B (supplied air) respirator equipment, add						%		10%	10%

02 91 Chemical Sampling, Testing and Analysis

02 91 10 – Monitoring, Sampling, Testing and Analysis

0010 10.10 Monitoring, Chem. Sampling, Testing & Analysis

0010	MONITORING, CHEMICAL SAMPLING, TESTING AND ANALYSIS		1 Skwk.	32	.250	Ea.		13.70	13.70	20.50
0015	Field sampling of waste			32	.250			13.70	13.70	20.50
0100	Field samples, sample collection, sludge									
0110	Contaminated soils									
0200	Vials and bottles									
0210	32 oz. clear wide mouth jar (case of 12)						Ea.	41.50	41.50	46
0220	32 oz. Boston round bottle (case of 12)							37.50	37.50	41.50
0230	32 oz. HDPE bottle (case of 12)							32.50	32.50	36
0300	Laboratory analytical services									
0310	Laboratory testing 13 metals						Ea.	224	224	247
0312	13 metals + mercury							217	217	239
0314	8 metals							167	167	183

02 91 Chemical Sampling, Testing and Analysis

02 91 10 – Monitoring, Sampling, Testing and Analysis

02 91 10.10 Monitoring, Chem. Sampling, Testing & Analysis	Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
						Labor	Equipment	Total		
0316 Mercury only				Ea.	61.50			61.50	67.50	
0318 Single metal (only Cs, Li, Sr, Ta)					47.50			47.50	52	
0320 Single metal (excludes Hg, Cs, Li, Sr, Ta)					47.50			47.50	52.50	
0400 Hydrocarbons standard					192			192	212	
0410 Hydrocarbons fingerprint					243			243	267	
0500 Radioactivity gross alpha					161			161	177	
0510 Gross alpha & beta					162			162	178	
0520 Radium 226					108			108	119	
0530 Radium 228					128			128	141	
0540 Radon					156			156	172	
0550 Uranium					141			141	155	
0600 Volatile organics without GC/MS					163			163	180	
0610 Volatile organics including GC/MS					315			315	345	
0630 Synthetic organic compounds					1,075			1,075	1,200	
0640 Herbicides					221			221	243	
0650 Pesticides					157			157	173	
0660 PCB's					129			129	142	

Division Notes

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	Material	2020 Bare Costs		Total	Total Incl O&P
0010	CONCRETE PATCHING									
0100	Floors, 1/4" thick, small areas, regular grout	1 Cefi	170	.047	S.F.	1.61	2.35		3.96	5.25
0150	Epoxy grout	"	100	.080	"	9.90	4		13.90	16.80
2000	Walls, including chipping, cleaning and epoxy grout									
2100	1/4" deep	1 Cefi	65	.123	S.F.	7.80	6.15		13.95	17.65
2150	1/2" deep		50	.160		15.60	8		23.60	29
2200	3/4" deep		40	.200		23.50	10		33.50	40

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.	71	14.90	85.90	122
0060	Reinforcing 1% to 2% of cross-sectional area		16	2.500		106	22.50	128.50	185
0070	Reinforcing more than 2% of cross-sectional area		8	5		213	44.50	257.50	370
0150	Remove whole pieces, up to 2 tons per piece	E-18	36	1.111	Ea.	64.50	41.50	106	146
0160	2-5 tons per piece		30	1.333		77	49.50	126.50	175
0170	5-10 tons per piece		24	1.667		96.50	62	158.50	218
0180	10-15 tons per piece		18	2.222		129	82.50	211.50	291
0250	Precast unit embedded in masonry, up to 1 C.F.	D-1	16	1		47		47	71
0260	1-2 C.F.		12	1.333		62.50		62.50	95
0270	2-5 C.F.		10	1.600		75		75	114
0280	5-10 C.F.		8	2		94		94	142
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									
0050	1 to 20 tons									
0070	Under 1 ton									
0100	Silicon carbide, black, over 20 tons									
0110	1 to 20 tons									
0120	Under 1 ton									
0200	Air entraining agent, 7 to 1.5 oz. per bag, 55 gallon drum									
0220	5 gallon pail									
0300	Bonding agent, acrylic latex, 250 S.F./gallon, 5 gallon pail									
0320	Epoxy resin, 80 S.F./gallon, 4 gallon case									
0400	Calcium chloride, 50 lb. bags, T.L. lots									
0420	Less than truckload lots									
0500	Carbon black, liquid, 2 to 8 lb. per bag of cement									
0600	Concrete admixture, integral colors, dry pigment, 5 lb. bag									
0610	10 lb. bag									
0620	25 lb. bag									
0920	Dustproofing compound, 250 S.F./gal., 5 gallon pail									
1010	Epoxy based, 125 S.F./gal., 5 gallon pail									
1100	Hardeners, metallic, 55 lb. bags, natural (grey)									
1200	Colors									
1300	Non-metallic, 55 lb. bags, natural grey									
1320	Colors									

03 05 Common Work Results for Concrete

03 05 13 – Basic Concrete Materials

03 05 13.20 Concrete Admixtures and Surface Treatments

		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
						Labor	Equipment		
1550	Release agent, for tilt slabs, 5 gallon pail				Gal.	18.05		18.05	19.90
1570	For forms, 5 gallon pail					13.35		13.35	14.65
1590	Concrete release agent for forms, 100% biodegradable, zero VOC, 5 gal. pail	G				23.50		23.50	26
1595	55 gallon drum	G				19.30		19.30	21
1600	Sealer, hardener and dustproofer, epoxy-based, 125 S.F./gal., 5 gallon unit					63.50		63.50	69.50
1620	3 gallon unit					69.50		69.50	76.50
1630	Sealer, solvent-based, 250 S.F./gal., 55 gallon drum					23		23	25.50
1640	5 gallon pail					33		33	36
1650	Sealer, water based, 350 S.F., 55 gallon drum					23.50		23.50	26
1660	5 gallon pail					26		26	29
1900	Set retarder, 100 S.F./gal., 1 gallon pail					6.95		6.95	7.65
2000	Waterproofing, integral 1 lb. per bag of cement				lb.	4.02		4.02	4.42
2100	Powdered metallic, 40 lbs. per 100 S.F., standard colors					4.77		4.77	5.25
2120	Premium colors					6.70		6.70	7.35
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.	31		31	34.50
3400	Medium shades, 10 lb. dry pigment per C.Y., add					38.50		38.50	42
3700	Deep shades, 25 lb. dry pigment per C.Y., add					78.50		78.50	86
6000	Concrete ready mix additives, recycled coal fly ash, mixed at plant	G			Ton	64		64	70
6010	Recycled blast furnace slag, mixed at plant	G			"	90.50		90.50	99.50

03 05 13.25 Aggregate

0010	AGGREGATE	R033105-20								
0100	Lightweight vermiculite or perlite, 4 C.F. bag, C.L. lots	G			Bag	22		22	24.50	
0150	L.C.L. lots	G			"	24.50		24.50	27	
0250	Sand & stone, loaded at pit, crushed bank gravel				Ton	19.85		19.85	22	
0350	Sand, washed, for concrete	R033105-50				21.50		21.50	24	
0400	For plaster or brick					21.50		21.50	24	
0450	Stone, 3/4" to 1-1/2"					20.50		20.50	22.50	
0470	Round, river stone					41		41	45	
0500	3/8" roofing stone & 1/2" pea stone					31.50		31.50	34.50	
0550	For trucking 10-mile round trip, add to the above	B-34B	.117	.068			3.35	4.90	8.25	10.40
0600	For trucking 30-mile round trip, add to the above	"	.72	.111			5.45	7.95	13.40	16.90
0850	Sand & stone, loaded at pit, crushed bank gravel				C.Y.	28		28	30.50	
0950	Sand, washed, for concrete					30		30	33	
1000	For plaster or brick					30		30	33	
1050	Stone, 3/4" to 1-1/2"					39		39	43	
1055	Round, river stone					44		44	48.50	
1100	3/8" roofing stone & 1/2" pea stone					30		30	33	
1150	For trucking 10-mile round trip, add to the above	B-34B	.78	.103			5	7.35	12.35	15.60
1200	For trucking 30-mile round trip, add to the above	"	.48	.167			8.15	11.95	20.10	25.50
1310	Onyx chips, 50 lb. bags				Cwt.	34		34	37	
1330	Quartz chips, 50 lb. bags					34.50		34.50	37.50	
1410	White marble, 3/8" to 1/2", 50 lb. bags					9.55		9.55	10.50	
1430	3/4", bulk				Ton	189		189	207	

03 05 13.30 Cement

0010	CEMENT	R033105-20							
0240	Portland, Type I/II, T.L. lots, 94 lb. bags				Bag	14.45		14.45	15.85
0250	L.T.L./L.C.L. lots	R033105-30			"	15.95		15.95	17.55
0300	Trucked in bulk, per cwt.				Cwt.	8.70		8.70	9.55
0400	Type III, high early strength, T.L. lots, 94 lb. bags	R033105-40			Bag	13.85		13.85	15.25
0420	L.T.L. or L.C.L. lots				"	19.30		19.30	21.50
0500	White, type III, high early strength, T.L. or C.L. lots, bags	R033105-50			"	27.50		27.50	30.50

03 05 Common Work Results for Concrete

03 05 13 – Basic Concrete Materials

03 05 13.30 Cement		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P
					Bag				
0520	L.T.L. or L.C.L. lots					38.50		38.50	42.50
0600	White, type I, T.L. or C.L. lots, bags					30		30	33.50
0620	L.T.L. or L.C.L. lots					32		32	35

03 05 13.80 Waterproofing and Dampproofing

0010	WATERPROOFING AND DAMPROOFING				C.Y.	24		24	26.50
0050	Integral waterproofing, add to cost of regular concrete								

03 05 13.85 Winter Protection

0010 WINTER PROTECTION					C.Y.	5.35		5.35	5.90
0012	For heated ready mix, add								
0100	Temporary heat to protect concrete, 24 hours	2 Clab	50	.320	M.S.F.	203	13.45	216.45	243
0200	Temporary shelter for slab on grade, wood frame/polyethylene sheeting	2 Carp	10	1.600	M.S.F.	345	85	430	510
0201	Build or remove, light framing for short spans	"	3	5.333	"	460	283	743	935
0210	Large framing for long spans				S.F.	11.60		11.60	12.80
0500	Electrically heated pads, 110 volts, 15 watts/S.F., buy					15.45		15.45	17
0600	20 watts/S.F., buy								
0710	Electrically heated pads, 15 watts/S.F., 20 uses					.58		.58	.64

03 11 Concrete Forming

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

03 11 13.20 Forms In Place, Beams and Girders		R031113-40							
0500	Exterior spandrel, job-built plywood, 12" wide, 1 use	C-2	225	.213	SFCA	3.30	11	14.30	20
0550	2 use	R031113-60	275	.175		1.73	9	10.73	15.45
0600	3 use		295	.163		1.32	8.40	9.72	14.05
0650	4 use		310	.155		1.07	8	9.07	13.20
1000	18" wide, 1 use		250	.192		2.91	9.90	12.81	18.10
1050	2 use		275	.175		1.60	9	10.60	15.30
1100	3 use		305	.157		1.16	8.15	9.31	13.50
1150	4 use		315	.152		.95	7.85	8.80	12.85
1500	24" wide, 1 use		265	.181		2.65	9.35	12	16.95
1550	2 use		290	.166		1.49	8.55	10.04	14.50
1600	3 use		315	.152		1.06	7.85	8.91	12.95
1650	4 use		325	.148		.86	7.65	8.51	12.40
2000	Interior beam, job-built plywood, 12" wide, 1 use		300	.160		4.02	8.25	12.27	16.80
2050	2 use		340	.141		1.94	7.30	9.24	13.10
2100	3 use		364	.132		1.61	6.80	8.41	12
2150	4 use		377	.127		1.31	6.55	7.86	11.35
2500	24" wide, 1 use		320	.150		2.71	7.75	10.46	14.65
2550	2 use		365	.132		1.52	6.80	8.32	11.90
2600	3 use		385	.125		1.07	6.45	7.52	10.85
2650	4 use		395	.122		.87	6.30	7.17	10.40
3000	Encasing steel beam, hung, job-built plywood, 1 use		325	.148		3.24	7.65	10.89	15
3050	2 use		390	.123		1.78	6.35	8.13	11.50
3100	3 use		415	.116		1.30	5.95	7.25	10.40
3150	4 use		430	.112		1.05	5.75	6.80	9.80
3500	Bottoms only, to 30" wide, job-built plywood, 1 use		230	.209		4.49	10.80	15.29	21
3550	2 use		265	.181		2.51	9.35	11.86	16.80
3600	3 use		280	.171		1.79	8.85	10.64	15.25
3650	4 use		290	.166		1.46	8.55	10.01	14.45
4000	Sides only, vertical, 36" high, job-built plywood, 1 use		335	.143		5.95	7.40	13.35	17.65

03 11 Concrete Forming

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

03 11 13.20 Forms In Place, Beams and Girders		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
		Crew			Labor	Equipment	Total		
4050	2 use	G-2	405	.119	SFCA	3.28	6.10	9.38	12.80
4100	3 use		430	.112		2.39	5.75	8.14	11.30
4150	4 use		445	.108		1.94	5.55	7.49	10.50
4500	Sloped sides, 36" high, 1 use		305	.157		5.70	8.15	13.85	18.45
4550	2 use		370	.130		3.17	6.70	9.87	13.55
4600	3 use		405	.119		2.28	6.10	8.38	11.70
4650	4 use		425	.113		1.85	5.85	7.70	10.80
5000	Upstanding beams, 36" high, 1 use		225	.213		7.45	11	18.45	25
5050	2 use		255	.188		4.13	9.70	13.83	19.15
5100	3 use		275	.175		3	9	12	16.85
5150	4 use		280	.171		2.43	8.85	11.28	16

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	G-1	160	.200	L.F.	9.95	10.10	20.05	26
0550	16" diameter	R031113-60	150	.213		11.85	10.75	22.60	29
0600	18" diameter		140	.229		13.25	11.50	24.75	32
0650	24" diameter		135	.237		16.50	11.95	28.45	36
0700	28" diameter		130	.246		18.45	12.40	30.85	39
0800	30" diameter		125	.256		19.25	12.90	32.15	40.50
0850	36" diameter		120	.267		25.50	13.45	38.95	48
1500	Round fiber tube, recycled paper, 1 use, 8" diameter	G	155	.206		2.96	10.40	13.36	18.90
1550	10" diameter	G	155	.206		3.91	10.40	14.31	19.95
1600	12" diameter	G	150	.213		4.54	10.75	15.29	21
1650	14" diameter	G	145	.221		4.54	11.10	15.64	21.50
1700	16" diameter	G	140	.229		5.65	11.50	17.15	23.50
1720	18" diameter	G	140	.229		6.60	11.50	18.10	24.50
1750	20" diameter	G	135	.237		7.90	11.95	19.85	26.50
1800	24" diameter	G	130	.246		11.40	12.40	23.80	31
1850	30" diameter	G	125	.256		14.80	12.90	27.70	35.50
1900	36" diameter	G	115	.278		20.50	14	34.50	43.50
1950	42" diameter	G	100	.320		44.50	16.10	60.60	73
2000	48" diameter	G	85	.376		55.50	18.95	74.45	89.50
2200	For seamless type, add					15%			
3000	Round, steel, 4 use per mo., rent, regular duty, 14" diameter	G-1	145	.221	L.F.	18.40	11.10	29.50	36.50
3050	16" diameter	G	125	.256		18.75	12.90	31.65	40
3100	Heavy duty, 20" diameter	G	105	.305		20.50	15.35	35.85	45.50
3150	24" diameter	G	85	.376		22	18.95	40.95	53
3200	30" diameter	G	70	.457		25.50	23	48.50	62.50
3250	36" diameter	G	60	.533		27.50	27	54.50	70.50
3300	48" diameter	G	50	.640		39.50	32.50	72	92
3350	60" diameter	G	45	.711		50	36	86	109
4500	For second and succeeding months, deduct					50%			
5000	Job-built plywood, 8" x 8" columns, 1 use	G-1	165	.194	SFCA	2.88	9.75	12.63	17.85
5050	2 use		195	.164		1.65	8.25	9.90	14.20
5100	3 use		210	.152		1.15	7.70	8.85	12.80
5150	4 use		215	.149		.95	7.50	8.45	12.30
5500	12" x 12" columns, 1 use		180	.178		2.80	8.95	11.75	16.55
5550	2 use		210	.152		1.54	7.70	9.24	13.25
5600	3 use		220	.145		1.12	7.35	8.47	12.25
5650	4 use		225	.142		.91	7.15	8.06	11.75
6000	16" x 16" columns, 1 use		185	.173		2.81	8.70	11.51	16.20
6050	2 use		215	.149		1.50	7.50	9	12.90

03 11 Concrete Forming

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

03 11 13.25 Forms In Place, Columns			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Ind O&P
6100	3 use		C-1	230	.139	SFCA	1.13	7		8.13	11.80
6150	4 use			235	.136		.92	6.85		7.77	11.30
6500	24" x 24" columns, 1 use			190	.168		3.19	8.50		11.69	16.25
6550	2 use			216	.148		1.75	7.45		9.20	13.15
6600	3 use			230	.139		1.27	7		8.27	11.95
6650	4 use			238	.134		1.04	6.75		7.79	11.35
7000	36" x 36" columns, 1 use			200	.160		2.33	8.05		10.38	14.65
7050	2 use			230	.139		1.32	7		8.32	12
7100	3 use			245	.131		.93	6.60		7.53	10.90
7150	4 use			250	.128		.76	6.45		7.21	10.55
7400	Steel framed plywood, based on 50 uses of purchased forms, and 4 uses of bracing lumber										
7420											
7500	8" x 8" column		C-1	340	.094	SFCA	2.22	4.74		6.96	9.55
7550	10" x 10"			350	.091		1.98	4.61		6.59	9.05
7600	12" x 12"			370	.086		1.68	4.36		6.04	8.40
7650	16" x 16"			400	.080		1.30	4.03		5.33	7.50
7700	20" x 20"			420	.076		1.16	3.84		5	7
7750	24" x 24"			440	.073		.81	3.66		4.47	6.40
7755	30" x 30"			440	.073		1.04	3.66		4.70	6.65
7760	36" x 36"			460	.070		.92	3.51		4.43	6.25

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	4.25	9.50		13.75	18.95
0050	2 use		R031113-60		180	.178		2.57	8.95		11.52	16.25
0100	3 use				190	.168		2.01	8.50		10.51	14.95
0150	4 use				200	.160		1.73	8.05		9.78	14

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.	4.09	5.25		9.34	12.40
1050	2 use				520	.092		2.25	4.77		7.02	9.65
1100	3 use				545	.088		1.64	4.55		6.19	8.65
1150	4 use				560	.086		1.33	4.43		5.76	8.10
1500	15' to 20' high ceilings, 4 use				495	.097		1.32	5		6.32	8.95
1600	21' to 35' high ceilings, 4 use				450	.107		1.65	5.50		7.15	10.10
2000	Flat slab, drop panels, job-built plywood, to 15' high, 1 use				449	.107		4.85	5.50		10.35	13.65
2050	2 use				509	.094		2.67	4.87		7.54	10.25
2100	3 use				532	.090		1.94	4.66		6.60	9.15
2150	4 use				544	.088		1.58	4.56		6.14	8.60
2250	15' to 20' high ceilings, 4 use				480	.100		2.70	5.15		7.85	10.70
2350	20' to 35' high ceilings, 4 use				435	.110		3.03	5.70		8.73	11.90
3000	Floor slab hung from steel beams, 1 use				485	.099		2.66	5.10		7.76	10.65
3050	2 use				535	.090		2.08	4.63		6.71	9.25
3100	3 use				550	.087		1.89	4.51		6.40	8.80
3150	4 use				565	.085		1.79	4.39		6.18	8.55
3500	Floor slab, with 1-way joist pans, 1 use				415	.116		8.30	5.95		14.25	18.10
3550	2 use				445	.108		6.10	5.55		11.65	15.05
3600	3 use				475	.101		5.35	5.20		10.55	13.75
3650	4 use				500	.096		5	4.96		9.96	12.95
4500	With 2-way waffle domes, 1 use				405	.119		8.90	6.10		15	19
4520	2 use				450	.107		6.70	5.50		12.20	15.70
4530	3 use				460	.104		6	5.40		11.40	14.65
4550	4 use				470	.102		5.60	5.25		10.85	14.05

03 11 Concrete Forming

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

03 11 13.35 Forms In Place, Elevated Slabs		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Ind O&P	
		G-2	190	.253	SFCA	3.75	13.05		16.80	23.50	
5000	Box out for slab openings, over 16" deep, 1 use		240	.200		2.06	10.35		12.41	17.75	
5050	2 use		42	1.143	Ea.	12.60	59		71.60	102	
5500	Shallow slab box outs, to 10 S.F.		600	.080	L.F.	1.69	4.13		5.82	8.05	
5550	Over 10 S.F. (use perimeter)		500	.096		1.80	4.96		6.76	9.45	
6000	Bulkhead forms for slab, with keyway, 1 use, 2 piece		460	.104		2.06	5.40		7.46	10.35	
6100	3 piece (see also edge forms)	G	G-1	1200	.027		.94	1.34		2.28	3.05
6200	Slab bulkhead form, 4-1/2" high, exp metal, w/keyway & stakes	G	G	1100	.029		1.19	1.47		2.66	3.51
6210	5-1/2" high	G	G	960	.033		1.40	1.68		3.08	4.06
6215	7-1/2" high	G	G	840	.038		1.56	1.92		3.48	4.60
6220	9-1/2" high	G	G	180	.178	SFCA	1.80	8.95		10.75	15.45
6500	Curb forms, wood, 6" to 12" high, on elevated slabs, 1 use		205	.156		.99	7.85		8.84	12.90	
6550	2 use		220	.145		.72	7.35		8.07	11.80	
6600	3 use		225	.142		.58	7.15		7.73	11.40	
6650	4 use		500	.064	L.F.	.22	3.23		3.45	5.10	
7000	Edge forms to 6" high, on elevated slab, 4 use		162	.198	SFCA	1.33	9.95		11.28	16.40	
7070	7" to 12" high, 1 use		198	.162		.73	8.15		8.88	13.05	
7080	2 use		222	.144		.53	7.25		7.78	11.50	
7090	3 use		350	.091		.22	4.61		4.83	7.15	
7101	4 use		300	.107	L.F.	.83	5.40		6.23	8.95	
7500	Depressed area forms to 12" high, 4 use		175	.183		1.13	9.20		10.33	15.10	
7550	12" to 24" high, 4 use		90	.356		12.70	17.90		30.60	41	
8000	Perimeter deck and rail for elevated slabs, straight		65	.492		17.45	25		42.45	56.50	
8050	Curved	G	G	450	.071	Ea.	2.05	3.58		5.63	7.65
8500	Void forms, round plastic, 8" high x 3" diameter	G	G	425	.075		2.32	3.79		6.11	8.25
8550	4" diameter	G	G	400	.080		4.05	4.03		8.08	10.50
8600	6" diameter	G	G	375	.085		7	4.30		11.30	14.15
8650	8" diameter	G	G								

03 11 13.40 Forms In Place, Equipment Foundations

0010 FORMS IN PLACE, EQUIPMENT FOUNDATIONS		R031113-40	Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Ind O&P
0020	1 use			G-2	160	.300	SFCA	2.95	15.50		18.45
0050	2 use			G-2	190	.253		1.62	13.05		14.67
0100	3 use			G-2	200	.240		1.18	12.40		13.58
0150	4 use			G-2	205	.234		.96	12.10		13.06
											19.20

03 11 13.45 Forms In Place, Footings

0010 FORMS IN PLACE, FOOTINGS		R031113-40	Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Ind O&P
0020	Continuous wall, plywood, 1 use			G-1	375	.085	SFCA	6.85	4.30		11.15
0050	2 use			G-1	440	.073		3.77	3.66		7.43
0100	3 use			G-1	470	.068		2.74	3.43		6.17
0150	4 use			G-1	485	.066		2.23	3.32		5.55
0500	Dowel supports for footings or beams, 1 use			G-1	500	.064	L.F.	1.05	3.23		4.28
1000	Integral starter wall, to 4" high, 1 use			G-1	400	.080		1.01	4.03		5.04
1500	Keyway, 4 use, tapered wood, 2" x 4"			G-1 Corp	530	.015		.25	.80		1.05
1550	2" x 6"			G-1	500	.016		.34	.85		1.19
2000	Tapered plastic			G-1	530	.015		1.53	.80		2.33
2250	For keyway hung from supports, add			G-1	150	.053		1.05	2.83		3.88
3000	Pile cap, square or rectangular, job-built plywood, 1 use			G-1	290	.110	SFCA	3.16	5.55		8.71
3050	2 use			G-1	346	.092		1.74	4.66		6.40
3100	3 use			G-1	371	.086		1.26	4.35		5.61
3150	4 use			G-1	383	.084		1.03	4.21		5.24
4000	Triangular or hexagonal, 1 use			G-1	225	.142		3.70	7.15		10.85
4050	2 use			G-1	280	.114		2.03	5.75		7.78
4100	3 use			G-1	305	.105		1.48	5.30		6.78
											9.60

03 11 Concrete Forming

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

03 11 13.45 Forms In Place, Footings			Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
							Labor	Equipment		
4150	4 use		C-1	315	.102	SFCA	1.20	5.10	6.30	9
5000	Spread footings, job-built lumber, 1 use			305	.105		2.28	5.30	7.58	10.45
5050	2 use			371	.086		1.27	4.35	5.62	7.95
5100	3 use			401	.080		.91	4.02	4.93	7.05
5150	4 use			414	.077		.74	3.89	4.63	6.65
6000	Supports for dowels, plinths or templates, 2' x 2' footing			25	1.280	Ea.	6.50	64.50	71	104
6050	4' x 4' footing			22	1.455		12.95	73.50	86.45	124
6100	8' x 8' footing			20	1.600		26	80.50	106.50	150
6150	12' x 12' footing			17	1.882		31	95	126	177
7000	Plinths, job-built plywood, 1 use			250	.128	SFCA	3.25	6.45	9.70	13.25
7100	4 use			270	.119	"	1.06	5.95	7.01	10.10

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 Corp	50	.160	L.F.	15.05	8.50	23.55	29.50
1000	Sign or light bases, 18" diameter, 9" high	[G]	9	.889	Ea.	95	47	142	175	
1050	30" diameter, 13" high	[G]	8	1		151	53	204	246	
2000	Island forms, 10' long, 9" high, 3'-6" wide	[G]	C-1	10	3.200		420	161	581	705
2050	4' wide	[G]		9	3.556		435	179	614	750
2500	20' long, 9" high, 4' wide	[G]		6	5.333		700	269	969	1,175
2550	5' wide	[G]		5	6.400		725	325	1,050	1,275

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	3.15	4.68	7.83	10.50	
0050	2 use		R031113-60		580	.083		1.73	4.27	6	8.30	
0100	3 use				600	.080		1.26	4.13	5.39	7.60	
0150	4 use				605	.079		1.02	4.10	5.12	7.30	

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	3.16	8.55	11.71	16.35	
0050	2 use		R031113-60		310	.155		1.26	8	9.26	13.40	
0100	3 use				330	.145		.81	7.50	8.31	12.20	
0120	4 use				350	.137		.74	7.10	7.84	11.45	

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.	1.10	3.16	4.26	5.95		
1050	2 uses		R031113-60		400	.080		.60	4.03	4.63	6.70	
1100	4 uses				350	.091		.36	4.61	4.97	7.30	
1400	Bulkhead form for slab, 4-1/2" high, exp metal, incl. keyway & stakes	[G]		1200	.027		.94	1.34	2.28	3.05		
1410	5-1/2" high	[G]		1100	.029		1.19	1.47	2.66	3.51		
1420	7-1/2" high	[G]		960	.033		1.40	1.68	3.08	4.06		
1430	9-1/2" high	[G]		840	.038		1.56	1.92	3.48	4.60		
2000	Curb forms, wood, 6" to 12" high, on grade, 1 use			215	.149	SFCA	2.19	7.50	9.69	13.65		
2050	2 use			250	.128		1.21	6.45	7.66	11.05		
2100	3 use			265	.121		.88	6.10	6.98	10.10		
2150	4 use			275	.116		.71	5.85	6.56	9.60		
3000	Edge forms, wood, 4 use, on grade, to 6" high			600	.053	L.F.	.33	2.69	3.02	4.40		
3050	7" to 12" high			435	.074	SFCA	.75	3.71	4.46	6.40		
3060	Over 12"			350	.091	"	.97	4.61	5.58	7.95		
3500	For depressed slabs, 4 use, to 12" high			300	.107	L.F.	.81	5.40	6.21	8.95		
3550	To 24" high			175	.183		1.04	9.20	10.24	15		
4000	For slab blockouts, to 12" high, 1 use			200	.160		.82	8.05	8.87	13		
4050	To 24" high, 1 use			120	.267		1.04	13.45	14.49	21		

03 11 Concrete Forming

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

03 11 13.65 Forms In Place, Slab On Grade

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
		Crew			Labor	Equipment			
4100	Plastic (extruded), to 6" high, multiple use, on grade	C-1	800	.040	L.F.	6.50	2.02	8.52	10.20
5000	Screeed, 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.	.87	1.79	2.66	3.65
5050	2" x 4"		900	.036	"	.90	1.79	2.69	3.68
6000	Trench forms in floor, wood, 1 use		160	.200	SFCA	2.05	10.10	12.15	17.40
6050	2 use		175	.183		1.13	9.20	10.33	15.10
6100	3 use		180	.178		.82	8.95	9.77	14.35
6150	4 use		185	.173		.67	8.70	9.37	13.85
8760	Void form, corrugated fiberboard, 4" x 12", 4' long	G	3000	.011	S.F.	3.64	.54	4.18	4.81
8770	6" x 12", 4' long		3000	.011		4.47	.54	5.01	5.75
8780	1/4" thick hardboard protective cover for void form	2 Carp	1500	.011		.72	.57	1.29	1.64

03 11 13.85 Forms In Place, Walls

		R031113-10								
			C-2	24	2	Ea.	28	103		
0100	Box out for wall openings, to 16" thick, to 10 S.F.	R031113-40	C-2	240	.200	SFCA	2.70	10.35	13.05	18.45
0150	Over 10 S.F. (use perimeter)		"	280	.171	L.F.	2.45	8.85	11.30	16
0250	Brick shelf, 4" w, add to wall forms, use wall area above shelf	R031113-60	C-2	240	.200	SFCA	2.70	10.35	13.05	18.45
0260	1 use			275	.175		1.48	9	10.48	15.20
0300	2 use			300	.160		1.08	8.25	9.33	13.60
0350	4 use			265	.181	L.F.	2.19	9.35	11.54	16.45
0500	Bulkhead, wood with keyway, 1 use, 2 piece									
0600	Bulkhead forms with keyway, 1 piece expanded metal, 8" wall	G	C-1	1000	.032		1.40	1.61	3.01	3.96
0610	10" wall	G		800	.040		1.56	2.02	3.58	4.75
0620	12" wall	G		525	.061		1.87	3.07	4.94	6.65
0700	Buttress, to 8' high, 1 use		C-2	350	.137	SFCA	4.85	7.10	11.95	16
0750	2 use			430	.112		2.67	5.75	8.42	11.60
0800	3 use			460	.104		1.95	5.40	7.35	10.25
0850	4 use			480	.100		1.60	5.15	6.75	9.50
1000	Corbel or haunch, to 12" wide, add to wall forms, 1 use			150	.320	L.F.	2.59	16.50	19.09	28
1050	2 use			170	.282		1.42	14.60	16.02	23.50
1100	3 use			175	.274		1.03	14.15	15.18	22.50
1150	4 use			180	.267		.84	13.75	14.59	21.50
2000	Wall, job-built plywood, to 8' high, 1 use			370	.130	SFCA	2.99	6.70	9.69	13.35
2050	2 use			435	.110		1.91	5.70	7.61	10.65
2100	3 use			495	.097		1.39	5	6.39	9.05
2150	4 use			505	.095		1.13	4.91	6.04	8.60
2400	Over 8' to 16' high, 1 use			280	.171		3.32	8.85	12.17	16.95
2450	2 use			345	.139		1.44	7.20	8.64	12.40
2500	3 use			375	.128		1.03	6.60	7.63	11.10
2550	4 use			395	.122		.84	6.30	7.14	10.40
2700	Over 16' high, 1 use			235	.204		2.94	10.55	13.49	19.10
2750	2 use			290	.166		1.62	8.55	10.17	14.65
2800	3 use			315	.152		1.18	7.85	9.03	13.10
2850	4 use			330	.145		.96	7.50	8.46	12.35
4000	Radial, smooth curved, job-built plywood, 1 use			245	.196		2.65	10.10	12.75	18.10
4050	2 use			300	.160		1.46	8.25	9.71	14
4100	3 use			325	.148		1.06	7.65	8.71	12.60
4150	4 use			335	.143		.86	7.40	8.26	12.05
4200	Below grade, job-built plywood, 1 use			225	.213		2.86	11	13.86	19.70
4210	2 use			225	.213		1.58	11	12.58	18.30
4220	3 use			225	.213		1.31	11	12.31	18
4230	4 use			225	.213		.93	11	11.98	17.60
4300	Curved, 2' chords, job-built plywood, to 8' high, 1 use			290	.166		2.32	8.55	10.87	15.40

03 11 Concrete Forming

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

				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total
				Crew				Labor	Equipment	Total	Total Incl O&P
03 11 13.85	Forms In Place, Walls										
4350	2 use			G-2	355	.135	SFCA	1.27	7		8.27
4400	3 use				385	.125		.93	6.45		7.38
4450	4 use				400	.120		.75	6.20		6.95
4500	Over 8' to 16' high, 1 use				290	.166		.95	8.55		9.50
4525	2 use				355	.135		.52	7		7.52
4550	3 use				385	.125		.38	6.45		6.83
4575	4 use				400	.120		.31	6.20		6.51
4600	Retaining wall, battered, job-built plyw'd, to 8' high, 1 use				300	.160		2.18	8.25		10.43
4650	2 use				355	.135		1.20	7		8.20
4700	3 use				375	.128		.87	6.60		7.47
4750	4 use				390	.123		.71	6.35		7.06
4900	Over 8' to 16' high, 1 use				240	.200		2.39	10.35		12.74
4950	2 use				295	.163		1.31	8.40		9.71
5000	3 use				305	.157		.95	8.15		9.10
5050	4 use				320	.150		.78	7.75		8.53
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 Corp	30	.267		3.51	14.15		17.66
7520	2 use				34	.235		1.93	12.50		14.43
7540	3 use				36	.222		1.40	11.80		13.20
7560	4 use				37	.216		1.14	11.50		12.64
7800	Modular prefabricated plywood, based on 20 uses of purchased forms, and 4 uses of bracing lumber										18.50
7860	To 8' high			G-2	800	.060	SFCA	1.15	3.10		4.25
8060	Over 8' to 16' high				600	.080		1.20	4.13		5.33
8600	Pilasters, 1 use				270	.178		3.49	9.20		12.69
8620	2 use				330	.145		1.92	7.50		9.42
8640	3 use				370	.130		1.40	6.70		8.10
8660	4 use				385	.125		1.13	6.45		7.58
9010	Steel framed plywood, based on 50 uses of purchased forms, and 4 uses of bracing lumber										
9020	To 8' high			G-2	600	.080	SFCA	.79	4.13		4.92
9260	Over 8' to 16' high				450	.107		.79	5.50		6.29
9460	Over 16' to 20' high				400	.120		.79	6.20		6.99
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 Corp	256	.031	SFCA	3.34	1.66		5
5820	2 use				256	.031		1.84	1.66		3.50
5830	3 use				256	.031		1.34	1.66		3
5840	4 use				256	.031		1.09	1.66		2.75
5900	Fractured rope rib, 1 use				192	.042		4.91	2.21		7.12
5925	2 use				192	.042		2.70	2.21		4.91
5950	3 use				192	.042		1.96	2.21		4.17
6000	4 use				192	.042		1.60	2.21		5.50
6100	Ribbed, 3/4" deep x 1-1/2" OC, 1 use				224	.036		5.05	1.90		6.95
6125	2 use				224	.036		2.79	1.90		4.69
6150	3 use				224	.036		2.03	1.90		3.93

03 11 Concrete Forming

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

03 11 16.13 Concrete Form Liners		4 use	Daily	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
			Crew		Material	Labor	Equipment	Total		
6200		4 use	1 Corp	224	.036	SFCA	1.65	1.90	3.55	4.66
6300		Rustic brick pattern, 1 use		224	.036		3.47	1.90	5.37	6.65
6325		2 use		224	.036		1.91	1.90	3.81	4.95
6350		3 use		224	.036		1.39	1.90	3.29	4.38
6400		4 use		224	.036		1.13	1.90	3.03	4.09
6500		3/8" striated, random, 1 use		224	.036		3.54	1.90	5.44	6.75
6525		2 use		224	.036		1.95	1.90	3.85	4.99
6550		3 use		224	.036		1.42	1.90	3.32	4.41
6600		4 use		224	.036		1.15	1.90	3.05	4.12
6850		Random vertical rustication, 1 use		384	.021		6.60	1.11	7.71	8.90
6900		2 use		384	.021		3.62	1.11	4.73	5.65
6925		3 use		384	.021		2.63	1.11	3.74	4.56
6950		4 use		384	.021		2.14	1.11	3.25	4.01
7050		Wood, beveled edge, 3/4" deep, 1 use		384	.021	L.F.	.18	1.11	1.29	1.86
7100		1" deep, 1 use		384	.021	"	.29	1.11	1.40	1.98
7200		4" wide aged cedar, 1 use		256	.031	SFCA	3.47	1.66	5.13	6.30
7300		4" variable depth rough cedar		224	.036	"	4.85	1.90	6.75	8.20

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 Corp	1984	.016	S.F.	3.62	.86		4.48	5.25
0120	6" core wall		1808	.018		3.64	.94		4.58	5.40
0130	8" core wall		1536	.021		3.77	1.11		4.88	5.80
0140	10" core wall		1152	.028		4.30	1.48		5.78	6.95
0150	12" core wall		992	.032		4.89	1.71		6.60	8
0200	90 degree corner blocks or panels, molded, walls up to 4' high									
0210	4" core wall	4 Corp	1880	.017	S.F.	3.73	.90		4.63	5.45
0220	6" core wall		1708	.019		3.75	1		4.75	5.65
0230	8" core wall		1324	.024		3.88	1.28		5.16	6.20
0240	10" core wall		987	.032		4.49	1.72		6.21	7.55
0250	12" core wall		884	.036		4.81	1.92		6.73	8.20
0300	45 degree corner blocks or panels, molded, walls up to 4' high									
0310	4" core wall	4 Corp	1880	.017	S.F.	3.93	.90		4.83	5.70
0320	6" core wall		1712	.019		4.06	.99		5.05	5.95
0330	8" core wall		1324	.024		4.17	1.28		5.45	6.50
0400	T blocks or panels, molded, walls up to 4' high									
0420	6" core wall	4 Corp	1540	.021	S.F.	4.79	1.10		5.89	6.90
0430	8" core wall		1325	.024		4.84	1.28		6.12	7.25
0440	Non-standard corners or Ts requiring trimming & strapping		192	.167		4.89	8.85		13.74	18.70
0500	Radius blocks or panels, molded, walls up to 4' high, 6" core wall									
0520	5' to 10' diameter, molded blocks or panels	4 Corp	2400	.013	S.F.	5.90	.71		6.61	7.55
0530	10' to 15' diameter, requiring trimming and strapping, add		500	.064		4.44	3.40		7.84	10
0540	15'-1" to 30' diameter, requiring trimming and strapping, add		1200	.027		4.44	1.42		5.86	7
0550	30'-1" to 60' diameter, requiring trimming and strapping, add		1600	.020		4.44	1.06		5.50	6.50
0560	60'-1" to 100' diameter, requiring trimming and strapping, add		2800	.011		4.44	.61		5.05	5.80
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%			

03 11 Concrete Forming

03 11 19 – Insulating Concrete Forming

03 11 19.10 Insulating Forms, Left In Place		Daily Crew Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
					Labor	Equipment		
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 Corp	1600	.020	S.F.	3.91	1.06	4.97
0730	8" core wall	"	1392	.023	"	3.96	1.22	5.18
0800	ICF brick ledge (corbel) block or panels, molded, single course							
0820	6" core wall	4 Corp	1200	.027	S.F.	4.31	1.42	5.73
0830	8" core wall	"	1152	.028	"	4.41	1.48	5.89
0900	ICF curb (shelf) block or panels, molded, single course							
0930	8" core wall	4 Corp	688	.047	S.F.	3.72	2.47	6.19
0940	10" core wall	"	544	.059	"	4.25	3.13	7.38
0950	Wood form to hold back concrete to form shelf, 8" high	2 Corp	400	.040	L.F.	.87	2.13	3
1000	ICF half height block or panels, molded, single course							
1010	4" core wall	4 Corp	1248	.026	S.F.	4.72	1.36	6.08
1020	6" core wall	"	1152	.028	"	4.74	1.48	6.22
1030	8" core wall		942	.034	"	4.79	1.81	6.60
1040	10" core wall		752	.043	"	5.30	2.26	7.56
1050	12" core wall		648	.049	"	5.20	2.62	7.82
1100	ICF half height block/panels, made by field sawing full height block/panels							
1110	4" core wall	4 Corp	800	.040	S.F.	1.81	2.13	3.94
1120	6" core wall	"	752	.043	"	1.82	2.26	4.08
1130	8" core wall		600	.053	"	1.89	2.83	4.72
1140	10" core wall		496	.065	"	2.15	3.43	5.58
1150	12" core wall		400	.080	"	2.45	4.25	6.70
1200	Additional insulation inserted into forms between ties							
1210	1 layer (2" thick)	4 Corp	14000	.002	S.F.	1.03	.12	1.15
1220	2 layers (4" thick)		7000	.005	"	2.06	.24	2.30
1230	3 layers (6" thick)		4622	.007	"	3.09	.37	3.46
1300	EPS window/door bucks, molded, permanent							
1310	4" core wall (9" wide)	2 Corp	200	.080	L.F.	3.47	4.25	7.72
1320	6" core wall (11" wide)	"	200	.080	"	3.56	4.25	7.81
1330	8" core wall (13" wide)		176	.091	"	3.73	4.83	8.56
1340	10" core wall (15" wide)		152	.105	"	4.86	5.60	10.46
1350	12" core wall (17" wide)		152	.105	"	5.45	5.60	11.05
1360	2" x 6" temporary buck bracing (includes installing and removing)		400	.040	"	.68	2.13	2.81
1400	Wood window/door bucks (instead of EPS bucks), permanent							
1410	4" core wall (9" wide)	2 Corp	400	.040	L.F.	1.31	2.13	3.44
1420	6" core wall (11" wide)	"	400	.040	"	1.72	2.13	3.85
1430	8" core wall (13" wide)		350	.046	"	7.35	2.43	9.78
1440	10" core wall (15" wide)		300	.053	"	10.15	2.83	12.98
1450	12" core wall (17" wide)		300	.053	"	10.15	2.83	12.98
1460	2" x 6" temporary buck bracing (includes installing and removing)		800	.020	"	.68	1.06	1.74
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	10.05		10.05
1530	Labor (includes installing & removing)	2 Corp	30	.533	Ea.		28.50	28.50
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	10.05		10.05
1580	Labor (includes installing & removing)	4 Corp	30	1.067	Ea.		56.50	56.50
1600	2" x 10" wood plank for work platform, 16' long							
1610	Plank material cost pro-rated over 20 uses				Ea.	1.05		1.15
1620	Labor (includes installing & removing)	2 Corp	48	.333	"		17.70	17.70

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	Material	2020 Bare Costs			Total	Total Incl O&P
					Ea.	.02	Labor	Equipment	Total		
1700	2" x 4" lumber for top & middle rails for work platform									.02	.03
1710	Railing material cost pro-rated over 20 uses										
1720	Labor (includes installing & removing)	2 Corp	2400	.007	L.F.		.35		.35		.53
1800	ICF accessories										
1810	Wire clip to secure forms in place	2 Corp	2100	.008	Ea.	.39	.41		.80		1.04
1820	Masonry anchor embedment (excludes ties by mason)		1600	.010		4.24	.53		4.77		5.45
1830	Ledger anchor embedment (excludes timber hanger & screws)					7.60	6.65			14.25	18.35
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	G-13	2950	.008	S.F.	3.28	.46	.05	3.79		4.37
0100	Fiberglass, 1" thick		2700	.009		3.89	.50	.05	4.44		5.10
0500	Wood fiber, 1" thick	G	2700	.009		2.43	.50	.05	2.98		3.51

03 11 23 – Permanent Stair Forming

03 11 23.75 Forms In Place, Stairs		R031113-40									
0010	FORMS IN PLACE, STAIRS			G-2	165	.291	S.F.	6.15	15		21.15
0015	(Slant length x width), 1 use										29.50
0050	2 use	R031113-60		170	.282			3.50	14.60		18.10
0100	3 use			180	.267			2.62	13.75		16.37
0150	4 use			190	.253			2.17	13.05		15.22
1000	Alternate pricing method (1.0 L.F./S.F.), 1 use			100	.480	LF Rsr		6.15	25		31.15
1050	2 use			105	.457			3.50	23.50		27
1100	3 use			110	.436			2.62	22.50		25.12
1150	4 use			115	.417			2.17	21.50		23.67
2000	Stairs, cast on sloping ground (length x width), 1 use			220	.218	S.F.		2.57	11.25		13.82
2025	2 use			232	.207			1.42	10.70		12.12
2050	3 use			244	.197			1.03	10.15		11.18
2100	4 use			256	.188			.84	9.70		10.54

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 Corp	535	.015	L.F.	.75	.79			1.54	2.02
2200	3/4" wide with leg		525	.015		.77	.81			1.58	2.07
2400	1" radius with leg		515	.016		.81	.83			1.64	2.13
2800	2" radius with leg		500	.016		1.79	.85			2.64	3.25
5000	Wood, 1/2" wide		535	.015		.14	.79			.93	1.34
5200	3/4" wide		525	.015		.18	.81			.99	1.42
5400	1" wide		515	.016		.29	.83			1.12	1.56

03 15 Concrete Accessories

03 15 05 – Concrete Forming Accessories

03 15 05.15 Column Form Accessories		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P
						Labor	Equipment		
0010	COLUMN FORM ACCESSORIES								
1000	Column clamps, adjustable to 24" x 24", buy	[G]			Set	171		171	188
1100	Rent per month	[G]				13.65		13.65	15
1300	For sizes to 30" x 30", buy	[G]				220		220	242
1400	Rent per month	[G]				15.15		15.15	16.65
1600	For sizes to 36" x 36", buy	[G]				237		237	260
1700	Rent per month	[G]				17.15		17.15	18.85
2000	Bar type with wedges, 36" x 36", buy	[G]				190		190	209
2100	Rent per month	[G]				13.40		13.40	14.75
2300	48" x 48", buy	[G]				250		250	275
2400	Rent per month	[G]				18.40		18.40	20
3000	Scissor type with wedges, 36" x 36", buy	[G]				160		160	176
3100	Rent per month	[G]				15.25		15.25	16.80
3300	60" x 60", buy	[G]				228		228	250
3400	Rent per month	[G]				21.50		21.50	23.50
4000	Friction collars 2'-6" diam., buy	[G]				2,675		2,675	2,950
4100	Rent per month	[G]				205		205	226
4300	4'-0" diam., buy	[G]				3,275		3,275	3,600
4400	Rent per month	[G]				249		249	274

03 15 05.30 Hangers

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.	1.44		1.44	1.58
1000	Fascia ties, coil type, to 24" long	[G]			C	450		450	495
1500	Frame ties to 8-1/8"	[G]				520		520	570
1550	8-1/8" to 10-1/8"	[G]				545		545	600
5000	Snap tie hanger, to 30" overall length, 3000#	[G]				450		450	495
5050	To 36" overall length	[G]				500		500	550
5100	To 48" overall length	[G]				610		610	670
5500	Steel beam hanger								
5600	Flange to 8-1/8"	[G]			C	520		520	570
5650	8-1/8" to 10-1/8"	[G]			"	545		545	600
5900	Coil threaded rods, continuous, 1/2" diameter	[G]			L.F.	1.49		1.49	1.64
6000	Tie hangers to 30" overall length, 4000#	[G]			C	510		510	560
6100	To 36" overall length	[G]				555		555	610
6500	Tie back hanger, up to 12-1/8" flange	[G]				1,400		1,400	1,525
8500	Wire, black annealed, 15 gauge	[G]			Cwt.	187		187	206
8600	16 gauge				"	197		197	217

03 15 05.70 Shores

03 15 05.70 Shores									
0010	SHORES								
0020	Erect and strip, by hand, horizontal members								
0500	Aluminum joists and stringers	[G]	2 Corp	60	.267	Ea.		14.15	14.15
0600	Steel, adjustable beams	[G]		45	.356			18.90	28.50
0700	Wood joists			50	.320			17	25.50
0800	Wood stringers			30	.533			28.50	42.50
1000	Vertical members to 10' high	[G]		55	.291			15.45	23
1050	To 13' high	[G]		50	.320			17	25.50
1100	To 16' high	[G]		45	.356			18.90	28.50
1500	Reshoring	[G]		1400	.011	S.F.	.63	.61	1.24
1600	Flying truss system	[G]	C-17D	9600	.009	SFCA		.49	.08
1760	Horizontal, aluminum joists, 6-1/4" high x 5' to 21' span, buy	[G]				L.F.	16.40	16.40	18.05

03 15 Concrete Accessories

03 15 05 - Concrete Forming Accessories

03 15 05.70 Shores

	Description	G	Daily	Labor-Hours	Unit	2020 Bare Costs			Total	Total Ind O&P
			Crew	Output	Unit	Material	Labor	Equipment		
1770	Beams, 7-1/4" high x 4' to 30' span	G			L.F.	19.70			19.70	21.50
1810	Horizontal, steel beam, W8x10, 7' span, buy	G			Ea.	64.50			64.50	71
1830	10' span	G				75			75	82.50
1920	15' span	G				129			129	142
1940	20' span	G				181			181	199
1970	Steel stringer, W8x10, 4' to 16' span, buy	G			L.F.	7.45			7.45	8.20
3000	Rent for job duration, aluminum joist @ 2' OC, per mo.	G			SF Flr.	.41			.41	.45
3050	Steel W8x10	G				.19			.19	.21
3060	Steel adjustable	G				.19			.19	.21
3500	#1 post shore, steel, 5'-7" to 9'-6" high, 10,000# cap., buy	G			Ea.	161			161	178
3550	#2 post shore, 7'-3" to 12'-10" high, 7800# capacity	G				186			186	205
3600	#3 post shore, 8'-10" to 16'-1" high, 3800# capacity	G				204			204	224
5010	Frame shoring systems, steel, 12,000#/leg, buy	G			Ea.	107			107	118
5040	Frame, 2' wide x 6' high	G				17.05			17.05	18.80
5250	X-brace	G				16.05			16.05	17.65
5550	Base plate	G				35			35	38
5600	Screw jack	G				20.50			20.50	22.50
5650	U-head, 8" x 8"	G								

03 15 05.75 Sleeves and Chases

0010 SLEEVES AND CHASES										
	Description	1 Carp	100	.080	Ea.	2.32	4.25	4.25	6.57	8.95
0100	Plastic, 1 use, 12" long, 2" diameter									
0150	4" diameter		90	.089		4.97	4.72	4.72	9.69	12.55
0200	6" diameter		75	.107		10.85	5.65	5.65	16.50	20.50
0250	12" diameter		60	.133		28.50	7.10	7.10	35.60	41.50

03 15 05.80 Snap Ties

0010 SNAP TIES, 8-1/4" L&W (Lumber and wedge)										
	Description	G			Ea.	97.50			97.50	107
0100	2250 lb., w/flat washer, 8" wall	G				163			163	179
0150	10" wall	G				166			166	183
0200	12" wall	G				178			178	196
0250	16" wall	G				185			185	203
0300	18" wall	G				86			86	94.50
0500	With plastic cone, 8" wall	G				88			88	97
0550	10" wall	G				96.50			96.50	106
0600	12" wall	G				106			106	116
0650	16" wall	G				109			109	120
0700	18" wall	G				204			204	225
1000	3350 lb., w/flat washer, 8" wall	G				224			224	246
1100	10" wall	G				204			204	224
1150	12" wall	G				262			262	289
1200	16" wall	G				274			274	300
1250	18" wall	G				164			164	180
1500	With plastic cone, 8" wall	G				180			180	197
1550	10" wall	G				163			163	179
1600	12" wall	G				211			211	232
1650	16" wall	G				213			213	234
1700	18" wall	G								

03 15 05.85 Stair Tread Inserts

0010 STAIR TREAD INSERTS										
	Description	1 Cefi	32	.250	Ea.	58	12.50	12.50	70.50	82
0105	Cast nosing insert, abrasive surface, pre-drilled, includes screws									
0110	Aluminum, 3" wide x 3' long		31	.258		75	12.90	12.90	87.90	101
0120	4' long		30	.267		90	13.30	13.30	103.30	119
0130	5' long									

03 15 Concrete Accessories

03 15 05 – Concrete Forming Accessories

03 15 05.85 Stair Tread Inserts		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Ind O&P
0135	Extruded nosing insert, black abrasive strips, continuous anchor									
0140	Aluminum, 3" wide x 3' long	1 Cefi	64	.125	Ea.	35.50	6.25		41.75	48
0150	4' long			60	.133		48	6.65	54.65	63
0160	5' long			56	.143		62.50	7.15	69.65	79.50
0165	Extruded nosing insert, black abrasive strips, pre-drilled, incl. screws									
0170	Aluminum, 3" wide x 3' long	1 Cefi	32	.250	Ea.	45	12.50		57.50	68
0180	4' long			31	.258		59.50	12.90	72.40	84.50
0190	5' long			30	.267		83.50	13.30	96.80	112

03 15 05.95 Wall and Foundation Form Accessories

0010 WALL AND FOUNDATION FORM ACCESSORIES		G	Ea.	17.40	17.40	19.10
2000	Footings, turnbuckle form aligner					
2050	Spreaders for footer, adjustable	G	"	25.50	25.50	28
3000	Form oil, up to 1200 S.F./gallon coverage		Gal.	15.95	15.95	17.55
3050	Up to 800 S.F./gallon		"	23.50	23.50	25.50
3500	Form patches, 1-3/4" diameter		C	27	27	29.50
3550	2-3/4" diameter		"	45.50	45.50	50.50
4000	Nail stakes, 3/4" diameter, 18" long	G	Ea.	2.70	2.70	2.97
4050	24" long	G		2.68	2.68	2.95
4200	30" long	G		3.38	3.38	3.72
4250	36" long	G		4.25	4.25	4.68

03 15 13 – Waterstops

03 15 13.50 Waterstops		1 Corp	155	.052	LF.	1.55	2.74	4.29	5.85
0020	PVC, ribbed 3/16" thick, 4" wide		145	.055		2.78	2.93	5.71	7.45
0050	6" wide		135	.059		2.68	3.15	5.83	7.70
0500	With center bulb, 6" wide, 3/16" thick		130	.062		4.85	3.27	8.12	10.25
0550	3/8" thick		125	.064		8.15	3.40	11.55	14.05
0600	9" wide x 3/8" thick		150	.053		4.31	2.83	7.14	9
0800	Dumbbell type, 6" wide, 3/16" thick		145	.055		4.13	2.93	7.06	8.95
0850	3/8" thick		130	.062		6.60	3.27	9.87	12.15
1000	9" wide, 3/8" thick, plain		130	.062		9.15	3.27	12.42	14.95
1050	Center bulb		145	.055		2.21	2.93	5.14	6.85
1250	Ribbed type, split, 3/16" thick, 6" wide		135	.059		5.10	3.27	8.37	10.50
1300	3/8" thick		145	.055		5.65	2.93	8.58	10.60
2000	Rubber, flat dumbbell, 3/8" thick, 6" wide		135	.059		10.40	3.15	13.55	16.15
2050	9" wide		145	.055		2.21	2.93	5.14	6.85
2500	Flat dumbbell split, 3/8" thick, 6" wide		135	.059		5.10	3.15	8.25	10.35
2550	9" wide		145	.055		6.95	2.93	9.88	12.05
3000	Center bulb, 1/4" thick, 6" wide		135	.059		14.85	3.15	18	21
3050	9" wide		145	.055		6.10	2.93	9.03	11.10
3500	Center bulb split, 3/8" thick, 6" wide		135	.059		10.25	3.15	13.40	16
3550	9" wide								
5000	Waterstop fittings, rubber, flat								
5010	Dumbbell or center bulb, 3/8" thick,								
5200	Field union, 6" wide	1 Corp	50	.160	Ea.	31.50	8.50	40	47.50
5250	9" wide		50	.160		33.50	8.50	42	50
5500	Flat cross, 6" wide		30	.267		52.50	14.15	66.65	79.50
5550	9" wide		30	.267		78	14.15	92.15	108
6000	Flat tee, 6" wide		30	.267		50.50	14.15	64.65	77
6050	9" wide		30	.267		66	14.15	80.15	94.50
6500	Flat ell, 6" wide		40	.200		49.50	10.65	60.15	70.50
6550	9" wide		40	.200		61.50	10.65	72.15	83.50

03 15 Concrete Accessories

03 15 13 – Waterstops

03 15 13.50 Waterstops			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
7000	Vertical tee, 6" wide		1 Corp	.25	.320	ea.	21	.17		.38	48.50
7050	9" wide			25	.320		28.50	.17		45.50	57
7500	Vertical ell, 6" wide				.35	.229	20.50	12.15		32.65	41
7550	9" wide				.35	.229	39	12.15		51.15	61.50

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		C-27	2000	.008	L.F.	.03	.40	.06	.49	.69
0120	1" depth			1800	.009		.05	.44	.06	.55	.78
0140	1-1/2" depth										
0160	2" depth			1600	.010		.07	.50	.07	.64	.88
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.	.05	.80	.11	.96	1.36
0184	1/2" wide x 1" deep, with double saw blades			900	.018		.10	.89	.12	1.11	1.56
0186	3/4" wide x 1-1/2" deep, with double saw blades			800	.020		.20	1	.14	1.34	1.84
0190	Water blast joint to wash away laitance, 2 passes		C-29	2500	.003			.13	.04	.17	.24
0200	Air blast joint to blow out debris and air dry, 2 passes		C-28	2000	.004			.20	.02	.22	.31
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 Corp	.200	.040	L.F.	.89	2.13		3.02	4.17
0050	4-1/2" high		G		200	.040		.94	2.13		3.07	4.22
0100	5-1/2" high		G		195	.041		1.19	2.18		3.37	4.59
0150	7-1/2" high		G		190	.042		1.40	2.24		3.64	4.90
0160	9-1/2" high		G		185	.043		1.56	2.30		3.86	5.15
0300	Poured asphalt, plain, 1/2" x 1"		1 Clad	450	.018			.24	.75		.99	1.38
0350	1" x 2"				400	.020		.97	.84		1.81	2.34
0500	Neoprene, liquid, cold applied, 1/2" x 1"				450	.018		2.53	.75		3.28	3.90
0550	1" x 2"				400	.020		9.95	.84		10.79	12.20
0700	Polyurethane, poured, 2 part, 1/2" x 1"				400	.020		1.40	.84		2.24	2.81
0750	1" x 2"				350	.023		5.60	.96		6.56	7.65
0900	Rubberized asphalt, hot or cold applied, 1/2" x 1"				450	.018		.32	.75		1.07	1.47
0950	1" x 2"				400	.020		1.27	.84		2.11	2.67
1100	Hot applied, fuel resistant, 1/2" x 1"				450	.018		.48	.75		1.23	1.65
1150	1" x 2"				400	.020		1.91	.84		2.75	3.37
2000	Premolded, bituminous fiber, 1/2" x 6"		1 Corp	375	.021			.44	1.13		1.57	2.18
2050	1" x 12"				300	.027		2.03	1.42		3.45	4.36
2140	Concrete expansion joint, recycled paper and fiber, 1/2" x 6"		G		390	.021		.43	1.09		1.52	2.11
2150	1/2" x 12"		G		360	.022		.86	1.18		2.04	2.72
2250	Cork with resin binder, 1/2" x 6"				375	.021		1.36	1.13		2.49	3.20
2300	1" x 12"				300	.027		3.50	1.42		4.92	6
2500	Neoprene sponge, closed cell, 1/2" x 6"				375	.021		2.43	1.13		3.56	4.37
2550	1" x 12"				300	.027		8.90	1.42		10.32	11.90
2750	Polyethylene foam, 1/2" x 6"				375	.021		.59	1.13		1.72	2.35
2800	1" x 12"				300	.027		3.11	1.42		4.53	5.55
3000	Polyethylene backer rod, 3/8" diameter				460	.017		.03	.92		.95	1.43
3050	3/4" diameter				460	.017		.07	.92		.99	1.46
3100	1" diameter				460	.017		.15	.92		1.07	1.55
3500	Polyurethane foam, with polybutylene, 1/2" x 1/2"				475	.017		1.25	.90		2.15	2.72
3550	1" x 1"				450	.018		3.19	.95		4.14	4.93

03 15 Concrete Accessories

03 15 16 – Concrete Construction Joints

03 15 16.30 Expansion Joints		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Ind O&P
						Labor	Equipment			
3750	Polyurethane foam, regular, closed cell, 1/2" x 6"	1 Carp	375	.021	L.F.	.93	1.13		2.06	2.72
3800	1" x 12"		300	.027		3.32	1.42		4.74	5.80
4000	Polyvinyl chloride foam, closed cell, 1/2" x 6"		375	.021		2.53	1.13		3.66	4.48
4050	1" x 12"		300	.027		8.70	1.42		10.12	11.70
4250	Rubber, gray sponge, 1/2" x 6"		375	.021		2.12	1.13		3.25	4.03
4300	1" x 12"		300	.027		7.65	1.42		9.07	10.55
4400	Redwood heartwood, 1" x 4"		400	.020		1.18	1.06		2.24	2.89
4450	1" x 6"		375	.021		1.79	1.13		2.92	3.67
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.	11.60	7.10		18.70	23.50
8500	1-1/2" diameter		28	.286		21.50	15.20		36.70	46.50
8600	2" diameter		24	.333		19.10	17.70		36.80	47.50
8650	3" diameter		20	.400		35	21.50		56.50	70.50

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.	1.62	3.22	4.84	6.60
0040	12" long	G		131	.061		1.80	3.25	5.05	6.85
0050	5/8" diameter, 8" long	G		129	.062		3.39	3.30	6.69	8.70
0060	12" long	G		127	.063		4.18	3.35	7.53	9.65
0070	3/4" diameter, 8" long	G		127	.063		4.18	3.35	7.53	9.65
0080	12" long	G		125	.064		5.20	3.40	8.60	10.85
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	5.60	20.50	26.10	36.50
0110	12" long	G		21	.381		6.35	20.50	26.85	37.50
0120	18" long	G		21	.381		7.40	20.50	27.90	38.50
0130	3/4" diameter x 8" long	G		20	.400		11.10	21.50	32.60	44
0140	12" long	G		20	.400		13.15	21.50	34.65	46.50
0150	18" long	G		20	.400		16.30	21.50	37.80	50
0160	1" diameter x 12" long	G		19	.421		26.50	22.50	49	62.50
0170	18" long	G		19	.421		31	22.50	53.50	68
0180	24" long	G		19	.421		37.50	22.50	60	74.50
0190	36" long	G		18	.444		50.50	23.50	74	91
0200	1-1/2" diameter x 18" long	G		17	.471		47.50	25	72.50	89.50
0210	24" long	G		16	.500		56	26.50	82.50	102
0300	L-type, incl. hex nut & washer, 3/4" diameter x 12" long	G		20	.400		18.20	21.50	39.70	52
0310	18" long	G		20	.400		22.50	21.50	44	57
0320	24" long	G		20	.400		27	21.50	48.50	61.50
0330	30" long	G		20	.400		33.50	21.50	55	69
0340	36" long	G		20	.400		38	21.50	59.50	73.50
0350	1" diameter x 12" long	G		19	.421		24.50	22.50	47	60.50
0360	18" long	G		19	.421		29.50	22.50	52	66
0370	24" long	G		19	.421		36	22.50	58.50	73
0380	30" long	G		19	.421		42	22.50	64.50	80
0390	36" long	G		18	.444		47.50	23.50	71	88
0400	42" long	G		18	.444		57.50	23.50	81	98.50

03 15 Concrete Accessories

03 15 19 – Cast-In Concrete Anchors

03 15 19.10 Anchor Bolts		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
							Labor	Equipment	Total		
0410	48" long	G	1 Carp	18	.444	Set	64	23.50	87.50	106	
0420	1-1/4" diameter x 18" long	G		18	.444		43.50	23.50	67	83.50	
0430	24" long	G		18	.444		51.50	23.50	75	92	
0440	30" long	G		17	.471		59	25	84	103	
0450	36" long	G		17	.471		66.50	25	91.50	111	
0460	42" long	G	2 Carp	32	.500		75	26.50	101.50	123	
0470	48" long	G		32	.500		85	26.50	111.50	134	
0480	54" long	G		31	.516		100	27.50	127.50	151	
0490	60" long	G		31	.516		109	27.50	136.50	161	
0500	1-1/2" diameter x 18" long	G		33	.485		47	26	73	90	
0510	24" long	G		32	.500		54	26.50	80.50	99.50	
0520	30" long	G		31	.516		61	27.50	88.50	108	
0530	36" long	G		30	.533		69.50	28.50	98	119	
0540	42" long	G		30	.533		79	28.50	107.50	129	
0550	48" long	G		29	.552		88	29.50	117.50	141	
0560	54" long	G		28	.571		107	30.50	137.50	163	
0570	60" long	G		28	.571		117	30.50	147.50	174	
0580	1-3/4" diameter x 18" long	G		31	.516		71.50	27.50	99	120	
0590	24" long	G		30	.533		83.50	28.50	112	135	
0600	30" long	G		29	.552		96.50	29.50	126	150	
0610	36" long	G		28	.571		110	30.50	140.50	167	
0620	42" long	G		27	.593		123	31.50	154.50	184	
0630	48" long	G		26	.615		135	32.50	167.50	198	
0640	54" long	G		26	.615		167	32.50	199.50	233	
0650	60" long	G		25	.640		180	34	214	249	
0660	2" diameter x 24" long	G		27	.593		135	31.50	166.50	197	
0670	30" long	G		27	.593		152	31.50	183.50	215	
0680	36" long	G		26	.615		167	32.50	199.50	232	
0690	42" long	G		25	.640		185	34	219	255	
0700	48" long	G		24	.667		213	35.50	248.50	287	
0710	54" long	G		23	.696		253	37	290	335	
0720	60" long	G		23	.696		272	37	309	355	
0730	66" long	G		22	.727		291	38.50	329.50	380	
0740	72" long	G		21	.762		320	40.50	360.50	410	
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	8.50	22.50	31	43	
1110	12" long	G		19	.421		9.95	22.50	32.45	44.50	
1120	18" long	G		18	.444		12.10	23.50	35.60	49	
1130	3/4" diameter x 8" long	G		17	.471		19.45	25	44.45	59	
1140	12" long	G		17	.471		23.50	25	48.50	63.50	
1150	18" long	G		17	.471		30	25	55	70.50	
1160	1" diameter x 12" long	G		16	.500		50	26.50	76.50	95	
1170	18" long	G		15	.533		59.50	28.50	88	108	
1180	24" long	G		15	.533		72	28.50	100.50	122	
1190	36" long	G		15	.533		98	28.50	126.50	151	
1200	1-1/2" diameter x 18" long	G		13	.615		92	32.50	124.50	150	
1210	24" long	G		12	.667		109	35.50	144.50	173	
1300	L-type, incl. hex nut & washer, 3/4" diameter x 12" long	G		17	.471		33.50	25	58.50	74.50	
1310	18" long	G		17	.471		42.50	25	67.50	84	
1320	24" long	G		17	.471		51	25	76	93.50	
1330	30" long	G		16	.500		64	26.50	90.50	111	
1340	36" long	G		16	.500		73	26.50	99.50	120	
1350	1" diameter x 12" long	G		16	.500		46	26.50	72.50	90.50	

03 15 Concrete Accessories

03 15 19 - Cast-In Concrete Anchors

03 15 19.10 Anchor Bolts			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P		
			Crew			Labor	Equipment				
1360	18" long		G	1 Corp	.15	.533	Set	56.50	28.50	85	105
1370	24" long		G		.15	.533		69.50	28.50	98	119
1380	30" long		G		.15	.533		81.50	28.50	110	132
1390	36" long		G		.15	.533		92.50	28.50	121	145
1400	42" long		G		.14	.571		112	30.50	142.50	169
1410	48" long		G		.14	.571		125	30.50	155.50	184
1420	1-1/4" diameter x 18" long		G		.14	.571		84.50	30.50	115	139
1430	24" long		G		.14	.571		100	30.50	130.50	156
1440	30" long		G		.13	.615		115	32.50	147.50	176
1450	36" long		G		.13	.615		131	32.50	163.50	193
1460	42" long		G	2 Corp	.25	.640		147	34	181	213
1470	48" long		G		.24	.667		168	35.50	203.50	237
1480	54" long		G		.23	.696		197	37	234	273
1490	60" long		G		.23	.696		216	37	253	294
1500	1-1/2" diameter x 18" long		G		.25	.640		91	34	125	151
1510	24" long		G		.24	.667		105	35.50	140.50	169
1520	30" long		G		.23	.696		119	37	156	187
1530	36" long		G		.22	.727		136	38.50	174.50	208
1540	42" long		G		.22	.727		155	38.50	193.50	228
1550	48" long		G		.21	.762		173	40.50	213.50	252
1560	54" long		G		.20	.800		211	42.50	253.50	296
1570	60" long		G		.20	.800		231	42.50	273.50	320
1580	1-3/4" diameter x 18" long		G		.22	.727		140	38.50	178.50	212
1590	24" long		G		.21	.762		164	40.50	204.50	242
1600	30" long		G		.21	.762		191	40.50	231.50	271
1610	36" long		G		.20	.800		217	42.50	259.50	305
1620	42" long		G		.19	.842		244	45	289	335
1630	48" long		G		.18	.889		267	47	314	365
1640	54" long		G		.18	.889		330	47	377	435
1650	60" long		G		.17	.941		360	50	410	470
1660	2" diameter x 24" long		G		.19	.842		267	45	312	360
1670	30" long		G		.18	.889		300	47	347	400
1680	36" long		G		.18	.889		330	47	377	435
1690	42" long		G		.17	.941		370	50	420	480
1700	48" long		G		.16	1		425	53	478	545
1710	54" long		G		.15	1.067		505	56.50	561.50	640
1720	60" long		G		.15	1.067		540	56.50	596.50	680
1730	66" long		G		.14	1.143		580	60.50	640.50	725
1740	72" long		G		.14	1.143	↓	635	60.50	695.50	785
1990	For galvanized, add						Eo.	75%			

03 15 19.20 Dovetail Anchor System

0010 DOVETAIL ANCHOR SYSTEM											
0500	Dovetail anchor slot, galvanized, foam-filled, 26 ga.		G	1 Corp	.425	.019	L.F.	1.38	1	2.38	3.02
0600	24 ga.		G		.400	.020		1.67	1.06	2.73	3.44
0625	22 ga.		G		.400	.020		2.10	1.06	3.16	3.91
0900	Stainless steel, foam-filled, 26 ga.		G		.375	.021	↓	2.21	1.13	3.34	4.13
1200	Dovetail brick anchor, corrugated, galvanized, 3-1/2" long, 16 ga.		G	1 Bric	10.50	.762	C	44.50	39.50	84	109
1300	12 ga.		G		10.50	.762		67	39.50	106.50	134
1500	Seismic, galvanized, 3-1/2" long, 16 ga.		G		10.50	.762		75.50	39.50	115	143
1600	12 ga.		G		10.50	.762		86	39.50	125.50	155
2000	Dovetail cavity wall, corrugated, galvanized, 5-1/2" long, 16 ga.		G		10.50	.762		46.50	39.50	86	111
2100	12 ga.		G		10.50	.762		58	39.50	97.50	124

03 15 Concrete Accessories

03 15 19 – Cast-In Concrete Anchors

03 15 19.20 Dovetail Anchor System

			Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
								Labor	Equipment		
3000	Dovetail turning anchors, corrugated, galvanized, 1-1/2" long, 16 ga.	[G]	1 Bric	10.50	.762	C	24.50	39.50		64	87
3100	12 ga.	[G]		10.50	.762		33.50	39.50		73	96.50
6000	Dovetail stone panel anchors, galvanized, 1/8" x 1" wide, 3-1/2" long	[G]		10.50	.762		103	39.50		142.50	173
6100	1/4" x 1" wide	[G]		10.50	.762		183	39.50		222.50	262

03 15 19.30 Inserts

0010 INSERTS

1000	Inserts, slotted nut type for 3/4" bolts, 4" long	[G]	1 Corp	84	.095	Ea.	20.50	5.05		25.55	30
2100	6" long	[G]		84	.095		24	5.05		29.05	34
2150	8" long	[G]		84	.095		32	5.05		37.05	43
2200	Slotted, strap type, 4" long	[G]		84	.095		21.50	5.05		26.55	31
2250	6" long	[G]		84	.095		24	5.05		29.05	34
2300	8" long	[G]		84	.095		34	5.05		39.05	45
2350	Strap for slotted insert, 4" long	[G]		84	.095		12.05	5.05		17.10	21
4100	6" long	[G]		84	.095		13.10	5.05		18.15	22
4150	8" long	[G]		84	.095		16.25	5.05		21.30	25.50
4200	10" long	[G]		84	.095		19.75	5.05		24.80	29
7000	Loop ferrule type	[G]									
7100	1/4" diameter bolt	[G]	1 Corp	84	.095	Ea.	2.23	5.05		7.28	10.05
7350	7/8" diameter bolt	[G]	"	84	.095	"	10.35	5.05		15.40	19
9000	Wedge type	[G]									
9100	For 3/4" diameter bolt	[G]	1 Corp	60	.133	Ea.	9.10	7.10		16.20	20.50
9800	Cut washers, black	[G]									
9900	3/4" bolt	[G]				Ea.	1.30			1.30	1.43
9950	For galvanized inserts, odd	[G]					30%				

03 15 19.45 Machinery Anchors

0010 MACHINERY ANCHORS, heavy duty, incl. sleeve, floating base nut, 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.	61.50	23.50	3.68	88.68	109
0300	5/8" diameter	[G]		35	.457		67	26.50	4.20	97.70	120
0500	3/4" diameter	[G]		30	.533		79.50	31	4.90	115.40	142
0600	7/8" diameter	[G]		25	.640		93.50	37.50	5.90	136.90	168
0800	1" diameter	[G]		20	.800		102	47	7.35	156.35	194
0900	1-1/4" diameter	[G]		15	1.067		133	62.50	9.80	205.30	256

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	[G]				C.L.F.	38.50			38.50	42
0100	Beam bolsters (BB), lower, 1-1/2" high, plain steel	[G]									
0102	Galvanized	[G]					41			41	45.50
0104	Stainless tipped legs	[G]					475			475	525
0106	Plastic tipped legs	[G]					36			36	39.50
0108	Epoxy dipped	[G]					98.50			98.50	108
0110	2" high, plain	[G]					49.50			49.50	54.50
0120	Galvanized	[G]					52			52	57.50
0140	Stainless tipped legs	[G]					535			535	590
0160	Plastic tipped legs	[G]					66.50			66.50	73
0162	Epoxy dipped	[G]					110			110	121

03 21 Reinforcement Bars

03 21 05 – Reinforcing Steel Accessories

03 21 05.10 Rebar Accessories		Daily	Labor-	2020 Bare Costs	Equipment	Total	Total Incl O&P
		Crew	Output	Hours	Unit	Material	
0200	Upper (BBU), 1-1/2" high, plain steel	G		C.L.F.		78.50	78.50 86.50
0210	3" high	G				100	100 110
0500	Slab bolsters, continuous (SB), 1" high, plain steel	G				32.50	32.50 35.50
0502	Galvanized	G				38.50	38.50 42
0504	Stainless tipped legs	G				465	465 515
0506	Plastic tipped legs	G				46	46 51
0510	2" high, plain steel	G				40	40 44
0515	Galvanized	G				48.50	48.50 53.50
0520	Stainless tipped legs	G				555	555 610
0525	Plastic tipped legs	G				53.50	53.50 59
0530	For bolsters with wire runners (SBR), add	G				44	44 48
0540	For bolsters with plates (SBP), add	G				99	99 109
0700	Bag ties, 16 ga., plain, 4" long	G		C		4.30	4.30 4.73
0710	5" long	G				5.55	5.55 6.10
0720	6" long	G				3.93	3.93 4.32
0730	7" long	G				5.85	5.85 6.45
1200	High chairs, individual (HC), 3" high, plain steel	G				66.50	66.50 73.50
1202	Galvanized	G				95.50	95.50 105
1204	Stainless tipped legs	G				530	530 585
1206	Plastic tipped legs	G				70.50	70.50 77.50
1210	5" high, plain	G				97	97 107
1212	Galvanized	G				124	124 136
1214	Stainless tipped legs	G				570	570 625
1216	Plastic tipped legs	G				105	105 116
1220	8" high, plain	G				141	141 155
1222	Galvanized	G				194	194 214
1224	Stainless tipped legs	G				645	645 705
1226	Plastic tipped legs	G				152	152 168
1230	12" high, plain	G				340	340 375
1232	Galvanized	G				385	385 425
1234	Stainless tipped legs	G				700	700 770
1236	Plastic tipped legs	G				360	360 400
1400	Individual high chairs, with plate (HCP), 5" high	G				192	192 211
1410	8" high	G				265	265 292
1500	Bar chair (BC), 1-1/2" high, plain steel	G				51	51 56
1520	Galvanized	G				45.50	45.50 50
1530	Stainless tipped legs	G				480	480 525
1540	Plastic tipped legs	G				44	44 48.50
1700	Continuous high chairs (CHC), legs 8" OC, 4" high, plain steel	G		C.L.F.		57	57 63
1705	Galvanized	G				67.50	67.50 74.50
1710	Stainless tipped legs	G				540	540 590
1715	Plastic tipped legs	G				78.50	78.50 86
1718	Epoxy dipped	G				95	95 104
1720	6" high, plain	G				75	75 82.50
1725	Galvanized	G				109	109 119
1730	Stainless tipped legs	G				560	560 615
1735	Plastic tipped legs	G				101	101 111
1738	Epoxy dipped	G				129	129 142
1740	8" high, plain	G				132	132 145
1745	Galvanized	G				134	134 148
1750	Stainless tipped legs	G				630	630 695
1755	Plastic tipped legs	G				132	132 145
1758	Epoxy dipped	G				168	168 185

03 21 Reinforcement Bars

03 21 05 – Reinforcing Steel Accessories

03 21 05.10 Rebar Accessories

		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
						C.L.F.	Labor	Equipment	
1900	For continuous bottom wire runners, add	G				32		32	35.50
1940	For continuous bottom plate, add	G				191		191	210
2200	Screech chair base, 1/2" coil thread diam., 2-1/2" high, plain steel	G			C	345		345	380
2210	Galvanized	G				385		385	420
2220	5-1/2" high, plain	G				420		420	460
2250	Galvanized	G				460		460	510
2300	3/4" coil thread diam., 2-1/2" high, plain steel	G				420		420	460
2310	Galvanized	G				485		485	530
2320	5-1/2" high, plain steel	G				535		535	585
2350	Galvanized	G				665		665	730
2400	Screech holder, 1/2" coil thread diam. for pipe screed, plain steel, 6" long	G				445		445	490
2420	12" long	G				635		635	700
2500	3/4" coil thread diam. for pipe screed, plain steel, 6" long	G				590		590	645
2520	12" long	G				940		940	1,025
2700	Screw anchor for bolts, plain steel, 3/4" diameter x 4" long	G				535		535	585
2720	1" diameter x 6" long	G				1,000		1,000	1,100
2740	1-1/2" diameter x 8" long	G				1,225		1,225	1,350
2800	Screw anchor eye bolts, 3/4" x 3" long	G				3,125		3,125	3,450
2820	1" x 3-1/2" long	G				3,700		3,700	4,075
2840	1-1/2" x 6" long	G				12,400		12,400	13,600
2900	Screw anchor bolts, 3/4" x 9" long	G				1,775		1,775	1,950
2920	1" x 12" long	G				3,425		3,425	3,750
3001	Slab lifting inserts, single pickup, galv, 3/4" diam., 5" high	G				1,875		1,875	2,050
3010	6" high	G				1,900		1,900	2,075
3030	7" high	G				1,925		1,925	2,100
3100	1" diameter, 5-1/2" high	G				1,950		1,950	2,150
3120	7" high	G				2,025		2,025	2,225
3200	Double pickup lifting inserts, 1" diameter, 5-1/2" high	G				3,775		3,775	4,150
3220	7" high	G				4,175		4,175	4,575
3330	1-1/2" diameter, 8" high	G				5,075		5,075	5,575
3800	Subgrade chairs, #4 bar head, 3-1/2" high	G				44		44	48
3850	1-1/2" high	G				53		53	58
3900	#6 bar head, 3-1/2" high	G				44		44	48
3950	12" high	G				53		53	58
4200	Subgrade stakes, no nail holes, 3/4" diameter, 12" long	G				143		143	157
4250	24" long	G				274		274	300
4300	7/8" diameter, 12" long	G				420		420	465
4350	24" long	G				680		680	745
4500	Tie wire, 16 ga. annealed steel	G			Cwt.	197		197	217

03 21 05.75 Splicing Reinforcing Bars

	R032110-70										
	SPLICING REINFORCING BARS										
0020	Including holding bars in place while splicing										
0100	Standard, self-aligning type, taper threaded, #4 bars	G	C-25	190	.168	Ea.	7.90	7.65	15.55	20.50	
0105	#5 bars	G		170	.188		9.85	8.55	18.40	24	
0110	#6 bars	G		150	.213		11.10	9.70	20.80	27.50	
0120	#7 bars	G		130	.246		12.80	11.20	24	31.50	
0300	#8 bars	G		115	.278		21	12.65	33.65	43.50	
0305	#9 bars	G	C-5	105	.333		25	30	5.55	60.55	78.50
0310	#10 bars	G		95	.589		27.50	33	6.10	66.60	87.50
0320	#11 bars	G		85	.659		29.50	37	6.85	73.35	95
0330	#14 bars	G		65	.862		38	48.50	8.95	95.45	124
0340	#18 bars	G		45	1.244		57.50	70	12.90	140.40	183

03 21 Reinforcement Bars

03 21 05 – Reinforcing Steel Accessories

03 21 05.75 Splicing Reinforcing Bars		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Ind O&P	
						Labor	Equipment	Total			
0500	Transition self-aligning, taper threaded, #18-14	G	C-5	45	1.244	Ea.	77.50	70	12.90	160.40	205
0510	#18-11	G		45	1.244		79	70	12.90	161.90	206
0520	#14-11	G		65	.862		52.50	48.50	8.95	109.95	140
0540	#11-10	G		85	.659		34	37	6.85	77.85	101
0550	#10-9	G		95	.589		33	33	6.10	72.10	93.50
0560	#9-8	G	C-25	105	.305		29.50	13.85		43.35	54
0580	#8-7	G		115	.278		27.50	12.65		40.15	50.50
0590	#7-6	G		130	.246		21	11.20		32.20	40.50
0600	Position coupler for curved bars, taper threaded, #4 bars	G		160	.200		35.50	9.10		44.60	53
0610	#5 bars	G		145	.221		37	10.05		47.05	56.50
0620	#6 bars	G		130	.246		45	11.20		56.20	67
0630	#7 bars	G		110	.291		49.50	13.25		62.75	75
0640	#8 bars	G		100	.320		51.50	14.55		66.05	79
0650	#9 bars	G	C-5	90	.622		56	35	6.45	97.45	121
0660	#10 bars	G		80	.700		60.50	39.50	7.25	107.25	134
0670	#11 bars	G		70	.800		63	45	8.30	116.30	146
0680	#14 bars	G		55	1.018		78.50	57.50	10.55	146.55	184
0690	#18 bars	G		40	1.400		97.50	79	14.50	191	241
0700	Transition position coupler for curved bars, taper threaded, #18-14	G		40	1.400		141	79	14.50	234.50	289
0710	#18-11	G		40	1.400		143	79	14.50	236.50	291
0720	#14-11	G		55	1.018		106	57.50	10.55	174.05	215
0730	#11-10	G		70	.800		81.50	45	8.30	134.80	166
0740	#10-9	G		80	.700		77.50	39.50	7.25	124.25	153
0750	#9-8	G	C-25	90	.356		72	16.20		88.20	104
0760	#8-7	G		100	.320		66.50	14.55		81.05	95.50
0770	#7-6	G		110	.291		62.50	13.25		75.75	89
0800	Sleeve type w/grout filler, for precast concrete, #6 bars	G		72	.444		32.50	20		52.50	67
0802	#7 bars	G		64	.500		37.50	23		60.50	76.50
0805	#8 bars	G		56	.571		45	26		71	90
0807	#9 bars	G		48	.667		52.50	30.50		83	106
0810	#10 bars	G	C-5	40	1.400		62.50	79	14.50	156	202
0900	#11 bars	G		32	1.750		72	98.50	18.15	188.65	247
0920	#14 bars	G		24	2.333		110	131	24	265	345
1000	Sleeve type w/ferrous filler, for critical structures, #6 bars	G	C-25	72	.444		107	20		127	150
1210	#7 bars	G		64	.500		109	23		132	156
1220	#8 bars	G		56	.571		114	26		140	167
1230	#9 bars	G	C-5	48	1.167		119	65.50	12.10	196.60	243
1240	#10 bars	G		40	1.400		125	79	14.50	218.50	272
1250	#11 bars	G		32	1.750		152	98.50	18.15	268.65	335
1260	#14 bars	G		24	2.333		190	131	24	345	435
1270	#18 bars	G		16	3.500		236	197	36.50	469.50	595
2000	Weldable half coupler, taper threaded, #4 bars	G	E-16	120	.133		11.60	7.80	1.23	20.63	26.50
2100	#5 bars	G		112	.143		13.70	8.35	1.31	23.36	29.50
2200	#6 bars	G		104	.154		21.50	9	1.41	31.91	39.50
2300	#7 bars	G		96	.167		25.50	9.75	1.53	36.78	45
2400	#8 bars	G		88	.182		26.50	10.65	1.67	38.82	47.50
2500	#9 bars	G		80	.200		29	11.70	1.84	42.54	52.50
2600	#10 bars	G		72	.222		29.50	13	2.04	44.54	55.50
2700	#11 bars	G		64	.250		31.50	14.60	2.30	48.40	60.50
2800	#14 bars	G		56	.286		36.50	16.70	2.63	55.83	69.50
2900	#18 bars	G		48	.333		59.50	19.50	3.06	82.06	99.50

03 21 Reinforcement Bars

03 21 11 – Plain Steel Reinforcement Bars

03 21 11.60 Reinforcing In Place

			Daily Crew	Output	Labor- Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Ind 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	1,125	1,125	2,250	2,950
0150	#8 to #18	R032110-20	[G]		2.70	11.852		1,125	670	1,795	2,250
0200	Columns, #3 to #7		[G]		1.50	21.333		1,125	1,200	2,325	3,050
0250	#8 to #18		[G]		2.30	13.913		1,125	785	1,910	2,425
0300	Spirals, hot rolled, 8" to 15" diameter		[G]		2.20	14.545		1,675	820	2,495	3,050
0320	15" to 24" diameter	R032110-40	[G]		2.20	14.545		1,600	820	2,420	2,975
0330	24" to 36" diameter		[G]		2.30	13.913		1,525	785	2,310	2,850
0340	36" to 48" diameter	R032110-50	[G]		2.40	13.333		1,450	750	2,200	2,700
0360	48" to 64" diameter		[G]		2.50	12.800		1,600	720	2,320	2,825
0380	64" to 84" diameter	R032110-70	[G]		2.60	12.308		1,675	695	2,370	2,875
0390	84" to 96" diameter		[G]		2.70	11.852		1,750	670	2,420	2,925
0400	Elevated slabs, #4 to #7	R032110-80	[G]		2.90	11.034		1,125	620	1,745	2,175
0500	Footings, #4 to #7		[G]		2.10	15.238		1,125	860	1,985	2,550
0550	#8 to #18		[G]		3.60	8.889		1,125	500	1,625	2,000
0600	Slab on grade, #3 to #7		[G]		2.30	13.913		1,125	785	1,910	2,425
0700	Walls, #3 to #7		[G]		3	10.667		1,125	600	1,725	2,150
0750	#8 to #18		[G]		4	8		1,125	450	1,575	1,925
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	102		102	112
1220	Grade 90, add							140		140	154
2000	Unloading & sorting, add to above		C-5	100	.560				31.50	5.80	37.30
2200	Crane cost for handling, 90 picks/day, up to 1.5 tons/bundle, add to above			135	.415				23.50	4.30	27.80
2210	1.0 ton/bundle			92	.609				34	6.30	40.30
2220	0.5 ton/bundle			35	1.600				90	16.60	106.60
2400	Dowels, 2 feet long, deformed, #3		[G]	2 Rodm	.031	Ea.		.47	1.74		2.21
2410	#4		[G]		480	.033		.83	1.88		2.71
2420	#5		[G]		435	.037		1.30	2.07		3.37
2430	#6		[G]		360	.044		1.87	2.51		4.38
2450	Longer and heavier dowels, add		[G]		725	.022	Lb.	.62	1.24		1.86
2500	Smooth dowels, 12" long, 1/4" or 3/8" diameter		[G]		140	.114	Ea.	.87	6.45		7.32
2520	5/8" diameter		[G]		125	.128		1.53	7.20		8.73
2530	3/4" diameter		[G]		110	.145		1.89	8.20		10.09
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.		.54	2.26		2.80
2615	Sleeve, plastic, 12" long, for 5/8" smooth dowel, snap onto base			400	.020			1.54	1.13		2.67
2620	Sleeve base, for 3/4" smooth dowel sleeve			175	.046			.54	2.58		3.12
2625	Sleeve, 12" long, for 3/4" smooth dowel			350	.023			1.22	1.29		2.51
2630	Sleeve base, for 1" smooth dowel sleeve			150	.053			.71	3.01		3.72
2635	Sleeve, 12" long, for 1" smooth dowel			300	.027			1.67	1.50		3.17
2700	Dowel caps, visual warning only, plastic, #3 to #8		2 Rodm	800	.020			.37	1.13		1.50
2720	#8 to #18			750	.021			.89	1.20		2.09

03 21 Reinforcement Bars

03 21 11 – Plain Steel Reinforcement Bars

03 21 11.60 Reinforcing In Place		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
03 21 11.60	Reinforcing In Place	2 Rodm	800	.020	Ea.	1.18	1.13		2.31	3
2750	Impalement protective, plastic, #4 to #9									

03 21 13 – Galvanized Reinforcement Steel Bars

03 21 13.10 Galvanized Reinforcing

0010	GALVANIZED REINFORCING	Ton	510	Ton	510	Ton	560
0150	Add to plain steel rebar pricing for galvanized rebar						

03 21 16 – Epoxy-Coated Reinforcement Steel Bars

03 21 16.10 Epoxy-Coated Reinforcing

0010	EPOXY-COATED REINFORCING	Ton	1,075	Ton	1,075	Ton	1,200
0100	Add to plain steel rebar pricing for epoxy-coated rebar						

03 21 21 – Composite Reinforcement Bars

03 21 21.11 Glass Fiber-Reinforced Polymer Reinf. Bars

0010	GLASS FIBER-REINFORCED POLYMER REINFORCEMENT BARS	4 Rodm	9500	.003	LF.	.41	.19	.60	.74
0020	Includes labor, but not material cost, to install accessories								
0050	#2 bar, .043 lb./L.F.								
0100	#3 bar, .092 lb./L.F.		9300	.003		.65	.19	.84	1.01
0150	#4 bar, .160 lb./L.F.		9100	.004		.94	.20	1.14	1.33
0200	#5 bar, .258 lb./L.F.		8700	.004		1.14	.21	1.35	1.56
0250	#6 bar, .372 lb./L.F.		8300	.004		1.92	.22	2.14	2.44
0300	#7 bar, .497 lb./L.F.		7900	.004		2.59	.23	2.82	3.19
0350	#8 bar, .620 lb./L.F.		7400	.004		2.45	.24	2.69	3.07
0400	#9 bar, .800 lb./L.F.		6800	.005		4.22	.27	4.49	5.05
0450	#10 bar, 1.08 lb./L.F.		5800	.006		3.83	.31	4.14	4.68
0500	For bends, add per bend				Ea.	1.64		1.64	1.80

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. 16.25 26 42.25 57
0200	6 x 6 - W2.1 x W2.1 (8 x 8) 30 lb./C.S.F.	[G] 31 .516 19.15 29 48.15 65
0300	6 x 6 - W2.9 x W2.9 (6 x 6) 42 lb./C.S.F.	[G] 29 .552 27.50 31 58.50 77.50
0400	6 x 6 - W4 x W4 (4 x 4) 58 lb./C.S.F.	[G] 27 .593 38.50 33.50 72 93
0500	4 x 4 - W1.4 x W1.4 (10 x 10) 31 lb./C.S.F.	[G] 31 .516 24.50 29 53.50 70.50
0600	4 x 4 - W2.1 x W2.1 (8 x 8) 44 lb./C.S.F.	[G] 29 .552 30.50 31 61.50 80.50
0650	4 x 4 - W2.9 x W2.9 (6 x 6) 61 lb./C.S.F.	[G] 27 .593 48.50 33.50 82 104
0700	4 x 4 - W4 x W4 (4 x 4) 85 lb./C.S.F.	[G] 25 .640 60.50 36 96.50 122
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. 48.50 139 187.50 263
0900	2 x 2 - #12 galv. for gunite reinforcing	[G] " 6.50 2.462 " 73 139 212 290

03 22 13 – Galvanized Welded Wire Fabric Reinforcing

03 22 13.10 Galvanized Welded Wire Fabric

0010	GALVANIZED WELDED WIRE FABRIC	lb.	.26	lb.	.26	lb.	.28
0100	Add to plain welded wire pricing for galvanized welded wire						

03 22 Fabric and Grid Reinforcing

03 22 16 – Epoxy-Coated Welded Wire Fabric Reinforcing

03 22 16.10 Epoxy-Coated Welded Wire Fabric				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Ind O&P
0010	EPOXY-COATED WELDED WIRE FABRIC							Labor	Equipment	Total	
0100	Add to plain welded wire pricing for epoxy-coated welded wire					lb.	.54			.54	.60

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.	3.15	2.81	.15	6.11	7.85
0150	300 kip		G		2700	.024		1.27	1.25	.07	2.59	3.35
0300	100' span, 100 kip		G		1700	.038		3.15	1.98	.11	5.24	6.55
0350	300 kip		G		3200	.020		2.69	1.05	.06	3.80	4.60
0500	200' span, 100 kip		G		2700	.024		3.14	1.25	.07	4.46	5.40
0550	300 kip		G		3500	.018		2.68	.96	.05	3.69	4.46
0800	Grouted bars, in beams, 50' span, 42 kip		G		2600	.025		1.26	1.30	.07	2.63	3.42
0850	143 kip		G		3200	.020		1.21	1.05	.06	2.32	2.97
1000	75' span, 42 kip		G		3200	.020		1.28	1.05	.06	2.39	3.05
1050	143 kip		G		4200	.015		1.07	.80	.04	1.91	2.44
1200	Ungrounded strand, in beams, 50' span, 100 kip		G	C-4	1275	.025		.64	1.43	.04	2.11	2.90
1250	300 kip		G		1475	.022		.64	1.23	.04	1.91	2.60
1400	100' span, 100 kip		G		1500	.021		.64	1.21	.04	1.89	2.57
1450	300 kip		G		1650	.019		.64	1.10	.03	1.77	2.40
1600	200' span, 100 kip		G		1500	.021		.64	1.21	.04	1.89	2.57
1650	300 kip		G		1700	.019		.64	1.07	.03	1.74	2.35
1800	Ungrounded bars, in beams, 50' span, 42 kip		G		1400	.023		.56	1.30	.04	1.90	2.62
1850	143 kip		G		1700	.019		.56	1.07	.03	1.66	2.27
2000	75' span, 42 kip		G		1800	.018		.56	1.01	.03	1.60	2.17
2050	143 kip		G		2200	.015		.56	.83	.03	1.42	1.90
2220	Ungrounded single strand, 100' elevated slab, 25 kip		G		1200	.027		.64	1.52	.05	2.21	3.03
2250	35 kip		G		1475	.022		.64	1.23	.04	1.91	2.60
3000	Slabs on grade, 0.5-inch diam. non-bonded strands, HDPE sheathed, attached dead-end anchors, loose stressing-end anchors											
3100	25' x 30' slab, strands @ 36" OC, placing			2 Rodm	2940	.005	S.F.	.68	.31		.99	1.21
3105	Stressing			C-4A	3750	.004			.24	.02	.26	.38
3110	42" OC, placing			2 Rodm	3200	.005		.60	.28		.88	1.08
3115	Stressing			C-4A	4040	.004			.22	.02	.24	.36
3120	48" OC, placing			2 Rodm	3510	.005		.53	.26		.79	.97
3125	Stressing			C-4A	4390	.004			.21	.02	.23	.33
3150	25' x 40' slab, strands @ 36" OC, placing			2 Rodm	3370	.005		.66	.27		.93	1.12
3155	Stressing			C-4A	4360	.004			.21	.02	.23	.33
3160	42" OC, placing			2 Rodm	3760	.004		.57	.24		.81	.99
3165	Stressing			C-4A	4820	.003			.19	.02	.21	.30
3170	48" OC, placing			2 Rodm	4090	.004		.51	.22		.73	.89
3175	Stressing			C-4A	5190	.003			.17	.01	.18	.28
3200	30' x 30' slab, strands @ 36" OC, placing			2 Rodm	3260	.005		.66	.28		.94	1.14
3205	Stressing			C-4A	4190	.004			.22	.02	.24	.34
3210	42" OC, placing			2 Rodm	3530	.005		.59	.26		.85	1.03
3215	Stressing			C-4A	4500	.004			.20	.02	.22	.32
3220	48" OC, placing			2 Rodm	3840	.004		.52	.24		.76	.93
3225	Stressing			C-4A	4850	.003			.19	.02	.21	.30
3230	30' x 40' slab, strands @ 36" OC, placing			2 Rodm	3780	.004		.63	.24		.87	1.05

03 23 Stressed Tendon Reinforcing

03 23 05 – Prestressing Tendons

03 23 05.50 Prestressing Steel		Daily Crew	Labor-Output	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
3235	Stressing	C-4A	4920	.003 S.F.		.18	.02	.20	.30
3240	42" OC, placing	2 Rodm	4190	.004	.55	.22		.77	.93
3245	Stressing	C-4A	5410	.003		.17	.01	.18	.27
3250	48" OC, placing	2 Rodm	4520	.004	.50	.20		.70	.85
3255	Stressing	C-4A	5790	.003		.16	.01	.17	.24
3260	30' x 50' slab, strands @ 36" OC, placing	2 Rodm	4300	.004	.60	.21		.81	.97
3265	Stressing	C-4A	5650	.003		.16	.01	.17	.25
3270	42" OC, placing	2 Rodm	4720	.003	.53	.19		.72	.87
3275	Stressing	C-4A	6150	.003		.15	.01	.16	.23
3280	48" OC, placing	2 Rodm	5240	.003	.46	.17		.63	.77
3285	Stressing	C-4A	6760	.002		.13	.01	.14	.21

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.	5.05		5.05 5.55
0110	1-1/2 lb./C.Y.					C.Y.	7.80		7.80 8.55

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.	1.23		1.23 1.35
0205	Alternate pricing, dosing at 5 lb./C.Y., add to price of RMC	G				C.Y.	6.15		6.15 6.75
0210	10 lb./C.Y.	G					12.30		12.30 13.55
0215	15 lb./C.Y.	G					18.45		18.45 20.50
0220	20 lb./C.Y.	G					24.50		24.50 27
0225	25 lb./C.Y.	G					31		31 34
0230	30 lb./C.Y.	G					37		37 40.50
0235	35 lb./C.Y.	G					43		43 47.50
0240	40 lb./C.Y.	G					49		49 54
0250	50 lb./C.Y.	G					61.50		61.50 67.50
0275	75 lb./C.Y.	G					92.50		92.50 101
0300	100 lb./C.Y.	G					123		123 135

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.	370	675	28	1,073	1,450
0350	25' span	R033105-70	"	18.55	10.782		390	570	23.50	983.50	1,300
0500	Chimney foundations (5000 psi), over 5 C.Y.	R033105-85	C-14C	32.22	3.476		178	175	.83	353.83	460
0510	(3500 psi), under 5 C.Y.	R033053-50	"	23.71	4.724		208	238	1.13	447.13	585
0700	Columns, square (4000 psi), 12" x 12", up to 1% reinforcing by area	R033105-65	C-14A	11.96	16.722		410	885	36.50	1,331.50	1,825
0720	Up to 2% reinforcing by area			10.13	19.743		645	1,050	43	1,738	2,325
0740	Up to 3% reinforcing by area			9.03	22.148		965	1,175	48.50	2,188.50	2,850
0800	16" x 16", up to 1% reinforcing by area			16.22	12.330		325	650	27	1,002	1,375
0820	Up to 2% reinforcing by area			12.57	15.911		550	840	35	1,425	1,925

03 30 Cast-In-Place Concrete

03 30 53 – Miscellaneous Cast-In-Place Concrete

03 30 53.40 Concrete In Place		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
						Labor	Equipment	Total		
0840	Up to 3% reinforcing by area	C-14A	10.25	19.512	C.Y.	850	1,025	42.50	1,917.50	2,525
0900	24" x 24", up to 1% reinforcing by area		23.66	8.453		278	445	18.50	741.50	995
0920	Up to 2% reinforcing by area		17.71	11.293		490	595	24.50	1,109.50	1,450
0940	Up to 3% reinforcing by area		14.15	14.134		780	745	31	1,556	2,025
1000	36" x 36", up to 1% reinforcing by area		33.69	5.936		247	315	13	575	755
1020	Up to 2% reinforcing by area		23.32	8.576		435	455	18.80	908.80	1,175
1040	Up to 3% reinforcing by area		17.82	11.223		725	595	24.50	1,344.50	1,725
1100	Columns, round (4000 psi), tied, 12" diameter, up to 1% reinforcing by area		20.97	9.537		415	505	21	941	1,225
1120	Up to 2% reinforcing by area		15.27	13.098		645	695	28.50	1,368.50	1,800
1140	Up to 3% reinforcing by area		12.11	16.515		955	875	36	1,866	2,400
1200	16" diameter, up to 1% reinforcing by area		31.49	6.351		340	335	13.90	688.90	890
1220	Up to 2% reinforcing by area		19.12	10.460		575	555	23	1,153	1,475
1240	Up to 3% reinforcing by area		13.77	14.524		855	770	32	1,657	2,125
1300	20" diameter, up to 1% reinforcing by area		41.04	4.873		325	258	10.65	593.65	755
1320	Up to 2% reinforcing by area		24.05	8.316		540	440	18.20	998.20	1,275
1340	Up to 3% reinforcing by area		17.01	11.758		845	620	26	1,491	1,900
1400	24" diameter, up to 1% reinforcing by area		51.85	3.857		315	204	8.45	527.45	665
1420	Up to 2% reinforcing by area		27.06	7.391		555	390	16.20	961.20	1,225
1440	Up to 3% reinforcing by area		18.29	10.935		840	580	24	1,444	1,825
1500	36" diameter, up to 1% reinforcing by area		75.04	2.665		315	141	5.85	461.85	565
1520	Up to 2% reinforcing by area		37.49	5.335		525	282	11.70	818.70	1,025
1540	Up to 3% reinforcing by area		22.84	8.757		815	465	19.20	1,299.20	1,600
1900	Elevated slab (4000 psi), flat slab with drops, 125 psf Sup. Load, 20' span	C-14B	38.45	5.410		300	285	11.35	596.35	775
1950	30' span		50.99	4.079		320	215	8.55	543.55	690
2100	Flat plate, 125 psf Sup. Load, 15' span		30.24	6.878		274	365	14.45	653.45	860
2150	25' span		49.60	4.194		287	221	8.80	516.80	655
2300	Waffle const., 30" domes, 125 psf Sup. Load, 20' span		37.07	5.611		310	296	11.80	617.80	805
2350	30' span		44.07	4.720		290	249	9.90	548.90	705
2500	One way joists, 30" pams, 125 psf Sup. Load, 15' span		27.38	7.597		405	400	15.95	820.95	1,075
2550	25' span		31.15	6.677		375	350	14	739	960
2700	One way beam & slab, 125 psf Sup. Load, 15' span		20.59	10.102		295	535	21	851	1,150
2750	25' span		28.36	7.334		281	385	15.40	681.40	905
2900	Two way beam & slab, 125 psf Sup. Load, 15' span		24.04	8.652		285	455	18.15	758.15	1,025
2950	25' span		35.87	5.799		249	305	12.20	566.20	745
3100	Elevated slabs, flat plate, including finish, not including forms or reinforcing									
3110	Regular concrete (4000 psi), 4" slab	C-8	2613	.021	S.F.	1.69	1	.16	2.85	3.52
3200	6" slab		2585	.022		2.48	1.01	.16	3.65	4.40
3250	2-1/2" thick floor fill		2685	.021		1.10	.97	.15	2.22	2.84
3300	Lightweight, 110#/C.F., 2-1/2" thick floor fill		2585	.022		1.31	1.01	.16	2.48	3.13
3400	Cellular concrete, 1-5/8" fill, under 5000 S.F.		2000	.028		.90	1.31	.21	2.42	3.17
3450	Over 10,000 S.F.		2200	.025		.86	1.19	.19	2.24	2.92
3500	Add per floor for 3 to 6 stories high		31800	.002		.08	.01	.09	.13	
3520	For 7 to 20 stories high		21200	.003		.12	.02	.14	.20	
3540	Equipment pad (3000 psi), 3' x 3' x 6" thick	C-14H	45	1.067	Ea.	50.50	55	.60	106.10	139
3550	4' x 4' x 6" thick		30	1.600		78	82.50	.90	161.40	210
3560	5' x 5' x 8" thick		18	2.667		138	138	.49	277.49	360
3570	6' x 6' x 8" thick		14	3.429		190	177	1.92	368.92	475
3580	8' x 8' x 10" thick		8	6		395	310	3.36	708.36	905
3590	10' x 10' x 12" thick		5	9.600		695	495	5.40	1,195.40	1,500
3800	Footings (3000 psi), spread under 1 C.Y.	C-14C	28	4	C.Y.	203	201	.96	404.96	525
3813	Install new concrete (3000 psi) light pole base, 24" diam. x 8'	C-1	2.66	12.030		325	605		930	1,275
3825	1 C.Y. to 5 C.Y.	C-14C	43	2.605		240	131	.63	371.63	465

03 30 Cast-In-Place Concrete

03 30 53 – Miscellaneous Cast-In-Place Concrete

03 30 53.40 Concrete In Place		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
						Labor	Equipment	Total		
3850	Over 5 C.Y.	G-14C	75	1.493 C.Y.	220	75	.36	295.36	355	
3900	Footings, strip (3000 psi), 18" x 9", unreinforced	G-14L	40	2.400	154	118	.67	272.67	350	
3920	18" x 9", reinforced	G-14C	35	3.200	181	161	.77	342.77	440	
3925	20" x 10", unreinforced	G-14L	45	2.133	150	105	.60	255.60	325	
3930	20" x 10", reinforced	G-14C	40	2.800	172	141	.67	313.67	400	
3935	24" x 12", unreinforced	G-14L	55	1.745	148	86	.49	234.49	293	
3940	24" x 12", reinforced	G-14C	48	2.333	171	118	.56	289.56	365	
3945	36" x 12", unreinforced	G-14L	70	1.371	144	67.50	.38	211.88	261	
3950	36" x 12", reinforced	G-14C	60	1.867	165	94	.45	259.45	320	
4000	Foundation mat (3000 psi), under 10 C.Y.			38.67 2.896	246	146	.70	392.70	490	
4050	Over 20 C.Y.			56.40 1.986	217	100	.48	317.48	390	
4200	Wall, free-standing (3000 psi), 8" thick, 8' high	G-14D	45.83	4.364	197	230	9.55	436.55	570	
4250	14' high		27.26	7.337	232	385	16.05	633.05	855	
4260	12" thick, 8' high		64.32	3.109	179	164	6.80	349.80	450	
4270	14' high		40.01	4.999	190	263	10.95	463.95	615	
4300	15" thick, 8' high		80.02	2.499	173	132	5.45	310.45	395	
4350	12' high		51.26	3.902	173	205	8.55	386.55	510	
4500	18' high		48.85	4.094	194	215	8.95	417.95	550	
4520	Handicap access ramp (4000 psi), railing both sides, 3' wide	G-14H	14.58	3.292 L.F.	390	170	1.84	561.84	685	
4525	5' wide		12.22	3.928	400	203	2.20	605.20	745	
4530	With 6" curb and rails both sides, 3' wide		8.55	5.614	400	290	3.14	693.14	880	
4535	5' wide		7.31	6.566	405	340	3.68	748.68	965	
4650	Slab on grade (3500 psi), not including finish, 4" thick	G-14E	60.75	1.449 C.Y.	147	74	.45	221.45	273	
4700	6" thick		"	92 .957 "	141	49	.30	190.30	230	
4701	Thickened slab edge (3500 psi), for slab on grade poured monolithically with slab; depth is in addition to slab thickness; formed vertical outside edge, earthen bottom and inside slope									
4705	8" deep x 8" wide bottom, unreinforced	G-14L	2190	.044 L.F.	4.07	2.16	.01	6.24	7.75	
4710	8" x 8", reinforced	G-14C	1670	.067	6.70	3.38	.02	10.10	12.45	
4715	12" deep x 12" wide bottom, unreinforced	G-14L	1800	.053	8.30	2.63	.01	10.94	13.10	
4720	12" x 12", reinforced	G-14C	1310	.086	13.15	4.31	.02	17.48	21	
4725	16" deep x 16" wide bottom, unreinforced	G-14L	1440	.067	14	3.29	.02	17.31	20.50	
4730	16" x 16", reinforced	G-14C	1120	.100	19.75	5.05	.02	24.82	29.50	
4735	20" deep x 20" wide bottom, unreinforced	G-14L	1150	.083	21	4.12	.02	25.14	29.50	
4740	20" x 20", reinforced	G-14C	920	.122	28.50	6.15	.03	34.68	40.50	
4745	24" deep x 24" wide bottom, unreinforced	G-14L	930	.103	30	5.10	.03	35.13	40.50	
4750	24" x 24", reinforced	G-14C	740	.151	39.50	7.60	.04	47.14	55	
4751	Slab on grade (3500 psi), incl. troweled finish, not incl. forms or reinforcing, over 10,000 S.F., 4" thick	G-14F	3425	.021 S.F.	1.62	1	.01	2.63	3.27	
4760	6" thick		3350	.021	2.36	1.02	.01	3.39	4.12	
4840	8" thick		3184	.023	3.24	1.08	.01	4.33	5.15	
4900	12" thick		2734	.026	4.85	1.25	.01	6.11	7.20	
4950	15" thick		2505	.029	6.10	1.37	.01	7.48	8.75	
5000	Slab on grade (3000 psi), incl. broom finish, not incl. forms or reinforcing, 4" thick	G-14G	2873	.019 S.F.	1.67	.91	.01	2.59	3.20	
5010	6" thick		2590	.022	2.62	1.01	.01	3.64	4.39	
5020	8" thick		2320	.024	3.41	1.13	.01	4.55	5.45	
5200	Lift slab in place above the foundation, incl. forms, reinforcing, concrete (4000 psi) and columns, over 20,000 S.F./floor	G-14B	2113	.098 S.F.	7.75	5.20	.21	13.16	16.55	
5210	10,000 S.F. to 20,000 S.F./floor		1650	.126	8.45	6.65	.26	15.36	19.60	
5250	Under 10,000 S.F./floor		1500	.139	9.15	7.30	.29	16.74	21.50	
5500	Lightweight, ready mix, including screed finish only, not including forms or reinforcing									
5510										

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	2020 Bare Costs				Total	Total Incl O&P
						Material	Labor	Equipment	Total		
5550	1:4 (2500 psi) for structural roof decks	C-14B	260	.800	C.Y.	125	42	1.68	168.68	202	
5600	1:6 (3000 psi) for ground slab with radiant heat	C-14F	92	.783		134	37	.29	171.29	203	
5650	1:3:2 (2000 psi) with sand aggregate, roof deck	C-14B	260	.800		114	42	1.68	157.68	190	
5700	Ground slab (2000 psi)	C-14F	107	.673		114	32	.25	146.25	173	
5900	Pile caps (3000 psi), incl. forms and reinf., sq. or rect., under 10 C.Y.	C-14C	54.14	2.069		200	104	.50	304.50	375	
5950	Over 10 C.Y.		75	1.493		189	75	.36	264.36	320	
6000	Triangular or hexagonal, under 10 C.Y.		53	2.113		153	106	.51	259.51	330	
6050	Over 10 C.Y.		85	1.318		171	66.50	.32	237.82	288	
6200	Retaining walls (3000 psi), gravity, 4' high see Section 32 32	C-14D	66.20	3.021		173	159	6.60	338.60	435	
6250	10' high		125	1.600		166	84	3.50	253.50	315	
6300	Cantilever, level backfill loading, 8' high		70	2.857		184	150	6.25	340.25	435	
6350	16' high		91	2.198		179	116	4.81	299.81	375	
6800	Stairs (3500 psi), not including safety treads, free standing, 3'-6" wide	C-14H	83	.578	LF Nose	6.40	30	.32	36.72	52	
6850	Cast on ground		125	.384	"	5.40	19.85	.22	25.47	35.50	
7000	Stair landings, free standing		200	.240	S.F.	5.10	12.40	.13	17.63	24.50	
7050	Cast on ground		475	.101	"	4.15	5.20	.06	9.41	12.45	

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 cement (Type I) and water, using gas powered cement mixer									
0060	2500 psi	C-30	135	.059	C.F.	4.33	2.49	1.04	7.86	9.65
0125	3000 psi		135	.059		4.68	2.49	1.04	8.21	10.05
0130	3500 psi		135	.059		4.88	2.49	1.04	8.41	10.25
0140	4000 psi		135	.059		5.10	2.49	1.04	8.63	10.55
0145	4500 psi		135	.059		5.40	2.49	1.04	8.93	10.85
0150	5000 psi		135	.059		5.80	2.49	1.04	9.33	11.25
0300	Using pre-bagged dry mix and wheelbarrow (80-lb. bag = 0.6 C.F.)	1 Clab	48	.167	C.F.	8.50	7		15.50	19.90
0340	4000 psi									

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.	213			213	234
0110	2 C.Y.					164			164	180
0120	3 C.Y.					143			143	157
0130	4 C.Y.					125			125	138
0140	5 C.Y.					113			113	125
0200	For truck holding/waiting time past first 2 on-site hours, add				Hr.	91.50			91.50	101
0210	For trip charge beyond first 20 miles, each way, add				Mile	3.65			3.65	4.02
0220	For each additional increase of 500 psi, add				Ea.	4.64			4.64	5.10

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.	107			107	117
0100	2500 psi	R033105-30				110			110	121

03 31 Structural Concrete

03 31 13 – Heavyweight Structural Concrete

03 31 13.35 Heavyweight Concrete, Ready Mix		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	Equipment	Total	Total Ind D&P
0150	3000 psi				C.Y.	129				129	142
0200	3500 psi	R033105-40				124				124	137
0300	4000 psi					127				127	140
0350	4500 psi	R033105-50				131				131	144
0400	5000 psi					135				135	149
0411	6000 psi					139				139	153
0412	8000 psi					146				146	161
0413	10,000 psi					154				154	169
0414	12,000 psi					161				161	177
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						5.35				5.35
1410	For mid-range water reducer, add						4.18				4.18
1420	For high-range water reducer/superplasticizer, add						6.40				6.40
1430	For retarder, add						3.45				3.45
1440	For non-Chloride accelerator, add						6.80				6.80
1450	For Chloride accelerator, per 1%, add						4.10				4.10
1460	For fiber reinforcing, synthetic (1 lb./C.Y.), add						8.10				8.10
1500	For Saturday delivery, add						9.20				9.20
1510	For truck holding/waiting time past 1st hour per load, add		Hr.	109						109	120
1520	For short load (less than 4 C.Y.), add per load		Eq.	85						85	93.50
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	C-20	60	1.067	C.Y.	48	7.75	55.75	80.50	
0050	Beams, elevated, small beams, pumped	C-7	45	1.600		73	24	97	137	
0100	With crane and bucket	C-20	90	.711		32	5.15	37.15	53.50	
0200	Large beams, pumped	C-7	65	1.108		50.50	16.60	67.10	94.50	
0250	With crane and bucket	C-20	60	1.067		48	7.75	55.75	80.50	
0400	Columns, square or round, 12" thick, pumped	C-7	40	1.800		82.50	27	109.50	153	
0450	With crane and bucket	C-20	90	.711		32	5.15	37.15	53.50	
0600	18" thick, pumped	C-7	55	1.309		60	19.65	79.65	111	
0650	With crane and bucket	C-20	92	.696		31.50	5.05	36.55	52.50	
0800	24" thick, pumped	C-7	70	1.029		47	15.45	62.45	87.50	
0850	With crane and bucket	C-20	140	.457		20.50	3.31	23.81	34.50	
1000	36" thick, pumped	C-7	100	.720		33	10.80	43.80	61.50	
1050	With crane and bucket	C-6	155	.310		13.55	.35	13.90	21	
1200	Duct bank, direct chute	C-20	140	.457		20.50	3.31	23.81	34.50	
1400	Elevated slabs, less than 6" thick, pumped	C-7	95	.758		34.50	11.35	45.85	64.50	
1450	With crane and bucket	C-20	160	.400		18.05	2.90	20.95	30	
1500	6" to 10" thick, pumped	C-7	110	.655		30	9.80	39.80	56	
1550	With crane and bucket	C-20	180	.356		16.05	2.58	18.63	27	
1600	Slabs over 10" thick, pumped	C-7	130	.554		25.50	8.30	33.80	47	
1650	With crane and bucket	C-6	120	.400		17.50	.45	17.95	26.50	
1900	Footings, continuous, shallow, direct chute	C-20	150	.427		19.25	3.09	22.34	32.50	
1950	Pumped	C-7	90	.800		36.50	12	48.50	68	
2000	With crane and bucket	C-6	140	.343		15	.38	15.38	23	
2100	Footings, continuous, deep, direct chute	C-20	160	.400		18.05	2.90	20.95	30	
2150	Pumped	C-7	110	.655		30	9.80	39.80	56	
2200	With crane and bucket	C-6	55	.873		38	.98	38.98	58	
2400	Footings, spread, under 1 C.Y., direct chute	C-20	65	.985		44.50	7.15	51.65	74.50	
2450	Pumped									

03 31 Structural Concrete

03 31 13 – Heavyweight Structural Concrete

03 31 13.70 Placing Concrete		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total Incl O&P	
						Labor	Equipment	Total		
2500	With crane and bucket	C-7	.45	1.600	C.Y.		73	24	97	137
2600	Over 5 C.Y., direct chute	C-6	.120	.400			17.50	.45	17.95	26.50
2650	Pumped	C-20	.150	.427			19.25	3.09	22.34	32.50
2700	With crane and bucket	C-7	.100	.720			33	10.80	43.80	61.50
2900	Foundation mats, over 20 C.Y., direct chute	C-6	.350	.137			6	.35	6.15	9.15
2950	Pumped	C-20	.400	.160			7.25	1.16	8.41	12.10
3000	With crane and bucket	C-7	.300	.240			11	3.60	14.60	20.50
3200	Grade beams, direct chute	C-6	.150	.320			14	.36	14.36	21.50
3250	Pumped	C-20	.180	.356			16.05	2.58	18.63	27
3300	With crane and bucket	C-7	.120	.600			27.50	9	36.50	51
3500	High rise, for more than 5 stories, pumped, add per story	C-20	.2100	.030			1.38	.22	1.60	2.30
3510	With crane and bucket, add per story	C-7	.2100	.034			1.57	.51	2.08	2.92
3700	Pile caps, under 5 C.Y., direct chute	C-6	.90	.533			23.50	.60	24.10	35.50
3750	Pumped	C-20	.110	.582			26.50	4.22	30.72	44
3800	With crane and bucket	C-7	.80	.900			41	13.50	54.50	76.50
3850	Pile cap, 5 C.Y. to 10 C.Y., direct chute	C-6	.175	.274			12	.31	12.31	18.30
3900	Pumped	C-20	.200	.320			14.45	2.32	16.77	24
3950	With crane and bucket	C-7	.150	.480			22	7.20	29.20	41
4000	Over 10 C.Y., direct chute	C-6	.215	.223			9.75	.25	10	14.85
4050	Pumped	C-20	.240	.267			12.05	1.93	13.98	20
4100	With crane and bucket	C-7	.185	.389			17.80	5.85	23.65	33
4300	Slab on grade, up to 6" thick, direct chute	C-6	.110	.436			19.10	.49	19.59	29
4350	Pumped	C-20	.130	.492			22	3.57	25.57	37.50
4400	With crane and bucket	C-7	.110	.655			30	9.80	39.80	56
4600	Over 6" thick, direct chute	C-6	.165	.291			12.70	.33	13.03	19.40
4650	Pumped	C-20	.185	.346			15.60	2.51	18.11	26.50
4700	With crane and bucket	C-7	.145	.497			22.50	7.45	29.95	42
4900	Walls, 8" thick, direct chute	C-6	.90	.533			23.50	.60	24.10	35.50
4950	Pumped	C-20	.100	.640			29	4.64	33.64	48.50
5000	With crane and bucket	C-7	.80	.900			41	13.50	54.50	76.50
5050	12" thick, direct chute	C-6	.100	.480			21	.54	21.54	32
5100	Pumped	C-20	.110	.582			26.50	4.22	30.72	44
5200	With crane and bucket	C-7	.90	.800			36.50	12	48.50	68
5300	15" thick, direct chute	C-6	.105	.457			20	.51	20.51	30.50
5350	Pumped	C-20	.120	.533			24	3.87	27.87	40.50
5400	With crane and bucket	C-7	.95	.758			34.50	11.35	45.85	64.50
5600	Wheeled concrete dumping, add to placing costs above									
5610	Walking cart, 50' haul, add	G-18	.32	.281	C.Y.		11.90	.4	15.90	22.50
5620	150' haul, add		.24	.375			15.85	5.35	21.20	30
5700	250' haul, add		.18	.500			21	7.10	28.10	40
5800	Riding cart, 50' haul, add	G-19	.80	.113			4.76	1.92	6.68	9.25
5810	150' haul, add		.60	.150			6.35	2.56	8.91	12.35
5900	250' haul, add		.45	.200			8.45	3.41	11.86	16.45
6000	Concrete in-fill for pan-type metal stairs and landings. Manual placement includes up to 50' horizontal haul from point of concrete discharge.									
6010	Stair pan treads, 2" deep									
6110	Flights in 1st floor level up/down from discharge point	G-8A	3200	.015	S.E.		.68		.68	1.01
6120	2nd floor level		2500	.019			.87		.87	1.29
6130	3rd floor level		2000	.024			1.08		1.08	1.61
6140	4th floor level		1800	.027			1.20		1.20	1.79
6200	Intermediate stair landings, pan-type 4" deep									
6210	Flights in 1st floor level up/down from discharge point	G-8A	2000	.024	S.E.		1.08		1.08	1.61
6220	2nd floor level		1500	.032			1.44		1.44	2.15

03 31 Structural Concrete

03 31 13 – Heavyweight Structural Concrete

03 31 13.70 Placing Concrete		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
		G-8A	1200	.040	S.F.		1.80	1.80	2.69
6230	3rd floor level								
6240	4th floor level	↓	1000	.048	↓		2.16	2.16	3.22

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	G-10	4000	.006	S.F.		.28	.28	.42	
0125	Bull float & manual float		2000	.012	↓		.57	.57	.84	
0150	Bull float, manual float & broom finish, w/edging & joints		1850	.013	↓		.61	.61	.91	
0200	Bull float, manual float & manual steel trowel	↓	1265	.019	↓		.90	.90	1.33	
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.		.66	.05	.71	1.04
0300	Power screed, bull float, machine float & trowel (walk-behind)	C-10D	2400	.010	↓		.47	.07	.54	.77
0350	Power screed, bull float, machine float & trowel (ride-on)	C-10E	4000	.006	↓		.28	.06	.34	.49
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	G-10	6000	.004	S.F.		.19	.19	.28	
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	G-10	3000	.008	S.F.		.38	.38	.56	
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	G-10	2000	.012	S.F.		.57	.57	.84	

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.		.60	.47	1.07	1.34	
1850	Silicon carbide		850	.009	↓		.84	.47	1.31	1.62	
2000	Floor hardeners, dry shake, metallic, light service, .50 psf		850	.009	↓		.50	.47	.97	1.24	
2050	Medium service, .75 psf		750	.011	↓		.75	.53	1.28	1.61	
2100	Heavy service, 1.0 psf		650	.012	↓		1	.61	1.61	2	
2150	Extra heavy, 1.5 psf		575	.014	↓		1.50	.69	2.19	2.67	
2300	Non-metallic, light service, .50 psf		850	.009	↓		.18	.47	.65	.88	
2350	Medium service, .75 psf		750	.011	↓		.26	.53	.79	1.07	
2400	Heavy service, 1.0 psf		650	.012	↓		.35	.61	.96	1.29	
2450	Extra heavy, 1.5 psf	↓	575	.014	↓		.53	.69	1.22	1.60	
2800	Trap rock wearing surface, dry shake, for monolithic floors										
2810	2.0 psf	C-10B	1250	.032	S.F.		.02	1.45	.25	1.72	2.46
3800	Dustproofing, liquid, for cured concrete, solvent-based, 1 coat	1 Cefi	1900	.004	↓		.18	.21	.39	.51	
3850	2 coats		1300	.006	↓		.64	.31	.95	1.16	
4000	Epoxy-based, 1 coat		1500	.005	↓		.15	.27	.42	.56	
4050	2 coats	↓	1500	.005	↓		.31	.27	.58	.73	

03 35 Concrete Finishing

03 35 19 – Colored Concrete Finishing

03 35 19.30 Finishing Floors, Colored			Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare 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.	.45	.31	.76	.94
3050	(1.0 psf)		"	625	.013	"	.74	.64	1.38	1.76
3100	Colored dry shake powder only					Lb.	.74		.74	.82
3600	1/2" topping using 0.6 psf dry shake powdered color		C-10B	590	.068	S.F.	4.62	3.07	.53	8.22
3650	1.0 psf dry shake powdered color		"	590	.068	"	4.92	3.07	.53	8.52
										10.55

03 35 23 – Exposed Aggregate Concrete Finishing

03 35 23.30 Finishing Floors, Exposed Aggregate

0010 FINISHING FLOORS, EXPOSED AGGREGATE			Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
1600	Exposed local aggregate finish, seeded on fresh concrete, 3 lb./S.F.		1 Cefi	625	.013	S.F.	.21	.64	.85	1.18
1650	4 lb./S.F.		"	465	.017	"	.36	.86	1.22	1.66

03 35 29 – Tooled Concrete Finishing

03 35 29.30 Finishing Floors, Tooled

0010 FINISHING FLOORS, TOOLED			Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
4400	Stair finish, fresh concrete, float finish		1 Cefi	275	.029	S.F.		1.45	1.45	2.14
4500	Steel trowel finish			200	.040		2		2	2.94
4600	Silicon carbide finish, dry shake on fresh concrete, .25 psf		"	150	.053		.60	2.66	3.26	4.57

03 35 29.60 Finishing Walls

0010 FINISHING WALLS			Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
0020	Break ties and patch voids		1 Cefi	540	.015	S.F.	.04	.74	.78	1.14
0050	Burlap rub with grout			450	.018		.04	.89	.93	1.36
0100	Carborundum rub, dry			270	.030			1.48	1.48	2.18
0150	Wet rub	↓	175	.046			2.28		2.28	3.36
0300	Bush hammer, green concrete	B-39	1000	.048			2.12	.36	2.48	3.58
0350	Cured concrete	"	650	.074			3.27	.55	3.82	5.50
0500	Acid etch	1 Cefi	575	.014		.14	.69		.88	1.17
0600	Float finish, 1/16" thick	"	300	.027		.40	1.33		1.73	2.40
0700	Sandblast, light penetration	E-11	1100	.029		.51	1.36	.27	2.14	2.99
0750	Heavy penetration	"	375	.085		1.03	3.98	.80	5.81	8.20
0850	Grind form fins flush	1 Club	700	.011	L.F.		.48		.48	.72

03 35 33 – Stamped Concrete Finishing

03 35 33.50 Slab Texture Stamping

0010 SLAB TEXTURE STAMPING			Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
0050	Stamping requires that concrete first be placed, struck off, consolidated, 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.	.43	.06	.49	.56
0110	Step 2 - bull float	↓	6400	.001			.06		.06	.09
0130	Step 3 - second application of dry shake colored hardener	↓	6400	.001		.21	.06		.27	.32
0140	Step 4 - bull float, manual float & steel trowel	3 Cefi	1280	.019			.94		.94	1.38
0150	Step 5 - application of dry shake colored release agent	1 Cefi	6400	.001		.10	.06		.16	.20
0160	Step 6 - place, tamp & remove mats	3 Cefi	2400	.010		.87	.50		1.37	1.68
0170	Step 7 - touch up edges, mat joints & simulated grout lines	1 Cefi	1280	.006			.31		.31	.46
0300	Alternate stamping estimating method includes all tasks above	4 Cefi	800	.040		1.60	2		3.60	4.70
0400	Step 8 - pressure wash @ 3000 psi after 24 hours	1 Cefi	1600	.005			.25		.25	.37
0500	Step 9 - roll 2 coats cure/seal compound when dry	"	800	.010		.69	.50		1.19	1.49

03 35 43 – Polished Concrete Finishing

03 35 43.10 Polished Concrete Floors

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		

03 35 Concrete Finishing

03 35 43 – Polished Concrete Finishing

03 35 43.10 Polished Concrete Floors		Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Ind O&P
0025	planetary floor grinder (2 passes in different directions per grit)								
0100	Removal of pre-existing coatings, dry, with carbide discs using dry vacuum pick-up system, final hand sweeping								
0105	Glue, adhesive or tar	J-4	1.60	15	M.S.F.	22	710	139	871
0110	Paint, epoxy, 1 coat		3.60	6.667		22	315	62	399
0120	2 coats		1.80	13.333		22	630	124	776
0130	Grinding and edging, wet, including wet vac pick-up and auto scrubbing between grit changes								
0200	40-grit diamond/metal matrix	J-4A	1.60	20	M.S.F.	41.50	920	251	1,212.50
0220	80-grit diamond/metal matrix		2	16		41.50	735	200	976.50
0230	120-grit diamond/metal matrix		2.40	13.333		41.50	615	167	823.50
0240	200-grit diamond/metal matrix		2.80	11.429		41.50	525	143	709.50
0300	Spray on dye or stain (1 coat)	1 Cefi	16	.500		209	25		234
0400	Spray on densifier/hardener (2 coats)	"	8	1		315	50		365
0410	Auto scrubbing after 2nd coat, when dry	J-4B	16	.500			21	11.15	32.15
0500	Honing and edging, wet, including wet vac pick-up and auto scrubbing between grit changes								
0510	100-grit diamond/resin matrix	J-4A	2.80	11.429	M.S.F.	41.50	525	143	709.50
0520	200-grit diamond/resin matrix	"	2.80	11.429	"	41.50	525	143	709.50
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.	41.50	525	143	709.50
0600	Polishing and edging, dry, including dry vac pick-up and hand sweeping between grit changes								
0605	800-grit diamond/resin matrix	J-4A	2.80	11.429	M.S.F.	41.50	525	143	709.50
0620	1500-grit diamond/resin matrix		2.80	11.429		41.50	525	143	709.50
0630	3000-grit diamond/resin matrix		2.80	11.429		41.50	525	143	709.50
0700	Auto scrubbing after final polishing step	J-4B	16	.500			21	11.15	32.15
									44

03 37 Specialty Placed Concrete

03 37 13 – Shotcrete

03 37 13.30 Gunite (Dry-Mix)		G-16	2000	.028	S.F.	.42	1.31	.20	1.93	2.63
0020 Typical in place, 1" layers, no mesh included										
0100 Mesh for gunite 2 x 2, #12		2 Rodm	800	.020		.73	1.13		1.86	2.50
0150 #4 reinforcing bars @ 6" each way		"	500	.032		1.88	1.80		3.68	4.79
0300 Typical in place, including mesh, 2" thick, flat surfaces		G-16	1000	.056		1.57	2.62	.39	4.58	6.05
0350 Curved surfaces			500	.112		1.57	5.25	.78	7.60	10.40
0500 4" thick, flat surfaces			750	.075		2.41	3.49	.52	6.42	8.40
0550 Curved surfaces			350	.160		2.41	7.50	1.12	11.03	15.05
0900 Prepare old walls, no scaffolding, good condition		C-10	1000	.024			1.14		1.14	1.68
0950 Poor condition		"	275	.087			4.13		4.13	6.10
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)		G-8C	80	.600	C.Y.	136	27.50	7.45	170.95	199
0020 Wet mix, placed @ up to 12 C.Y./hour, 3000 psi										
0100 Up to 35 C.Y./hour		G-8E	240	.200		122	9.10	2.70	133.80	151
1010 Fiber reinforced, 1" thick		G-8C	1740	.028	S.F.	1	1.27	.34	2.61	3.38
1020 2" thick			900	.053		1.99	2.46	.66	5.11	6.60
1030 3" thick			825	.058		2.99	2.69	.72	6.40	8.10
1040 4" thick			750	.064		3.98	2.96	.79	7.73	9.65

03 39 Concrete Curing

03 39 13 – Water Concrete Curing

03 39 13.50 Water Curing		Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
0010	WATER CURING								
0015	With burlap, 4 uses assumed, 7.5 oz.	2 Clab	55	.291	C.S.F.	15.65	12.25	27.90	35.50
0100	10 oz.	"	55	.291	"	28	12.25	40.25	49.50
0400	Curing blankets, 1" to 2" thick, buy				S.F.	.26		.26	.29

03 39 23 – Membrane Concrete Curing

03 39 23.13 Chemical Compound Membrane Concrete Curing

0010 CHEMICAL COMPOUND MEMBRANE CONCRETE CURING		Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
0300	Sprayed membrane curing compound	2 Clab	95	.168	C.S.F.	12.45	7.10	19.55	24.50
0700	Curing compound, solvent based, 400 S.F./gal., 55 gallon lots			Gal.	23			23	25.50
0720	5 gallon lots				33			33	36
0800	Curing compound, water based, 250 S.F./gal., 55 gallon lots				23.50			23.50	26
0820	5 gallon lots				26			26	29

03 39 23.23 Sheet Membrane Concrete Curing

0010 SHEET MEMBRANE CONCRETE CURING

0200 Curing blanket, burlap/poly, 2-ply		Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
2 Clab	70	.229	C.S.F.		20.50	9.60		30.10	37

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	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
0020	Prestressed roof/floor members, grouted, solid, 4" thick	G-11	2400	.030	S.F.	8.55	1.72	.95	11.22	13.15
0050	6" thick		2800	.026		8.55	1.47	.81	10.83	12.60
0100	Hollow, 8" thick		3200	.023		11.90	1.29	.71	13.90	15.85
0150	10" thick		3600	.020		9.95	1.15	.63	11.73	13.35
0200	12" thick		4000	.018		11.60	1.03	.57	13.20	15

03 41 16 – Precast Concrete Slabs

03 41 16.20 Precast Concrete Channel Slabs

0010 PRECAST CONCRETE CHANNEL SLABS		R034116-20	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
0335	Lightweight concrete channel slab, long runs, 2-3/4" thick	G-12	1575	.030	S.F.	12.85	1.60	.30	14.75	16.85
0375	3-3/4" thick		1550	.031		13.20	1.63	.30	15.13	17.35
0475	4-3/4" thick		1525	.031		13.30	1.66	.31	15.27	17.50
1275	Short pieces, 2-3/4" thick		785	.061		19.25	3.22	.60	23.07	26.50
1375	3-3/4" thick		770	.062		19.80	3.28	.61	23.69	27.50
1475	4-3/4" thick		762	.063		19.95	3.32	.62	23.89	27.50

03 41 16.50 Precast Lightweight Concrete Plank

0010 PRECAST LIGHTWEIGHT CONCRETE PLANK

0015 PRECAST LIGHTWEIGHT CONCRETE PLANK		R034116-50	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
0015	Lightweight plank, nailable, T&G, 2" thick	G-12	1800	.027	S.F.	10.30	1.40	.26	11.96	13.75
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%				

03 41 23 – Precast Concrete Stairs

03 41 23.50 Precast Stairs

0010 PRECAST STAIRS		R034123-50	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
0020	Precast concrete treads on steel stringers, 3' wide	G-12	75	.640	Riser	149	33.50	6.30	188.80	221
0300	Front entrance, 5' wide with 48" platform, 2 risers		16	3	Flight	675	158	29.50	862.50	1,025
0350	5 risers		12	4		1,125	211	39	1,375	1,575
0500	6' wide, 2 risers		15	3.200		750	168	31.50	949.50	1,125
0550	5 risers		11	4.364		1,250	230	43	1,523	1,750
0700	7' wide, 2 risers		14	3.429		1,050	181	33.50	1,264.50	1,475

03 41 Precast Structural Concrete

03 41 23 – Precast Concrete Stairs

				Daily Output	Labor-Hrs	Unit	2020 Bare Costs			Total	Total Incl O&P	
							Material	Labor	Equipment	Total		
03 41 23.50	Precast Stairs											
0750	5 risers			C-12	10	4.800	Flight	1,775	253	47	2,075	2,375
1200	Basement entrance stairwell, 6 steps, incl. steel bulkhead door			B-51	22	2,182		1,875	94.50	8.90	1,978.40	2,200
1250	14 steps			"	11	4.364		3,350	189	17.85	3,556.85	3,975

03 41 33 – Precast Structural Pretensioned Concrete

03 41 33.10 Precast Beams

				R034105-30								
0010	Precast Beams											
0011	L-shaped, 20' span, 12" x 20"			C-11	32	2.250	Ea.	4,500	129	71	4,700	5,225
0060	18" x 36"				24	3		6,350	172	94.50	6,616.50	7,375
0100	24" x 44"				22	3.273		7,450	187	103	7,740	8,600
0150	30' span, 12" x 36"				24	3		8,800	172	94.50	9,066.50	10,100
0200	18" x 44"				20	3.600		10,500	206	113	10,819	11,900
0250	24" x 52"				16	4.500		12,800	258	142	13,200	14,700
0400	40' span, 12" x 52"				20	3.600		13,300	206	113	13,619	15,000
0450	18" x 52"				16	4.500		14,900	258	142	15,300	17,000
0500	24" x 52"				12	6		17,100	345	189	17,634	19,500
1200	Rectangular, 20' span, 12" x 20"				32	2.250		3,925	129	71	4,125	4,575
1250	18" x 36"				24	3		5,800	172	94.50	6,066.50	6,750
1300	24" x 44"				22	3.273		6,850	187	103	7,140	7,950
1400	30' span, 12" x 36"				24	3		6,475	172	94.50	6,741.50	7,500
1450	18" x 44"				20	3.600		9,000	206	113	9,319	10,300
1500	24" x 52"				16	4.500		11,200	258	142	11,600	12,900
1600	40' span, 12" x 52"				20	3.600		10,800	206	113	11,119	12,200
1650	18" x 52"				16	4.500		13,000	258	142	13,400	14,900
1700	24" x 52"				12	6		14,900	345	189	15,434	17,100
2000	"T" shaped, 20' span, 12" x 20"				32	2.250		5,575	129	71	5,775	6,400
2050	18" x 36"				24	3		7,175	172	94.50	7,441.50	8,250
2100	24" x 44"				22	3.273		8,075	187	103	8,365	9,275
2200	30' span, 12" x 36"				24	3		9,950	172	94.50	10,216.50	11,300
2250	18" x 44"				20	3.600		12,500	206	113	12,819	14,200
2300	24" x 52"				16	4.500		13,300	258	142	13,700	15,300
2500	40' span, 12" x 52"				20	3.600		16,200	206	113	16,519	18,200
2550	18" x 52"				16	4.500		16,700	258	142	17,100	18,900
2600	24" x 52"				12	6		17,800	345	189	18,334	20,300

03 41 33.15 Precast Columns

				R034105-30								
0010	Precast Columns											
0020	Rectangular to 12' high, 16" x 16"			C-11	120	.600	L.F.	278	34.50	18.90	331.40	380
0050	24" x 24"				96	.750		370	43	23.50	436.50	500
0300	24" high, 28" x 28"				192	.375		415	21.50	11.80	448.30	500
0350	36" x 36"				144	.500		565	28.50	15.75	609.25	680

03 41 33.25 Precast Joists

				R034105-30								
0010	Precast Joists											
0015	40 psf L.L., 6" deep for 12' spans			C-12	600	.080	L.F.	33.50	4.21	.78	38.49	43.50
0050	8" deep for 16' spans				575	.083		55.50	4.40	.82	60.72	68.50
0100	10" deep for 20' spans				550	.087		97	4.59	.86	102.45	115
0150	12" deep for 24' spans				525	.091		133	4.81	.90	138.71	154

03 41 33.60 Precast Tees

				R034105-30								
0010	Precast Tees											
0020	Quad tee, short spans, roof			C-11	7200	.010	S.F.	11.20	.57	.32	12.09	13.55
0050	Floor				7200	.010		11.20	.57	.32	12.09	13.55
0200	Double tee, floor members, 60' span				8400	.009		12.70	.49	.27	13.46	15
0250	80' span				8000	.009		17.35	.52	.28	18.15	20

03 41 Precast Structural Concrete

03 41 33 – Precast Structural Pretensioned Concrete

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
		Crew			Labor	Equipment			
03 41 33.60 Precast Tees									
0300	Roof members, 30' span	G-11	4800	.015	S.F.	13.95	.86	.47	15.28
0350	50' span		6400	.011		12.15	.64	.35	13.14
0400	Wall members, up to 55' high		3600	.020		16.60	1.15	.63	18.38
0500	Single tee roof members, 40' span		3200	.023		17.90	1.29	.71	19.90
0550	80' span		5120	.014		19.80	.81	.44	21.05
0600	100' span		6000	.012		29.50	.69	.38	30.57
0650	120' span		6000	.012		31.50	.69	.38	32.57
1000	Double tees, floor members								
1100	Lightweight, 20" x 8" wide, 45' span	G-11	20	3,600	Ea.	4,425	206	113	4,744
1150	24" x 8" wide, 50' span		18	4		4,925	229	126	5,280
1200	32" x 10" wide, 60' span		16	4,500		7,375	258	142	7,775
1250	Standard weight, 12" x 8" wide, 20' span		22	3,273		1,800	187	103	2,090
1300	16" x 8" wide, 25' span		20	3,600		2,225	206	113	2,544
1350	18" x 8" wide, 30' span		20	3,600		2,675	206	113	2,994
1400	20" x 8" wide, 45' span		18	4		4,025	229	126	4,380
1450	24" x 8" wide, 50' span		16	4,500		4,475	258	142	4,875
1500	32" x 10" wide, 60' span		14	5,143		6,700	294	162	7,156
2000	Roof members								
2050	Lightweight, 20" x 8" wide, 40' span	G-11	20	3,600	Ea.	3,925	206	113	4,244
2100	24" x 8" wide, 50' span		18	4		4,925	229	126	5,280
2150	32" x 10" wide, 60' span		16	4,500		7,375	258	142	7,775
2200	Standard weight, 12" x 8" wide, 30' span		22	3,273		2,675	187	103	2,965
2250	16" x 8" wide, 30' span		20	3,600		2,825	206	113	3,144
2300	18" x 8" wide, 30' span		20	3,600		2,950	206	113	3,269
2350	20" x 8" wide, 40' span		18	4		3,575	229	126	3,930
2400	24" x 8" wide, 50' span		16	4,500		4,475	258	142	4,875
2450	32" x 10" wide, 60' span		14	5,143		6,700	294	162	7,156

03 45 Precast Architectural Concrete

03 45 13 – Faced Architectural Precast Concrete

03 45 13.50 Precast Wall Panels

0010	PRECAST WALL PANELS	R034513-10							
0050	Uninsulated, smooth gray								
0150	Low rise, 4' x 8' x 4" thick	G-11	320	.225	S.F.	31.50	12.90	7.10	51.50
0210	8' x 8', 4" thick		576	.125		31	7.15	3.94	42.09
0250	8' x 16' x 4" thick		1024	.070		31	4.03	2.22	37.25
0600	High rise, 4' x 8' x 4" thick		288	.250		31.50	14.30	7.90	53.70
0650	8' x 8' x 4" thick		512	.141		31	8.05	4.43	43.48
0700	8' x 16' x 4" thick		768	.094		31	5.35	2.95	39.30
0750	10' x 20', 6" thick		1400	.051		52.50	2.94	1.62	57.06
0800	Insulated panel, 2" polystyrene, add					1.22			1.22
0850	2" urethane, add					.74			.74
1200	Finishes, white, add					3.54			3.54
1250	Exposed aggregate, add					.77			.84
1300	Granite faced, domestic, add					30.50			30.50
1350	Brick faced, modular, red, add					4.83			4.83
2200	Fiberglass reinforced cement with urethane core								
2210	R20, 8' x 8', 5" plain finish	E-2	750	.075	S.F.	29.50	4.27	2.26	36.03
2220	Exposed aggregate or brick finish		600	.093	"	48	5.35	2.83	56.18
									64

03 47 Site-Cast Concrete

03 47 13 – Tilt-Up Concrete

03 47 13.50 Tilt-Up Wall Panels		R034713-20	Daily	Labor-	Unit	Material	2020	Bare Costs	Total	Total
Crew	Output		Hours	Unit	Labor		Equipment			
0010	TILT-UP WALL PANELS									
0015	Wall panel construction, walls only, 5-1/2" thick		C-14	1600	.090	S.F.	6.40	4.62	.93	11.95
0100	7-1/2" thick			1550	.093		7.95	4.77	.96	13.68
0500	Walls and columns, 5-1/2" thick walls, 12" x 12" columns			1565	.092		9.45	4.73	.95	15.13
0550	7-1/2" thick wall, 12" x 12" columns			1370	.105		11.60	5.40	1.08	18.08
0800	Columns only, site precast, 12" x 12"			200	.720	L.F.	22.50	37	7.45	66.95
0850	16" x 16"			105	1.371	"	33	70.50	14.15	117.65

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.	35.50	59	15.30	109.80
0850	8' long			24	1.333		81	69	17.85	167.85
1000	6" wide x 8" high x 4' long			26	1.231		58.50	63.50	16.45	138.45
1050	10' long			22	1.455		149	75.50	19.45	243.95
1200	8" wide x 8" high x 4' long			24	1.333		61	69	17.85	147.85
1250	12' long			20	1.600		203	83	21.50	307.50
1275	For custom sizes, types, colors, or finishes of precast lintels, add						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.	23	10.70		33.70
0650	11" wide			60	.267		37	12.50		49.50

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 Corp	1000	.016	S.F.	3.68	.85		4.53
0100	1-1/2" thick			975	.016		5.60	.87		6.47
0150	T&G, 2" thick			950	.017		3.33	.90		4.23
0200	2-1/2" thick			925	.017		3.71	.92		4.63
0250	3" thick			900	.018		4.15	.95		5.10
1000	Bulb tee, sub-purlin and grout, 6' span, add	E-1	5000	.005			2.22	.27	.03	2.52
1100	8' span	"	4200	.006			2.22	.32	.04	2.58

03 51 16 – Gypsum Concrete Roof Decks

03 51 16.50 Gypsum Roof Deck

0010	GYPSUM ROOF DECK									
1000	Poured gypsum, 2" thick		C-8	6000	.009	S.F.	1.77	.44	.07	2.28
1100	3" thick			"	4800	.012	"	2.65	.55	3.29

03 52 Lightweight Concrete Roof Insulation

03 52 16 – Lightweight Insulating Concrete

03 52 16.13 Lightweight Cellular Insulating Concrete			Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P	
0010	LIGHTWEIGHT CELLULAR INSULATING CONCRETE	R035216-10									
0020	Portland cement and foaming agent	[G]	C-8	50	1.120	C.Y.	136	52.50	8.20	196.70	286

03 52 16.16 Lightweight Aggregate Insulating Concrete

0010 LIGHTWEIGHT AGGREGATE INSULATING CONCRETE		R035216-10									
0100	Poured vermiculite or perlite, field mix,	[G]	C-8	50	1.120	C.Y.	264	52.50	8.20	324.70	375
0110	1:6 field mix	[G]	10000	.006	S.F.	1.47	.26	.04	1.77	2.05	
0200	Ready mix, 1:6 mix, roof fill, 2" thick	[G]	7700	.007		2.20	.34	.05	2.59	2.99	
0250	3" thick	[G]	2 Carp	.1500	.011		.62	.57	1.19	1.53	
0400	Expanded volcanic glass rock, 1" thick	[G]	"	.1200	.013		1.85	.71	2.56	3.10	
0450	3" thick	[G]									

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	[G-10B]	1000	.040	S.F.	.14	1.81	.31	2.26	3.19
0450	1/2" thick		950	.042		.37	1.91	.33	2.61	3.61
0500	3/4" thick		850	.047		.56	2.13	.37	3.06	4.19
0600	1" thick		750	.053		.74	2.41	.42	3.57	4.87
0800	Granolithic topping, on fresh or cured concrete, 1:1:1-1/2 mix, 1/2" thick		590	.068		.41	3.07	.53	4.01	5.60
0820	3/4" thick		580	.069		.62	3.12	.54	4.28	5.90
0850	1" thick		575	.070		.82	3.15	.55	4.52	6.20
0950	2" thick		500	.080		1.65	3.62	.63	5.90	7.90
1200	Heavy duty, 1:1:2, 3/4" thick, preshrunk, gray, 20 M.S.F.		320	.125		.95	5.65	.98	7.58	10.55
1300	100 M.S.F.		380	.105		.56	4.76	.83	6.15	8.60

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.	.44	.11	.02	.57	.67
0500	3/4" thick		20000	.003		.66	.13	.02	.81	.95
0600	1" thick		16000	.004		.88	.16	.03	1.07	1.24
1400	Hand placed, 1/2" thick	C-18	450	.020		.44	.85	.28	1.57	2.07
1500	3/4" thick		"	.300	.030		.66	1.27	.43	2.36

03 54 16 – Hydraulic Cement Underlayment

03 54 16.50 Cement Underlayment

0010 CEMENT UNDERLAYMENT										
2510	Underlayment, P.C. based, self-leveling, 4100 psi, pumped, 1/4" thick	C-8	20000	.003	S.F.	1.75	.13	.02	1.90	2.15
2520	1/2" thick		19000	.003		3.50	.14	.02	3.66	4.09
2530	3/4" thick		18000	.003		5.25	.15	.02	5.42	6.05
2540	1" thick		17000	.003		7	.15	.02	7.17	7.95
2550	1-1/2" thick		15000	.004		10.50	.17	.03	10.70	11.85
2560	Hand placed, 1/2" thick	C-18	450	.020		3.50	.85	.28	4.63	5.45
2610	Topping, P.C. based, self-leveling, 6100 psi, pumped, 1/4" thick	C-8	20000	.003		2.09	.13	.02	2.24	2.52
2620	1/2" thick		19000	.003		4.18	.14	.02	4.34	4.83
2630	3/4" thick		18000	.003		6.25	.15	.02	6.42	7.15
2660	1" thick		17000	.003		8.35	.15	.02	8.52	9.45

03 54 Cast Underlayment

03 54 16 – Hydraulic Cement Underlayment

03 54 16.50 Cement Underlayment		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
2670	1-1/2" thick	C-8	15000	.004	S.F.	12.55	.17	.03	12.75
2680	Hand placed, 1/2" thick	C-18	450	.020	"	4.18	.85	.28	5.31

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	1 Cefi	35	.229	S.F.	7.60	11.40		19	25
0300	Non-shrink, non-metallic, 1" deep	"	25	.320	"	15.25	16		31.25	40.50
0350	2" deep	"	25	.320	"	24	16		40	50

03 62 16 – Metallic Non-Shrink Grouting

03 62 16.50 Grout, Metallic Non-Shrink

0010	GROUT, METALLIC NON-SHRINK	1 Cefi	35	.229	S.F.	12.05	11.40		23.45	30
0020	Column & machine bases, non-shrink, metallic, 1" deep	"	25	.320	"	24	16		40	50
0050	2" deep	"	25	.320	"	24	16		40	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	2 Skwk	72	.222	Ea.	4.78	12.20		16.98	23.50
1530	For fastener 3/4" diam. x 6" embedment	"	66	.242	"	7.15	13.30		20.45	28
1535	1" diam. x 8" embedment	"	60	.267	"	14.35	14.65		29	38
1540	1-1/4" diam. x 10" embedment	"	54	.296	"	24	16.25		40.25	51
1545	1-3/4" diam. x 12" embedment	"	48	.333	"	28.50	18.30		46.80	59
1550	14" embedment	"	42	.381	"	38	21		59	73.50
1555	2" diam. x 12" embedment	"	32	.500	"	48	27.50		75.50	94
1560	18" embedment	"								

03 81 Concrete Cutting

03 81 13 – Flat Concrete Sawing

03 81 13.50 Concrete Floor/Slab Cutting

0010	CONCRETE FLOOR/SLAB CUTTING	B-89	1060	.015	L.F.	.12	.76	.98	1.86	2.33
0050	Includes blade cost, layout and set-up time									
0300	Saw cut concrete slabs, plain, up to 3" deep		3180	.005		.04	.25	.33	.62	.78
0320	Each additional inch of depth									
0400	Mesh reinforced, up to 3" deep		980	.016		.13	.82	1.06	2.01	2.53
0420	Each additional inch of depth		2940	.005		.04	.27	.35	.66	.85
0500	Rod reinforced, up to 3" deep		800	.020		.17	1	1.29	2.46	3.10
0520	Each additional inch of depth		2400	.007		.06	.33	.43	.82	1.03

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.	249		249	274
3040	18" diameter						405		405	445
3080	24" diameter						585		585	645
3120	30" diameter						865		865	950
3160	36" diameter						1,150		1,150	1,250

03 81 Concrete Cutting

03 81 13 – Flat Concrete Sawing

03 81 13.75 Concrete Saw Blades	3200	42" diameter	Daily	Labor-	Unit	2020 Bare Costs			Total	
			Output	Hours		Material	Labor	Equipment		
			Eq.							
						2,450			2,450	2,700

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	B-89B	250	.064	L.F.	.04	3.21	6	9.25	11.45
0800	Concrete walls, hydraulic saw, plain, per inch of depth		150	.107	"	.06	5.35	10.05	15.46	19.10
0820	Rod reinforcing, per inch of depth									

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	B-89A	17	.941	Eq.	.20	45.50	6.70	52.40	76.50
0020	Reinforced concrete slab, up to 6" thick									
0100	1" diameter core									
0150	For each additional inch of slab thickness in same hole, add		1440	.011		.03	.54	.08	.65	.94
0200	2" diameter core		16.50	.970		.26	47	6.90	54.16	79
0250	For each additional inch of slab thickness in same hole, add		1080	.015		.04	.72	.11	.87	1.25
0300	3" diameter core		16	1		.40	48.50	7.15	56.05	81.50
0350	For each additional inch of slab thickness in same hole, add		720	.022		.07	1.08	.16	1.31	1.86
0500	4" diameter core		15	1.067		.45	51.50	7.60	59.55	87
0550	For each additional inch of slab thickness in same hole, add		480	.033		.07	1.62	.24	1.93	2.78
0700	6" diameter core		14	1.143		.65	55.50	8.15	64.30	93
0750	For each additional inch of slab thickness in same hole, add		360	.044		.11	2.15	.32	2.58	3.72
0900	8" diameter core		13	1.231		1.07	59.50	8.80	69.37	101
0950	For each additional inch of slab thickness in same hole, add		288	.056		.18	2.69	.40	3.27	4.70
1100	10" diameter core		12	1.333		1.20	64.50	9.50	75.20	109
1150	For each additional inch of slab thickness in same hole, add		240	.067		.20	3.23	.48	3.91	5.60
1300	12" diameter core		11	1.455		1.84	70.50	10.40	82.74	119
1350	For each additional inch of slab thickness in same hole, add		206	.078		.31	3.77	.55	4.63	6.65
1500	14" diameter core		10	1.600		1.84	77.50	11.40	90.74	132
1550	For each additional inch of slab thickness in same hole, add		180	.089		.31	4.31	.63	5.25	7.55
1700	18" diameter core		9	1.778		3.06	86	12.70	101.76	147
1750	For each additional inch of slab thickness in same hole, add		144	.111		.51	5.40	.79	6.70	9.55
1754	24" diameter core		8	2		4.15	97	14.30	115.45	166
1756	For each additional inch of slab thickness in same hole, add		120	.133		.69	6.45	.95	8.09	11.55
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	Eq.	.27	44.50	6.55	51.32	74.50
1790	For each additional inch of plank thickness in same hole, add		3840	.004		.03	.20	.03	.26	.37
1794	2" diameter core		17.25	.928		.35	45	6.60	51.95	75.50
1796	For each additional inch of plank thickness in same hole, add		2880	.006		.04	.27	.04	.35	.50
1800	3" diameter core		17	.941		.53	45.50	6.70	52.73	77
1810	For each additional inch of plank thickness in same hole, add		1920	.008		.07	.40	.06	.53	.75
1820	4" diameter core		16.50	.970		.60	47	6.90	54.50	79.50
1830	For each additional inch of plank thickness in same hole, add		1280	.013		.07	.61	.09	.77	1.09
1840	6" diameter core		15.50	1.032		.87	50	7.35	58.22	84.50
1850	For each additional inch of plank thickness in same hole, add		960	.017		.11	.81	.12	1.04	1.47
1860	8" diameter core		15	1.067		1.43	51.50	7.60	60.53	88
1870	For each additional inch of plank thickness in same hole, add		768	.021		.18	1.01	.15	1.34	1.88

03 82 Concrete Boring

03 82 13 – Concrete Core Drilling

03 82 13.10 Core Drilling		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Ind O&P
		B-89A	14	1,143	Ea.		Labor –	Equipment	Total	
1880	10" diameter core					1.60	55.50	8.15	65.25	94.50
1890	For each additional inch of plank thickness in same hole, add		640	.025		.20	1.21	.18	1.59	2.25
1900	12" diameter core			13.50	1.185		2.45	57.50	8.45	68.40
1910	For each additional inch of plank thickness in same hole, add		548	.029		.31	1.42	.21	1.94	2.70
3000	Bits for core drilling, included in drilling line items:									
3010	Diamond, premium, 1" diameter				Ea.	80.50			80.50	89
3020	2" diameter					104			104	114
3030	3" diameter					159			159	175
3040	4" diameter					180			180	198
3060	6" diameter					262			262	288
3080	8" diameter					430			430	470
3110	10" diameter					480			480	530
3120	12" diameter					735			735	810
3140	14" diameter					735			735	810
3180	18" diameter					1,225			1,225	1,350
3240	24" diameter					1,650			1,650	1,825

03 82 16 – Concrete Drilling

03 82 16.10 Concrete Impact Drilling

CONCRETE IMPACT DRILLING		1 Carp	75	.107	Ea.	.07	5.65		5.72	8.60
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									
0150	For each additional inch of depth in same hole, add		430	.019		.02	.99		1.01	1.51
0200	3/8" diameter		63	.127		.05	6.75		6.80	10.20
0250	For each additional inch of depth in same hole, add		340	.024		.01	1.25		1.26	1.89
0300	1/2" diameter		50	.160		.05	8.50		8.55	12.85
0350	For each additional inch of depth in same hole, add		250	.032		.01	1.70		1.71	2.57
0400	5/8" diameter		48	.167		.10	8.85		8.95	13.40
0450	For each additional inch of depth in same hole, add		240	.033		.02	1.77		1.79	2.69
0500	3/4" diameter		45	.178		.11	9.45		9.56	14.30
0550	For each additional inch of depth in same hole, add		220	.036		.03	1.93		1.96	2.93
0600	7/8" diameter		43	.186		.17	9.90		10.07	15.05
0650	For each additional inch of depth in same hole, add		210	.038		.04	2.03		2.07	3.09
0700	1" diameter		40	.200		.18	10.65		10.83	16.15
0750	For each additional inch of depth in same hole, add		190	.042		.04	2.24		2.28	3.41
0800	1-1/4" diameter		38	.211		.33	11.20		11.53	17.15
0850	For each additional inch of depth in same hole, add		180	.044		.08	2.36		2.44	3.64
0900	1-1/2" diameter		35	.229		.43	12.15		12.58	18.70
0950	For each additional inch of depth in same hole, add		165	.048		.11	2.58		2.69	3.99
1000	For ceiling installations, add						40%			

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 RO40513-10.
- 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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04 01 Maintenance of Masonry

04 01 20 – Maintenance of Unit Masonry

		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
							Labor	Equipment	Total	
04 01 20.20 Pointing Masonry										
0010 POINTING MASONRY										
0300	Cut and repoint brick, hard mortar, running bond	1 Bric	80	.100	S.F.	.57	5.20		5.77	8.55
0320	Common bond		77	.104		.57	5.40		5.97	8.85
0360	Flemish bond		70	.114		.60	5.95		6.55	9.65
0400	English bond		65	.123		.60	6.40		7	10.35
0600	Soft old mortar, running bond		100	.080		.57	4.16		4.73	6.95
0620	Common bond		96	.083		.57	4.34		4.91	7.20
0640	Flemish bond		90	.089		.60	4.63		5.23	7.65
0680	English bond		82	.098		.60	5.10		5.70	8.35
0700	Stonework, hard mortar		140	.057	L.F.	.76	2.97		3.73	5.35
0720	Soft old mortar		160	.050		.76	2.60		3.36	4.78
1000	Repoint, mask and grout method, running bond		95	.084	S.F.	.76	4.38		5.14	7.50
1020	Common bond		90	.089		.76	4.63		5.39	7.85
1040	Flemish bond		86	.093		.80	4.84		5.64	8.25
1060	English bond		77	.104		.80	5.40		6.20	9.10
2000	Scrub coat, sand grout on walls, thin mix, brushed		120	.067		3.59	3.47		7.06	9.20
2020	Troweled		98	.082		4.99	4.25		9.24	11.95
04 01 20.30 Pointing CMU										
0010 POINTING CMU										
0300	Cut and repoint block, hard mortar, running bond	1 Bric	190	.042	S.F.	.23	2.19		2.42	3.58
0310	Stacked bond		200	.040		.23	2.08		2.31	3.42
0600	Soft old mortar, running bond		230	.035		.23	1.81		2.04	3
0610	Stacked bond		245	.033		.23	1.70		1.93	2.84
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	2.69	.89	3.63	5.10
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.		1.73		1.73	2.63
0120	Clean and mask joint		2500	.003		.13	.17		.30	.39
0130	Epoxy paste and 1/4" FRP rod		240	.033		2.11	1.73		3.84	4.95
0132	3/8" FRP rod		160	.050		2.98	2.60		5.58	7.25
0140	Remove masking		14400	.001			.03		.03	.04
0300	Structural fabric method									
0310	Primer	1 Bric	600	.013	S.F.	1.08	.69		1.77	2.23
0320	Apply filling/leveling paste		720	.011		.89	.58		1.47	1.86
0330	Epoxy, glass fiber fabric		720	.011		9.85	.58		10.43	11.75
0340	Carbon fiber fabric		720	.011		23.50	.58		24.08	27
04 01 20.52 Cleaning Masonry										
0010 CLEANING MASONRY										
0200	By chemical, brush and rinse, new work, light construction dust	B-1	1000	.016	S.F.	.06	.75		.81	1.20
0220	Medium construction dust		800	.020		.08	.94		1.02	1.51
0240	Heavy construction dust, drips or stains		600	.027		.11	1.25		1.36	2.02
0260	Low pressure wash and rinse, light restoration, light soil		800	.020		.14	.94		1.08	1.58
0270	Average soil, biological staining		400	.040		.22	1.88		2.10	3.08
0280	Heavy soil, biological and mineral staining, paint		330	.048		.29	2.27		2.56	3.77
0300	High pressure wash and rinse, heavy restoration, light soil		600	.027		.10	1.25		1.35	2.01
0310	Average soil, biological staining		400	.040		.15	1.88		2.03	3
0320	Heavy soil, biological and mineral staining, paint		250	.064		.20	.3		3.20	4.77
0400	High pressure wash, water only, light soil	C-29	500	.016		.67	.19	.86	1.22	
0420	Average soil, biological staining		375	.021		.90	.26	1.16	1.63	

04 01 Maintenance of Masonry

04 01 20 – Maintenance of Unit Masonry

				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
				Crew				Labor	Equipment	Total		
04 01 20.52 Cleaning Masonry												
0440	Heavy soil, biological and mineral staining, paint		G-29	250	.032	S.F.		1.35	.39	1.74	2.45	
0800	High pressure water and chemical, light soil			450	.018		.17	.75	.22	1.14	1.55	
0820	Average soil, biological staining			300	.027		.26	1.12	.32	1.70	2.34	
0840	Heavy soil, biological and mineral staining, paint		↓	200	.040		.35	1.68	.48	2.51	3.44	
1200	Sandblast, wet system, light soil		J-6	1750	.018		.34	.84	.17	1.35	1.83	
1220	Average soil, biological staining			1100	.029		.51	1.34	.27	2.12	2.87	
1240	Heavy soil, biological and mineral staining, paint			700	.046		.69	2.10	.43	3.22	4.36	
1400	Dry system, light soil			2500	.013		.34	.59	.12	1.05	1.39	
1420	Average soil, biological staining			1750	.018		.51	.84	.17	1.52	2.02	
1440	Heavy soil, biological and mineral staining, paint		↓	1000	.032		.69	1.47	.30	2.46	3.28	
1800	For walnut shells, add						.92			.92	1.01	
1820	For corn chips, add						.96			.96	1.06	
2000	Steam cleaning, light soil		A-1H	750	.011			.45	.10	.55	.78	
2020	Average soil, biological staining			625	.013			.54	.12	.66	.94	
2040	Heavy soil, biological and mineral staining			375	.021			.90	.20	1.10	1.57	
4000	Add for masking doors and windows		1 Clab	800	.010		.07	.42		.49	.71	
4200	Add for pedestrian protection					Job				10%	10%	

04 01 20.70 Brick Washing

				R040130-10								
				1 Bric	560	.014	S.F.	.05	.74		.79	1.19
				400	.020			.07	1.04		1.11	1.66
0010	BRICK WASHING			↓	600	.013	↓	.08	.69		.77	1.14
0012	Acid cleanser, smooth brick surface						Gal.	10.55			10.55	11.60
0050	Rough brick											
0060	Stone, acid wash											
1000	Muriatic acid, price per gallon in 5 gallon lots											

04 05 Common Work Results for Masonry

04 05 05 – Selective Demolition for Masonry

				R024119-10								
				2 Clab	32	.500	L.F.		21		21	31.50
0200	Bond beams, 8" block with #4 bar											
0300	Concrete block walls, unreinforced, 2" thick			1200	.013	S.F.			.56		.56	.84
0310	4" thick			1150	.014				.59		.59	.88
0320	6" thick			1100	.015				.61		.61	.92
0330	8" thick			1050	.015				.64		.64	.96
0340	10" thick			1000	.016				.67		.67	1.01
0360	12" thick			950	.017				.71		.71	1.07
0380	Reinforced alternate courses, 2" thick			1130	.014				.60		.60	.90
0390	4" thick			1080	.015				.62		.62	.94
0400	6" thick			1035	.015				.65		.65	.98
0410	8" thick			990	.016				.68		.68	1.02
0420	10" thick			940	.017				.72		.72	1.08
0430	12" thick			890	.018				.76		.76	1.14
0440	Reinforced alternate courses & vertically 48" OC, 4" thick			900	.018				.75		.75	1.12
0450	6" thick			850	.019				.79		.79	1.19
0460	8" thick			800	.020				.84		.84	1.27
0480	10" thick			750	.021				.90		.90	1.35
0490	12" thick			700	.023				.96		.96	1.45
1000	Chimney, 16" x 16", soft old mortar		1 Clab	55	.145	C.F.			6.10		6.10	9.20
1020	Hard mortar			40	.200				8.40		8.40	12.65
1030	16" x 20", soft old mortar			55	.145				6.10		6.10	9.20
1040	Hard mortar			40	.200				8.40		8.40	12.65
1050	16" x 24", soft old mortar			55	.145				6.10		6.10	9.20

04 05 Common Work Results for Masonry

04 05 05 – Selective Demolition for Masonry

04 05 05.10 Selective Demolition	Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Ind O&P
						Labor	Equipment	Total		
1060 Hard mortar	1 Clb	40	.200	C.F.		8.40		8.40	12.65	
1080 20" x 20", soft old mortar		55	.145			6.10		6.10	9.20	
1100 Hard mortar		40	.200			8.40		8.40	12.65	
1110 20" x 24", soft old mortar		55	.145			6.10		6.10	9.20	
1120 Hard mortar		40	.200			8.40		8.40	12.65	
1140 20" x 32", soft old mortar		55	.145			6.10		6.10	9.20	
1160 Hard mortar		40	.200			8.40		8.40	12.65	
1200 48" x 48", soft old mortar		55	.145			6.10		6.10	9.20	
1220 Hard mortar		40	.200			8.40		8.40	12.65	
1250 Metal, high temp steel jacket, 24" diameter	E-2	130	.431	V.L.F.		24.50	13.05	37.55	52.50	
1260 60" diameter	"	60	.933			53.50	28.50	82	114	
1280 Flue lining, up to 12" x 12"	1 Clb	200	.040			1.68		1.68	2.53	
1282 Up to 24" x 24"		150	.053			2.25		2.25	3.37	
2000 Columns, 8" x 8", soft old mortar		48	.167			7		7	10.55	
2020 Hard mortar		40	.200			8.40		8.40	12.65	
2060 16" x 16", soft old mortar		16	.500			21		21	31.50	
2100 Hard mortar		14	.571			24		24	36	
2140 24" x 24", soft old mortar		8	1			42		42	63.50	
2160 Hard mortar		6	1.333			56		56	84.50	
2200 36" x 36", soft old mortar		4	2			84		84	127	
2220 Hard mortar		3	2.667			112		112	169	
2230 Alternate pricing method, soft old mortar		30	.267	C.F.		11.25		11.25	16.85	
2240 Hard mortar		23	.348	"		14.65		14.65	22	
3000 Copings, precast or masonry, to 8" wide										
3020 Soft old mortar	1 Clb	180	.044	L.F.		1.87		1.87	2.81	
3040 Hard mortar	"	160	.050	"		2.11		2.11	3.16	
3100 To 12" wide										
3120 Soft old mortar	1 Clb	160	.050	L.F.		2.11		2.11	3.16	
3140 Hard mortar	"	140	.057	"		2.41		2.41	3.61	
4000 Fireplace, brick, 30" x 24" opening										
4020 Soft old mortar	1 Clb	2	4	Eq.		168		168	253	
4040 Hard mortar		1.25	6.400			269		269	405	
4100 Stone, soft old mortar		1.50	5.333			225		225	335	
4120 Hard mortar		1	8			335		335	505	
5000 Veneers, brick, soft old mortar		140	.057	S.F.		2.41		2.41	3.61	
5020 Hard mortar		125	.064			2.69		2.69	4.05	
5050 Glass block, up to 4" thick		500	.016			.67		.67	1.01	
5100 Granite and marble, 2" thick		180	.044			1.87		1.87	2.81	
5120 4" thick		170	.047			1.98		1.98	2.98	
5140 Stone, 4" thick		180	.044			1.87		1.87	2.81	
5160 8" thick		175	.046			1.92		1.92	2.89	
5400 Alternate pricing method, stone, 4" thick		60	.133	C.F.		5.60		5.60	8.45	
5420 8" thick		85	.094	"		3.96		3.96	5.95	

04 05 13 – Masonry Mortaring

04 05 13.10 Cement

0010 CEMENT									
0100 Masonry, 70 lb. bag, T.L. lots					Bag	11.40		11.40	12.50
0150 L.T.L. lots						12.05		12.05	13.25
0200 White, 70 lb. bag, T.L. lots						18.65		18.65	20.50
0250 L.T.L. lots					▼	22.50		22.50	24.50

04 05 Common Work Results for Masonry

04 05 13 – Masonry Mortaring

		Daily Crew Output	Labor Hours	Unit	Material	2020 Labor	Bare Costs Equipment	Total	Total Incl O&P
04 05 13.20 Lime									
0010 LIME									
0020 Masons, hydrated, 50 lb. bag, T.L. lots					Bag	11.25		11.25	12.40
0050 L.T.L. lots						12.40		12.40	13.65
0200 Finish, double hydrated, 50 lb. bag, T.L. lots						11.90		11.90	13.10
0250 L.T.L. lots						13.10		13.10	14.40

04 05 13.23 Surface Bonding Masonry Mortaring

0010 SURFACE BONDING MASONRY MORTARING	1 Bric	540	.015	S.F.	.20	.77		.97	1.39
0020 Gray or white colors, not incl. block work									

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.	6.15	2.34		8.49	10.30
0200 Type N, 1:3 mix		143	.056		5.35	2.34		7.69	9.45
0300 Type O, 1:3 mix		143	.056		5.20	2.34		7.54	9.25
0400 Type PM, 1:1:6 mix, 2500 psi		143	.056		6.20	2.34		8.54	10.35
0500 Type S, 1/2:1:4 mix		143	.056	↓	6.55	2.34		8.89	10.75
2000 With Portland cement and lime									
2100 Type M, 1:1/4:3 mix	1 Brhe	143	.056	C.F.	9.10	2.34		11.44	13.55
2200 Type N, 1:1:6 mix, 750 psi		143	.056		7.30	2.34		9.64	11.60
2300 Type O, 1:2:9 mix (Pointing Mortar)		143	.056		8.75	2.34		11.09	13.20
2400 Type PL, 1:1/2:4 mix, 2500 psi		143	.056		6.35	2.34		8.69	10.55
2600 Type S, 1:1/2:4 mix, 1800 psi	↓	143	.056		8.55	2.34		10.89	13
2650 Pre-mixed, type S or N					6.25			6.25	6.90
2700 Mortar for glass block	1 Brhe	143	.056	↓	13.25	2.34		15.59	18.10
2900 Mortar for fire brick, dry mix, 10 lb. pail				Ea.	25			25	28

04 05 13.91 Masonry Restoration Mortaring

0010 MASONRY RESTORATION MORTARING									
0020 Masonry restoration mix					Lb.	.85		.85	.94
0050 White					"	1.40		1.40	1.54

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.	6.30		6.30	6.95
0050 Medium colors						7.05		7.05	7.75
0100 Dark colors						15.95		15.95	17.55

04 05 13.95 Sand

0010 SAND , screened and washed at pit									
0020 For mortar, per ton					Ton	21.50		21.50	24
0050 With 10 mile haul						42		42	46
0100 With 30 mile haul						67		67	74
0200 Screened and washed, at the pit					C.Y.	30		30	33
0250 With 10 mile haul						58.50		58.50	64
0300 With 30 mile haul						93.50		93.50	103

04 05 13.98 Mortar Admixtures

0010 MORTAR ADMIXTURES									
0020 Waterproofing admixture, per quart (1 qt. to 2 bags of masonry cement)					Qt.	4.10		4.10	4.51

04 05 16 – Masonry Grouting

0010 GROUTING									
0011 Bond beams & lintels, 8" deep, 6" thick, 0.15 C.F./L.F.	D-4	1480	.022	L.F.	.80	1.02	.13	1.95	2.56
0020 8" thick, 0.2 C.F./L.F.		1400	.023		1.29	1.08	.13	2.50	3.20

04 05 Common Work Results for Masonry

04 05 16 – Masonry Grouting

04 05 16.30 Grouting		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
						Labor	Equipment	Total		
0050	10" thick, 0.25 C.F./L.F.	D-4	1200	.027	L.F.	1.34	1.26	.16	2.76	3.54
0060	12" thick, 0.3 C.F./L.F.	↓	1040	.031	↓	1.61	1.45	.18	3.24	4.16
0200	Concrete block cores, solid, 4" thk., by hand, 0.067 C.F./S.F. of wall	D-8	1100	.036	S.F.	.36	1.74		2.10	3.03
0210	6" thick, pumped, 0.175 C.F./S.F.	D-4	720	.044		.94	2.09	.26	3.29	4.48
0250	8" thick, pumped, 0.258 C.F./S.F.		680	.047		1.38	2.22	.28	3.88	5.15
0300	10" thick, pumped, 0.340 C.F./S.F.		660	.048		1.82	2.29	.29	4.40	5.75
0350	12" thick, pumped, 0.422 C.F./S.F.		640	.050		2.26	2.36	.29	4.91	6.35
0500	Cavity walls, 2" space, pumped, 0.167 C.F./S.F. of wall		1700	.019		.89	.89	.11	1.89	2.44
0550	3" space, 0.250 C.F./S.F.		1200	.027		1.34	1.26	.16	2.76	3.54
0600	4" space, 0.333 C.F./S.F.		1150	.028		1.78	1.31	.16	3.25	4.12
0700	6" space, 0.500 C.F./S.F.		800	.040	↓	2.68	1.89	.24	4.81	6.05
0800	Door frames, 3' x 7' opening, 2.5 C.F. per opening		60	.533	Opng.	13.40	25	3.14	41.54	56
0850	6' x 7' opening, 3.5 C.F. per opening		45	.711	"	18.75	33.50	4.19	56.44	75.50
2000	Grout, C476, for bond beams, lintels and CMU cores		350	.091	C.F.	5.35	4.31	.54	10.20	13

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.	1.62	3.15		4.77	6.55
0030	12" long		131	.061		1.80	3.18		4.98	6.80
0040	5/8" diameter, 8" long		129	.062		3.39	3.23		6.62	8.60
0050	12" long		127	.063		4.18	3.28		7.46	9.55
0060	3/4" diameter, 8" long		127	.063		4.18	3.28		7.46	9.55
0070	12" long	↓	125	.064	↓	5.20	3.33		8.53	10.80

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	E	16.70	39.50		56.20	78.50
0100	24 ga.		10.50	.762		10.35	39.50		49.85	71.50
0150	16 ga.		10.50	.762		31.50	39.50		71	95
0200	Buck anchors, galv., corrugated, 16 ga., 2" bend, 8" x 2"		10.50	.762		65	39.50		104.50	132
0250	8" x 3"		10.50	.762		69.50	39.50		109	137
0660	Cavity wall, Z-type, galvanized, 6" long, 1/8" diam.		10.50	.762		25	39.50		64.50	87.50
0670	3/16" diameter		10.50	.762		31.50	39.50		71	94.50
0680	1/4" diameter		10.50	.762		40.50	39.50		80	105
0850	8" long, 3/16" diameter		10.50	.762		27	39.50		66.50	90
0855	1/4" diameter		10.50	.762		49	39.50		88.50	114
1000	Rectangular type, galvanized, 1/4" diameter, 2" x 6"		10.50	.762		80	39.50		119.50	148
1050	4" x 6"	↓	10.50	.762		91.50	39.50		131	160
1100	3/16" diameter, 2" x 6"		10.50	.762		54.50	39.50		94	120
1150	4" x 6"		10.50	.762		55	39.50		94.50	121
1500	Rigid partition anchors, plain, 8" long, 1" x 1/8"		10.50	.762		241	39.50		280.50	325
1550	1" x 1/4"		10.50	.762		325	39.50		364.50	415
1580	1-1/2" x 1/8"		10.50	.762		261	39.50		300.50	345
1600	1-1/2" x 1/4"		10.50	.762		340	39.50		379.50	435
1650	2" x 1/8"		10.50	.762		330	39.50		369.50	425
1700	2" x 1/4"	↓	10.50	.762	↓	445	39.50		484.50	550

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.	.56	.93		1.49	2.02
0020	#5 & #6 bars		800	.010		.56	.52		1.08	1.41
0050	Placed vertical, #3 & #4 bars		350	.023		.56	1.19		1.75	2.42
0060	#5 & #6 bars	↓	650	.012	↓	.56	.64		1.20	1.59

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	Material	2020 Bare Costs		Total	Total Incl O&P
						Labor	Equipment			
0200	Joint reinforcing, regular truss, to 6" wide, mill std galvanized	1 Bric	30	.267	C.L.F.	23	13.90		36.90	46.50
0250	12" wide		20	.400		29.50	21		50.50	64
0400	Cavity truss with drip section, to 6" wide		30	.267		23	13.90		36.90	46.50
0450	12" wide		20	.400		26.50	21		47.50	60.50

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.	2.46	1.04		3.50	4.29
0025	"T" shaped		320	.025		1.22	1.30		2.52	3.31
0030	Cross-shaped for CMU units		280	.029		1.66	1.49		3.15	4.08
0050	PVC, for double wythe 8" minimum wall (Brick/CMU)		400	.020		1.70	1.04		2.74	3.45
0120	"T" shaped		320	.025		.92	1.30		2.22	2.98
0160	Cross-shaped for CMU units		280	.029		1.14	1.49		2.63	3.50

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	Ed.	41	13.90		54.90	66
0050	5" x 8-1/8"		25	.320		53	16.65		69.65	84
0100	2-1/4" x 25"		25	.320		89	16.65		105.65	124
0150	5" x 16-1/2"		22	.364		61.50	18.95		80.45	96.50
0175	5" x 24"		22	.364		93	18.95		111.95	131
0200	6" x 16-1/2"		22	.364		99.50	18.95		118.45	138
0250	7-3/4" x 16-1/2"		20	.400		92.50	21		113.50	134
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		230	16.65		246.65	279
1050	8" x 8"		24	.333		257	17.35		274.35	310
1100	12" x 12"		23	.348		289	18.10		307.10	350
1150	12" x 6"		24	.333		279	17.35		296.35	330
1200	Foundation block vent, galv., 1-1/4" thk, 8" high, 16" long, no damper		30	.267		17.45	13.90		31.35	40
1250	For damper, add					3.34			3.34	3.67
1450	Drainage and ventilation fabric	2 Bric	1450	.011	S.F.	.82	.57		1.39	1.77

04 05 23.95 Wall Plugs

0010	WALL PLUGS (for nailing to brickwork)									
0020	25 ga., galvanized, plain	1 Bric	10.50	.762	C	26.50	39.50		66	89
0050	Wood filled	"	10.50	.762	"	73	39.50		112.50	141

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	670	1,275	1,945	2,675
0050	Red, 4" x 2-2/3" x 8", running bond			1.50	26.667		720	1,275	1,995	2,750
0100	Full header every 6th course (7.88/S.F.)	R042110-50		1.45	27.586		720	1,325	2,045	2,800
0150	English, full header every 2nd course (10.13/S.F.)			1.40	28.571		715	1,375	2,090	2,875
0200	Flemish, alternate header every course (9.00/S.F.)			1.40	28.571		715	1,375	2,090	2,875
0250	Flemish, alt. header every 6th course (7.13/S.F.)			1.45	27.586		720	1,325	2,045	2,800
0300	Full headers throughout (13.50/S.F.)			1.40	28.571		715	1,375	2,090	2,850
0350	Rowlock course (13.50/S.F.)			1.35	29.630		715	1,425	2,140	2,925
0400	Rowlock stretcher (4.50/S.F.)			1.40	28.571		725	1,375	2,100	2,875

04 21 Clay Unit Masonry

04 21 13 – Brick Masonry

		Daily Output	Labor Hours	Unit	Material	2020 Bare Costs		Total	Total Incl Q&P
		Crew			Labor	Equipment			
04 21 13.13 Brick Veneer Masonry									
0450	Soldier course (6.75/S.F.)	D-8	1.40	28.571	M	720	1,375	2,095	2,875
0500	Sailor course (4.50/S.F.)		1.30	30.769		725	1,475	2,200	3,025
0601	Buff or gray face, running bond (6.75/S.F.)		1.50	26.667		720	1,275	1,995	2,750
0700	Glazed face, 4" x 2-2/3" x 8", running bond		1.40	28.571		2,175	1,375	3,550	4,475
0750	Full header every 6th course (7.88/S.F.)		1.35	29.630		2,075	1,425	3,500	4,425
1000	Jumbo, 6" x 4" x 12" (3.00/S.F.)		1.30	30.769		1,950	1,475	3,425	4,375
1051	Norman, 4" x 2-2/3" x 12" (4.50/S.F.)		1.45	27.586		1,225	1,325	2,550	3,350
1100	Norwegian, 4" x 3-1/5" x 12" (3.75/S.F.)		1.40	28.571		1,650	1,375	3,025	3,900
1150	Economy, 4" x 4" x 8" (4.50/S.F.)		1.40	28.571		1,050	1,375	2,425	3,225
1201	Engineer, 4" x 3-1/5" x 8" (5.63/S.F.)		1.45	27.586		695	1,325	2,020	2,775
1251	Roman, 4" x 2" x 12" (6.00/S.F.)		1.50	26.667		1,300	1,275	2,575	3,375
1300	S.C.R., 6" x 2-2/3" x 12" (4.50/S.F.)		1.40	28.571		1,425	1,375	2,800	3,625
1350	Utility, 4" x 4" x 12" (3.00/S.F.)		1.08	37.037		1,850	1,775	3,625	4,725
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. comon, 4" x 2-2/3" x 8" (6.75/S.F.)	D-8	230	.174	S.F.	4.52	8.35	12.87	17.65
2020	Red, 4" x 2-2/3" x 8", running bond		220	.182		4.86	8.70	13.56	18.55
2050	Full header every 6th course (7.88/S.F.)		185	.216		5.65	10.35	16	22
2100	English, full header every 2nd course (10.13/S.F.)		140	.286		7.25	13.70	20.95	29
2150	Flemish, alternate header every course (9.00/S.F.)		150	.267		6.45	12.80	19.25	26.50
2200	Flemish, alt. header every 6th course (7.13/S.F.)		205	.195		5.15	9.35	14.50	19.85
2250	Full headers throughout (13.50/S.F.)		105	.381		9.65	18.25	27.90	38
2300	Rowlock course (13.50/S.F.)		100	.400		9.65	19.15	28.80	39.50
2350	Rowlock stretcher (4.50/S.F.)		310	.129		3.27	6.20	9.47	13
2400	Soldier course (6.75/S.F.)		200	.200		4.86	9.60	14.46	19.90
2450	Sailor course (4.50/S.F.)		290	.138		3.27	6.60	9.87	13.60
2600	Buff or gray face, running bond (6.75/S.F.)		220	.182		5.15	8.70	13.85	18.85
2700	Glazed face brick, running bond		210	.190		14	9.15	23.15	29.50
2750	Full header every 6th course (7.88/S.F.)		170	.235		16.30	11.30	27.60	35
3000	Jumbo, 6" x 4" x 12" running bond (3.00/S.F.)		435	.092		5.40	4.41	9.81	12.60
3050	Norman, 4" x 2-2/3" x 12" running bond (4.5/S.F.)		320	.125		6.65	6	12.65	16.45
3100	Norwegian, 4" x 3-1/5" x 12" (3.75/S.F.)		375	.107		6.05	5.10	11.15	14.40
3150	Economy, 4" x 4" x 8" (4.50/S.F.)		310	.129		4.63	6.20	10.83	14.50
3200	Engineer, 4" x 3-1/5" x 8" (5.63/S.F.)		260	.154		3.89	7.35	11.24	15.50
3250	Roman, 4" x 2" x 12" (6.00/S.F.)		250	.160		7.65	7.65	15.30	20
3300	S.C.R., 6" x 2-2/3" x 12" (4.50/S.F.)		310	.129		6.30	6.20	12.50	16.35
3350	Utility, 4" x 4" x 12" (3.00/S.F.)		360	.111		5.40	5.35	10.75	14
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 Clay Unit Masonry

04 21 13 – Brick Masonry

04 21 13.14 Thin Brick Veneer

		Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	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.	9.70	7.70		17.40	22
0100	Closure, 4" x 5/8" x 8"		110	.145		9.40	6.40		15.80	19.75
0110	Norman, 2-2/3" x 5/8" x 12"		110	.145		9.65	6.40		16.05	20
0120	Utility, 4" x 5/8" x 12"		125	.128		9.10	5.65		14.75	18.30
0130	Emperor, 4" x 3/4" x 16"		175	.091		10.30	4.04		14.34	17.20
0140	Super emperor, 8" x 3/4" x 16"	↓	195	.082	↓	11.15	3.62		14.77	17.55
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.	4.66	5.15		9.81	12.70
0210	Closure, 4" x 5/8" x 8"		165	.097		4.37	4.28		8.65	11.10
0220	Norman, 2-2/3" x 5/8" x 12"		165	.097		4.61	4.28		8.89	11.35
0230	Utility, 4" x 5/8" x 12"		185	.086		4.09	3.82		7.91	10.10
0240	Emperor, 4" x 3/4" x 16"		260	.062		5.25	2.72		7.97	9.80
0250	Super emperor, 8" x 3/4" x 16"	↓	285	.056	↓	6.15	2.48		8.63	10.40
0260	For L shaped corners with 4" return, add				L.F.	10			10	11
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.	26.50	41		67.50	91.50
0150	16" x 20" with one 8" x 12" flue		16	.1		42.50	47		89.50	118
0200	16" x 24" with two 8" x 8" flues		14	1.143		63	53.50		116.50	151
0250	20" x 20" with one 12" x 12" flue		13.70	1.168		49.50	55		104.50	138
0300	20" x 24" with two 8" x 12" flues		12	1.333		71	62.50		133.50	173
0350	20" x 32" with two 12" x 12" flues	↓	10	1.600	↓	87	75		162	210

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.	6.30	13.40		19.70	27.50
0100	12" x 8", 13.5 brick/V.L.F.		37	.432		9.45	20.50		29.95	41.50
0200	12" x 12", 20 brick/V.L.F.		25	.640		14	30		44	61
0300	16" x 12", 27 brick/V.L.F.		19	.842		18.90	39.50		58.40	81
0400	16" x 16", 36 brick/V.L.F.		14	1.143		25	53.50		78.50	109
0500	20" x 16", 45 brick/V.L.F.		11	1.455		31.50	68		99.50	138
0600	20" x 20", 56 brick/V.L.F.		9	1.778		39	83.50		122.50	169
0700	24" x 20", 68 brick/V.L.F.		7	2.286		47.50	107		154.50	216
0800	24" x 24", 81 brick/V.L.F.		6	2.667		56.50	125		181.50	253
1000	36" x 36", 182 brick/V.L.F.		3	5.333	↓	127	250		377	520

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.	5.05	4.95		10	13.05
0102	8" x 2.25" x 16", multicell		265	.151		17.55	7.25		24.80	30.50
0105	4" x 2.75" x 16"		412	.097		5.75	4.65		10.40	13.40
0107	8" x 2.75" x 16", multicell		295	.136		17.50	6.50		24	29
0110	4" x 4" x 16"		460	.087		3.80	4.17		7.97	10.50
0120	4" x 8" x 16"		533	.075		5.10	3.60		8.70	11.10
0122	4" x 8" x 16" multicell		327	.122		15.70	5.85		21.55	26
0125	Loadbearing, 6" x 4" x 16", grouted and reinforced		387	.103		11.60	4.95		16.55	20.50
0130	8" x 4" x 16", grouted and reinforced		327	.122		12.05	5.85		17.90	22
0132	10" x 4" x 16", grouted and reinforced		327	.122		27.50	5.85		33.35	39.50
0135	6" x 8" x 16", grouted and reinforced		440	.091		15.05	4.36		19.41	23
0140	8" x 8" x 16", grouted and reinforced	↓	400	.100	↓	16.05	4.79		20.84	25

04 21 Clay Unit Masonry

04 21 13 – Brick Masonry

04 21 13.30 Oversized Brick		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs		Total	Total Ind O&P
0145	Curtainwall/reinforced veneer, 6" x 4" x 16"	D-8	387	.103	S.F.	16.85	4.95		21.80	26
0150	8" x 4" x 16"		327	.122		19.95	5.85		25.80	31
0152	10" x 4" x 16"			327	.122	30.50	5.85		36.35	42.50
0155	6" x 8" x 16"			440	.091	21	4.36		25.36	29.50
0160	8" x 8" x 16"			400	.100	28.50	4.79		33.29	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	590					590	650
0050	Select	"		555					555	615

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.	5.25	7.85		13.10	17.65
0120	Bond beam		225	.178		4.44	8.50		12.94	17.80
0140	V cut bond beam		225	.178		4.34	8.50		12.84	17.65
0160	Stretcher quoin, 5-5/8" x 2-3/4" x 9-5/8"		245	.163		8.30	7.85		16.15	21
0180	Corner quoin		245	.163		8.25	7.85		16.10	21
0200	Corner, 45 degree, 4-5/8" x 2-3/4" x 10-7/16"		235	.170		8.25	8.15		16.40	21.50

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	605					605	665
0450	Economy, 4" x 4" x 8"			900					900	990
0510	Economy, 4" x 4" x 12"			1,425					1,425	1,550
0550	Jumbo, 6" x 4" x 12"			1,625					1,625	1,800
0610	Jumbo, 8" x 4" x 12"			1,625					1,625	1,800
0650	Norwegian, 4" x 3-1/5" x 12"			1,475					1,475	1,600
0710	Norwegian, 6" x 3-1/5" x 12"			1,725					1,725	1,900
0850	Standard glazed, plain colors, 4" x 2-2/3" x 8"			1,925					1,925	2,100
1000	Deep trim shades, 4" x 2-2/3" x 8"			2,350					2,350	2,600
1080	Jumbo utility, 4" x 4" x 12"			1,650					1,650	1,800
1120	4" x 8" x 8"			1,975					1,975	2,175
1140	4" x 8" x 16"			6,250					6,250	6,875
1260	Engineer, 4" x 3-1/5" x 8"			575					575	635
1350	King, 4" x 2-3/4" x 10"			600					600	660
1770	Standard modular, double glazed, 4" x 2-2/3" x 8"			2,950					2,950	3,250
1850	Jumbo, colored glazed ceramic, 6" x 4" x 12"			3,050					3,050	3,350
2050	Jumbo utility, glazed, 4" x 4" x 12"			6,125					6,125	6,725
2100	4" x 8" x 8"			7,200					7,200	7,925
2150	4" x 16" x 8"			7,875					7,875	8,675

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.	9	8.50		17.50	23
0100	4" thick		220	.182		13.50	8.70		22.20	28
0150	Glazed 2 sides		195	.205		16.40	9.85		26.25	33

04 21 Clay Unit Masonry

04 21 26 – Glazed Structural Clay Tile Masonry

04 21 26.10 Structural Facing Tile		Crew	Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Ind O&P
						Labor	Equipment	Total		
0250	6" thick	D-8	210	.190	S.F.	17.25	9.15	26.40	33	
0300	Glazed 2 sides		185	.216		21	10.35	31.35	38.50	
0400	8" thick		180	.222		23	10.65	33.65	41.50	
0500	Special shapes, group 1		400	.100	Ea.	7.80	4.79	12.59	15.80	
0550	Group 2		375	.107		12.75	5.10	17.85	22	
0600	Group 3		350	.114		17.50	5.50	23	27.50	
0650	Group 4		325	.123		36	5.90	41.90	49	
0700	Group 5		300	.133		43.50	6.40	49.90	57	
0750	Group 6		275	.145		59	6.95	65.95	75.50	
1000	Fire rated, 4" thick, 1 hr. rating		210	.190	S.F.	19	9.15	28.15	35	
1300	Acoustic, 4" thick		210	.190	"	40	9.15	49.15	58	
2000	8W series, 8" x 16", 1.125 pieces per S.F.									
2050	2" thick, glazed 1 side	D-8	360	.111	S.F.	9.95	5.35	15.30	19	
2100	4" thick, glazed 1 side		345	.116		14.35	5.55	19.90	24	
2150	Glazed 2 sides		325	.123		15.30	5.90	21.20	26	
2200	6" thick, glazed 1 side		330	.121		28	5.80	33.80	40	
2250	8" thick, glazed 1 side		310	.129		30.50	6.20	36.70	43	
2500	Special shapes, group 1		300	.133	Ea.	18.35	6.40	24.75	29.50	
2550	Group 2		280	.143		24.50	6.85	31.35	37.50	
2600	Group 3		260	.154		26	7.35	33.35	39.50	
2650	Group 4		250	.160		54	7.65	61.65	70.50	
2700	Group 5		240	.167		47.50	8	55.50	64	
2750	Group 6		230	.174		104	8.35	112.35	127	
3000	4" thick, glazed 1 side		345	.116	S.F.	16.75	5.55	22.30	27	
3100	Acoustic, 4" thick		345	.116	"	22.50	5.55	28.05	33	
3120	4W series, 8" x 8", 2.25 pieces per S.F.									
3125	2" thick, glazed 1 side	D-8	360	.111	S.F.	9.75	5.35	15.10	18.80	
3130	4" thick, glazed 1 side		345	.116		12.80	5.55	18.35	22.50	
3135	Glazed 2 sides		325	.123		17.10	5.90	23	28	
3140	6" thick, glazed 1 side		330	.121		17.35	5.80	23.15	28	
3150	8" thick, glazed 1 side		310	.129		26.50	6.20	32.70	38.50	
3155	Special shapes, group 1		300	.133	Ea.	8.25	6.40	14.65	18.80	
3160	Group 2		280	.143	"	9.65	6.85	16.50	21	
3200	For designer colors, add					25%				
3300	For epoxy mortar joints, add				S.F.	1.82		1.82	2	

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.	10.65	8.35	19	24.50	
0100	13" wide		80	.200		16.30	9.40	25.70	32	
0200	Coping, split type, glazed, 9" wide		90	.178		20.50	8.35	28.85	35	
0250	13" wide		80	.200		24.50	9.40	33.90	41	
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.	19.40	3.49	22.89	27	
0750	4" thick, standard		500	.080		6.80	3.83	10.63	13.25	
0800	6" thick		450	.089		9.05	4.26	13.31	16.40	
0850	8" thick		400	.100		11.25	4.79	16.04	19.60	
1000	Load bearing, 12" x 12", 4" thick, in walls		500	.080		6.30	3.83	10.13	12.70	
1050	In floors		750	.053		6.30	2.56	8.86	10.80	
1200	6" thick, in walls		450	.089		9.75	4.26	14.01	17.20	
1250	In floors		675	.059		9.75	2.84	12.59	15.05	
1400	8" thick, in walls		400	.100		11.90	4.79	16.69	20.50	

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	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
1450	In floors	D-8	575	.070	S.F.	11.90	3.33		15.23	18.15
1600	10" thick, in walls, special order		350	.114		28	5.50		33.50	39.50
1650	In floors, special order		500	.080		28	3.83		31.83	37
1800	12" thick, in walls, special order		300	.133		28.50	6.40		34.90	41
1850	In floors, special order		450	.089		28.50	4.26		32.76	38
2000	For reinforcing with steel rods, add to above					15%	5%			
2100	For smooth tile instead of scored, add					2.94			2.94	3.23
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	1 Tlf	135	.059	S.F.	5.20	2.93		8.13	10
0100	Square, hexagonal or lattice shapes, unglazed		130	.062		7.90	3.05		10.95	13.15
0300	Glazed, plain colors		125	.064		9.25	3.17		12.42	14.80
0400	Intense colors									

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.	1.55	3.20	4.75	6.55
0060	6" x 8" x 24"	G		600	.067		2.50	3.20	5.70	7.60
0070	8" x 8" x 24"	G		575	.070		3.22	3.33	6.55	8.60
0080	10" x 8" x 24"	G		575	.070		4	3.33	7.33	9.45
0090	12" x 8" x 24"	G		550	.073		4.83	3.49	8.32	10.60

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.	20.50	27	47.50	63
0230	2 piece, 16" x 16"			26	.615		21.50	29	50.50	67.50
0240	2 piece, with 8" x 12" flue, 16" x 20"			24	.667		35.50	31.50	67	86.50

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.	1.68	4.04	5.72	7.95
0200	4" thick			460	.087		2.16	4.17	6.33	8.70
0300	6" thick			440	.091		2.72	4.36	7.08	9.60
0350	8" thick			400	.100		2.73	4.79	7.52	10.25
0400	10" thick			330	.121		3.25	5.80	9.05	12.35
0450	12" thick		D-9	310	.155		4.72	7.25	11.97	16.20
1000	Reinforced, alternate courses, 4" thick		D-8	450	.089		2.34	4.26	6.60	9.05
1100	6" thick			430	.093		2.91	4.46	7.37	9.95
1150	8" thick			395	.101		2.94	4.85	7.79	10.60
1200	10" thick			320	.125		3.43	6	9.43	12.85
1250	12" thick		D-9	300	.160		4.90	7.50	12.40	16.80

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.	2.77	3.28	6.05	8
0130	8" high, 8" thick		"	565	.071		2.90	3.39	6.29	8.35
0150	12" thick		D-9	510	.094		4.09	4.41	8.50	11.20
0525	Lightweight, 6" thick		D-8	592	.068		2.90	3.24	6.14	8.10
0530	8" high, 8" thick		"	575	.070		3.41	3.33	6.74	8.80

04 22 Concrete Unit Masonry

04 22 10 – Concrete Masonry Units

04 22 10.16 Concrete Block, Bond Beam				Daily Crew	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
							Material	Labor	Equipment		
0550	12" thick			D-9	520	.092	L.F.	4.63	4.33		8.96
2000	Including grout and 2 #5 bars										
2100	Regular block, 8" high, 8" thick			D-8	300	.133	L.F.	5.35	6.40		11.75
2150	12" thick			D-9	250	.192		7.25	9		16.25
2500	Lightweight, 8" high, 8" thick			D-8	305	.131		5.90	6.30		12.20
2550	12" thick			D-9	255	.188		7.80	8.85		16.65

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.	16.20	29		45.20
0170	2 piece units, 16" x 20"				24	.667		22	31.50		53.50
0180	20" x 20"				22	.727		30.50	34		64.50
0190	22" x 24"				18	.889		45.50	41.50		87
0200	20" x 32"				14	1.143		53.50	53.50		107

04 22 10.19 Concrete Block, Insulation Inserts

0010	CONCRETE BLOCK, INSULATION INSERTS										
0100	Styrofoam, plant installed, add to block prices						S.F.	1.25		1.25	1.38
0200	8" x 16" units, 6" thick										
0250	8" thick							1.57		1.57	1.73
0300	10" thick							1.47		1.47	1.62
0350	12" thick							1.85		1.85	2.04
0500	8" x 8" units, 8" thick							1.40		1.40	1.54
0550	12" thick							1.47		1.47	1.62

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	4.79		8.02
0200	8" thick				340	.118		3.25	5.65		8.90
0250	12" thick				300	.133		5.60	6.40		12
0400	Embossed both sides			D-8	300	.133	S.F.	4.88	6.40		11.28
0500	8" thick				"	.145	"	6.10	6.95		15.05
0550	12" thick										13.05
1000	Fluted high strength										17.25
1100	8" x 16" x 4" thick, flutes 1 side,			D-8	345	.116	S.F.	4.11	5.55		9.66
1150	Flutes 2 sides				335	.119		5.40	5.70		12.90
1200	8" thick				300	.133		5.85	6.40		11.10
1250	For special colors, add							.67		.67	.73
1400	Deep grooved, smooth face										
1450	8" x 16" x 4" thick			D-8	345	.116	S.F.	2.97	5.55		8.52
1500	8" thick				"	.133	"	4.48	6.40		11.65
2000	Formblock, incl. inserts & reinforcing										
2100	8" x 16" x 8" thick			D-8	345	.116	S.F.	4.22	5.55		9.77
2150	12" thick				"	.129	"	5.50	6.20		13.05
2500	Ground face										
2600	8" x 16" x 4" thick			D-8	345	.116	S.F.	4.86	5.55		10.41
2650	6" thick				325	.123		4.90	5.90		10.80
2700	8" thick				300	.133		5.25	6.40		14.35
2750	12" thick			D-9	265	.181		6.15	8.50		15.45
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.	4.76	4.55		9.31

04 22 Concrete Unit Masonry

04 22 10 – Concrete Masonry Units

04 22 10.23 Concrete Block, Decorative		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
						Labor	Equipment	Total		
4150	6" thick	D-1	.160	.100 S.F.	6.25	4.69		10.94	14	
4200	8" thick		.155	.103	8	4.84		12.84	16.15	
4250	10" thick		.140	.114	14.10	5.35		19.45	23.50	
4300	12" thick		.130	.123	12.55	5.75		18.30	22.50	
4400	6" face height x 16" x 6" thick		.155	.103	5.80	4.84		10.64	13.75	
4450	8" thick		.150	.107	8.75	5		13.75	17.25	
4500	10" thick		.130	.123	14.90	5.75		20.65	25	
4550	12" thick		.120	.133	14.50	6.25		20.75	25.50	
5000	Split rib profile units, 1" deep ribs, 8 ribs									
5100	8" x 16" x 4" thick	D-8	.345	.116 S.F.	4.61	5.55		10.16	13.50	
5150	6" thick		.325	.123	5.25	5.90		11.15	14.75	
5200	8" thick		.300	.133	6.55	6.40		12.95	16.95	
5250	12" thick	D-9	.275	.175	7.50	8.20		15.70	20.50	
5400	For special deeper colors, 4" thick, add					1.32		1.32	1.45	
5450	12" thick, add					1.41		1.41	1.55	
5600	For white, 4" thick, add					1.32		1.32	1.45	
5650	6" thick, add					1.39		1.39	1.53	
5700	8" thick, add					1.48		1.48	1.63	
5750	12" thick, add					1.47		1.47	1.62	
6000	Split face									
6100	8" x 16" x 4" thick	D-8	.350	.114 S.F.	3.90	5.50		9.40	12.60	
6150	6" thick		.325	.123	4.40	5.90		10.30	13.80	
6200	8" thick		.300	.133	5.60	6.40		12	15.90	
6250	12" thick	D-9	.270	.178	6.25	8.35		14.60	19.55	
6300	For scored, add					.39		.39	.43	
6400	For special deeper colors, 4" thick, add					.63		.63	.70	
6450	6" thick, add					.77		.77	.85	
6500	8" thick, add					.81		.81	.89	
6550	12" thick, add					.86		.86	.94	
6650	For white, 4" thick, add					1.32		1.32	1.45	
6700	6" thick, add					1.29		1.29	1.42	
6750	8" thick, add					1.41		1.41	1.55	
6800	12" thick, add					1.41		1.41	1.55	
7000	Scored ground face, 2 or 5 scores									
7100	8" x 16" x 4" thick	D-8	.340	.118 S.F.	9	5.65		14.65	18.50	
7150	6" thick		.310	.129	10.10	6.20		16.30	20.50	
7200	8" thick		.290	.138	11.45	6.60		18.05	22.50	
7250	12" thick	D-9	.265	.181	15.65	8.50		24.15	30	
8000	Hexagonal face profile units, 8" x 16" units									
8100	4" thick, hollow	D-8	.340	.118 S.F.	4.06	5.65		9.71	13	
8200	Solid		.340	.118	5.15	5.65		10.80	14.25	
8300	6" thick, hollow		.310	.129	4.37	6.20		10.57	14.20	
8350	8" thick, hollow		.290	.138	4.74	6.60		11.34	15.20	
8500	For stacked bond, add					26%				
8550	For high rise construction, add per story	D-8	67.80	.590 M.S.F.		28.50		28.50	43	
8600	For scored block, add					10%				
8650	For honed or ground face, per face, add					Eq.	1.23	1.23	1.35	
8700	For honed or ground end, per end, add					Eq.	1.36	1.36	1.49	
8750	For bullnose block, add					10%				
8800	For special color, add					13%				

04 22 Concrete Unit Masonry

04 22 10 – Concrete Masonry Units

		Daily Crew	Output	Labor- Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Ind O&P
04 22 10.24 Concrete Block, Exterior										
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.	2.56	4.85	.63	7.41	10.15
0200	8" thick		360	.111		4.16	5.35		9.51	12.65
0250	10" thick		290	.138		4.50	6.60		11.10	14.95
0300	12" thick	D-9	250	.192		5.30	9		14.30	19.50
0500	Lightweight, 8" x 16" x 6" thick	D-8	450	.089		3.62	4.26		7.88	10.45
0600	8" thick		430	.093		4.01	4.46		8.47	11.15
0650	10" thick		395	.101		4.50	4.85		9.35	12.30
0700	12" thick	D-9	350	.137		4.71	6.45		11.16	14.95
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.	3.20	4.21	.63	7.41	9.90
0250	8" thick		425	.094		3.23	4.51		7.74	10.40
0300	10" thick		350	.114		3.73	5.50		9.23	12.40
0350	12" thick	D-9	300	.160		5.20	7.50		12.70	17.15
0500	Solid, 8" x 16" block, 6" thick	D-8	440	.091		3.63	4.36		7.99	10.60
0550	8" thick		415	.096		4.38	4.62		9	11.80
0600	12" thick	D-9	350	.137		6.45	6.45		12.90	16.85
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	4.36	.63	6.86	9.35
0250	6" thick		395	.101		2.47	4.85		7.32	10.05
0300	8" thick		360	.111		4.07	5.35		9.42	12.55
0350	12" thick	D-9	250	.192		5.20	9		14.20	19.35
0500	5000 psi, 4" thick	D-8	440	.091		2.32	4.36		6.68	9.15
0550	6" thick		395	.101		3.18	4.85		8.03	10.85
0600	8" thick		360	.111		4.48	5.35		9.83	12.95
0650	12" thick	D-9	300	.160		5.40	7.50		12.90	17.35
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.	3.08	3.06	.63	6.14	8.05
0300	12" thick		220	.073		4.57	3.41		7.98	10.20
0350	16" thick		185	.086		6.70	4.06		10.76	13.50
0400	Including grout & reinforcing, 8" thick	D-4	245	.131		8.90	6.15	.77	15.82	19.95
0450	12" thick		220	.145		10.65	6.85	.86	18.36	23
0500	16" thick		185	.173		13	8.15	1.02	22.17	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.	4.54	5.05	.63	10.22	13.30
0250	2 #4 bars		295	.108		4.79	5.10	.64	10.53	13.65
0400	8" x 16" x 8", 1 #4 bar		275	.116		4.24	5.50	.69	10.43	13.70
0450	2 #4 bars		270	.119		4.49	5.60	.70	10.79	14.15
1000	12" x 8" x 8", 1 #4 bar		275	.116		6.05	5.50	.69	12.24	15.70
1100	2 #4 bars		270	.119		6.30	5.60	.70	12.60	16.10

04 22 Concrete Unit Masonry

04 22 10 – Concrete Masonry Units

04 22 10.32 Concrete Block, Lintels		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
						Labor	Equipment	Total		
1150	2 #5 bars	D-4	270	.119	L.F.	6.55	5.60	.70	12.85	16.45
1200	2 #6 bars		265	.121		6.90	5.70	.71	13.31	17
1500	12" x 16" x 8", 1 #4 bar		250	.128		7.05	6.05	.75	13.85	17.70
1600	2 #3 bars		245	.131		7.10	6.15	.77	14.02	17.95
1650	2 #4 bars		245	.131		7.30	6.15	.77	14.22	18.20
1700	2 #5 bars		240	.133		7.60	6.30	.79	14.69	18.70

04 22 10.33 Lintel Block

0010 LINTEL BLOCK										
3481	Lintel block 6" x 8" x 8"	D-1	300	.053	Ea.	1.37	2.50		3.87	5.30
3501	6" x 16" x 8"		275	.058		2.05	2.73		4.78	6.40
3521	8" x 8" x 8"		275	.058		1.29	2.73		4.02	5.55
3561	8" x 16" x 8"		250	.064		2.01	3		5.01	6.75

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.	6.65	6.10		12.75	16.60
0210	8" thick		275	.145		7.60	6.95		14.55	18.90
0250	8" thick, type Q		275	.145		14.80	6.95		21.75	27
0260	4" thick, type RSC		315	.127		11.25	6.10		17.35	21.50
0270	6" thick		295	.136		11.80	6.50		18.30	23
0280	8" thick		275	.145		12.35	6.95		19.30	24
0290	12" thick		250	.160		12.85	7.65		20.50	26
0300	8" thick, type RSR		275	.145		12.35	6.95		19.30	24
0400	8" thick, type RSC/RF		275	.145		8.35	6.95		15.30	19.70
0410	10" thick		260	.154		10.45	7.35		17.80	22.50
0420	12" thick		250	.160		9.60	7.65		17.25	22
0430	12" thick, type RSC/RF-4		250	.160		16.40	7.65		24.05	29.50
0500	NRC .60 type R, 8" thick		265	.151		13.25	7.25		20.50	25.50
0600	NRC .65 type RR, 8" thick		265	.151		8.15	7.25		15.40	19.90
0700	NRC .65 type 4R-RF, 8" thick		265	.151		13.70	7.25		20.95	26
0710	NRC .70 type R, 12" thick		245	.163		14.15	7.85		22	27.50
1000	Lightweight block, tooled joints, 2 sides, hollow									
1100	Not reinforced, 8" x 16" x 4" thick	D-8	440	.091	S.F.	2	4.36		6.36	8.80
1150	6" thick		410	.098		2.77	4.68		7.45	10.15
1200	8" thick		385	.104		3.75	4.98		8.73	11.65
1250	10" thick		370	.108		4.18	5.20		9.38	12.45
1300	12" thick	D-9	350	.137		4.28	6.45		10.73	14.45
2000	Not reinforced, 8" x 24" x 4" thick, hollow		460	.104		1.45	4.89		6.34	9
2100	6" thick		440	.109		1.98	5.10		7.08	9.95
2150	8" thick		415	.116		2.71	5.40		8.11	11.20
2200	10" thick		385	.125		3.04	5.85		8.89	12.20
2250	12" thick		365	.132		3.15	6.15		9.30	12.80
2800	Solid, not reinforced, 8" x 16" x 2" thick	D-8	440	.091		1.86	4.36		6.22	8.65
2900	4" thick		420	.095		2	4.56		6.56	9.10
2950	6" thick		390	.103		3.46	4.92		8.38	11.25
3000	8" thick		365	.110		3.82	5.25		9.07	12.15
3050	10" thick		350	.114		4.31	5.50		9.81	13.05
3100	12" thick	D-9	330	.145		4.52	6.80		11.32	15.30
4000	Regular block, tooled joints, 2 sides, hollow									
4100	Not reinforced, 8" x 16" x 4" thick	D-8	430	.093	S.F.	2.06	4.46		6.52	9
4150	6" thick		400	.100		2.62	4.79		7.41	10.15
4200	8" thick		375	.107		2.63	5.10		7.73	10.65

04 22 Concrete Unit Masonry

04 22 10 - Concrete Masonry Units

04 22 10.34 Concrete Block, Partitions		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P
						Labor	Equipment		
4250	10" thick	D-8	360	.111	S.F.	3.15	5.35	8.50	11.50
4300	12" thick	D-9	340	.141		4.62	6.60	11.22	15.15
4500	Reinforced alternate courses, 8" x 16" x 4" thick	D-8	425	.094		2.25	4.51	6.76	9.30
4550	6" thick		395	.101		2.81	4.85	7.66	10.45
4600	8" thick		370	.108		2.84	5.20	8.04	10.95
4650	10" thick	▼	355	.113		4.67	5.40	10.07	13.35
4700	12" thick	D-9	335	.143		4.81	6.70	11.51	15.50
4900	Solid, not reinforced, 2" thick	D-8	435	.092		1.63	4.41	6.04	8.50
5000	3" thick		430	.093		1.63	4.46	6.09	8.55
5050	4" thick		415	.096		2.22	4.62	6.84	9.45
5100	6" thick		385	.104		3.05	4.98	8.03	10.90
5150	8" thick	▼	360	.111		3.78	5.35	9.13	12.20
5200	12" thick	D-9	325	.148		5.85	6.95	12.80	16.95
5500	Solid, reinforced alternate courses, 4" thick	D-8	420	.095		2.40	4.56	6.96	9.55
5550	6" thick		380	.105		3.21	5.05	8.26	11.20
5600	8" thick	▼	355	.113		3.98	5.40	9.38	12.60
5650	12" thick	D-9	320	.150	▼	4.64	7.05	11.69	15.75

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.	.60	2.91	3.51	5.05
0125	Rusticated, 4" x 2-1/4" x 8"		660	.061		.67	2.91	3.58	5.15
0150	Frog, 4" x 2-1/4" x 8"		660	.061		.65	2.91	3.56	5.10
0200	Double, 4" x 4-7/8" x 8"	▼	535	.075	▼	1.05	3.58	4.63	6.60

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.	10.50	5.80	16.30	20.50
0300	8" thick		270	.148		11.75	7.10	18.85	23.50
0350	12" x 12", 4" thick		290	.138		7.35	6.60	13.95	18.10
0500	8" thick	▼	250	.160	▼	7.30	7.65	14.95	19.70

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.	12.25	5.35	17.60	21.50
0200	4" thick		345	.116		12.55	5.55	18.10	22
0250	6" thick		330	.121		12.80	5.80	18.60	23
0300	8" thick		310	.129		15.35	6.20	21.55	26.50
0350	10" thick	▼	295	.136		16.90	6.50	23.40	28.50
0400	12" thick	D-9	280	.171		18.15	8.05	26.20	32
0700	Double face, 8" x 16" units, 4" thick	D-8	340	.118		16.80	5.65	22.45	27
0750	6" thick		320	.125		21.50	6	27.50	32.50
0800	8" thick		300	.133	▼	23	6.40	29.40	35
1000	Jambs, bullnose or square, single face, 8" x 16", 2" thick		315	.127	Ea.	20	6.10	26.10	31.50
1050	4" thick		285	.140	"	21	6.75	27.75	33
1200	Caps, bullnose or square, 8" x 16", 2" thick		420	.095	L.F.	19.90	4.56	24.46	29
1250	4" thick		380	.105	"	23	5.05	28.05	32.50
1256	Corner, bullnose or square, 2" thick		280	.143	Ea.	23.50	6.85	30.35	36
1258	4" thick		270	.148		26.50	7.10	33.60	40.50
1260	6" thick		260	.154		29.50	7.35	36.85	43.50
1270	8" thick		250	.160		39.50	7.65	47.15	55
1280	10" thick		240	.167		35.50	8	43.50	51
1290	12" thick		230	.174	▼	37.50	8.35	45.85	54
1500	Cove base, 8" x 16", 2" thick		315	.127	L.F.	11.25	6.10	17.35	21.50
1550	4" thick		285	.140	▼	10.75	6.75	17.50	22

04 22 Concrete Unit Masonry

04 22 10 - Concrete Masonry Units

04 22 10.44 Glazed Concrete Block		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Ind O&P
1600	6" thick	D-8	265	.151	L.F.	11.45	7.25			18.70	23.50
1650	8" thick	↓	245	.163	↓	12	7.85			19.85	25

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.	23	16.65			39.65	51
0150 8" x 8"		160	.250		14.25	12			26.25	34
0160 end block		160	.250		64.50	12			76.50	89
0170 90 degree corner		160	.250		65	12			77	89.50
0180 45 degree corner		160	.250		67.50	12			79.50	92
0200 12" x 12"		175	.229		24	10.95			34.95	43
0210 4" x 8"		160	.250		36.50	12			48.50	58
0220 6" x 8"		160	.250		23	12			35	43.50
0300 1,000 to 5,000 S.F., 6" x 6"		135	.296		22.50	14.20			36.70	46.50
0350 8" x 8"		190	.211		14	10.10			24.10	30.50
0400 12" x 12"		215	.186		23.50	8.90			32.40	39.50
0410 4" x 8"		215	.186		35.50	8.90			44.40	52.50
0420 6" x 8"		215	.186		22.50	8.90			31.40	38.50
0500 Over 5,000 S.F., 6" x 6"		145	.276		22	13.20			35.20	44
0550 8" x 8"		215	.186		13.55	8.90			22.45	28.50
0600 12" x 12"		240	.167		23	8			31	37
0610 4" x 8"		240	.167		34.50	8			42.50	50
0620 6" x 8"		240	.167		22	8			30	36
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.	25	16.65			41.65	52.50
1050 8" x 8"		160	.250		15.35	12			27.35	35
1200 Over 5,000 S.F., 6" x 6"		145	.276		27.50	13.20			40.70	50
1250 8" x 8"		215	.186		15.30	8.90			24.20	30.50
1400 For cleaning block after installation (both sides), add	↓	1000	.040		.16	1.92			2.08	3.09
4000 Accessories										
4100 Anchors, 20 ga. galv., 1-3/4" wide x 24" long					Ea.	5.95			5.95	6.55
4200 Emulsion asphalt					Gal.	11.60			11.60	12.80
4300 Expansion joint, fiberglass					L.F.	.74			.74	.81
4400 Steel mesh, double galvanized					"	1.05			1.05	1.16

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.	5.05	3.42		8.47	10.75
0080 12" x 4" x 16", 2.3/S.F.	G	580	.069			6.90	3.31		10.21	12.60
0100 10" x 4" x 16", 2.3/S.F.	G	590	.068			7.20	3.25		10.45	12.85
0120 8" x 4" x 16", 2.3/S.F.	G	560	.071			5.25	3.42		8.67	11
0140 4" x 4" x 16", 2.3/S.F.	G	540	.074			4.75	3.55		8.30	10.60
0160 6" x 4" x 16", 2.3/S.F.	G	540	.074			4.31	3.55		7.86	10.15
0180 4" x 4" x 12", 3.0/S.F.	G	520	.077			6.20	3.69		9.89	12.40
0200 8" x 4" x 12", 3.0/S.F.	G	520	.077			4.42	3.69		8.11	10.45

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	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
0010 BRICK AND EPOXY MORTAR PANELS										
0020 Prefabricated brick & epoxy mortar, 4" thick, minimum		G-11	775	.093	S.F.	8.45	5.30	2.93	16.68	21
0100 Maximum		"	500	.144		9.90	8.25	4.54	22.69	28.50
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	D-8	165	.242	S.F.	7.10	11.60		18.70	25.50
0200	4" face brick, 4" block	"	145	.276		7.50	13.20		20.70	28.50
0400	6" block	"	125	.320		7.40	15.35		22.75	31.50
0600	8" block	"								

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	710	1,325		2,035	2,775
0150	Common brick, 4" thick wall, 6.75 brick/S.F.	"	1.60	.25		690	1,200		1,890	2,575
0204	8" thick, 13.50 brick/S.F.	"	1.80	22.222		710	1,075		1,785	2,400
0250	12" thick, 20.25 brick/S.F.	"	1.90	21.053		715	1,000		1,715	2,300
0304	16" thick, 27.00 brick/S.F.	"	2	.20		720	960		1,680	2,250
0500	Reinforced, face brick, 4" thick wall, 6.75 brick/S.F.	"	1.40	28.571		735	1,375		2,110	2,875
0520	Common brick, 4" thick wall, 6.75 brick/S.F.	"	1.55	25.806		720	1,225		1,945	2,675
0550	8" thick, 13.50 brick/S.F.	"	1.75	22.857		740	1,100		1,840	2,450
0600	12" thick, 20.25 brick/S.F.	"	1.85	21.622		740	1,025		1,765	2,400
0650	16" thick, 27.00 brick/S.F.	"	1.95	20.513		750	985		1,735	2,325
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.	4.78	8.90		13.68	18.75
0850	Common brick, 4" thick wall, 6.75 brick/S.F.	"	240	.167		4.67	8		12.67	17.25
0900	8" thick, 13.50 brick/S.F.	"	135	.296		9.60	14.20		23.80	32
1000	12" thick, 20.25 brick/S.F.	"	95	.421		14.45	20		34.45	46.50
1050	16" thick, 27.00 brick/S.F.	"	75	.533		19.50	25.50		45	60.50
1200	Reinforced, face brick, 4" thick wall, 6.75 brick/S.F.	"	210	.190		4.96	9.15		14.11	19.30
1220	Common brick, 4" thick wall, 6.75 brick/S.F.	"	235	.170		4.86	8.15		13.01	17.70
1250	8" thick, 13.50 brick/S.F.	"	130	.308		9.95	14.75		24.70	33.50
1260	8" thick, 2.25 brick/S.F.	"	130	.308		1.79	14.75		16.54	24.50
1300	12" thick, 20.25 brick/S.F.	"	90	.444		15	21.50		36.50	49
1350	16" thick, 27.00 brick/S.F.	"	70	.571		20	27.50		47.50	63.50

04 27 10.40 Steps

0010	STEPS	D-1	.30	53.333	M	555	2,500		3,055	4,425
0012	Entry steps, select common brick									

04 41 Dry-Placed Stone

04 41 10 – Dry Placed Stone

04 41 10.10 Rough Stone Wall		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	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	12.50	26.65	34.50
0100	Random fieldstone, under 18" thick	G	D-12	60	.533	14.15	25.50	39.65	54
0150	Over 18" thick	G	"	63	.508	17	24	41	55
0500	Field stone veneer	G	D-8	120	.333 S.F.	12.95	16	28.95	38.50
0510	Valley stone veneer	G	"	120	.333	12.95	16	28.95	38.50
0520	River stone veneer	G	"	120	.333	12.95	16	28.95	38.50
0600	Rubble stone walls, in mortar bed, up to 18" thick	G	D-11	75	.320 C.F.	17.10	15.75	32.85	43

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.	12.15	13.70	25.85	34.50
0200	Medium priced stone	"	130	.308		15.40	14.75	30.15	39.50
0300	High priced stone	"	120	.333		18.45	16	34.45	44.50
0600	Seam face, split joints, medium price stone	"	125	.320		18.20	15.35	33.55	43.50
0700	High price stone	"	120	.333		18.10	16	34.10	44
1000	Split or rock face, split joints, medium price stone	"	125	.320		10.95	15.35	26.30	35.50
1100	High price stone	"	120	.333		17.25	16	33.25	43

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.	13.50	16.90	30.40	40.50
0550	2" thick	"	63	.381		14.80	18.75	33.55	45
1000	Stair treads, natural cleft, 12" wide, 6' long, 1-1/2" thick	D-10	115	.278		14.05	14.40	32.17	41.50
1050	2" thick	"	105	.305		15.30	15.75	35.13	45.50
1100	Smooth finish, 1-1/2" thick	"	115	.278		13.45	14.40	31.57	41
1150	2" thick	"	105	.305		14.55	15.75	34.38	44.50
1300	Thermal finish, 1-1/2" thick	"	115	.278		13.80	14.40	31.92	41.50
1350	2" thick	"	105	.305		13.50	15.75	33.33	43.50

04 43 10.45 Granite

0010	GRANITE, cut to size									
0050	Veneer, polished face, 3/4" to 1-1/2" thick	D-10	130	.246	S.F.	27	12.75	3.29	43.04	52.50
0150	Low price, gray, light gray, etc.	"	130	.246		30.50	12.75	3.29	46.54	56.50
0180	Medium price, pink, brown, etc.	"	130	.246		42.50	12.75	3.29	58.54	70
0220	High price, red, black, etc.	"	130	.246						
0300	1-1/2" to 2-1/2" thick, veneer	D-10	130	.246	S.F.	29	12.75	3.29	45.04	55
0350	Low price, gray, light gray, etc.	"	130	.246		34	12.75	3.29	50.04	60
0500	Medium price, pink, brown, etc.	"	130	.246		52.50	12.75	3.29	68.54	81
0550	High price, red, black, etc.	"	130	.246						
0700	2-1/2" to 4" thick, veneer	D-10	110	.291	S.F.	39	15.05	3.89	57.94	70
0750	Low price, gray, light gray, etc.	"	110	.291		44.50	15.05	3.89	63.44	76
0850	Medium price, pink, brown, etc.	"	110	.291		64	15.05	3.89	82.94	97.50
0950	High price, red, black, etc.	"	110	.291						
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									

04 43 Stone Masonry

04 43 10 – Masonry with Natural and Processed Stone

04 43 10.45 Granite

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
		Crew			Labor	Equipment		
2550	Low price, gray, light gray, etc.	D-10	50	.640	C.F.	92	33	8.55
2575	Medium price, pink, brown, etc.		50	.640		120	33	8.55
2600	High price, red, black, etc.	↓	50	.640	↓	147	33	8.55
2800	Pavers, 4" x 4" x 4" blocks, split face and joints	D-11	80	.300	S.F.	13.30	14.80	
2850	Low price, gray, light gray, etc.		80	.300		21.50	14.80	
2875	Medium price, pink, brown, etc.	↓	80	.300	↓	29.50	14.80	
2900	High price, red, black, etc.	↓	80	.300	↓			
4000	Soffits, 2" thick, low price, gray, light gray	D-13	35	1.371		38	69	12.25
4050	Medium price, pink, brown, etc.		35	1.371		65.50	69	12.25
4100	High price, red, black, etc.	↓	35	1.371	↓	92.50	69	12.25
4200	Low price, gray, light gray, etc.	↓	35	1.371	↓	63.50	69	12.25
4250	Medium price, pink, brown, etc.	↓	35	1.371	↓	92	69	12.25
4300	High price, red, black, etc.	↓	35	1.371	↓	120	69	12.25
5000	Reclaimed or antique							
5010	Treads, up to 12" wide	D-10	100	.320	L.F.	42	16.55	4.28
5020	Up to 18" wide		100	.320		45.50	16.55	4.28
5030	Capstone, size varies	↓	50	.640	↓	26.50	33	8.55
5040	Posts	↓	30	1.067	V.L.F.	31.50	55	14.25

04 43 10.50 Lightweight Natural Stone

0011	LIGHTWEIGHT NATURAL STONE Lava type	G	D-10	130	.246	S.F.	9.10	12.75	3.29	25.14	33
0100	Veneer, rubble face, sawed back, irregular shapes	G	D-10	130	.246	"	9.10	12.75	3.29	25.14	33
0200	Sawed face and back, irregular shapes										
1000	Reclaimed or antique, barn or foundation stone										

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.	22.50	5.05	.63	28.18	33.50	
0750	5" thick, 5' x 14' panels	D-10	275	.116		24	6	1.56	31.56	37.50	
1000	Sugarcube finish, 2" thick, 3' x 5' panels		275	.116		29.50	6	1.56	37.06	43.50	
1050	3" thick, 4' x 9' panels		275	.116		29	6	1.56	36.56	42.50	
1200	4" thick, 5' x 11' panels		275	.116		32.50	6	1.56	40.06	46.50	
1400	Sugarcube, textured finish, 4-1/2" thick, 5' x 12'		275	.116		35.50	6	1.56	43.06	50	
1450	5" thick, 5' x 14' panels		275	.116		35.50	6	1.56	43.06	50	
2000	Coping, sugarcube finish, top & 2 sides		30	1.067	C.F.	66.50	55	14.25	135.75	173	
2100	Sills, lintels, jambs, trim, steps, sugarcube finish, simple		20	1.600		66.50	83	21.50	171	222	
2150	Detailed		20	1.600	↓	66.50	83	21.50	171	222	
2300	Steps, extra hard, 14" wide, 6" rise	↓	50	.640	L.F.	29	33	8.55	70.55	91.50	
3000	Quoins, plain finish, 6" x 12" x 12"	D-12	25	1.280	Ea.	44.50	60.50		105	141	
3050	6" x 16" x 24"	"	25	1.280	"	59.50	60.50		120	158	

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.	17.60	10.95	2.46	28.55	36	
0100	Base, polished, 3/4" or 7/8" thick, polished, 6" high	D-10	65	.492	L.F.	11.45	25.50	6.60	43.55	58.50	
0300	Carvings or bas-relief, from templates, simple design		80	.400	S.F.	157	20.50	5.35	182.85	210	
0350	Intricate design	↓	80	.400	"	355	20.50	5.35	380.85	425	
0600	Columns, cornices, mouldings, etc.	D-10	35	.914	C.F.	61.50	47.50	12.25	121.25	152	
0650	Hand or special machine cut, simple design	"	35	.914	"	325	47.50	12.25	384.75	440	
0700	Intricate design										
1000	Facing, polished finish, cut to size, 3/4" to 7/8" thick	D-10	130	.246	S.F.	20.50	12.75	3.29	36.54	46	
1050	Carrara or equal		130	.246		38	12.75	3.29	54.04	64.50	
1100	Arabescato or equal		130	.246							
1300	1-1/4" thick, Botticino Classico or equal		125	.256		24.50	13.25	3.43	41.18	51	

04 43 Stone Masonry

04 43 10 - Masonry with Natural and Processed Stone

04 43 10.60 Marble			Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
							Labor	Equipment			
1350	Statuarietto or equal		D-10	125	.256	S.F.	39	13.25	3.43	55.68	67
1500	2" thick, Crema Marfil or equal			120	.267		48.50	13.80	3.57	65.87	78.50
1550	Cafe Pinta or equal		▼	120	.267	▼	65	13.80	3.57	82.37	96.50
1700	Rubbed finish, cut to size, 4" thick										
1740	Average		D-10	100	.320	S.F.	42.50	16.55	4.28	63.33	76
1780	Maximum		"	100	.320	"	71	16.55	4.28	91.83	108
2200	Window sills, 6" x 3/4" thick		D-1	85	.188	L.F.	13.10	8.85		21.95	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.	15.65	13.15		28.80	37
2600	Sky Blue or equal		"	90	.267		15.05	13.15		28.20	36.50
2700	Mortar bed, Giallo Solare or equal		"	65	.369		15.75	18.20		33.95	45
2740	Sky Blue or equal		▼	65	.369		15.05	18.20		33.25	44
2780	Travertine, 3/8" thick, Sierra or equal		D-10	130	.246		10.80	12.75	3.29	26.84	35
2790	Silver or equal		"	130	.246		29	12.75	3.29	45.04	55
2800	Patio tile, non-slip, 1/2" thick, flame finish		D-11	75	.320	▼	12.40	15.75		28.15	37.50
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.	47.50	15.75		63.25	76
3201	Soffits, add to above prices						"	20%	100%		
3210	Stairs, risers, 7/8" thick x 6" high		D-10	115	.278	L.F.	15.15	14.40	3.72	33.27	43
3360	Treads, 12" wide x 1-1/4" thick		"	115	.278	"	50	14.40	3.72	68.12	81
3500	Thresholds, 3' long, 7/8" thick, 4" to 5" wide, plain		D-12	24	1.333	Ea.	36	63		99	136
3550	Beveled			24	1.333	"	76	63		139	180
3700	Window stools, polished, 7/8" thick, 5" wide		▼	85	.376	L.F.	24.50	17.85		42.35	54

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.	22	12.75	3.29	38.04	47
0150	4" thick, to 3'-6" x 8' panels			100	.320		22	16.55	4.28	42.83	53.50
0300	Split face, random sizes		▼	100	.320	▼	14.50	16.55	4.28	35.33	45.50
0350	Cut stone trim (limestone)										
0360	Ribbon stone, 4" thick, 5' pieces		D-8	120	.333	Ea.	162	16		178	202
0370	Cove stone, 4" thick, 5' pieces			105	.381		163	18.25		181.25	207
0380	Cornice stone, 10" to 12" wide			"	.444		201	21.50		222.50	254
0390	Band stone, 4" thick, 5' pieces			145	.276		107	13.20		120.20	137
0410	Window and door trim, 3" to 4" wide			160	.250		90.50	12		102.50	118
0420	Key stone, 18" long		▼	60	.667	▼	93	32		125	151

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.	7.05	15.15		22.20	31
0300	Vermont			100	.320		11.20	15.15		26.35	35.50
0350	Virginia			100	.320		14.70	15.15		29.85	39
0500	24" x 24", Pennsylvania			120	.267		13.55	12.65		26.20	34
0550	Vermont			120	.267		28	12.65		40.65	49.50
0600	Virginia			120	.267		21.50	12.65		34.15	42.50
0700	18" x 30" Pennsylvania			120	.267		15.35	12.65		28	36
0750	Vermont			120	.267		28	12.65		40.65	49.50
0800	Virginia		▼	120	.267	▼	19	12.65		31.65	40
1000	Interior flooring, natural cleft, 1/2" thick										
1100	6" x 6" Pennsylvania		D-12	100	.320	S.F.	4.16	15.15		19.31	27.50

04 43 Stone Masonry

04 43 10 – Masonry with Natural and Processed Stone

04 43 10.80 Slate		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
						Labor	Equipment	Total	
1150	Vermont	D-12	100	.320	S.F.	9.85	15.15	25	34
1200	Virginia		100	.320		11.60	15.15	26.75	36
1300	24" x 24" Pennsylvania		120	.267		8.10	12.65	20.75	28
1350	Vermont		120	.267		22.50	12.65	35.15	43.50
1400	Virginia		120	.267		15.35	12.65	28	36
1500	18" x 24" Pennsylvania		120	.267		8.10	12.65	20.75	28
1550	Vermont		120	.267		16.95	12.65	29.60	38
1600	Virginia		120	.267		15.55	12.65	28.20	36.50
2000	Facing panels, 1-1/4" thick, to 4' x 4' panels								
2100	Natural cleft finish, Pennsylvania	D-10	180	.178	S.F.	35	9.20	2.38	46.58
2110	Vermont		180	.178		28.50	9.20	2.38	40.08
2120	Virginia		180	.178		34.50	9.20	2.38	46.08
2150	Sand rubbed finish, surface, add					10.60		10.60	11.65
2200	Honed finish, add					7.65		7.65	8.45
2500	Ribbon, natural cleft finish, 1" thick, to 9 S.F.	D-10	80	.400		13.65	20.50	5.35	39.50
2550	Sand rubbed finish		80	.400		18.50	20.50	5.35	44.35
2600	Honed finish		80	.400		17.20	20.50	5.35	43.05
2700	1-1/2" thick		78	.410		17.75	21	5.50	44.25
2750	Sand rubbed finish		78	.410		23.50	21	5.50	50
2800	Honed finish		78	.410		22	21	5.50	48.50
2850	2" thick		76	.421		21.50	22	5.65	49.15
2900	Sand rubbed finish		76	.421		29.50	22	5.65	57.15
2950	Honed finish		76	.421		27	22	5.65	54.65
3100	Stair landings, 1" thick, black, clear	D-1	65	.246		21	11.55		32.55
3200	Ribbon	"	65	.246		23	11.55		34.55
3500	Stair treads, sand finish, 1" thick x 12" wide								
3550	Under 3 L.F.	D-10	85	.376	L.F.	23	19.50	5.05	47.55
3600	3 L.F. to 6 L.F.	"	120	.267	"	25	13.80	3.57	42.37
3700	Ribbon, sand finish, 1" thick x 12" wide								
3750	To 6 L.F.	D-10	120	.267	L.F.	21	13.80	3.57	38.37
4000	Stools or sills, sand finish, 1" thick, 6" wide	D-12	160	.200		12	9.50		21.50
4100	Honed finish		160	.200		11.45	9.50		20.95
4200	10" wide		90	.356		18.50	16.85		35.35
4250	Honed finish		90	.356		17.20	16.85		34.05
4400	2" thick, 6" wide		140	.229		19.30	10.85		30.15
4450	Honed finish		140	.229		18.20	10.85		29.05
4600	10" wide		90	.356		30	16.85		46.85
4650	Honed finish		90	.356		28.50	16.85		45.35
4800	For lengths over 3', add					25%			57

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.	10.30	8.85		19.15
0050	2" thick		75	.213	"	10.95	10		20.95
0100	Cut stone, 5" x 8" plain		48	.333	L.F.	12.95	15.65		28.60
0200	Face brick on edge, brick, 8" wide		80	.200		3.42	9.40		12.82
0400	Marble, 9" wide, 1" thick		85	.188		9.25	8.85		18.10
0900	Slate, colored, unfading, honed, 12" wide, 1" thick		85	.188		10.45	8.85		19.30
0950	2" thick		70	.229		10.05	10.70		20.75
									27.50

04 51 Flue Liner Masonry

04 51 10 – Clay Flue Lining

04 51 10.10 Flue Lining		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	Equipment	Total	Total Incl O&P
0010	FLUE LINING, including mortar										
0020	Clay, 8" x 8"	D-1	125	.128	V.L.F.	6.45	6	12.45		16.20	
0100	8" x 12"		103	.155		9.60	7.30			16.90	21.50
0200	12" x 12"		93	.172		11.70	8.05			19.75	25
0300	12" x 18"		84	.190		26.50	8.95			35.45	42.50
0400	18" x 18"		75	.213		30	10			40	48
0500	20" x 20"		66	.242		48	11.35			59.35	70
0600	24" x 24"		56	.286		68.50	13.40			81.90	95.50
1000	Round, 18" diameter		66	.242		42.50	11.35			53.85	64.50
1100	24" diameter		47	.340		88.50	15.95			104.45	122

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	1,675	1,250			2,925	3,750
0050	High duty, 3000°F	"	.60	26.667	"	2,800	1,250			4,050	5,000

04 54 10.20 Fire Clay

0010	FIRE CLAY										
0020	Gray, high duty, 100 lb. bag					Bag	37			37	40.50
0050	100 lb. drum, premixed (400 brick per drum)					Drum	48.50			48.50	53.50

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.	625	1,875			2,500	3,525
0200	Fireplace box only (110 brick)	"	2	8	"	172	375			547	760
0300	For elaborate brickwork and details, add						35%				
0400	For hearth, brick & stone, add	D-1	2	8	Ea.	215	375			590	805
0410	For steel, damper, cleanouts, add		4	4	"	18.25	188			206.25	305
0600	Plain brickwork, incl. metal circulator		.50	32	"	995	1,500			2,495	3,375
0800	Face brick only, standard size, 8" x 2-2/3" x 4"		.30	53.333	M	605	2,500			3,105	4,475

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.	4.53	2.13			6.66	8.15
0050	Fiberglass panels		200	.040		9.90	2.13			12.03	14.10
0100	Urethane pieces cemented in mastic		150	.053		9	2.83			11.83	14.15
0150	Vinyl siding panels	↓	200	.040		11.50	2.13			13.63	15.85
0160	Cement base, brick, incl. mastic	D-1	100	.160	↓	9.75	7.50			17.25	22
0170	Corner		50	.320	V.L.F.	22	15			37	47.50
0180	Stone face, incl. mastic		100	.160	S.F.	10.05	7.50			17.55	22.50
0190	Corner	↓	50	.320	V.L.F.	3.23	15			18.23	26.50

04 72 Cast Stone Masonry

04 72 10 – Cast Stone Masonry Features

04 72 10.10 Coping		Crew	Daily	Labor-	Material	2020 Bare Costs		Total	Total
			Output	Hours		Labor	Equipment		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.	25.50	10	35.50	43
0100	12" wide, 3-1/2" tapers to 3", 10" wall		70	.229		27.50	10.70	38.20	46.50
0110	14" wide, 4" tapers to 3-1/2", 12" wall		65	.246		31.50	11.55	43.05	52
0150	16" wide, 4" tapers to 3-1/2", 14" wall		60	.267		34	12.50	46.50	56
0250	Precast concrete corners		40	.400	Ea.	44	18.75	62.75	76.50
0300	Limestone for 12" wall, 4" thick		90	.178	L.F.	16.80	8.35	25.15	31
0350	6" thick		80	.200		24	9.40	33.40	40
0500	Marble, to 4" thick, no wash, 9" wide		90	.178		12.30	8.35	20.65	26
0550	12" wide		80	.200		19.90	9.40	29.30	36
0700	Terra cotta, 9" wide		90	.178		8.15	8.35	16.50	21.50
0750	12" wide		80	.200		8.60	9.40	18	23.50
0800	Aluminum, for 12" wall		80	.200		9.45	9.40	18.85	24.50

04 72 20 – Cultured Stone Veneer

04 72 20.10 Cultured Stone Veneer Components

0010	CULTURED STONE VENEER COMPONENTS		D-8	.70	.571	V.L.F.	10.55	27.50	38.05	53	
0110	On wood frame and sheathing substrate, random sized cobbles, corner stones			140	.286	S.F.	7.45	13.70	21.15	29	
0120	Field stones			70	.571	V.L.F.	10.55	27.50	38.05	53	
0130	Random sized flats, corner stones			140	.286	S.F.	8.85	13.70	22.55	30.50	
0140	Field stones			75	.533	V.L.F.	10.35	25.50	35.85	50.50	
0150	Horizontal lined ledgerstones, corner stones			150	.267	S.F.	7.80	12.80	20.60	28	
0160	Field stones			65	.615	V.L.F.	10.35	29.50	39.85	56	
0170	Random shaped flats, corner stones			150	.267	S.F.	7.75	12.80	20.55	28	
0180	Field stones			65	.615	V.L.F.	10.55	29.50	40.05	56	
0190	Random shaped/textured face, corner stones			130	.308	S.F.	7.70	14.75	22.45	31	
0200	Field stones			65	.615	V.L.F.	9.70	27.50	40.05	56	
0210	Random shaped river rock, corner stones			130	.308	S.F.	7.70	14.75	22.45	31	
0220	Field stones			70	.571	V.L.F.	9.70	27.50	37.20	52	
0240	On concrete or CMU substrate, random sized cobbles, corner stones			140	.286	S.F.	7.05	13.70	20.75	29	
0250	Field stones			70	.571	V.L.F.	9.70	27.50	37.20	52	
0260	Random sized flats, corner stones			140	.286	S.F.	8.40	13.70	22.10	30.50	
0270	Field stones			75	.533	V.L.F.	9.50	25.50	35	49.50	
0280	Horizontal lined ledgerstones, corner stones			150	.267	S.F.	7.35	12.80	20.15	27.50	
0290	Field stones			70	.571	V.L.F.	9.50	27.50	37	52	
0300	Random shaped flats, corner stones			140	.286	S.F.	7.35	13.70	21.05	29	
0310	Field stones			65	.615	V.L.F.	9.70	29.50	39.20	55	
0320	Random shaped/textured face, corner stones			130	.308	S.F.	7.30	14.75	22.05	30.50	
0330	Field stones			65	.615	V.L.F.	9.70	29.50	39.20	55	
0340	Random shaped river rock, corner stones			130	.308	S.F.	7.30	14.75	22.05	30.50	
0350	Field stones			1 Clb	3700	.002	Sq.	5.25	5.34	5.95	
0360	Cultured stone veneer, #15 felt weather resistant barrier			1 Lath	85	.094	S.Y.	3.80	4.90	8.70	11.40
0370	Expanded metal lath, diamond, 2.5 lb./S.Y., galvanized			1 Brct	80	.100	Ea.	9.95	5.20	15.15	18.85
0390	Water table or window sill, 18" long										

04 73 Manufactured Stone Masonry

04 73 20 – Simulated or Manufactured Stone

04 73 20.10 Simulated Stone		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
0010 SIMULATED STONE										
0100 Insulated fiberglass panels, 5/8" ply backer		L-4	200	.120	S.F.	10.85	6		16.85	21

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		Daily Crew Output	Labor-Hours	Unit	Material	2020 Bare Labor-Costs	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.	.02	.92	.94	1.51
6180	Power tool (SSPC-SP3)	"	700	.011		.07	.52	.59	.93
6215	Pressure washing, up to 5,000 psi, 5,000-15,000 S.F./day	1 Pord	10000	.001			.04	.04	.05
6220	Steam cleaning, 600 psi @ 300°F, 1,250-2,500 S.F./day	↓	2000	.004			.18	.18	.26
6225	Water blasting, up to 25,000 psi, 1,750-3,500 S.F./day	↓	2500	.003			.14	.14	.21
6230	Brush-off blast (SSPC-SP7)	E-11	1750	.018		.17	.85	.17	1.19
6235	Com'l blast (SSPC-SP6), loose scale, fine powder rust, 2.0#/S.F. sand		1200	.027		.34	1.25	.25	1.84
6240	Tight mill scale, little/no rust, 3.0#/S.F. sand		1000	.032		.51	1.49	.30	2.30
6245	Exist coat blistered/pitted, 4.0#/S.F. sand		875	.037		.69	1.71	.34	2.74
6250	Exist coat badly pitted/nodules, 6.7#/S.F. sand		825	.039		1.15	1.81	.36	3.32
6255	Near white blast (SSPC-SP10), loose scale, fine rust, 5.6#/S.F. sand		450	.071		.96	3.32	.67	4.95
6260	Tight mill scale, little/no rust, 6.9#/S.F. sand		325	.098		1.18	4.60	.93	6.71
6265	Exist coat blistered/pitted, 9.0#/S.F. sand		225	.142		1.54	6.65	1.34	9.53
6270	Exist coat badly pitted/nodules, 11.3#/S.F. sand	↓	150	.213		1.94	9.95	2.01	13.90

05 05 Common Work Results for Metals

05 05 05 – Selective Demolition for Metals

05 05 05.10 Selective Demolition, Metals		R024119-10
0010	SELECTIVE DEMOLITION, METALS	
0015	Excludes shores, bracing, cutting, loading, hauling, dumping	
0020	Remove nuts only up to 3/4" diameter	1 Sswk 480 .017 Ea. .96 .96 1.51
0030	7/8" to 1-1/4" diameter	240 .033 1.92 1.92 3.01
0040	1-3/8" to 2" diameter	160 .050 2.88 2.88 4.52
0060	Unbolt and remove structural bolts up to 3/4" diameter	240 .033 1.92 1.92 3.01
0070	7/8" to 2" diameter	160 .050 2.88 2.88 4.52
0140	Light weight framing members, remove whole or cut up, up to 20 lb.	240 .033 1.92 1.92 3.01
0150	21-40 lb.	2 Sswk 210 .076 4.39 4.39 6.90
0160	41-80 lb.	3 Sswk 180 .133 7.70 7.70 12.05
0170	81-120 lb.	4 Sswk 150 .213 12.30 12.30 19.30
0230	Structural members, remove whole or cut up, up to 500 lb.	E-19 48 .500 28.50 31 59.50 .78
0240	1/4-2 tons	E-18 36 1.111 64.50 41.50 106 146
0250	2-5 tons	E-24 30 1.067 61.50 19.35 80.85 117
0260	5-10 tons	E-20 24 2.667 153 84.50 237.50 330
0270	10-15 tons	E-2 18 3.111 178 94 272 380
0340	Fabricated item, remove whole or cut up, up to 20 lb.	1 Sswk 96 .083 4.80 4.80 7.55
0350	21-40 lb.	2 Sswk 84 .190 11 11 17.25
0360	41-80 lb.	3 Sswk 72 .333 19.20 19.20 30
0370	81-120 lb.	4 Sswk 60 .533 31 31 48
0380	121-500 lb.	E-19 48 .500 28.50 31 59.50 .78
0390	501-1000 lb.	" 36 .667 38 41.50 79.50 104
0500	Steel roof decking, uncovered, bare	B-2 5000 .008 S.F. .34 .34 .51

05 05 13 – Shop-Applied Coatings for Metal

05 05 13.50 Paints and Protective Coatings

0010 PAINTS AND PROTECTIVE COATINGS		R050516-30	Ton	580	580	640
5900	Galvanizing structural steel in shop, under 1 ton					
5950	1 ton to 20 tons			570	570	625
6000	Over 20 tons			535	535	590

05 05 Common Work Results for Metals

05 05 19 – Post-Installed Concrete Anchors

05 05 19.10 Chemical Anchors		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Ind 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.	10.15	28.50	4.23	42.88	59.50	
1435	1" diameter x 11-3/4" long		24	.667		20.50	32.50	4.76	57.76	76.50	
1440	1-1/4" diameter x 14" long		21	.762		39	37	5.45	81.45	105	
1445	1-3/4" diameter x 15" long		20	.800		68.50	39	5.70	113.20	140	
1450	18" long		17	.941		82.50	45.50	6.70	134.70	167	
1455	2" diameter x 18" long		16	1		113	48.50	7.15	168.65	206	
1460	24" long		15	1.067		148	51.50	7.60	207.10	249	

05 05 19.20 Expansion Anchors

05 05 19.20 Expansion Anchors		G	1 Carp	90	.089	Ea.	.46	4.72		5.18	7.60
0010 EXPANSION ANCHORS		G									
0100	Anchors for concrete, brick or stone, no layout and drilling	G									
0200	Expansion shields, zinc, 1/4" diameter, 1-5/16" long, single	G	85	.094		.66	5			5.66	8.25
0300	1-3/8" long, double	G	85	.094		.71	5			5.71	8.30
0400	3/8" diameter, 1-1/2" long, single	G	80	.100		1.20	5.30			6.50	9.30
0500	2" long, double	G	80	.100		1.28	5.30			6.58	9.40
0600	1/2" diameter, 2-1/16" long, single	G	75	.107		2.17	5.65			7.82	10.90
0700	2-1/2" long, double	G	75	.107							
0800	5/8" diameter, 2-5/8" long, single	G	75	.107		2.22	5.65			7.87	10.95
0900	2-3/4" long, double	G	70	.114		3.64	6.05			9.69	13.15
1000	3/4" diameter, 2-3/4" long, single	G	70	.114		3.66	6.05			9.71	13.20
1100	3-15/16" long, double	G	65	.123		5.65	6.55			12.20	16.10
2100	Hollow wall anchors for gypsum wall board, plaster or tile										
2300	1/8" diameter, short	G	1 Carp	160	.050	Ea.	.31	2.66		2.97	4.33
2400	Long	G		150	.053		.32	2.83		3.15	4.61
2500	3/16" diameter, short	G		150	.053		.58	2.83		3.41	4.90
2600	Long	G		140	.057		.75	3.04		3.79	5.40
2700	1/4" diameter, short	G		140	.057		.65	3.04		3.69	5.30
2800	Long	G		130	.062		1.03	3.27		4.30	6.05
3000	Toggle bolts, bright steel, 1/8" diameter, 2" long	G		85	.094		.21	5		5.21	7.75
3100	4" long	G		80	.100		.26	5.30		5.56	8.30
3200	3/16" diameter, 3" long	G		80	.100		.30	5.30		5.60	8.35
3300	6" long	G		75	.107		.49	5.65		6.14	9.05
3400	1/4" diameter, 3" long	G		75	.107		.44	5.65		6.09	9
3500	6" long	G		70	.114		.57	6.05		6.62	9.80
3600	3/8" diameter, 3" long	G		70	.114		.88	6.05		6.93	10.10
3700	6" long	G		60	.133		1.58	7.10		8.68	12.40
3800	1/2" diameter, 4" long	G		60	.133		1.86	7.10		8.96	12.70
3900	6" long	G		50	.160		2.37	8.50		10.87	15.40
4000	Nailing anchors										
4100	Nylon nailing anchor, 1/4" diameter, 1" long	1 Carp	3.20	2.500	C	19.75	133			152.75	222
4200	1-1/2" long			2.80	2.857		22	152		174	252
4300	2" long			2.40	3.333		24	177		201	293
4400	Metal nailing anchor, 1/4" diameter, 1" long	G		3.20	2.500		20	133		153	222
4500	1-1/2" long	G		2.80	2.857		25	152		177	256
4600	2" long	G		2.40	3.333		43	177		220	315
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.	.47	4.72		5.19	7.60
5800	Long	G		85	.094		.56	5		5.56	8.10
5900	3/8" diameter, short	G		85	.094		.74	5		5.74	8.30
6000	Long	G		80	.100		1.05	5.30		6.35	9.15

05 05 Common Work Results for Metals

05 05 19 – Post-Installed Concrete Anchors

05 05 19.20 Expansion Anchors		Crew	Daily	Labor-	Unit	2020 Bare Costs			Total	Total
			Output	Hours		Material	Labor	Equipment		Incl O&P
6100	1/2" diameter, short	[G]	1 Carp	.80	.100	Ea.	.98	5.30	6.28	9.10
6200	Long	[G]		.75	.107		1.52	5.65	7.17	10.15
6300	5/8" diameter, short	[G]		.70	.114		1.54	6.05	7.59	10.85
6400	Long	[G]		.65	.123		2.21	6.55	8.76	12.30
6600	Lead, #6 & #8, 3/4" long	[G]		.260	.031		.18	1.64	1.82	2.66
6700	#10 - #14, 1-1/2" long	[G]		.200	.040		.48	2.13	2.61	3.72
6800	#16 & #18, 1-1/2" long	[G]		.160	.050		.42	2.66	3.08	4.45
6900	Plastic, #6 & #8, 3/4" long			.260	.031		.05	1.64	1.69	2.52
7000	#8 & #10, 7/8" long			.240	.033		.05	1.77	1.82	2.72
7100	#10 & #12, 1" long			.220	.036		.07	1.93	2	2.98
7200	#14 & #16, 1-1/2" long		↓	.160	.050	↓	.07	2.66	2.73	4.07
8000	Wedge anchors, not including layout or drilling									
8050	Carbon steel, 1/4" diameter, 1-3/4" long	[G]	1 Corp	.150	.053	Ea.	.62	2.83	3.45	4.94
8100	3-1/4" long	[G]		.140	.057		.82	3.04	3.86	5.45
8150	3/8" diameter, 2-1/4" long	[G]		.145	.055		.44	2.93	3.37	4.90
8200	5" long	[G]		.140	.057		.78	3.04	3.82	5.40
8250	1/2" diameter, 2-3/4" long	[G]		.140	.057		.99	3.04	4.03	5.65
8300	7" long	[G]		.125	.064		1.70	3.40	5.10	6.95
8350	5/8" diameter, 3-1/2" long	[G]		.130	.062		2.05	3.27	5.32	7.15
8400	8-1/2" long	[G]		.115	.070		4.36	3.70	8.06	10.35
8450	3/4" diameter, 4-1/4" long	[G]		.115	.070		2.97	3.70	6.67	8.80
8500	10" long	[G]		.95	.084		6.75	4.48	11.23	14.15
8550	1" diameter, 6" long	[G]		.100	.080		8.80	4.25	13.05	16.05
8575	9" long	[G]		.85	.094		11.40	5	16.40	20
8600	12" long	[G]		.75	.107		12.30	5.65	17.95	22
8650	1-1/4" diameter, 9" long	[G]		.70	.114		23.50	6.05	29.55	34.50
8700	12" long	[G]	↓	.60	.133	↓	.30	7.10	37.10	43.50
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 Corp	.300	.027	Ea.	.18	1.42	1.60	2.33
8960	2-1/4" long	[G]		.250	.032		.24	1.70	1.94	2.82
8970	Phillips flat head, 3/16" diam. x 1-3/4" long	[G]		.300	.027		.19	1.42	1.61	2.34
8980	2-1/4" long	[G]		.250	.032		.23	1.70	1.93	2.81

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.	.21	1.19	.03	1.43
0100	1/2" thick			320	.025		.39	1.49	.04	1.92
0150	3/4" thick			260	.031		.63	1.83	.05	2.51
0200	1" thick		↓	200	.040	↓	.90	2.38	.06	3.34
										4.79

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.		.10	4.12		4.22
1925	For each additional 1/4" depth, add			336	.024		.10	1.37		1.47
1930	3/8" diameter			104	.077		.08	4.43		4.51
1935	For each additional 1/4" depth, add			312	.026		.08	1.48		1.56
1940	1/2" diameter			96	.083		.08	4.80		4.88
1945	For each additional 1/4" depth, add			288	.028		.08	1.60		1.68
1950	5/8" diameter			88	.091		.16	5.25		5.41
1955	For each additional 1/4" depth, add			264	.030		.16	1.75		1.91

05 05 Common Work Results for Metals

05 05 21 – Fastening Methods for Metal

05 05 21.15 Drilling Steel		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
1960	3/4" diameter	1 Swk	80	.100	Ea.	.17	5.75			5.92	9.25
1965	For each additional 1/4" depth, add		240	.033		.17	1.92			2.09	3.19
1970	7/8" diameter		72	.111		.24	6.40			6.64	10.30
1975	For each additional 1/4" depth, add		216	.037		.24	2.14			2.38	3.62
1980	1" diameter		64	.125		.26	7.20			7.46	11.60
1985	For each additional 1/4" depth, add		192	.042		.26	2.40			2.66	4.05
1990	For drilling up, add						40%				

05 05 21.90 Welding Steel

0010 WELDING STEEL, Structural		R050521-20	E14	8	1	Hr.	5.55	59.50	18.40	83.45	120
0020	Field welding, 1/8" E6011, cost per welder, no operating engineer		E13	8	1.500		5.55	86	18.40	109.95	159
0200	With 1/2 operating engineer		E12	8	2		5.55	112	18.40	135.95	198
0300	With 1 operating engineer		E14	8	1	Ton	5.55	59.50	18.40	83.45	120
0500	With no operating engineer, 2# weld rod per ton		"	2	4		22	238	73.50	333.50	480
0600	8# E6011 per ton		E12	8	2		5.55	112	18.40	135.95	198
0800	With one operating engineer per welder, 2# E6011 per ton		"	2	8		22	450	73.50	545.50	795
0900	8# E6011 per ton										
1200	Continuous fillet, down welding										
1300	Single pass, 1/8" thick, 0.1#/L.F.		E14	150	.053	L.F.	.28	3.17	.98	4.43	6.35
1400	3/16" thick, 0.2#/L.F.			75	.107		.55	6.35	1.96	8.86	12.70
1500	1/4" thick, 0.3#/L.F.			50	.160		.83	9.50	2.94	13.27	19.05
1610	5/16" thick, 0.4#/L.F.			38	.211		1.11	12.50	3.87	17.48	25
1800	3 passes, 3/8" thick, 0.5#/L.F.			30	.267		1.38	15.85	4.90	22.13	32
2010	4 passes, 1/2" thick, 0.7#/L.F.			22	.364		1.93	21.50	6.70	30.13	43.50
2200	5 to 6 passes, 3/4" thick, 1.3#/L.F.			12	.667		3.59	39.50	12.25	55.34	79.50
2400	8 to 11 passes, 1" thick, 2.4#/L.F.			6	1.333		6.65	79.50	24.50	110.65	158
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		E14	12	.667	L.F.	1.38	39.50	12.25	53.13	77

05 05 23 – Metal Fastenings

05 05 23.10 Bolts and Hex Nuts

0010 BOLTS & HEX NUTS, Steel, A307		G	1 Swk	140	.057	Ea.	.06	3.29		3.35	5.20
0100	1/4" diameter, 1/2" long	G	140	.057		.07	.329			3.36	5.25
0200	1" long	G	130	.062		.10	3.55			3.65	5.65
0300	2" long	G	130	.062		.15	3.55			3.70	5.70
0400	3" long	G	120	.067		.17	3.84			4.01	6.25
0500	4" long	G	130	.062		.14	3.55			3.69	5.70
0600	3/8" diameter, 1" long	G	130	.062		.17	3.55			3.72	5.75
0700	2" long	G	130	.062		.17	3.55			3.72	5.75
0800	3" long	G	120	.067		.23	3.84			4.07	6.30
0900	4" long	G	120	.067		.29	3.84			4.13	6.35
1000	5" long	G	115	.070		.36	4.01			4.37	6.70
1100	1/2" diameter, 1-1/2" long	G	120	.067		.41	3.84			4.25	6.50
1200	2" long	G	120	.067		.48	3.84			4.32	6.55
1300	4" long	G	115	.070		.77	4.01			4.78	7.15
1400	6" long	G	110	.073		1.08	4.19			5.27	7.80
1500	8" long	G	105	.076		1.42	4.39			5.81	8.45
1600	5/8" diameter, 1-1/2" long	G	120	.067		.88	3.84			4.72	7
1700	2" long	G	120	.067		.96	3.84			4.80	7.10
1800	4" long	G	115	.070		1.37	4.01			5.38	7.80

05 05 Common Work Results for Metals

05 05 23 – Metal Fastenings

05 05 23.10 Bolts and Hex Nuts			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
		Crew				Labor	Equipment		
1900	6" long	[G]	1 Sswk	.110	.073	Ea.	1.74	4.19	5.93
2000	8" long	[G]		.105	.076		2.56	4.39	6.95
2100	10" long	[G]		.100	.080		3.21	4.61	7.82
2200	3/4" diameter, 2" long	[G]		.120	.067		1.22	3.84	5.06
2300	4" long	[G]		.110	.073		1.78	4.19	5.97
2400	6" long	[G]		.105	.076		2.30	4.39	6.69
2500	8" long	[G]		.095	.084		3.51	4.85	8.36
2600	10" long	[G]		.085	.094		4.62	5.45	10.07
2700	12" long	[G]		.080	.100		5.45	5.75	11.20
2800	1" diameter, 3" long	[G]		.105	.076		3.02	4.39	7.41
2900	6" long	[G]		.090	.089		4.49	5.10	9.59
3000	12" long	[G]		.075	.107		8.20	6.15	14.35
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. 1.02 3.55 4.57 6.65
0120	2" long	[G] 125 .064 1.10 3.69 4.79 7
0150	3" long	[G] 120 .067 1.52 3.84 5.36 7.70
0170	5/8" diameter x 1-1/2" long	[G] 125 .064 2 3.69 5.69 8
0180	2" long	[G] 120 .067 2.16 3.84 6 8.45
0190	3" long	[G] 115 .070 2.70 4.01 6.71 9.25
0200	3/4" diameter x 2" long	[G] 120 .067 3.30 3.84 7.14 9.70
0220	3" long	[G] 115 .070 3.99 4.01 8 10.70
0250	4" long	[G] 110 .073 4.92 4.19 9.11 12
0300	6" long	[G] 105 .076 6.45 4.39 10.84 14
0350	8" long	[G] 95 .084 12.85 4.85 17.70 22
0360	7/8" diameter x 2" long	[G] 115 .070 4.08 4.01 8.09 10.80
0365	3" long	[G] 110 .073 4.82 4.19 9.01 11.90
0370	4" long	[G] 105 .076 5.80 4.39 10.19 13.30
0380	6" long	[G] 100 .080 7.35 4.61 11.96 15.35
0390	8" long	[G] 90 .089 11.70 5.10 16.80 21
0400	1" diameter x 2" long	[G] 105 .076 4.61 4.39 9 11.95
0420	3" long	[G] 100 .080 5.20 4.61 9.81 12.95
0450	4" long	[G] 95 .084 5.85 4.85 10.70 14.05
0500	6" long	[G] 90 .089 7.75 5.10 12.85 16.60
0550	8" long	[G] 85 .094 13.40 5.45 18.85 23.50
0600	1-1/4" diameter x 3" long	[G] 85 .094 10.25 5.45 15.70 19.80
0650	4" long	[G] 80 .100 11.15 5.75 16.90 21.50
0700	6" long	[G] 75 .107 14.50 6.15 20.65 25.50
0750	8" long	[G] 70 .114 18.45 6.60 25.05 31
1020	A490, bolt-nut-washer set	
1170	5/8" diameter x 1-1/2" long	[G] 1 Sswk .125 .064 Ea. 5.10 3.69 8.79 11.40
1180	2" long	[G] 120 .067 6 3.84 9.84 12.65
1190	3" long	[G] 115 .070 7.30 4.01 11.31 14.35
1200	3/4" diameter x 2" long	[G] 120 .067 5.45 3.84 9.29 12.05
1220	3" long	[G] 115 .070 6.40 4.01 10.41 13.35
1250	4" long	[G] 110 .073 7.45 4.19 11.64 14.80
1300	6" long	[G] 105 .076 10.85 4.39 15.24 18.85
1350	8" long	[G] 95 .084 18.30 4.85 23.15 27.50
1360	7/8" diameter x 2" long	[G] 115 .070 7.75 4.01 11.76 14.85

05 05 Common Work Results for Metals

05 05 23 – Metal Fastenings

			Daily	Labor-	Unit	2020 Bare Costs			Total	Total Ind O&P
			Crew	Output		Material	Labor	Equipment		
05 05 23.25	High Strength Bolts									
1365	3" long		G	1 Sswk	110	.073	Ea.	9.05	4.19	13.24
1370	4" long		G		105	.076		11.10	4.39	15.49
1380	6" long		G		100	.080		15.45	4.61	20.06
1390	8" long		G		90	.089		22	5.10	27.10
1400	1" diameter x 2" long		G		105	.076		9.40	4.39	13.79
1420	3" long		G		100	.080		11.15	4.61	15.76
1450	4" long		G		95	.084		12.70	4.85	17.55
1500	6" long		G		90	.089		16.70	5.10	21.80
1550	8" long		G		85	.094		26	5.45	31.45
1600	1-1/4" diameter x 3" long		G		85	.094		50.50	5.45	55.95
1650	4" long		G		80	.100		58.50	5.75	64.25
1700	6" long		G		75	.107		80.50	6.15	86.65
1750	8" long		G		70	.114		105	6.60	111.60

05 05 23.30 Lag Screws

0010	LAG SCREWS									
0020	Steel, 1/4" diameter, 2" long		G	1 Carp	200	.040	Ea.	.10	2.13	2.23
0100	3/8" diameter, 3" long		G		150	.053		.31	2.83	3.14
0200	1/2" diameter, 3" long		G		130	.062		.72	3.27	3.99
0300	5/8" diameter, 3" long		G	↓	120	.067	↓	1.26	3.54	4.80
										6.70

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	3.98	88.50	92.48
0110	#8 x 2" long		G		2.40	3.333		8.80	177	185.80
0200	#10 x 1" long		G		4	2		4.89	106	110.89
0300	#10 x 2" long		G	↓	2	4	↓	9.80	213	222.80
										330

05 05 23.50 Powder Actuated Tools and Fasteners

0010	POWDER ACTUATED TOOLS & FASTENERS									
0020	Stud driver, .22 caliber, single shot					Ea.		159		175
0100	.27 caliber, semi automatic, strip					"		460		460
0300	Powder load, single shot, .22 cal, power level 2, brown					C		6.25		6.25
0400	Strip, .27 cal, power level 4, red							10.30		10.30
0600	Drive pin, .300 x 3/4" long		G	1 Carp	4.80	1.667		4.48	88.50	92.98
0700	.300 x 3" long with washer		G	"	4	2	↓	11.95	106	117.95
										173

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	8.15	88.50	96.65
0200	3/16" diameter		G		4	2		11.65	106	117.65
0300	Aluminum rivet, steel mandrel, 1/8" diameter		G		4.80	1.667		10.30	88.50	98.80
0400	3/16" diameter		G		4	2		18.35	106	124.35
0500	Copper rivet, steel mandrel, 1/8" diameter		G		4.80	1.667		10.30	88.50	98.80
0800	Stainless rivet & mandrel, 1/8" diameter		G		4.80	1.667		25	88.50	113.50
0900	3/16" diameter		G		4	2		41	106	147
1000	Stainless rivet, steel mandrel, 1/8" diameter		G		4.80	1.667		16.70	88.50	105.20
1100	3/16" diameter		G		4	2		26	106	132
1200	Steel rivet and mandrel, 1/8" diameter		G		4.80	1.667		8.15	88.50	96.65
1300	3/16" diameter		G	↓	4	2	↓	11	106	117
1400	Hand riveting tool, standard					Ea.		78		86
1500	Deluxe							415		460
1600	Power riveting tool, standard							545		600
1700	Deluxe							1,575		1,725

05 05 Common Work Results for Metals

05 05 23 - Metal Fastenings

05 05 23.70 Structural Blind Bolts			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P	
0010	STRUCTURAL BLIND BOLTS										
0100	1/4" diameter x 1/4" grip		G	Sswk	240	.033	Ea.	1.84	1.92	3.76	5.05
0150	1/2" grip		G		216	.037		1.89	2.14	4.03	5.45
0200	3/8" diameter x 1/2" grip		G		232	.034		3.50	1.99	5.49	6.95
0250	3/4" grip		G		208	.038		3.14	2.22	5.36	6.95
0300	1/2" diameter x 1/2" grip		G		224	.036		6.25	2.06	8.31	10.15
0350	3/4" grip		G		200	.040		9.10	2.31	11.41	13.60
0400	5/8" diameter x 3/4" grip		G		216	.037		11.25	2.14	13.39	15.75
0450	1" grip		G		192	.042		15.70	2.40	18.10	21
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.	74.50	38.50	113	143
0400	1" thick				20	.800		156	46	202	245
0600	Neoprene bearing pads, 1/2" thick				24	.667		30	38.50	68.50	93.50
0700	1" thick				20	.800		60.50	46	106.50	139
0900	Fabric reinforced neoprene, 5000 psi, 1/2" thick				24	.667		12.30	38.50	50.80	74
1000	1" thick				20	.800		24.50	46	70.50	99.50
1200	Felt surfaced vinyl pads, cork and sisal, 5/8" thick				24	.667		6.35	38.50	44.85	67.50
1300	1" thick				20	.800		11.40	46	57.40	85
1500	Teflon bonded to 10 ga. carbon steel, 1/32" layer				24	.667		59	38.50	97.50	126
1600	3/32" layer				24	.667		88.50	38.50	127	158
1800	Bonded to 10 ga. stainless steel, 1/32" layer				24	.667		105	38.50	143.50	176
1900	3/32" layer				24	.667		124	38.50	162.50	198
2100	Circular machine leveling pad & stud						Kip	7.55		7.55	8.30
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.	.56	.97	1.01	2.54
0030	3-3/8" long		G		950	.017		.58	.98	1.02	2.58
0200	3-7/8" long		G		945	.017		.62	.99	1.02	2.63
0300	4-3/16" long		G		935	.017		.65	1	1.03	2.68
0500	4-7/8" long		G		930	.017		.73	1.01	1.04	2.78
0600	5-3/16" long		G		920	.017		.76	1.02	1.05	2.83
0800	5-3/8" long		G		910	.018		.77	1.03	1.06	2.86
0900	6-3/16" long		G		905	.018		.84	1.03	1.07	2.94
1000	7-3/16" long		G		895	.018		1.05	1.05	1.08	3.18
1100	8-3/16" long		G		890	.018		1.14	1.05	1.09	3.28
1500	7/8" diameter, 3-11/16" long		G		920	.017		.91	1.02	1.05	2.98
1600	4-3/16" long		G		910	.018		.97	1.03	1.06	3.06
1700	5-3/16" long		G		905	.018		1.10	1.03	1.07	3.20
1800	6-3/16" long		G		895	.018		1.23	1.05	1.08	3.36
1900	7-3/16" long		G		890	.018		1.37	1.05	1.09	3.51
2000	8-3/16" long		G		880	.018		1.49	1.06	1.10	3.65
05 05 23.87 Weld Studs											
0010	WELD STUDS										
0020	1/4" diameter, 2-11/16" long		G	E-10	1120	.014	Ea.	.37	.84	.86	2.07
0100	4-1/8" long		G		1080	.015		.35	.87	.90	2.12
0200	3/8" diameter, 4-1/8" long		G		1080	.015		.40	.87	.90	2.17
0300	6-1/8" long		G		1040	.015		.52	.90	.93	2.35
0400	1/2" diameter, 2-1/8" long		G		1040	.015		.37	.90	.93	2.20
0500	3-1/8" long		G		1025	.016		.45	.91	.94	2.30
0600	4-1/8" long		G		1010	.016		.53	.93	.96	2.42

05 05 Common Work Results for Metals

05 05 23 – Metal Fastenings

05 05 23.87 Weld Studs

Item No.	Description	G	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
							Labor	Equipment	Total		
0700	5-5/16" long	G	E-10	.990	.016	ea.	.65	.94	.98	2.57	3.27
0800	6-1/8" long	G		975	.016		.70	.96	.99	2.65	3.37
0900	8-1/8" long	G		960	.017		.99	.97	1.01	2.97	3.73
1000	5/8" diameter, 2-11/16" long	G		1000	.016		.64	.94	.97	2.55	3.24
1010	4-3/16" long	G		990	.016		.80	.94	.98	2.72	3.43
1100	6-9/16" long	G		975	.016		1.04	.96	.99	2.99	3.73
1200	8-3/16" long	G		960	.017		1.39	.97	1.01	3.37	4.17

05 05 23.90 Welding Rod

0010 WELDING ROD

0020	Steel, type 6011, 1/8" diam., less than 500#					Lb.	2.76		2.76		3.04
0100	500# to 2,000#						2.49		2.49		2.74
0200	2,000# to 5,000#						2.34		2.34		2.57
0300	5/32" diam., less than 500#						2.46		2.46		2.71
0310	500# to 2,000#						2.22		2.22		2.44
0320	2,000# to 5,000#						2.09		2.09		2.30
0400	3/16" diam., less than 500#						2.75		2.75		3.03
0500	500# to 2,000#						2.48		2.48		2.73
0600	2,000# to 5,000#						2.33		2.33		2.56
0620	Steel, type 6010, 1/8" diam., less than 500#						2.49		2.49		2.74
0630	500# to 2,000#						2.24		2.24		2.46
0640	2,000# to 5,000#						2.11		2.11		2.32
0650	Steel, type 7018 Low Hydrogen, 1/8" diam., less than 500#						2.94		2.94		3.24
0660	500# to 2,000#						2.65		2.65		2.92
0670	2,000# to 5,000#						2.49		2.49		2.74
0700	Steel, type 7024 Jet Weld, 1/8" diam., less than 500#						2.55		2.55		2.81
0710	500# to 2,000#						2.30		2.30		2.53
0720	2,000# to 5,000#						2.16		2.16		2.38
1550	Aluminum, type 4043 TIG, 1/8" diam., less than 10#						5.20		5.20		5.75
1560	10# to 60#						4.70		4.70		5.15
1570	Over 60#						4.42		4.42		4.86
1600	Aluminum, type 5356 TIG, 1/8" diam., less than 10#						5.55		5.55		6.10
1610	10# to 60#						4.99		4.99		5.50
1620	Over 60#						4.69		4.69		5.15
1900	Cast iron, type 8 Nickel, 1/8" diam., less than 500#						22.50		22.50		24.50
1910	500# to 1,000#						20		20		22
1920	Over 1,000#						18.90		18.90		21
2000	Stainless steel, type 316/316L, 1/8" diam., less than 500#						7.15		7.15		7.85
2100	500# to 1,000#						6.45		6.45		7.10
2220	Over 1,000#						6.05		6.05		6.65

05 12 Structural Steel Framing

05 12 23 – Structural Steel for Buildings

05 12 23.05 Canopy Framing

0010	CANOPY FRAMING	G	E-4	3000	.011	Lb.	1.72	.62	.05	2.39	2.92
0020	6" and 8" members, shop fabricated										

05 12 23.10 Ceiling Supports

0010	CEILING SUPPORTS	G	E-4	60	.533	L.F.	29	31	2.45	62.45	82.50
1000	Entrance door/folding partition supports, shop fabricated	G		14	2.286		131	133	10.50	274.50	365
1100	Linear accelerator door supports	G									
1200	Lintel or shelf angles, hung, exterior hot dipped galv.	G		267	.120		19.60	6.95	.55	27.10	33

05 12 Structural Steel Framing

05 12 23 – Structural Steel for Buildings

05 12 23.10 Ceiling Supports			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Ind O&P
Line No.	Description		Crew								
1250	Two coats primer paint instead of galv.	[G]	E-4	267	.120	L.F.	17	6.95	.55	24.50	30.50
1400	Monitor support, ceiling hung, expansion bolted	[G]		4	.8	Ea.	455	465	36.50	956.50	1,275
1450	Hung from pre-set inserts	[G]		6	5.333		490	310	24.50	824.50	1,050
1600	Motor supports for overhead doors	[G]		4	.8		232	465	36.50	733.50	1,025
1700	Partition support for heavy folding partitions, without pocket	[G]		24	1.333	L.F.	65.50	77.50	6.10	149.10	201
1750	Supports at pocket only	[G]		12	2.667		131	155	12.25	298.25	400
2000	Rolling grilles & fire door supports	[G]		34	.941		56	54.50	4.32	114.82	152
2100	Spider-leg light supports, expansion bolted to ceiling slab	[G]		8	.4	Ea.	187	233	18.35	438.35	590
2150	Hung from pre-set inserts	[G]		12	2.667	"	201	155	12.25	368.25	475
2400	Toilet partition support	[G]		36	.889	L.F.	65.50	51.50	4.08	121.08	157
2500	X-ray travel gantry support	[G]		12	2.667	"	224	155	12.25	391.25	505

05 12 23.15 Columns, Lightweight

0010 COLUMNS, LIGHTWEIGHT											
1000	Lightweight units (lally), 3-1/2" diameter		E-2	780	.072	L.F.	6.30	4.10	2.17	12.57	15.70
1050	4" diameter			900	.062		9.40	3.56	1.88	14.84	17.85
5800	Adjustable jack post, 8' maximum height, 2-3/4" diameter	[G]				Ea.	52			52	57
5850	4" diameter	[G]				"	83			83	91.50

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.	47.50	4.85	2.57	54.92	62.50
0830	4" diameter			780	.072		53	4.10	2.17	59.27	66.50
0890	5" diameter			1020	.055		63	3.14	1.66	67.80	75.50
0930	6" diameter			1200	.047		83.50	2.67	1.41	87.58	97.50
0940	8" diameter			1100	.051		83.50	2.91	1.54	87.95	98
1100	For galvanizing, add					lb.	.29			.29	.31
1300	For web ties, angles, etc., add per added lb.		1 Sswk	945	.008		1.44	.49		1.93	2.35
1500	Steel pipe, extra strong, no concrete, 3" to 5" diameter	[G]	E-2	16000	.004		1.44	.20	.11	1.75	2.01
1600	6" to 12" diameter	[G]		14000	.004		1.44	.23	.12	1.79	2.06
1700	Steel pipe, extra strong, no concrete, 3" diameter x 12'-0"	[G]		60	.933	Ea.	177	53.50	28.50	259	310
1750	4" diameter x 12'-0"	[G]		58	.966		258	55	29.50	342.50	400
1800	6" diameter x 12'-0"	[G]		54	1.037		495	59.50	31.50	586	665
1850	8" diameter x 14'-0"	[G]		50	1.120		875	64	34	973	1,100
1900	10" diameter x 16'-0"	[G]		48	1.167		1,250	66.50	35.50	1,352	1,525
1950	12" diameter x 18'-0"	[G]		45	1.244		1,700	71	37.50	1,808.50	2,000
3300	Structural tubing, square, A500GRB, 4" to 6" square, light section	[G]		11270	.005	lb.	1.44	.28	.15	1.87	2.19
3600	Heavy section	[G]		32000	.002	"	1.44	.10	.05	1.59	1.79
4000	Concrete filled, add					L.F.	5.10			5.10	5.60
4500	Structural tubing, square, 4" x 4" x 1/4" x 12'-0"	[G]	E-2	58	.966	Ea.	237	55	29.50	321.50	380
4550	6" x 6" x 1/4" x 12'-0"	[G]		54	1.037		390	59.50	31.50	481	550
4600	8" x 8" x 3/8" x 14'-0"	[G]		50	1.120		840	64	34	938	1,050
4650	10" x 10" x 1/2" x 16'-0"	[G]		48	1.167		1,550	66.50	35.50	1,652	1,875
5100	Structural tubing, rect., 5" to 6" wide, light section	[G]		8000	.007	lb.	1.44	.40	.21	2.05	2.43
5200	Heavy section	[G]		12000	.005		1.44	.27	.14	1.85	2.15
5300	7" to 10" wide, light section	[G]		15000	.004		1.44	.21	.11	1.76	2.03
5400	Heavy section	[G]		18000	.003		1.44	.18	.09	1.71	1.96
5500	Structural tubing, rect., 5" x 3" x 1/4" x 12'-0"	[G]		58	.966	Ea.	230	55	29.50	314.50	370
5550	6" x 4" x 5/16" x 12'-0"	[G]		54	1.037		360	59.50	31.50	451	520
5600	8" x 4" x 3/8" x 12'-0"	[G]		54	1.037		525	59.50	31.50	616	700
5650	10" x 6" x 3/8" x 14'-0"	[G]		50	1.120		840	64	34	938	1,050
5700	12" x 8" x 1/2" x 16'-0"	[G]		48	1.167		1,550	66.50	35.50	1,652	1,850

05 12 Structural Steel Framing

05 12 23 – Structural Steel for Buildings

05 12 23.17 Columns, Structural

			Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P		
								Labor	Equipment			
6800	W Shape, A992 steel, 2 tier, W8 x 24		G	E-2	1080	.052	L.F.	38	2.96	1.57	42.53	48
6850	W8 x 31		G		1080	.052		49	2.96	1.57	53.53	60.50
6900	W8 x 48		G		1032	.054		76	3.10	1.64	80.74	90
6950	W8 x 67		G		984	.057		106	3.25	1.72	110.97	123
7000	W10 x 45		G		1032	.054		71	3.10	1.64	75.74	84.50
7050	W10 x 68		G		984	.057		107	3.25	1.72	111.97	125
7100	W10 x 112		G		960	.058		177	3.33	1.77	182.10	202
7150	W12 x 50		G		1032	.054		79	3.10	1.64	83.74	93.50
7200	W12 x 87		G		984	.057		138	3.25	1.72	142.97	158
7250	W12 x 120		G		960	.058		190	3.33	1.77	195.10	216
7300	W12 x 190		G		912	.061		300	3.51	1.86	305.37	340
7350	W14 x 74		G		984	.057		117	3.25	1.72	121.97	136
7400	W14 x 120		G		960	.058		190	3.33	1.77	195.10	216
7450	W14 x 176		G		912	.061		278	3.51	1.86	283.37	315
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 Corp	160	.100	L.F.	7.95	5.30		13.25	16.70
0100	2" x 2" x 1/4" angles, 3.2#/L.F.			150	.107		10.60	5.65		16.25	20
0200	3" x 3" x 5/16" angles, 6.1#/L.F.			140	.114		17.95	6.05		24	29
0300	4" x 4" x 5/16" angles, 8.2#/L.F.			120	.133		18.10	7.10		25.20	30.50
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.	1.74	5.30	.42	7.46	10.70
0100	2" x 2" angles, 3.92#/L.F.		G		330	.097		7.10	5.65	.45	13.20	17.20
0200	3" x 3" angles, 6.1#/L.F.		G		300	.107		11.70	6.20	.49	18.39	23
0300	4" x 4" angles, 8.2#/L.F.		G		275	.116		15.30	6.75	.53	22.58	28
1000	6" x 4" angles, 12.3#/L.F.		G		250	.128		22.50	7.45	.59	30.54	37
1050	Steel channels with anchors, on forms, 3" channel, 5#/L.F.		G		290	.110		9	6.40	.51	15.91	20.50
1100	4" channel, 5.4#/L.F.		G		270	.119		9.65	6.90	.54	17.09	22
1200	6" channel, 8.2#/L.F.		G		255	.125		15.30	7.30	.58	23.18	29
1300	8" channel, 11.5#/L.F.		G		225	.142		21	8.25	.65	29.90	36.50
1400	10" channel, 15.3#/L.F.		G		180	.178		27.50	10.35	.82	38.67	47.50
1500	12" channel, 20.7#/L.F.		G		140	.229		37	13.30	1.05	51.35	62.50
2000	For curved edging, add						35%	10%				

05 12 23.40 Lightweight Framing

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.	.83	3.18	.33	4.34	6.25	
0450	Less than 4" angles		G		265	.091	"	.86	5.30	.56	6.72	9.85
0460	1/2" x 1/2" x 1/8"		G		200	.120	L.F.	.17	.7	.74	7.91	11.95
0462	3/4" x 3/4" x 1/8"		G		160	.150		.48	8.75	.92	10.15	15.25

05 12 Structural Steel Framing

05 12 23 – Structural Steel for Buildings

05 12 23.40 Lightweight Framing

			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P		
			Crew			Labor	Equipment				
0464	1" x 1" x 1/8"	[G]	E-3	135	.178	L.F.	.69	10.35	1.09	12.13	18.20
0466	1-1/4" x 1-1/4" x 3/16"	[G]		115	.209		1.28	12.15	1.28	14.71	22
0468	1-1/2" x 1-1/2" x 3/16"	[G]		100	.240		1.55	14	1.47	17.02	25.50
0470	2" x 2" x 1/4"	[G]		90	.267		2.75	15.55	1.63	19.93	29.50
0472	2-1/2" x 2-1/2" x 1/4"	[G]		72	.333		3.53	19.40	2.04	24.97	36.50
0474	3" x 2" x 3/8"	[G]		65	.369		5.10	21.50	2.26	28.86	41.50
0476	3" x 3" x 3/8"	[G]		57	.421		6.20	24.50	2.58	33.28	48
0600	Channel framing, field fabricated, 8" and larger	[G]		500	.048	Lb.	.86	2.80	.29	3.95	5.65
0650	Less than 8" channels	[G]		335	.072	"	.86	4.17	.44	5.47	8
0660	C2 x 1.78	[G]		115	.209	L.F.	1.53	12.15	1.28	14.96	22
0662	C3 x 4.1	[G]		80	.300		3.53	17.50	1.84	22.87	33.50
0664	C4 x 5.4	[G]		66	.364		4.66	21	2.23	27.89	40.50
0666	C5 x 6.7	[G]		57	.421		5.80	24.50	2.58	32.88	47.50
0668	C6 x 8.2	[G]		55	.436		6.85	25.50	2.67	35.02	50.50
0670	" C7 x 9.8	[G]		40	.600		8.45	35	3.68	47.13	68.50
0672	C8 x 11.5	[G]		36	.667		9.90	39	4.09	52.99	76.50
0710	Structural bar tee, field fabricated, 3/4" x 3/4" x 1/8"	[G]		160	.150		.48	8.75	.92	10.15	15.25
0712	1" x 1" x 1/8"	[G]		135	.178		.69	10.35	1.09	12.13	18.20
0714	1-1/2" x 1-1/2" x 1/4"	[G]		114	.211		2.02	12.25	1.29	15.56	23
0716	2" x 2" x 1/4"	[G]		89	.270		2.75	15.70	1.65	20.10	29.50
0718	2-1/2" x 2-1/2" x 3/8"	[G]		72	.333		5.10	19.40	2.04	26.54	38.50
0720	3" x 3" x 3/8"	[G]		57	.421		6.20	24.50	2.58	33.28	48
0730	Structural zee, field fabricated, 1-1/4" x 1-3/4" x 1-3/4"	[G]		114	.211		.66	12.25	1.29	14.20	21.50
0732	2-11/16" x 3" x 2-11/16"	[G]		114	.211		1.53	12.25	1.29	15.07	22.50
0734	3-1/16" x 4" x 3-1/16"	[G]		133	.180		2.32	10.50	1.11	13.93	20.50
0736	3-1/4" x 5" x 3-1/4"	[G]		133	.180		3.16	10.50	1.11	14.77	21
0738	3-1/2" x 6" x 3-1/2"	[G]		160	.150		4.77	8.75	.92	14.44	19.95
0740	Junior beam, field fabricated, 3"	[G]		80	.300		4.91	17.50	1.84	24.25	35
0742	4"	[G]		72	.333		6.65	19.40	2.04	28.09	40
0744	5"	[G]		67	.358		8.60	21	2.20	31.80	44.50
0746	6"	[G]		62	.387		10.80	22.50	2.37	35.67	50
0748	7"	[G]		57	.421		13.20	24.50	2.58	40.28	56
0750	8"	[G]		53	.453		15.85	26.50	2.78	45.13	62
1000	Continuous slotted channel framing system, shop fab, simple framing	[G]	2 Sswk	2400	.007	Lb.	4.45	.38		4.83	5.50
1200	Complex framing	[G]	"	1600	.010		5.05	.58		5.63	6.45
1300	Cross bracing, rods, shop fabricated, 3/4" diameter	[G]	E-3	700	.034		1.72	2	.21	3.93	5.25
1310	7/8" diameter	[G]		850	.028		1.72	1.65	.17	3.54	4.67
1320	1" diameter	[G]		1000	.024		1.72	1.40	.15	3.27	4.25
1330	Angle, 5" x 5" x 3/8"	[G]		2800	.009		1.72	.50	.05	2.27	2.74
1350	Hanging lintels, shop fabricated	[G]		850	.028		1.72	1.65	.17	3.54	4.67
1380	Roof frames, shop fabricated, 3'-0" square, 5' span	[G]	E-2	4200	.013		1.72	.76	.40	2.88	3.52
1400	Tie rod, not upset, 1-1/2" to 4" diameter, with turnbuckle	[G]	2 Sswk	800	.020		1.87	1.15		3.02	3.86
1420	No turnbuckle	[G]		700	.023		1.80	1.32		3.12	4.05
1500	Upset, 1-3/4" to 4" diameter, with turnbuckle	[G]		800	.020		1.87	1.15		3.02	3.86
1520	No turnbuckle	[G]		700	.023		1.80	1.32		3.12	4.05

05 12 23.45 Lintels

0010	LINTELS										
0015	Made from recycled materials										
0020	Plain steel angles, shop fabricated, under 500 lb.	[G]	1 Bric	550	.015	Lb.	1.11	.76		1.87	2.37
0100	500 to 1,000 lb.	[G]		640	.013		1.08	.65		1.73	2.18
0200	1,000 to 2,000 lb.	[G]		640	.013		1.05	.65		1.70	2.14
0300	2,000 to 4,000 lb.	[G]		640	.013		1.02	.65		1.67	2.11

05 12 Structural Steel Framing

05 12 23 – Structural Steel for Buildings

05 12 23.45 Lintels

			Daily Crew Output	Labor-Hours	Unit	Material	2020 Bare Labor Costs	Equipment	Total	Total Incl O&P
0500	For built-up angles and plates, add to above	[G]			Lb.	1.44			1.44	1.58
0700	For engineering, add to above					.14			.14	.16
0900	For galvanizing, add to above, under 500 lb.					.32			.32	.35
0950	500 to 2,000 lb.					.29			.29	.32
1000	Over 2,000 lb.					.29			.29	.31
2000	Steel angles, 3-1/2" x 3", 1/4" thick, 2'-6" long	[G]	1 Bric	47	.170	Ea.	15.50	8.85	24.35	30.50
2100	4'-6" long	[G]		26	.308		28	16	44	55
2600	4" x 3-1/2", 1/4" thick, 5'-0" long	[G]		21	.381		35.50	19.85	55.35	69
2700	9'-0" long	[G]		12	.667		64	34.50	98.50	123

05 12 23.60 Pipe Support Framing

	PIPE SUPPORT FRAMING										
0020	Under 10#/L.F., shop fabricated	[G]	E-4	3900	.008	Lb.	1.93	.48	.04	2.45	2.91
0200	10.1 to 15#/L.F.	[G]		4300	.007		1.90	.43	.03	2.36	2.81
0400	15.1 to 20#/L.F.	[G]		4800	.007		1.87	.39	.03	2.29	2.69
0600	Over 20#/L.F.	[G]		5400	.006		1.84	.34	.03	2.21	2.59

05 12 23.65 Plates

	PLATES									
0015	Made from recycled materials		R051223-80							
0020	For connections & stiffener plates, shop fabricated									
0050	1/8" thick (5.1 lb./S.F.)	[G]				S.F.	7.35		7.35	8.05
0100	1/4" thick (10.2 lb./S.F.)	[G]					14.65		14.65	16.10
0300	3/8" thick (15.3 lb./S.F.)	[G]					22		22	24
0400	1/2" thick (20.4 lb./S.F.)	[G]					29.50		29.50	32
0450	3/4" thick (30.6 lb./S.F.)	[G]					44		44	48.50
0500	1" thick (40.8 lb./S.F.)	[G]					58.50		58.50	64.50
2000	Steel plate, warehouse prices, no shop fabrication					S.F.	7.20		7.20	7.90
2100	1/4" thick (10.2 lb./S.F.)	[G]								

05 12 23.70 Stressed Skin Steel Roof and Ceiling System

	STRESSED SKIN STEEL ROOF & CEILING SYSTEM										
0020	Double panel flat roof, spans to 100'	[G]	E-2	1150	.049	S.F.	11.50	2.78	1.48	15.76	18.60
0100	Double panel convex roof, spans to 200'	[G]		960	.058		18.70	3.33	1.77	23.80	27.50
0200	Double panel arched roof, spans to 300'	[G]		760	.074		28.50	4.21	2.23	34.94	40.50

05 12 23.75 Structural Steel Members

	STRUCTURAL STEEL MEMBERS										
0015	Made from recycled materials		R051223-10								
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.	14.25	5.35	2.83	22.43	27
0120	x 15	[G]		600	.093		23.50	5.35	2.83	31.68	37.50
0140	x 20	[G]		600	.093		31.50	5.35	2.83	39.68	46.50
0300	W 8 x 10	[G]		600	.093		15.80	5.35	2.83	23.98	29
0320	x 15	[G]		600	.093		23.50	5.35	2.83	31.68	37.50
0350	x 21	[G]		600	.093		33	5.35	2.83	41.18	48
0360	x 24	[G]		550	.102		38	5.80	3.08	46.88	54
0370	x 28	[G]		550	.102		44.50	5.80	3.08	53.38	61
0500	x 31	[G]		550	.102		49	5.80	3.08	57.88	66.50
0520	x 35	[G]		550	.102		55.50	5.80	3.08	64.38	73.50
0540	x 48	[G]		550	.102		76	5.80	3.08	84.88	96
0600	W 10 x 12	[G]		600	.093		18.95	5.35	2.83	27.13	32.50
0620	x 15	[G]		600	.093		23.50	5.35	2.83	31.68	37.50
0700	x 22	[G]		600	.093		35	5.35	2.83	43.18	50
0720	x 26	[G]		600	.093		41	5.35	2.83	49.18	56.50
0740	x 33	[G]		550	.102		52	5.80	3.08	60.88	70

05 12 Structural Steel Framing

05 12 23 – Structural Steel for Buildings

05 12 23.75 Structural Steel Members		Crew	Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P	
						Material	Labor	Equipment			
0900	x 49	G	E-2	550	.102	L.F.	77.50	5.80	3.08	86.38	97.50
1100	W 12 x 16	G		880	.064		25.50	3.64	1.93	31.07	36
1300	x 22	G		880	.064		35	3.64	1.93	40.57	46.50
1500	x 26	G		880	.064		41	3.64	1.93	46.57	53
1520	x 35	G		810	.069		55.50	3.95	2.09	61.54	69.50
1560	x 50	G		750	.075		79	4.27	2.26	85.53	96
1580	x 58	G		750	.075		91.50	4.27	2.26	98.03	110
1700	x 72	G		640	.088		114	5	2.65	121.65	136
1740	x 87	G		640	.088		138	5	2.65	145.65	162
1900	W 14 x 26	G		990	.057		41	3.23	1.71	45.94	52
2100	x 30	G		900	.062		47.50	3.56	1.88	52.94	59.50
2300	x 34	G		810	.069		53.50	3.95	2.09	59.54	67.50
2320	x 43	G		810	.069		68	3.95	2.09	74.04	83.50
2340	x 53	G		800	.070		84	4	2.12	90.12	101
2360	x 74	G		760	.074		117	4.21	2.23	123.44	138
2380	x 90	G		740	.076		142	4.32	2.29	148.61	165
2500	x 120	G		720	.078		190	4.44	2.36	196.80	218
2700	W 16 x 26	G		1000	.056		41	3.20	1.70	45.90	52
2900	x 31	G		900	.062		49	3.56	1.88	54.44	61.50
3100	x 40	G		800	.070		63	4	2.12	69.12	78
3120	x 50	G		800	.070		79	4	2.12	85.12	95.50
3140	x 67	G		760	.074		106	4.21	2.23	112.44	125
3300	W 18 x 35	G	E-5	960	.083		55.50	4.79	1.92	62.21	70.50
3500	x 40	G		960	.083		63	4.79	1.92	69.71	79
3520	x 46	G		960	.083		72.50	4.79	1.92	79.21	89.50
3700	x 50	G		912	.088		79	5.05	2.02	86.07	97
3900	x 55	G		912	.088		87	5.05	2.02	94.07	106
3920	x 65	G		900	.089		103	5.10	2.05	110.15	123
3940	x 76	G		900	.089		120	5.10	2.05	127.15	142
3960	x 86	G		900	.089		136	5.10	2.05	143.15	160
3980	x 106	G		900	.089		168	5.10	2.05	175.15	194
4100	W 21 x 44	G		1064	.075		69.50	4.32	1.73	75.55	85
4300	x 50	G		1064	.075		79	4.32	1.73	85.05	95.50
4500	x 62	G		1036	.077		98	4.44	1.78	104.22	117
4700	x 68	G		1036	.077		107	4.44	1.78	113.22	127
4720	x 83	G		1000	.080		131	4.60	1.84	137.44	153
4740	x 93	G		1000	.080		147	4.60	1.84	153.44	171
4760	x 101	G		1000	.080		160	4.60	1.84	166.44	185
4780	x 122	G		1000	.080		193	4.60	1.84	199.44	221
4900	W 24 x 55	G		1110	.072		87	4.14	1.66	92.80	104
5100	x 62	G		1110	.072		98	4.14	1.66	103.80	116
5300	x 68	G		1110	.072		107	4.14	1.66	112.80	126
5500	x 76	G		1110	.072		120	4.14	1.66	125.80	140
5700	x 84	G		1080	.074		133	4.26	1.71	138.97	154
5720	x 94	G		1080	.074		149	4.26	1.71	154.97	171
5740	x 104	G		1050	.076		164	4.38	1.76	170.14	190
5760	x 117	G		1050	.076		185	4.38	1.76	191.14	212
5780	x 146	G		1050	.076		231	4.38	1.76	237.14	263
5800	W 27 x 84	G		1190	.067		133	3.86	1.55	138.41	154
5900	x 94	G		1190	.067		149	3.86	1.55	154.41	171
5920	x 114	G		1150	.070		180	4	1.60	185.60	206
5940	x 146	G		1150	.070		231	4	1.60	236.60	262
5960	x 161	G		1150	.070		254	4	1.60	259.60	288

05 12 Structural Steel Framing

05 12 23 – Structural Steel for Buildings

05 12 23.75 Structural Steel Members		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
							Labor	Equipment	Total		
6100	W 30 x 99	G	E-5	1200	.067	L.F.	156	3.83	1.54	161.37	180
6300	x 108	G	"	1200	.067		171	3.83	1.54	176.37	196
6500	x 116	G	"	1160	.069		183	3.96	1.59	188.55	210
6520	x 132	G	"	1160	.069		209	3.96	1.59	214.55	238
6540	x 148	G	"	1160	.069		234	3.96	1.59	239.55	265
6560	x 173	G	"	1120	.071		273	4.11	1.65	278.76	310
6580	x 191	G	"	1120	.071		300	4.11	1.65	305.76	340
6700	W 33 x 118	G	"	1176	.068		187	3.91	1.57	192.48	213
6900	x 130	G	"	1134	.071		205	4.06	1.63	210.69	234
7100	x 141	G	"	1134	.071		223	4.06	1.63	228.69	253
7120	x 169	G	"	1100	.073		267	4.18	1.68	272.86	300
7140	x 201	G	"	1100	.073		320	4.18	1.68	325.86	360
7300	W 36 x 135	G	"	1170	.068		213	3.93	1.58	218.51	243
7500	x 150	G	"	1170	.068		237	3.93	1.58	242.51	269
7600	x 170	G	"	1150	.070		269	4	1.60	274.60	305
7700	x 194	G	"	1125	.071		305	4.09	1.64	310.73	345
7900	x 231	G	"	1125	.071		365	4.09	1.64	370.73	410
7920	x 262	G	"	1035	.077		415	4.44	1.78	421.22	465
8100	x 302	G	"	1035	.077		475	4.44	1.78	481.22	535
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	2,875	445	179	3,499	4,050
0300	3 to 6 stories		G	"	10.10	7.921		2,925	455	183	3,563	4,125
0400	7 to 15 stories	R051223-10	G	E-6	14.20	9.014		3,000	515	151	3,666	4,275
0500	Over 15 stories		G	"	13.90	9.209		3,100	530	155	3,785	4,425
0700	Offices, hospitals, etc., steel bearing, 1 to 2 stories	R051223-20	G	E-5	10.30	7.767		2,875	445	179	3,499	4,050
0800	3 to 6 stories		G	E-6	14.40	8.889		2,925	510	149	3,584	4,175
0900	7 to 15 stories	R051223-25	G	"	14.20	9.014		3,000	515	151	3,666	4,275
1000	Over 15 stories		G	"	13.90	9.209		3,100	530	155	3,785	4,425
1100	For multi-story masonry wall bearing construction, add	R051223-30						30%				
1300	Industrial bldgs., 1 story, beams & girders, steel bearing		G	E-5	12.90	6.202		2,875	355	143	3,373	3,850
1400	Masonry bearing		G	"	10	8		2,875	460	184	3,519	4,075
1500	Industrial bldgs., 1 story, under 10 tons,		G	E-2	7.50	7.467	Ton	3,450	425	226	4,101	4,700
1510	steel from warehouse, trucked		G	E-5	10.60	7.547		3,400	435	174	4,009	4,600
1600	1 story with roof trusses, steel bearing		G	"	8.30	9.639		3,400	555	222	4,177	4,825
1700	Masonry bearing		G	E-6	13	9.846		2,875	565	165	3,605	4,200
1900	Monumental structures, banks, stores, etc., simple connections		G	"	9	14.222		4,775	815	239	5,829	6,800
2000	Moment/composite connections		G	E-5	11.60	6.897		2,675	395	159	3,229	3,750
2200	Churches, simple connections		G	"	5.20	15.385		3,575	885	355	4,815	5,700
2300	Moment/composite connections		G	E-6	11	11.636		2,875	670	195	3,740	4,425
2800	Power stations, fossil fuels, simple connections		G	"	5.70	22.456		4,300	1,300	375	5,975	7,175
2900	Moment/composite connections		G	"	7	18.286		2,875	1,050	305	4,230	5,125
2950	Nuclear fuels, non-safety steel, simple connections		G	"	5.50	23.273		4,300	1,325	390	6,015	7,250

05 12 Structural Steel Framing

05 12 23 – Structural Steel for Buildings

05 12 23.77 Structural Steel Projects		Daily Crew	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P		
					Material	Labor –	Equipment				
3040	Safety steel, simple connections	G	E-6	2.50	51,200	Ton	4,200	2,950	860	8,010	10,100
3070	Moment/composite connections	G		1.50	85,333		5,525	4,900	1,425	11,850	15,300
3100	Roof trusses, simple connections	G	E-5	13	6,154		4,025	355	142	4,522	5,125
3200	Moment/composite connections	G		8.30	9,639		4,875	555	222	5,652	6,475
3210	Schools, simple connections	G		14.50	5,517		2,875	315	127	3,317	3,775
3220	Moment/composite connections	G		8.30	9,639		4,200	555	222	4,977	5,725
3400	Welded construction, simple commercial bldgs., 1 to 2 stories	G	E-7	7.60	10,526		2,925	605	262	3,792	4,450
3500	7 to 15 stories	G	E-9	8.30	15,422		3,400	885	293	4,578	5,425
3700	Welded rigid frame, 1 story, simple connections	G	E-7	15.80	5,063		3,000	291	126	3,417	3,900
3800	Moment/composite connections	G	"	5.50	14,545		3,875	835	360	5,070	5,975
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	87.50			87.50	96.50
4300	Column base plates, light, up to 150 lb.	G	2 Sswk	2000	.008	lb.	1.58	.46		2.04	2.46
4400	Heavy, over 150 lb.	G	E-2	7500	.007	"	1.65	.43	.23	2.31	2.73
4600	Castellated beams, light sections, to 50#/L.F., simple connections	G		10.70	5,234	Ton	3,025	299	159	3,483	3,975
4700	Moment/composite connections	G		7	8		3,300	455	242	3,997	4,600
4900	Heavy sections, over 50 plf, simple connections	G		11.70	4,786		3,150	273	145	3,568	4,050
5000	Moment/composite connections	G		7.80	7,179		3,450	410	217	4,077	4,675
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.	3.88		3.88	4.27
0115	14 ga., 3.5 lb./L.F.					4.53		4.53	4.98
0120	8" x 2-3/4" x 2-3/4", 16 ga., 3.4 lb./L.F.					4.40		4.40	4.84
0125	14 ga., 4.1 lb./L.F.					5.30		5.30	5.85
0130	12 ga., 5.6 lb./L.F.					7.25		7.25	7.95
0135	10" x 3-1/2" x 3-1/2", 14 ga., 4.7 lb./L.F.					6.10		6.10	6.70
0140	12 ga., 6.7 lb./L.F.					8.65		8.65	9.55
0145	12" x 3-1/2" x 3-1/2", 14 ga., 5.3 lb./L.F.					6.85		6.85	7.55
0150	12 ga., 7.4 lb./L.F.					9.55		9.55	10.55
0200	Eave struts, C-shape, includes clips and bolts								
0210	6" x 4" x 3", 16 ga., 3.1 lb./L.F.				L.F.	4.01		4.01	4.41
0215	14 ga., 3.9 lb./L.F.					5.05		5.05	5.55
0220	8" x 4" x 3", 16 ga., 3.5 lb./L.F.					4.53		4.53	4.98
0225	14 ga., 4.4 lb./L.F.					5.70		5.70	6.25
0230	12 ga., 6.2 lb./L.F.					8		8	8.80
0235	10" x 5" x 3", 14 ga., 5.2 lb./L.F.					6.70		6.70	7.40
0240	12 ga., 7.3 lb./L.F.					9.45		9.45	10.40
0245	12" x 5" x 4", 14 ga., 6.0 lb./L.F.					7.75		7.75	8.55
0250	12 ga., 8.4 lb./L.F.					10.85		10.85	11.95
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.	1.29	1.44	2.73	3.68
0315	3" x 2", 14 ga., 1.3 lb./L.F.		535	.030		1.68	1.72	3.40	4.56

05 12 Structural Steel Framing

05 12 23 – Structural Steel for Buildings

05 12 23.78 Structural Steel Secondary Members		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
		2 Sswk	500	.032	L.F.		Labor	Equipment	
0320	3" x 3", 14 ga., 1.6 lb./L.F.		480	.033		2.07	1.84	3.91	5.15
0325	4" x 3", 14 ga., 1.8 lb./L.F.					2.33	1.92	4.25	5.55
0600	Installation of secondary members, erection only								
0610	Girts, purlins, eave struts, 16 ga., 6" deep	E-18	100	.400	Ea.		23	14.90	37.90
0615	8" deep		80	.500			29	18.60	47.60
0620	14 ga., 6" deep		80	.500			29	18.60	47.60
0625	8" deep		65	.615			35.50	23	58.50
0630	10" deep		55	.727			42	27	69
0635	12" deep		50	.800			46.50	30	76.50
0640	12 ga., 8" deep		50	.800			46.50	30	76.50
0645	10" deep		45	.889			51.50	33	84.50
0650	12" deep		40	1			58	37	95
0900	For less than 20-ton job lots				%	10%			
0905	For 15 to 19 tons, add								
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.	1.79	.44	.05
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.	4.46	.80	.42
0050	1 to 5 tons	G		4300	.013		3.77	.74	.39
0100	Over 5 tons	G		4600	.012		3.58	.70	.37
0300	Extrusions, over 5 tons, stock shapes	G		1330	.042		3.39	2.41	1.28
0400	Custom shapes	G		1330	.042		4.35	2.41	1.28

05 15 Wire Rope Assemblies

05 15 16 – Steel Wire Rope Assemblies

05 15 16.05 Accessories for Steel Wire Rope

0010	ACCESSORIES FOR STEEL WIRE ROPE								
0015	Made from recycled materials								
1500	Thimbles, heavy duty, 1/4"	G	E-17	160	.100	Ea.	.51	5.85	6.36
1510	1/2"	G		160	.100		2.24	5.85	8.09
1520	3/4"	G		105	.152		5.10	8.95	14.05
1530	1"	G		52	.308		10.15	18.05	28.20
1540	1-1/4"	G		38	.421		15.65	24.50	40.15
1550	1-1/2"	G		13	1.231		44	72	116
1560	1-3/4"	G		8	2		91	117	208

05 15 Wire Rope Assemblies

05 15 16 – Steel Wire Rope Assemblies

05 15 16.05 Accessories for Steel Wire Rope	Description	Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
1570	2"	G	E-17	6	2.667	Ea.	132	156	288	390
1580	2-1/4"	G		4	.4		179	235	414	565
1600	Clips, 1/4" diameter	G		160	.100		1.81	5.85	7.66	11.20
1610	3/8" diameter	G		160	.100		1.98	5.85	7.83	11.40
1620	1/2" diameter	G		160	.100		3.19	5.85	9.04	12.70
1630	3/4" diameter	G		102	.157		5.20	9.20	14.40	20
1640	1" diameter	G		64	.250		8.65	14.65	23.30	32.50
1650	1-1/4" diameter	G		35	.457		14.15	27	41.15	57.50
1670	1-1/2" diameter	G		26	.615		19.05	36	55.05	77.50
1680	1-3/4" diameter	G		16	1		44.50	58.50	103	141
1690	2" diameter	G		12	1.333		49.50	78	127.50	178
1700	2-1/4" diameter	G		10	1.600		73	94	167	227
1800	Sockets, open swage, 1/4" diameter	G		160	.100		31.50	5.85	37.35	44
1810	1/2" diameter	G		77	.208		45.50	12.20	57.70	69
1820	3/4" diameter	G		19	.842		71	49.50	120.50	156
1830	1" diameter	G		9	1.778		127	104	231	305
1840	1-1/4" diameter	G		5	3.200		176	188	364	485
1850	1-1/2" diameter	G		3	5.333		385	315	700	915
1860	1-3/4" diameter	G		3	5.333		685	315	1,000	1,250
1870	2" diameter	G		1.50	10.667		1,025	625	1,650	2,125
1900	Closed swage, 1/4" diameter	G		160	.100		19	5.85	24.85	30
1910	1/2" diameter	G		104	.154		33	9	42	50
1920	3/4" diameter	G		32	.500		49	29.50	78.50	100
1930	1" diameter	G		15	1.067		86.50	62.50	149	193
1940	1-1/4" diameter	G		7	2.286		129	134	263	350
1950	1-1/2" diameter	G		4	4		235	235	470	630
1960	1-3/4" diameter	G		3	5.333		345	315	660	870
1970	2" diameter	G		2	8		675	470	1,145	1,475
2000	Open spelter, galv., 1/4" diameter	G		160	.100		42	5.85	47.85	55
2010	1/2" diameter	G		70	.229		43.50	13.40	56.90	69
2020	3/4" diameter	G		26	.615		65.50	36	101.50	129
2030	1" diameter	G		10	1.600		182	94	276	345
2040	1-1/4" diameter	G		5	3.200		260	188	448	580
2050	1-1/2" diameter	G		4	4		550	235	785	975
2060	1-3/4" diameter	G		2	8		960	470	1,430	1,775
2070	2" diameter	G		1.20	13.333		1,100	780	1,880	2,450
2080	2-1/2" diameter	G		1	16		2,025	940	2,965	3,725
2100	Closed spelter, galv., 1/4" diameter	G		160	.100		33	5.85	38.85	45
2110	1/2" diameter	G		88	.182		35	10.65	45.65	55.50
2120	3/4" diameter	G		30	.533		53	31.50	84.50	108
2130	1" diameter	G		13	1.231		113	72	185	238
2140	1-1/4" diameter	G		7	2.286		181	134	315	410
2150	1-1/2" diameter	G		6	2.667		390	156	546	675
2160	1-3/4" diameter	G		2.80	5.714		520	335	855	1,100
2170	2" diameter	G		2	8		640	470	1,110	1,450
2200	Jaw & jaw turnbuckles, 1/4" x 4"	G		160	.100		9.65	5.85	15.50	19.80
2250	1/2" x 6"	G		96	.167		12.20	9.80	22	29
2260	1/2" x 9"	G		77	.208		16.25	12.20	28.45	37
2270	1/2" x 12"	G		66	.242		18.30	14.20	32.50	42.50
2300	3/4" x 6"	G		38	.421		24	24.50	48.50	65
2310	3/4" x 9"	G		30	.533		26.50	31.50	58	78
2320	3/4" x 12"	G		28	.571		34	33.50	67.50	90
2330	3/4" x 18"	G		23	.696		40.50	41	81.50	109

05 15 Wire Rope Assemblies

05 15 16 – Steel Wire Rope Assemblies

05 15 16.05 Accessories for Steel Wire Rope

		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
							Labor	Equipment	
2350	1" x 6"	G	E-17	17	.941	Ea.	46	55	101
2360	1" x 12"	G		13	1.231		51	72	123
2370	1" x 18"	G		10	1.600		76	94	170
2380	1" x 24"	G		9	1.778		84	104	188
2400	1-1/4" x 12"	G		7	2.286		85.50	134	219.50
2410	1-1/4" x 18"	G		6.50	2.462		106	144	250
2420	1-1/4" x 24"	G		5.60	2.857		142	168	310
2450	1-1/2" x 12"	G		5.20	3.077		238	180	418
2460	1-1/2" x 18"	G		4	4		254	235	489
2470	1-1/2" x 24"	G		3.20	5		340	293	633
2500	1-3/4" x 18"	G		3.20	5		515	293	808
2510	1-3/4" x 24"	G		2.80	5.714		585	335	920
2550	2" x 24"	G		1.60	10		795	585	1,380
									1,800

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.	.70		.70	.77
0050	Steel core	G				.92		.92	1.01
0100	Fiber core, 1" diameter	G				2.36		2.36	2.59
0150	Steel core	G				2.69		2.69	2.96
0300	6 x 19, galvanized, fiber core, 1/2" diameter	G				1.03		1.03	1.13
0350	Steel core	G				1.18		1.18	1.30
0400	Fiber core, 1" diameter	G				3.02		3.02	3.32
0450	Steel core	G				3.16		3.16	3.48
0500	6 x 7, bright, IPS, fiber core, <500 L.F. w/acc., 1/4" diameter	G	E-17	6400 .003		1.20	.15	1.35	1.55
0510	1/2" diameter	G		2100 .008		2.93	.45	3.38	3.92
0520	3/4" diameter	G		960 .017		5.30	.98	6.28	7.40
0550	6 x 19, bright, IPS, IWRC, <500 L.F. w/acc., 1/4" diameter	G		5760 .003		.77	.16	.93	1.11
0560	1/2" diameter	G		1730 .009		1.25	.54	1.79	2.23
0570	3/4" diameter	G		770 .021		2.17	1.22	3.39	4.30
0580	1" diameter	G		420 .038		3.68	2.23	5.91	7.55
0590	1-1/4" diameter	G		290 .055		6.10	3.24	9.34	11.80
0600	1-1/2" diameter	G		192 .083		7.50	4.89	12.39	15.90
0610	1-3/4" diameter	G	E-18	240 .167		11.95	9.65	6.20	27.80
0620	2" diameter	G		160 .250		15.35	14.45	9.30	39.10
0630	2-1/4" diameter	G		160 .250		20.50	14.45	9.30	44.25
0650	6 x 37, bright, IPS, IWRC, <500 L.F. w/acc., 1/4" diameter	G	E-17	6400 .003		1.12	.15	1.27	1.46
0660	1/2" diameter	G		1730 .009		1.90	.54	2.44	2.94
0670	3/4" diameter	G		770 .021		3.07	1.22	4.29	5.30
0680	1" diameter	G		430 .037		4.88	2.18	7.06	8.75
0690	1-1/4" diameter	G		290 .055		7.35	3.24	10.59	13.20
0700	1-1/2" diameter	G		190 .084		10.55	4.94	15.49	19.35
0710	1-3/4" diameter	G	E-18	260 .154		16.75	8.90	5.70	31.35
0720	2" diameter	G		200 .200		21.50	11.55	7.45	40.50
0730	2-1/4" diameter	G		160 .250		28.50	14.45	9.30	52.25
0800	6 x 19 & 6 x 37, swaged, 1/2" diameter	G	E-17	1220 .013		3.91	.77	4.68	5.50
0810	9/16" diameter	G		1120 .014		4.55	.84		5.39
0820	5/8" diameter	G		930 .017		5.40	1.01		6.41
0830	3/4" diameter	G		640 .025		6.85	1.47		8.32
0840	7/8" diameter	G		480 .033		8.65	1.95		10.60
0850	1" diameter	G		350 .046		10.55	2.68		13.23
0860	1-1/8" diameter	G		288 .056		13	3.26		16.26
									19.40

05 15 Wire Rope Assemblies

05 15 16 – Steel Wire Rope Assemblies

05 15 16.50 Steel Wire Rope			Daily Crew	Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Ind O&P
0870	1-1/4" diameter	[G]	E-17	280	.070	L.F.	15.75	4.08		19.83	23.50
0880	1-3/8" diameter	[G]		192	.083		18.20	4.89		23.09	27.50
0890	1-1/2" diameter	[G]	E-18	300	.133		22	7.70	4.96	34.66	42

05 15 16.60 Galvanized Steel Wire Rope and Accessories

0010 GALVANIZED STEEL WIRE ROPE & ACCESSORIES

0015	Made from recycled materials	[G]	E-17	5000	.003	L.F.	.18	.19		.37	.49
3000	Aircraft cable, galvanized, 7 x 7 x 1/8"	[G]	"	125	.128	Eq.	1.29	7.50		8.79	13.20
3100	Clamps, 1/8"	[G]	"								

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

0200 " 1/2" cable & accessories

[G]	2 Sswk	4	4	C.L.F.	158	231			389	535
[G]	"	2	8	"	345	460			805	1,100

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)

3200	52DLH11, 26 lb./L.F.	[G]	E-7	13	6.154	Ton	2,275	355	153	2,783	3,225
3220	52DLH16, 45 lb./L.F.	[G]		2000	.040		28.50	2.30	1	31.80	36
3240	56DLH11, 26 lb./L.F.	[G]		2000	.040		51	2.30	1	54.30	61
3260	56DLH16, 46 lb./L.F.	[G]		2000	.040		29.50	2.30	1	32.80	37
3280	60DLH12, 29 lb./L.F.	[G]		2000	.040		52.50	2.30	1	55.80	62
3300	60DLH17, 52 lb./L.F.	[G]		2000	.040		33	2.30	1	36.30	41
3320	64DLH12, 31 lb./L.F.	[G]		2200	.036		59	2.30	1	62.30	69.50
3340	64DLH17, 52 lb./L.F.	[G]		2200	.036		35.50	2.09	.90	38.49	43
3360	68DLH13, 37 lb./L.F.	[G]		2200	.036		59	2.09	.90	44.99	50.50
3380	68DLH18, 61 lb./L.F.	[G]		2200	.036		42	2.09	.90	72.49	80.50
3400	72DLH14, 41 lb./L.F.	[G]		2200	.036		46.50	2.09	.90	49.49	55.50
3420	72DLH19, 70 lb./L.F.	[G]		2200	.036		79.50	2.09	.90	82.49	91.50

3500 For less than 40-ton job lots

3502 For 30 to 39 tons, add

3504 20 to 29 tons, add

3506 10 to 19 tons, add

3507 5 to 9 tons, add

3508 1 to 4 tons, add

3509 Less than 1 ton, add

4010	SLH series, 40-ton job lots, bolted cross bridging, shop primer	[G]	E-7	13	6.154	Ton	2,350	355	153	2,858	3,325
4040	Spans to 200' (shipped in 3 pieces)	[G]		1500	.053	L.F.	47	3.06	1.33	51.39	58
4200	80SLH15, 40 lb./L.F.	[G]		1500	.053		88	3.06	1.33	92.39	103
4220	80SLH20, 75 lb./L.F.	[G]		1500	.053		54	3.06	1.33	58.39	65.50
4240	88SLH16, 46 lb./L.F.	[G]		1500	.053		105	3.06	1.33	109.39	121
4260	88SLH21, 89 lb./L.F.	[G]		1500	.053		61	3.06	1.33	65.39	73.50
4280	96SLH17, 52 lb./L.F.	[G]		1500	.053		120	3.06	1.33	124.39	138
4300	96SLH22, 102 lb./L.F.	[G]		1800	.044		69.50	2.55	1.11	73.16	81.50
4320	104SLH18, 59 lb./L.F.	[G]									

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	Material	2020 Bare Costs			Total	Total Incl O&P
							Labor	Equipment	Total		
4340	104SLH23, 109 lb./L.F.	G	E-7	1800	.044	L.F.	128	2.55	1.11	131.66	146
4360	112SLH19, 67 lb./L.F.	G		1800	.044		79	2.55	1.11	82.66	91.50
4380	112SLH24, 131 lb./L.F.	G		1800	.044		154	2.55	1.11	157.66	175
4400	120SLH20, 77 lb./L.F.	G		1800	.044		90.50	2.55	1.11	94.16	105
4420	120SLH25, 152 lb./L.F.	G		1800	.044		179	2.55	1.11	182.66	202
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	2,175	355	153	2,683	3,125
2200	18LH04, 12 lb./L.F.	G		1400	.057	L.F.	13.05	3.28	1.42	17.75	21
2220	18LH08, 19 lb./L.F.	G		1400	.057		20.50	3.28	1.42	25.20	29.50
2240	20LH04, 12 lb./L.F.	G		1400	.057		13.05	3.28	1.42	17.75	21
2260	20LH08, 19 lb./L.F.	G		1400	.057		20.50	3.28	1.42	25.20	29.50
2280	24LH05, 13 lb./L.F.	G		1400	.057		14.15	3.28	1.42	18.85	22
2300	24LH10, 23 lb./L.F.	G		1400	.057		25	3.28	1.42	29.70	34
2320	28LH06, 16 lb./L.F.	G		1800	.044		17.40	2.55	1.11	21.06	24.50
2340	28LH11, 25 lb./L.F.	G		1800	.044		27	2.55	1.11	30.66	35
2360	32LH08, 17 lb./L.F.	G		1800	.044		18.50	2.55	1.11	22.16	25.50
2380	32LH13, 30 lb./L.F.	G		1800	.044		32.50	2.55	1.11	36.16	41
2400	36LH09, 21 lb./L.F.	G		1800	.044		23	2.55	1.11	26.66	30
2420	36LH14, 36 lb./L.F.	G		1800	.044		39	2.55	1.11	42.66	48
2440	40LH10, 21 lb./L.F.	G		2200	.036		23	2.09	.90	25.99	29
2460	40LH15, 36 lb./L.F.	G		2200	.036		39	2.09	.90	41.99	47
2480	44LH11, 22 lb./L.F.	G		2200	.036		24	2.09	.90	26.99	30.50
2500	44LH16, 42 lb./L.F.	G		2200	.036		45.50	2.09	.90	48.49	54.50
2520	48LH11, 22 lb./L.F.	G		2200	.036		24	2.09	.90	26.99	30.50
2540	48LH16, 42 lb./L.F.	G		2200	.036		45.50	2.09	.90	48.49	54.50
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%			
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	1,925	385	166	2,476	2,900
0130	8K1, 5.1 lb./L.F.	G		1200	.067	L.F.	4.91	3.83	1.66	10.40	13.15
0140	10K1, 5.0 lb./L.F.	G		1200	.067		4.81	3.83	1.66	10.30	13.05
0160	12K3, 5.7 lb./L.F.	G		1500	.053		5.50	3.06	1.33	9.89	12.25

05 21 Steel Joist Framing

05 21 19 - Open Web Steel Joist Framing

05 21 19.10 Open Web Joists		Crew	Daily	Labor-	Unit	2020 Bare Costs			Total	Total Incl O&P	
			Output	Hours		Material	Labor	Equipment			
0180	14K3, 6.0 lb./L.F.	G	E-7	1500	.053	L.F.	5.80	3.06	1.33	10.19	12.55
0200	16K3, 6.3 lb./L.F.	G		1800	.044		6.05	2.55	1.11	9.71	11.85
0220	16K6, 8.1 lb./L.F.	G		1800	.044		7.80	2.55	1.11	11.46	13.80
0240	18K5, 7.7 lb./L.F.	G		2000	.040		7.40	2.30	1	10.70	12.80
0260	18K9, 10.2 lb./L.F.	G		2000	.040		9.80	2.30	1	13.10	15.45
0440	K series, 30' to 50' spans	G		17	4.706	Ton	1,950	270	117	2,337	2,700
0500	20K5, 8.2 lb./L.F.	G		2000	.040	L.F.	8.05	2.30	1	11.35	13.50
0520	20K9, 10.8 lb./L.F.	G		2000	.040		10.55	2.30	1	13.85	16.30
0540	22K5, 8.8 lb./L.F.	G		2000	.040		8.60	2.30	1	11.90	14.15
0560	22K9, 11.3 lb./L.F.	G		2000	.040		11.05	2.30	1	14.35	16.80
0580	24K6, 9.7 lb./L.F.	G		2200	.036		9.50	2.09	.90	12.49	14.70
0600	24K10, 13.1 lb./L.F.	G		2200	.036		12.85	2.09	.90	15.84	18.35
0620	26K6, 10.6 lb./L.F.	G		2200	.036		10.40	2.09	.90	13.39	15.65
0640	26K10, 13.8 lb./L.F.	G		2200	.036		13.50	2.09	.90	16.49	19.10
0660	28K8, 12.7 lb./L.F.	G		2400	.033		12.45	1.91	.83	15.19	17.60
0680	28K12, 17.1 lb./L.F.	G		2400	.033		16.75	1.91	.83	19.49	22.50
0700	30K8, 13.2 lb./L.F.	G		2400	.033		12.90	1.91	.83	15.64	18.10
0720	30K12, 17.6 lb./L.F.	G		2400	.033		17.25	1.91	.83	19.99	23
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	2,000	385	166	2,551	2,975
1100	10CS2, 7.5 lb./L.F.	G		1200	.067	L.F.	7.45	3.83	1.66	12.94	15.95
1120	12CS2, 8.0 lb./L.F.	G		1500	.053		7.95	3.06	1.33	12.34	14.95
1140	14CS2, 8.0 lb./L.F.	G		1500	.053		7.95	3.06	1.33	12.34	14.95
1160	16CS2, 8.5 lb./L.F.	G		1800	.044		8.45	2.55	1.11	12.11	14.50
1180	16CS4, 14.5 lb./L.F.	G		1800	.044		14.45	2.55	1.11	18.11	21
1200	18CS2, 9.0 lb./L.F.	G		2000	.040		8.95	2.30	1	12.25	14.50
1220	18CS4, 15.0 lb./L.F.	G		2000	.040		14.95	2.30	1	18.25	21
1240	20CS2, 9.5 lb./L.F.	G		2000	.040		9.45	2.30	1	12.75	15.05
1260	20CS4, 16.5 lb./L.F.	G		2000	.040		16.40	2.30	1	19.70	22.50
1280	22CS2, 10.0 lb./L.F.	G		2000	.040		9.95	2.30	1	13.25	15.60
1300	22CS4, 16.5 lb./L.F.	G		2000	.040		16.40	2.30	1	19.70	22.50
1320	24CS2, 10.0 lb./L.F.	G		2200	.036		9.95	2.09	.90	12.94	15.20
1340	24CS4, 16.5 lb./L.F.	G		2200	.036		16.40	2.09	.90	19.39	22.50
1360	26CS2, 10.0 lb./L.F.	G		2200	.036		9.95	2.09	.90	12.94	15.20
1380	26CS4, 16.5 lb./L.F.	G		2200	.036		16.40	2.09	.90	19.39	22.50
1400	28CS2, 10.5 lb./L.F.	G		2400	.033		10.45	1.91	.83	13.19	15.40
1420	28CS4, 16.5 lb./L.F.	G		2400	.033		16.40	1.91	.83	19.14	22
1440	30CS2, 11.0 lb./L.F.	G		2400	.033		10.95	1.91	.83	13.69	15.95
1460	30CS4, 16.5 lb./L.F.	G		2400	.033		16.40	1.91	.83	19.14	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%			

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	Material	2020 Bare Costs	Total	Total Incl O&P	
						Labor	Equipment			
6200	For shop prime paint other than mfrs. standard, add					20%				
6300	For bottom chord extensions, add per chord	G			Ea.	42.50		42.50	47	
6400	Individual steel bearing plate, 6" x 6" x 1/4" with J-hook	G	1 Bric	160	.050	"	8.60	2.60	11.20	13.45

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	1,925	355	142	2,422	2,825
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	↓	6,350	420	168	6,938	7,800
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.	4.82	.53	.04	5.39	6.20
5120	18 ga.	G		3650	.009		3	.51	.04	3.55	4.13
5140	20 ga.	G		3800	.008		3.52	.49	.04	4.05	4.68
5200	2" deep, 22 ga.	G		3860	.008		2.38	.48	.04	2.90	3.42
5300	20 ga.	G		3600	.009		3.38	.52	.04	3.94	4.57
5400	18 ga.	G		3380	.009		3.12	.55	.04	3.71	4.34
5500	16 ga.	G		3200	.010		4.77	.58	.05	5.40	6.20
5700	3" deep, 22 ga.	G		3200	.010		2.59	.58	.05	3.22	3.81
5800	20 ga.	G		3000	.011		3.72	.62	.05	4.39	5.10
5900	18 ga.	G		2850	.011		3.12	.65	.05	3.82	4.51
6000	16 ga.	G	↓	2700	.012	↓	5.40	.69	.05	6.14	7.10

05 31 23 – Steel Roof Decking

05 31 23.50 Roof Decking

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.	2.68	.41	.03	3.12	3.64
2200	50-500 squares	G		4900	.007		2.08	.38	.03	2.49	2.92
2400	Over 500 squares	G		5100	.006		1.93	.36	.03	2.32	2.72
2600	20 ga., under 50 squares	G		3865	.008		2.99	.48	.04	3.51	4.09
2650	50-500 squares	G		4170	.008		2.39	.45	.04	2.88	3.37
2700	Over 500 squares	G	↓	4300	.007	↓	2.15	.43	.03	2.61	3.09

05 31 Steel Decking

05 31 23 – Steel Roof Decking

05 31 23.50 Roof Decking

			Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P		
							Labor	Equipment				
2900	18 ga., under 50 squares		G	E-4	3800	.008	S.F.	.384	.49	.04	4.37	5.05
2950	50-500 squares		G		4100	.008		3.07	.45	.04	3.56	4.13
3000	Over 500 squares		G		4300	.007		2.76	.43	.03	3.22	3.76
3050	16 ga., under 50 squares		G		3700	.009		5.20	.50	.04	5.74	6.55
3060	50-500 squares		G		4000	.008		4.15	.47	.04	4.66	5.35
3100	Over 500 squares		G		4200	.008		3.74	.44	.04	4.22	4.85
3200	3" deep, Type N, 22 ga., under 50 squares		G		3600	.009		3.72	.52	.04	4.28	4.94
3250	50-500 squares		G		3800	.008		2.98	.49	.04	3.51	4.08
3260	over 500 squares		G		4000	.008		2.68	.47	.04	3.19	3.72
3300	20 ga., under 50 squares		G		3400	.009		4.04	.55	.04	4.63	5.35
3350	50-500 squares		G		3600	.009		3.23	.52	.04	3.79	4.41
3360	over 500 squares		G		3800	.008		2.91	.49	.04	3.44	4.01
3400	18 ga., under 50 squares		G		3200	.010		5.25	.58	.05	5.88	6.70
3450	50-500 squares		G		3400	.009		4.19	.55	.04	4.78	5.50
3460	over 500 squares		G		3600	.009		3.77	.52	.04	4.33	5
3500	16 ga., under 50 squares		G		3000	.011		6.95	.62	.05	7.62	8.60
3550	50-500 squares		G		3200	.010		5.55	.58	.05	6.18	7.05
3560	over 500 squares		G		3400	.009		4.99	.55	.04	5.58	6.40
3700	4-1/2" deep, Type J, 20 ga., over 50 squares		G		2700	.012		4.47	.69	.05	5.21	6.05
3800	18 ga.		G		2460	.013		5.85	.76	.06	6.67	7.70
3900	16 ga.		G		2350	.014		7.10	.79	.06	7.95	9.10
4100	6" deep, Type H, 18 ga., over 50 squares		G		2000	.016		6.55	.93	.07	7.55	8.75
4200	16 ga.		G		1930	.017		8.95	.96	.08	9.99	11.45
4300	14 ga.		G		1860	.017		11.50	1	.08	12.58	14.30
4500	7-1/2" deep, Type H, 18 ga., over 50 squares		G		1690	.019		7.75	1.10	.09	8.94	10.40
4600	16 ga.		G		1590	.020		9.65	1.17	.09	10.91	12.60
4700	14 ga.		G		1490	.021		12.05	1.25	.10	13.40	15.30
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.	1.90	.47	.04	2.41	2.86
6200	Galvanized		G		4000	.008		1.68	.47	.04	2.19	2.62
6220	24 ga., 1" deep, Type UF1X, uncoated		G		3900	.008		1.84	.48	.04	2.36	2.82
6240	Galvanized		G		3900	.008		2.17	.48	.04	2.69	3.18
6300	24 ga., 1-5/16" deep, Type UFX, uncoated		G		3800	.008		1.96	.49	.04	2.49	2.97
6400	Galvanized		G		3800	.008		2.31	.49	.04	2.84	3.35
6500	22 ga., 1-5/16" deep, uncoated		G		3700	.009		2.48	.50	.04	3.02	3.56
6600	Galvanized		G		3700	.009		2.53	.50	.04	3.07	3.61
6700	22 ga., 2" deep, uncoated		G		3600	.009		3.23	.52	.04	3.79	4.41
6800	Galvanized		G		3600	.009		3.17	.52	.04	3.73	4.34
7000	Sheet metal edge closure form, 12" wide with 2 bends, galvanized		G	E-14	360	.022	LF.	5.25	1.32	.41	6.98	8.25
7100	18 ga.		G	"	360	.022	"	7.10	1.32	.41	8.83	10.30
7200	16 ga.		G	"	360	.022	"					

05 35 Raceway Decking Assemblies

05 35 13 – Steel Cellular Decking

05 35 13.50 Cellular Decking		Crew	Daily Output	Labor Hours	Unit	Material	2020	Bare Labor	Costs Equipment	Total	Total Incl O&P
0010	CELLULAR DECKING										
0015	Made from recycled materials										
0200	Cellular units, galv., 1-1/2" deep, Type BC, 20-20 ga., over 1.5 squares	G	R-4	1460	.022	S.F.	11.55	1.27	.10	12.92	14.80
0250	18-20 ga.	G		1420	.023		10.25	1.31	.10	11.66	13.45
0300	18-18 ga.	G		1390	.023		10.55	1.34	.11	12	13.80
0320	16-18 ga.	G		1360	.024		16.05	1.37	.11	17.53	19.90
0340	16-16 ga.	G		1330	.024		17.85	1.40	.11	19.36	22
0400	3" deep, Type NC, galvanized, 20-20 ga.	G		1375	.023		12.70	1.35	.11	14.16	16.25
0500	18-20 ga.	G		1350	.024		12	1.38	.11	13.49	15.50
0600	18-18 ga.	G		1290	.025		11.95	1.44	.11	13.50	15.55
0700	16-18 ga.	G		1230	.026		17.25	1.51	.12	18.88	21.50
0800	16-16 ga.	G		1150	.028		18.80	1.62	.13	20.55	23
1000	4-1/2" deep, Type JC, galvanized, 18-20 ga.	G		1100	.029		13.85	1.69	.13	15.67	18.05
1100	18-18 ga.	G		1040	.031		13.75	1.79	.14	15.68	18.10
1200	16-18 ga.	G		980	.033		19.85	1.90	.15	21.90	25
1300	16-16 ga.	G		935	.034		21.50	1.99	.16	23.65	27.50
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.	23	2.14	.13	25.27	29

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 from recycled materials										
0120	Metal strap, 20 ga. x 4" wide	G	2 Carp	18	.889	Ea.	19.35	47		66.35	92.50
0130	6" wide	G		18	.889		32	47		79	106
0160	18 ga. x 4" wide	G		16	1		32	53		85	115
0170	6" wide	G		16	1		47	53		100	132
0410	Continuous strap bracing, per horizontal row on both faces										
0420	Metal strap, 20 ga. x 2" wide, studs 12" OC	G	1 Corp	7	1.143	C.L.F.	57	60.50		117.50	155
0430	16" OC	G		8	1		57	53		110	143
0440	24" OC	G		10	.800		57	42.50		99.50	127
0450	18 ga. x 2" wide, studs 12" OC	G		6	1.333		77	71		148	191
0460	16" OC	G		7	1.143		77	60.50		137.50	176
0470	24" OC	G		8	1		77	53		130	165

05 41 13.10 Bridging

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	3.40		4.33	6.10
0210	3-5/8" wide	G		120	.067		1.11	3.54		4.65	6.50
0220	4" wide	G		120	.067		1.11	3.54		4.65	6.50
0230	6" wide	G		115	.070		1.53	3.70		5.23	7.25
0240	8" wide	G		110	.073		1.88	3.87		5.75	7.85
0300	16 ga. x 2-1/2" wide	G		115	.070		1.15	3.70		4.85	6.80
0310	3-5/8" wide	G		110	.073		1.39	3.87		5.26	7.35
0320	4" wide	G		110	.073		1.54	3.87		5.41	7.50
0330	6" wide	G		105	.076		1.94	4.05		5.99	8.25
0340	8" wide	G		100	.080		2.39	4.25		6.64	9.05

05 41 Structural Metal Stud Framing

05 41 13 – Load-Bearing Metal Stud Framing

05 41 13.10 Bridging

			Daily Crew Output	Labor- Hours Unit	Material	2020 Bare Costs Labor Equipment	Total	Total Ind O&P	
1200	Studs 16" OC, 18 ga. x 2-1/2" wide	[G]	1 Carp	125 .064	Ea.	1.19	3.40	4.59	6.40
1210	3-5/8" wide	[G]		120 .067		1.42	3.54	4.96	6.85
1220	4" wide	[G]		120 .067		1.42	3.54	4.96	6.85
1230	6" wide	[G]		115 .070		1.96	3.70	5.66	7.70
1240	8" wide	[G]		110 .073		2.41	3.87	6.28	8.45
1300	16 ga. x 2-1/2" wide	[G]		115 .070		1.47	3.70	5.17	7.15
1310	3-5/8" wide	[G]		110 .073		1.78	3.87	5.65	7.75
1320	4" wide	[G]		110 .073		1.98	3.87	5.85	8
1330	6" wide	[G]		105 .076		2.49	4.05	6.54	8.85
1340	8" wide	[G]		100 .080		3.07	4.25	7.32	9.80
2200	Studs 24" OC, 18 ga. x 2-1/2" wide	[G]		125 .064		1.72	3.40	5.12	7
2210	3-5/8" wide	[G]		120 .067		2.05	3.54	5.59	7.55
2220	4" wide	[G]		120 .067		2.05	3.54	5.59	7.55
2230	6" wide	[G]		115 .070		2.84	3.70	6.54	8.65
2240	8" wide	[G]		110 .073		3.49	3.87	7.36	9.65
2300	16 ga. x 2-1/2" wide	[G]		115 .070		2.12	3.70	5.82	7.90
2310	3-5/8" wide	[G]		110 .073		2.58	3.87	6.45	8.65
2320	4" wide	[G]		110 .073		2.86	3.87	6.73	8.95
2330	6" wide	[G]		105 .076		3.60	4.05	7.65	10.05
2340	8" wide	[G]		100 .080		4.44	4.25	8.69	11.30
3000	Continuous bridging, per row								
3100	16 ga. x 1-1/2" channel thru studs 12" OC	[G]	1 Corp	6 1.333	C.L.F.	51.50	71	122.50	163
3110	16" OC	[G]		7 1.143		51.50	60.50	112	149
3120	24" OC	[G]		8.80 909		51.50	48.50	100	130
4100	2" x 2" angle x 18 ga., studs 12" OC	[G]		7 1.143		78	60.50	138.50	178
4110	16" OC	[G]		9 .889		78	47	125	157
4120	24" OC	[G]		12 .667		78	35.50	113.50	139
4200	16 ga., studs 12" OC	[G]		5 1.600		98	85	183	236
4210	16" OC	[G]		7 1.143		98	60.50	158.50	200
4220	24" OC	[G]		10 .800		98	42.50	140.50	172

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.	5.55	3.87	9.42	11.90
0210	8" deep	[G]		210 .076		5.80	4.05	9.85	12.45
0220	10" deep	[G]		200 .080		7.30	4.25	11.55	14.45
0230	12" deep	[G]		190 .084		7.95	4.48	12.43	15.45
0300	16 ga. x 8" deep	[G]		180 .089		6.70	4.72	11.42	14.45
0310	10" deep	[G]		170 .094		8.30	5	13.30	16.65
0320	12" deep	[G]		160 .100		9	5.30	14.30	17.90
0400	14 ga. x 10" deep	[G]		140 .114		9.60	6.05	15.65	19.70
0410	12" deep	[G]		130 .123		10.50	6.55	17.05	21.50
1210	Triple, 18 ga. x 8" deep	[G]		170 .094		8.55	5	13.55	16.90
1220	10" deep	[G]		165 .097		10.40	5.15	15.55	19.20
1230	12" deep	[G]		160 .100		11.40	5.30	16.70	20.50
1300	16 ga. x 8" deep	[G]		145 .110		9.95	5.85	15.80	19.75
1310	10" deep	[G]		140 .114		11.90	6.05	17.95	22.50
1320	12" deep	[G]		135 .119		13	6.30	19.30	24
1400	14 ga. x 10" deep	[G]		115 .139		13.10	7.40	20.50	25.50
1410	12" deep	[G]		110 .145		14.45	7.75	22.20	27.50

05 41 Structural Metal Stud Framing

05 41 13 – Load-Bearing Metal Stud Framing

05 41 13.30 Framing, Stud Walls		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
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 Corp	.54	.296	L.F.	8.40	15.75		24.15	33
4110	16" OC	[G]		.77	.208		6.75	11.05		17.80	24
4120	24" OC	[G]		.107	.150		5.10	7.95		13.05	17.55
4130	3-5/8" wide, studs 12" OC	[G]		.53	.302		9.95	16.05		26	35
4140	16" OC	[G]		.76	.211		8	11.20		19.20	25.50
4150	24" OC	[G]		.105	.152		6.05	8.10		14.15	18.80
4160	4" wide, studs 12" OC	[G]		.52	.308		10.25	16.35		26.60	36
4170	16" OC	[G]		.74	.216		8.25	11.50		19.75	26.50
4180	24" OC	[G]		.103	.155		6.20	8.25		14.45	19.20
4190	6" wide, studs 12" OC	[G]		.51	.314		13.25	16.65		29.90	39.50
4200	16" OC	[G]		.73	.219		10.65	11.65		22.30	29
4210	24" OC	[G]		.101	.158		8.10	8.40		16.50	21.50
4220	8" wide, studs 12" OC	[G]		.50	.320		16.95	17		33.95	44
4230	16" OC	[G]		.72	.222		13.60	11.80		25.40	32.50
4240	24" OC	[G]		.100	.160		10.25	8.50		18.75	24
4300	16 ga. x 2-1/2" wide, studs 12" OC	[G]		.47	.340		10.50	18.10		28.60	38.50
4310	16" OC	[G]		.68	.235		8.30	12.50		20.80	28
4320	24" OC	[G]		.94	.170		6.10	9.05		15.15	20.50
4330	3-5/8" wide, studs 12" OC	[G]		.46	.348		12.35	18.50		30.85	41.50
4340	16" OC	[G]		.66	.242		9.80	12.90		22.70	30
4350	24" OC	[G]		.92	.174		7.25	9.25		16.50	22
4360	4" wide, studs 12" OC	[G]		.45	.356		13.05	18.90		31.95	43
4370	16" OC	[G]		.65	.246		10.35	13.10		23.45	31
4380	24" OC	[G]		.90	.178		7.60	9.45		17.05	22.50
4390	6" wide, studs 12" OC	[G]		.44	.364		16.30	19.35		35.65	47
4400	16" OC	[G]		.64	.250		12.95	13.30		26.25	34
4410	24" OC	[G]		.88	.182		9.60	9.65		19.25	25
4420	8" wide, studs 12" OC	[G]		.43	.372		20	19.80		39.80	51.50
4430	16" OC	[G]		.63	.254		16	13.50		29.50	38
4440	24" OC	[G]		.86	.186		11.85	9.90		21.75	28
5100	10' high walls, 18 ga. x 2-1/2" wide, studs 12" OC	[G]		.54	.296		10.05	15.75		25.80	34.50
5110	16" OC	[G]		.77	.208		8	11.05		19.05	25.50
5120	24" OC	[G]		.107	.150		5.90	7.95		13.85	18.45
5130	3-5/8" wide, studs 12" OC	[G]		.53	.302		11.90	16.05		27.95	37
5140	16" OC	[G]		.76	.211		9.45	11.20		20.65	27
5150	24" OC	[G]		.105	.152		7	8.10		15.10	19.85
5160	4" wide, studs 12" OC	[G]		.52	.308		12.30	16.35		28.65	38
5170	16" OC	[G]		.74	.216		9.75	11.50		21.25	28
5180	24" OC	[G]		.103	.155		7.20	8.25		15.45	20.50
5190	6" wide, studs 12" OC	[G]		.51	.314		15.80	16.65		32.45	42.50
5200	16" OC	[G]		.73	.219		12.60	11.65		24.25	31.50
5210	24" OC	[G]		.101	.158		9.35	8.40		17.75	23
5220	8" wide, studs 12" OC	[G]		.50	.320		20.50	17		37.50	48
5230	16" OC	[G]		.72	.222		16.10	11.80		27.90	35.50
5240	24" OC	[G]		.100	.160		11.95	8.50		20.45	26
5300	16 ga. x 2-1/2" wide, studs 12" OC	[G]		.47	.340		12.65	18.10		30.75	41
5310	16" OC	[G]		.68	.235		9.95	12.50		22.45	30
5320	24" OC	[G]		.94	.170		7.20	9.05		16.25	21.50
5330	3-5/8" wide, studs 12" OC	[G]		.46	.348		14.90	18.50		33.40	44.50

05 41 Structural Metal Stud Framing

05 41 13 – Load-Bearing Metal Stud Framing

05 41 13.30 Framing, Stud Walls		Crew	Daily	Labor-	Material	2020 Bare Costs			Total	Total
			Output	Hours		Labor	Equipment	Total		Incl O&P
5340	16" OC	G	2 Carp	.242	L.F.	11.70	12.90		24.60	32.50
5350	24" OC	G		.174		8.50	9.25		17.75	23.50
5360	4" wide, studs 12" OC	G		.356		15.80	18.90		34.70	46
5370	16" OC	G		.246		12.40	13.10		25.50	33.50
5380	24" OC	G		.178		8.95	9.45		18.40	24
5390	6" wide, studs 12" OC	G		.364		19.60	19.35		38.95	50.50
5400	16" OC	G		.250		15.45	13.30		28.75	37
5410	24" OC	G		.182		11.25	9.65		20.90	27
5420	8" wide, studs 12" OC	G		.372		24.50	19.80		44.30	56
5430	16" OC	G		.254		19.10	13.50		32.60	41.50
5440	24" OC	G		.186		13.95	9.90		23.85	30
6190	12' high walls, 18 ga. x 6" wide, studs 12" OC	G		.390		18.40	20.50		38.90	51
6200	16" OC	G		.276		14.55	14.65		29.20	38
6210	24" OC	G		.198		10.65	10.50		21.15	27.50
6220	8" wide, studs 12" OC	G		.400		23.50	21.50		45	58
6230	16" OC	G		.281		18.60	14.90		33.50	43
6240	24" OC	G		.200		13.60	10.65		24.25	31
6390	16 ga. x 6" wide, studs 12" OC	G		.457		23	24.50		47.50	62
6400	16" OC	G		.314		17.95	16.65		34.60	45
6410	24" OC	G		.229		12.95	12.15		25.10	32.50
6420	8" wide, studs 12" OC	G		.471		28.50	25		53.50	69
6430	16" OC	G		.320		22	17		39	50
6440	24" OC	G		.232		16	12.30		28.30	36
6530	14 ga. x 3-5/8" wide, studs 12" OC	G		.471		22	25		47	62
6540	16" OC	G		.333		17.30	17.70		35	45.50
6550	24" OC	G		.246		12.45	13.10		25.55	33.50
6560	4" wide, studs 12" OC	G		.485		23.50	26		49.50	64.50
6570	16" OC	G		.340		18.35	18.10		36.45	47
6580	24" OC	G		.250		13.20	13.30		26.50	34.50
6730	12 ga. x 3-5/8" wide, studs 12" OC	G		.516		30.50	27.50		58	75
6740	16" OC	G		.372		23.50	19.80		43.30	55.50
6750	24" OC	G		.271		16.70	14.40		31.10	40
6760	4" wide, studs 12" OC	G		.533		33	28.50		61.50	79
6770	16" OC	G		.381		25.50	20.50		46	58.50
6780	24" OC	G		.276		18	14.65		32.65	42
7390	16' high walls, 16 ga. x 6" wide, studs 12" OC	G		.485		29.50	26		55.50	71
7400	16" OC	G		.333		23	17.70		40.70	52
7410	24" OC	G		.239		16.30	12.70		29	37
7420	8" wide, studs 12" OC	G		.500		36.50	26.50		63	80.50
7430	16" OC	G		.340		28.50	18.10		46.60	58.50
7440	24" OC	G		.242		20	12.90		32.90	41.50
7560	14 ga. x 4" wide, studs 12" OC	G		.516		30.50	27.50		58	74.50
7570	16" OC	G		.356		23.50	18.90		42.40	54.50
7580	24" OC	G		.262		16.60	13.95		30.55	39.50
7590	6" wide, studs 12" OC	G		.533		38.50	28.50		67	84.50
7600	16" OC	G		.364		29.50	19.35		48.85	61.50
7610	24" OC	G		.267		21	14.15		35.15	44.50
7760	12 ga. x 4" wide, studs 12" OC	G		.552		43	29.50		72.50	91.50
7770	16" OC	G		.400		33	21.50		54.50	68.50
7780	24" OC	G		.291		23	15.45		38.45	48.50
7790	6" wide, studs 12" OC	G		.571		54	30.50		84.50	105
7800	16" OC	G		.410		41.50	22		63.50	78.50
7810	24" OC	G		.296		29	15.75		44.75	55.50

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	Material	2020 Bare Costs	Total	Total Incl O&P
						Labor	Equipment		
8590	20' high walls, 14 ga. x 6" wide, studs 12" OC	G	2 Corp	.29	.552	L.F.	47	29.50	76.50
8600	16" OC	G		.42	.381		36	20.50	56.50
8610	24" OC	G		.57	.281		25.50	14.90	40.40
8620	8" wide, studs 12" OC	G		.28	.571		53	30.50	83.50
8630	16" OC	G		.41	.390		40.50	20.50	61
8640	24" OC	G		.56	.286		28.50	15.20	43.70
8790	12 ga. x 6" wide, studs 12" OC	G		.27	.593		66.50	31.50	98
8800	16" OC	G		.37	.432		51	23	74
8810	24" OC	G		.51	.314		35	16.65	51.65
8820	8" wide, studs 12" OC	G		.26	.615		81	32.50	113.50
8830	16" OC	G		.36	.444		62	23.50	85.50
8840	24" OC	G		.50	.320	↓	43	17	60
									72.50

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 Corp	4.67	1.713	C.L.F.	60	91	151
0130	16" OC	G		5.33	1.501		57.50	80	137.50
0140	24" OC	G		6.66	1.201		55.50	64	119.50
0150	18 ga. x 2" wide, joists at 12" OC	G		4	2		76.50	106	182.50
0160	16" OC	G		4.67	1.713		75	91	166
0170	24" OC	G		5.33	1.501	↓	73.50	80	153.50
									201

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 Corp	80	.100	Ea.	1.53	5.30	6.83
0240	8" wide	G		75	.107		1.88	5.65	7.53
0250	10" wide	G		70	.114		2.39	6.05	8.44
0260	12" wide	G		65	.123		2.74	6.55	9.29
0330	16 ga. track x 6" wide	G		70	.114		1.94	6.05	7.99
0340	8" wide	G		65	.123		2.39	6.55	8.94
0350	10" wide	G		60	.133		3.06	7.10	10.16
0360	12" wide	G		55	.145		3.53	7.75	11.28
0440	14 ga. track x 8" wide	G		60	.133		3.05	7.10	10.15
0450	10" wide	G		55	.145		3.78	7.75	11.53
0460	12" wide	G		50	.160		4.38	8.50	12.88
0550	12 ga. track x 10" wide	G		45	.178		5.55	9.45	15
0560	12" wide	G		40	.200		5.90	10.65	16.55
1230	16" OC, 18 ga. track x 6" wide	G		80	.100		1.96	5.30	7.26
1240	8" wide	G		75	.107		2.41	5.65	8.06
1250	10" wide	G		70	.114		3.07	6.05	9.12
1260	12" wide	G		65	.123		3.51	6.55	10.06
1330	16 ga. track x 6" wide	G		70	.114		2.49	6.05	8.54
1340	8" wide	G		65	.123		3.07	6.55	9.62
1350	10" wide	G		60	.133		3.93	7.10	11.03
1360	12" wide	G		55	.145		4.52	7.75	12.27
1440	14 ga. track x 8" wide	G		60	.133		3.91	7.10	11.01
1450	10" wide	G		55	.145		4.85	7.75	12.60
1460	12" wide	G		50	.160		5.60	8.50	14.10
									18.95

05 42 Cold-Formed Metal Joist Framing

05 42 13 – Cold-Formed Metal Floor Joist Framing

05 42 13.10 Bridging

			Daily Crew	Output	Labor- Hours	Unit	Material	2020 Bare Costs		Total	Incl O&P	
			G	1 Corp	.45	ea.	7.10	9.45		16.55	22	
1550	12 ga. track x 10" wide		G	40	.178		7.55	10.65		18.20	24.50	
1560	12" wide		G	40	.200							
2230	24" OC, 18 ga. track x 6" wide		G		.80	.100		2.84	5.30		8.14	11.10
2240	8" wide		G		.75	.107		3.49	5.65		9.14	12.35
2250	10" wide		G		.70	.114		4.44	6.05		10.49	14.05
2260	12" wide		G		.65	.123		5.10	6.55		11.65	15.45
2330	16 ga. track x 6" wide		G		.70	.114		3.60	6.05		9.65	13.10
2340	8" wide		G		.65	.123		4.44	6.55		10.99	14.75
2350	10" wide		G		.60	.133		5.70	7.10		12.80	16.90
2360	12" wide		G		.55	.145		6.55	7.75		14.30	18.80
2440	14 ga. track x 8" wide		G		.60	.133		5.65	7.10		12.75	16.85
2450	10" wide		G		.55	.145		7	7.75		14.75	19.30
2460	12" wide		G		.50	.160		8.10	8.50		16.60	22
2550	12 ga. track x 10" wide		G		.45	.178		10.30	9.45		19.75	25.50
2560	12" wide		G		.40	.200		10.95	10.65		21.60	28

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 Corp	1000	.016	LF	1.25	.85		2.10	2.65
0230	8" deep	G		920	.017		1.53	.92		2.45	3.08
0240	10" deep	G		860	.019		1.95	.99		2.94	3.64
0320	16 ga. track x 6" deep	G		900	.018		1.59	.95		2.54	3.16
0330	8" deep	G		840	.019		1.95	1.01		2.96	3.67
0340	10" deep	G		780	.021		2.50	1.09		3.59	4.39
0350	12" deep	G		740	.022		2.88	1.15		4.03	4.89
0430	14 ga. track x 8" deep	G		750	.021		2.49	1.13		3.62	4.44
0440	10" deep	G		720	.022		3.09	1.18		4.27	5.15
0450	12" deep	G		700	.023		3.57	1.22		4.79	5.75
0540	12 ga. track x 10" deep	G		670	.024		4.53	1.27		5.80	6.90
0550	12" deep	G		650	.025		4.81	1.31		6.12	7.25

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 Corp	220	.073	LF	5.55	3.87		9.42	11.90
0210	8" deep	G		210	.076		5.80	4.05		9.85	12.45
0220	10" deep	G		200	.080		7.30	4.25		11.55	14.45
0230	12" deep	G		190	.084		7.95	4.48		12.43	15.45
0300	16 ga. x 8" deep	G		180	.089		6.70	4.72		11.42	14.45
0310	10" deep	G		170	.094		8.30	5		13.30	16.65
0320	12" deep	G		160	.100		9	5.30		14.30	17.90
0400	14 ga. x 10" deep	G		140	.114		9.60	6.05		15.65	19.70
0410	12" deep	G		130	.123		10.50	6.55		17.05	21.50
0500	12 ga. x 10" deep	G		110	.145		12.65	7.75		20.40	25.50
0510	12" deep	G		100	.160		14	8.50		22.50	28
1210	Triple, 18 ga. x 8" deep	G		170	.094		8.55	5		13.55	16.90
1220	10" deep	G		165	.097		10.40	5.15		15.55	19.20
1230	12" deep	G		160	.100		11.40	5.30		16.70	20.50
1300	16 ga. x 8" deep	G		145	.110		9.95	5.85		15.80	19.75
1310	10" deep	G		140	.114		11.90	6.05		17.95	22.50
1320	12" deep	G		135	.119		13	6.30		19.30	24
1400	14 ga. x 10" deep	G		115	.139		13.85	7.40		21.25	26.50
1410	12" deep	G		110	.145		15.25	7.75		23	28.50

05 42 Cold-Formed Metal Joist Framing

05 42 13 – Cold-Formed Metal Floor Joist Framing

			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total		Total Incl O&P
		Crew			L.F.		Labor	Equipment		
05 42 13.30	Framing, Boxed Headers/Beams									
1500	12 ga. x 10" deep	G	2 Corp	.90	.178		18.45	9.45		27.90
1510	12" deep	G	↓	.85	.188	↓	20.50	10		30.50
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
0230	8" deep	G					1.95			1.95
0240	10" deep	G					2.32			2.32
0320	16 ga. x 6" deep	G					2.04			2.04
0330	8" deep	G					2.44			2.44
0340	10" deep	G					2.85			2.85
0350	12" deep	G					3.22			3.22
0430	14 ga. x 8" deep	G					3.07			3.07
0440	10" deep	G					3.53			3.53
0450	12" deep	G					4.01			4.01
0540	12 ga. x 10" deep	G					5.15			5.15
0550	12" deep	G				↓	5.85			5.85
1010	Installation of joists to band joists, beams & headers, labor only									
1220	18 ga. x 6" deep	2 Corp	.110	.145	Ea.		7.75			7.75
1230	8" deep		.90	.178			9.45			9.45
1240	10" deep		.80	.200			10.65			10.65
1320	16 ga. x 6" deep		95	.168			8.95			8.95
1330	8" deep		70	.229			12.15			12.15
1340	10" deep		60	.267			14.15			14.15
1350	12" deep		55	.291			15.45			15.45
1430	14 ga. x 8" deep		65	.246			13.10			13.10
1440	10" deep		45	.356			18.90			18.90
1450	12" deep		35	.457			24.50			24.50
1540	12 ga. x 10" deep		40	.400			21.50			21.50
1550	12" deep	↓	30	.533	↓		28.50			28.50
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 Corp	.120	.067	Ea.	.83	3.54		4.37
2130	3-5/8" stud	G		.110	.073		.98	3.87		4.85
2140	4" stud	G		.105	.076		1.02	4.05		5.07
2150	6" stud	G		.100	.080		1.29	4.25		5.54
2160	8" stud	G		.95	.084		1.67	4.48		6.15
2220	8" deep joist, with 2-1/2" stud	G		.120	.067		1.11	3.54		4.65
2230	3-5/8" stud	G		.110	.073		1.31	3.87		5.18
2240	4" stud	G		.105	.076		1.37	4.05		5.42
2250	6" stud	G		.100	.080		1.73	4.25		5.98
2260	8" stud	G		.95	.084		2.24	4.48		6.72
2320	10" deep joist, with 2-1/2" stud	G		.110	.073		1.38	3.87		5.25
2330	3-5/8" stud	G		.100	.080		1.63	4.25		5.88
2340	4" stud	G		.95	.084		1.69	4.48		6.17
2350	6" stud	G		.90	.089		2.14	4.72		6.86
2360	8" stud	G		.85	.094		2.77	5		7.77
2420	12" deep joist, with 2-1/2" stud	G		.110	.073		1.66	3.87		5.53

05 42 Cold-Formed Metal Joist Framing

05 42 13 – Cold-Formed Metal Floor Joist Framing

05 42 13.45 Framing, Web Stiffeners			Daily Crew	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P	
						Labor	Equipment			
2430	3-5/8" stud	G	1 Carp	.100	.080	Ed.	1.96	4.25	6.21	8.55
2440	4" stud	G		95	.084		2.04	4.48	6.52	8.95
2450	6" stud	G		90	.089		2.58	4.72	7.30	9.95
2460	8" stud	G		85	.094		3.34	5	8.34	11.15
3130	For 6" deep joist, with 16 ga. x 3-5/8" stud	G		100	.080		1.28	4.25	5.53	7.80
3140	4" stud	G		95	.084		1.37	4.48	5.85	8.20
3150	6" stud	G		90	.089		1.67	4.72	6.39	8.95
3160	8" stud	G		85	.094		2.07	5	7.07	9.80
3230	8" deep joist, with 3-5/8" stud	G		100	.080		1.72	4.25	5.97	8.30
3240	4" stud	G		95	.084		1.84	4.48	6.32	8.70
3250	6" stud	G		90	.089		2.24	4.72	6.96	9.55
3260	8" stud	G		85	.094		2.77	5	7.77	10.55
3330	10" deep joist, with 3-5/8" stud	G		85	.094		2.12	5	7.12	9.85
3340	4" stud	G		80	.100		2.27	5.30	7.57	10.50
3350	6" stud	G		75	.107		2.77	5.65	8.42	11.55
3360	8" stud	G		70	.114		3.44	6.05	9.49	12.95
3430	12" deep joist, with 3-5/8" stud	G		85	.094		2.56	5	7.56	10.30
3440	4" stud	G		80	.100		2.74	5.30	8.04	11
3450	6" stud	G		75	.107		3.34	5.65	8.99	12.15
3460	8" stud	G		70	.114		4.14	6.05	10.19	13.70
4230	For 8" deep joist, with 14 ga. x 3-5/8" stud	G		90	.089		2.18	4.72	6.90	9.50
4240	4" stud	G		85	.094		2.29	5	7.29	10
4250	6" stud	G		80	.100		2.89	5.30	8.19	11.20
4260	8" stud	G		75	.107		3.23	5.65	8.88	12.05
4330	10" deep joist, with 3-5/8" stud	G		75	.107		2.71	5.65	8.36	11.50
4340	4" stud	G		70	.114		2.84	6.05	8.89	12.25
4350	6" stud	G		65	.123		3.59	6.55	10.14	13.80
4360	8" stud	G		60	.133		4	7.10	11.10	15.05
4430	12" deep joist, with 3-5/8" stud	G		75	.107		3.26	5.65	8.91	12.10
4440	4" stud	G		70	.114		3.42	6.05	9.47	12.90
4450	6" stud	G		65	.123		4.32	6.55	10.87	14.60
4460	8" stud	G		60	.133		4.82	7.10	11.92	15.95
5330	For 10" deep joist, with 12 ga. x 3-5/8" stud	G		65	.123		3.88	6.55	10.43	14.10
5340	4" stud	G		60	.133		4.17	7.10	11.27	15.25
5350	6" stud	G		55	.145		5.25	7.75	13	17.35
5360	8" stud	G		50	.160		6.35	8.50	14.85	19.80
5430	12" deep joist, with 3-5/8" stud	G		65	.123		4.68	6.55	11.23	15
5440	4" stud	G		60	.133		5	7.10	12.10	16.15
5450	6" stud	G		55	.145		6.30	7.75	14.05	18.55
5460	8" stud	G		50	.160		7.65	8.50	16.15	21

05 42 23 – Cold-Formed Metal Roof Joist Framing

05 42 23.05 Framing, Bracing

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	94.50	146	199
0120	24" OC	G		6	1.333		51.50	71	122.50	163
0300	2" x 2" angle x 18 ga., rafters/trusses @ 16" OC	G		6	1.333		78	71	149	192
0320	24" OC	G		8	1		78	53	131	166
0400	16 ga. rafters/trusses @ 16" OC	G		4.50	1.778		98	94.50	192.50	250
0420	24" OC	G		6.50	1.231		98	65.50	163.50	207

05 42 Cold-Formed Metal Joist Framing

05 42 23 – Cold-Formed Metal Roof Joist Framing

05 42 23.10 Framing, Bridging

	Daily Crew	Output	Labor- Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
						Labor	Equipment	Total	

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.	1.42	7.10	8.52	12.20
1210	6" deep	[G]		57	.140		1.96	7.45	9.41	13.35
1220	8" deep	[G]		55	.145		2.41	7.75	10.16	14.25
1230	10" deep	[G]		52	.154		3.07	8.20	11.27	15.70
1240	12" deep	[G]		50	.160		3.51	8.50	12.01	16.65
2200	24" OC, 18 ga. x 4" deep	[G]		60	.133		2.05	7.10	9.15	12.90
2210	6" deep	[G]		57	.140		2.84	7.45	10.29	14.30
2220	8" deep	[G]		55	.145		3.49	7.75	11.24	15.45
2230	10" deep	[G]		52	.154		4.44	8.20	12.64	17.20
2240	12" deep	[G]		50	.160		5.10	8.50	13.60	18.40

05 42 23.50 Framing, Parapets

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	LF	5.15	8.50	13.65	18.50
0110	16" OC	[G]		150	.107		4.40	5.65	10.05	13.35
0120	24" OC	[G]		200	.080		3.64	4.25	7.89	10.40
0200	6" wide studs, 12" OC	[G]		100	.160		6.80	8.50	15.30	20.50
0210	16" OC	[G]		150	.107		5.80	5.65	11.45	14.90
0220	24" OC	[G]		200	.080		4.85	4.25	9.10	11.75
1100	Installed on 2nd story, 18 ga. x 4" wide studs, 12" OC	[G]		95	.168		5.15	8.95	14.10	19.15
1110	16" OC	[G]		145	.110		4.40	5.85	10.25	13.65
1120	24" OC	[G]		190	.084		3.64	4.48	8.12	10.70
1200	6" wide studs, 12" OC	[G]		95	.168		6.80	8.95	15.75	21
1210	16" OC	[G]		145	.110		5.80	5.85	11.65	15.20
1220	24" OC	[G]		190	.084		4.85	4.48	9.33	12.05
2100	Installed on gable, 18 ga. x 4" wide studs, 12" OC	[G]		85	.188		5.15	10	15.15	21
2110	16" OC	[G]		130	.123		4.40	6.55	10.95	14.70
2120	24" OC	[G]		170	.094		3.64	5	8.64	11.50
2200	6" wide studs, 12" OC	[G]		85	.188		6.80	10	16.80	22.50
2210	16" OC	[G]		130	.123		5.80	6.55	12.35	16.25
2220	24" OC	[G]		170	.094		4.85	5	9.85	12.85

05 42 23.60 Framing, Roof Rafters

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.	5.55	5.30	10.85	14.10
0110	8" deep	[G]		150	.107		5.80	5.65	11.45	14.85
0120	10" deep	[G]		140	.114		7.30	6.05	13.35	17.20
0130	12" deep	[G]		130	.123		7.95	6.55	14.50	18.60
0200	16 ga. x 6" deep	[G]		150	.107		5.95	5.65	11.60	15.05
0210	8" deep	[G]		140	.114		6.70	6.05	12.75	16.50
0220	10" deep	[G]		130	.123		8.30	6.55	14.85	19
0230	12" deep	[G]		120	.133		9	7.10	16.10	20.50
1100	Rafters, 2" flange, material only, 18 ga. x 6" deep	[G]					1.84		1.84	2.02
1110	8" deep	[G]					1.95		1.95	2.15
1120	10" deep	[G]					2.32		2.32	2.55
1130	12" deep	[G]					2.67		2.67	2.93
1200	16 ga. x 6" deep	[G]					2.04		2.04	2.24
1210	8" deep	[G]					2.44		2.44	2.68
1220	10" deep	[G]					2.85		2.85	3.13

05 42 Cold-Formed Metal Joist Framing

05 42 23 – Cold-Formed Metal Roof Joist Framing

05 42 23.60 Framing, Roof Rafters			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P
Line No.	Description	(G)					Labor	Equipment	
1230	12" deep				L.F.	3.22		3.22	3.55
2100	Installation only, ordinary rafter to 4:12 pitch, 18 ga. x 6" deep	2 Corp	.35	.457	Ea.		24.50	24.50	36.50
2110	8" deep			.30	.533		28.50	28.50	42.50
2120	10" deep			.25	.640		34	34	51
2130	12" deep			.20	.800		42.50	42.50	64
2200	16 ga. x 6" deep			.30	.533		28.50	28.50	42.50
2210	8" deep			.25	.640		34	34	51
2220	10" deep			.20	.800		42.50	42.50	64
2230	12" deep			.15	1.067		56.50	56.50	85
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										
Line No.	Description	(G)	2 Corp	.535	.030	L.F.	.95	1.59	2.54	3.43
0015	Made from recycled materials									
0130	Continuous ledger track @ wall, studs @ 16" OC, 18 ga. x 4" wide	(G)	2 Corp	.535	.030	L.F.	.95	1.59	2.54	3.43
0140	6" wide	(G)		.500	.032		1.31	1.70	3.01	4
0150	8" wide	(G)		.465	.034		1.61	1.83	3.44	4.52
0160	10" wide	(G)		.430	.037		2.05	1.98	4.03	5.20
0230	Studs @ 24" OC, 18 ga. x 4" wide	(G)		.800	.020		.90	1.06	1.96	2.59
0240	6" wide	(G)		.750	.021		1.25	1.13	2.38	3.07
0250	8" wide	(G)		.700	.023		1.53	1.22	2.75	3.52
0260	10" wide	(G)		.650	.025		1.95	1.31	3.26	4.12
1000	Horizontal soffit and canopy members, material only									
1030	1-5/8" flange studs, 18 ga. x 4" deep	(G)				L.F.	1.22		1.22	1.35
1040	6" deep	(G)					1.55		1.55	1.70
1050	8" deep	(G)					2		2	2.20
1140	2" flange joists, 18 ga. x 6" deep	(G)					2.10		2.10	2.31
1150	8" deep	(G)					2.23		2.23	2.46
1160	10" deep	(G)					2.65		2.65	2.92
4030	Installation only, 18 ga., 1-5/8" flange x 4" deep	2 Corp	.130	.123	Ea.		6.55		6.55	9.85
4040	6" deep			.110	.145			7.75		7.75
4050	8" deep			.090	.178			9.45		9.45
4140	2" flange, 18 ga. x 6" deep			.110	.145			7.75		7.75
4150	8" deep			.090	.178			9.45		9.45
4160	10" deep			.080	.200			10.65		10.65
6010	Clips to attach fascia to rafter tails, 2" x 2" x 18 ga. angle	(G)	1 Corp	.120	.067		.92	3.54	4.46	6.30
6020	16 ga. angle	(G)	"	.100	.080		1.16	4.25	5.41	7.65

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	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
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.	57	71	128	169
0130	20' span	[G]		11	1.455		71.50	77.50	149	195
0140	24' span	[G]		11	1.455		85.50	77.50	163	211
0150	28' span	[G]		10	1.600		100	85	185	238
0160	32' span	[G]		10	1.600		114	85	199	254
0250	6" chords, 28' span	[G]		9	1.778		126	94.50	220.50	281
0260	32' span	[G]		9	1.778		144	94.50	238.50	300
0270	36' span	[G]		8	2		163	106	269	340
0280	40' span	[G]		8	2		181	106	287	360
1120	5:12 to 8:12 pitch, 18 ga. x 4" chords, 16' span	[G]		10	1.600		65.50	85	150.50	200
1130	20' span	[G]		9	1.778		81.50	94.50	176	232
1140	24' span	[G]		9	1.778		98	94.50	192.50	250
1150	28' span	[G]		8	2		114	106	220	286
1160	32' span	[G]		8	2		131	106	237	305
1250	6" chords, 28' span	[G]		7	2.286		144	121	265	340
1260	32' span	[G]		7	2.286		165	121	286	365
1270	36' span	[G]		6	2.667		186	142	328	415
1280	40' span	[G]		6	2.667		206	142	348	440
2120	9:12 to 12:12 pitch, 18 ga. x 4" chords, 16' span	[G]		8	2		81.50	106	187.50	250
2130	20' span	[G]		7	2.286		102	121	223	295
2140	24' span	[G]		7	2.286		122	121	243	320
2150	28' span	[G]		6	2.667		143	142	285	370
2160	32' span	[G]		6	2.667		163	142	305	395
2250	6" chords, 28' span	[G]		5	3.200		181	170	351	455
2260	32' span	[G]		5	3.200		206	170	376	485
2270	36' span	[G]		4	4		232	213	445	575
2280	40' span	[G]		4	4		258	213	471	605
5120	Erection only of roof trusses, to 4:12 pitch, 16' span	F-6	48	.833			41.50	9.80	51.30	73.50
5130	20' span		46	.870			43.50	10.25	53.75	76.50
5140	24' span		44	.909			45.50	10.70	56.20	80
5150	28' span		42	.952			47.50	11.20	58.70	84
5160	32' span		40	1			50	11.80	61.80	88
5170	36' span		38	1.053			52.50	12.40	64.90	92.50
5180	40' span		36	1.111			55.50	13.10	68.60	98
5220	5:12 to 8:12 pitch, 16' span		42	.952			47.50	11.20	58.70	84
5230	20' span		40	1			50	11.80	61.80	88
5240	24' span		38	1.053			52.50	12.40	64.90	92.50
5250	28' span		36	1.111			55.50	13.10	68.60	98
5260	32' span		34	1.176			59	13.85	72.85	103
5270	36' span		32	1.250			62.50	14.75	77.25	110
5280	40' span		30	1.333			66.50	15.70	82.20	117
5320	9:12 to 12:12 pitch, 16' span		36	1.111			55.50	13.10	68.60	98
5330	20' span		34	1.176			59	13.85	72.85	103
5340	24' span		32	1.250			62.50	14.75	77.25	110
5350	28' span		30	1.333			66.50	15.70	82.20	117
5360	32' span		28	1.429			71.50	16.85	88.35	126
5370	36' span		26	1.538			77	18.10	95.10	135
5380	40' span		24	1.667			83	19.65	102.65	147

05 51 Metal Stairs

05 51 13 – Metal Pan Stairs

05 51 13.50 Pan Stairs		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
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	600	53	4.20	657.20
0300	4'-0" wide	G		30	1.067		590	62	4.90	656.90
0350	Wall rail, both sides, 3'-6" wide	G		53	.604		460	35	2.77	497.77
1500	Landing, steel pan, conventional	G		160	.200	S.F.	79.50	11.65	.92	92.07
1600	Pre-erected	G		255	.125	"	138	7.30	.58	145.88
1700	Pre-erected, steel pan tread, 3'-6" wide, 2 line pipe rail	G	E-2	87	.644	Riser	585	37	19.50	641.50
										725

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	570	53	4.20	627.20
0500	Checkered plate tread, industrial, 3'-6" wide	G		28	1.143		385	66.50	5.25	456.75
0550	Circular, for tanks, 3'-0" wide	G		33	.970		435	56.50	4.45	495.95
0600	For isolated stairs, odd							100%		
0800	Custom steel stairs, 3'-6" wide, economy	G	E-4	35	.914		585	53	4.20	642.20
0810	Medium priced	G		30	1.067		775	62	4.90	841.90
0900	Deluxe	G		20	1.600		970	93	7.35	1,070.35
1100	For 4' wide stairs, odd							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	390	53	4.20	447.20
0100	4'-0" wide	G		30	1.067	"	455	62	4.90	521.90

0001 Grating tread and pipe railing, 3'-6" wide

		G		35	.914	Flight	3,025	53	4.20	3,082.20
										3,425

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.	63.50	92		155.50
0400	1st story cantilevered stair, standard, with railing	G		.50	32	Ea.	2,550	1,850		4,400
0500	Cable counterweighted, with railing	G		.40	40	"	2,425	2,300		5,700
0700	36" x 40" platform & fixed stair, with railing	G			40	40	Flight	1,125	2,300	4,725
0900	For 3'-6" wide escapes, add to above							100%	150%	6,300

0001 For 3'-6" wide escapes, add to above

		G								3,425
										4,875

05 51 23.50 Fire Escape Stairs

0010	FIRE ESCAPE STAIRS, portable									
0100	Portable ladder					Ea.	125		125	137

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.	92	37	2.94	131.94
0100	Without cage	G		85	.376		42	22	1.73	65.73
0300	Aluminum, bolted to concrete, with cage	G		50	.640		130	37	2.94	169.94
0400	Without cage	G		85	.376		51	22	1.73	74.73

05 51 Metal Stairs

05 51 33 – Metal Ladders

0010	INCLINED METAL LADDERS, shop fabricated		Daily	Labor-	Material	2020 Bare Costs		Total	Total			
			Crew	Output		Hours	Unit	Labor	Incl O&P			
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		205	62	4.90	271.90	330
4000	Aluminum	[G]	"	30	1.067	"		300	62	4.90	366.90	435

05 51 33.23 Alternating Tread Ladders

0010	ALTERNATING TREAD LADDERS, shop fabricated		B-686	3	5.333	Ea.	1,950	305	93.50	2,348.50	2,700	
0015	Made from recycled materials											
0800	Alternating tread ladders, 68°F angle of incline											
0810	8' vertical rise, steel, 149 lb., standard paint color											
0820	Non-standard paint color				3	5.333		2,400	305	93.50	2,798.50	3,225
0830	Galvanized				3	5.333		2,425	305	93.50	2,823.50	3,225
0840	Stainless				3	5.333		3,700	305	93.50	4,098.50	4,625
0850	Aluminum, 87 lb.				3	5.333		2,700	305	93.50	3,098.50	3,550
1010	10' vertical rise, steel, 181 lb., standard paint color			2.75	5.818		2,775	335	102	3,212	3,700	
1020	Non-standard paint color			2.75	5.818		3,025	335	102	3,462	3,950	
1030	Galvanized			2.75	5.818		3,075	335	102	3,512	4,000	
1040	Stainless			2.75	5.818		4,450	335	102	4,887	5,525	
1050	Aluminum, 103 lb.			2.75	5.818		3,250	335	102	3,687	4,200	
1210	12' vertical rise, steel, 245 lb., standard paint color			2.50	6.400		3,100	370	112	3,582	4,100	
1220	Non-standard paint color			2.50	6.400		3,525	370	112	4,007	4,575	
1230	Galvanized			2.50	6.400		3,600	370	112	4,082	4,675	
1240	Stainless			2.50	6.400		5,200	370	112	5,682	6,425	
1250	Aluminum, 103 lb.			2.50	6.400		3,775	370	112	4,257	4,850	
1410	14' vertical rise, steel, 281 lb., standard paint color			2.25	7.111		3,550	410	124	4,084	4,675	
1420	Non-standard paint color			2.25	7.111		4,025	410	124	4,559	5,200	
1430	Galvanized			2.25	7.111		4,150	410	124	4,684	5,325	
1440	Stainless			2.25	7.111		5,950	410	124	6,484	7,325	
1450	Aluminum, 136 lb.			2.25	7.111		4,375	410	124	4,909	5,575	
1610	16' vertical rise, steel, 317 lb., standard paint color			2	8		4,025	460	140	4,625	5,300	
1620	Non-standard paint color			2	8		4,525	460	140	5,125	5,850	
1630	Galvanized			2	8		4,675	460	140	5,275	6,025	
1640	Stainless			2	8		6,700	460	140	7,300	8,250	
1650	Aluminum, 153 lb.			2	8		4,675	460	140	5,275	6,000	

05 52 Metal Railings

05 52 13 – Pipe and Tube Railings

0010	RAILINGS, PIPE, shop fab'd, 3'-6" high, posts @ 5' OC		G	E-4	160	.200	L.F.	51.50	11.65	.92	64.07	76
0015	Made from recycled materials											
0020	Aluminum, 2 rail, satin finish, 1-1/4" diameter		[G]		160	.200		61.50	11.65	.92	74.07	87
0030	Clear anodized		[G]		160	.200		68	11.65	.92	80.57	94.50
0040	Dark anodized		[G]		160	.200		58.50	11.65	.92	71.07	84
0080	1-1/2" diameter, satin finish		[G]		160	.200		66	11.65	.92	78.57	92
0090	Clear anodized		[G]		160	.200		72.50	11.65	.92	85.07	99.50
0100	Dark anodized		[G]		160	.200						
0140	Aluminum, 3 rail, 1-1/4" diam., satin finish		[G]		137	.234		67	13.60	1.07	81.67	96.50
0150	Clear anodized		[G]		137	.234		83.50	13.60	1.07	98.17	115
0160	Dark anodized		[G]		137	.234		92	13.60	1.07	106.67	124
0200	1-1/2" diameter, satin finish		[G]		137	.234		79.50	13.60	1.07	94.17	110
0210	Clear anodized		[G]		137	.234		90.50	13.60	1.07	105.17	122

05 52 Metal Railings

05 52 13 – Pipe and Tube Railings

			Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
							Labor	Equipment		
0220	Dark anodized	[G]	E-4	137	.234	L.F.	99.50	13.60	1.07	114.17
0500	Steel, 2 rail, on stairs, primed, 1-1/4" diameter	[G]		160	.200		32	11.65	.92	44.57
0520	1-1/2" diameter	[G]		160	.200		31	11.65	.92	43.57
0540	Galvanized, 1-1/4" diameter	[G]		160	.200		41.50	11.65	.92	54.07
0560	1-1/2" diameter	[G]		160	.200		49	11.65	.92	61.57
0580	Steel, 3 rail, primed, 1-1/4" diameter	[G]		137	.234		46	13.60	1.07	60.67
0600	1-1/2" diameter	[G]		137	.234		50.50	13.60	1.07	65.17
0620	Galvanized, 1-1/4" diameter	[G]		137	.234		64.50	13.60	1.07	79.17
0640	1-1/2" diameter	[G]		137	.234		77.50	13.60	1.07	92.17
0700	Stainless steel, 2 rail, 1-1/4" diam., #4 finish	[G]		137	.234		141	13.60	1.07	155.67
0720	High polish	[G]		137	.234		228	13.60	1.07	242.67
0740	Mirror polish	[G]		137	.234		285	13.60	1.07	299.67
0760	Stainless steel, 3 rail, 1-1/2" diam., #4 finish	[G]		120	.267		212	15.50	1.22	228.72
0770	High polish	[G]		120	.267		350	15.50	1.22	366.72
0780	Mirror finish	[G]		120	.267		430	15.50	1.22	446.72
0900	Wall rail, alum. pipe, 1-1/4" diam., satin finish	[G]		213	.150		25	8.75	.69	34.44
0905	Clear anodized	[G]		213	.150		31	8.75	.69	40.44
0910	Dark anodized	[G]		213	.150		36.50	8.75	.69	45.94
0915	1-1/2" diameter, satin finish	[G]		213	.150		27.50	8.75	.69	36.94
0920	Clear anodized	[G]		213	.150		34.50	8.75	.69	43.94
0925	Dark anodized	[G]		213	.150		43.50	8.75	.69	52.94
0930	Steel pipe, 1-1/4" diameter, primed	[G]		213	.150		18.50	8.75	.69	27.94
0935	Galvanized	[G]		213	.150		27	8.75	.69	36.44
0940	1-1/2" diameter	[G]		176	.182		17.75	10.55	.83	29.13
0945	Galvanized	[G]		213	.150		27	8.75	.69	36.44
0955	Stainless steel pipe, 1-1/2" diam., #4 finish	[G]		107	.299		113	17.40	1.37	131.77
0960	High polish	[G]		107	.299		229	17.40	1.37	247.77
0965	Mirror polish	[G]		107	.299		271	17.40	1.37	289.77
2000	2-line pipe rail (1-1/2" T&B) with 1/2" pickets @ 4-1/2" OC, attached handrail on brackets									
2005		[G]	E-4	120	.267	L.F.	355	15.50	1.22	371.72
2010	42" high aluminum, satin finish, straight & level	[G]	"	120	.267		149	15.50	1.22	165.72
2050	42" high steel, primed, straight & level						10%	10%		190
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	[G]	E-4	255	.125	L.F.	39	7.30	.58	46.88	55
0020	2 rail, 3'-6" high, 1-1/2" pipe	[G]	"	255	.125		35	7.30	.58	42.88	50.50
0100	2" angle rail	[G]					6.20			6.20	6.80
0200	For 4" high kick plate, 10 ga., add	[G]					8.15			8.15	8.95
0300	1/4" thick, add	[G]					10%	10%			
0500	For curved level rails, add						30%	30%			
0550	For sloped rails for stairs, add										

05 53 Metal Gratings

05 53 13 – Bar Gratings

05 53 13.10 Floor Grating, Aluminum

		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
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	E4	900	.036	S.F.	22	2.07	.16	24.23	28
0112	Over 300 S.F.	G		850	.038	"	20	2.19	.17	22.36	25.50
0113	1-1/4" x 1/8" bar, up to 300 S.F.	G		800	.040	"	19.10	2.33	.18	21.61	25
0114	Over 300 S.F.	G		1000	.032	"	17.35	1.86	.15	19.36	22
0122	1-1/4" x 3/16" bar, up to 300 S.F.	G		750	.043	"	28	2.48	.20	30.68	35
0124	Over 300 S.F.	G		1000	.032	"	25.50	1.86	.15	27.51	31
0132	1-1/2" x 3/16" bar, up to 300 S.F.	G		700	.046	"	41	2.66	.21	43.87	49.50
0134	Over 300 S.F.	G		1000	.032	"	37.50	1.86	.15	39.51	44
0136	1-3/4" x 3/16" bar, up to 300 S.F.	G		500	.064	"	43.50	3.72	.29	47.51	53.50
0138	Over 300 S.F.	G		1000	.032	"	39.50	1.86	.15	41.51	46.50
0146	2-1/4" x 3/16" bar, up to 300 S.F.	G		600	.053	"	59	3.10	.24	62.34	69.50
0148	Over 300 S.F.	G		1000	.032	"	53.50	1.86	.15	55.51	62
0162	Cross bars @ 2" OC, 1" x 1/8", up to 300 S.F.	G		600	.053	"	31.50	3.10	.24	34.84	39.50
0164	Over 300 S.F.	G		1000	.032	"	28.50	1.86	.15	30.51	34.50
0172	1-1/4" x 3/16" bar, up to 300 S.F.	G		600	.053	"	50.50	3.10	.24	53.84	60.50
0174	Over 300 S.F.	G		1000	.032	"	46	1.86	.15	48.01	53.50
0182	1-1/2" x 3/16" bar, up to 300 S.F.	G		600	.053	"	61.50	3.10	.24	64.84	73
0184	Over 300 S.F.	G		1000	.032	"	56	1.86	.15	58.01	64.50
0186	1-3/4" x 3/16" bar, up to 300 S.F.	G		600	.053	"	63	3.10	.24	66.34	74.50
0188	Over 300 S.F.	G		1000	.032	"	57.50	1.86	.15	59.51	66
0200	For straight cuts, add					L.F.	4.53			4.53	4.98
0300	For curved cuts, add						5.55			5.55	6.15
0400	For straight banding, add	G					5.80			5.80	6.35
0500	For curved banding, add	G					7.10			7.10	7.85
0600	For aluminum checkered plate nosings, add	G					7.50			7.50	8.25
0700	For straight toe plate, add	G					11.35			11.35	12.50
0800	For curved toe plate, add	G					13.25			13.25	14.55
1000	For cast aluminum abrasive nosings, add	G					11.05			11.05	12.15
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	E4	1100	.029	S.F.	27.50	1.69	.13	29.32	33
1700	1-1/4" deep, 2.9 #/S.F.	G		1000	.032	"	34.50	1.86	.15	36.51	41
1800	1-3/4" deep, 4.2 #/S.F.	G		925	.035	"	43.50	2.01	.16	45.67	51.50
1900	2-1/4" deep, 5.0 #/S.F.	G		875	.037	"	67.50	2.13	.17	69.80	78
2100	For safety serrated surface, add						15%				

05 53 13.70 Floor Grating, Steel

			Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
0010	FLOOR GRATING, STEEL, field fabricated from panels											
0015	Made from recycled materials											
0300	Platforms, to 12' high, rectangular	G	E4	3150	.010	lb.	3.34	.59	.05	3.98	4.65	
0400	Circular	G		2300	.014	"	4.17	.81	.06	5.04	5.95	
0410	Painted bearing bars @ 1-3/16"											
0412	Cross bars @ 4" OC, 3/4" x 1/8" bar, up to 300 S.F.	G	E2	500	.112	S.F.	8.35	6.40	3.39	18.14	23	
0414	Over 300 S.F.	G		750	.075	"	7.60	4.27	2.26	14.13	17.45	
0422	1-1/4" x 3/16", up to 300 S.F.	G		400	.140	"	13.30	8	4.24	25.54	31.50	
0424	Over 300 S.F.	G		600	.093	"	12.10	5.35	2.83	20.28	24.50	
0432	1-1/2" x 3/16", up to 300 S.F.	G		400	.140	"	15.45	8	4.24	27.69	34	
0434	Over 300 S.F.	G		600	.093	"	14.05	5.35	2.83	22.23	27	
0436	1-3/4" x 3/16", up to 300 S.F.	G		400	.140	"	20.50	8	4.24	32.74	39.50	
0438	Over 300 S.F.	G		600	.093	"	18.50	5.35	2.83	26.68	32	
0452	2-1/4" x 3/16", up to 300 S.F.	G		300	.187	"	24	10.65	5.65	40.30	48.50	

05 53 Metal Gratings

05 53 13 – Bar Gratings

05 53 13.70 Floor Grating, Steel	Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
						Labor	Equipment	Total		
0454 Over 300 S.F.	[G]	E-2	450	.124	S.F.	21.50	7.10	3.77	32.37	39
0462 Cross bars @ 2" OC, 3/4" x 1/8", up to 300 S.F.	[G]		500	.112		15.20	6.40	3.39	24.99	30.50
0464 Over 300 S.F.	[G]		750	.075		12.65	4.27	2.26	19.18	23
0472 1-1/4" x 3/16", up to 300 S.F.	[G]		400	.140		19.90	8	4.24	32.14	39
0474 Over 300 S.F.	[G]		600	.093		16.55	5.35	2.83	24.73	29.50
0482 1-1/2" x 3/16", up to 300 S.F.	[G]		400	.140		22.50	8	4.24	34.74	41.50
0484 Over 300 S.F.	[G]		600	.093		18.65	5.35	2.83	26.83	32
0486 1-3/4" x 3/16", up to 300 S.F.	[G]		400	.140		33.50	8	4.24	45.74	54
0488 Over 300 S.F.	[G]		600	.093		28	5.35	2.83	36.18	42.50
0502 2-1/4" x 3/16", up to 300 S.F.	[G]		300	.187		31	10.65	5.65	47.30	56.50
0504 Over 300 S.F.	[G]		450	.124		26	7.10	3.77	36.87	43.50
0690 For galvanized grating, add						25%				
0800 For straight cuts, add					L.F.	6.45			6.45	7.10
0900 For curved cuts, add						8.20			8.20	9.05
1000 For straight banding, add	[G]					7.10			7.10	7.85
1100 For curved banding, add	[G]					9.15			9.15	10.05
1200 For checkered plate nosings, add	[G]					8.05			8.05	8.85
1300 For straight toe or kick plate, add	[G]					14.40			14.40	15.85
1400 For curved toe or kick plate, add	[G]					16.30			16.30	17.95
1500 For abrasive nosings, add	[G]					10.65			10.65	11.75
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.	76.50	4.14	.33	80.97	91
2100 Standard spacing, 3/4" x 1/8" bars	[G]		500	.064		96.50	3.72	.29	100.51	112
2200 1-1/4" x 3/16" bars	[G]		400	.080		118	4.65	.37	123.02	137

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	1.96	.15	38.11	42.50
0200 Galvanized steel, 9-1/2" wide, 14 ga., 2-1/2" rib	[G]		950	.034		16.95	1.96	.15	19.06	22
0300 4" rib	[G]		950	.034		18.20	1.96	.15	20.31	23
0500 12 ga., 2-1/2" rib	[G]		950	.034		19.80	1.96	.15	21.91	25
0600 3" rib	[G]		950	.034		21.50	1.96	.15	23.61	27
0800 Stainless steel, type 304, 16 ga., 2" rib	[G]		950	.034		42	1.96	.15	44.11	49
0900 Type 316	[G]		950	.034		56.50	1.96	.15	58.61	65

05 53 19 – Expanded Metal Gratings

05 53 19.10 Expanded Grating, Aluminum

0010 EXPANDED GRATING, ALUMINUM	[G]	E-4	1050	.030	S.F.	22	1.77	.14	23.91	27
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05 53 19.20 Expanded Grating, Steel

0010 EXPANDED GRATING, STEEL										
2400 Expanded steel grating, at ground, 3.0 #/S.F.	[G]	E-4	900	.036	S.F.	8.10	2.07	.16	10.33	12.30
2500 3.14 #/S.F.	[G]		900	.036		7.35	2.07	.16	9.58	11.50
2600 4.0 #/S.F.	[G]		850	.038		8.85	2.19	.17	11.21	13.35
2650 4.27 #/S.F.	[G]		850	.038		9.70	2.19	.17	12.06	14.30
2700 5.0 #/S.F.	[G]		800	.040		13.80	2.33	.18	16.31	19.05
2800 6.25 #/S.F.	[G]		750	.043		17.85	2.48	.20	20.53	24
2900 7.0 #/S.F.	[G]		700	.046		19.70	2.66	.21	22.57	26
3100 For flattened expanded steel grating, add						8%				
3300 For elevated installation above 15°, add							15%			

05 53 Metal Gratings

05 53 19 – Expanded Metal Gratings

05 53 19.30 Grating Frame		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Ind O&P
0010	GRATING FRAME, field fabricated									
0020	Aluminum, for gratings 1" to 1-1/2" deep	[G]	1 Sswk	70	.114	L.F.	3.82	6.60	10.42	14.55
0100	For each corner, add	[G]				Ea.	5.70		5.70	6.25

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.	.80	.64	.05	1.49	1.95
0100	Welded	[G]		4400	.007	"	.91	.42	.03	1.36	1.70
0300	Pit or trench cover and frame, 1/4" plate, 2' to 3' wide	[G]	↓	100	.320	S.F.	10.95	18.60	1.47	31.02	42.50
0400	For galvanizing, add	[G]				Lb.	.32			.32	.35
0500	Platforms, 1/4" plate, no handrails included, rectangular	[G]	E-4	4200	.008		3.55	.44	.04	4.03	4.65
0600	Circular	[G]	"	2500	.013	↓	4.44	.74	.06	5.24	6.10

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.	212	23	235.12	269	
0100	Frame only (both sides of trench), 1" grating	[G]		45	.178		1.41	10.25	11.66	17.65	
0150	2" grating	[G]		35	.229		3.23	13.20		16.43	24
0200	Aluminum, stock units, including frames and										
0210	3/8" plain cover plate, 4" opening	[G]	E-4	205	.156	L.F.	15.85	9.10	.72	25.67	32.50
0300	6" opening	[G]		185	.173		19.95	10.05	.79	30.79	38.50
0400	10" opening	[G]		170	.188		30	10.95	.86	41.81	51
0500	16" opening	[G]		155	.206		43.50	12	.95	56.45	67.50
0700	Add per inch for additional widths to 24"	[G]					1.87			1.87	2.05
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%				

05 55 Metal Stair Treads and Nosings

05 55 13 – Metal Stair Treads

05 55 13.50 Stair Treads

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.	112	19.20		131.20	153
3020	42" long	[G]		48	.333		118	19.20		137.20	160
3030	48" long	[G]		48	.333		123	19.20		142.20	165
3040	11" deep x 36" long	[G]		44	.364		118	21		139	163
3050	42" long	[G]		44	.364		125	21		146	170
3060	48" long	[G]		44	.364		133	21		154	179

05 55 Metal Stair Treads and Nosings

05 55 13 – Metal Stair Treads

		Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
					Material	Labor	Equipment		
05 55 13.50 Stair Treads									
3110	Galvanized, 9" deep x 36" long	[G] 2 Sswk	.333	Ed.	177	19.20		196.20	224
3120	42" long	[G]	.333		188	19.20		207.20	237
3130	48" long	[G]	.333		199	19.20		218.20	249
3140	11" deep x 36" long	[G]	.364		183	21		204	234
3150	42" long	[G]	.364		199	21		220	252
3160	48" long	[G]	.364	↓	207	21		228	261
3200	Closed riser, black enamel								
3210	12" deep x 36" long	[G] 2 Sswk	.400	Ed.	135	23		158	185
3220	42" long	[G]	.400		147	23		170	197
3230	48" long	[G]	.400		155	23		178	206
3240	Galvanized, 12" deep x 36" long	[G]	.400		213	23		236	271
3250	42" long	[G]	.400		233	23		256	292
3260	48" long	[G]	.400	↓	244	23		267	305
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	.333	Ed.	56	19.20		75.20	91.50
4020	36" long	[G]	.333		65.50	19.20		84.70	102
4030	48" long	[G]	.333		101	19.20		120.20	141
4040	10-15/16" deep x 36" long	[G]	.364		72.50	21		93.50	113
4050	48" long	[G]	.364		104	21		125	147
4060	Galvanized, 8-5/8" deep x 30" long	[G]	.333		64	19.20		83.20	101
4070	36" long	[G]	.333		76	19.20		95.20	114
4080	48" long	[G]	.333		112	19.20		131.20	153
4090	10-15/16" deep x 36" long	[G]	.364		89	21		110	131
4100	48" long	[G]	.364	↓	115	21		136	160
4200	Aluminum, 1-1/4" x 3/16" bars, serrated, with nosing								
4210	7-5/8" deep x 18" long	[G] 2 Sswk	.308	Ed.	53	17.75		70.75	86.50
4220	24" long	[G]	.308		63	17.75		80.75	97
4230	30" long	[G]	.308		73	17.75		90.75	108
4240	36" long	[G]	.308		188	17.75		205.75	235
4250	8-13/16" deep x 18" long	[G]	.333		71.50	19.20		90.70	109
4260	24" long	[G]	.333		106	19.20		125.20	146
4270	30" long	[G]	.333		122	19.20		141.20	164
4280	36" long	[G]	.333		207	19.20		226.20	258
4290	10" deep x 18" long	[G]	.364		139	21		160	185
4300	30" long	[G]	.364		184	21		205	236
4310	36" long	[G]	.364	↓	224	21		245	279
5000	Channel grating treads								
5005	Steel, 14 ga., 2-1/2" thick, galvanized								
5010	9" deep x 36" long	[G] 2 Sswk	.333	Ed.	106	19.20		125.20	147
5020	48" long	[G]	.333	"	143	19.20		162.20	188

05 55 19 – Metal Stair Tread Covers

05 55 19.50 Stair Tread Covers for Renovation

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	Ed.	104	17.70	121.70	142
0220	4' long		.22	.364		136	19.35	155.35	179
0230	5' long		.20	.400		186	21.50	207.50	236
0240	11" wide x 3' long		.24	.333		147	17.70	164.70	188
0250	4' long		.22	.364		199	19.35	218.35	247
0260	5' long		.20	.400	↓	238	21.50	259.50	293
0305	Black abrasive strips with yellow front strips								

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	Material	2020 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
0310	Aluminum, 9" wide x 3' long	1 Carp	24	.333	Ea.	124	17.70		141.70	164
0320	4' long		22	.364		166	19.35		185.35	211
0330	5' long		20	.400		213	21.50		234.50	266
0340	11" wide x 3' long		24	.333		161	17.70		178.70	204
0350	4' long		22	.364		204	19.35		223.35	254
0360	5' long		20	.400		267	21.50		288.50	325
0405	Black abrasive strips with photoluminescent front strips									
0410	Aluminum, 9" wide x 3' long	1 Carp	24	.333	Ea.	157	17.70		174.70	200
0420	4' long		22	.364		178	19.35		197.35	225
0430	5' long		20	.400		223	21.50		244.50	277
0440	11" wide x 3' long		24	.333		162	17.70		179.70	205
0450	4' long		22	.364		216	19.35		235.35	266
0460	5' long		20	.400		270	21.50		291.50	330

05 56 Metal Castings

05 56 13 – Metal Construction Castings

05 56 13.50 Construction Castings

0010 CONSTRUCTION CASTINGS	G	E4	46	.696	Ea.	140	40.50	3.19	183.69	221
0020 Manhole covers and frames, see Section 33 44 13.13	G	"	23	1.391		525	81	6.40	612.40	710
0100 Column bases, cast iron, 16" x 16", approx. 65 lb.	G	1 Carp	32	.250		43.50	13.30		56.80	67.50
0200 32" x 32", approx. 256 lb.	G	"	32	.250		70	13.30		83.30	97
0400 Cast aluminum for wood columns, 8" x 8"	G	E4	3200	.010	Lb.	9.10	.58	.05	9.73	11
0500 12" x 12"	G		4200	.008		5.30	.44	.04	5.78	6.60
0600 Miscellaneous C.I. castings, light sections, less than 150 lb.	G		3200	.010		11.05	.58	.05	11.68	13.10
1100 Heavy sections, more than 150 lb.							100%			
1300 Special low volume items										
1500 For ductile iron, add										

05 58 Formed Metal Fabrications

05 58 13 – Column Covers

05 58 13.05 Column Covers

0010 COLUMN COVERS	G	2 Swk	32	.500	V.L.F.	33	29		62	81
0015 Made from recycled materials	G		32	.500		47	29		76	97
0020 Excludes structural steel, light ga. metal framing, misc. metals, sealants	G		32	.500		57.50	29		86.50	109
0100 Round covers, 2 halves with 2 vertical joints for backer rod and sealant	G		32	.500		49	29		78	99
0110 Up to 12' high, no horizontal joints	G		32	.500		70.50	29		99.50	123
0120 12" diameter, 0.125" aluminum, anodized/painted finish	G		32	.500		86.50	29		115.50	140
0130 Type 304 stainless steel, 16 gauge, #4 brushed finish	G		32	.500		65.50	29		94.50	117
0140 Type 316 stainless steel, 16 gauge, #4 brushed finish	G		32	.500		94.50	29		123.50	149
0150 18" diameter, aluminum	G		32	.500		115	29		144	172
0160 Type 304 stainless steel	G		30	.533		82	31		113	138
0170 Type 316 stainless steel	G		30	.533		118	31		149	178
0180 24" diameter, aluminum	G		30	.533		144	31		175	207
0190 Type 304 stainless steel	G		30	.533		98.50	31		129.50	156
0200 Type 316 stainless steel	G									
0210 30" diameter, aluminum	G									
0220 Type 304 stainless steel	G									
0230 Type 316 stainless steel	G									
0240 36" diameter, aluminum	G									

05 58 Formed Metal Fabrications

05 58 13 – Column Covers

05 58 13.05 Column Covers			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
		Crew				Labor	Equipment		
0250	Type 304 stainless steel	G	2 Sswk	30	.533 V.L.F.	141	31	172	204
0260	Type 316 stainless steel	G	2 Sswk	30	.533 V.L.F.	173	31	204	238
0400	Up to 24' high, 2 stacked sections with 1 horizontal joint								
0410	18" diameter, aluminum	G	2 Sswk	28	.571 V.L.F.	51.50	33	84.50	109
0450	Type 304 stainless steel	G	2 Sswk	28	.571 V.L.F.	74.50	33	107.50	133
0460	Type 316 stainless steel	G	2 Sswk	28	.571 V.L.F.	91	33	124	152
0470	24" diameter, aluminum	G	2 Sswk	28	.571 V.L.F.	69	33	102	128
0480	Type 304 stainless steel	G	2 Sswk	28	.571 V.L.F.	99	33	132	161
0490	Type 316 stainless steel	G	2 Sswk	28	.571 V.L.F.	121	33	154	185
0500	30" diameter, aluminum	G	2 Sswk	24	.667 V.L.F.	86	38.50	124.50	155
0510	Type 304 stainless steel	G	2 Sswk	24	.667 V.L.F.	124	38.50	162.50	197
0520	Type 316 stainless steel	G	2 Sswk	24	.667 V.L.F.	151	38.50	189.50	228
0530	36" diameter, aluminum	G	2 Sswk	24	.667 V.L.F.	103	38.50	141.50	175
0540	Type 304 stainless steel	G	2 Sswk	24	.667 V.L.F.	149	38.50	187.50	224
0550	Type 316 stainless steel	G	2 Sswk	24	.667 V.L.F.	182	38.50	220.50	261

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.	920	235	1,155	1,400
0020	3/8"	G		2	8	1,400	470	1,870	2,275
0030	1/2"	G		1.20	13.333	2,300	780	3,080	3,750
0040	5/8"	G		.72	22.222	3,800	1,300	5,100	6,225
0050	3/4"	G	E-18	.48	83.333	3,750	4,825	3,100	11,675
0060	7/8"	G		.40	100	7,425	5,775	3,725	15,000
0070	1"	G		.35	114	9,200	6,625	4,250	21,300
0080	1-1/4"	G		.24	167	13,600	9,650	6,200	29,450
0110	Hook, Grade 80, Clevis slip, 1/4"	G			Ea.	32.50		32.50	35.50
0120	3/8"	G				51.50		51.50	56.50
0130	1/2"	G				75		75	82.50
0140	5/8"	G				107		107	117
0150	3/4"	G				123		123	135
0160	Hook, Grade 80, eye/sling w/hammerlock coupling, 15 ton	G				425		425	470
0170	22 ton	G				945		945	1,050
0180	37 ton	G				3,050		3,050	3,350

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.	25	5.30	.42	30.72
0025	Steel bars, 1/2" x 1/2", spaced 5" OC	G	"	290	.110 "	17.30	6.40	.51	24.21
0030	Hinge mounted, add	G			Opng.	.50		.50	.55
0040	Removable type, add	G			"	31.50		31.50	35
0050	For galvanized guards, add				S.F.	35%			
0070	For pivoted or projected type, add					105%	40%		
0100	Mild steel, stock units, economy	G	E-4	405	.079	6.80	4.59	.36	11.75
0200	Deluxe	G		405	.079	13.85	4.59	.36	18.80
0400	Woven wire, stock units, 3/8" channel frame, 3' x 5' opening	G		40	.800 Opng.	184	46.50	.367	234.17
0500	4' x 6' opening	G		38	.842	293	49	.387	345.87
0800	Basket guards for above, add	G				263		263	290
1000	Swinging guards for above, add	G				90		90	99

05 58 Formed Metal Fabrications

05 58 25 – Formed Lamp Posts

05 58 25.40 Lamp Posts		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Incl O&P
0010	LAMP POSTS									
0020	Aluminum, 7' high, stock units, post only	[G]	1 Corp	16	.500 Ea.	84	26.50		110.50	132
0100	Mild steel, plain	[G]	"	16	.500 "	86	26.50		112.50	135

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	720	41.50	3.26	764.76	860
1820	Fancy units	[G]		45	.711	1,200	41.50	3.26	1,244.76	1,400
1900	Cast iron, 4'-0" diameter, plain units	[G]		45	.711	715	41.50	3.26	759.76	855
1920	Fancy units	[G]		25	1.280	1,400	74.50	5.90	1,480.40	1,675
2000	Steel, industrial checkered plate, 4' diameter	[G]		45	.711	700	41.50	3.26	744.76	835
2200	6' diameter	[G]		40	.800	715	46.50	3.67	765.17	860
3100	Spiral stair kits, 12 stacking risers to fit exact floor height									
3110	Steel, flat metal treads, primed, 3'-6" diameter	[G]	2 Corp	1.60	10 Flight	1,300	530		1,830	2,225
3120	4'-0" diameter	[G]		1.45	11.034	1,500	585		2,085	2,525
3130	4'-6" diameter	[G]		1.35	11.852	1,650	630		2,280	2,775
3140	5'-0" diameter	[G]		1.25	12.800	1,850	680		2,530	3,050
3210	Galvanized, 3'-6" diameter	[G]		1.60	10	1,875	530		2,405	2,850
3220	4'-0" diameter	[G]		1.45	11.034	2,150	585		2,735	3,225
3230	4'-6" diameter	[G]		1.35	11.852	2,325	630		2,955	3,500
3240	5'-0" diameter	[G]		1.25	12.800	2,575	680		3,255	3,850
3310	Checkered plate tread, primed, 3'-6" diameter	[G]		1.45	11.034	1,575	585		2,160	2,625
3320	4'-0" diameter	[G]		1.35	11.852	1,725	630		2,355	2,850
3330	4'-6" diameter	[G]		1.25	12.800	1,875	680		2,555	3,075
3340	5'-0" diameter	[G]		1.15	13.913	1,950	740		2,690	3,250
3410	Galvanized, 3'-6" diameter	[G]		1.45	11.034	2,150	585		2,735	3,250
3420	4'-0" diameter	[G]		1.35	11.852	2,425	630		3,055	3,600
3430	4'-6" diameter	[G]		1.25	12.800	2,625	680		3,305	3,900
3440	5'-0" diameter	[G]		1.15	13.913	2,925	740		3,665	4,300
3510	Red oak covers on flat metal treads, 3'-6" diameter			1.35	11.852	2,375	630		3,005	3,575
3520	4'-0" diameter			1.25	12.800	2,850	680		3,530	4,175
3530	4'-6" diameter			1.15	13.913	3,075	740		3,815	4,500
3540	5'-0" diameter			1.05	15.238	3,300	810		4,110	4,850

05 73 Decorative Metal Railings

05 73 16 – Wire Rope Decorative Metal Railings

05 73 16.10 Cable Railings

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.	43.50	37		80.50	106

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.	265	38.50		303.50	355
0100	Fancy	[G]		18	.889	525	51		576	660

05 73 Decorative Metal Railings

05 73 23 – Ornamental Railings

05 73 23.50 Railings, Ornamental			Daily Crew	Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Ind O&P
0200	Aluminum, panelized, plain	[G]	2 Sswk	24	.667	L.F.	13.35	38.50			51.85	75
0300	Fancy	[G]		18	.889		25.50	51			76.50	109
0400	Wrought iron, hand forged, plain	[G]		24	.667		96.50	38.50			135	167
0500	Fancy	[G]		18	.889		231	51			282	335
0550	Steel, panelized, plain	[G]		24	.667		21	38.50			59.50	84
0560	Fancy	[G]		18	.889		33	51			84	117
0600	Composite metal/wood/glass, plain			18	.889		145	51			196	240
0700	Fancy			12	1.333		290	77			367	440

05 75 Decorative Formed Metal

05 75 13 – Columns

05 75 13.10 Aluminum Columns

0010 ALUMINUM COLUMNS			E4	240	.133	L.F.	16.85	7.75	.61	25.21	31.50
0015	Made from recycled materials	[G]									
0020	Aluminum, extruded, stock units, no cap or base, 6" diameter	[G]	E4	170	.188		18.60	10.95	.86	30.41	38.50
0100	8" diameter	[G]		150	.213		25.50	12.40	.98	38.88	48.50
0200	10" diameter	[G]		140	.229		40	13.30	1.05	54.35	66
0300	12" diameter	[G]		120	.267		56.50	15.50	1.22	73.22	88.50
0400	15" diameter	[G]				Set	25.50			25.50	28
0410	Caps and bases, plain, 6" diameter	[G]					31.50			31.50	34.50
0420	8" diameter	[G]					50.50			50.50	56
0430	10" diameter	[G]					79.50			79.50	87.50
0440	12" diameter	[G]					143			143	158
0450	15" diameter	[G]									
0460	Caps, ornamental, plain	[G]					315			315	345
0470	Fancy	[G]					1,750			1,750	1,925
0500	For square columns, add to column prices above					L.F.	50%				
0700	Residential, flat, 8' high, plain	[G]	E4	20	1.600	Eq.	103	.93	7.35	203.35	267
0720	Fancy	[G]		20	1.600		200	.93	7.35	300.35	375
0740	Corner type, plain	[G]		20	1.600		188	.93	7.35	288.35	360
0760	Fancy	[G]		20	1.600		310	.93	7.35	410.35	495

05 75 13.20 Columns, Ornamental

0010 COLUMNS, ORNAMENTAL, shop fabricated		R051223-10		E4	160	.200	V.L.F.	9.65	11.65	.92	22.22	30
6400	Mild steel, flat, 9" wide, stock units, painted, plain	[G]										
6450	Fancy	[G]		160	.200		18.70	11.65	.92	31.27	40	
6500	Corner columns, painted, plain	[G]		160	.200		17.65	11.65	.92	30.22	38.50	
6550	Fancy	[G]		160	.200		29	11.65	.92	41.57	51.50	

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 Common Work Results for Wood, Plastics, and Composites

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

06 05 05.10 Selective Demolition Wood Framing		R024119-10	Daily Crew	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
							Labor	Equipment	
0010	SELECTIVE DEMOLITION WOOD FRAMING								
0100	Timber connector, nailed, small		1 Clab	.96	.083	Ea.	3.51	3.51	5.25
0110	Medium			60	.133		5.60	5.60	8.45
0120	Large			48	.167		7	7	10.55
0130	Bolted, small			48	.167		7	7	10.55
0140	Medium			32	.250		10.55	10.55	15.80
0150	Large			24	.333		14.05	14.05	21
2958	Beams, 2" x 6"		2 Clab	1100	.015	L.F.	.61	.61	.92
2960	2" x 8"			825	.019		.82	.82	1.23
2965	2" x 10"			665	.024		1.01	1.01	1.52
2970	2" x 12"			550	.029		1.22	1.22	1.84
2972	2" x 14"			470	.034		1.43	1.43	2.15
2975	4" x 8"		B-1	413	.058		2.49	2.49	3.73
2980	4" x 10"			330	.073		3.11	3.11	4.67
2985	4" x 12"			275	.087		3.73	3.73	5.60
3000	6" x 8"			275	.087		3.73	3.73	5.60
3040	6" x 10"			220	.109		4.67	4.67	7
3080	6" x 12"			185	.130		5.55	5.55	8.35
3120	8" x 12"			140	.171		7.35	7.35	11
3160	10" x 12"			110	.218		9.35	9.35	14
3162	Alternate pricing method			1.10	21.818	M.B.F.	935	935	1,400
3170	Blocking, in 16" OC wall framing, 2" x 4"		1 Clab	600	.013	L.F.	.56	.56	.84
3172	2" x 6"			400	.020		.84	.84	1.27
3174	In 24" OC wall framing, 2" x 4"			600	.013		.56	.56	.84
3176	2" x 6"			400	.020		.84	.84	1.27
3178	Alt method, wood blocking removal from wood framing			.40	20	M.B.F.	840	840	1,275
3179	Wood blocking removal from steel framing			.36	22.222	"	935	935	1,400
3180	Bracing, let in, 1" x 3", studs 16" OC			1050	.008	L.F.	.32	.32	.48
3181	Studs 24" OC			1080	.007		.31	.31	.47
3182	1" x 4", studs 16" OC			1050	.008		.32	.32	.48
3183	Studs 24" OC			1080	.007		.31	.31	.47
3184	1" x 6", studs 16" OC			1050	.008		.32	.32	.48
3185	Studs 24" OC			1080	.007		.31	.31	.47
3186	2" x 3", studs 16" OC			800	.010		.42	.42	.63
3187	Studs 24" OC			830	.010		.41	.41	.61
3188	2" x 4", studs 16" OC			800	.010		.42	.42	.63
3189	Studs 24" OC			830	.010		.41	.41	.61
3190	2" x 6", studs 16" OC			800	.010		.42	.42	.63
3191	Studs 24" OC			830	.010		.41	.41	.61
3192	2" x 8", studs 16" OC			800	.010		.42	.42	.63
3193	Studs 24" OC			830	.010		.41	.41	.61
3194	"T" shaped metal bracing, studs at 16" OC			1060	.008		.32	.32	.48
3195	Studs at 24" OC			1200	.007		.28	.28	.42
3196	Metal straps, studs at 16" OC			1200	.007		.28	.28	.42
3197	Studs at 24" OC			1240	.006		.27	.27	.41
3200	Columns, round, 8' to 14' tall		40	.200	Ea.		8.40	8.40	12.65
3202	Dimensional lumber sizes		2 Clab	1.10	14.545	M.B.F.	610	610	920
3250	Blocking, between joists		1 Clab	320	.025	Ea.	1.05	1.05	1.58
3252	Bridging, metal strap, between joists			320	.025	Pr.	1.05	1.05	1.58
3254	Wood, between joists			320	.025		1.05	1.05	1.58
3260	Door buck, studs, header & access., 8' high 2" x 4" wall, 3' wide			32	.250	Ea.	10.55	10.55	15.80
3261	4' wide			32	.250		10.55	10.55	15.80
3262	5' wide			32	.250		10.55	10.55	15.80

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

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

06 05 05.10	Selective Demolition Wood Framing	Crew	Daily	Labor-	Unit	Material	2020 Bare Costs		Total	Total
			Output	Hours			Labor	Equipment		
3263	6' wide	1 Clab	32	.250	Ea.		10.55		10.55	15.80
3264	8' wide		30	.267			11.25		11.25	16.85
3265	10' wide		30	.267			11.25		11.25	16.85
3266	12' wide		30	.267			11.25		11.25	16.85
3267	2" x 6" wall, 3' wide		32	.250			10.55		10.55	15.80
3268	4' wide		32	.250			10.55		10.55	15.80
3269	5' wide		32	.250			10.55		10.55	15.80
3270	6' wide		32	.250			10.55		10.55	15.80
3271	8' wide		30	.267			11.25		11.25	16.85
3272	10' wide		30	.267			11.25		11.25	16.85
3273	12' wide		30	.267			11.25		11.25	16.85
3274	Window buck, studs, header & access., 8' high 2" x 4" wall, 2' wide		24	.333			14.05		14.05	21
3275	3' wide		24	.333			14.05		14.05	21
3276	4' wide		24	.333			14.05		14.05	21
3277	5' wide		24	.333			14.05		14.05	21
3278	6' wide		24	.333			14.05		14.05	21
3279	7' wide		24	.333			14.05		14.05	21
3280	8' wide		22	.364			15.30		15.30	23
3281	10' wide		22	.364			15.30		15.30	23
3282	12' wide		22	.364			15.30		15.30	23
3283	2" x 6" wall, 2' wide		24	.333			14.05		14.05	21
3284	3' wide		24	.333			14.05		14.05	21
3285	4' wide		24	.333			14.05		14.05	21
3286	5' wide		24	.333			14.05		14.05	21
3287	6' wide		24	.333			14.05		14.05	21
3288	7' wide		24	.333			14.05		14.05	21
3289	8' wide		22	.364			15.30		15.30	23
3290	10' wide		22	.364			15.30		15.30	23
3291	12' wide		22	.364			15.30		15.30	23
3360	Deck or porch decking		825	.010	L.F.		.41		.41	.61
3400	Fascia boards, 1" x 6"		500	.016			.67		.67	1.01
3440	1" x 8"		450	.018			.75		.75	1.12
3480	1" x 10"		400	.020			.84		.84	1.27
3490	2" x 6"		450	.018			.75		.75	1.12
3500	2" x 8"		400	.020			.84		.84	1.27
3510	2" x 10"		350	.023			.96		.96	1.45
3610	Furring, on wood walls or ceiling		4000	.002	S.F.		.08		.08	.13
3620	On masonry or concrete walls or ceiling		1200	.007	"		.28		.28	.42
3800	Headers over openings, 2 @ 2" x 6"		110	.073	L.F.		3.06		3.06	4.60
3840	2 @ 2" x 8"		100	.080			3.37		3.37	5.05
3880	2 @ 2" x 10"		90	.089			3.74		3.74	5.60
3885	Alternate pricing method		.26	130.651	M.B.F.		1,300		1,300	1,950
3920	Joists, 1" x 4"		1250	.006	L.F.		.27		.27	.40
3930	1" x 6"		1135	.007			.30		.30	.45
3940	1" x 8"		1000	.008			.34		.34	.51
3950	1" x 10"		895	.009			.38		.38	.57
3960	1" x 12"		765	.010			.44		.44	.66
4200	2" x 4"	2 Clab	1000	.016			.67		.67	1.01
4230	2" x 6"		970	.016			.69		.69	1.04
4240	2" x 8"		940	.017			.72		.72	1.08
4250	2" x 10"		910	.018			.74		.74	1.11
4280	2" x 12"		880	.018			.77		.77	1.15
4281	2" x 14"		850	.019			.79		.79	1.19

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

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

06 05 05.10 Selective Demolition Wood Framing			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
						Labor	Equipment		
4282	Composite joists, 9-1/2"		2 Clab	960	.017	L.F.	.70	.70	1.05
4283	11-7/8"			930	.017		.72	.72	1.09
4284	14"			897	.018		.75	.75	1.13
4285	16"			865	.019		.78	.78	1.17
4290	Wood joists, alternate pricing method			1.50	10.667	M.B.F.	450	450	675
4500	Open web joist, 12" deep			500	.032	L.F.	1.35	1.35	2.02
4505	14" deep			475	.034		1.42	1.42	2.13
4510	16" deep			450	.036		1.50	1.50	2.25
4520	18" deep			425	.038		1.59	1.59	2.38
4530	24" deep			400	.040		1.68	1.68	2.53
4550	Ledger strips, 1" x 2"		1 Clab	1200	.007		.28	.28	.42
4560	1" x 3"			1200	.007		.28	.28	.42
4570	1" x 4"			1200	.007		.28	.28	.42
4580	2" x 2"			1100	.007		.31	.31	.46
4590	2" x 4"			1000	.008		.34	.34	.51
4600	2" x 6"			1000	.008		.34	.34	.51
4601	2" x 8 or 2" x 10"			800	.010		.42	.42	.63
4602	4" x 6"			600	.013		.56	.56	.84
4604	4" x 8"			450	.018		.75	.75	1.12
5400	Posts, 4" x 4"		2 Clab	800	.020		.84	.84	1.27
5405	4" x 6"			550	.029		1.22	1.22	1.84
5410	4" x 8"			440	.036		1.53	1.53	2.30
5425	4" x 10"			390	.041		1.73	1.73	2.60
5430	4" x 12"			350	.046		1.92	1.92	2.89
5440	6" x 6"			400	.040		1.68	1.68	2.53
5445	6" x 8"			350	.046		1.92	1.92	2.89
5450	6" x 10"			320	.050		2.11	2.11	3.16
5455	6" x 12"			290	.055		2.32	2.32	3.49
5480	8" x 8"			300	.053		2.25	2.25	3.37
5500	10" x 10"			240	.067		2.81	2.81	4.22
5660	T&G floor planks			2	8	M.B.F.	335	335	505
5682	Rafters, ordinary, 16" OC, 2" x 4"			880	.018	S.F.	.77	.77	1.15
5683	2" x 6"			840	.019		.80	.80	1.20
5684	2" x 8"			820	.020		.82	.82	1.23
5685	2" x 10"			820	.020		.82	.82	1.23
5686	2" x 12"			810	.020		.83	.83	1.25
5687	24" OC, 2" x 4"			1170	.014		.58	.58	.87
5688	2" x 6"			1117	.014		.60	.60	.91
5689	2" x 8"			1091	.015		.62	.62	.93
5690	2" x 10"			1091	.015		.62	.62	.93
5691	2" x 12"			1077	.015		.63	.63	.94
5795	Rafters, ordinary, 2" x 4" (alternate method)			862	.019	L.F.	.78	.78	1.17
5800	2" x 6" (alternate method)			850	.019		.79	.79	1.19
5840	2" x 8" (alternate method)			837	.019		.81	.81	1.21
5855	2" x 10" (alternate method)			825	.019		.82	.82	1.23
5865	2" x 12" (alternate method)			812	.020		.83	.83	1.25
5870	Sill plate, 2" x 4"		1 Clab	1170	.007		.29	.29	.43
5871	2" x 6"			780	.010		.43	.43	.65
5872	2" x 8"			586	.014		.57	.57	.86
5873	Alternate pricing method			.78	10.256	M.B.F.	430	430	650
5885	Ridge board, 1" x 4"		2 Clab	900	.018	L.F.	.75	.75	1.12
5886	1" x 6"			875	.018		.77	.77	1.16
5887	1" x 8"			850	.019		.79	.79	1.19

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

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	2020 Bare Costs	Equipment	Total	Total Incl O&P
5888	1" x 10"		2 Clab	825	.019	L.F.		.82		.82	1.23
5889	1" x 12"			800	.020			.84		.84	1.27
5890	2" x 4"			900	.018			.75		.75	1.12
5892	2" x 6"			875	.018			.77		.77	1.16
5894	2" x 8"			850	.019			.79		.79	1.19
5896	2" x 10"			825	.019			.82		.82	1.23
5898	2" x 12"			800	.020			.84		.84	1.27
6050	Rafter tie, 1" x 4"			1250	.013			.54		.54	.81
6052	1" x 6"			1135	.014			.59		.59	.89
6054	2" x 4"			1000	.016			.67		.67	1.01
6056	2" x 6"			970	.016			.69		.69	1.04
6070	Sleepers, on concrete, 1" x 2"		1 Clab	4700	.002			.07		.07	.11
6075	1" x 3"			4000	.002			.08		.08	.13
6080	2" x 4"			3000	.003			.11		.11	.17
6085	2" x 6"			2600	.003			.13		.13	.19
6086	Sheathing from roof, 5/16"		2 Clab	1600	.010	S.F.		.42		.42	.63
6088	3/8"			1525	.010			.44		.44	.66
6090	1/2"			1400	.011			.48		.48	.72
6092	5/8"			1300	.012			.52		.52	.78
6094	3/4"			1200	.013			.56		.56	.84
6096	Board sheathing from roof			1400	.011			.48		.48	.72
6100	Sheathing, from walls, 1/4"			1200	.013			.56		.56	.84
6110	5/16"			1175	.014			.57		.57	.86
6120	3/8"			1150	.014			.59		.59	.88
6130	1/2"			1125	.014			.60		.60	.90
6140	5/8"			1100	.015			.61		.61	.92
6150	3/4"			1075	.015			.63		.63	.94
6152	Board sheathing from walls			1500	.011			.45		.45	.67
6158	Subfloor/roof deck, with boards			2200	.007			.31		.31	.46
6159	Subfloor/roof deck, with tongue & groove boards			2000	.008			.34		.34	.51
6160	Plywood, 1/2" thick			768	.021			.88		.88	1.32
6162	5/8" thick			760	.021			.89		.89	1.33
6164	3/4" thick			750	.021			.90		.90	1.35
6165	1-1/8" thick			720	.022			.94		.94	1.41
6166	Underlayment, particle board, 3/8" thick		1 Clab	780	.010			.43		.43	.65
6168	1/2" thick			768	.010			.44		.44	.66
6170	5/8" thick			760	.011			.44		.44	.67
6172	3/4" thick			750	.011			.45		.45	.67
6200	Stairs and stringers, straight run		2 Clab	40	.400	Riser		16.85		16.85	25.50
6240	With platforms, winders or curves		"	26	.615	"		26		26	39
6300	Components, tread		1 Clab	110	.073	Ea.		3.06		3.06	4.60
6320	Riser			80	.100	"		4.21		4.21	6.35
6390	Stringer, 2" x 10"			260	.031	L.F.		1.30		1.30	1.95
6400	2" x 12"			260	.031			1.30		1.30	1.95
6410	3" x 10"			250	.032			1.35		1.35	2.02
6420	3" x 12"			250	.032			1.35		1.35	2.02
6590	Wood studs, 2" x 3"		2 Clab	3076	.005			.22		.22	.33
6600	2" x 4"			2000	.008			.34		.34	.51
6640	2" x 6"			1600	.010			.42		.42	.63
6720	Wall framing, including studs, plates and blocking, 2" x 4"		1 Clab	600	.013	S.F.		.56		.56	.84
6740	2" x 6"			480	.017	"		.70		.70	1.05
6750	Headers, 2" x 4"			1125	.007	L.F.		.30		.30	.45
6755	2" x 6"			1125	.007			.30		.30	.45

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

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	2020 Bare Costs		Total	Total Ind O&P
						Labor.	Equipment	Total		
6760	2" x 8"		1 Clab	1050	.008	L.F.		.32		.32 .48
6765	2" x 10"			1050	.008			.32		.32 .48
6770	2" x 12"			1000	.008			.34		.34 .51
6780	4" x 10"			525	.015			.64		.64 .96
6785	4" x 12"			500	.016			.67		.67 1.01
6790	6" x 8"			560	.014			.60		.60 .90
6795	6" x 10"			525	.015			.64		.64 .96
6797	6" x 12"			500	.016			.67		.67 1.01
7000	Trusses									
7050	12' span		2 Clab	74	.216	Ea.		9.10		9.10 13.70
7150	24' span		F-3	66	.606			33	7.15	40.15 57.50
7200	26' span			64	.625			34	7.35	41.35 59
7250	28' span			62	.645			35	7.60	42.60 61
7300	30' span			58	.690			37.50	8.10	45.60 65.50
7350	32' span			56	.714			39	8.40	47.40 68
7400	34' span			54	.741			40.50	8.75	49.25 70
7450	36' span			52	.769			42	9.05	51.05 73
8000	Soffit, T&G wood		1 Clab	520	.015	S.F.		.65		.65 .97
8010	Hardboard, vinyl or aluminum		"	640	.013			.53		.53 .79
8030	Plywood		2 Carp	315	.051			2.70		2.70 4.06
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.		8.40		8.40 12.65
1020	Wall cabinets, per L.F.		"	80	.200	"		8.40		8.40 12.65
1060	Remove and reset, base cabinets		2 Carp	18	.889	Ea.		47		47 71
1070	Wall cabinets			20	.800			42.50		42.50 64
1072	Oven cabinet, 7' high			11	1.455			77.50		77.50 116
1074	Cabinet door, up to 2' high		1 Clab	66	.121			5.10		5.10 7.65
1076	2' - 4' high		"	46	.174			7.30		7.30 11
1100	Steel, painted, base cabinets		2 Clab	60	.267	L.F.		11.25		11.25 16.85
1120	Wall cabinets			60	.267	"		11.25		11.25 16.85
1200	Casework, large area			320	.050	S.F.		2.11		2.11 3.16
1220	Selective			200	.080	"		3.37		3.37 5.05
1500	Counter top, straight runs			200	.080	L.F.		3.37		3.37 5.05
1510	L, U or C shapes			120	.133			5.60		5.60 8.45
1550	Remove and reset, straight runs		2 Carp	50	.320			17		17 25.50
1560	L, U or C shape		"	40	.400			21.50		21.50 32
2000	Paneling, 4' x 8' sheets		2 Clab	2000	.008	S.F.		.34		.34 .51
2100	Boards, 1" x 4"			700	.023			.96		.96 1.45
2120	1" x 6"			750	.021			.90		.90 1.35
2140	1" x 8"			800	.020			.84		.84 1.27
3000	Trim, baseboard, to 6" wide			1200	.013	L.F.		.56		.56 .84
3040	Greater than 6" and up to 12" wide			1000	.016			.67		.67 1.01
3080	Remove and reset, minimum		2 Carp	400	.040			2.13		2.13 3.19
3090	Maximum		"	300	.053			2.83		2.83 4.26
3100	Ceiling trim		2 Clab	1000	.016			.67		.67 1.01
3120	Chair rail			1200	.013			.56		.56 .84
3140	Railings with balusters			240	.067			2.81		2.81 4.22
3160	Wainscoting			700	.023	S.F.		.96		.96 1.45

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

06 05 23 – Wood, Plastic, and Composite Fastenings

	Description	Daily	Labor-	2020 Bare Costs	Total	Total	
		Crew	Output				
0010	NAILS , material only, based upon 50# box purchase			Lb.	11.65	11.65	12.85
0020	Copper nails, plain			10.10	10.10	11.10	
0400	Stainless steel, plain			1.52	1.52	1.67	
0500	Box, 3d to 20d, bright			2.55	2.55	2.81	
0520	Galvanized			1.13	1.13	1.24	
0600	Common, 3d to 60d, plain			2.48	2.48	2.73	
0700	Galvanized			11.05	11.05	12.15	
0800	Aluminum			2.85	2.85	3.14	
1000	Annular or spiral thread, 4d to 60d, plain			3.49	3.49	3.84	
1200	Galvanized			2.01	2.01	2.21	
1400	Drywall nails, plain			1.89	1.89	2.08	
1600	Galvanized			1.57	1.57	1.73	
1800	Finish nails, 4d to 10d, plain			1.93	1.93	2.12	
2000	Galvanized			8.75	8.75	9.65	
2100	Aluminum			3.88	3.88	4.27	
2300	Flooring nails, hardened steel, 2d to 10d, plain			4.09	4.09	4.50	
2400	Galvanized			3.64	3.64	4	
2500	Gypsum lath nails, 1-1/8", 13 ga. flathead, blued			2.34	2.34	2.57	
2600	Masonry nails, hardened steel, 3/4" to 3" long, plain			4.14	4.14	4.55	
2700	Galvanized			2.93	2.93	3.22	
2900	Roofing nails, threaded, galvanized			7.60	7.60	8.40	
3100	Aluminum			3.06	3.06	3.37	
3300	Compressed lead head, threaded, galvanized			2.59	2.59	2.85	
3600	Siding nails, plain shank, galvanized			5.95	5.95	6.55	
3800	Aluminum			1.16	1.16	.18	
5000	Add to prices above for cement coating			.27	.27	.30	
5200	Zinc or tin plating			2.51	2.51	2.76	
5500	Vinyl coated sinkers, 8d to 16d						

06 05 23.40 Sheet Metal Screws

	Description	Daily	Labor-	2020 Bare Costs	Total	Total	
		C	Hours				
0010	SHEET METAL SCREWS			2.04	2.04	2.24	
0020	Steel, standard, #8 x 3/4", plain			2.49	2.49	2.74	
0100	Galvanized			3.77	3.77	4.15	
0300	#10 x 1", plain			4.34	4.34	4.77	
0400	Galvanized			7.60	7.60	8.35	
0600	With washers, #14 x 1", plain			8	8	8.80	
0700	Galvanized			24	24	26.50	
0900	#14 x 2", plain			11.45	11.45	12.60	
1000	Galvanized			10.35	10.35	11.40	
1500	Self-drilling, with washers (pinch point), #8 x 3/4", plain			3.13	3.13	3.44	
1600	Galvanized			3.62	3.62	3.98	
1800	#10 x 3/4", plain			3.99	3.99	4.39	
1900	Galvanized			14	14	15.40	
3000	Stainless steel w/aluminum or neoprene washers, #14 x 1", plain			23	23	25.50	
3100	#14 x 2", plain						

06 05 23.50 Wood Screws

	Description	Daily	Labor-	2020 Bare Costs	Total	Total	
		C	Hours				
0010	WOOD SCREWS			4.03	4.03	4.43	
0020	#8, 1" long, steel			12.30	12.30	13.10	
0100	Brass			6.90	6.90	7.60	
0200	#8, 2" long, steel			27.50	27.50	30	
0300	Brass			3.55	3.55	3.91	
0400	#10, 1" long, steel			15.65	15.65	17.25	
0500	Brass						

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

06 05 23 – Wood, Plastic, and Composite Fastenings

06 05 23.50 Wood Screws		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Ind&O&P
0600	#10, 2" long, steel				C	5.15			5.15	5.65
0700	Brass					26			26	28.50
0800	#10, 3" long, steel					9.20			9.20	10.15
1000	#12, 2" long, steel					7.70			7.70	8.45
1100	Brass					36.50			36.50	40
1500	#12, 3" long, steel					11.55			11.55	12.70
2000	#12, 4" long, steel				↓	26.50			26.50	29
2050	Composite trim screws									
2100	Stainless steel, trim head, #7 x 1-5/8" long				C	27.50			27.50	30
2200	#7 x 2" long					27			27	30
2300	#7 x 2-1/2" long					30.50			30.50	33.50
2400	#7 x 3" long					35.50			35.50	39
2500	#9 x 3-1/2" long					76.50			76.50	84.50
2600	#9 x 4" long					90			90	99
3000	" Stainless steel, flat head, #6 x 1-5/8" long					25.50			25.50	28
3100	#8 x 2" long					18.05			18.05	19.85
3200	#8 x 2-1/2" long					21.50			21.50	23.50
3300	#8 x 3" long					25			25	27.50
3400	#10 x 2" long					20.50			20.50	22.50
3500	#10 x 3-1/2" long					41			41	45.50
3600	#12 x 3" long					47.50			47.50	52
3700	#12 x 4" long					72.50			72.50	80
3800	#12 x 6" long				↓	124			124	137

06 05 23.60 Timber Connectors

0010 TIMBER CONNECTORS		2 Carp	75	.213	Ea.	27.50	11.35		38.85	47.50
0020	Add up cost of each part for total cost of connection									
0100	Connector plates, steel, with bolts, straight	2 Carp	75	.213	Ea.	27.50	11.35		38.85	47.50
0110	Tee, 7 ga.		50	.320		41.50	17		58.50	71
0120	T-Strap, 14 ga., 12" x 8" x 2"		50	.320		41.50	17		58.50	71
0150	Anchor plates, 7 ga., 9" x 7"	↓	75	.213		27.50	11.35		38.85	47.50
0200	Bolts, machine, sq. hd. with nut & washer, 1/2" diameter, 4" long	1 Carp	140	.057		.77	3.04		3.81	5.40
0300	7-1/2" long		130	.062		1.41	3.27		4.68	6.45
0500	3/4" diameter, 7-1/2" long		130	.062		3.51	3.27		6.78	8.75
0610	Machine bolts, w/nut, washer, 3/4" diameter, 15" L, HD's & beam hangers		95	.084		6.60	4.48		11.08	13.95
0800	Drilling bolt holes in timber, 1/2" diameter		450	.018	Inch		.95		.95	1.42
0900	1" diameter		350	.023			1.22		1.22	1.83
1100	Framing anchor, angle, 3" x 3" x 1-1/2", 12 ga.		175	.046	Ea.	2.53	2.43		4.96	6.45
1150	Framing anchors, 18 ga., 4-1/2" x 2-3/4"		175	.046		2.53	2.43		4.96	6.45
1160	Framing anchors, 18 ga., 4-1/2" x 3"		175	.046		2.53	2.43		4.96	6.45
1170	Clip anchors plates, 18 ga., 12" x 1-1/8"		175	.046		2.53	2.43		4.96	6.45
1250	Holdowns, 3 ga base, 10 ga. body		8	1		46.50	53		99.50	131
1260	Holdowns, 7 ga 11-1/16" x 3-1/4"		8	1		46.50	53		99.50	131
1270	Holdowns, 7 ga. 14-3/8" x 3-1/8"		8	1		46.50	53		99.50	131
1275	Holdowns, 12 ga. 8" x 2-1/2"		8	1		46.50	53		99.50	131
1300	Joist and beam hangers, 18 ga. galv., for 2" x 4" joist		175	.046		.85	2.43		3.28	4.59
1400	2" x 6" to 2" x 10" joist		165	.048		1.56	2.58		4.14	5.60
1600	16 ga. galv., 3" x 6" to 3" x 10" joist		160	.050		3.03	2.66		5.69	7.30
1700	3" x 10" to 3" x 14" joist		160	.050		4.64	2.66		7.30	9.10
1800	4" x 6" to 4" x 10" joist		155	.052		3.59	2.74		6.33	8.05
1900	4" x 10" to 4" x 14" joist		155	.052		5	2.74		7.74	9.60
2000	Two-2" x 6" to two-2" x 10" joists		150	.053		3.98	2.83		6.81	8.65
2100	Two-2" x 10" to two-2" x 14" joists		150	.053		4.55	2.83		7.38	9.25

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

06 05 23 – Wood, Plastic, and Composite Fastenings

06 05 23.60 Timber Connectors		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
						Labor	Equipment	Total		
2300	3/16" thick, 6" x 8" joist	1 Carp	.145	.055	Ea.	75	2.93	77.93	87	
2400	6" x 10" joist	1	140	.057		77.50	3.04	80.54	90	
2500	6" x 12" joist	1	135	.059		79.50	3.15	82.65	92	
2700	1/4" thick, 6" x 14" joist	↓	130	.062		82	3.27	85.27	95	
2900	Plywood clips, extruded aluminum H clip, for 3/4" panels					.24		.24	.26	
3000	Galvanized 18 ga. back-up clip					.19		.19	.21	
3200	Post framing, 16 ga. galv. for 4" x 4" base, 2 piece	1 Carp	130	.062		15.25	3.27	18.52	21.50	
3300	Cap	1	130	.062		25	3.27	28.27	32.50	
3500	Rafter anchors, 18 ga. galv., 1-1/2" wide, 5-1/4" long	1	145	.055		.41	2.93	3.34	4.86	
3600	10-3/4" long	1	145	.055		1.15	2.93	4.08	5.70	
3800	Shear plates, 2-5/8" diameter	1	120	.067		3.20	3.54	6.74	8.80	
3900	4" diameter	1	115	.070		2.69	3.70	6.39	8.50	
4000	Sill anchors, embedded in concrete or block, 25-1/2" long	1	115	.070		16.10	3.70	19.80	23.50	
4100	Spike grids, 3" x 6"	1	120	.067		1.34	3.54	4.88	6.75	
4400	Split rings, 2-1/2" diameter	1	120	.067		3.31	3.54	6.85	8.95	
4500	4" diameter	1	110	.073		3.51	3.87	7.38	9.65	
4550	Tie plate, 20 ga., 7" x 3-1/8"	1	110	.073		3.51	3.87	7.38	9.65	
4560	5" x 4-1/8"	1	110	.073		3.51	3.87	7.38	9.65	
4575	Twist straps, 18 ga., 12" x 1-1/4"	1	110	.073		3.51	3.87	7.38	9.65	
4580	16" x 1-1/4"	1	110	.073		3.51	3.87	7.38	9.65	
4600	Strap ties, 20 ga., 2-1/16" wide, 12-13/16" long	1	180	.044		1.01	2.36	3.37	4.66	
4700	16 ga., 1-3/8" wide, 12" long	1	180	.044		1.01	2.36	3.37	4.66	
4800	1-1/4" wide, 21-5/8" long	1	160	.050		2.81	2.66	5.47	7.10	
5000	Toothed rings, 2-5/8" or 4" diameter	1	90	.089		2.33	4.72	7.05	9.65	
5200	Truss plates, nailed, 20 ga., up to 32' span	↓	17	.471	Truss	15.15	25		40.15	
5400	Washers, 2" x 2" x 1/8"				Ea.	.48		.48	.53	
5500	3" x 3" x 3/16"				"	1.26		1.26	1.39	
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	1,225	224	1,449	1,675	
6014	3-1/4" x 3-1/4" x 5" long	1	1.90	4.211		2,150	224	2,374	2,700	
6016	3-1/4" x 3-1/4" x 7-1/2" long	1	1.85	4.324		4,100	230	4,330	4,850	
6018	5-3/4" x 5-3/4" x 2-1/2" long	1	1.85	4.324		2,650	230	2,880	3,250	
6020	5-3/4" x 5-3/4" x 5" long	1	1.85	4.324		4,200	230	4,430	4,975	
6022	5-3/4" x 5-3/4" x 7-1/2" long	1	1.80	4.444		5,925	236	6,161	6,875	
6024	3 ga., 4-1/4" x 4-1/4" x 3" long	1	1.85	4.324		2,875	230	3,105	3,525	
6026	4-1/4" x 4-1/4" x 6" long	1	1.85	4.324		5,750	230	5,980	6,675	
6028	4-1/4" x 4-1/4" x 9" long	1	1.80	4.444		6,975	236	7,211	8,025	
6030	7-1/4" x 7-1/4" x 3" long	1	1.80	4.444		5,000	236	5,236	5,850	
6032	7-1/4" x 7-1/4" x 6" long	1	1.80	4.444		6,750	236	6,986	7,775	
6034	7-1/4" x 7-1/4" x 9" long	↓	1.75	4.571	↓	14,000	243	14,243	15,800	
6036	Gussets									
6038	7 ga., 8-1/8" x 8-1/8" x 2-3/4" long	1 Carp	1.80	4.444	C	5,700	236	5,936	6,625	
6040	3 ga., 9-3/4" x 9-3/4" x 3-1/4" long	"	1.80	4.444	"	8,425	236	8,661	9,625	
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	19,700	425	20,125	22,300	
6106	.5-1/4" x 9" x 12" top flange	1	8			20,700	425	21,125	23,400	
6108	5-1/4" x 11" x 11-3/4" top flange	1	8			21,400	425	21,825	24,100	
6110	6-7/8" x 9" x 12" top flange	1	8			21,300	425	21,725	24,000	
6112	6-7/8" x 11" x 13-1/2" top flange	1	8			29,700	425	30,125	33,200	
6114	8-7/8" x 11" x 15-1/2" top flange	↓	1	8	↓	24,400	425	24,825	27,400	
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	20,700	236	20,936	23,200	

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

06 05 23 – Wood, Plastic, and Composite Fastenings

06 05 23.60 Timber Connectors			Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Bare Costs	Total	Total Incl O&P
							Labor	Equipment			
6120	3-1/4" x 10-1/2" x 12" top flange		1 Corp	1.80	4,444	C	25,200	236		25,436	28,100
6122	5-1/4" x 9-1/2" x 10" top flange			1.80	4,444		20,600	236		20,836	23,100
6124	5-1/4" x 9-1/2" x 12" top flange			1.80	4,444		29,400	236		29,636	32,700
6128	6-7/8" x 8-1/2" x 12" top flange			1.80	4,444		21,300	236		21,536	23,800
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 Corp	.50	16	C	15,500	850		16,350	18,300
6138	3-1/4" x 10-1/2" x 6-7/8" x 6" saddle			.50	16		16,300	850		17,150	19,200
6140	3-1/4" x 10-1/2" x 8-7/8" x 6" saddle			.50	16		18,000	850		18,850	21,100
6142	3-1/4" x 19-1/2" x 5-1/4" x 10-1/8" saddle			.40	20		17,500	1,075		18,575	20,800
6144	3-1/4" x 19-1/2" x 6-7/8" x 10-1/8" saddle			.40	20		18,600	1,075		19,675	22,100
6146	3-1/4" x 19-1/2" x 8-7/8" x 10-1/8" saddle			.40	20		16,700	1,075		17,775	20,000
6148	5-1/4" x 9-1/2" x 5-1/4" x 12" saddle			.50	16		19,600	850		20,450	22,900
6150	5-1/4" x 9-1/2" x 6-7/8" x 9" saddle			.50	16		19,500	850		20,350	22,800
6152	5-1/4" x 10-1/2" x spec x 12" saddle			.50	16		23,400	850		24,250	27,000
6154	5-1/4" x 18" x 5-1/4" x 12-1/8" saddle			.40	20		18,000	1,075		19,075	21,400
6156	5-1/4" x 18" x 6-7/8" x 12-1/8" saddle			.40	20		19,700	1,075		20,775	23,200
6158	5-1/4" x 18" x spec x 12-1/8" saddle			.40	20		21,300	1,075		22,375	25,100
6160	6-7/8" x 8-1/2" x 6-7/8" x 12" saddle			.50	16		22,200	850		23,050	25,700
6162	6-7/8" x 8-1/2" x 8-7/8" x 12" saddle			.50	16		23,000	850		23,850	26,500
6164	6-7/8" x 10-1/2" x spec x 12" saddle			.50	16		22,200	850		23,050	25,700
6166	6-7/8" x 18" x 6-7/8" x 13-3/4" saddle			.40	20		25,400	1,075		26,475	29,600
6168	6-7/8" x 18" x 8-7/8" x 13-3/4" saddle			.40	20		26,000	1,075		27,075	30,100
6170	6-7/8" x 18" x spec x 13-3/4" saddle			.40	20		28,400	1,075		29,475	32,800
6172	8-7/8" x 18" x spec x 15-3/4" saddle			.40	20		38,600	1,075		39,675	44,000
6201	Beam and purlin hangers, galvanized, 12 ga.										
6202	Purlin or joist size, 3" x 8"		1 Corp	1.70	4,706	C	2,300	250		2,550	2,900
6204	3" x 10"			1.70	4,706		1,825	250		2,125	2,425
6206	3" x 12"			1.65	4,848		2,575	258		2,833	3,200
6208	3" x 14"			1.65	4,848		3,000	258		3,258	3,675
6210	3" x 16"			1.65	4,848		3,175	258		3,433	3,875
6212	4" x 8"			1.65	4,848		2,325	258		2,583	2,925
6214	4" x 10"			1.65	4,848		2,225	258		2,483	2,825
6216	4" x 12"			1.60	5		2,525	266		2,791	3,175
6218	4" x 14"			1.60	5		2,775	266		3,041	3,475
6220	4" x 16"			1.60	5		2,950	266		3,216	3,650
6222	6" x 8"			1.60	5		2,050	266		2,316	2,650
6224	6" x 10"			1.55	5,161		2,300	274		2,574	2,925
6226	6" x 12"			1.55	5,161		4,650	274		4,924	5,500
6228	6" x 14"			1.50	5,333		4,925	283		5,208	5,825
6230	6" x 16"			1.50	5,333		4,525	283		4,808	5,400
6250	Beam seats										
6252	Beam size, 5-1/4" wide										
6254	5" x 7" x 1/4"		1 Corp	1.80	4,444	C	7,475	236		7,711	8,575
6256	6" x 7" x 3/8"			1.80	4,444		9,325	236		9,561	10,600
6258	7" x 7" x 3/8"			1.80	4,444		9,000	236		9,236	10,300
6260	8" x 7" x 3/8"			1.80	4,444		10,600	236		10,836	12,100
6262	Beam size, 6-7/8" wide										
6264	5" x 9" x 1/4"		1 Corp	1.80	4,444	C	8,975	236		9,211	10,200
6266	6" x 9" x 3/8"			1.80	4,444		11,700	236		11,936	13,200
6268	7" x 9" x 3/8"			1.80	4,444		13,100	236		13,336	14,800
6270	8" x 9" x 3/8"			1.80	4,444		15,500	236		15,736	17,400
6272	Special beams, over 6-7/8" wide										
6274	5" x 10" x 3/8"		1 Corp	1.80	4,444	C	15,100	236		15,336	17,000

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

06 05 23 – Wood, Plastic, and Composite Fastenings

06 05 23.60 Timber Connectors			Daily Output	Labor Hours	Unit	2020 Bare Costs			Total	Total Incl O&P	
			Crew			Material	Labor	Equipment			
6276	6" x 10" x 3/8"		1 Carp	1.80	4,444	C	15,700	236		15,936	17,600
6278	7" x 10" x 3/8"			1.80	4,444		14,800	236		15,036	16,700
6280	8" x 10" x 3/8"			1.75	4,571		15,600	243		15,843	17,600
6282	5-1/4" x 12" x 5/16"			1.75	4,571		12,100	243		12,343	13,700
6284	6-1/2" x 12" x 3/8"			1.75	4,571		20,100	243		20,343	22,500
6286	5-1/4" x 16" x 5/16"			1.70	4,706		17,700	250		17,950	19,800
6288	6-1/2" x 16" x 3/8"			1.70	4,706		30,000	250		30,250	33,400
6290	5-1/4" x 20" x 5/16"			1.70	4,706		23,500	250		23,750	26,200
6292	6-1/2" x 20" x 3/8"			1.65	4,848	▼	35,300	258		35,558	39,200
6300	Column bases										
6302	4" x 4", 16 ga.		1 Carp	1.80	4,444	C	910	236		1,146	1,350
6306	7 ga.			1.80	4,444		3,200	236		3,436	3,850
6308	4" x 6", 16 ga.			1.80	4,444		1,625	236		1,861	2,150
6312	7 ga.			1.80	4,444		2,800	236		3,036	3,425
6314	6" x 6", 16 ga.			1.75	4,571		2,050	243		2,293	2,625
6318	7 ga.			1.75	4,571		3,625	243		3,868	4,375
6320	6" x 8", 7 ga.			1.70	4,706		3,700	250		3,950	4,450
6322	6" x 10", 7 ga.			1.70	4,706		4,200	250		4,450	5,000
6324	6" x 12", 7 ga.			1.70	4,706		4,525	250		4,775	5,350
6326	8" x 8", 7 ga.			1.65	4,848		7,275	258		7,533	8,375
6330	8" x 10", 7 ga.			1.65	4,848		7,125	258		7,383	8,200
6332	8" x 12", 7 ga.			1.60	5		7,725	266		7,991	8,900
6334	10" x 10", 3 ga.			1.60	5		7,875	266		8,141	9,075
6336	10" x 12", 3 ga.			1.60	5		9,050	266		9,316	10,400
6338	12" x 12", 3 ga.			1.55	5,161	▼	9,825	274		10,099	11,200
6350	Column caps, painted, 3 ga.										
6352	3-1/4" x 3-5/8"		1 Carp	1.80	4,444	C	12,200	236		12,436	13,800
6354	3-1/4" x 5-1/2"			1.80	4,444		12,200	236		12,436	13,800
6356	3-5/8" x 3-5/8"			1.80	4,444		8,400	236		8,636	9,600
6358	3-5/8" x 5-1/2"			1.80	4,444		8,400	236		8,636	9,600
6360	5-1/4" x 5-1/2"			1.75	4,571		10,200	243		10,443	11,700
6362	5-1/4" x 7-1/2"			1.75	4,571		10,700	243		10,943	12,200
6364	5-1/2" x 3-5/8"			1.75	4,571		10,200	243		10,443	11,600
6366	5-1/2" x 5-1/2"			1.75	4,571		10,200	243		10,443	11,600
6368	5-1/2" x 7-1/2"			1.70	4,706		11,500	250		11,750	13,100
6370	6-7/8" x 5-1/2"			1.70	4,706		12,000	250		12,250	13,600
6372	6-7/8" x 6-7/8"			1.70	4,706		12,000	250		12,250	13,600
6374	6-7/8" x 7-1/2"			1.70	4,706		12,000	250		12,250	13,600
6376	7-1/2" x 5-1/2"			1.65	4,848		12,600	258		12,858	14,200
6378	7-1/2" x 7-1/2"			1.65	4,848		12,600	258		12,858	14,200
6380	8-7/8" x 5-1/2"			1.60	5		13,300	266		13,566	15,000
6382	8-7/8" x 7-1/2"			1.60	5		13,300	266		13,566	15,000
6384	9-1/2" x 5-1/2"			1.60	5		18,000	266		18,266	20,200
6400	Floor tie anchors, polymer paint										
6402	10 ga., 3" x 37-1/2"		1 Carp	1.80	4,444	C	4,800	236		5,036	5,625
6404	3-1/2" x 45-1/2"			1.75	4,571		5,000	243		5,243	5,875
6406	3 ga., 3-1/2" x 56"			1.70	4,706	▼	8,825	250		9,075	10,100
6410	Girder hangers										
6412	6" wall thickness, 4" x 6"		1 Carp	1.80	4,444	C	2,700	236		2,936	3,325
6414	4" x 8"			1.80	4,444		2,950	236		3,186	3,575
6416	8" wall thickness, 4" x 6"			1.80	4,444		3,000	236		3,236	3,625
6418	4" x 8"			1.80	4,444		3,400	236		3,636	4,100
6420	Hinge connections, polymer painted										

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

06 05 23 – Wood, Plastic, and Composite Fastenings

	Description	Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
							Labor	Equipment	Total		
06 05 23.60 Timber Connectors											
6422	3/4" thick top plate										
6424	5-1/4" x 12" w/5" x 5" top	1 Corp	1	8	C	41,900	425		42,325	46,700	
6426	5-1/4" x 15" w/6" x 6" top		.80	10		44,500	530		45,030	49,800	
6428	5-1/4" x 18" w/7" x 7" top		.70	11.429		46,800	605		47,405	52,500	
6430	5-1/4" x 26" w/9" x 9" top	↓	.60	13.333	↓	49,800	710		50,510	56,000	
6432	1" thick top plate										
6434	6-7/8" x 14" w/5" x 5" top	1 Corp	.80	10	C	51,000	530		51,530	57,000	
6436	6-7/8" x 17" w/6" x 6" top		.80	10		56,500	530		57,030	63,500	
6438	6-7/8" x 21" w/7" x 7" top		.70	11.429		62,000	605		62,605	69,000	
6440	6-7/8" x 31" w/9" x 9" top	↓	.60	13.333	↓	67,500	710		68,210	75,500	
6442	1-1/4" thick top plate										
6444	8-7/8" x 16" w/5" x 5" top	1 Corp	.60	13.333	C	63,500	710		64,210	71,000	
6446	8-7/8" x 21" w/6" x 6" top		.50	16		70,000	850		70,850	78,500	
6448	8-7/8" x 26" w/7" x 7" top			40	20	79,500	1,075		80,575	89,000	
6450	8-7/8" x 39" w/9" x 9" top			.30	26.667	99,000	1,425		100,425	110,500	
6460	Holdowns										
6462	Embedded along edge										
6464	26" long, 12 ga.	1 Corp	.90	8.889	C	1,225	470		1,695	2,050	
6466	35" long, 12 ga.		.85	9.412		1,675	500		2,175	2,600	
6468	35" long, 10 ga.	↓	.85	9.412	↓	1,750	500		2,250	2,675	
6470	Embedded away from edge										
6472	Medium duty, 12 ga.										
6474	18-1/2" long	1 Corp	.95	8.421	C	890	450		1,340	1,650	
6476	23-3/4" long		.90	8.889		1,125	470		1,595	1,925	
6478	28" long		.85	9.412		1,150	500		1,650	2,000	
6480	35" long	↓	.85	9.412	↓	1,575	500		2,075	2,475	
6482	Heavy duty, 10 ga.										
6484	28" long	1 Corp	.85	9.412	C	2,175	500		2,675	3,150	
6486	35" long	"	.85	9.412	"	2,375	500		2,875	3,375	
6490	Surface mounted (W x H)										
6492	2-1/2" x 5-3/4", 7 ga.	1 Corp	1	8	C	2,350	425		2,775	3,225	
6494	2-1/2" x 8", 12 ga.	1	8			1,375	425		1,800	2,175	
6496	2-7/8" x 6-3/8", 7 ga.	1	8			4,825	425		5,250	5,950	
6498	2-7/8" x 12-1/2", 3 ga.		1	8		4,400	425		4,825	5,475	
6500	3-3/16" x 9-3/8", 10 ga.		1	8		4,800	425		5,225	5,925	
6502	3-1/2" x 11-5/8", 3 ga.		1	8		6,250	425		6,675	7,525	
6504	3-1/2" x 14-3/4", 3 ga.		1	8		13,100	425		13,525	15,000	
6506	3-1/2" x 16-1/2", 3 ga.		1	8		17,600	425		18,025	20,000	
6508	3-1/2" x 20-1/2", 3 ga.		.90	8.889		17,200	470		17,670	19,600	
6510	3-1/2" x 24-1/2", 3 ga.		.90	8.889		24,000	470		24,470	27,100	
6512	4-1/4" x 20-3/4", 3 ga.	↓	.90	8.889	↓	23,100	470		23,570	26,100	
6520	Joist hangers										
6522	Sloped, field adjustable, 18 ga.										
6524	2" x 6"	1 Corp	1.65	4.848	C	580	258		838	1,025	
6526	2" x 8"		1.65	4.848		990	258		1,248	1,475	
6528	2" x 10" and up		1.65	4.848		1,025	258		1,283	1,500	
6530	3" x 10" and up		1.60	5		1,300	266		1,566	1,825	
6532	4" x 10" and up	↓	1.55	5.161	↓	1,375	274		1,649	1,925	
6536	Skewed 45°, 16 ga.										
6538	2" x 4"	1 Corp	1.75	4.571	C	935	243		1,178	1,400	
6540	2" x 6" or 2" x 8"		1.65	4.848		1,025	258		1,283	1,500	
6542	2" x 10" or 2" x 12"		1.65	4.848		1,175	258		1,433	1,650	
6544	2" x 14" or 2" x 16"	↓	1.60	5	↓	2,125	266		2,391	2,725	

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

06 05 23 – Wood, Plastic, and Composite Fastenings

06 05 23.60 Timber Connectors	Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total Ind O&P
						Labor	Equipment	Total	
6546 (2) 2" x 6" or (2) 2" x 8"	1 Corp	1.60	5	C	1,775	266		2,041	2,350
6548 (2) 2" x 10" or (2) 2" x 12"		1.55	5.161		2,275	274		2,549	2,900
6550 (2) 2" x 14" or (2) 2" x 16"		1.50	5.333		3,150	283		3,433	3,900
6552 4" x 6" or 4" x 8"		1.60	5		1,700	266		1,966	2,275
6554 4" x 10" or 4" x 12"		1.55	5.161		1,850	274		2,124	2,450
6556 4" x 14" or 4" x 16"	↓	1.55	5.161	↓	2,975	274		3,249	3,650
6560 Skewed 45°, 14 ga.									
6562 (2) 2" x 6" or (2) 2" x 8"	1 Corp	1.60	5	C	1,875	266		2,141	2,450
6564 (2) 2" x 10" or (2) 2" x 12"		1.55	5.161		2,475	274		2,749	3,125
6566 (2) 2" x 14" or (2) 2" x 16"		1.50	5.333		3,950	283		4,233	4,775
6568 4" x 6" or 4" x 8"		1.60	5		2,275	266		2,541	2,900
6570 4" x 10" or 4" x 12"		1.55	5.161		2,750	274		3,024	3,425
6572 4" x 14" or 4" x 16"	↓	1.55	5.161	↓	4,200	274		4,474	5,000
6590 Joist hangers, heavy duty 12 ga., galvanized									
6592 2" x 4"	1 Corp	1.75	4.571	C	1,625	243		1,868	2,175
6594 2" x 6"		1.65	4.848		1,600	258		1,858	2,125
6595 2" x 8", 16 ga.		1.65	4.848		1,500	258		1,758	2,025
6596 2" x 8"		1.65	4.848		2,450	258		2,708	3,050
6597 2" x 8", 16 ga.		1.65	4.848		2,325	258		2,583	2,925
6598 2" x 10"		1.65	4.848		2,525	258		2,783	3,150
6600 2" x 12"		1.65	4.848		2,825	258		3,083	3,500
6602 2" x 14"		1.65	4.848		3,450	258		3,708	4,150
6604 2" x 16"		1.65	4.848		3,625	258		3,883	4,375
6606 3" x 4"		1.65	4.848		2,125	258		2,383	2,700
6608 3" x 6"		1.65	4.848		2,650	258		2,908	3,275
6610 3" x 8"		1.65	4.848		3,025	258		3,283	3,700
6612 3" x 10"		1.60	5		3,500	266		3,766	4,250
6614 3" x 12"		1.60	5		3,750	266		4,016	4,525
6616 3" x 14"		1.60	5		4,775	266		5,041	5,650
6618 3" x 16"		1.60	5		5,125	266		5,391	6,050
6620 (2) 2" x 4"		1.75	4.571		2,375	243		2,618	2,975
6622 (2) 2" x 6"		1.60	5		2,825	266		3,091	3,525
6624 (2) 2" x 8"		1.60	5		2,900	266		3,166	3,600
6626 (2) 2" x 10"		1.55	5.161		3,050	274		3,324	3,750
6628 (2) 2" x 12"		1.55	5.161		4,025	274		4,299	4,825
6630 (2) 2" x 14"		1.50	5.333		4,250	283		4,533	5,100
6632 (2) 2" x 16"		1.50	5.333		4,450	283		4,733	5,325
6634 4" x 4"		1.65	4.848		1,975	258		2,233	2,550
6636 4" x 6"		1.60	5		2,275	266		2,541	2,900
6638 4" x 8"		1.60	5		2,450	266		2,716	3,100
6640 4" x 10"		1.55	5.161		3,000	274		3,274	3,700
6642 4" x 12"		1.55	5.161		3,275	274		3,549	4,025
6644 4" x 14"		1.55	5.161		3,225	274		3,499	3,925
6646 4" x 16"		1.55	5.161		3,750	274		4,024	4,525
6648 (3) 2" x 10"		1.50	5.333		4,025	283		4,308	4,850
6650 (3) 2" x 12"		1.50	5.333		4,600	283		4,883	5,475
6652 (3) 2" x 14"		1.45	5.517		5,650	293		5,943	6,675
6654 (3) 2" x 16"		1.45	5.517		4,575	293		4,868	5,475
6656 6" x 6"		1.60	5		2,150	266		2,416	2,750
6658 6" x 8"		1.60	5		2,475	266		2,741	3,125
6660 6" x 10"		1.55	5.161		2,825	274		3,099	3,500
6662 6" x 12"		1.55	5.161		3,200	274		3,474	3,925
6664 6" x 14"	↓	1.50	5.333	↓	4,025	283		4,308	4,850

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

06 05 23 – Wood, Plastic, and Composite Fastenings

		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
						Labor	Equipment	Total		
6666	6" x 16"	1 Corp	1.50	5.333	C	4,975	283	5,258	5,900	
6690	Knee braces, galvanized, 12 ga.	1 Corp	1.80	4.444	C	6,475	236	6,711	7,475	
6692	Beam depth, 10" x 15" x 5' long	1 Corp	1.70	4.706	C	7,425	250	7,675	8,550	
6694	15" x 22-1/2" x 7' long	1 Corp	1.60	5	C	7,975	266	8,241	9,175	
6696	22-1/2" x 28-1/2" x 8' long	1 Corp	1.55	5.161	C	8,325	274	8,599	9,550	
6698	28-1/2" x 36" x 10' long	1 Corp	1.50	5.333	C	9,175	283	9,458	10,500	
6700	36" x 42" x 12' long	1 Corp	1.15	5.333	C	9,175	283	9,458	10,500	
6710	Mudsill anchors	1 Corp	115	.070	C	183	3.70	186.70	208	
6714	2" x 4" or 3" x 4"	1 Corp	115	.070	C	183	3.70	186.70	208	
6716	2" x 6" or 3" x 6"	1 Corp	115	.070	C	183	3.70	186.70	208	
6718	Block wall, 13-1/4" long	1 Corp	115	.070	C	93.50	3.70	97.20	109	
6720	21-1/4" long	1 Corp	115	.070	C	128	3.70	131.70	147	
6730	Post bases, 12 ga. galvanized	1 Corp	1.30	6.154	C	1,250	325	1,575	1,875	
6732	Adjustable, 3-9/16" x 3-9/16"	1 Corp	1.30	6.154	C	1,900	325	2,225	2,600	
6734	3-9/16" x 5-1/2"	1 Corp	1.30	6.154	C	945	325	1,270	1,550	
6736	4" x 4"	1 Corp	1.30	6.154	C	1,325	325	1,650	1,950	
6738	4" x 6"	1 Corp	1.30	6.154	C	1,825	325	2,150	2,500	
6740	5-1/2" x 5-1/2"	1 Corp	1.30	6.154	C	3,300	325	3,625	4,125	
6742	6" x 6"	1 Corp	1.30	6.154	C	1,400	325	1,725	2,025	
6744	Elevated, 3-9/16" x 3-1/4"	1 Corp	1.30	6.154	C	1,875	325	2,200	2,575	
6746	5-1/2" x 3-5/16"	1 Corp	1.30	6.154	C	2,875	325	3,200	3,675	
6748	5-1/2" x 5"	1 Corp	1.30	6.154	C	1,025	325	1,350	1,625	
6750	Regular, 3-9/16" x 3-3/8"	1 Corp	1.30	6.154	C	1,550	325	1,875	2,200	
6752	4" x 3-3/8"	1 Corp	1.30	6.154	C	1,525	325	1,850	2,175	
6754	18 ga., 5-1/4" x 3-1/8"	1 Corp	1.30	6.154	C	1,525	325	1,850	2,175	
6755	5-1/2" x 3-3/8"	1 Corp	1.30	6.154	C	2,175	325	2,500	2,900	
6756	5-1/2" x 5-3/8"	1 Corp	1.30	6.154	C	2,450	325	2,775	3,200	
6758	6" x 3-3/8"	1 Corp	1.30	6.154	C	3,100	325	3,425	3,925	
6760	6" x 5-3/8"	1 Corp	1.30	6.154	C	3,100	325	3,425	3,925	
6762	Post combination cap/bases	1 Corp	1.20	6.667	C	445	355	800	1,025	
6764	3-9/16" x 3-9/16"	1 Corp	1.20	6.667	C	1,100	355	1,455	1,725	
6766	3-9/16" x 5-1/2"	1 Corp	1.20	6.667	C	2,200	355	2,555	2,950	
6768	4" x 4"	1 Corp	1.20	6.667	C	1,250	355	1,605	1,900	
6770	5-1/2" x 5-1/2"	1 Corp	1.20	6.667	C	4,975	355	5,330	6,000	
6772	6" x 6"	1 Corp	1.20	6.667	C	5,400	355	5,755	6,450	
6774	7-1/2" x 7-1/2"	1 Corp	1.20	6.667	C	3,350	355	3,775	4,325	
6776	8" x 8"	1 Corp	1.20	6.667	C	4,250	355	6,030	6,750	
6790	Post-beam connection caps	1 Corp	1	8	C	3,175	425	3,600	4,150	
6792	Beam size 3-9/16"	1 Corp	1	8	C	4,300	425	4,725	5,375	
6794	12 ga. post, 4" x 4"	1 Corp	1	8	C	5,850	425	6,275	7,075	
6796	4" x 6"	1 Corp	1	8	C	1,150	425	1,575	1,925	
6798	4" x 8"	1 Corp	1	8	C	1,700	425	2,125	2,525	
6800	16 ga. post, 4" x 4"	1 Corp	1	8	C	3,350	425	3,775	4,325	
6802	4" x 6"	1 Corp	1	8	C	3,350	425	3,775	4,325	
6804	4" x 8"	1 Corp	1	8	C	1,975	425	2,400	2,825	
6805	18 ga. post, 2-7/8" x 3"	1 Corp	1	8	C	2,000	425	2,425	2,850	
6806	Beam size 5-1/2"	1 Corp	1	8	C	2,000	425	2,425	2,850	
6808	12 ga. post, 6" x 4"	1 Corp	1	8	C	3,425	425	3,850	4,425	
6810	6" x 6"	1 Corp	1	8	C	4,775	425	5,200	5,900	
6812	6" x 8"	1 Corp	1	8	C	4,875	425	5,300	6,000	
6814	16 ga. post, 6" x 4"	1 Corp	1	8	C	1,975	425	2,400	2,825	
6818	6" x 6"	1 Corp	1	8	C	2,000	425	2,425	2,850	
6820	Beam size 7-1/2"	1 Corp	1	8	C	2,000	425	2,425	2,850	

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

06 05 23 – Wood, Plastic, and Composite Fastenings

06 05 23.60	Timber Connectors		Daily	Labor-	Unit	2020 Bare Costs			Total	Total Incl O&P
			Crew	Output		Material	Labor	Equipment		
6822	12 ga. post, 8" x 4"		1 Corp	1	8	C	4,875	425	5,300	6,025
6824	8" x 6"			1	8		4,875	425	5,300	6,025
6826	8" x 8"		↓	1	8	↓	7,525	425	7,950	8,925
6840	Purlin anchors, embedded									
6842	Heavy duty, 10 ga.									
6844	Straight, 28" long		1 Corp	1.60	5	C	1,775	266	2,041	2,350
6846	35" long			1.50	5.333		1,850	283	2,133	2,450
6848	Twisted, 28" long			1.60	5		1,725	266	1,991	2,300
6850	35" long		↓	1.50	5.333		1,825	283	2,108	2,425
6852	Regular duty, 12 ga.									
6854	Straight, 18-1/2" long		1 Corp	1.80	4.444	C	1,050	236	1,286	1,500
6856	23-3/4" long			1.70	4.706		1,250	250	1,500	1,750
6858	29" long			1.60	5		1,425	266	1,691	1,950
6860	35" long			1.50	5.333		1,650	283	1,933	2,250
6862	Twisted, 18" long			1.80	4.444		1,050	236	1,286	1,500
6866	28" long			1.60	5		1,200	266	1,466	1,725
6868	35" long		↓	1.50	5.333		1,850	283	2,133	2,450
6870	Straight, plastic coated									
6872	23-1/2" long		1 Corp	1.60	5	C	2,575	266	2,841	3,225
6874	26-7/8" long			1.60	5		3,000	266	3,266	3,700
6876	32-1/2" long			1.50	5.333		3,200	283	3,483	3,950
6878	35-7/8" long		↓	1.50	5.333	↓	3,350	283	3,633	4,100
6890	Purlin hangers, painted									
6892	12 ga., 2" x 6"		1 Corp	1.80	4.444	C	2,175	236	2,411	2,750
6894	2" x 8"			1.80	4.444		2,050	236	2,286	2,600
6896	2" x 10"			1.80	4.444		2,175	236	2,411	2,750
6898	2" x 12"			1.75	4.571		2,650	243	2,893	3,300
6900	2" x 14"			1.75	4.571		2,825	243	3,068	3,500
6902	2" x 16"			1.75	4.571		3,025	243	3,268	3,700
6904	3" x 6"			1.70	4.706		2,125	250	2,375	2,700
6906	3" x 8"			1.70	4.706		2,300	250	2,550	2,900
6908	3" x 10"			1.70	4.706		2,475	250	2,725	3,100
6910	3" x 12"			1.65	4.848		2,850	258	3,108	3,500
6912	3" x 14"			1.65	4.848		3,025	258	3,283	3,700
6914	3" x 16"			1.65	4.848		3,100	258	3,358	3,800
6916	4" x 6"			1.65	4.848		2,125	258	2,383	2,725
6918	4" x 8"			1.65	4.848		2,325	258	2,583	2,925
6920	4" x 10"			1.65	4.848		2,500	258	2,758	3,125
6922	4" x 12"			1.60	5		2,625	266	2,891	3,275
6924	4" x 14"			1.60	5		3,125	266	3,391	3,850
6926	4" x 16"			1.60	5		3,300	266	3,566	4,050
6928	6" x 6"			1.60	5		2,625	266	2,891	3,300
6930	6" x 8"			1.60	5		2,550	266	2,816	3,200
6932	6" x 10"			1.55	5.161		2,675	274	2,949	3,325
6934	double 2" x 6"			1.70	4.706		1,925	250	2,175	2,500
6936	double 2" x 8"			1.70	4.706		2,575	250	2,825	3,225
6938	double 2" x 10"			1.70	4.706		2,150	250	2,400	2,750
6940	double 2" x 12"			1.65	4.848		2,850	258	3,108	3,500
6942	double 2" x 14"			1.65	4.848		2,550	258	2,808	3,175
6944	double 2" x 16"			1.65	4.848		2,900	258	3,158	3,575
6960	11 ga., 4" x 6"			1.65	4.848		4,200	258	4,458	5,000
6962	4" x 8"			1.65	4.848		4,525	258	4,783	5,350
6964	4" x 10"		↓	1.65	4.848	↓	4,825	258	5,083	5,700

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

06 05 23 – Wood, Plastic, and Composite Fastenings

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
		Crew			Labor	Equipment		
06 05 23.60 Timber Connectors								
6966	6" x 6"		1 Corp	1.60	5	C	4,250	266
6968	6" x 8"			1.60	5		4,550	266
6970	6" x 10"			1.55	5.161		4,850	274
6972	6" x 12"			1.55	5.161		5,200	274
6974	6" x 14"			1.55	5.161		5,500	274
6976	6" x 16"			1.50	5.333		5,800	283
6978	7 ga., 8" x 6"			1.60	5		4,100	266
6980	8" x 8"			1.60	5		4,950	266
6982	8" x 10"			1.55	5.161		5,250	274
6984	8" x 12"			1.55	5.161		5,350	274
6986	8" x 14"			1.50	5.333		5,875	283
6988	8" x 16"			1.50	5.333		6,175	283
7000	Strap connectors, galvanized							
7002	12 ga., 2-1/16" x 36"		1 Corp	1.55	5.161	C	1,375	274
7004	2-1/16" x 47"			1.50	5.333		1,925	283
7005	10 ga., 2-1/16" x 72"			1.50	5.333		2,000	283
7006	7 ga., 2-1/16" x 34"			1.55	5.161		2,900	274
7008	2-1/16" x 45"			1.50	5.333		4,475	283
7010	3 ga., 3" x 32"			1.55	5.161		5,775	274
7012	3" x 41"			1.55	5.161		5,975	274
7014	3" x 50"			1.50	5.333		9,125	283
7016	3" x 59"			1.50	5.333		11,100	283
7018	3-1/2" x 68"			1.45	5.517		11,300	293
7030	Tension ties							
7032	19-1/8" long, 16 ga., 3/4" anchor bolt		1 Corp	1.80	4.444	C	1,525	236
7034	20" long, 12 ga., 1/2" anchor bolt			1.80	4.444		1,675	236
7036	20" long, 12 ga., 3/4" anchor bolt			1.80	4.444		1,700	236
7038	27-3/4" long, 12 ga., 3/4" anchor bolt			1.75	4.571		3,625	243
7050	Truss connectors, galvanized							
7052	Adjustable hanger							
7054	18 ga., 2" x 6"		1 Corp	1.65	4.848	C	525	258
7056	4" x 6"			1.65	4.848		815	258
7058	16 ga., 4" x 10"			1.60	5		1,200	266
7060	(2) 2" x 10"			1.60	5		1,200	266
7062	Connectors to plate							
7064	16 ga., 2" x 4" plate		1 Corp	1.80	4.444	C	515	236
7066	2" x 6" plate			"	1.80	4.444	790	236
7068	Hip jack connector							
7070	14 ga.		1 Corp	1.50	5.333	C	2,900	283

06 05 23.80 Metal Bracing

0010 METAL BRACING								
0302	Let-in, "T" shaped, 22 ga. galv. steel, studs at 16" OC		1 Corp	580	.014	L.F.	.85	.73
0402	Studs at 24" OC			600	.013		.85	.71
0502	Steel straps, 16 ga. galv. steel, studs at 16" OC			600	.013		1.10	.71
0602	Studs at 24" OC			620	.013		1.10	.69

06 11 Wood Framing

06 11.10 – Framing with Dimensional, Engineered or Composite Lumber

06 11.10.01 Forest Stewardship Council Certification		Daily Crew	Output	Labor Hours	Unit	Material	2020 Bare Labor	Costs 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 Corp	.17	47.059	M.B.F.	710	2,500		3,210	4,525
2625	Pneumatic nailed		.21	38.095		720	2,025		2,745	3,850
2660	2" x 8"		.27	29.630		750	1,575		2,325	3,200
2665	Pneumatic nailed		.33	24.242		760	1,300		2,060	2,750
2720	To steel construction									
2740	2" x 4"	1 Corp	.14	57.143	M.B.F.	710	3,025		3,735	5,350
2780	2" x 8"	"	.21	38.095	"	750	2,025		2,775	3,875
06 11.10.04 Wood Bracing										
0010 WOOD BRACING										
0012	Let-in, with 1" x 6" boards, studs @ 16" OC	1 Corp	150	.053	L.F.	.83	2.83		3.66	5.15
0020	Studs @ 24" OC	"	230	.035	"	.83	1.85		2.68	3.69
06 11.10.06 Bridging										
0010 BRIDGING										
0012	Wood, for joists 16" OC, 1" x 3"	1 Corp	130	.062	Pr.	.70	3.27		3.97	5.70
0017	Pneumatic nailed		170	.047		.79	2.50		3.29	4.63
0102	2" x 3" bridging		130	.062		.72	3.27		3.99	5.70
0107	Pneumatic nailed		170	.047		.77	2.50		3.27	4.60
0302	Steel, galvanized, 18 ga., for 2" x 10" joists at 12" OC		130	.062		1.71	3.27		4.98	6.80
0352	16" OC		135	.059		1.72	3.15		4.87	6.60
0402	24" OC		140	.057		2.63	3.04		5.67	7.45
0602	For 2" x 14" joists at 16" OC		130	.062		1.98	3.27		5.25	7.10
0902	Compression type, 16" OC, 2" x 8" joists		200	.040		1.43	2.13		3.56	4.76
1002	2" x 12" joists		200	.040		1.43	2.13		3.56	4.76
06 11.10.10 Beam and Girder Framing										
0010 BEAM AND GIRDER FRAMING		R061110-30								
3500	Single, 2" x 6"	2 Corp	.70	22.857	M.B.F.	685	1,225		1,910	2,575
3505	Pneumatic nailed		.81	19.704		695	1,050		1,745	2,350
3520	2" x 8"		.86	18.605		750	990		1,740	2,300
3525	Pneumatic nailed		1	16.048		760	855		1,615	2,100
3540	2" x 10"		1	16		795	850		1,645	2,150
3545	Pneumatic nailed		1.16	13.793		805	735		1,540	1,975
3560	2" x 12"		1.10	14.545		870	775		1,645	2,100
3565	Pneumatic nailed		1.28	12.539		880	665		1,545	1,975
3580	2" x 14"		1.17	13.675		1,025	725		1,750	2,225
3585	Pneumatic nailed		1.36	11.791		1,025	625		1,650	2,075
3600	3" x 8"		1.10	14.545		1,475	775		2,250	2,775
3620	3" x 10"		1.25	12.800		1,425	680		2,105	2,600
3640	3" x 12"		1.35	11.852		1,600	630		2,230	2,725
3660	3" x 14"		1.40	11.429		1,525	605		2,130	2,600
3680	4" x 8"	F-3	2.66	15.038		1,625	815	177	2,617	3,200
3700	4" x 10"		3.16	12.658		1,625	690	149	2,464	3,000
3720	4" x 12"		3.60	11.111		1,450	605	131	2,186	2,650
3740	4" x 14"		3.96	10.101		1,425	550	119	2,094	2,525
4000	Double, 2" x 6"	2 Corp	1.25	12.800		685	680		1,365	1,775
4005	Pneumatic nailed		1.45	11.034		695	585		1,280	1,650
4020	2" x 8"		1.60	10		750	530		1,280	1,625
4025	Pneumatic nailed		1.86	8.621		760	460		1,220	1,525

06 11 Wood Framing

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

06 11 10.10 Beam and Girder Framing			Daily Crew Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
						Labor –	Equipment		
4040	2" x 10"		2 Corp	1.92	8,333 M.B.F.	795	445	1,240	1,550
4045	Pneumatic nailed			2.23	7,185	805	380	1,185	1,450
4060	2" x 12"			2.20	7,273	870	385	1,255	1,525
4065	Pneumatic nailed			2.55	6,275	880	335	1,215	1,475
4080	2" x 14"			2.45	6,531	1,025	345	1,370	1,650
4085	Pneumatic nailed			2.84	5,634	1,025	299	1,324	1,575
5000	Triple, 2" x 6"			1.65	9,697	685	515	1,200	1,525
5005	Pneumatic nailed			1.91	8,377	695	445	1,140	1,425
5020	2" x 8"			2.10	7,619	750	405	1,155	1,425
5025	Pneumatic nailed			2.44	6,568	760	350	1,110	1,350
5040	2" x 10"			2.50	6,400	795	340	1,135	1,375
5045	Pneumatic nailed			2.90	5,517	805	293	1,098	1,325
5060	2" x 12"			2.85	5,614	870	298	1,168	1,400
5065	Pneumatic nailed			3.31	4,840	880	257	1,137	1,350
5080	2" x 14"			3.15	5,079	1,025	270	1,295	1,525
5085	Pneumatic nailed			3.35	4,770	1,025	254	1,279	1,500

06 11 10.12 Ceiling Framing

0010 CEILING FRAMING			Daily Crew Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
						Labor –	Equipment		
6400	Suspended, 2" x 3"		2 Corp	.50	32 M.B.F.	850	1,700	2,550	3,475
6450	2" x 4"			.59	27,119	710	1,450	2,160	2,950
6500	2" x 6"			.80	20	685	1,075	1,760	2,350
6550	2" x 8"			.86	18,605	750	990	1,740	2,300

06 11 10.14 Posts and Columns

0010 POSTS AND COLUMNS			Daily Crew Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
						Labor –	Equipment		
0400	4" x 4"		2 Corp	.52	30,769 M.B.F.	1,550	1,625	3,175	4,150
0420	4" x 6"			.55	29,091	1,550	1,550	3,100	4,025
0440	4" x 8"			.59	27,119	1,625	1,450	3,075	3,975
0460	6" x 6"			.65	24,615	1,800	1,300	3,100	3,950
0480	6" x 8"			.70	22,857	2,100	1,225	3,325	4,125
0500	6" x 10"			.75	21,333	1,425	1,125	2,550	3,275

06 11 10.18 Joist Framing

0010 JOIST FRAMING			R061110-30	Daily Crew Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
							Labor –	Equipment		
2650	Joists, 2" x 4"		2 Corp	.83	19,277 M.B.F.	710	1,025	1,735	2,325	
2655	Pneumatic nailed			.96	16,667	720	885	1,605	2,125	
2680	2" x 6"			1.25	12,800	685	680	1,365	1,775	
2685	Pneumatic nailed			1.44	11,111	695	590	1,285	1,650	
2700	2" x 8"			1.46	10,959	750	580	1,330	1,700	
2705	Pneumatic nailed			1.68	9,524	760	505	1,265	1,600	
2720	2" x 10"			1.49	10,738	795	570	1,365	1,725	
2725	Pneumatic nailed			1.71	9,357	805	495	1,300	1,625	
2740	2" x 12"			1.75	9,143	870	485	1,355	1,675	
2745	Pneumatic nailed			2.01	7,960	880	425	1,305	1,600	
2760	2" x 14"			1.79	8,939	1,025	475	1,500	1,850	
2765	Pneumatic nailed			2.06	7,767	1,025	415	1,440	1,750	
2780	3" x 6"			1.39	11,511	1,475	610	2,085	2,550	
2790	3" x 8"			1.90	8,421	1,475	450	1,925	2,300	
2800	3" x 10"			1.95	8,205	1,425	435	1,860	2,225	
2820	3" x 12"			1.80	8,889	1,600	470	2,070	2,475	
2840	4" x 6"			1.60	10	1,525	530	2,055	2,475	
2860	4" x 10"			2	8	1,625	425	2,050	2,450	
2880	4" x 12"			1.80	8,889	1,450	470	1,920	2,300	
3000	Composite wood joist 9-1/2" deep			.90	17,778 M.L.F.	1,600	945	2,545	3,175	

06 11 Wood Framing

06 11.10 — Framing with Dimensional, Engineered or Composite Lumber

06 11 10.18 Joist Framing			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total
			Crew			Labor	Equipment	Total	Incl O&P	
3010	11-1/2" deep		2 Corp	.88	18.182	M.L.F.	2,000	965	2,965	3,650
3020	14" deep			.82	19.512		2,375	1,025	3,400	4,150
3030	16" deep			.78	20.513		4,225	1,100	5,325	6,275
4000	Open web joist 12" deep			.88	18.182		3,850	965	4,815	5,700
4002	Per linear foot			880	.018	L.F.	3.86	.97	4.83	5.70
4004	Treated, per linear foot			880	.018	"	4.85	.97	5.82	6.80
4010	14" deep			.82	19.512	M.L.F.	3,900	1,025	4,925	5,850
4012	Per linear foot			820	.020	L.F.	3.91	1.04	4.95	5.85
4014	Treated, per linear foot			820	.020	"	5.05	1.04	6.09	7.15
4020	16" deep			.78	20.513	M.L.F.	4,200	1,100	5,300	6,275
4022	Per linear foot			780	.021	L.F.	4.21	1.09	5.30	6.25
4024	Treated, per linear foot			780	.021	"	5.55	1.09	6.64	7.75
4030	18" deep			.74	21.622	M.L.F.	4,400	1,150	5,550	6,550
4032	Per linear foot			740	.022	L.F.	4.39	1.15	5.54	6.55
4034	Treated, per linear foot			740	.022	"	5.90	1.15	7.05	8.20
6000	Composite rim joist, 1-1/4" x 9-1/2"			.90	17.778	M.L.F.	2,075	945	3,020	3,725
6010	1-1/4" x 11-1/2"			.88	18.182		2,250	965	3,215	3,925
6020	1-1/4" x 14-1/2"			.82	19.512		3,200	1,025	4,225	5,075
6030	1-1/4" x 16-1/2"			.78	20.513		2,850	1,100	3,950	4,800

06 11 10.24 Miscellaneous Framing

0010 MISCELLANEOUS FRAMING										
8500	Firestops, 2" x 4"		2 Corp	.51	31.373	M.B.F.	710	1,675	2,385	3,275
8505	Pneumatic nailed			.62	25.806		720	1,375	2,095	2,850
8520	2" x 6"			.60	26.667		685	1,425	2,110	2,875
8525	Pneumatic nailed			.73	21.858		695	1,150	1,845	2,525
8540	2" x 8"			.60	26.667		750	1,425	2,175	2,950
8560	2" x 12"			.70	22.857		870	1,225	2,095	2,775
8600	Nailers, treated, wood construction, 2" x 4"			.53	30.189		860	1,600	2,460	3,350
8605	Pneumatic nailed			.64	25.157		865	1,325	2,190	2,950
8620	2" x 6"			.75	21.333		760	1,125	1,885	2,550
8625	Pneumatic nailed			.90	17.778		770	945	1,715	2,275
8640	2" x 8"			.93	17.204		925	915	1,840	2,400
8645	Pneumatic nailed			1.12	14.337		930	760	1,690	2,175
8660	Steel construction, 2" x 4"			.50	32		860	1,700	2,560	3,500
8680	2" x 6"			.70	22.857		765	1,225	1,990	2,675
8700	2" x 8"			.87	18.391		925	975	1,900	2,500
8760	Rough bucks, treated, for doors or windows, 2" x 6"			.40	40		760	2,125	2,885	4,050
8765	Pneumatic nailed			.48	33.333		770	1,775	2,545	3,500
8780	2" x 8"			.51	31.373		925	1,675	2,600	3,525
8785	Pneumatic nailed			.61	26.144		930	1,400	2,330	3,125
8800	Stair stringers, 2" x 10"			.22	72.727		795	3,875	4,670	6,675
8820	2" x 12"			.26	61.538		870	3,275	4,145	5,875
8840	3" x 10"			.31	51.613		1,425	2,750	4,175	5,700
8860	3" x 12"			.38	42.105		1,600	2,250	3,850	5,125
8870	Laminated structural lumber, 1-1/4" x 11-1/2"			130	.123	L.F.	2.24	6.55	8.79	12.30
8880	1-1/4" x 14-1/2"			130	.123	"	3.18	6.55	9.73	13.35

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 Corp	80	.200	L.F.	5.20	10.65	15.85	21.50	
0185	12" OC, pneumatic nailed			96	.167		5.25	8.85	14.10	19.10	
0200	16" OC				100	.160		4.26	8.50	12.76	17.50

06 11 Wood Framing

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

06 11 10.26 Partitions		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
						Labor	Equipment			
0205	16" OC, pneumatic nailed	2 Carp	120	.133	L.F.	4.31	7.10		11.41	15.40
0300	24" OC		125	.128		3.31	6.80		10.11	13.85
0305	24" OC, pneumatic nailed		150	.107		3.35	5.65		9	12.20
0380	10' high, studs 12" OC		80	.200		6.15	10.65		16.80	22.50
0385	12" OC, pneumatic nailed		96	.167		6.25	8.85		15.10	20
0400	16" OC		100	.160		4.97	8.50		13.47	18.25
0405	16" OC, pneumatic nailed		120	.133		5.05	7.10		12.15	16.20
0500	24" OC		125	.128		3.79	6.80		10.59	14.35
0505	24" OC, pneumatic nailed		150	.107		3.83	5.65		9.48	12.70
0580	12' high, studs 12" OC		65	.246		7.10	13.10		20.20	27.50
0585	12" OC, pneumatic nailed		78	.205		7.20	10.90		18.10	24.50
0600	16" OC		80	.200		5.70	10.65		16.35	22
0605	16" OC, pneumatic nailed		96	.167		5.75	8.85		14.60	19.65
0700	24" OC		100	.160		4.26	8.50		12.76	17.50
0705	24" OC, pneumatic nailed		120	.133		4.31	7.10		11.41	15.40
0780	2" x 6" studs, 8' high, studs 12" OC		70	.229		7.55	12.15		19.70	26.50
0785	12" OC, pneumatic nailed		84	.190		7.65	10.10		17.75	23.50
0800	16" OC		90	.178		6.15	9.45		15.60	21
0805	16" OC, pneumatic nailed		108	.148		6.25	7.85		14.10	18.70
0900	24" OC		115	.139		4.80	7.40		12.20	16.40
0905	24" OC, pneumatic nailed		138	.116		4.86	6.15		11.01	14.60
0980	10' high, studs 12" OC		70	.229		8.90	12.15		21.05	28
0985	12" OC, pneumatic nailed		84	.190		9	10.10		19.10	25
1000	16" OC		90	.178		7.20	9.45		16.65	22
1005	16" OC, pneumatic nailed		108	.148		7.30	7.85		15.15	19.85
1100	24" OC		115	.139		5.50	7.40		12.90	17.15
1105	24" OC, pneumatic nailed		138	.116		5.55	6.15		11.70	15.35
1180	12' high, studs 12" OC		55	.291		10.30	15.45		25.75	34.50
1185	12" OC, pneumatic nailed		66	.242		10.40	12.90		23.30	31
1200	16" OC		70	.229		8.25	12.15		20.40	27.50
1205	16" OC, pneumatic nailed		84	.190		8.35	10.10		18.45	24.50
1300	24" OC		90	.178		6.15	9.45		15.60	21
1305	24" OC, pneumatic nailed		108	.148		6.25	7.85		14.10	18.70
1400	For horizontal blocking, 2" x 4", add		600	.027		.47	1.42		1.89	2.65
1500	2" x 6", add		600	.027		.69	1.42		2.11	2.88
1600	For openings, add		250	.064			3.40		3.40	5.10
1700	Headers for above openings, material only, add				M.B.F.	750			750	830

06 11 10.28 Porch or Deck Framing

0010 PORCH OR DECK FRAMING		2 Carp	390	.041	L.F.	1.41	2.18		3.59	4.83
0100	Treated lumber, posts or columns, 4" x 4"		275	.058		2.24	3.09		5.33	7.10
0110	4" x 6"		220	.073		4.28	3.87		8.15	10.50
0120	4" x 8"		675	.024		1.41	1.26		2.67	3.44
0130	Girder, single, 4" x 4"		600	.027		2.24	1.42		3.66	4.59
0140	4" x 8"		525	.030		4.28	1.62		5.90	7.15
0150	Double, 2" x 4"		625	.026		1.18	1.36		2.54	3.34
0170	2" x 6"		600	.027		1.58	1.42		3	3.87
0180	2" x 8"		575	.028		2.54	1.48		4.02	5
0190	2" x 10"		550	.029		2.94	1.55		4.49	5.55
0200	2" x 12"		525	.030		4.75	1.62		6.37	7.70
0210	Triple, 2" x 4"		575	.028		1.77	1.48		3.25	4.17
0220	2" x 6"		550	.029		2.37	1.55		3.92	4.93

06 11 Wood Framing

06.11.10 — Framing with Dimensional, Engineered or Composite Lumber

06 11.28 Porch or Deck Framing			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
			Crew				Labor	Equipment	Total		
0230	2" x 8"		2 Carp	525	.030	L.F.	3.81	1.62		5.43	6.60
0240	2" x 10"			500	.032		4.41	1.70		6.11	7.40
0250	2" x 12"			475	.034		7.15	1.79		8.94	10.55
0260	Ledger, bolted 4' OC, 2" x 4"			400	.040		.75	2.13		2.88	4.01
0270	2" x 6"			395	.041		.93	2.15		3.08	4.26
0280	2" x 8"			390	.041		1.40	2.18		3.58	4.82
0290	2" x 10"			385	.042		1.59	2.21		3.80	5.05
0300	2" x 12"			380	.042		2.48	2.24		4.72	6.10
0310	Joists, 2" x 4"			1250	.013		.59	.68		1.27	1.67
0320	2" x 6"			1250	.013		.79	.68		1.47	1.89
0330	2" x 8"			1100	.015		1.27	.77		2.04	2.56
0340	2" x 10"			900	.018		1.47	.95		2.42	3.04
0350	2" x 12"			875	.018		1.77	.97		2.74	3.40
0360	Railings and trim, 1" x 4"		1 Carp	300	.027		.54	1.42		1.96	2.72
0370	2" x 2"			300	.027		.48	1.42		1.90	2.65
0380	2" x 4"			300	.027		.58	1.42		2	2.77
0390	2" x 6"			300	.027		.77	1.42		2.19	2.98
0400	Decking, 1" x 4"			275	.029	S.F.	3.09	1.55		4.64	5.70
0410	2" x 4"			300	.027		1.95	1.42		3.37	4.28
0420	2" x 6"			320	.025		1.66	1.33		2.99	3.83
0430	5/4" x 6"			320	.025		2.17	1.33		3.50	4.38
0440	Balusters, square, 2" x 2"		2 Carp	660	.024	L.F.	.48	1.29		1.77	2.47
0450	Turned, 2" x 2"			420	.038		.64	2.03		2.67	3.74
0460	Stair stringer, 2" x 10"			130	.123		1.47	6.55		8.02	11.45
0470	2" x 12"			130	.123		1.77	6.55		8.32	11.80
0480	Stair treads, 1" x 4"			140	.114		3.09	6.05		9.14	12.55
0490	2" x 4"			140	.114		.59	6.05		6.64	9.80
0500	2" x 6"			160	.100		.89	5.30		6.19	9
0510	5/4" x 6"			160	.100		1.01	5.30		6.31	9.10
0520	Turned handrail post, 4" x 4"			64	.250	Ea.	36	13.30		49.30	60
0530	Lattice panel, 4' x 8', 1/2"			1600	.010	S.F.	.68	.53		1.21	1.55
0535	3/4"			1600	.010	"	1.01	.53		1.54	1.91
0540	Cedar, posts or columns, 4" x 4"			390	.041	L.F.	4.14	2.18		6.32	7.85
0550	4" x 6"			275	.058		6.65	3.09		9.74	11.95
0560	4" x 8"			220	.073		12.50	3.87		16.37	19.55
0800	Decking, 1" x 4"			550	.029		2.85	1.55		4.40	5.45
0810	2" x 4"			600	.027		5.45	1.42		6.87	8.15
0820	2" x 6"			640	.025		9.90	1.33		11.23	12.85
0830	5/4" x 6"			640	.025		7.55	1.33		8.88	10.30
0840	Railings and trim, 1" x 4"			600	.027		2.85	1.42		4.27	5.25
0860	2" x 4"			600	.027		5.45	1.42		6.87	8.15
0870	2" x 6"			600	.027		9.90	1.42		11.32	13
0920	Stair treads, 1" x 4"			140	.114		2.85	6.05		8.90	12.30
0930	2" x 4"			140	.114		5.45	6.05		11.50	15.15
0940	2" x 6"			160	.100		9.90	5.30		15.20	18.85
0950	5/4" x 6"			160	.100		7.55	5.30		12.85	16.30
0980	Redwood, posts or columns, 4" x 4"			390	.041		6.60	2.18		8.78	10.60
0990	4" x 6"			275	.058		12.85	3.09		15.94	18.80
1000	4" x 8"			220	.073		24	3.87		27.87	32.50
1240	Decking, 1" x 4"		1 Carp	275	.029	S.F.	4.03	1.55		5.58	6.75
1260	2" x 6"			340	.024		6.95	1.25		8.20	9.50
1270	5/4" x 6"			320	.025		4.89	1.33		6.22	7.40
1280	Railings and trim, 1" x 4"		2 Carp	600	.027	L.F.	1.19	1.42		2.61	3.44

06 11 Wood Framing

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

06 11 10.28 Porch or Deck Framing			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
1310	2" x 6"		2 Carp	600	.027	L.F.	6.95	1.42		8.37	9.80
1420	Alternative decking, wood/plastic composite, 5/4" x 6"	[G]		640	.025		3.44	1.33		4.77	5.80
1440	1" x 4" square edge fir			550	.029		3.10	1.55		4.65	5.75
1450	1" x 4" tongue and groove fir			450	.036		1.53	1.89		3.42	4.52
1460	1" x 4" mahogany			550	.029		2.13	1.55		3.68	4.66
1462	5/4" x 6" PVC			550	.029		3.45	1.55		5	6.10
1465	Framing, porch or deck, alt deck fastening, screws, add		1 Carp	240	.033	S.F.		1.77		1.77	2.66
1470	Accessories, joist hangers, 2" x 4"			160	.050	ea.	.85	2.66		3.51	4.93
1480	2" x 6" through 2" x 12"			150	.053		1.56	2.83		4.39	6
1530	Post footing, incl excav, backfill, tube form & concrete, 4' deep, 8" diam.	F-7	12	2,667			18.30	127		145.30	211
1540	10" diameter			11	2,909		26	139		165	237
1550	12" diameter			10	3,200		33.50	152		185.50	266

06 11 10.30 Roof Framing

0010 ROOF FRAMING			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
5250	Composite rafter, 9-1/2" deep		2 Carp	575	.028	L.F.	1.60	1.48		3.08	3.98
5260	11-1/2" deep			575	.028		2	1.48		3.48	4.42
6070	Fascia boards, 2" x 8"			.30	53.333	M.B.F.	750	2,825		3,575	5,075
6080	2" x 10"			.30	53.333		795	2,825		3,620	5,125
7000	Rafters, to 4 in 12 pitch, 2" x 6"			1	16		685	850		1,535	2,025
7060	2" x 8"			1.26	12.698		750	675		1,425	1,850
7300	Hip and valley rafters, 2" x 6"			.76	21.053		685	1,125		1,810	2,425
7360	2" x 8"			.96	16.667		750	885		1,635	2,150
7540	Hip and valley jacks, 2" x 6"			.60	26.667		685	1,425		2,110	2,875
7600	2" x 8"			.65	24.615		750	1,300		2,050	2,800
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.	1,600	3,150		4,750	6,475
7820	Ridge board, #2 or better, 1" x 6"			.30	53.333		1,650	2,825		4,475	6,075
7840	1" x 8"			.37	43.243		1,950	2,300		4,250	5,575
7860	1" x 10"			.42	38.095		2,375	2,025		4,400	5,675
7880	2" x 6"			.50	32		685	1,700		2,385	3,300
7900	2" x 8"			.60	26.667		750	1,425		2,175	2,950
7920	2" x 10"			.66	24.242		.795	1,300		2,095	2,800
7940	Roof cant, split, 4" x 4"			.86	18.605		1,525	990		2,515	3,150
7960	6" x 6"			1.80	8.889		1,775	470		2,245	2,650
7980	Roof curbs, untreated, 2" x 6"			.52	30.769		685	1,625		2,310	3,200
8000	2" x 12"			.80	20		870	1,075		1,945	2,550

06 11 10.32 Sill and Ledger Framing

0010 SILL AND LEDGER FRAMING			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
0020	Extruded polystyrene sill sealer, 5-1/2" wide		1 Carp	1600	.005	L.F.	.14	.27		.41	.55
4482	Ledgers, nailed, 2" x 4"		2 Carp	.50	32	M.B.F.	710	1,700		2,410	3,325
4484	2" x 6"			.60	26.667		685	1,425		2,110	2,875
4486	Bolted, not including bolts, 3" x 8"			.65	24.615		1,475	1,300		2,775	3,575
4488	3" x 12"			.70	22.857		1,600	1,225		2,825	3,575
4490	Mud sills, redwood, construction grade, 2" x 4"			.59	27.119		3,475	1,450		4,925	5,975
4492	2" x 6"			.78	20.513		3,150	1,100		4,250	5,100
4500	Sills, 2" x 4"			.40	40		700	2,125		2,825	3,975
4520	2" x 6"			.55	29.091		675	1,550		2,225	3,075
4540	2" x 8"			.67	23.881		740	1,275		2,015	2,725
4600	Treated, 2" x 4"			.36	44.444		850	2,350		3,200	4,475
4620	2" x 6"			.50	32		755	1,700		2,455	3,375
4640	2" x 8"			.60	26.667		915	1,425		2,340	3,125

06 11 Wood Framing

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

06 11 10.32 Sill and Ledger Framing			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
4700	4" x 4"		2 Corp	.60	26.667 M.B.F.	1,025	1,425		2,450	3,250
4720	4" x 6"			.70	22.857	1,075	1,225		2,800	3,025
4740	4" x 8"			.80	20	1,575	1,075		2,650	3,325
4760	4" x 10"			.87	18.391	1,725	975		2,700	3,375

06 11 10.34 Sleepers

0010 SLEEPERS			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
0300	On concrete, treated, 1" x 2"		2 Corp	.39	41.026 M.B.F.	1,850	2,175		4,025	5,325
0320	1" x 3"			.50	32	2,025	1,700		3,725	4,775
0340	2" x 4"			.99	16.162	985	860		1,845	2,375
0360	2" x 6"			1.30	12.308	890	655		1,545	1,975

06 11 10.36 Soffit and Canopy Framing

0010 SOFFIT AND CANOPY FRAMING			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
1300	Canopy or soffit framing, 1" x 4"		2 Corp	.30	53.333 M.B.F.	1,600	2,825		4,425	6,000
1340	1" x 8"			.50	32	1,950	1,700		3,650	4,675
1360	2" x 4"			.41	39.024	710	2,075		2,785	3,900
1400	2" x 8"			.67	23.881	750	1,275		2,025	2,725
1420	3" x 4"			.50	32	1,375	1,700		3,075	4,075
1460	3" x 8"			.60	26.667	1,475	1,425		2,900	3,750

06 11 10.38 Treated Lumber Framing Material

0010 TREATED LUMBER FRAMING MATERIAL			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
0100	2" x 4"				M.B.F.	850			850	935
0110	2" x 6"					755			755	830
0120	2" x 8"					915			915	1,000
0130	2" x 10"					845			845	930
0140	2" x 12"					1,150			1,150	1,275
0200	4" x 4"					1,025			1,025	1,125
0210	4" x 6"					1,075			1,075	1,200
0220	4" x 8"					1,575			1,575	1,725

06 11 10.40 Wall Framing

0010 WALL FRAMING			R061110-30	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
5860	Headers over openings, 2" x 6"			2 Corp	.36	44.444 M.B.F.	685	2,350		3,035	4,300
5865	2" x 6", pneumatic nailed				.43	37.209	695	1,975		2,670	3,750
5880	2" x 8"				.45	35.556	750	1,900		2,650	3,675
5885	2" x 8", pneumatic nailed				.54	29.630	760	1,575		2,335	3,200
5900	2" x 10"				.53	30.189	795	1,600		2,395	3,275
5905	2" x 10", pneumatic nailed				.67	23.881	805	1,275		2,080	2,775
5920	2" x 12"				.60	26.667	870	1,425		2,295	3,075
5925	2" x 12", pneumatic nailed				.72	22.222	880	1,175		2,055	2,750
5940	4" x 12"				.76	21.053	1,450	1,125		2,575	3,275
5945	4" x 12", pneumatic nailed				.92	17.391	1,475	925		2,400	3,000
5960	6" x 12"				.84	19.048	1,500	1,000		2,500	3,175
5965	6" x 12", pneumatic nailed				1.01	15.873	1,500	845		2,345	2,925
6000	Plates, untreated, 2" x 3"				.43	37.209	850	1,975		2,825	3,900
6005	2" x 3", pneumatic nailed				.52	30.769	855	1,625		2,480	3,400
6020	2" x 4"				.53	30.189	710	1,600		2,310	3,175
6025	2" x 4", pneumatic nailed				.67	23.881	720	1,275		1,995	2,700
6040	2" x 6"				.75	21.333	685	1,125		1,810	2,450
6045	2" x 6", pneumatic nailed				.90	17.778	695	945		1,640	2,200
6120	Studs, 8' high wall, 2" x 3"				.60	26.667	850	1,425		2,275	3,050
6125	2" x 3", pneumatic nailed				.72	22.222	855	1,175		2,030	2,725
6140	2" x 4"				.92	17.391	710	925		1,635	2,175
6145	2" x 4", pneumatic nailed				1.10	14.493	720	770		1,490	1,950

06 11 Wood Framing

06 11.10 – Framing with Dimensional, Engineered or Composite Lumber

06 11 10.40 Wall Framing			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
6160	2" x 6"		2 Carp	1	16	M.B.F.	685	850		1,535	2,025
6165	2" x 6", pneumatic nailed			1.20	13.333		695	710		1,405	1,850
6180	3" x 4"			.80	20		1,375	1,075		2,450	3,125
6185	3" x 4", pneumatic nailed			.96	16.667		1,375	885		2,260	2,850
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.	.29	.77		1.06	1.48
0015	On wood, pneumatic nailed			710	.011		.29	.60		.89	1.22
0300	On masonry			495	.016		.31	.86		1.17	1.64
0400	On concrete			260	.031		.31	1.64		1.95	2.81
0600	1" x 3", on walls, on wood			550	.015		.44	.77		1.21	1.64
0605	On wood, pneumatic nailed			710	.011		.44	.60		1.04	1.38
0700	On masonry			495	.016		.47	.86		1.33	1.81
0800	On concrete			260	.031		.47	1.64		2.11	2.98
0850	On ceilings, on wood			350	.023		.44	1.22		1.66	2.31
0855	On wood, pneumatic nailed			450	.018		.44	.95		1.39	1.90
0900	On masonry			320	.025		.47	1.33		1.80	2.52
0950	On concrete			210	.038		.47	2.03		2.50	3.56

06 11 10.44 Grounds

0010 GROUNDS											
0020	For casework, 1" x 2" wood strips, on wood		1 Carp	330	.024	L.F.	.29	1.29		1.58	2.26
0100	On masonry			285	.028		.31	1.49		1.80	2.59
0200	On concrete			250	.032		.31	1.70		2.01	2.91
0400	For plaster, 3/4" deep, on wood			450	.018		.29	.95		1.24	1.74
0500	On masonry			225	.036		.31	1.89		2.20	3.19
0600	On concrete			175	.046		.31	2.43		2.74	4
0700	On metal lath			200	.040		.31	2.13		2.44	3.54

06 12 Structural Panels

06 12.10 – Structural Insulated Panels

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.	4.18	1.05	.23	5.46	6.40
0110	5-5/8" thick	[G]		1725	.023		4.41	1.26	.27	5.94	7.05
0120	7-3/8" thick	[G]		1425	.028		5.50	1.53	.33	7.36	8.70
0130	9-3/8" thick	[G]		1125	.036		5.95	1.93	.42	8.30	9.90
0140	7/16" OSB one face, EPS insul., 3-5/8" thick	[G]		2175	.018		4.27	1	.22	5.49	6.45
0150	5-5/8" thick	[G]		1825	.022		4.62	1.19	.26	6.07	7.15
0160	7-3/8" thick	[G]		1525	.026		5.40	1.43	.31	7.14	8.40
0170	9-3/8" thick	[G]		1225	.033		5.85	1.77	.38	8	9.55
0190	7/16" OSB - 1/2" GWB faces, EPS insul., 3-5/8" T	[G]		2075	.019		3.61	1.05	.23	4.89	5.80
0200	5-5/8" thick	[G]		1725	.023		4.74	1.26	.27	6.27	7.40
0210	7-3/8" thick	[G]		1425	.028		5	1.53	.33	6.86	8.15
0220	9-3/8" thick	[G]		1125	.036		5.60	1.93	.42	7.95	9.50
0240	7/16" OSB - 1/2" MRGBWB faces, EPS insul., 3-5/8" T	[G]		2075	.019		4.45	1.05	.23	5.73	6.70

06 12 Structural Panels

06 12 10 – Structural Insulated Panels

06 12 10.10 OSB Faced Panels			Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
							Labor	Equipment			
0250	5-5/8" thick	G	F-3	1725	.023	S.F.	4.56	1.26	.27	6.09	7.20
0260	7-3/8" thick	G		1425	.028		5.25	1.53	.33	7.11	8.45
0270	9-3/8" thick	G		1125	.036		5.85	1.93	.42	8.20	9.75
0300	For 1/2" GWB added to OSB skin, add	G					1.52			1.52	1.67
0310	For 1/2" MRGWB added to OSB skin, add	G					1.54			1.54	1.69
0320	For one T1-11 skin, add to OSB-OSB	G					2.22			2.22	2.44
0330	For one 19-3/32" CDX skin, add to OSB-OSB	G					1.63			1.63	1.79
0500	Structural insulated panel, 7/16" OSB both sides, straw core										
0510	4-3/8" T, wall (w/sill, splines, plates)	G	F-6	2400	.017	S.F.	7.30	.83	.20	8.33	9.45
0520	Floors (w/splines)	G		2400	.017		7.30	.83	.20	8.33	9.45
0530	Roof (w/splines)	G		2400	.017		7.30	.83	.20	8.33	9.45
0550	7-7/8" T, walls (w/sill, splines, plates)	G		2400	.017		11.45	.83	.20	12.48	14.05
0560	Floors (w/splines)	G		2400	.017		11.45	.83	.20	12.48	14.05
0570	Roof (w/splines)	G		2400	.017		11.45	.83	.20	12.48	14.05

06 12 19 – Composite Shearwall Panels

06 12 19.10 Steel and Wood Composite Shearwall Panels

0010 STEEL & WOOD COMPOSITE SHEARWALL PANELS			1 Carp	150	.053	Ea.	43.50	2.83		46.33	52.50
0020	Anchor bolts, 36" long (must be placed in wet concrete)		1 Carp	150	.053	Ea.	43.50	2.83		46.33	52.50
0030	On concrete, 2" x 4" & 2" x 6" walls, 7'-10" high, 360 lb. shear, 12" wide		2 Carp	8	2		495	106		601	705
0040	715 lb. shear, 15" wide			8	2		650	106		756	875
0050	1860 lb. shear, 18" wide			8	2		700	106		806	930
0060	2780 lb. shear, 21" wide			8	2		830	106		936	1,075
0070	3790 lb. shear, 24" wide			8	2		780	106		886	1,025
0080	2" x 6" walls, 11'-13" high, 1180 lb. shear, 18" wide			6	2.667		735	142		877	1,025
0090	1555 lb. shear, 21" wide			6	2.667		755	142		897	1,050
0100	2280 lb. shear, 24" wide			6	2.667		895	142		1,037	1,200
0110	For installing above on wood floor frame, add										
0120	Coupler nuts, threaded rods, bolts, shear transfer plate kit		1 Carp	16	.500	Ea.	63	26.50		89.50	110
0130	Framing anchors, angle (2 required)		"	96	.083	"	2.53	4.43		6.96	9.45
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.	69.50			69.50	76.50
0170	Threaded rods, bolts, shear transfer plate kit		1 Carp	16	.500		78	26.50		104.50	126
0180	Framing anchors, angle (2 required)		"	96	.083		2.53	4.43		6.96	9.45
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.	69.50			69.50	76.50
0220	Threaded rods, bolts kit		1 Carp	16	.500	"	44.50	26.50		71	89

06 13 Heavy Timber Construction

06 13 23 – Heavy Timber Framing

06 13 23.10 Heavy Framing

0010 HEAVY FRAMING			2 Carp	1.10	14.545	M.B.F.	1,575	775		2,350	2,875
0020	Beams, single 6" x 10"										
0100	Single 8" x 16"			1.20	13.333		2,000	710		2,710	3,275
0200	Built from 2" lumber, multiple 2" x 14"			.90	17.778		1,000	945		1,945	2,550
0210	Built from 3" lumber, multiple 3" x 6"			.70	22.857		1,475	1,225		2,700	3,425
0220	Multiple 3" x 8"			.80	20		1,475	1,075		2,550	3,200
0230	Multiple 3" x 10"			.90	17.778		1,425	945		2,370	2,975
0240	Multiple 3" x 12"			1	16		1,600	850		2,450	3,025

06 13 Heavy Timber Construction

06 13 23 – Heavy Timber Framing

06 13 23.10 Heavy Framing		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
0250	Built from 4" lumber, multiple 4" x 6"	2 Carp	.80	20	M.B.F.	1,525	1,075	2,600	3,275
0260	Multiple 4" x 8"		.90	17.778		1,625	945	2,570	3,200
0270	Multiple 4" x 10"		1	16		1,625	850	2,475	3,050
0280	Multiple 4" x 12"		1.10	14.545		1,450	775	2,225	2,750
0290	Columns, structural grade, 1500Fb, 4" x 4"		.60	26.667		1,750	1,425	3,175	4,050
0300	6" x 6"		.65	24.615		1,350	1,300	2,650	3,475
0400	8" x 8"		.70	22.857		1,550	1,225	2,775	3,525
0500	10" x 10"		.75	21.333		1,750	1,125	2,875	3,625
0600	12" x 12"		.80	20		1,525	1,075	2,600	3,275
0800	Floor planks, 2" thick, T&G, 2" x 6"		1.05	15.238		1,450	810	2,260	2,825
0900	2" x 10"		1.10	14.545		1,450	775	2,225	2,750
1100	3" thick, 3" x 6"		1.05	15.238		1,625	810	2,435	3,000
1200	3" x 10"		1.10	14.545		1,650	775	2,425	2,975
1400	Girders, structural grade, 12" x 12"		.80	20		1,525	1,075	2,600	3,275
1500	10" x 16"		1	16		2,550	850	3,400	4,100
2300	Roof purlins, 4" thick, structural grade		1.05	15.238		1,625	810	2,435	3,000

06 15 Wood Decking

06 15 16 – Wood Roof Decking

06 15 16.10 Solid Wood Roof Decking

0010 SOLID WOOD ROOF DECKING		2 Carp	350	.046	S.F.	7.05	2.43	9.48	11.40
0350	Cedar planks, 2" thick		320	.050		10.60	2.66	13.26	15.65
0400	3" thick		250	.064		14.15	3.40	17.55	20.50
0500	4" thick		200	.080		21	4.25	25.25	30
0550	6" thick		350	.046		3.10	2.43	5.53	7.05
0650	Douglas fir, 2" thick		320	.050		4.65	2.66	7.31	9.10
0700	3" thick		250	.064		6.20	3.40	9.60	11.95
0800	4" thick		200	.080		9.30	4.25	13.55	16.65
0850	6" thick		350	.046		3.16	2.43	5.59	7.10
0950	Hemlock, 2" thick		320	.050		4.74	2.66	7.40	9.20
1000	3" thick		250	.064		6.30	3.40	9.70	12.05
1100	4" thick		200	.080		9.50	4.25	13.75	16.80
1150	6" thick		350	.046		2.02	2.43	4.45	5.85
1250	Western white spruce, 2" thick		320	.050		3.03	2.66	5.69	7.30
1300	3" thick		250	.064		4.03	3.40	7.43	9.55
1400	4" thick		200	.080		6.05	4.25	10.30	13.05

06 15 23 – Laminated Wood Decking

06 15 23.10 Laminated Roof Deck

0010 LAMINATED ROOF DECK		2 Carp	425	.038	S.F.	5.70	2.62	7.70	9.25
0020	Pine or hemlock, 3" thick		325	.049		7.40	2.62	10.02	12.10
0100	4" thick		425	.038		8.20	2	10.20	12
0300	Cedar, 3" thick		325	.049		11.05	2.62	13.67	16.10
0400	4" thick		425	.038		6.60	2	8.60	10.25
0600	Fir, 3" thick		325	.049		8.40	2.62	11.02	13.20
0700	4" thick								

06 16 Sheathing

06 16 13 – Insulating Sheathing

06 16 13.10 Insulating Sheathing		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P
						Labor	Equipment		
0010	INSULATING SHEATHING								
0020	Expanded polystyrene, 1#/C.F. density, 3/4" thick, R2.89	[G]	2 Carp	1400	.011	S.F.	.37	.61	.98
0030	1" thick, R3.85	[G]	1300	.012		.45	.65		1.10
0040	2" thick, R7.69	[G]	1200	.013		.74	.71		1.45
0050	Extruded polystyrene, 15 psi compressive strength, 1" thick, R5	[G]	1300	.012		.68	.65		1.33
0060	2" thick, R10	[G]	1200	.013		.83	.71		1.54
0070	Polyisocyanurate, 2#/C.F. density, 3/4" thick	[G]	1400	.011		.68	.61		1.29
0080	1" thick	[G]	1300	.012		.61	.65		1.26
0090	1-1/2" thick	[G]	1250	.013		.76	.68		1.44
0100	2" thick	[G]	1200	.013		1.08	.71		1.79
									2.25

06 16 23 – Subflooring

06 16 23.10 Subfloor

06 16 23.10 Subfloor		R061636-20							
0010	SUBFLOOR								
0011	Plywood, CDX, 1/2" thick		2 Carp	1500	.011	S.F.	.68	.57	1.25
0015	Pneumatic nailed			1860	.009		.68	.46	1.14
0100	5/8" thick			1350	.012		.77	.63	1.40
0105	Pneumatic nailed			1674	.010		.77	.51	1.28
0200	3/4" thick			1250	.013		.95	.68	1.63
0205	Pneumatic nailed			1550	.010		.95	.55	1.50
0300	1-1/8" thick, 2-4-1 including underlayment			1050	.015		2.12	.81	2.93
0440	With boards, 1" x 6", S4S, laid regular			900	.018		1.79	.95	2.74
0450	1" x 8", laid regular			1000	.016		2.06	.85	2.91
0460	Laid diagonal			850	.019		2.06	1	3.06
0500	1" x 10", laid regular			1100	.015		2.49	.77	3.26
0600	Laid diagonal			900	.018		2.49	.95	3.44
8990	Subfloor adhesive, 3/8" bead		1 Carp	2300	.003	L.F.	.10	.19	.29
									.39

06 16 26 – Underlayment

06 16 26.10 Wood Product Underlayment

06 16 26.10 Wood Product Underlayment		R061636-20							
0010	WOOD PRODUCT UNDERLAMENT								
0015	Plywood, underlayment grade, 1/4" thick		2 Carp	1500	.011	S.F.	.95	.57	1.52
0018	Pneumatic nailed			1860	.009		.95	.46	1.41
0030	3/8" thick			1500	.011		1.05	.57	1.62
0070	Pneumatic nailed			1860	.009		1.05	.46	1.51
0100	1/2" thick			1450	.011		1.18	.59	1.77
0105	Pneumatic nailed			1798	.009		1.18	.47	1.65
0200	5/8" thick			1400	.011		1.54	.61	2.15
0205	Pneumatic nailed			1736	.009		1.54	.49	2.03
0300	3/4" thick			1300	.012		1.49	.65	2.14
0305	Pneumatic nailed			1612	.010		1.49	.53	2.02
0500	Particle board, 3/8" thick	[G]	1500	.011		.39	.57	.96	1.28
0505	Pneumatic nailed	[G]	1860	.009		.39	.46	.85	1.12
0600	1/2" thick	[G]	1450	.011		.41	.59	1	1.33
0605	Pneumatic nailed	[G]	1798	.009		.41	.47	.88	1.16
0800	5/8" thick	[G]	1400	.011		.61	.61	1.22	1.58
0805	Pneumatic nailed	[G]	1736	.009		.61	.49	1.10	1.41
0900	3/4" thick	[G]	1300	.012		.74	.65	1.39	1.79
0905	Pneumatic nailed	[G]	1612	.010		.74	.53	1.27	1.60
1100	Hardboard, underlayment grade, 4' x 4', .215" thick	[G]	1500	.011		.72	.57	1.29	1.64

06 16 Sheathing

06.16.33 – Wood Board Sheathing

06 16 33.10 Board Sheathing			Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
							Labor	Equipment		
0009	BOARD SHEATHING									
0010	Roof, 1" x 6" boards, laid horizontal		2 Corp	725	.022	S.F.	1.79	1.17	2.96	3.73
0020	On steep roof			520	.031		1.79	1.64	3.43	4.43
0040	On dormers, hips, & valleys			480	.033		1.79	1.77	3.56	4.63
0050	Laid diagonal			650	.025		1.79	1.31	3.10	3.94
0070	1" x 8" boards, laid horizontal			875	.018		2.06	.97	3.03	3.72
0080	On steep roof			635	.025		2.06	1.34	3.40	4.27
0090	On dormers, hips, & valleys			580	.028		2.10	1.47	3.57	4.51
0100	Laid diagonal			725	.022		2.06	1.17	3.23	4.02
0110	Skip sheathing, 1" x 4", 7" OC		1 Corp	1200	.007		.66	.35	1.01	1.26
0120	1" x 6", 9" OC			1450	.006		.82	.29	1.11	1.34
0180	T&G sheathing decking, 1" x 6"			1000	.008		1.78	.43	2.21	2.60
0190	2" x 6"			1000	.008		3.95	.43	4.38	4.99
0200	Walls, 1" x 6" boards, laid regular		2 Corp	650	.025		1.79	1.31	3.10	3.94
0210	Laid diagonal			585	.027		1.79	1.45	3.24	4.15
0220	1" x 8" boards, laid regular			765	.021		2.06	1.11	3.17	3.93
0230	Laid diagonal			650	.025		2.06	1.31	3.37	4.23

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 Corp	1600	.010	S.F.	.60	.53	1.13	1.45
0035	Pneumatic nailed	R061110-30		1952	.008		.60	.44	1.04	1.30
0050	3/8" thick			1525	.010		.53	.56	1.09	1.42
0055	Pneumatic nailed			1860	.009		.53	.46	.99	1.27
0100	1/2" thick			1400	.011		.68	.61	1.29	1.66
0105	Pneumatic nailed			1708	.009		.68	.50	1.18	1.50
0200	5/8" thick			1300	.012		.77	.65	1.42	1.83
0205	Pneumatic nailed			1586	.010		.77	.54	1.31	1.66
0300	3/4" thick			1200	.013		.95	.71	1.66	2.10
0305	Pneumatic nailed			1464	.011		.95	.58	1.53	1.91
0500	Plywood on walls, with exterior CDX, 3/8" thick			1200	.013		.53	.71	1.24	1.64
0505	Pneumatic nailed			1488	.011		.53	.57	1.10	1.44
0600	1/2" thick			1125	.014		.68	.76	1.44	1.89
0605	Pneumatic nailed			1395	.011		.68	.61	1.29	1.67
0700	5/8" thick			1050	.015		.77	.81	1.58	2.07
0705	Pneumatic nailed			1302	.012		.77	.65	1.42	1.83
0800	3/4" thick			975	.016		.95	.87	1.82	2.35
0805	Pneumatic nailed			1209	.013		.95	.70	1.65	2.10
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 Corp	1200	.013		.64	.71	1.35	1.76
3100	5/8" thick			1200	.013		.70	.71	1.41	1.83
3300	No vapor barrier, in colors, 1/2" thick			1200	.013		.82	.71	1.53	1.96
3400	5/8" thick			1200	.013		.86	.71	1.57	2.01
3600	With vapor barrier one side, white, 1/2" thick			1200	.013		.63	.71	1.34	1.75
3700	Vapor barrier 2 sides, 1/2" thick			1200	.013		.86	.71	1.57	2.01
3800	Asphalt impregnated, 25/32" thick			1200	.013		.32	.71	1.03	1.41
3850	Intermediate, 1/2" thick			1200	.013		.34	.71	1.05	1.43
4500	Oriented strand board, on roof, 7/16" thick		G	1460	.011		.48	.58	1.06	1.41
4505	Pneumatic nailed		G	1780	.009		.48	.48	.96	1.25
4550	1/2" thick		G	1400	.011		.48	.61	1.09	1.44

06 16 Sheathing

06 16 36 – Wood Panel Product Sheathing

06 16 36.10 Sheathing		Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
					Material	Labor	Equipment		
4555	Pneumatic nailed	G	2 Corp	.009 S.F.	.48	.49		.97	1.27
4600	5/8" thick	G		1300 .012	.66	.65		1.31	1.71
4605	Pneumatic nailed	G		1586 .010	.66	.54		1.20	1.54
4610	On walls, 7/16" thick	G		1200 .013	.48	.71		1.19	1.59
4615	Pneumatic nailed	G		1488 .011	.48	.57		1.05	1.39
4620	1/2" thick	G		1195 .013	.48	.71		1.19	1.60
4625	Pneumatic nailed	G		1325 .012	.48	.64		1.12	1.49
4630	5/8" thick	G		1050 .015	.66	.81		1.47	1.95
4635	Pneumatic nailed	G		1302 .012	.66	.65		1.31	1.71
4700	Oriented strand board, factory laminated W.R. barrier, on roof, 1/2" thick	G		1400 .011	.79	.61		1.40	1.78
4705	Pneumatic nailed	G		1736 .009	.79	.49		1.28	1.61
4720	5/8" thick	G		1300 .012	.98	.65		1.63	2.06
4725	Pneumatic nailed	G		1586 .010	.98	.54		1.52	1.89
4730	5/8" thick, T&G	G		1150 .014	1.06	.74		1.80	2.28
4735	Pneumatic nailed, T&G	G		1400 .011	1.06	.61		1.67	2.08
4740	On walls, 7/16" thick	G		1200 .013	.73	.71		1.44	1.86
4745	Pneumatic nailed	G		1488 .011	.73	.57		1.30	1.66
4750	1/2" thick	G		1195 .013	.79	.71		1.50	1.94
4755	Pneumatic nailed	G		1325 .012	.79	.64		1.43	1.83
4800	Joint sealant tape, 3-1/2"		2 Corp	.002 L.F.	.36	.11		.47	.57
4810	Joint sealant tape, 6"		"	.002 "	.41	.11		.52	.62

06 16 43 – Gypsum Sheathing

06 16 43.10 Gypsum Sheathing

0010 GYPSUM SHEATHING	2 Corp	1125 .014 S.F.	.53	.76	1.29	1.72
0020 Gypsum, weatherproof, 1/2" thick						
0040 With embedded glass mats	"	1100 .015 "	.71	.77	1.48	1.94

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	F-5	2400 .013 SF Flr.	1.81	.72	2.53	3.06
0100 Plywood webs, incl. bridging & blocking, panels 24" OC						
1200 15' to 24' span, 50 psf live load		2250 .014	2.26	.76	3.02	3.64
1300 55 psf live load		2600 .012	2.68	.66	3.34	3.93
1400 24' to 30' span, 45 psf live load		2400 .013	4.77	.72	5.49	6.30
1500 55 psf live load						

06 17 53 – Shop-Fabricated Wood Trusses

06 17 53.10 Roof Trusses

0010 ROOF TRUSSES	F-3	3000 .013 SF Flr.	1.82	.72	.16	2.70	3.26
0100 Fink (W) or King post type, 2'-0" OC							
0200 Metal plate connected, 4 in 12 slope							
0210 24' to 29' span		3000 .013	2.40	.72	.16	3.28	3.90
0300 30' to 43' span		3000 .013	2.41	.72	.16	3.29	3.91
0400 44' to 60' span							
0700 Glued and nailed, add			50%				

06 18 Glued-Laminated Construction

06 18 13 — Glued-Laminated Beams

06 18 13.20 Laminated Framing		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total
						Labor	Equipment	Total	Incl O&P	
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.	2.27	.85	.18	3.30	
0300	Beams 16' OC		3200	.013		1.66	.68	.15	2.49	
0500	40' clear span, beams 8' OC		3200	.013		4.31	.68	.15	5.14	
0600	Beams 16' OC		3840	.010		3.57	.57	.12	4.26	
0800	60' clear span, beams 8' OC	F-4	2880	.017		7.40	.90	.34	8.64	
0900	Beams 16' OC		"	.013		5.55	.67	.26	6.48	
1100	Tudor arches, 30' to 40' clear span, frames 8' OC	F-3	1680	.024		9.60	1.29	.28	11.17	
1200	Frames 16' OC		"	.018		7.50	.97	.21	8.68	
1400	50' to 60' clear span, frames 8' OC	F-4	2200	.022		10.35	1.17	.45	11.97	
1500	Frames 16' OC			.018		8.85	.98	.37	10.20	
1700	Radial arches, 60' clear span, frames 8' OC		1920	.025		9.70	1.34	.51	11.55	
1800	Frames 16' OC		2880	.017		7.75	.90	.34	8.99	
2000	100' clear span, frames 8' OC		1600	.030		10	1.61	.61	12.22	
2100	Frames 16' OC		2400	.020		8.80	1.07	.41	10.28	
2300	120' clear span, frames 8' OC		1440	.033		13.25	1.79	.68	15.72	
2400	Frames 16' OC		"	.025		12.10	1.34	.51	13.95	
2600	Bowstring trusses, 20' OC, 40' clear span	F-3	2400	.017		6	.91	.20	7.11	
2700	60' clear span	F-4	3600	.013		5.40	.72	.27	6.39	
2800	100' clear span		4000	.012		7.65	.64	.25	8.54	
2900	120' clear span		3600	.013		8.10	.72	.27	9.09	
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 components). Straight beams, camber less than 6"	F-3	3.50	11.429	M.B.F.	3,075	620	135	3,830	
4400	Columns, including hardware		2	20		3,300	1,075	236	4,611	
4600	Curved members, radius over 32'		2.50	16		3,375	870	188	4,433	
4700	Radius 10' to 32'		"	3	13.333	3,350	725	157	4,232	
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					45%				
6050	1-3/4" wide x 5-1/2" deep	2 Carp	480	.033	L.F.	3.36	1.77		5.13	
6100	9-1/2" deep		480	.033		4.56	1.77		6.33	
6150	14" deep		450	.036		7.35	1.89		9.24	
6200	18" deep		450	.036		10.15	1.89		12.04	
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.	5.05	1.77		6.82	
6400	11-1/4" deep		450	.036		5.65	1.89		7.54	
6450	14" deep		400	.040		8.35	2.13		10.48	
6500	3-1/2" wide x 9-1/4" deep		480	.033		18.10	1.77		19.87	
6550	11-1/4" deep		450	.036		19.70	1.89		21.59	
6600	14" deep		400	.040		22.50	2.13		24.63	
6650	7" wide x 9-1/4" deep		450	.036		33	1.89		34.89	
6700	11-1/4" deep		420	.038		42	2.03		44.03	
6750	14" deep		400	.040		50	2.13		52.13	
8000	Straight beams								58	

06 18 Glued-Laminated Construction

06 18 13 – Glued-Laminated Beams

06 18 13.20 Laminated Framing				Daily Crew	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
							Material	Labor	Equipment	Total	
8102	20' span										
8104	3-1/8" x 9"			F-3	30	1.333	Ea.	144	72.50	15.70	232.20
8106	x 10-1/2"				30	1.333		168	72.50	15.70	256.20
8108	x 12"				30	1.333		192	72.50	15.70	280.20
8110	x 13-1/2"				30	1.333		216	72.50	15.70	304.20
8112	x 15"				29	1.379		240	75	16.25	331.25
8114	5-1/8" x 10-1/2"				30	1.333		275	72.50	15.70	363.20
8116	x 12"				30	1.333		315	72.50	15.70	403.20
8118	x 13-1/2"				30	1.333		355	72.50	15.70	443.20
8120	x 15"				29	1.379		395	75	16.25	486.25
8122	x 16-1/2"				29	1.379		430	75	16.25	521.25
8124	x 18"				29	1.379		470	75	16.25	561.25
8126	x 19-1/2"				29	1.379		510	75	16.25	601.25
8128	x 21"				28	1.429		550	77.50	16.85	644.35
8130	x 22-1/2"				28	1.429		590	77.50	16.85	684.35
8132	x 24"				28	1.429		630	77.50	16.85	724.35
8134	6-3/4" x 12"				29	1.379		415	75	16.25	506.25
8136	x 13-1/2"				29	1.379		465	75	16.25	556.25
8138	x 15"				29	1.379		520	75	16.25	611.25
8140	x 16-1/2"				28	1.429		570	77.50	16.85	664.35
8142	x 18"				28	1.429		620	77.50	16.85	714.35
8144	x 19-1/2"				28	1.429		675	77.50	16.85	769.35
8146	x 21"				27	1.481		725	80.50	17.45	822.95
8148	x 22-1/2"				27	1.481		775	80.50	17.45	872.95
8150	x 24"				27	1.481		830	80.50	17.45	927.95
8152	x 25-1/2"				27	1.481		880	80.50	17.45	977.95
8154	x 27"				26	1.538		930	83.50	18.10	1,031.60
8156	x 28-1/2"				26	1.538		985	83.50	18.10	1,086.60
8158	x 30"				26	1.538		1,025	83.50	18.10	1,126.60
8200	30' span										
8250	3-1/8" x 9"			F-3	30	1.333	Ea.	216	72.50	15.70	304.20
8252	x 10-1/2"				30	1.333		252	72.50	15.70	340.20
8254	x 12"				30	1.333		288	72.50	15.70	376.20
8256	x 13-1/2"				30	1.333		325	72.50	15.70	413.20
8258	x 15"				29	1.379		360	75	16.25	451.25
8260	5-1/8" x 10-1/2"				30	1.333		415	72.50	15.70	503.20
8262	x 12"				30	1.333		470	72.50	15.70	558.20
8264	x 13-1/2"				30	1.333		530	72.50	15.70	618.20
8266	x 15"				29	1.379		590	75	16.25	681.25
8268	x 16-1/2"				29	1.379		650	75	16.25	741.25
8270	x 18"				29	1.379		710	75	16.25	801.25
8272	x 19-1/2"				29	1.379		765	75	16.25	856.25
8274	x 21"				28	1.429		825	77.50	16.85	919.35
8276	x 22-1/2"				28	1.429		885	77.50	16.85	979.35
8278	x 24"				28	1.429		945	77.50	16.85	1,039.35
8280	6-3/4" x 12"				29	1.379		620	75	16.25	711.25
8282	x 13-1/2"				29	1.379		700	75	16.25	791.25
8284	x 15"				29	1.379		775	75	16.25	866.25
8286	x 16-1/2"				28	1.429		855	77.50	16.85	949.35
8288	x 18"				28	1.429		930	77.50	16.85	1,024.35
8290	x 19-1/2"				28	1.429		1,000	77.50	16.85	1,094.35
8292	x 21"				27	1.481		1,075	80.50	17.45	1,172.95
8294	x 22-1/2"				27	1.481		1,175	80.50	17.45	1,272.95

06 18 Glued-Laminated Construction

06 18 13 – Glued-Laminated Beams

06 18 13.20 Laminated Framing		Crew	Daily	Labor-	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
			Output	Hours			Labor	Equipment	Total		
8296	x 24"	F-3	27	1.481	Ea.	1,250	80.50	17.45	1,347.95	1,525	
8298	x 25-1/2"			27	1.481		1,325	80.50	17.45	1,422.95	
8300	x 27"			26	1.538		1,400	83.50	18.10	1,501.60	
8302	x 28-1/2"			26	1.538		1,475	83.50	18.10	1,576.60	
8304	x 30"			26	1.538	↓	1,550	83.50	18.10	1,651.60	
8400	40' span									1,850	
8402	3-1/8" x 9"	F-3	30	1.333	Ea.	288	72.50	15.70	376.20	440	
8404	x 10-1/2"		30	1.333		335	72.50	15.70	423.20	495	
8406	x 12"		30	1.333		385	72.50	15.70	473.20	545	
8408	x 13-1/2"		30	1.333		430	72.50	15.70	518.20	600	
8410	x 15"		29	1.379		480	75	16.25	571.25	655	
8412	5-1/8" x 10-1/2"		30	1.333		550	72.50	15.70	638.20	730	
8414	x 12"		30	1.333		630	72.50	15.70	718.20	815	
8416	x 13-1/2"		30	1.333		710	72.50	15.70	798.20	905	
8418	x 15"		29	1.379		785	75	16.25	876.25	995	
8420	x 16-1/2"		29	1.379		865	75	16.25	956.25	1,075	
8422	x 18"		29	1.379		945	75	16.25	1,036.25	1,175	
8424	x 19-1/2"		29	1.379		1,025	75	16.25	1,116.25	1,250	
8426	x 21"		28	1.429		1,100	77.50	16.85	1,194.35	1,325	
8428	x 22-1/2"		28	1.429		1,175	77.50	16.85	1,269.35	1,425	
8430	x 24"		28	1.429		1,250	77.50	16.85	1,344.35	1,500	
8432	6-3/4" x 12"		29	1.379		830	75	16.25	921.25	1,050	
8434	x 13-1/2"		29	1.379		930	75	16.25	1,021.25	1,150	
8436	x 15"		29	1.379		1,025	75	16.25	1,116.25	1,275	
8438	x 16-1/2"		28	1.429		1,150	77.50	16.85	1,244.35	1,375	
8440	x 18"		28	1.429		1,250	77.50	16.85	1,344.35	1,500	
8442	x 19-1/2"		28	1.429		1,350	77.50	16.85	1,444.35	1,600	
8444	x 21"		27	1.481		1,450	80.50	17.45	1,547.95	1,750	
8446	x 22-1/2"		27	1.481		1,550	80.50	17.45	1,647.95	1,850	
8448	x 24"		27	1.481		1,650	80.50	17.45	1,747.95	1,975	
8450	x 25-1/2"		27	1.481		1,750	80.50	17.45	1,847.95	2,075	
8452	x 27"		26	1.538		1,875	83.50	18.10	1,976.60	2,200	
8454	x 28-1/2"		26	1.538		1,975	83.50	18.10	2,076.60	2,325	
8456	x 30"		26	1.538	↓	2,075	83.50	18.10	2,176.60	2,425	

06 22 Millwork

06 22 13 – Standard Pattern Wood Trim

06 22 13.15 Moldings, Base

0010	MOLDINGS, BASE		1 Corp	.250	.032	L.F.	1.76	1.70		3.46	4.50
5100	Classic profile, 5/8" x 5-1/2", finger jointed and primed										
5105	Poplar			240	.033		2.18	1.77		3.95	5.05
5110	Red oak			220	.036		2.54	1.93		4.47	5.70
5115	Maple			220	.036		4.15	1.93		6.08	7.45
5120	Cherry			220	.036		4.55	1.93		6.48	7.90
5125	3/4" x 7-1/2", finger jointed and primed			250	.032		2.05	1.70		3.75	4.82
5130	Poplar			240	.033		2.66	1.77		4.43	5.60
5135	Red oak			220	.036		3.70	1.93		5.63	6.95
5140	Maple			220	.036		5.15	1.93		7.08	8.55
5145	Cherry			220	.036		6.10	1.93		8.03	9.65
5150	Modern profile, 5/8" x 3-1/2", finger jointed and primed			250	.032		.95	1.70		2.65	3.61
5155	Poplar			240	.033		1.06	1.77		2.83	3.83

06 22 Millwork

06 22 13 – Standard Pattern Wood Trim

06 22 13.15 Moldings, Base		Crew	Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
						Material	Labor	Equipment		
5160	Red oak	1 Corp	220	.036	L.F.	1.74	1.93		3.67	4.81
5165	Maple		220	.036		2.70	1.93		4.63	5.85
5170	Cherry		220	.036		2.94	1.93		4.87	6.15
5175	Ogee profile, 7/16" x 3", finger jointed and primed		250	.032		.68	1.70		2.38	3.31
5180	Poplar		240	.033		.76	1.77		2.53	3.50
5185	Red oak		220	.036		.99	1.93		2.92	3.99
5200	9/16" x 3-1/2", finger jointed and primed		250	.032		.68	1.70		2.38	3.31
5205	Pine		240	.033		1.28	1.77		3.05	4.07
5210	Red oak		220	.036		2.92	1.93		4.85	6.10
5215	9/16" x 4-1/2", red oak		220	.036		4.38	1.93		6.31	7.70
5220	5/8" x 3-1/2", finger jointed and primed		250	.032		1.04	1.70		2.74	3.70
5225	Poplar		240	.033		1.06	1.77		2.83	3.83
5230	Red oak		220	.036		1.74	1.93		3.67	4.81
5235	Maple		220	.036		2.70	1.93		4.63	5.85
5240	Cherry		220	.036		2.92	1.93		4.85	6.10
5245	5/8" x 4", finger jointed and primed		250	.032		1.28	1.70		2.98	3.97
5250	Poplar		240	.033		1.37	1.77		3.14	4.17
5255	Red oak		220	.036		1.96	1.93		3.89	5.05
5260	Maple		220	.036		3.02	1.93		4.95	6.20
5265	Cherry		220	.036		3.17	1.93		5.10	6.40
5270	Rectangular profile, oak, 3/8" x 1-1/4"		260	.031		1.58	1.64		3.22	4.19
5275	1/2" x 2-1/2"		255	.031		2.27	1.67		3.94	5
5280	1/2" x 3-1/2"		250	.032		2.85	1.70		4.55	5.70
5285	1" x 6"		240	.033		4.06	1.77		5.83	7.15
5290	1" x 8"		240	.033		5.05	1.77		6.82	8.25
5295	Pine, 3/8" x 1-3/4"		260	.031		.50	1.64		2.14	3.01
5300	7/16" x 2-1/2"		255	.031		.82	1.67		2.49	3.40
5305	1" x 6"		240	.033		.84	1.77		2.61	3.58
5310	1" x 8"		240	.033		.95	1.77		2.72	3.71
5315	Shoe, 1/2" x 3/4", primed		260	.031		.59	1.64		2.23	3.11
5320	Pine		240	.033		.43	1.77		2.20	3.13
5325	Poplar		240	.033		.43	1.77		2.20	3.13
5330	Red oak		220	.036		.57	1.93		2.50	3.53
5335	Maple		220	.036		.82	1.93		2.75	3.80
5340	Cherry		220	.036		.84	1.93		2.77	3.82
5345	11/16" x 1-1/2", pine		240	.033		.87	1.77		2.64	3.62
5350	Caps, 11/16" x 1-3/8", pine		240	.033		.69	1.77		2.46	3.42
5355	3/4" x 1-3/4", finger jointed and primed		260	.031		.93	1.64		2.57	3.48
5360	Poplar		240	.033		1.07	1.77		2.84	3.84
5365	Red oak		220	.036		1.33	1.93		3.26	4.36
5370	Maple		220	.036		1.68	1.93		3.61	4.75
5375	Cherry		220	.036		3.69	1.93		5.62	6.95
5380	Combination base & shoe, 9/16" x 3-1/2" & 1/2" x 3/4", pine		125	.064		1.71	3.40		5.11	7
5385	Three piece oak, 6" high		80	.100		5.95	5.30		11.25	14.55
5390	Including 3/4" x 1" base shoe		70	.114		6.60	6.05		12.65	16.40
5395	Flooring cant strip, 3/4" x 3/4", pre-finished pine		260	.031		.48	1.64		2.12	2.99
5400	For pre-finished, stain and clear coat, add					.59			.59	.65
5405	Clear coat only, add					.45			.45	.50

06 22 13.30 Moldings, Casings

0010 MOLDINGS, CASINGS	Crew	Daily Output	Labor-Hours	Unit	Material	Labor	Equipment	Total	Total Incl O&P
0085 Apron, 9/16" x 2-1/2", pine	1 Corp	250	.032	L.F.	1.51	1.70		3.21	4.22
0090 5/8" x 2-1/2", pine		250	.032		1.81	1.70		3.51	4.55

06 22 Millwork

06 22 13 – Standard Pattern Wood Trim

06 22 13.30 Moldings, Casings		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
						Labor	Equipment		
0110	5/8" x 3-1/2", pine	1 Carp	220	.036	L.F.	2.27	1.93	4.20	5.40
0300	Band, 11/16" x 1-1/8", pine		270	.030		.77	1.57	2.34	3.22
0310	11/16" x 1-1/2", finger jointed and primed		270	.030		.76	1.57	2.33	3.21
0320	Pine		270	.030		1.02	1.57	2.59	3.49
0330	11/16" x 1-3/4", finger jointed and primed		270	.030		.96	1.57	2.53	3.43
0350	Pine		270	.030		1.09	1.57	2.66	3.57
0355	Beaded, 3/4" x 3-1/2", finger jointed and primed		220	.036		1.03	1.93	2.96	4.03
0360	Poplar		220	.036		1.20	1.93	3.13	4.22
0365	Red oak		220	.036		1.74	1.93	3.67	4.81
0370	Maple		220	.036		2.69	1.93	4.62	5.85
0375	Cherry		220	.036		3.25	1.93	5.18	6.50
0380	3/4" x 4", finger jointed and primed		220	.036		1.27	1.93	3.20	4.30
0385	Poplar		220	.036		1.84	1.93	3.77	4.92
0390	Red oak		220	.036		2.47	1.93	4.40	5.60
0395	Maple		220	.036		2.71	1.93	4.64	5.90
0400	Cherry		220	.036		4.03	1.93	5.96	7.35
0405	3/4" x 5-1/2", finger jointed and primed		200	.040		1.59	2.13	3.72	4.94
0410	Poplar		200	.040		2.04	2.13	4.17	5.45
0415	Red oak		200	.040		2.99	2.13	5.12	6.50
0420	Maple		200	.040		3.95	2.13	6.08	7.55
0425	Cherry		200	.040		4.53	2.13	6.66	8.15
0430	Classic profile, 3/4" x 2-3/4", finger jointed and primed		250	.032		.87	1.70	2.57	3.52
0435	Poplar		250	.032		1.05	1.70	2.75	3.72
0440	Red oak		250	.032		1.57	1.70	3.27	4.29
0445	Maple		250	.032		2.21	1.70	3.91	4.99
0450	Cherry		250	.032		2.54	1.70	4.24	5.35
0455	Fluted, 3/4" x 3-1/2", poplar		220	.036		1.20	1.93	3.13	4.22
0460	Red oak		220	.036		1.74	1.93	3.67	4.81
0465	Maple		220	.036		3.04	1.93	4.97	6.25
0470	Cherry		220	.036		3.25	1.93	5.18	6.50
0475	3/4" x 4", poplar		220	.036		1.47	1.93	3.40	4.52
0480	Red oak		220	.036		2.31	1.93	4.24	5.45
0485	Maple		220	.036		2.71	1.93	4.64	5.90
0490	Cherry		220	.036		4.03	1.93	5.96	7.35
0495	3/4" x 5-1/2", poplar		200	.040		2.04	2.13	4.17	5.45
0500	Red oak		200	.040		3.08	2.13	5.21	6.60
0505	Maple		200	.040		3.95	2.13	6.08	7.55
0510	Cherry		200	.040		4.52	2.13	6.65	8.15
0515	3/4" x 7-1/2", poplar		190	.042		1.59	2.24	3.83	5.10
0520	Red oak		190	.042		4	2.24	6.24	7.75
0525	Maple		190	.042		7.20	2.24	9.44	11.25
0530	Cherry		190	.042		8.60	2.24	10.84	12.80
0535	3/4" x 9-1/2", poplar		180	.044		4.21	2.36	6.57	8.20
0540	Red oak		180	.044		6.60	2.36	8.96	10.85
0545	Maple		180	.044		11.45	2.36	13.81	16.15
0550	Cherry		180	.044		12.50	2.36	14.86	17.30
0555	Modern profile, 9/16" x 2-1/4", poplar		250	.032		.88	1.70	2.58	3.53
0560	Red oak		250	.032		.99	1.70	2.69	3.65
0565	11/16" x 2-1/2", finger jointed & primed		250	.032		.77	1.70	2.47	3.41
0570	Pine		250	.032		1.29	1.70	2.99	3.98
0575	3/4" x 2-1/2", poplar		250	.032		.94	1.70	2.64	3.59
0580	Red oak		250	.032		1.26	1.70	2.96	3.95
0585	Maple		250	.032		1.94	1.70	3.64	4.69

06 22 Millwork

06 22 13 – Standard Pattern Wood Trim

06 22 13.30 Moldings, Casings		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
							Labor	Equipment	Total		
0590	Cherry	1 Corp	250	.032	L.F.	2.75	1.70		4.45	5.60	
0595	Mullion, 5/16" x 2", pine		270	.030		.98	1.57		2.55	3.45	
0600	9/16" x 2-1/2", finger jointed and primed		250	.032		1.98	1.70		2.68	3.64	
0605	Pine		250	.032		1.35	1.70		3.05	4.05	
0610	Red oak		250	.032		3.40	1.70		5.10	6.30	
0615	1-1/16" x 3-3/4", red oak		220	.036		7.05	1.93		8.98	10.65	
0620	Ogee, 7/16" x 2-1/2", poplar		250	.032		.79	1.70		2.49	3.43	
0625	Red oak		250	.032		.93	1.70		2.63	3.58	
0630	9/16" x 2-1/4", finger jointed and primed		250	.032		.61	1.70		2.31	3.23	
0635	Poplar		250	.032		.62	1.70		2.32	3.24	
0640	Red oak		250	.032		.85	1.70		2.55	3.50	
0645	11/16" x 2-1/2", finger jointed and primed		250	.032		.73	1.70		2.43	3.36	
0700	Pine		250	.032		1.41	1.70		3.11	4.11	
0701	Red oak		250	.032		3.29	1.70		4.99	6.20	
0730	11/16" x 3-1/2", finger jointed and primed		220	.036		1.36	1.93		3.29	4.40	
0750	Pine		220	.036		1.95	1.93		3.88	5.05	
0755	3/4" x 2-1/2", finger jointed and primed		250	.032		.77	1.70		2.47	3.41	
0760	Poplar		250	.032		.96	1.70		2.66	3.62	
0765	Red oak		250	.032		1.32	1.70		3.02	4.01	
0770	Maple		250	.032		1.91	1.70		3.61	4.66	
0775	Cherry		250	.032		2.40	1.70		4.10	5.20	
0780	3/4" x 3-1/2", finger jointed and primed		220	.036		.86	1.93		2.79	3.85	
0785	Poplar		220	.036		1.20	1.93		3.13	4.22	
0790	Red oak		220	.036		1.74	1.93		3.67	4.81	
0795	Maple		220	.036		2.68	1.93		4.61	5.85	
0800	Cherry		220	.036		3.30	1.93		5.23	6.55	
4700	Square profile, 1" x 1", teak		215	.037		2.28	1.98		4.21	5.40	
4800	Rectangular profile, 1" x 3", teak		200	.040		6.60	2.13		8.73	10.45	

06 22 13.35 Moldings, Ceilings

0010 MOLDINGS, CEILINGS		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
							Labor	Equipment	Total		
0600	Bed, 9/16" x 1-3/4", pine	1 Corp	270	.030	L.F.	1.13	1.57		2.70	3.61	
0650	9/16" x 2", pine		270	.030		1.30	1.57		2.87	3.80	
0710	9/16" x 1-3/4", oak		270	.030		2.44	1.57		4.01	5.05	
1200	Cornice, 9/16" x 1-3/4", pine		270	.030		1.02	1.57		2.59	3.49	
1300	9/16" x 2-1/4", pine		265	.030		1.37	1.60		2.97	3.92	
1350	Cove, 1/2" x 2-1/4", poplar		265	.030		1.26	1.60		2.86	3.80	
1360	Red oak		265	.030		1.73	1.60		3.33	4.31	
1370	Hard maple		265	.030		1.71	1.60		3.31	4.29	
1380	Cherry		265	.030		2.31	1.60		3.91	4.95	
2400	9/16" x 1-3/4", pine		270	.030		1.10	1.57		2.67	3.58	
2500	11/16" x 2-3/4", pine		265	.030		2.21	1.60		3.81	4.84	
2510	Crown, 5/8" x 5/8", poplar		300	.027		.55	1.42		1.97	2.74	
2520	Red oak		300	.027		.56	1.42		1.98	2.75	
2530	Hard maple		300	.027		.76	1.42		2.18	2.97	
2540	Cherry		300	.027		.80	1.42		2.22	3.01	
2600	9/16" x 3-5/8", pine		250	.032		1.83	1.70		3.53	4.57	
2700	11/16" x 4-1/4", pine		250	.032		3.05	1.70		4.75	5.90	
2705	Oak		250	.032		6.50	1.70		8.20	9.70	
2710	3/4" x 1-3/4", poplar		270	.030		.76	1.57		2.33	3.21	
2720	Red oak		270	.030		1.12	1.57		2.69	3.60	
2730	Hard maple		270	.030		1.47	1.57		3.04	3.99	
2740	Cherry		270	.030		1.81	1.57		3.38	4.36	

06 22 Millwork

06 22 13 – Standard Pattern Wood Trim

06 22 13.35 Moldings, Ceilings		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P
						Labor	Equipment		
2750	3/4" x 2", poplar	1 Carp.	270	.030	L.F.	1	1.57	2.57	3.47
2760	Red oak		270	.030		1.50	1.57	3.07	4.02
2770	Hard maple		270	.030		2.05	1.57	3.62	4.63
2780	Cherry		270	.030		2.28	1.57	3.85	4.88
2790	3/4" x 2-3/4", poplar		265	.030		1.08	1.60	2.68	3.60
2800	Red oak		265	.030		1.67	1.60	3.27	4.25
2810	Hard maple		265	.030		2.28	1.60	3.88	4.92
2820	Cherry		265	.030		2.59	1.60	4.19	5.25
2830	3/4" x 3-1/2", poplar		250	.032		1.40	1.70	3.10	4.10
2840	Red oak		250	.032		2.08	1.70	3.78	4.85
2850	Hard maple		250	.032		2.95	1.70	4.65	5.80
2860	Cherry		250	.032		3.16	1.70	4.86	6.05
2870	FJP poplar		250	.032		1.06	1.70	2.76	3.73
2880	3/4" x 5", poplar		245	.033		2.04	1.74	3.78	4.86
2890	Red oak		245	.033		3.02	1.74	4.76	5.95
2900	Hard maple		245	.033		3.99	1.74	5.73	7
2910	Cherry		245	.033		4.76	1.74	6.50	7.85
2920	FJP poplar		245	.033		1.48	1.74	3.22	4.24
2930	3/4" x 6-1/4", poplar		240	.033		2.45	1.77	4.22	5.35
2940	Red oak		240	.033		3.69	1.77	5.46	6.70
2950	Hard maple		240	.033		4.96	1.77	6.73	8.10
2960	Cherry		240	.033		5.90	1.77	7.67	9.15
2970	7/8" x 8-3/4", poplar		220	.036		4.97	1.93	6.90	8.35
2980	Red oak		220	.036		5.20	1.93	7.13	8.60
2990	Hard maple		220	.036		6.85	1.93	8.78	10.45
3000	Cherry		220	.036		7.85	1.93	9.78	11.55
3010	1" x 7-1/4", poplar		220	.036		4.45	1.93	6.38	7.80
3020	Red oak		220	.036		6.25	1.93	8.18	9.75
3030	Hard maple		220	.036		9.05	1.93	10.98	12.85
3040	Cherry		220	.036		10.30	1.93	12.23	14.20
3050	1-1/16" x 4-1/4", poplar		250	.032		2.54	1.70	4.24	5.35
3060	Red oak		250	.032		2.86	1.70	4.56	5.70
3070	Hard maple		250	.032		4.20	1.70	5.90	7.20
3080	Cherry		250	.032		5.45	1.70	7.15	8.50
3090	Dentil crown, 3/4" x 5", poplar		250	.032		2.04	1.70	3.74	4.81
3100	Red oak		250	.032		3.02	1.70	4.72	5.90
3110	Hard maple		250	.032		3.98	1.70	5.68	6.95
3120	Cherry		250	.032		4.59	1.70	6.29	7.60
3130	Dentil piece for above, 1/2" x 1/2", poplar		300	.027		3.22	1.42	4.64	5.65
3140	Red oak		300	.027		3.33	1.42	4.75	5.80
3150	Hard maple		300	.027		4.17	1.42	5.59	6.70
3160	Cherry		300	.027		4.14	1.42	5.56	6.70

06 22 13.40 Moldings, Exterior

MOLDINGS, EXTERIOR		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P
						Labor	Equipment		
0100	Band board, cedar, rough sawn, 1" x 2"	1 Carp.	300	.027	L.F.	.72	1.42	2.14	2.92
0110	1" x 3"		300	.027		1.07	1.42	2.49	3.31
0120	1" x 4"		250	.032		1.43	1.70	3.13	4.13
0130	1" x 6"		250	.032		2.15	1.70	3.85	4.92
0140	1" x 8"		225	.036		2.86	1.89	4.75	6
0150	1" x 10"		225	.036		3.56	1.89	5.45	6.75
0160	1" x 12"		200	.040		4.27	2.13	6.40	7.90
0240	STK, 1" x 2"		300	.027		.44	1.42	1.86	2.61

06 22 Millwork

06 22 13 – Standard Pattern Wood Trim

06 22 13.40 Moldings, Exterior		Crew	Daily	Labor-	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
			Output	Hours			Labor	Equipment	Total		
0250	1" x 3"		1 Corp	.300	.027	L.F.	.48	1.42	1.90	2.66	
0260	1" x 4"			250	.032		.85	1.70	2.55	3.50	
0270	1" x 6"			250	.032		1.39	1.70	3.09	4.09	
0280	1" x 8"			225	.036		2.35	1.89	4.24	5.45	
0290	1" x 10"			225	.036		2.86	1.89	4.75	6	
0300	1" x 12"			200	.040		4.44	2.13	6.57	8.10	
0310	Pine, #2, 1" x 2"			300	.027		.31	1.42	1.73	2.47	
0320	1" x 3"			300	.027		.45	1.42	1.87	2.63	
0330	1" x 4"			250	.032		.57	1.70	2.27	3.19	
0340	1" x 6"			250	.032		.86	1.70	2.56	3.51	
0350	1" x 8"			225	.036		1.33	1.89	3.22	4.30	
0360	1" x 10"			225	.036		2.04	1.89	3.93	5.10	
0370	1" x 12"			200	.040		2.66	2.13	4.79	6.10	
0380	D & better, 1" x 2"			300	.027		.51	1.42	1.93	2.69	
0390	1" x 3"			300	.027		.73	1.42	2.15	2.93	
0400	1" x 4"			250	.032		.95	1.70	2.65	3.61	
0410	1" x 6"			250	.032		1.10	1.70	2.80	3.77	
0420	1" x 8"			225	.036		1.64	1.89	3.53	4.64	
0430	1" x 10"			225	.036		2.16	1.89	4.05	5.20	
0440	1" x 12"			200	.040		2.73	2.13	4.86	6.20	
0450	Redwood, clear all heart, 1" x 2"			300	.027		.66	1.42	2.08	2.86	
0460	1" x 3"			300	.027		.98	1.42	2.40	3.21	
0470	1" x 4"			250	.032		1.22	1.70	2.92	3.90	
0480	1" x 6"			252	.032		1.83	1.69	3.52	4.56	
0490	1" x 8"			225	.036		2.43	1.89	4.32	5.50	
0500	1" x 10"			225	.036		4.03	1.89	5.92	7.30	
0510	1" x 12"			200	.040		4.40	2.13	6.53	8.05	
0530	Corner board, cedar, rough sawn, 1" x 2"			225	.036		.72	1.89	2.61	3.63	
0540	1" x 3"			225	.036		1.07	1.89	2.96	4.02	
0550	1" x 4"			200	.040		1.43	2.13	3.56	4.76	
0560	1" x 6"			200	.040		2.15	2.13	4.28	5.55	
0570	1" x 8"			200	.040		2.86	2.13	4.99	6.35	
0580	1" x 10"			175	.046		3.56	2.43	5.99	7.55	
0590	1" x 12"			175	.046		4.27	2.43	6.70	8.35	
0670	STK, 1" x 2"			225	.036		.44	1.89	2.33	3.32	
0680	1" x 3"			225	.036		.48	1.89	2.37	3.37	
0690	1" x 4"			200	.040		.83	2.13	2.96	4.10	
0700	1" x 6"			200	.040		1.39	2.13	3.52	4.72	
0710	1" x 8"			200	.040		2.35	2.13	4.48	5.80	
0720	1" x 10"			175	.046		2.86	2.43	5.29	6.80	
0730	1" x 12"			175	.046		4.44	2.43	6.87	8.55	
0740	Pine, #2, 1" x 2"			225	.036		.31	1.89	2.20	3.18	
0750	1" x 3"			225	.036		.45	1.89	2.34	3.34	
0760	1" x 4"			200	.040		.57	2.13	2.70	3.82	
0770	1" x 6"			200	.040		.86	2.13	2.99	4.14	
0780	1" x 8"			200	.040		1.33	2.13	3.46	4.65	
0790	1" x 10"			175	.046		2.04	2.43	4.47	5.90	
0800	1" x 12"			175	.046		2.66	2.43	5.09	6.60	
0810	D & better, 1" x 2"			225	.036		.51	1.89	2.40	3.40	
0820	1" x 3"			225	.036		.73	1.89	2.62	3.64	
0830	1" x 4"			200	.040		.95	2.13	3.08	4.24	
0840	1" x 6"			200	.040		1.10	2.13	3.23	4.40	
0850	1" x 8"			200	.040		1.64	2.13	3.77	4.99	

06 22 Millwork

06 22 13 – Standard Pattern Wood Trim

06 22 13.40 Moldings, Exterior		Crew	Daily	Labor-	2020 Bare Costs	Total	Total		
			Output	Hours			Ind O&P		
0860	1" x 10"	1 Corp	175	.046	L.F.	2.16	2.43	4.59	6.05
0870	1" x 12"		175	.046		2.73	2.43	5.16	6.65
0880	Redwood, clear all heart, 1" x 2"		225	.036		.66	1.89	2.55	3.57
0890	1" x 3"		225	.036		.98	1.89	2.87	3.92
0900	1" x 4"		200	.040		1.22	2.13	3.35	4.53
0910	1" x 6"		200	.040		1.83	2.13	3.96	5.20
0920	1" x 8"		200	.040		2.43	2.13	4.56	5.85
0930	1" x 10"		175	.046		4.03	2.43	6.46	8.10
0940	1" x 12"		175	.046		4.40	2.43	6.83	8.50
0950	Cornice board, cedar, rough sawn, 1" x 2"		330	.024		.72	1.29	2.01	2.73
0960	1" x 3"		290	.028		1.07	1.47	2.54	3.38
0970	1" x 4"		250	.032		1.43	1.70	3.13	4.13
0980	1" x 6"		250	.032		2.15	1.70	3.85	4.92
0990	1" x 8"		200	.040		2.86	2.13	4.99	6.35
1000	1" x 10"		180	.044		3.56	2.36	5.92	7.45
1010	1" x 12"		180	.044		4.27	2.36	6.63	8.25
1020	STK, 1" x 2"		330	.024		.44	1.29	1.73	2.42
1030	1" x 3"		290	.028		.48	1.47	1.95	2.73
1040	1" x 4"		250	.032		.85	1.70	2.55	3.50
1050	1" x 6"		250	.032		1.39	1.70	3.09	4.09
1060	1" x 8"		200	.040		2.35	2.13	4.48	5.80
1070	1" x 10"		180	.044		2.86	2.36	5.22	6.70
1080	1" x 12"		180	.044		4.44	2.36	6.80	8.45
1500	Pine, #2, 1" x 2"		330	.024		.31	1.29	1.60	2.28
1510	1" x 3"		290	.028		.31	1.47	1.78	2.54
1600	1" x 4"		250	.032		.57	1.70	2.27	3.19
1700	1" x 6"		250	.032		.86	1.70	2.56	3.51
1800	1" x 8"		200	.040		1.33	2.13	3.46	4.65
1900	1" x 10"		180	.044		2.04	2.36	4.40	5.80
2000	1" x 12"		180	.044		2.66	2.36	5.02	6.50
2020	D & better, 1" x 2"		330	.024		.51	1.29	1.80	2.50
2030	1" x 3"		290	.028		.73	1.47	2.20	3
2040	1" x 4"		250	.032		.95	1.70	2.65	3.61
2050	1" x 6"		250	.032		1.10	1.70	2.80	3.77
2060	1" x 8"		200	.040		1.64	2.13	3.77	4.99
2070	1" x 10"		180	.044		2.16	2.36	4.52	5.95
2080	1" x 12"		180	.044		2.73	2.36	5.09	6.55
2090	Redwood, clear all heart, 1" x 2"		330	.024		.66	1.29	1.95	2.67
2100	1" x 3"		290	.028		.98	1.47	2.45	3.28
2110	1" x 4"		250	.032		1.22	1.70	2.92	3.90
2120	1" x 6"		250	.032		1.83	1.70	3.53	4.58
2130	1" x 8"		200	.040		2.43	2.13	4.56	5.85
2140	1" x 10"		180	.044		4.03	2.36	6.39	8
2150	1" x 12"		180	.044		4.40	2.36	6.76	8.40
2160	3 piece, 1" x 2", 1" x 4", 1" x 6", rough sawn cedar		80	.100		4.31	5.30	9.61	12.75
2180	STK cedar		80	.100		2.68	5.30	7.98	10.95
2200	#2 pine		80	.100		1.75	5.30	7.05	9.90
2210	D & better pine		80	.100		2.56	5.30	7.86	10.80
2220	Clear all heart redwood		80	.100		3.71	5.30	9.01	12.10
2230	1" x 8", 1" x 10", 1" x 12", rough sawn cedar		65	.123		10.65	6.55	17.20	21.50
2240	STK cedar		65	.123		9.60	6.55	16.15	20.50
2300	#2 pine		65	.123		6	6.55	12.55	16.45
2320	D & better pine		65	.123		6.50	6.55	13.05	17

06 22 13 – Standard Pattern Wood Trim

			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
06 22 13.40 Moldings, Exterior			Crew			Labor	Equipment	Total		
2330	Clear all heart redwood		1 Corp	.65	.123	L.F.	10.80	6.55	17.35	22
2340	Door/window casing, cedar, rough sawn, 1" x 2"			275	.029		.72	1.55	2.27	3.11
2350	1" x 3"			275	.029		1.07	1.55	2.62	3.50
2360	1" x 4"			250	.032		1.43	1.70	3.13	4.13
2370	1" x 6"			250	.032		2.15	1.70	3.85	4.92
2380	1" x 8"			230	.035		2.86	1.85	4.71	5.95
2390	1" x 10"			230	.035		3.56	1.85	5.41	6.70
2395	1" x 12"			210	.038		4.27	2.03	6.30	7.75
2410	STK, 1" x 2"			275	.029		.44	1.55	1.99	2.80
2420	1" x 3"			275	.029		.48	1.55	2.03	2.85
2430	1" x 4"			250	.032		.85	1.70	2.55	3.50
2440	1" x 6"			250	.032		1.39	1.70	3.09	4.09
2450	1" x 8"			230	.035		2.35	1.85	4.20	5.35
2460	1" x 10"			230	.035		2.86	1.85	4.71	5.95
2470	1" x 12"			210	.038		4.44	2.03	6.47	7.95
2550	Pine, #2, 1" x 2"			275	.029		.31	1.55	1.86	2.66
2560	1" x 3"			275	.029		.45	1.55	2	2.82
2570	1" x 4"			250	.032		.57	1.70	2.27	3.19
2580	1" x 6"			250	.032		.86	1.70	2.56	3.51
2590	1" x 8"			230	.035		1.33	1.85	3.18	4.24
2600	1" x 10"			230	.035		2.04	1.85	3.89	5
2610	1" x 12"			210	.038		2.66	2.03	4.69	5.95
2620	Pine, D & better, 1" x 2"			275	.029		.51	1.55	2.06	2.88
2630	1" x 3"			275	.029		.73	1.55	2.28	3.12
2640	1" x 4"			250	.032		.95	1.70	2.65	3.61
2650	1" x 6"			250	.032		1.10	1.70	2.80	3.77
2660	1" x 8"			230	.035		1.64	1.85	3.49	4.58
2670	1" x 10"			230	.035		2.16	1.85	4.01	5.15
2680	1" x 12"			210	.038		2.73	2.03	4.76	6.05
2690	Redwood, clear all heart, 1" x 2"			275	.029		.66	1.55	2.21	3.05
2695	1" x 3"			275	.029		.98	1.55	2.53	3.40
2710	1" x 4"			250	.032		1.22	1.70	2.92	3.90
2715	1" x 6"			250	.032		1.83	1.70	3.53	4.58
2730	1" x 8"			230	.035		2.43	1.85	4.28	5.45
2740	1" x 10"			230	.035		4.03	1.85	5.88	7.20
2750	1" x 12"			210	.038		4.40	2.03	6.43	7.90
3500	Bellyband, pine, 11/16" x 4-1/4"			250	.032		2.82	1.70	4.52	5.65
3610	Brickmold, pine, 1-1/4" x 2"			200	.040		2.13	2.13	4.26	5.55
3620	FJP, 1-1/4" x 2"			200	.040		1.03	2.13	3.16	4.32
5100	Fascia, cedar, rough sawn, 1" x 2"			275	.029		.72	1.55	2.27	3.11
5110	1" x 3"			275	.029		1.07	1.55	2.62	3.50
5120	1" x 4"			250	.032		1.43	1.70	3.13	4.13
5200	1" x 6"			250	.032		2.15	1.70	3.85	4.92
5300	1" x 8"			230	.035		2.86	1.85	4.71	5.95
5310	1" x 10"			230	.035		3.56	1.85	5.41	6.70
5320	1" x 12"			210	.038		4.27	2.03	6.30	7.75
5400	2" x 4"			220	.036		1.26	1.93	3.19	4.28
5500	2" x 6"			220	.036		1.88	1.93	3.81	4.97
5600	2" x 8"			200	.040		2.51	2.13	4.64	5.95
5700	2" x 10"			180	.044		3.12	2.36	5.48	7
5800	2" x 12"			170	.047		7.45	2.50	9.95	11.90
6120	STK, 1" x 2"			275	.029		.44	1.55	1.99	2.80
6130	1" x 3"			275	.029		.48	1.55	2.03	2.85

06 22 Millwork

06 22 13 – Standard Pattern Wood Trim

06 22 13.40 Moldings, Exterior		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
						Labor	Equipment		
6140	1" x 4"	1 Carp	250	.032	L.F.	.85	1.70	2.55	3.50
6150	1" x 6"		250	.032		1.39	1.70	3.09	4.09
6160	1" x 8"		230	.035		2.35	1.85	4.20	5.35
6170	1" x 10"		230	.035		2.86	1.85	4.71	5.95
6180	1" x 12"		210	.038		4.44	2.03	6.47	7.95
6185	2" x 2"		260	.031		.76	1.64	2.40	3.30
6190	Pine, #2, 1" x 2"		275	.029		.31	1.55	1.86	2.66
6200	1" x 3"		275	.029		.45	1.55	2	2.82
6210	1" x 4"		250	.032		.57	1.70	2.27	3.19
6220	1" x 6"		250	.032		.86	1.70	2.56	3.51
6230	1" x 8"		230	.035		1.33	1.85	3.18	4.24
6240	1" x 10"		230	.035		2.04	1.85	3.89	5
6250	1" x 12"		210	.038		2.66	2.03	4.69	5.95
6260	D & better, 1" x 2"		275	.029		.51	1.55	2.06	2.88
6270	1" x 3"		275	.029		.73	1.55	2.28	3.12
6280	1" x 4"		250	.032		.95	1.70	2.65	3.61
6290	1" x 6"		250	.032		1.10	1.70	2.80	3.77
6300	1" x 8"		230	.035		1.64	1.85	3.49	4.58
6310	1" x 10"		230	.035		2.16	1.85	4.01	5.15
6312	1" x 12"		210	.038		2.73	2.03	4.76	6.05
6330	Southern yellow, 1-1/4" x 5"		240	.033		3.12	1.77	4.89	6.10
6340	1-1/4" x 6"		240	.033		2.55	1.77	4.32	5.45
6350	1-1/4" x 8"		215	.037		3.83	1.98	5.81	7.20
6360	1-1/4" x 12"		190	.042		6.15	2.24	8.39	10.15
6370	Redwood, clear all heart, 1" x 2"		275	.029		.66	1.55	2.21	3.05
6380	1" x 3"		275	.029		1.22	1.55	2.77	3.66
6390	1" x 4"		250	.032		1.22	1.70	2.92	3.90
6400	1" x 6"		250	.032		1.83	1.70	3.53	4.58
6410	1" x 8"		230	.035		2.43	1.85	4.28	5.45
6420	1" x 10"		230	.035		4.03	1.85	5.88	7.20
6430	1" x 12"		210	.038		4.40	2.03	6.43	7.90
6440	1-1/4" x 5"		240	.033		1.92	1.77	3.69	4.77
6450	1-1/4" x 6"		240	.033		2.29	1.77	4.06	5.20
6460	1-1/4" x 8"		215	.037		3.63	1.98	5.61	6.95
6470	1-1/4" x 12"		190	.042		6.60	2.24	8.84	10.60
6580	Frieze, cedar, rough sawn, 1" x 2"		275	.029		.72	1.55	2.27	3.11
6590	1" x 3"		275	.029		1.07	1.55	2.62	3.50
6600	1" x 4"		250	.032		1.43	1.70	3.13	4.13
6610	1" x 6"		250	.032		2.15	1.70	3.85	4.92
6620	1" x 8"		250	.032		2.86	1.70	4.56	5.70
6630	1" x 10"		225	.036		3.56	1.89	5.45	6.75
6640	1" x 12"		200	.040		4.23	2.13	6.36	7.85
6650	STK, 1" x 2"		275	.029		.44	1.55	1.99	2.80
6660	1" x 3"		275	.029		.48	1.55	2.03	2.85
6670	1" x 4"		250	.032		.85	1.70	2.55	3.50
6680	1" x 6"		250	.032		1.39	1.70	3.09	4.09
6690	1" x 8"		250	.032		2.35	1.70	4.05	5.15
6700	1" x 10"		225	.036		2.86	1.89	4.75	6
6710	1" x 12"		200	.040		4.44	2.13	6.57	8.10
6790	Pine, #2, 1" x 2"		275	.029		.31	1.55	1.86	2.66
6800	1" x 3"		275	.029		.45	1.55	2	2.82
6810	1" x 4"		250	.032		.57	1.70	2.27	3.19
6820	1" x 6"		250	.032		.86	1.70	2.56	3.51

06 22 13 – Standard Pattern Wood Trim

06 22 13.40 Moldings, Exterior		Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total Incl O&P	
					Material	Labor	Equipment		
6830	1" x 8"	1 Carp	.250	.032	L.F.	1.33	1.70	3.03	4.02
6840	1" x 10"		.225	.036		2.04	1.89	3.93	5.10
6850	1" x 12"		.200	.040		2.66	2.13	4.79	6.10
6860	D & better, 1" x 2"		.275	.029		.51	1.55	2.06	2.88
6870	1" x 3"		.275	.029		.73	1.55	2.28	3.12
6880	1" x 4"		.250	.032		.95	1.70	2.65	3.61
6890	1" x 6"		.250	.032		1.10	1.70	2.80	3.77
6900	1" x 8"		.250	.032		1.64	1.70	3.34	4.36
6910	1" x 10"		.225	.036		2.16	1.89	4.05	5.20
6920	1" x 12"		.200	.040		2.73	2.13	4.86	6.20
6930	Redwood, clear all heart, 1" x 2"		.275	.029		.66	1.55	2.21	3.05
6940	1" x 3"		.275	.029		.98	1.55	2.53	3.40
6950	1" x 4"		.250	.032		1.22	1.70	2.92	3.90
6960	1" x 6"		.250	.032		1.83	1.70	3.53	4.58
6970	1" x 8"		.250	.032		2.43	1.70	4.13	5.25
6980	1" x 10"		.225	.036		4.03	1.89	5.92	7.30
6990	1" x 12"		.200	.040		4.40	2.13	6.53	8.05
7000	Grounds, 1" x 1", cedar, rough sawn		.300	.027		.37	1.42	1.79	2.54
7010	STK		.300	.027		.27	1.42	1.69	2.43
7020	Pine, #2		.300	.027		.20	1.42	1.62	2.34
7030	D & better		.300	.027		.31	1.42	1.73	2.48
7050	Redwood		.300	.027		.40	1.42	1.82	2.57
7060	Rake/verge board, cedar, rough sawn, 1" x 2"		.225	.036		.72	1.89	2.61	3.63
7070	1" x 3"		.225	.036		1.07	1.89	2.96	4.02
7080	1" x 4"		.200	.040		1.43	2.13	3.56	4.76
7090	1" x 6"		.200	.040		2.15	2.13	4.28	5.55
7100	1" x 8"		.190	.042		2.86	2.24	5.10	6.50
7110	1" x 10"		.190	.042		3.56	2.24	5.80	7.25
7120	1" x 12"		.180	.044		4.27	2.36	6.63	8.25
7130	STK, 1" x 2"		.225	.036		.44	1.89	2.33	3.32
7140	1" x 3"		.225	.036		.48	1.89	2.37	3.37
7150	1" x 4"		.200	.040		.85	2.13	2.98	4.13
7160	1" x 6"		.200	.040		1.39	2.13	3.52	4.72
7170	1" x 8"		.190	.042		2.35	2.24	4.59	5.95
7180	1" x 10"		.190	.042		2.86	2.24	5.10	6.50
7190	1" x 12"		.180	.044		4.44	2.36	6.80	8.45
7200	Pine, #2, 1" x 2"		.225	.036		.31	1.89	2.20	3.18
7210	1" x 3"		.225	.036		.45	1.89	2.34	3.34
7220	1" x 4"		.200	.040		.57	2.13	2.70	3.82
7230	1" x 6"		.200	.040		.86	2.13	2.99	4.14
7240	1" x 8"		.190	.042		1.33	2.24	3.57	4.82
7250	1" x 10"		.190	.042		2.04	2.24	4.28	5.60
7260	1" x 12"		.180	.044		2.66	2.36	5.02	6.50
7340	D & better, 1" x 2"		.225	.036		.51	1.89	2.40	3.40
7350	1" x 3"		.225	.036		.73	1.89	2.62	3.64
7360	1" x 4"		.200	.040		.95	2.13	3.08	4.24
7370	1" x 6"		.200	.040		1.10	2.13	3.23	4.40
7380	1" x 8"		.190	.042		1.64	2.24	3.88	5.15
7390	1" x 10"		.190	.042		2.16	2.24	4.40	5.75
7400	1" x 12"		.180	.044		2.73	2.36	5.09	6.55
7410	Redwood, clear all heart, 1" x 2"		.225	.036		.66	1.89	2.55	3.57
7420	1" x 3"		.225	.036		.98	1.89	2.87	3.92
7430	1" x 4"		.200	.040		1.22	2.13	3.35	4.53

06 22 Millwork

06 22 13 – Standard Pattern Wood Trim

			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P	
06 22 13.40 Moldings, Exterior			Crew			Labor	Equipment			
7440	1" x 6"		1 Carp	200	.040	LF.	1.83	2.13	3.96	5.20
7450	1" x 8"			190	.042		2.43	2.24	4.67	6.05
7460	1" x 10"			190	.042		4.03	2.24	6.27	7.80
7470	1" x 12"			180	.044		4.40	2.36	6.76	8.40
7480	2" x 4"			200	.040		2.35	2.13	4.48	5.75
7490	2" x 6"			182	.044		3.19	2.34	5.53	7
7500	2" x 8"			165	.048		5.10	2.58	7.68	9.50
7630	Soffit, cedar, rough sawn, 1" x 2"		2 Carp	440	.036		.72	1.93	2.65	3.69
7640	1" x 3"			440	.036		1.07	1.93	3	4.08
7650	1" x 4"			420	.038		1.43	2.03	3.46	4.61
7660	1" x 6"			420	.038		2.15	2.03	4.18	5.40
7670	1" x 8"			420	.038		2.86	2.03	4.89	6.20
7680	1" x 10"			400	.040		3.56	2.13	5.69	7.10
7690	1" x 12"			400	.040		4.27	2.13	6.40	7.90
7700	STK, 1" x 2"			440	.036		.44	1.93	2.37	3.38
7710	1" x 3"			440	.036		.48	1.93	2.41	3.43
7720	1" x 4"			420	.038		.85	2.03	2.88	3.98
7730	1" x 6"			420	.038		1.39	2.03	3.42	4.57
7740	1" x 8"			420	.038		2.35	2.03	4.38	5.65
7750	1" x 10"			400	.040		2.86	2.13	4.99	6.35
7760	1" x 12"			400	.040		4.44	2.13	6.57	8.10
7770	Pine, #2, 1" x 2"			440	.036		.31	1.93	2.24	3.24
7780	1" x 3"			440	.036		.45	1.93	2.38	3.40
7790	1" x 4"			420	.038		.57	2.03	2.60	3.67
7800	1" x 6"			420	.038		.86	2.03	2.89	3.99
7810	1" x 8"			420	.038		1.33	2.03	3.36	4.50
7820	1" x 10"			400	.040		2.04	2.13	4.17	5.45
7830	1" x 12"			400	.040		2.66	2.13	4.79	6.10
7840	D & better, 1" x 2"			440	.036		.51	1.93	2.44	3.46
7850	1" x 3"			440	.036		.73	1.93	2.66	3.70
7860	1" x 4"			420	.038		.95	2.03	2.98	4.09
7870	1" x 6"			420	.038		1.10	2.03	3.13	4.25
7880	1" x 8"			420	.038		1.64	2.03	3.67	4.84
7890	1" x 10"			400	.040		2.16	2.13	4.29	5.55
7900	1" x 12"			400	.040		2.73	2.13	4.86	6.20
7910	Redwood, clear all heart, 1" x 2"			440	.036		.66	1.93	2.59	3.63
7920	1" x 3"			440	.036		.98	1.93	2.91	3.98
7930	1" x 4"			420	.038		1.22	2.03	3.25	4.38
7940	1" x 6"			420	.038		1.83	2.03	3.86	5.05
7950	1" x 8"			420	.038		2.43	2.03	4.46	5.70
7960	1" x 10"			400	.040		4.03	2.13	6.16	7.65
7970	1" x 12"			400	.040		4.40	2.13	6.53	8.05
8050	Trim, crown molding, pine, 11/16" x 4-1/4"		1 Carp	250	.032		4.10	1.70	5.80	7.05
8060	Back band, 11/16" x 1-1/16"			250	.032		.92	1.70	2.62	3.57
8070	Insect screen frame stock, 1-1/16" x 1-3/4"			395	.020		2.24	1.08	3.32	4.08
8080	Dentils, 2-1/2" x 2-1/2" x 4", 6" OC			30	.267		1.27	14.15	15.42	23
8100	Fluted, 5-1/2"			165	.048		5.15	2.58	7.73	9.50
8110	Stucco bead, 1-3/8" x 1-5/8"			250	.032		2.53	1.70	4.23	5.35

06 22 13.45 Moldings, Trim

0010	MOLDINGS, TRIM									
0200	Astragal, stock pine, 11/16" x 1-3/4"		1 Carp	255	.031	LF.	1.26	1.67	2.93	3.89
0250	1-5/16" x 2-3/16"			240	.033		2.65	1.77	4.42	5.60

06 22 Millwork

06 22 13 – Standard Pattern Wood Trim

		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
							Labor	Equipment	Total	
06 22 13.45 Moldings, Trim										
0800	Chair rail, stock pine, 5/8" x 2-1/2"	1 Corp	270	.030	L.F.	1.54	1.57		3.11	4.06
0900	5/8" x 3-1/2"		240	.033	"	2.36	1.77		4.13	5.25
1000	Closet pole, stock pine, 1-1/8" diameter		200	.040	"	1.19	2.13		3.32	4.50
1100	Fir, 1-5/8" diameter		200	.040	"	2.28	2.13		4.41	5.70
3300	Half round, stock pine, 1/4" x 1/2"		270	.030	"	.25	1.57		1.82	2.65
3350	1/2" x 1"		255	.031	"	.64	1.67		2.31	3.20
3400	Handrail, fir, single piece, stock, hardware not included									
3450	1-1/2" x 1-3/4"	1 Corp	80	.100	L.F.	2.24	5.30		7.54	10.45
3470	Pine, 1-1/2" x 1-3/4"		80	.100	"	2.07	5.30		7.37	10.30
3500	1-1/2" x 2-1/2"		76	.105	"	2.59	5.60		8.19	11.25
3600	Lattice, stock pine, 1/4" x 1-1/8"		270	.030	"	.40	1.57		1.97	2.81
3700	1/4" x 1-3/4"		250	.032	"	.72	1.70		2.42	3.35
3800	Miscellaneous, custom, pine, 1" x 1"		270	.030	"	.42	1.57		1.99	2.83
3850	1" x 2"		265	.030	"	.84	1.60		2.44	3.33
3900	1" x 3"		240	.033	"	1.26	1.77		3.03	4.04
4100	Birch or oak, nominal 1" x 1"		240	.033	"	.40	1.77		2.17	3.10
4200	Nominal 1" x 3"		215	.037	"	1.20	1.98		3.18	4.29
4400	Walnut, nominal 1" x 1"		215	.037	"	.65	1.98		2.63	3.69
4500	Nominal 1" x 3"		200	.040	"	1.96	2.13		4.09	5.35
4700	Teak, nominal 1" x 1"		215	.037	"	2.91	1.98		4.89	6.15
4800	Nominal 1" x 3"		200	.040	"	8.75	2.13		10.88	12.80
4900	Quarter round, stock pine, 1/4" x 1/4"		275	.029	"	.29	1.55		1.84	2.64
4950	3/4" x 3/4"		255	.031	"	.54	1.67		2.21	3.09
5600	Wainscot moldings, 1-1/8" x 9/16", 2' high, minimum		76	.105	S.F.	12.70	5.60		18.30	22.50
5700	Maximum		65	.123	"	16.80	6.55		23.35	28.50

06 22 13.50 Moldings, Window and Door

0010	MOLDINGS, WINDOW AND DOOR									
2800	Door moldings, stock, decorative, 1-1/8" wide, plain	1 Corp	17	.471	S.F.	47.50	25		72.50	90
2900	Detailed		17	.471	"	112	25		137	161
2960	Clear pine door jamb, no stops, 11/16" x 4-9/16"		240	.033	L.F.	5.45	1.77		7.22	8.65
3150	Door trim set, 1 head and 2 sides, pine, 2-1/2" wide		12	.667	Opng.	24	35.50		59.50	79
3170	3-1/2" wide		11	.727	"	33	38.50		71.50	94.50
3250	Glass beads, stock pine, 3/8" x 1/2"		275	.029	L.F.	.35	1.55		1.90	2.71
3270	3/8" x 7/8"		270	.030	"	.44	1.57		2.01	2.85
4850	Parting bead, stock pine, 3/8" x 3/4"		275	.029	"	.47	1.55		2.02	2.84
4870	1/2" x 3/4"		255	.031	"	.46	1.67		2.13	3.01
5000	Stool caps, stock pine, 11/16" x 3-1/2"		200	.040	"	2.56	2.13		4.69	6
5100	1-1/16" x 3-1/4"		150	.053	"	3.80	2.83		6.63	8.45
5300	Threshold, oak, 3' long, inside, 5/8" x 3-5/8"		32	.250	Ea.	12.70	13.30		26	34
5400	Outside, 1-1/2" x 7-5/8"		16	.500	"	48	26.50		74.50	93
5900	Window trim sets, including casings, header, stops,									
5910	stool and apron, 2-1/2" wide, FJP	1 Corp	13	.615	Opng.	33	32.50		65.50	85.50
5950	Pine		10	.800	"	39	42.50		81.50	107
6000	Oak		6	1.333	"	79.50	71		150.50	194

06 22 13.60 Moldings, Soffits

0010	MOLDINGS, SOFFITS									
0200	Soffits, pine, 1" x 4"	2 Corp	420	.038	L.F.	.53	2.03		2.56	3.62
0210	1" x 6"		420	.038	"	.82	2.03		2.85	3.94
0220	1" x 8"		420	.038	"	1.29	2.03		3.32	4.45
0230	1" x 10"		400	.040	"	1.97	2.13		4.10	5.35
0240	1" x 12"		400	.040	"	2.60	2.13		4.73	6.05
0250	STK cedar, 1" x 4"		420	.038	"	.81	2.03		2.84	3.93

06 22 Millwork

06 22 13 – Standard Pattern Wood Trim

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
06 22 13.60 Moldings, Soffits		Crew			Labor	Equipment			
0260	1" x 6"	2 Carp	420	.038	L.F.	1.35	2.03		3.38
0270	1" x 8"		420	.038		2.31	2.03		4.34
0280	1" x 10"		400	.040		2.80	2.13		4.93
0290	1" x 12"		400	.040		4.38	2.13		6.51
1000	Exterior AC plywood, 1/4" thick		400	.040	S.F.	.99	2.13		3.12
1050	3/8" thick		400	.040		1.05	2.13		3.18
1100	1/2" thick		400	.040		1.18	2.13		3.31
1150	Polyvinyl chloride, white, solid	1 Carp	230	.035		2.24	1.85		4.09
1160	Perforated	"	230	.035		2.24	1.85		4.09
1170	Accessories, "J" channel 5/8"	2 Carp	700	.023	L.F.	.56	1.22		1.78
									2.45

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.	.50	1.70		2.20
0100	1/4" thick	[G]		500	.032		.58	1.70		2.28
0300	Tempered pegboard, 1/8" thick	[G]		500	.032		.43	1.70		2.13
0400	1/4" thick	[G]		500	.032		.76	1.70		2.46
0600	Untempered hardboard, natural finish, 1/8" thick	[G]		500	.032		.44	1.70		2.14
0700	1/4" thick	[G]		500	.032		.53	1.70		2.23
0900	Untempered pegboard, 1/8" thick	[G]		500	.032		.49	1.70		2.19
1000	1/4" thick	[G]		500	.032		.55	1.70		2.25
1200	Plastic faced hardboard, 1/8" thick	[G]		500	.032		.63	1.70		2.33
1300	1/4" thick	[G]		500	.032		.87	1.70		2.57
1500	Plastic faced pegboard, 1/8" thick	[G]		500	.032		.68	1.70		2.38
1600	1/4" thick	[G]		500	.032		.83	1.70		2.53
1800	Wood grained, plain or grooved, 1/8" thick	[G]		500	.032		.68	1.70		2.38
1900	1/4" thick	[G]		425	.038		1.43	2		3.43
2100	Moldings, wood grained MDF			500	.032	L.F.	.41	1.70		2.11
2200	Pine			425	.038	"	1.40	2		3.40
										4.55

06 25 16 – Prefinished Plywood Paneling

06 25 16.10 Paneling, Plywood

0010 PANELING, PLYWOOD		R061636-20								
2400	Plywood, prefabricated, 1/4" thick, 4' x 8' sheets		2 Carp	500	.032	S.F.	1.69	1.70		3.39
2410	with vertical grooves. Birch faced, economy			420	.038		1.24	2.03		3.27
2420	Average			350	.046		1.08	2.43		3.51
2430	Custom			400	.040		2.43			4.84
2600	Mahogany, African			500	.032		.57	2.13		4.56
2700	Philippine (Lauan)			500	.032		1.36	1.70		2.27
2900	Oak			400	.040		2.03			3.06
3000	Cherry			320	.050		3.08	2.66		4.16
3200	Rosewood			400	.040		3.26			5.74
3400	Teak			375	.043		5.45	2.27		5.39
3600	Chestnut			400	.040		2.57	2.13		7.72
3800	Pecan			500	.032		2.64	1.70		4.70
3900	Walnut, average			400	.040		2.38	2.13		4.34
3950	Custom			320	.050		1.38	2.66		4.51
4000	Plywood, prefabricated, 3/4" thick, stock grades, economy			224	.071		5.20	3.80		9
4100	Average									11.40

06 25 Prefinished Paneling

06 25 16 – Prefinished Plywood Paneling

06 25 16.10 Paneling, Plywood		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
							Labor	Equipment	Total		
4300	Architectural grade, custom	2 Corp	224	.071	S.F.	5.30	3.80		9.10	11.55	
4400	Luxury		160	.100		5.55	5.30		10.85	14.15	
4600	Plywood, "A" face, birch, VC, 1/2" thick, natural		450	.036		1.36	1.89		3.25	4.34	
4700	Select		450	.036		1.95	1.89		3.84	4.99	
4900	Veneer core, 3/4" thick, natural		320	.050		2.29	2.66		4.95	6.50	
5000	Select		320	.050		2.68	2.66		5.34	6.95	
5200	Lumber core, 3/4" thick, natural		320	.050		3.05	2.66		5.71	7.35	
5500	Plywood, knotty pine, 1/4" thick, A2 grade		450	.036		1.62	1.89		3.51	4.62	
5600	A3 grade		450	.036		2.25	1.89		4.14	5.30	
5800	3/4" thick, veneer core, A2 grade		320	.050		2.42	2.66		5.08	6.65	
5900	A3 grade		320	.050		2.49	2.66		5.15	6.75	
6100	Aromatic cedar, 1/4" thick, plywood		400	.040		2.26	2.13		4.39	5.70	
6200	1/4" thick, particle board		400	.040		1.16	2.13		3.29	4.47	

06 25 26 – Panel System

06 25 26.10 Panel Systems

0010	PANEL SYSTEMS									
0100	Raised panel, eng. wood core w/wood veneer, std., paint grade	2 Corp	300	.053	S.F.	13.10	2.83		15.93	18.70
0110	Oak veneer		300	.053		26.50	2.83		29.33	33.50
0120	Maple veneer		300	.053		30	2.83		32.83	37.50
0130	Cherry veneer		300	.053		40	2.83		42.83	49
0300	Class I fire rated, paint grade		300	.053		14	2.83		16.83	19.65
0310	Oak veneer		300	.053		30.50	2.83		33.33	38.50
0320	Maple veneer		300	.053		34.50	2.83		37.33	42.50
0330	Cherry veneer		300	.053		50	2.83		52.83	59.50
0510	Beadboard, 5/8" MDF, standard, primed		300	.053		9.70	2.83		12.53	14.90
0520	Oak veneer, unfinished		300	.053		16	2.83		18.83	22
0530	Maple veneer, unfinished		300	.053		16.50	2.83		19.33	22.50
0610	Rustic paneling, 5/8" MDF, standard, maple veneer, unfinished		300	.053		18.20	2.83		21.03	24.50

06 26 Board Paneling

06 26 13 – Profile Board Paneling

06 26 13.10 Paneling, Boards

0010	PANELING, BOARDS									
6400	Wood board paneling, 3/4" thick, knotty pine	2 Corp	300	.053	S.F.	2.07	2.83		4.90	6.55
6500	Rough sawn cedar		300	.053		3.48	2.83		6.31	8.10
6700	Redwood, clear, 1" x 4" boards		300	.053		5.05	2.83		7.88	9.80
6900	Aromatic cedar, closer lining, boards		275	.058		2.28	3.09		5.37	7.15

06 43 Wood Stairs and Railings

06 43 13 – Wood Stairs

06 43 13.20 Prefabricated Wood Stairs

0010	PREFABRICATED WOOD STAIRS									
0100	Box stairs, prefabricated, 3'-0" wide									
0110	Oak treads, up to 14 risers	2 Corp	39	.410	Riser	98	22		120	141
0600	With pine treads for carpet, up to 14 risers	"	39	.410	"	63.50	22		85.50	103
1100	For 4' wide stairs, add									
1550	Stairs, prefabricated stair handrail with balusters	1 Corp	30	.267	L.F.	83	14.15		97.15	113
1700	Basement stairs, prefabricated, pine treads									
1710	Pine risers, 3' wide, up to 14 risers	2 Corp	52	.308	Riser	63.50	16.35		79.85	94.50

06 43 Wood Stairs and Railings

06 43 13 – Wood Stairs

06 43 13.20 Prefabricated Wood Stairs		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
						Labor	Equipment		
4000	Residential, wood, oak treads, prefabricated	2 Carp	1.50	10.667	Flight	1,275	565	1,840	2,250
4200	Built in place		.44	36.364	"	2,250	1,925	4,175	5,375
4400	Spiral, oak, 4'-6" diameter, unfinished, prefabricated,								
4500	incl. railing, 9' high	2 Carp	1.50	10.667	Flight	2,625	565	3,190	3,725
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.	5.65	4.43	10.08	12.85
0030	38"		96	.083		5.75	4.43	10.18	13
0040	42"		96	.083		6.85	4.43	11.28	14.15
0050	Poplar, 34"		96	.083		3.34	4.43	7.77	10.30
0060	38"		96	.083		5.60	4.43	10.03	12.80
0070	42"		96	.083		5.95	4.43	10.38	13.20
0080	Maple, 34"		96	.083		6	4.43	10.43	13.25
0090	38"		96	.083		5.55	4.43	9.98	12.75
0100	42"		96	.083		7.85	4.43	12.28	15.30
0130	Primed, 34"		96	.083		3.67	4.43	8.10	10.70
0140	38"		96	.083		4.20	4.43	8.63	11.25
0150	42"		96	.083		4.84	4.43	9.27	11.95
0180	Box top balusters, 1-1/4", oak, 34"		60	.133		7.45	7.10	14.55	18.85
0190	38"		60	.133		11.75	7.10	18.85	23.50
0200	42"		60	.133		12.85	7.10	19.95	25
0210	Poplar, 34"		60	.133		7.65	7.10	14.75	19.10
0220	38"		60	.133		8.25	7.10	15.35	19.75
0230	42"		60	.133		9.10	7.10	16.20	20.50
0240	Maple, 34"		60	.133		9.75	7.10	16.85	21.50
0250	38"		60	.133		10.65	7.10	17.75	22.50
0260	42"		60	.133		11.75	7.10	18.85	23.50
0290	Primed, 34"		60	.133		8.20	7.10	15.30	19.65
0300	38"		60	.133		12.05	7.10	19.15	24
0310	42"		60	.133		11.30	7.10	18.40	23
0340	Square balusters, cut from lineal stock, pine, 1-1/16" x 1-1/16"		180	.044	L.F.	1.29	2.36	3.65	4.97
0350	1-5/16" x 1-5/16"		180	.044		1.99	2.36	4.35	5.75
0360	1-5/8" x 1-5/8"		180	.044		2.48	2.36	4.84	6.30
0370	Turned newel, oak, 3-1/2" square, 48" high		8	1	Ea.	94	53	147	183
0380	62" high		8	1		99.50	53	152.50	189
0390	Poplar, 3-1/2" square, 48" high		8	1		46	53	99	131
0400	62" high		8	1		56.50	53	109.50	143
0410	Maple, 3-1/2" square, 48" high		8	1		79	53	132	167
0420	62" high		8	1		79	53	132	167
0430	Square newel, oak, 3-1/2" square, 48" high		8	1		56.50	53	109.50	143
0440	58" high		8	1		65	53	118	152
0450	Poplar, 3-1/2" square, 48" high		8	1		42	53	95	126
0460	58" high		8	1		62	53	115	148
0470	Maple, 3" square, 48" high		8	1		53	53	106	139
0480	58" high		8	1		67	53	120	154
0490	Railings, oak, economy		96	.083	L.F.	9	4.43	13.43	16.55
0500	Average		96	.083		15.10	4.43	19.53	23.50
0510	Custom		96	.083		18.75	4.43	23.18	27
0520	Maple, economy		96	.083		11.70	4.43	16.13	19.55
0530	Average		96	.083		13.25	4.43	17.68	21
0540	Custom		96	.083		22	4.43	26.43	31
0550	Oak, for bending rail, economy		48	.167		26.50	8.85	35.35	42.50

06 43 Wood Stairs and Railings

06 43 13 – Wood Stairs

06 43 13.40 Wood Stair Parts			Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
							Labor	Equipment			
0560	Average		1 Carp	48	.167	L.F.	29.50	8.85		38.35	46
0570	Custom			48	.167		33	8.85		41.85	49.50
0580	Maple, for bending rail, economy			48	.167		29	8.85		37.85	45.50
0590	Average			48	.167		31.50	8.85		40.35	48
0600	Custom			48	.167		36.50	8.85		45.35	53.50
0610	Risers, oak, 3/4" x 8", 36" long			80	.100	Ea.	12.85	5.30		18.15	22
0620	42" long			70	.114		15	6.05		21.05	25.50
0630	48" long			63	.127		17.10	6.75		23.85	29
0640	54" long			56	.143		19.25	7.60		26.85	32.50
0650	60" long			50	.160		21.50	8.50		30	36.50
0660	72" long			42	.190		25.50	10.10		35.60	43.50
0670	Poplar, 3/4" x 8", 36" long			80	.100		13.10	5.30		18.40	22.50
0680	42" long			71	.113		15.25	6		21.25	26
0690	48" long			63	.127		17.45	6.75		24.20	29.50
0700	54" long			56	.143		19.60	7.60		27.20	33
0710	60" long			50	.160		22	8.50		30.50	37
0720	72" long			42	.190		26	10.10		36.10	44
0730	Pine, 1" x 8", 36" long			80	.100		3.86	5.30		9.16	12.25
0740	42" long			70	.114		4.50	6.05		10.55	14.10
0750	48" long			63	.127		5.15	6.75		11.90	15.80
0760	54" long			56	.143		5.80	7.60		13.40	17.75
0770	60" long			50	.160		6.45	8.50		14.95	19.85
0780	72" long			42	.190		7.70	10.10		17.80	23.50
0790	Treads, oak, no returns, 1-1/32" x 11-1/2" x 36" long			32	.250		31.50	13.30		44.80	54.50
0800	42" long			32	.250		36.50	13.30		49.80	60.50
0810	48" long			32	.250		42	13.30		55.30	66
0820	54" long			32	.250		47	13.30		60.30	72
0830	60" long			32	.250		52.50	13.30		65.80	77.50
0840	72" long			32	.250		63	13.30		76.30	89
0850	Mitered return one end, 1-1/32" x 11-1/2" x 36" long			24	.333		38.50	17.70		56.20	68.50
0860	42" long			24	.333		45	17.70		62.70	75.50
0870	48" long			24	.333		51	17.70		68.70	83
0880	54" long			24	.333		57.50	17.70		75.20	90
0890	60" long			24	.333		64	17.70		81.70	97
0900	72" long			24	.333		76.50	17.70		94.20	111
0910	Mitered return two ends, 1-1/32" x 11-1/2" x 36" long			12	.667		45.50	35.50		81	103
0920	42" long			12	.667		53	35.50		88.50	112
0930	48" long			12	.667		61	35.50		96.50	120
0940	54" long			12	.667		68.50	35.50		104	129
0950	60" long			12	.667		76	35.50		111.50	137
0960	72" long			12	.667		91.50	35.50		127	153
0970	Starting step, oak, 48", bullnose			8	1		176	53		229	274
0980	Double end bullnose			8	1		268	53		321	375
1030	Skirt board, pine, 1" x 10"			55	.145	L.F.	1.97	7.75		9.72	13.75
1040	1" x 12"			52	.154	"	2.60	8.20		10.80	15.15
1050	Oak landing tread, 1-1/16" thick			54	.148	S.F.	7.90	7.85		15.75	20.50
1060	Oak cove molding			96	.083	L.F.	.95	4.43		5.38	7.70
1070	Oak stringer molding			96	.083	"	3.68	4.43		8.11	10.70
1090	Rail bolt, 5/16" x 3-1/2"			48	.167	Ea.	3.55	8.85		12.40	17.20
1100	5/16" x 4-1/2"			48	.167		3.04	8.85		11.89	16.65
1120	Newel post anchor			16	.500		12.85	26.50		39.35	54
1130	Tapered plug, 1/2"			240	.033		.95	1.77		2.72	3.71
1140	1"			240	.033		.98	1.77		2.75	3.74

06 43 Wood Stairs and Railings

06 43 16 – Wood Railings

06 43 16.10 Wood Handrails and Railings		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P		
0010	WOOD HANDRAILS AND RAILINGS	Crew			Labor	Equipment				
0020	Custom design, architectural grade, hardwood, plain	1 Corp	38	.211	L.F.	12.60	11.20	23.80	30.50	
0100	Shaped		30	.267		56	14.15	70.15	83	
0300	Stock interior railing with spindles 4" OC, 4' long		40	.200		46.50	10.65	57.15	67	
0400	8' long		↓	48	.167	↓	46.50	8.85	55.35	64.50

06 44 Ornamental Woodwork

06 44 19 – Wood Grilles

06 44 19.10 Grilles

0010	GRILLES and panels, hardwood, sanded	1 Corp	38	.211	S.F.	61	11.20	72.20	84	
0020	2' x 4' to 4' x 8', custom designs, unfinished, economy		30	.267		73.50	14.15	87.65	103	
0050	Average		19	.421		70.50	22.50	93	111	
0100	Custom		↓	3	2.667	↓	815	142	957	1,100

06 44 33 – Wood Mantels

06 44 33.10 Fireplace Mantels

0010	FIREPLACE MANTELS	1 Corp	5	1.600	Opng.	490	85	575	670	
0015	6" molding, 6' x 3'-6" opening, plain, paint grade		5	1.600		640	85	725	835	
0100	Ornate, oak		2	4		1,900	213	2,113	2,425	
0300	Prefabricated pine, colonial type, stock, deluxe		↓	3	2.667	↓	815	142	957	1,100
0400	Economy									

06 44 33.20 Fireplace Mantel Beam

0010	FIREPLACE MANTEL BEAM	1 Corp	36	.222	L.F.	8.80	11.80	20.60	27.50	
0020	Rough texture wood, 4" x 8"		35	.229	"	12.45	12.15	24.60	32	
0100	4" x 10"		5	1.600	Ea.	109	85	194	248	
0300	Laminated hardwood, 2-1/4" x 10-1/2" wide, 6' long		5	1.600	"	162	85	247	305	
0400	8' long		↓	12	.667	Pr.	11.50	35.50	47	65.50
0600	Brackets for above, rough sawn			12	.667	"	22.50	35.50	58	77.50
0700	Laminated			↓						

06 44 39 – Wood Posts and Columns

06 44 39.10 Decorative Beams

0010	DECORATIVE BEAMS	2 Corp	180	.089	L.F.	1.61	4.72	6.33	8.85	
0020	Rough sawn cedar, non-load bearing, 4" x 4"		170	.094		1.84	5	6.84	9.50	
0100	4" x 6"		160	.100		2.44	5.30	7.74	10.70	
0200	4" x 8"		150	.107		4.66	5.65	10.31	13.65	
0300	4" x 10"		140	.114		5.50	6.05	11.55	15.20	
0400	4" x 12"		↓	130	.123	↓	5	6.55	11.55	15.35
0500	8" x 8"									

06 44 39.20 Columns

0010	COLUMNS	2 Corp	80	.200	V.L.F.	21.50	10.65	32.15	40
0050	Aluminum, round colonial, 6" diameter		62.25	.257		20.50	13.65	34.15	43
0100	8" diameter		55	.291		24.50	15.45	39.95	50
0200	10" diameter		80	.200		31	10.65	41.65	50
0250	Fir, stock units, hollow round, 6" diameter		80	.200		36.50	10.65	47.15	56.50
0300	8" diameter		70	.229		45.50	12.15	57.65	68.50
0350	10" diameter		65	.246		65	13.10	78.10	91
0360	12" diameter		80	.200		11.30	10.65	21.95	28.50
0400	Solid turned, to 8' high, 3-1/2" diameter		75	.213		14.30	11.35	25.65	33
0500	4-1/2" diameter		70	.229		19.75	12.15	31.90	40
0600	5-1/2" diameter								

06 44 Ornamental Woodwork

06 44 39 – Wood Posts and Columns

06 44 39.20 Columns			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P	
			Crew	V.L.F.		Labor	Equipment	Total		
0800	Square columns, built-up, 5" x 5"		2 Corp	.65	.246		34.50	13.10	47.60	57.50
0900	Solid, 3-1/2" x 3-1/2"			130	.123		11.95	6.55	18.50	23
1600	Hemlock, tapered, T&G, 12" diam., 10' high			100	.160		48	8.50	56.50	65.50
1700	16' high			65	.246		82.50	13.10	95.60	110
1900	14" diameter, 10' high			100	.160		102	8.50	110.50	125
2000	18" high			65	.246		102	13.10	115.10	132
2200	18" diameter, 12' high			65	.246		204	13.10	217.10	245
2300	20' high			50	.320		125	17	142	164
2500	20" diameter, 14' high			40	.400		201	21.50	222.50	253
2600	20' high		↓	35	.457		188	24.50	212.50	243
2800	For flat pilasters, deduct					↓	33%			
3000	For splitting into halves, add					Ea.	130		130	143
4000	Rough sawn cedar posts, 4" x 4"		2 Corp	250	.064	V.L.F.	4.61	3.40	8.01	10.15
4100	4" x 6"			235	.068		8.55	3.62	12.17	14.85
4200	6" x 6"			220	.073		13.10	3.87	16.97	20
4300	8" x 8"			200	.080		21	4.25	25.25	29.50

06 48 Wood Frames

06 48 13 – Exterior Wood Door Frames

06 48 13.10 Exterior Wood Door Frames and Accessories

0010 EXTERIOR WOOD DOOR FRAMES AND ACCESSORIES			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P	
			Crew	V.L.F.		Labor	Equipment	Total		
0400	Exterior frame, incl. ext. trim, pine, 5/4 x 4-9/16" deep		2 Corp	375	.043	V.L.F.	6.90	2.27	9.17	11
0420	5-3/16" deep			375	.043		8.05	2.27	10.32	12.25
0440	6-9/16" deep			375	.043		10	2.27	12.27	14.40
0600	Oak, 5/4 x 4-9/16" deep			350	.046		12.30	2.43	14.73	17.15
0620	5-3/16" deep			350	.046		13.50	2.43	15.93	18.50
0640	6-9/16" deep			350	.046		21	2.43	23.43	26.50
1000	Sills, 8/4 x 8" deep, oak, no horns			100	.160		8.85	8.50	16.85	22
1020	2" horns			100	.160		21.50	8.50	30	36.50
1040	3" horns			100	.160		21.50	8.50	30	36.50
1100	8/4 x 10" deep, oak, no horns			90	.178		6.85	9.45	16.30	21.50
1120	2" horns			90	.178		27.50	9.45	36.95	44.50
1140	3" horns			90	.178	↓	27.50	9.45	36.95	44.50
2000	Wood frame & trim, ext., colonial, 3' opng., fluted pilasters, flat head			22	.727	Ea.	510	38.50	548.50	620
2010	Dentil head			21	.762		620	40.50	660.50	745
2020	Ram's head			20	.800		735	42.50	777.50	870
2100	5'-4" opening, in-swing, fluted pilasters, flat head			17	.941		485	50	535	610
2120	Ram's head			15	1.067		1,325	56.50	1,381.50	1,550
2140	Out-swing, fluted pilasters, flat head			17	.941		480	50	530	605
2160	Ram's head			15	1.067		1,550	56.50	1,606.50	1,775
2400	6'-0" opening, in-swing, fluted pilasters, flat head			16	1		490	53	543	615
2420	Ram's head			10	1.600		1,525	85	1,610	1,800
2460	Out-swing, fluted pilasters, flat head			16	1		485	53	538	615
2480	Ram's head			10	1.600	↓	1,525	85	1,610	1,800
2600	For two sidelights, flat head, add			30	.533	Opng.	330	28.50	358.50	410
2620	Ram's head, add			20	.800	"	865	42.50	907.50	1,025
2700	Custom birch frame, 3'-0" opening			16	1	Ea.	246	53	299	350
2750	6'-0" opng.			16	1		395	53	448	515
2900	Exterior, modern, plain trim, 3' opng., in-swing, FJP			26	.615		55	32.50	87.50	110
2920	Fir			24	.667		59	35.50	94.50	118
2940	Oak		↓	22	.727	↓	68.50	38.50	107	134

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	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
0010	INTERIOR WOOD DOOR JAMB AND FRAMES									
3000	Interior frame, pine, 11/16" x 3-5/8" deep	2 Corp	375	.043	L.F.	4.27	2.27		6.54	8.10
3020	4-9/16" deep		375	.043		5.40	2.27		7.67	9.35
3200	Oak, 11/16" x 3-5/8" deep		350	.046		2.53	2.43		4.96	6.45
3220	4-9/16" deep		350	.046		10.45	2.43		12.88	15.10
3240	5-3/16" deep		350	.046		18.60	2.43		21.03	24
3400	Walnut, 11/16" x 3-5/8" deep		350	.046		9.75	2.43		12.18	14.35
3420	4-9/16" deep		350	.046		12.10	2.43		14.53	16.95
3440	5-3/16" deep		350	.046		9.95	2.43		12.38	14.60
3600	Pocket door frame		16	1	Ea.	113	53		166	204
3800	Threshold, oak, 5/8" x 3-5/8" deep		200	.080	L.F.	3.73	4.25		7.98	10.50
3820	4-5/8" deep		190	.084		4.25	4.48		8.73	11.40
3840	5-5/8" deep	↓	180	.089	↓	6.80	4.72		11.52	14.60

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, 1-1/4" wide, 3'-0" long	1 Corp	10	.800	Pr.	219	42.50		261.50	305
0400	6'-8" long		9	.889		390	47		437	500
1000	Pine, louvered, primed, each 1'-2" wide, 3'-3" long		10	.800		263	42.50		305.50	355
1100	4'-7" long		10	.800		305	42.50		347.50	400
1500	Each 1'-6" wide, 3'-3" long		10	.800		294	42.50		336.50	390
1600	4'-7" long		10	.800		405	42.50		447.50	510
1620	Cedar, louvered, 1'-2" wide, 5'-7" long		10	.800		360	42.50		402.50	460
1630	Each 1'-4" wide, 2-1/2" long		10	.800		195	42.50		237.50	278
1670	4'-3" long		10	.800		345	42.50		387.50	445
1690	5'-11" long		10	.800		455	42.50		497.50	565
1700	Door blinds, 6'-9" long, each 1'-3" wide		9	.889		500	47		547	620
1710	1'-6" wide		9	.889		455	47		502	575
1720	Cedar, solid raised panel, each 1'-4" wide, 3'-3" long		10	.800		375	42.50		417.50	475
1740	4'-3" long		10	.800		370	42.50		412.50	470
1770	5'-11" long		10	.800		590	42.50		632.50	715
1800	Door blinds, 6'-9" long, each 1'-3" wide		9	.889		515	47		562	635
1900	1'-6" wide		9	.889		770	47		817	920
2500	Polystyrene, solid raised panel, each 1'-4" wide, 3'-3" long		10	.800		89	42.50		131.50	162
2700	4'-7" long		10	.800		106	42.50		148.50	181
4500	Polystyrene, louvered, each 1'-2" wide, 3'-3" long		10	.800		37.50	42.50		80	105
4750	5'-3" long		10	.800		58	42.50		100.50	128
6000	Vinyl, louvered, each 1'-2" x 4'-7" long		10	.800		67	42.50		109.50	138
6200	Each 1'-4" x 6'-8" long	↓	9	.889	↓	89	47		136	169

06 51 Structural Plastic Shapes and Plates

06 51 13 – Plastic Lumber

06 51 13.10 Recycled Plastic Lumber

		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Ind O&P
0010	RECYCLED PLASTIC LUMBER									
4000	Sheeting, recycled plastic, black or white, 4' x 8' x 1/8"	[G]	2 Carp.	1100	.015	S.F.	1.05	.77	1.82	2.32
4010	4' x 8' x 3/16"	[G]		1100	.015		1.46	.77	2.23	2.77
4020	4' x 8' x 1/4"	[G]		950	.017		1.62	.90	2.52	3.12
4030	4' x 8' x 3/8"	[G]		950	.017		2.80	.90	3.70	4.42
4040	4' x 8' x 1/2"	[G]		900	.018		3.74	.95	4.69	5.55
4050	4' x 8' x 5/8"	[G]		900	.018		6.95	.95	7.90	9.05
4060	4' x 8' x 3/4"	[G]		850	.019		8.10	1	9.10	10.40
4070	Add for colors	[G]			Ea.	5%				
8500	100% recycled plastic, var colors, NLB, 2" x 2"	[G]			L.F.	1.89			1.89	2.08
8510	2" x 4"	[G]					3.96		3.96	4.36
8520	2" x 6"	[G]					6.20		6.20	6.85
8530	2" x 8"	[G]					8.80		8.80	9.65
8540	2" x 10"	[G]					12.45		12.45	13.70
8550	5/4" x 4"	[G]					4.32		4.32	4.75
8560	5/4" x 6"	[G]					5.90		5.90	6.50
8570	1" x 6"	[G]					2.90		2.90	3.19
8580	1/2" x 8"	[G]					3.41		3.41	3.75
8590	2" x 10" T&G	[G]					12.60		12.60	13.85
8600	3" x 10" T&G	[G]					19.80		19.80	22
8610	Add for premium colors	[G]				20%				

06 51 13.12 Structural Plastic Lumber

		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Ind O&P
0010	STRUCTURAL PLASTIC LUMBER									
1320	Plastic lumber, posts or columns, 4" x 4"	2 Carp.	390	.041	L.F.	10.95	2.18		13.13	15.35
1325	4" x 6"		275	.058		14.45	3.09		17.54	20.50
1330	4" x 8"		220	.073		21	3.87		24.87	29.50
1340	Girder, single, 4" x 4"		675	.024		10.95	1.26		12.21	13.95
1345	4" x 6"		600	.027		14.45	1.42		15.87	18.05
1350	4" x 8"		525	.030		21	1.62		22.62	26
1352	Double, 2" x 4"		625	.026		9.55	1.36		10.91	12.60
1354	2" x 6"		600	.027		10.45	1.42		11.87	13.65
1356	2" x 8"		575	.028		18.30	1.48		19.78	22
1358	2" x 10"		550	.029		22.50	1.55		24.05	27.50
1360	2" x 12"		525	.030		26	1.62		27.62	31
1362	Triple, 2" x 4"		575	.028		14.35	1.48		15.83	18
1364	2" x 6"		550	.029		15.70	1.55		17.25	19.55
1366	2" x 8"		525	.030		27.50	1.62		29.12	32.50
1368	2" x 10"		500	.032		34	1.70		35.70	40
1370	2" x 12"		475	.034		38.50	1.79		40.29	45
1372	Ledger, bolted 4' OC, 2" x 4"		400	.040		4.94	2.13		7.07	8.65
1374	2" x 6"		550	.029		5.30	1.55		6.85	8.15
1376	2" x 8"		390	.041		9.30	2.18		11.48	13.50
1378	2" x 10"		385	.042		11.40	2.21		13.61	15.85
1380	2" x 12"		380	.042		13	2.24		15.24	17.65
1382	Joists, 2" x 4"		1250	.013		4.79	.68		5.47	6.25
1384	2" x 6"		1250	.013		5.25	.68		5.93	6.75
1386	2" x 8"		1100	.015		9.15	.77		9.92	11.20
1388	2" x 10"		500	.032		11.45	1.70		13.15	15.10
1390	2" x 12"		875	.018		12.90	.97		13.87	15.65
1392	Railings and trim, 5/4" x 4"	1 Carp.	300	.027		4.90	1.42		6.82	7.55
1394	2" x 2"		300	.027		2.20	1.42		3.62	4.55
1396	2" x 4"		300	.027		4.76	1.42		6.18	7.40

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	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
1398	2" x 6"	1 Carp	300	.027	L.F.	5.20	1.42			6.62	7.85

06 52 Plastic Structural Assemblies

06 52 10 – Fiberglass Structural Assemblies

06 52 10.10 Castings, Fiberglass

0010 CASTINGS, FIBERGLASS		2 Swk	240	.067	L.F.	1.77	3.84			5.61	8
0100	Angle, 1" x 1" x 1/8" thick										
0120	3" x 3" x 1/4" thick		200	.080		7.60	4.61			12.21	15.60
0140	4" x 4" x 1/4" thick		200	.080		9.30	4.61			13.91	17.50
0160	4" x 4" x 3/8" thick		200	.080		11.15	4.61			15.76	19.55
0180	6" x 6" x 1/2" thick		160	.100		26	5.75			31.75	37.50
1000	Flat sheet, 1/8" thick		140	.114	S.F.	6.10	6.60			12.70	17.05
1020	1/4" thick		120	.133		9.80	7.70			17.50	23
1040	3/8" thick		100	.160		15.65	9.20			24.85	31.50
1060	1/2" thick		80	.200		21.50	11.55			33.05	41.50
2000	Handrail, 42" high, 2" diam. rails pickets 5' OC		32	.500	L.F.	57.50	29			86.50	108
3000	Round bar, 1/4" diam.		240	.067		.46	3.84			4.30	6.55
3020	1/2" diam.		200	.080		1.26	4.61			5.87	8.65
3040	3/4" diam.		200	.080		3.12	4.61			7.73	10.70
3060	1" diam.		160	.100		5.35	5.75			11.10	14.90
3080	1-1/4" diam.		160	.100		10.10	5.75			15.85	20
3100	1-1/2" diam.		140	.114		11.10	6.60			17.70	22.50
3500	Round tube, 1" diam. x 1/8" thick		240	.067		2.83	3.84			6.67	9.15
3520	2" diam. x 1/4" thick		200	.080		8.15	4.61			12.76	16.20
3540	3" diam. x 1/4" thick		160	.100		11.50	5.75			17.25	21.50
4000	Square bar, 1/2" square		240	.067		4.45	3.84			8.29	10.95
4020	1" square		200	.080		6	4.61			10.61	13.85
4040	1-1/2" square		160	.100		11.15	5.75			16.90	21.50
4500	Square tube, 1" x 1" x 1/8" thick		240	.067		3.32	3.84			7.16	9.70
4520	2" x 2" x 1/8" thick		200	.080		5.50	4.61			10.11	13.30
4540	3" x 3" x 1/4" thick		160	.100		13.40	5.75			19.15	24
5000	Threaded rod, 3/8" diam.		320	.050		4.78	2.88			7.66	9.75
5020	1/2" diam.		320	.050		5.55	2.88			8.43	10.60
5040	5/8" diam.		280	.057		6	3.29			9.29	11.75
5060	3/4" diam.		280	.057		7.20	3.29			10.49	13.10
6000	Wide flange beam, 4" x 4" x 1/4" thick		120	.133		11.25	7.70			18.95	24.50
6020	6" x 6" x 1/4" thick		100	.160		17.95	9.20			27.15	34
6040	8" x 8" x 3/8" thick		80	.200		38.50	11.55			50.05	60.50

06 52 10.20 Fiberglass Stair Treads

0010 FIBERGLASS STAIR TREADS		2 Swk	52	.308	Ea.	37.50	17.75			55.25	69
0100	24" wide										
0140	30" wide		52	.308		46.50	17.75			64.25	79
0180	36" wide		52	.308		56	17.75			73.75	89.50
0220	42" wide		52	.308		65	17.75			82.75	99.50

06 52 10.30 Fiberglass Grating

0010 FIBERGLASS GRATING		2 Swk	400	.040	S.F.	7.30	2.31			9.61	11.65
0100	Molded, green (for mod. corrosive environment)										
0140	1" x 4" mesh, 1" thick		400	.040		16.40	2.31			18.71	21.50
0180	1-1/2" square mesh, 1" thick		400	.040		9.10	2.31			11.41	13.65
0220	1-1/4" thick		400	.040							

06 52 Plastic Structural Assemblies

06 52 10 – Fiberglass Structural Assemblies

06 52 10.30 Fiberglass Grating

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Ind O&P
		Crew			Labor	Equipment			
0260	1-1/2" thick	2 Sswk	400	.040	S.F.	24	2.31	26.31	30
0300	2" square mesh, 2" thick	↓	320	.050	↓	27	2.88	29.88	34.50
1000	Orange (for highly corrosive environment)								
1040	1" x 4" mesh, 1" thick	2 Sswk	400	.040	S.F.	17.85	2.31	20.16	23
1080	1-1/2" square mesh, 1" thick	↓	400	.040	↓	19.70	2.31	22.01	25
1120	1-1/4" thick		400	.040		18.55	2.31	20.86	24
1160	1-1/2" thick		400	.040		21	2.31	23.31	26.50
1200	2" square mesh, 2" thick	↓	320	.050	↓	21	2.88	23.88	27.50
3000	Pultruded, green (for mod. corrosive environment)								
3040	1" OC bar spacing, 1" thick	2 Sswk	400	.040	S.F.	14.35	2.31	16.66	19.35
3080	1-1/2" thick	↓	320	.050	↓	16.10	2.88	18.98	22
3120	1-1/2" OC bar spacing, 1" thick		400	.040		14.95	2.31	17.26	20
3160	1-1/2" thick		400	.040		21.50	2.31	23.81	27
4000	Grating support legs, fixed height, no base				Ea.	45.50		45.50	50
4040	With base					38.50		38.50	42.50
4080	Adjustable to 60"				↓	58		58	63.50

06 52 10.40 Fiberglass Floor Grating

0010 FIBERGLASS FLOOR GRATING

0100	Reinforced polyester, fire retardant, 1" x 4" grid, 1" thick	E-4	510	.063	S.F.	14.55	3.65	.29	18.49	22
0200	1-1/2" x 6" mesh, 1-1/2" thick		500	.064		16.80	3.72	.29	20.81	24.50
0300	With grit surface, 1-1/2" x 6" grid, 1-1/2" thick	↓	500	.064	↓	17.15	3.72	.29	21.16	25

06 63 Plastic Railings

06 63 10 – Plastic (PVC) Railings

06 63 10.10 Plastic Railings

0010	PLASTIC RAILINGS									
0100	Horizontal PVC handrail with balusters, 3-1/2" wide, 36" high	1 Carp	96	.083	L.F.	30	4.43		34.43	39.50
0150	42" high		96	.083		29	4.43		33.43	38
0200	Angled PVC handrail with balusters, 3-1/2" wide, 36" high		72	.111		20.50	5.90		26.40	31.50
0250	42" high		72	.111		30.50	5.90		36.40	42.50
0300	Post sleeve for 4 x 4 post		96	.083	↓	16.45	4.43		20.88	25
0400	Post cap for 4 x 4 post, flat profile		48	.167	Ea.	15.55	8.85		24.40	30.50
0450	Newel post style profile		48	.167		28.50	8.85		37.35	45
0500	Raised corbeled profile		48	.167		35	8.85		43.85	52.50
0550	Post base trim for 4 x 4 post	↓	96	.083	↓	20.50	4.43		24.93	29

06 65 Plastic Trim

06 65 10 – PVC Trim

06 65 10.10 PVC Trim, Exterior

0010	PVC TRIM, EXTERIOR									
0100	Cornerboards, 5/4" x 6" x 6"	1 Carp	240	.033	L.F.	8.50	1.77		10.27	12
0110	Door/window casing, 1" x 4"		200	.040		2.09	2.13		4.22	5.50
0120	1" x 6"		200	.040		2.60	2.13		4.73	6.05
0130	1" x 8"		195	.041		3.43	2.18		5.61	7.05
0140	1" x 10"		195	.041		4.50	2.18		6.68	8.25
0150	1" x 12"		190	.042		5.10	2.24		7.34	8.95
0160	5/4" x 4"		195	.041		2.48	2.18		4.66	6
0170	5/4" x 6"		195	.041		3.74	2.18		5.92	7.40
0180	5/4" x 8"		190	.042		4.75	2.24		6.99	8.55

06 65 Plastic Trim

06 65 10 – PVC Trim

06 65 10.10 PVC Trim, Exterior		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
						Labor	Equipment	Total	
0190	5/4" x 10"	1 Corp	190	.042	L.F.	5.95	2.24	8.19	9.90
0200	5/4" x 12"		185	.043		6.75	2.30	9.05	10.85
0210	Fascia, 1" x 4"		250	.032		2.09	1.70	3.79	4.86
0220	1" x 6"		250	.032		2.60	1.70	4.30	5.40
0230	1" x 8"		225	.036		3.43	1.89	5.32	6.60
0240	1" x 10"		225	.036		4.50	1.89	6.39	7.80
0250	1" x 12"		200	.040		5.10	2.13	7.23	8.80
0260	5/4" x 4"		240	.033		2.48	1.77	4.25	5.40
0270	5/4" x 6"		240	.033		3.74	1.77	5.51	6.75
0280	5/4" x 8"		215	.037		4.75	1.98	6.73	8.15
0290	5/4" x 10"		215	.037		5.95	1.98	7.93	9.50
0300	5/4" x 12"		190	.042		6.75	2.24	8.99	10.75
0310	Frieze, 1" x 4"		250	.032		2.09	1.70	3.79	4.86
0320	1" x 6"		250	.032		2.60	1.70	4.30	5.40
0330	1" x 8"		225	.036		3.43	1.89	5.32	6.60
0340	1" x 10"		225	.036		4.50	1.89	6.39	7.80
0350	1" x 12"		200	.040		5.10	2.13	7.23	8.80
0360	5/4" x 4"		240	.033		2.48	1.77	4.25	5.40
0370	5/4" x 6"		240	.033		3.74	1.77	5.51	6.75
0380	5/4" x 8"		215	.037		4.75	1.98	6.73	8.15
0390	5/4" x 10"		215	.037		5.95	1.98	7.93	9.50
0400	5/4" x 12"		190	.042		6.75	2.24	8.99	10.75
0410	Rake, 1" x 4"		200	.040		2.09	2.13	4.22	5.50
0420	1" x 6"		200	.040		2.60	2.13	4.73	6.05
0430	1" x 8"		190	.042		3.43	2.24	5.67	7.15
0440	1" x 10"		190	.042		4.50	2.24	6.74	8.30
0450	1" x 12"		180	.044		5.10	2.36	7.46	9.15
0460	5/4" x 4"		195	.041		2.48	2.18	4.66	6
0470	5/4" x 6"		195	.041		3.74	2.18	5.92	7.40
0480	5/4" x 8"		185	.043		4.75	2.30	7.05	8.65
0490	5/4" x 10"		185	.043		5.95	2.30	8.25	10
0500	5/4" x 12"		175	.046		6.75	2.43	9.18	11.05
0510	Rake trim, 1" x 4"		225	.036		2.09	1.89	3.98	5.15
0520	1" x 6"		225	.036		2.60	1.89	4.49	5.70
0560	5/4" x 4"		220	.036		2.48	1.93	4.41	5.65
0570	5/4" x 6"		220	.036		3.74	1.93	5.67	7
0610	Soffit, 1" x 4"	2 Corp	420	.038		2.09	2.03	4.12	5.35
0620	1" x 6"		420	.038		2.60	2.03	4.63	5.90
0630	1" x 8"		420	.038		3.43	2.03	5.46	6.80
0640	1" x 10"		400	.040		4.50	2.13	6.63	8.15
0650	1" x 12"		400	.040		5.10	2.13	7.23	8.80
0660	5/4" x 4"		410	.039		2.48	2.07	4.55	5.85
0670	5/4" x 6"		410	.039		3.74	2.07	5.81	7.25
0680	5/4" x 8"		410	.039		4.75	2.07	6.82	8.30
0690	5/4" x 10"		390	.041		5.95	2.18	8.13	9.85
0700	5/4" x 12"		390	.041		6.75	2.18	8.93	10.70

06 73 Composite Decking

06 73 13 - Composite Decking

06 73 13.10 Woodgrained Composite Decking		Crew	Daily Output	Labor Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
0010	WOODGRAINED COMPOSITE DECKING									
0100	Woodgrained composite decking, 1" x 6"	2 Carp	640	.025	L.F.	3.48	1.33	4.81	4.81	5.85
0110	Grooved edge		660	.024		4.39	1.29		5.68	6.75
0120	2" x 6"		640	.025		4.02	1.33		5.35	6.40
0130	Enclosed, 1" x 6"		640	.025		4.71	1.33		6.04	7.20
0140	Grooved edge		660	.024		4.66	1.29		5.95	7.05
0150	2" x 6"		640	.025		5.45	1.33		6.78	8

06 81 Composite Railings

06 81 10 - Encased Railings

06 81 10.10 Encased Composite Railings

06 81 10.10 Encased Composite Railings		Crew	Daily Output	Labor Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
0010	ENCASED COMPOSITE RAILINGS									
0100	Encased composite railing, 6' long, 36" high, incl. balusters	1 Carp	16	.500	Ea.	146	26.50		172.50	200
0110	42" high, incl. balusters		16	.500		225	26.50		251.50	287
0120	8' long, 36" high, incl. balusters		12	.667		170	35.50		205.50	239
0130	42" high, incl. balusters		12	.667		178	35.50		213.50	249
0140	Accessories, post sleeve, 4" x 4", 39" long		32	.250		30	13.30		43.30	53
0150	96" long		24	.333		76	17.70		93.70	111
0160	6" x 6", 39" long		32	.250		53.50	13.30		66.80	78.50
0170	96" long		24	.333		159	17.70		176.70	202
0180	Accessories, post skirt, 4" x 4"		96	.083		5.75	4.43		10.18	12.95
0190	6" x 6"		96	.083		8.05	4.43		12.48	15.50
0200	Post cap, 4" x 4", flat		48	.167		9.15	8.85		18	23.50
0210	Pyramid		48	.167		7.95	8.85		16.80	22
0220	Post cap, 6" x 6", flat		48	.167		14.25	8.85		23.10	29
0230	Pyramid		48	.167		10.85	8.85		19.70	25.50

Division Notes

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 caulks 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		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Incl O&P
0010	ROOF COATINGS				Gal.	9.50			9.50	10.45
0012	Asphalt, brush grade, material only				Gal.	9.40			9.40	10.35
0200	Asphalt base, fibered aluminum coating				Gal.	7.15			7.15	7.85
0300	Asphalt primer, 5 gal.				Ton	1,225			1,225	1,350
0600	Coal tar pitch, 200 lb. barrels				Gal.	16.15			16.15	17.75
0700	Tar roof cement, 5 gal. lots				"	9.40			9.40	10.35
0800	Glass fibered roof & patching cement, 5 gal.				Ea.	61			61	67
0900	Reinforcing glass membrane, 450 S.F./roll				Gal.	32.50			32.50	35.50
1000	Neoprene roof coating, 5 gal., 2 gal./sq.				"	8.90			8.90	9.75
1100	Roof patch & flashing cement, 5 gal.				Gal.	9.35			9.35	10.25
1200	Roof resaturant, glass fibered, 3 gal./sq.									

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.	.02	.17	.02	.21	.29
0114	3/8" wide x 3/4" deep, with single saw blade		4000	.004		.03	.20	.03	.26	.35
0116	1/2" wide x 1" deep, with double saw blades		3600	.004		.06	.22	.03	.31	.42
0118	3/4" wide x 1-1/2" deep, with double saw blades		3200	.005		.11	.25	.03	.39	.53
0120	Step 2: Water blast joint faces and edges	C-29	2500	.003			.13	.04	.17	.24
0130	Step 3: Air blast joint faces and edges	C-28	2000	.004			.20	.02	.22	.31
0140	Step 4: Sand blast joint faces and edges	E-11	2000	.016			.75	.15	.90	1.34
0150	Step 5: Air blast joint faces and edges	C-28	2000	.004			.20	.02	.22	.31
0200	Option 2 for joints with soft pliable sealant									
0210	Step 1: Plow joint with rectangular blade	B-62	2600	.009	L.F.		.42	.07	.49	.71
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	.33	.05	.40	.56
0224	3/8" wide x 3/4" deep, with single saw blade		2000	.008		.04	.40	.06	.50	.69
0226	1/2" wide x 1" deep, with double saw blades		1800	.009		.07	.44	.06	.57	.80
0228	3/4" wide x 1-1/2" deep, with double saw blades		1600	.010		.15	.50	.07	.72	.98
0230	Step 3: Water blast joint faces and edges	C-29	2500	.003			.13	.04	.17	.24
0240	Step 4: Air blast joint faces and edges	C-28	2000	.004			.20	.02	.22	.31
0250	Step 5: Sand blast joint faces and edges	E-11	2000	.016			.75	.15	.90	1.34
0260	Step 6: Air blast joint faces and edges	C-28	2000	.004			.20	.02	.22	.31
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 Protection

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	R024119-10	1 Club	.600	.013	L.F.		.56	.56	.84
0020	Caulking/sealant, to 1" x 1" joint			350	.023	"		.96	.96	1.45
0120	Downspouts, including hangers			290	.028	S.F.		1.16	1.16	1.75
0220	Flashing, sheet metal			240	.033	L.F.		1.40	1.40	2.11
0420	Gutters, aluminum or wood, edge hung			100	.080	"		3.37	3.37	5.05
0520	Built-in			3500	.002	S.F.		.10	.10	.14
0620	Insulation, air/vapor barrier									

07 05 Common Work Results for Thermal and Moisture Protection

07 05 05 – Selective Demolition for Thermal and Moisture Protection

07 05 05.10 Selective Demo., Thermal and Moist. Protection	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs			Total
					Labor	Equipment	Total	
0670 Batts or blankets	1 Clab	1400	.006	C.F.	.24		.24	.36
0720 Foamed or sprayed in place	2 Clab	1000	.016	B.F.	.67		.67	1.01
0770 Loose fitting	1 Clab	3000	.003	C.F.	.11		.11	.17
0870 Rigid board		3450	.002	B.F.	.10		.10	.15
1120 Roll roofing, cold adhesive		12	.667	Sq.	28		28	42
1170 Roof accessories, adjustable metal chimney flashing		9	.889	Ea.	37.50		37.50	56
1325 Plumbing vent flashing		32	.250	"	10.55		10.55	15.80
1375 Ridge vent strip, aluminum		310	.026	L.F.	1.09		1.09	1.63
1620 Skylight to 10 S.F.		8	1	Ea.	42		42	63.50
2120 Roof edge, aluminum soffit and fascia		570	.014	L.F.	.59		.59	.89
2170 Concrete coping, up to 12" wide	2 Clab	160	.100		4.21		4.21	6.35
2220 Drip edge	1 Clab	1000	.008		.34		.34	.51
2270 Gravel stop		950	.008		.35		.35	.53
2370 Sheet metal coping, up to 12" wide	↓	240	.033	▼	1.40		1.40	2.11
2470 Roof insulation board, over 2" thick	B-2	7800	.005	B.F.	.22		.22	.33
2520 Up to 2" thick	"	3900	.010	S.F.	.44		.44	.66
2620 Roof ventilation, louvered gable vent	1 Clab	16	.500	Ea.	21		21	31.50
2670 Remove, roof hatch	G-3	15	2.133		111		111	168
2675 Rafter vents	1 Clab	960	.008		.35		.35	.53
2720 Soffit vent and/or fascia vent		575	.014	L.F.	.59		.59	.88
2775 Soffit vent strip, aluminum, 3" to 4" wide		160	.050		2.11		2.11	3.16
2820 Roofing accessories, shingle moulding, to 1" x 4"	↓	1600	.005		.21		.21	.32
2870 Cant strip	B-2	2000	.020		.85		.85	1.28
2920 Concrete block walkway	1 Clab	230	.035	↓	1.46		1.46	2.20
3070 Roofing, felt paper, #15		70	.114	Sq.	4.81		4.81	7.25
3125 #30 felt	~	30	.267	"	11.25		11.25	16.85
3170 Asphalt shingles, 1 layer	B-2	3500	.011	S.F.	.49		.49	.73
3180 2 layers		1750	.023	"	.97		.97	1.46
3370 Modified bitumen		26	1.538	Sq.	65.50		65.50	98
3420 Built-up, no gravel, 3 ply		25	1.600		68		68	102
3470 4 ply		21	1.905	▼	81		81	122
3620 5 ply		1600	.025	S.F.	1.06		1.06	1.60
3720 5 ply, with gravel		890	.045		1.91		1.91	2.87
3725 Loose gravel removal		5000	.008		.34		.34	.51
3730 Embedded gravel removal		2000	.020		.85		.85	1.28
3870 Fiberglass sheet		1200	.033		1.42		1.42	2.13
4120 Slate shingles		1900	.021	▼	.89		.89	1.34
4170 Ridge shingles, clay or slate		2000	.020	L.F.	.85		.85	1.28
4320 Single ply membrane, attached at seams		52	.769	Sq.	32.50		32.50	49
4370 Ballasted		75	.533		22.50		22.50	34
4420 Fully adhered	↓	39	1.026	▼	43.50		43.50	65.50
4550 Roof hatch, 2'-6" x 3'-0"	1 Clab	10	.800	Ea.	33.50		33.50	50.50
4670 Wood shingles	B-2	2200	.018	S.F.	.77		.77	1.16
4820 Sheet metal roofing	"	2150	.019		.79		.79	1.19
4970 Siding, horizontal wood clapboards	1 Clab	380	.021		.89		.89	1.33
5025 Exterior insulation finish system	"	120	.067		2.81		2.81	4.22
5070 Tempered hardboard, remove and reset	1 Carp	380	.021		1.12		1.12	1.68
5120 Tempered hardboard sheet siding	"	375	.021	↓	1.13		1.13	1.70
5170 Metal, corner strips	1 Clab	850	.009	L.F.	.40		.40	.60
5225 Horizontal strips		444	.018	S.F.	.76		.76	1.14
5320 Vertical strips		400	.020		.84		.84	1.27
5520 Wood shingles		350	.023		.96		.96	1.45
5620 Stucco siding	↓	360	.022	▼	.94		.94	1.41

07 05 Common Work Results for Thermal and Moisture Protection

07 05 05 – Selective Demolition for Thermal and Moisture Protection

07 05 05.10 Selective Demo., Thermal and Moist. Protection		Daily Crew Output	Labor-Hours Unit	Material	2020 Bare Costs Labor.	Equipment	Total	Total Incl O&P
5670	Textured plywood	1 Clab	725 .011 S.F.		.46		.46	.70
5720	Vinyl siding		510 .016 ↓		.66		.66	.99
5770	Corner strips		900 .009 L.F.		.37		.37	.56
5870	Wood, boards, vertical		400 .020 S.F.		.84		.84	1.27
5880	Steel siding, corrugated/ribbed		402.50 .020 "		.84		.84	1.26
5920	Waterproofing, protection/drain board	2 Clab	3900 .004 B.F.		.17		.17	.26
5970	Over 1/2" thick		1750 .009 S.F.		.38		.38	.58
6020	To 1/2" thick		2000 .008 "		.34		.34	.51

07 11 Damproofing

07 11 13 – Bituminous Damproofing

07 11 13.10 Bituminous Asphalt Coating

0010 BITUMINOUS ASPHALT COATING		Daily Rofc Output	Labor-Hours S.F.	Material	2020 Bare Costs Labor.	Equipment	Total	Total Incl O&P
0030	Brushed on, below grade, 1 coat	1 Rofc	665 .012 S.F.	.24	.56		.80	1.18
0100	2 coat		500 .016 ↓	.48	.74		1.22	1.74
0300	Sprayed on, below grade, 1 coat		830 .010 ↓	.24	.45		.69	1.01
0400	2 coat	↓	500 .016 ↓	.46	.74		1.20	1.73
0500	Asphalt coating, with fibers			Gal.	9.40		9.40	10.35
0600	Troweled on, asphalt with fibers, 1/16" thick	1 Rofc	500 .016 S.F.	.41	.74		1.15	1.67
0700	1/8" thick		400 .020 ↓	.72	.92		1.64	2.32
1000	1/2" thick		350 .023 ↓	2.35	1.06		3.41	4.32

07 11 16 – Cementitious Damproofing

07 11 16.20 Cementitious Parging

0010 CEMENTITIOUS PARGING		D-1 Daily Output	Labor-Hours S.F.	Material	2020 Bare Costs Labor.	Equipment	Total	Total Incl O&P
0020	Portland cement, 2 coats, 1/2" thick	250	.064 S.F.	.42	.19		3.42	5
0100	Waterproofed Portland cement, 1/2" thick, 2 coats	250	.064 ↓	7.25	3		10.25	12.55

07 12 Built-up Bituminous Waterproofing

07 12 13 – Built-Up Asphalt Waterproofing

07 12 13.20 Membrane Waterproofing

0010 MEMBRANE WATERPROOFING		G-1 Daily Output	Labor-Hours S.F.	Material	2020 Bare Costs Labor.	Equipment	Total	Total Incl O&P
0012	On slabs, 1 ply, felt, mopped	3000	.019 S.F.	.40	.81	.19	1.40	1.98
0100	On slabs, 1 ply, glass fiber fabric, mopped	2100	.027 ↓	.45	1.15	.27	1.87	2.69
0300	On slabs, 2 ply, felt, mopped	2500	.022 ↓	.80	.97	.23	2	2.73
0400	On slabs, 2 ply, glass fiber fabric, mopped	1650	.034 ↓	.99	1.47	.34	2.80	3.89
0600	On slabs, 3 ply, felt, mopped	2100	.027 ↓	1.20	1.15	.27	2.62	3.52
0700	On slabs, 3 ply, glass fiber fabric, mopped	1550	.036 ↓	1.35	1.56	.37	3.28	4.45
0710	Asphaltic hardboard protection board, 1/8" thick	2 Rofc	500 .032 ↓	.76	1.48		2.24	3.28
1000	EPS membrane protection board, 1/4" thick	3500	.005 ↓	.33	.21		.54	.71
1050	3/8" thick	3500	.005 ↓	.36	.21		.57	.75
1060	1/2" thick	3500	.005 ↓	.40	.21		.61	.79
1070	Fiberglass fabric, black, 20/10 mesh	116	.138 Sq.	15.10	6.35		21.45	27

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	Material	2020 Labor	Bare Equipment	Total	Total Ind O&P
0010 ELASTOMERIC SHEET WATERPROOFING AND ACCESS.										
0090	EPDM, plain, 45 mils thick		2 Rofc	580	.028	S.F.	1.50	1.27	2.77	3.75
0100	60 mils thick			570	.028		1.72	1.30	3.02	4.03
0300	Nylon reinforced sheets, 45 mils thick			580	.028		1.62	1.27	2.89	3.88
0400	60 mils thick			570	.028		1.69	1.30	2.99	4
0600	Vulcanizing splicing tape for above, 2" wide					C.L.F.	61.50		61.50	67.50
0700	4" wide					"	124		124	136
0900	Adhesive, bonding, 60 S.F./gal.					Gal.	28		28	31
1000	Splicing, 75 S.F./gal.					"	37.50		37.50	41.50
1200	Neoprene sheets, plain, 45 mils thick		2 Rofc	580	.028	S.F.	2.17	1.27	3.44	4.49
1300	60 mils thick			570	.028		2.26	1.30	3.56	4.63
1500	Nylon reinforced, 45 mils thick			580	.028		2.40	1.27	3.67	4.74
1600	60 mils thick			570	.028		2.56	1.30	3.86	4.96
1800	120 mils thick			500	.032		5.25	1.48	6.73	8.25
1900	Adhesive, splicing, 150 S.F./gal. per coat					Gal.	37.50		37.50	41.50
2100	Fiberglass reinforced, fluid applied, 1/8" thick		2 Rofc	500	.032	S.F.	1.72	1.48	3.20	4.33
2200	Polyethylene and rubberized asphalt sheets, 60 mils thick			550	.029		.96	1.34	2.30	3.28
2400	Polyvinyl chloride sheets, plain, 10 mils thick			580	.028		.15	1.27	1.42	2.27
2500	20 mils thick			570	.028		.22	1.30	1.52	2.38
2700	30 mils thick			560	.029		.24	1.32	1.56	2.44
3000	Adhesives, trowel grade, 40-100 S.F./gal.					Gal.	23.50		23.50	26
3100	Brush grade, 100-250 S.F./gal.					"	21		21	23.50
3300	Bitumen modified polyurethane, fluid applied, 55 mils thick		2 Rofc	665	.024	S.F.	1.12	1.11	2.23	3.06

07 16 Cementitious and Reactive Waterproofing

07 16 16 – Crystalline Waterproofing

07 16 16.20 Cementitious Waterproofing

0010	CEMENTITIOUS WATERPROOFING	G-2A	1000	.024	S.F.	.71	.98	.63	2.32	3.05
0020	1/8" application, sprayed on									
0050	4 coat cementitious metallic slurry	1 Celi	1.20	6.667	C.S.F.	75	335		410	575

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.	1.83	.59		2.42	2.99
0100	Rolls, 3/8" thick, with geotextile fabric both sides	"	550	.015	"	1.78	.67		2.45	3.07
0300	Granular bentonite, 50 lb. bags (.625 C.F.)				Bag	17.65			17.65	19.40
0400	3/8" thick, troweled on	1 Rofc	475	.017	S.F.	.88	.78		1.66	2.25
0500	Drain board, expanded polystyrene, 1-1/2" thick	1 Rohe	1600	.005		.44	.17		.61	.77
0510	2" thick		1600	.005		.58	.17		.75	.93
0520	3" thick		1600	.005		.87	.17		1.04	1.25
0530	4" thick		1600	.005		1.16	.17		1.33	1.57
0600	With filter fabric, 1-1/2" thick		1600	.005		.50	.17		.67	.84
0625	2" thick		1600	.005		.65	.17		.82	1
0650	3" thick		1600	.005		.94	.17		1.11	1.32
0675	4" thick		1600	.005		1.23	.17		1.40	1.64

07 19 Water Repellents

07 19 19 – Silicone Water Repellents

07 19 19.10 Silicone Based Water Repellents		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
0010 SILICONE BASED WATER REPELLENTS										
0020	Water base liquid, roller applied	2 Rofc	7000	.002	S.F.	.43	.11		.54	.64
0200	Silicone or stearate, sprayed on CMU, 1 coat	1 Rofc	4000	.002	"	.40	.09		.49	.59
0300	2 coats	"	3000	.003	"	.79	.12		.91	1.07

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 Corp	1000	.008	S.F.	.33	.43	.76	1
0060	1-1/2" thick, R6.2	G		1000	.008	"	.43	.43	.86	1.11
0080	2" thick, R8.3	G		1000	.008	"	.49	.43	.92	1.18
0120	3" thick, R12.4	G		800	.010	"	.56	.53	1.09	1.42
0370	3#/C.F., unfaced, 1" thick, R4.3	G		1000	.008	"	.57	.43	1	1.27
0390	1-1/2" thick, R6.5	G		1000	.008	"	.78	.43	1.21	1.50
0400	2" thick, R8.7	G		890	.009	"	1.09	.48	1.57	1.92
0420	2-1/2" thick, R10.9	G		800	.010	"	1.12	.53	1.65	2.03
0440	3" thick, R13	G		800	.010	"	1.65	.53	2.18	2.62
0520	Foil faced, 1" thick, R4.3	G		1000	.008	"	.85	.43	1.28	1.58
0540	1-1/2" thick, R6.5	G		1000	.008	"	1.28	.43	1.71	2.05
0560	2" thick, R8.7	G		890	.009	"	1.62	.48	2.10	2.50
0580	2-1/2" thick, R10.9	G		800	.010	"	1.91	.53	2.44	2.90
0600	3" thick, R13	G		800	.010	"	2.01	.53	2.54	3.01
1600	Isocyanurate, 4' x 8' sheet, foil faced, both sides									
1610	1/2" thick	G	1 Corp	800	.010	S.F.	.31	.53	.84	1.14
1620	5/8" thick	G		800	.010	"	.62	.53	1.15	1.48
1630	3/4" thick	G		800	.010	"	.43	.53	.96	1.27
1640	1" thick	G		800	.010	"	.62	.53	1.15	1.48
1650	1-1/2" thick	G		730	.011	"	.76	.58	1.34	1.72
1660	2" thick	G		730	.011	"	.74	.58	1.32	1.69
1670	3" thick	G		730	.011	"	3.11	.58	3.69	4.30
1680	4" thick	G		730	.011	"	2.58	.58	3.16	3.72
1700	Perlite, 1" thick, R2.77	G		800	.010	"	.47	.53	1	1.32
1750	2" thick, R5.55	G		730	.011	"	.86	.58	1.44	1.83
1900	Extruded polystyrene, 25 psi compressive strength, 1" thick, R5	G		800	.010	"	.62	.53	1.15	1.48
1940	2" thick, R10	G		730	.011	"	1.22	.58	1.80	2.22
1960	3" thick, R15	G		730	.011	"	1.67	.58	2.25	2.72
2100	Expanded polystyrene, 1" thick, R3.85	G		800	.010	"	.29	.53	.82	1.12
2120	2" thick, R7.69	G		730	.011	"	.58	.58	1.16	1.52
2140	3" thick, R11.49	G		730	.011	"	.87	.58	1.45	1.84

07 21 13.13 Foam Board Insulation

0010	FOAM BOARD INSULATION									
0600	Polystyrene, expanded, 1" thick, R4	G	1 Corp	680	.012	S.F.	.29	.63	.92	1.26
0700	2" thick, R8	G	"	675	.012	"	.58	.63	1.21	1.59

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 Corp	700	.011	S.F.	.41	.61	1.02	1.36

07 21 Thermal Insulation

07 21 16 – Blanket Insulation

07 21 16.10 Blanket Insulation for Floors/Ceilings

			Crew	Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
							Labor	Equipment	Total		
2150	6-1/4" thick, R19		G	1 Corp	.600	.013	S.F.	.51	.71	1.22	1.62
2210	9-1/2" thick, R30		G		.500	.016		.86	.85	1.71	2.23
2220	12" thick, R38		G		.475	.017		1.04	.90	1.94	2.48
3000	Unfaced, 3-1/2" thick, R13		G		.600	.013		.33	.71	1.04	1.42
3010	6-1/4" thick, R19		G		.500	.016		.39	.85	1.24	1.71
3020	9-1/2" thick, R30		G		.450	.018		.68	.95	1.63	2.17
3030	12" thick, R38		G		.425	.019		.77	1	1.77	2.35

07 21 16.20 Blanket Insulation for Walls

0010 BLANKET INSULATION FOR WALLS

0020	Kraft faced fiberglass, 3-1/2" thick, R11, 15" wide		G	1 Corp	1350	.006	S.F.	.30	.32	.62	.80
0030	23" wide		G		1600	.005		.30	.27	.57	.73
0060	R13, 11" wide		G		1150	.007		.34	.37	.71	.93
0080	15" wide		G		1350	.006		.34	.32	.66	.84
0100	23" wide		G		1600	.005		.34	.27	.61	.77
0110	R15, 11" wide		G		1150	.007		.55	.37	.92	1.17
0120	15" wide		G		1350	.006		.55	.32	.87	1.08
0130	23" wide		G		1600	.005		.55	.27	.82	1.01
0140	6" thick, R19, 11" wide		G		1150	.007		.44	.37	.81	1.04
0160	15" wide		G		1350	.006		.44	.32	.76	.95
0180	23" wide		G		1600	.005		.44	.27	.71	.88
0182	R21, 11" wide		G		1150	.007		.70	.37	1.07	1.33
0184	15" wide		G		1350	.006		.70	.32	1.02	1.24
0186	23" wide		G		1600	.005		.70	.27	.97	1.17
0188	9" thick, R30, 11" wide		G		985	.008		.86	.43	1.29	1.60
0200	15" wide		G		1150	.007		.86	.37	1.23	1.51
0220	23" wide		G		1350	.006		.86	.32	1.18	1.42
0230	12" thick, R38, 11" wide		G		985	.008		1.04	.43	1.47	1.79
0240	15" wide		G		1150	.007		1.04	.37	1.41	1.70
0260	23" wide		G		1350	.006		1.04	.32	1.36	1.61
0410	Foil faced fiberglass, 3-1/2" thick, R13, 11" wide		G		1150	.007		.47	.37	.84	1.08
0420	15" wide		G		1350	.006		.47	.32	.79	.99
0440	23" wide		G		1600	.005		.47	.27	.74	.92
0442	R15, 11" wide		G		1150	.007		.46	.37	.83	1.07
0444	15" wide		G		1350	.006		.46	.32	.78	.98
0446	23" wide		G		1600	.005		.46	.27	.73	.91
0448	6" thick, R19, 11" wide		G		1150	.007		.63	.37	1	1.25
0460	15" wide		G		1350	.006		.63	.32	.95	1.16
0480	23" wide		G		1600	.005		.63	.27	.90	1.09
0482	R21, 11" wide		G		1150	.007		.65	.37	1.02	1.28
0484	15" wide		G		1350	.006		.65	.32	.97	1.19
0486	23" wide		G		1600	.005		.65	.27	.92	1.12
0488	9" thick, R30, 11" wide		G		985	.008		1.05	.43	1.48	1.81
0500	15" wide		G		1150	.007		1.05	.37	1.42	1.72
0550	23" wide		G		1350	.006		1.05	.32	1.37	1.63
0560	12" thick, R38, 11" wide		G		985	.008		1.14	.43	1.57	1.90
0570	15" wide		G		1150	.007		1.14	.37	1.51	1.81
0580	23" wide		G		1350	.006		1.14	.32	1.46	1.72
0620	Unfaced fiberglass, 3-1/2" thick, R13, 11" wide		G		1150	.007		.33	.37	.70	.92
0820	15" wide		G		1350	.006		.33	.32	.65	.83
0830	23" wide		G		1600	.005		.33	.27	.60	.76
0832	R15, 11" wide		G		1150	.007		.46	.37	.83	1.07
0834	15" wide		G		1350	.006		.46	.32	.78	.98

07 21 Thermal Insulation

07 21 16 – Blanket Insulation

07 21 16.20	Blanket Insulation for Walls		Daily	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P	
			Crew	Output		Material	Labor	Equipment			
0836	23" wide		[G]	1 Carp	1600	.005	S.F.	.46	.27	.73	.91
0838	6" thick, R19, 11" wide		[G]		1150	.007		.39	.37	.76	.99
0860	15" wide		[G]		1150	.007		.39	.37	.76	.99
0880	23" wide		[G]		1350	.006		.39	.32	.71	.90
0882	R21, 11" wide		[G]		1150	.007		.68	.37	1.05	1.31
0886	15" wide		[G]		1350	.006		.68	.32	1	1.22
0888	23" wide		[G]		1600	.005		.68	.27	.95	1.15
0890	9" thick, R30, 11" wide		[G]		985	.008		.68	.43	1.11	1.40
0900	15" wide		[G]		1150	.007		.68	.37	1.05	1.31
0920	23" wide		[G]		1350	.006		.68	.32	1	1.22
0930	12" thick, R38, 11" wide		[G]		985	.008		.77	.43	1.20	1.50
0940	15" wide		[G]		1000	.008		.77	.43	1.20	1.49
0960	23" wide		[G]		1150	.007		.77	.37	1.14	1.41
1300	Wall or ceiling insulation, mineral wool batts		[G]	1 Carp	1600	.005	S.F.	.82	.27	1.09	1.30
1320	3-1/2" thick, R15		[G]		1600	.005		1.29	.27	1.56	1.82
1340	5-1/2" thick, R23		[G]		1350	.006		1.70	.32	2.02	2.34
1380	7-1/4" thick, R30		[G]		1600	.005		1.18	.27	1.45	1.70
1700	Non-rigid insul., recycled blue cotton fiber, unfaced batts, R13, 16" wide		[G]		1600	.005		1.45	.27	1.72	2
1710	R19, 16" wide		[G]		960	.008	Ea.	.07	.44	.51	.75
1850	Friction fit wire insulation supports, 16" OC										

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.	.17	.16	.11	.44
0110	8" block		[G]		5000	.005		.20	.20	.13	.53
0120	10" block		[G]		4000	.006		.26	.25	.16	.67
0130	12" block		[G]		3000	.008		.34	.33	.21	.84
0140	Injected into cavity wall		[G]		13000	.002	B.F.	.06	.08	.05	.24
0150	Preparation, drill holes into mortar joint every 4 V.L.F., 5/8" diameter		1 Club		960	.008	Ea.		.35	.35	.53
0160	7/8" diameter				680	.012			.50	.50	.74
0170	Patch drilled holes, 5/8" diameter				1800	.004		.04	.19	.23	.32
0180	7/8" diameter				1200	.007		.05	.28	.33	.48

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.	.70	2.13	2.83	3.96
0021	4" thick		[G]		1000	.008	S.F.	.17	.43	.60	.82
0022	6" thick		[G]		800	.010	"	.28	.53	.81	1.11
0080	Fiberglass wool, R4 per inch		[G]		200	.040	C.F.	.70	2.13	2.83	3.96
0081	4" thick		[G]		600	.013	S.F.	.24	.71	.95	1.32
0082	6" thick		[G]		400	.020	"	.34	1.06	1.40	1.97
0100	Mineral wool, R3 per inch		[G]		200	.040	C.F.	.56	2.13	2.69	3.81
0101	4" thick		[G]		600	.013	S.F.	.18	.71	.89	1.26
0102	6" thick		[G]		400	.020	"	.28	1.06	1.34	1.91
0300	Polystyrene, R4 per inch		[G]		200	.040	C.F.	1.56	2.13	3.69	4.91
0301	4" thick		[G]		600	.013	S.F.	.51	.71	1.22	1.63
0302	6" thick		[G]		400	.020	"	.78	1.06	1.84	2.46
0400	Perlite, R2.78 per inch		[G]		200	.040	C.F.	5.30	2.13	7.43	9
0401	4" thick		[G]		1000	.008	S.F.	1.76	.43	2.19	2.58
0402	6" thick		[G]		800	.010	"	2.65	.53	3.18	3.71

07 21 Thermal Insulation

07 21 23 – Loose-Fill Insulation

07 21 23.20 Masonry Loose-Fill Insulation		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare 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.	.61	.16	.77	.91	
0200	6" thick wall, .175 C.F./S.F.	G		3000	.005	"	.93	.25	1.18	1.40	
0300	8" thick wall, .258 C.F./S.F.	G		2400	.007	"	1.36	.31	1.67	1.97	
0400	10" thick wall, .340 C.F./S.F.	G		1850	.009	"	1.80	.41	2.21	2.60	
0500	12" thick wall, .422 C.F./S.F.	G		1200	.013	"	2.23	.63	2.86	3.41	
0600	Poured cavity wall, vermiculite or perlite, water repellent	G		250	.064	C.F.	5.30	3	8.30	10.35	
0700	Foamed in place, urethane in 2-5/8" cavity	G	G-2A	1035	.023	S.F.	1.39	.95	.61	2.95	3.72
0800	For each 1" added thickness, add	G	"	2372	.010	"	5.3	.41	.27	1.21	1.53

07 21 26 – Blown Insulation

07 21 26.10 Blown Insulation

0010	BLOWN INSULATION Ceilings, with open access	G	G-4	5000	.005	S.F.	.24	.21	.08	.53	.66
0020	Cellulose, 3-1/2" thick, R13	G		3800	.006	"	.35	.27	.11	.73	.92
0030	5-3/16" thick, R19	G		3000	.008	"	.45	.34	.13	.92	1.16
0050	6-1/2" thick, R22	G		2600	.009	"	.61	.39	.15	1.15	1.43
0100	8-11/16" thick, R30	G		1800	.013	"	.78	.57	.22	1.57	1.96
1000	10-7/8" thick, R38	G		3800	.006	"	.24	.27	.11	.62	.79
1050	Fiberglass, 5.5" thick, R11	G		3000	.008	"	.34	.34	.13	.81	1.03
1100	6" thick, R12	G		2200	.011	"	.42	.47	.18	1.07	1.36
1200	8.8" thick, R19	G		1800	.013	"	.49	.57	.22	1.28	1.64
1300	10" thick, R22	G		1500	.016	"	.58	.68	.27	1.53	1.96
1350	11.5" thick, R26	G		1400	.017	"	.68	.73	.28	1.69	2.15
1450	13" thick, R30	G		1145	.021	"	.86	.90	.35	2.11	2.68
1500	16" thick, R38	G		920	.026	"	1.14	1.12	.43	2.69	3.42
1500	20" thick, R49	G									

07 21 29 – Sprayed Insulation

07 21 29.10 Sprayed-On Insulation

0010	SPRAYED-ON INSULATION	G	G-2	2050	.012	S.F.	.36	.52	.09	.97	1.28
0020	Fibrous/cementitious, finished wall, 1" thick, R3.7	G		1550	.015	"	.43	.69	.12	1.24	1.63
0100	Attic, 5.2" thick, R19	G		1600	.015	B.F.	.20	.67	.12	.99	1.35
0200	Fiberglass, R4 per inch, vertical	G		1200	.020	"	.20	.89	.16	1.25	1.72
0210	Horizontal	G									
0300	Closed cell, spray polyurethane foam, 2 lb./C.F. density	G	G-2A	6000	.004	S.F.	.53	.16	.11	.80	.96
0310	1" thick	G		3000	.008	"	1.06	.33	.21	1.60	1.92
0320	2" thick	G		2000	.012	"	1.59	.49	.32	2.40	2.89
0330	3" thick	G		1715	.014	"	1.86	.57	.37	2.80	3.37
0335	3-1/2" thick	G		1500	.016	"	2.12	.66	.42	3.20	3.86
0340	4" thick	G		1200	.020	"	2.65	.82	.53	4	4.81
0350	5" thick	G		1090	.022	"	2.92	.90	.58	4.40	5.30
0355	5-1/2" thick	G		1000	.024	"	3.18	.98	.63	4.79	5.75
0360	6" thick	G									

07 21 53 – Reflective Insulation

07 21 53.10 Reflective Insulation Options

0010	REFLECTIVE INSULATION OPTIONS	G	1 Carp	19	.421	C.S.F.	15	22.50		37.50	50
0020	Aluminum foil on reinforced scrim	G		19	.421	"	22.50	22.50		45	58.50
0100	Reinforced with woven polyolefin	G		15	.533	"	26.50	28.50		55	71.50
0500	With single bubble air space, R8.8	G		15	.533	"	32.50	28.50		61	78.50
0600	With double bubble air space, R9.8	G									

07 22 Roof and Deck Insulation

07 22 16 – Roof Board Insulation

07 22 16.10 Roof Deck Insulation		Daily	Labor-	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
		Crew	Output			Hours	Labor		
0010 ROOF DECK INSULATION, fastening excluded									
0016 Asphaltic cover board, fiberglass lined, 1/8" thick		1 Rofc	1400	.006	S.F.	.49	.26	.75	.98
0018 1/4" thick			1400	.006		.99	.26	1.25	1.53
0020 Fiberboard low density, 1/2" thick, R1.39	G	1300	.006			.36	.28	.64	.87
0030 1" thick, R2.78	G	1040	.008			.69	.36	1.05	1.35
0080 1-1/2" thick, R4.17	G	1040	.008			1.04	.36	1.40	1.73
0100 2" thick, R5.56	G	1040	.008			1.19	.36	1.55	1.90
0110 Fiberboard high density, 1/2" thick, R1.3	G	1300	.006			.28	.28	.56	.78
0120 1" thick, R2.5	G	1040	.008			.64	.36	1	1.29
0130 1-1/2" thick, R3.8	G	1040	.008			1.24	.36	1.60	1.95
0200 Fiberglass, 3/4" thick, R2.78	G	1300	.006			.63	.28	.91	1.16
0400 15/16" thick, R3.70	G	1300	.006			.84	.28	1.12	1.39
0460 1-1/16" thick, R4.17	G	1300	.006			1.17	.28	1.45	1.76
0600 1-5/16" thick, R5.26	G	1300	.006			1.45	.28	1.73	2.07
0650 2-1/16" thick, R8.33	G	1040	.008			1.63	.36	1.99	2.38
0700 2-7/16" thick, R10	G	1040	.008			1.75	.36	2.11	2.52
0800 Gypsum cover board, fiberglass mat facer, 1/4" thick			1400	.006		.51	.26	.77	1
0810 1/2" thick			1300	.006		.67	.28	.95	1.21
0820 5/8" thick			1200	.007		.66	.31	.97	1.24
0830 Primed fiberglass mat facer, 1/4" thick			1400	.006		.50	.26	.76	.99
0840 1/2" thick			1300	.006		.58	.28	.86	1.11
0850 5/8" thick			1200	.007		.61	.31	.92	1.18
1650 Perlite, 1/2" thick, R1.32	G	1365	.006			.29	.27	.56	.77
1655 3/4" thick, R2.08	G	1040	.008			.39	.36	.75	1.02
1660 1" thick, R2.78	G	1040	.008			.57	.36	.93	1.22
1670 1-1/2" thick, R4.17	G	1040	.008			.83	.36	1.19	1.50
1680 2" thick, R5.56	G	910	.009			1.09	.41	1.50	1.87
1685 2-1/2" thick, R6.67	G	910	.009			1.42	.41	1.83	2.23
1690 Tapered for drainage	G	1040	.008	B.F.		1.09	.36	1.45	1.79
1700 Polyisocyanurate, 2#/C.F. density, 3/4" thick	G	1950	.004	S.F.		.52	.19	.71	.88
1705 1" thick	G	1820	.004			.45	.20	.65	.84
1715 1-1/2" thick	G	1625	.005			.60	.23	.83	1.04
1725 2" thick	G	1430	.006			.92	.26	1.18	1.44
1735 2-1/2" thick	G	1365	.006			1	.27	1.27	1.55
1745 3" thick	G	1300	.006			1.13	.28	1.41	1.71
1755 3-1/2" thick	G	1300	.006			1.67	.28	1.95	2.31
1765 Tapered for drainage	G	1820	.004	B.F.		.53	.20	.73	.92
1900 Extruded polystyrene									
1910 15 psi compressive strength, 1" thick, R5	G	1 Rofc	1950	.004	S.F.	.52	.19	.71	.88
1920 2" thick, R10	G	1625	.005			.68	.23	.91	1.12
1930 3" thick, R15	G	1300	.006			1.35	.28	1.63	1.96
1932 4" thick, R20	G	1300	.006			1.82	.28	2.10	2.47
1934 Tapered for drainage	G	1950	.004	B.F.		.51	.19	.70	.87
1940 25 psi compressive strength, 1" thick, R5	G	1950	.004	S.F.		1.06	.19	1.25	1.48
1942 2" thick, R10	G	1625	.005			2.01	.23	2.24	2.60
1944 3" thick, R15	G	1300	.006			3.07	.28	3.35	3.85
1946 4" thick, R20	G	1300	.006			4.24	.28	4.52	5.15
1948 Tapered for drainage	G	1950	.004	B.F.		.57	.19	.76	.94
1950 40 psi compressive strength, 1" thick, R5	G	1950	.004	S.F.		.87	.19	1.06	1.27
1952 2" thick, R10	G	1625	.005			1.65	.23	1.88	2.20
1954 3" thick, R15	G	1300	.006			2.39	.28	2.67	3.10
1956 4" thick, R20	G	1300	.006			3.13	.28	3.41	3.92
1958 Tapered for drainage	G	1820	.004	B.F.		.88	.20	1.08	1.31

07 22 Roof and Deck Insulation

07 22 16 – Roof Board Insulation

07 22 16.10 Roof Deck Insulation		Daily Crew	Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
						Material	Labor	Equipment		
1960	60 psi compressive strength, 1" thick, R5	G	1 Rofc	1885	.004	S.F.	1.09	.20	1.29	1.52
1962	2" thick, R10	G		1560	.005		2.07	.24	2.31	2.67
1964	3" thick, R15	G		1270	.006		3.38	.29	3.67	4.20
1966	4" thick, R20	G		1235	.006		4.20	.30	4.50	5.10
1968	Tapered for drainage	G		1820	.004	B.F.	.99	.20	1.19	1.43
2010	Expanded polystyrene, 1#/C.F. density, 3/4" thick, R2.89	G		1950	.004	S.F.	.22	.19	.41	.55
2020	1" thick, R3.85	G		1950	.004		.29	.19	.48	.63
2100	2" thick, R7.69	G		1625	.005		.58	.23	.81	1.02
2110	3" thick, R11.49	G		1625	.005		.87	.23	1.10	1.34
2120	4" thick, R15.38	G		1625	.005		1.16	.23	1.39	1.66
2130	5" thick, R19.23	G		1495	.005		1.45	.25	1.70	2.01
2140	6" thick, R23.26	G		1495	.005		1.74	.25	1.99	2.32
2150	Tapered for drainage	G		1950	.004	B.F.	.51	.19	.70	.87
2400	Composites with 2" EPS									
2410	1" fiberboard	G	1 Rofc	1325	.006	S.F.	1.48	.28	1.76	2.09
2420	7/16" oriented strand board	G		1040	.008		1.25	.36	1.61	1.97
2430	1/2" plywood	G		1040	.008		1.47	.36	1.83	2.21
2440	1" perlite	G		1040	.008		1.16	.36	1.52	1.87
2450	Composites with 1-1/2" polyisocyanurate									
2460	1" fiberboard	G	1 Rofc	1040	.008	S.F.	1.21	.36	1.57	1.92
2470	1" perlite	G		1105	.007		.98	.33	1.31	1.63
2480	7/16" oriented strand board	G		1040	.008		.91	.36	1.27	1.59
3000	Fastening alternatives, coated screws, 2" long			3744	.002	Ea.	.06	.10	.16	.23
3010	4" long			3120	.003		.11	.12	.23	.32
3020	6" long			2675	.003		.20	.14	.34	.45
3030	8" long			2340	.003		.28	.16	.44	.57
3040	10" long			1872	.004		.52	.20	.72	.90
3050	Pre-drill and drive wedge spike, 2-1/2"			1248	.006		.40	.30	.70	.93
3060	3-1/2"			1101	.007		.59	.34	.93	1.20
3070	4-1/2"			936	.009		.65	.40	1.05	1.37
3075	3" galvanized deck plates			7488	.001		.10	.05	.15	.19
3080	Spot mop asphalt	G	J-1	295	.190	Sq.	5.30	8.20	1.92	15.42
3090	Full mop asphalt	"		192	.292		10.65	12.60	2.95	26.20
3110	Low-rise polyurethane adhesive, 12" OC beads		1 Rofc	45	.178		41.50	8.20		49.70
3120	6" OC beads			32	.250		83	11.55		94.55
3130	4" OC beads			30	.267		125	12.30		137.30
										159

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.	1.80	4.73	.30	6.83
0100	With 1/2" cement board sheathing	G		268	.149		2.58	6.90	.44	9.92
0105	2" EPS insulation	G		390	.103		2.09	4.73	.30	7.12
0110	With 1/2" cement board sheathing	G		268	.149		2.87	6.90	.44	10.21
0115	3" EPS insulation	G		390	.103		2.38	4.73	.30	7.41
0120	With 1/2" cement board sheathing	G		268	.149		3.16	6.90	.44	10.50
0125	4" EPS insulation	G		390	.103		2.67	4.73	.30	7.70
0130	With 1/2" cement board sheathing	G		268	.149		4.22	6.90	.44	11.56
0140	Premium finish add			1265	.032		.45	1.46	.09	2
0145	Drainage and ventilation cavity, add		2 Plas	1450	.011		.82	.54		1.36
										1.70

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	Material	2020 Bare Labor	Costs Equipment	Total	Total Ind O&P
0150	Heavy duty reinforcement add	J-1	914	.044	S.F.	.59	2.02	.13	2.74	3.80
0160	2.5#/S.Y. metal lath substrate add	1 Lath	75	.107	S.Y.	3.80	5.55		9.35	12.35
0170	3.4#/S.Y. metal lath substrate add	"	75	.107	"	4.72	5.55		10.27	13.35
0180	Color or texture change	J-1	1265	.032	S.F.	.74	1.46	.09	2.29	3.09
0190	With substrate leveling base coat	1 Plas	530	.015		.84	.73		1.57	2.01
0210	With substrate sealing base coat	1 Pord	1224	.007		.14	.29		.43	.58
0370	V groove shape in panel face				L.F.	.70			.70	.77
0380	U groove shape in panel face				"	.86			.86	.95
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

0010 WEATHER BARRIERS		1 Corp	.37	.216	Sq.	5.25	11.50		16.75	23
0400	Asphalt felt paper, #15	"	3700	.002	S.F.	.05	.11		.16	.23
0401	Per square foot	"	3700	.002	S.F.	.05	.11		.16	.23
0450	Housewrap, exterior, spun bonded polypropylene	1 Corp	3800	.002	S.F.	.15	.11		.26	.34
0470	Small roll	"	4000	.002	"	.16	.11		.27	.34
0480	Large roll	1 Rofc	37	.216	Sq.	21	10		31	40
2100	Asphalt felt roof deck vapor barrier, class 1 metal decks	"	37	.216	Sq.	15.90	10		25.90	34
2200	For all other decks	1 Corp	36	.222		6.10	11.80		17.90	24.50
2800	Asphalt felt, 50% recycled content, 15 lb., 4 sq./roll	"	36	.222		10.45	11.80		22.25	29.50
2810	30 lb., 2 sq./roll	2 Corp	8000	.002	S.F.	.14	.11		.25	.31
3000	Building wrap, spun bonded polyethylene									

07 26 Vapor Retarders

07 26 13 – Above-Grade Vapor Retarders

07 26 13.10 Vapor Retarders

0010 VAPOR RETARDERS		G	1 Corp	.37	.216	Sq.	16.05	11.50		27.55	35
0020	Aluminum and kraft laminated, foil 1 side	G									
0100	Foil 2 sides	G									
0600	Polyethylene vapor barrier, standard, 2 mil	G									
0700	4 mil	G									
0900	6 mil	G									
1200	10 mil	G									
1300	Clear reinforced, fir retardant, 8 mil	G									
1350	Cross laminated type, 3 mil	G									
1400	4 mil	G									
1800	Reinf. waterproof, 2 mil polyethylene backing, 1 side	G									
1900	2 sides	G									
2400	Waterproofed kraft with sisal or fiberglass fibers	G									

07 27 Air Barriers

07 27 13 – Modified Bituminous Sheet Air Barriers

07 27 13.10 Modified Bituminous Sheet Air Barrier		Crew	Daily Output	Labor Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
0010	MODIFIED BITUMINOUS SHEET AIR BARRIER									
0100	SBS modified sheet laminated to polyethylene sheet, 40 mils, 4" wide	1 Corp	1200	.007	L.F.	.32	.35		.67	.89
0120	6" wide		1100	.007		.44	.39		.83	1.07
0140	9" wide		1000	.008		.62	.43		1.05	1.32
0160	12" wide		900	.009		.79	.47		1.26	1.58
0180	18" wide	2 Corp	1700	.009	S.F.	.74	.50		1.24	1.56
0200	36" wide	"	1800	.009		.72	.47		1.19	1.50
0220	Adhesive for above	1 Corp	1400	.006		.32	.30		.62	.81

07 27 26 – Fluid-Applied Membrane Air Barriers

07 27 26.10 Fluid Applied Membrane Air Barrier

0010	FLUID APPLIED MEMBRANE AIR BARRIER	1 Pord	1375	.006	S.F.	.02	.26		.28	.40
0100	Spray applied vapor barrier, 25 S.F./gallon									

07 31 Shingles and Shakes

07 31 13 – Asphalt Shingles

07 31 13.10 Asphalt Roof Shingles

0010	ASPHALT ROOF SHINGLES										
0100	Standard strip shingles										
0150	Inorganic, class A, 25 year	1 Rofc	5.50	1.455	Sq.	75	.67		142	194	
0155	Pneumatic nailed		7	1.143		75	.53		128	170	
0200	30 year		5	1.600		111	.74		185	244	
0205	Pneumatic nailed		6.25	1.280		111	.59		170	220	
0250	Standard laminated multi-layered shingles										
0300	Class A, 240-260 lb./square	1 Rofc	4.50	1.778	Sq.	103	.82		185	249	
0305	Pneumatic nailed		5.63	1.422		103	65.50		168.50	221	
0350	Class A, 250-270 lb./square		4	2		103	92.50		195.50	266	
0355	Pneumatic nailed		5	1.600		103	.74		177	235	
0400	Premium, laminated multi-layered shingles										
0450	Class A, 260-300 lb./square	1 Rofc	3.50	2.286	Sq.	148	106		254	335	
0455	Pneumatic nailed		4.37	1.831		148	84.50		232.50	305	
0500	Class A, 300-385 lb./square		3	2.667		310	123		433	545	
0505	Pneumatic nailed		3.75	2.133		310	98.50		408.50	505	
0800	#15 felt underlayment		64	.125			5.25	5.80		11.05	15.35
0825	#30 felt underlayment		58	.138			10.20	6.35		16.55	21.50
0850	Self adhering polyethylene and rubberized asphalt underlayment		22	.364		76	16.80		92.80	111	
0900	Ridge shingles		330	.024	L.F.	2.31	1.12		3.43	4.39	
0905	Pneumatic nailed		412.50	.019	"	2.31	.90		3.21	4.02	
1000	For steep roofs (7 to 12 pitch or greater), add						50%				

07 31 16 – Metal Shingles

07 31 16.10 Aluminum Shingles

0010	ALUMINUM SHINGLES									
0020	Mill finish, .019" thick	1 Corp	5	1.600	Sq.	232	85		317	385
0100	.020" thick	"	5	1.600		256	85		341	410
0300	For colors, add					21.50			21.50	23.50
0600	Ridge cap, .024" thick	1 Corp	170	.047	L.F.	4.02	2.50		6.52	8.20
0700	End wall flashing, .024" thick		170	.047		2.48	2.50		4.98	6.50
0900	Valley section, .024" thick		170	.047		4.08	2.50		6.58	8.25
1000	Starter strip, .024" thick		400	.020		2.01	1.06		3.07	3.81
1200	Side wall flashing, .024" thick		170	.047		2.41	2.50		4.91	6.40
1500	Gable flashing, .024" thick		400	.020		1.89	1.06		2.95	3.68

07 31 Shingles and Shakes

07 31 16 – Metal Shingles

07 31 16.20 Steel Shingles

		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
0010	STEEL SHINGLES										
0012	Galvanized, 26 ga.		1 Rots	2.20	3.636	Sq.	390	168		558	705
0200	24 ga.		"	2.20	3.636		380	168		548	695
0300	For colored galvanized shingles, add						59.50			59.50	65.50

07 31 26 – Slate Shingles

07 31 26.10 Slate Roof Shingles

0010 SLATE ROOF SHINGLES

		R073126-20	G	1 Rots	1.75	4.571	Sq.	560	211	771	965
0100	Buckingham Virginia black, 3/16" - 1/4" thick		G	1.75	4.571		560	211		771	965
0200	1/4" thick		G	1.75	4.571		560	211		771	965
0900	Pennsylvania black, Bangor, #1 clear		G	1.75	4.571		500	211		711	900
1200	Vermont, unfading, green, mottled green		G	1.75	4.571		505	211		716	905
1300	Semi-weathering green & gray		G	1.75	4.571		405	211		616	795
1400	Purple		G	1.75	4.571		440	211		651	835
1500	Black or gray		G	1.75	4.571		485	211		696	885
1600	Red		G	1.75	4.571		1,175	211		1,386	1,650
1700	Variegated purple		"	1.75	4.571		475	211		686	870
2700	Ridge shingles, slate			200	.040	L.F.	10.20	1.85		12.05	14.25

07 31 29 – Wood Shingles and Shakes

07 31 29.13 Wood Shingles

0010 WOOD SHINGLES

			1 Carp	2.50	3.200	Sq.	320	170		490	605
0012	16" No. 1 red cedar shingles, 5" exposure, on roof			3.25	2.462		320	131		451	545
0015	Pneumatic nailed			2.05	3.902		213	207		420	545
0200	7-1/2" exposure, on walls			2.67	2.996		213	159		372	475
0205	Pneumatic nailed			2.75	2.909		286	155		441	545
0300	18" No. 1 red cedar perfections, 5-1/2" exposure, on roof			3.57	2.241		286	119		405	495
0305	Pneumatic nailed			2.25	3.556		210	189		399	515
0500	7-1/2" exposure, on walls			2.92	2.740		210	146		356	450
0505	Pneumatic nailed			3	2.667		280	142		422	525
0600	Resquared and rebutted, 5-1/2" exposure, on roof			3.90	2.051		280	109		389	475
0605	Pneumatic nailed			2.45	3.265		206	174		380	490
0900	7-1/2" exposure, on walls			3.18	2.516		206	134		340	430
0905	Pneumatic nailed						60			60	66
1000	Add to above for fire retardant shingles		1 Carp	400	.020	L.F.	4.06	1.06		5.12	6.05
1060	Preformed ridge shingles			2.40	3.333	Sq.	194	177		371	480
2000	White cedar shingles, 16" long, extras, 5" exposure, on roof			3.12	2.564		194	136		330	420
2005	Pneumatic nailed			2	4		194	213		407	535
2050	5" exposure on walls			2.60	3.077		194	164		358	460
2055	Pneumatic nailed			2	4		138	213		351	470
2100	7-1/2" exposure, on walls			2.60	3.077		138	164		302	400
2105	Pneumatic nailed			2	4		168	213		381	505
2150	"B" grade, 5" exposure on walls			2.60	3.077		168	164		332	430
2155	Pneumatic nailed			64	.125		5.25	6.65		11.90	15.80
2300	For #15 organic felt underlayment on roof, 1 layer, add			32	.250		10.50	13.30		23.80	31.50
2400	2 layers, add							50%			
2600	For steep roofs (7/12 pitch or greater), add to above										
2700	Panelized systems, No.1 cedar shingles on 5/16" CDX plywood		2 Carp	700	.023	S.F.	6.85	1.22		8.07	9.40
2800	On walls, 8' strips, 7" or 14" exposure		1 Carp	3	2.667	Sq.	665	142		807	945
3500	On roofs, 8' strips, 7" or 14" exposure		"	4	2	"	665	106		771	890
3505	Pneumatic nailed										

07 31 Shingles and Shakes

07 31 29 – Wood Shingles and Shakes

07 31 29.16 Wood Shakes		Daily Crew	Output	Labor Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Ind O&P
0010 WOOD SHAKES										
1100	Hand-split red cedar shakes, 1/2" thick x 24" long, 10" exp. on roof	1 Carp	2.50	3.200	Sq.	340	170		510	630
1105	Pneumatic nailed		3.25	2.462		340	131		471	570
1110	3/4" thick x 24" long, 10" exp. on roof		2.25	3.556		340	189		529	660
1115	Pneumatic nailed		2.92	2.740		340	146		486	595
1200	1/2" thick, 18" long, 8-1/2" exp. on roof		2	4		294	213		507	645
1205	Pneumatic nailed		2.60	3.077		294	164		458	570
1210	3/4" thick x 18" long, 8-1/2" exp. on roof		1.80	4.444		294	236		530	680
1215	Pneumatic nailed		2.34	3.419		294	182		476	600
1255	10" exposure on walls		2	4		283	213		496	630
1260	10" exposure on walls, pneumatic nailed		2.60	3.077		283	164		447	555
1700	Add to above for fire retardant shakes, 24" long					60			60	66
1800	18" long					60			60	66
1810	Ridge shakes	1 Carp	350	.023	L.F.	5.75	1.22		6.97	8.20

07 32 Roof Tiles

07 32 13 – Clay Roof Tiles

07 32 13.10 Clay Tiles		3 Rots	6	4	Sq.	535	185		720	895
0300	Flat shingle, interlocking, 15", 166 pcs./sq., fireflashed blend		6	4		545	185		730	905
0500	Terra cotta red		6	4						
0600	Roman pan and top, 18", 102 pcs./sq., fireflashed blend		5.50	4.364		495	202		697	880
0640	Terra cotta red	1 Rots	2.40	3.333		585	154		739	900
1100	Barrel mission tile, 18", 166 pcs./sq., fireflashed blend	3 Rots	5.50	4.364		460	202		662	840
1140	Terra cotta red		5.50	4.364		465	202		667	845
1700	Scalloped edge flat shingle, 14", 145 pcs./sq., fireflashed blend		6	4		1,125	185		1,310	1,525
1800	Terra cotta red		6	4		1,050	185		1,235	1,450
3010	#15 felt underlayment	1 Rofc	64	.125		5.25	5.80		11.05	15.35
3020	#30 felt underlayment		58	.138		10.20	6.35		16.55	21.50
3040	Polyethylene and rubberized asph. underlayment		22	.364		76	16.80		92.80	111

07 32 16 – Concrete Roof Tiles

07 32 16.10 Concrete Tiles		1 Rots	1.35	5.926	Sq.	107	274		381	565
0020	Corrugated, 13" x 16-1/2", 90 per sq., 950 lb./sq.									
0050	Earthtone colors, nailed to wood deck									
0150	Blues									
0200	Greens									
0250	Premium colors									
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.	153	247		400	575
1500	Accessory pieces, ridge & hip, 10" x 16-1/2", 8 lb. each	"	120	.067	Ea.	3.72	3.08		6.80	9.20
1700	Rake, 6-1/2" x 16-3/4", 9 lb. each					3.72			3.72	4.09
1800	Mansard hip, 10" x 16-1/2", 9.2 lb. each					3.72			3.72	4.09
1900	Hip starter, 10" x 16-1/2", 10.5 lb. each					10.65			10.65	11.75
2000	3 or 4 way apex, 10" each side, 11.5 lb. each					12.20			12.20	13.40

07 32 Roof Tiles

07 32 19 – Metal Roof Tiles

07 32 19.10 Metal Roof Tiles		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
0010 METAL ROOF TILES											
0020 Accessories included, .032" thick aluminum, mission tile		1 Corp	2.50	3.200	Sq.	830	170			1,000	1,175
0200 Spanish tiles		"	3	2.667	"	550	142			692	820

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.	.23	.64	.25	1.12	1.50
0150	6" depth	G		2667	.021		.35	.97	.37	1.69	2.24
0200	8" depth	G		2000	.028		.47	1.29	.49	2.25	2.99
0250	10" depth	G		1600	.035		.59	1.61	.61	2.81	3.73
0300	12" depth	G		1335	.042		.70	1.93	.73	3.36	4.48
0310	Alt. man-made soil mix, hoist & spread, 4" deep up to 5 stories tall roof	G		4000	.014		1.92	.64	.25	2.81	3.35
0350	Mobilization 55 ton crane to site	G	1 Eqhv	3.60	2.222	Ea.		132		132	197
0355	Hoisting cost to 5 stories per day (Avg. 28 picks per day)	G	B-13B	1	56	Day		2,575	980	3,555	4,950
0360	Mobilization or demobilization, 100 ton crane to site driver & escort	G	A-3E	2.50	6.400	Ea.		345	70.50	415.50	600
0365	Hoisting cost 6-10 stories per day (Avg. 21 picks per day)	G	B-13C	1	56	Day		2,575	2,275	4,850	6,400
0370	Hoist and spread soil mixture 4" depth 6-10 stories tall roof	G		4000	.014	S.F.	.23	.64	.57	1.44	1.86
0375	6" depth	G		2667	.021		.35	.97	.86	2.18	2.78
0380	8" depth	G		2000	.028		.47	1.29	1.14	2.90	3.71
0385	10" depth	G		1600	.035		.59	1.61	1.43	3.63	4.63
0390	12" depth	G		1335	.042		.70	1.93	1.71	4.34	5.55
0400	Green roof edging treated lumber 4" x 4", no hoisting included	G	2 Corp	400	.040	L.F.	1.41	2.13		3.54	4.74
0410	4" x 6"	G		400	.040			2.24	2.13		4.37
0420	4" x 8"	G		360	.044		4.28	2.36		6.64	8.25
0430	4" x 6" double stacked	G		300	.053		4.48	2.83		7.31	9.20
0500	Green roof edging redwood lumber 4" x 4", no hoisting included	G		400	.040		6.60	2.13		8.73	10.50
0510	4" x 6"	G		400	.040		12.85	2.13		14.98	17.35
0520	4" x 8"	G		360	.044		24	2.36		26.36	30
0530	4" x 6" double stacked	G		300	.053		25.50	2.83		28.33	33
0550	Components, not including membrane or insulation:										
0560	Fluid applied rubber membrane, reinforced, 215 mil thick	G	G-5	350	.114	S.F.	.29	4.80	.55	5.64	8.85
0570	Root barrier	G	2 Rofc	775	.021		.70	.95		1.65	2.34
0580	Moisture retention barrier and reservoir	G	"	900	.018		2.66	.82		3.48	4.29
0600	Planting sedum, light soil, potted, 2-1/4" diameter, 2 per S.F.	G	1 Clab	420	.019		6.35	.80		7.15	8.20
0610	1 per S.F.	G	"	840	.010		3.18	.40		3.58	4.10
0630	Planting sedum mat per S.F. including shipping (4000 S.F. min)	G	4 Clab	4000	.008		7.65	.34		7.99	8.90
0640	Installation sedum mat system (no soil required) per S.F. (4000 S.F. min)	G	"	4000	.008		10.60	.34		10.94	12.20
0645	Note: pricing of sedum mats shipped in full truck loads (4000-5000 S.F.)										

07 41 Roof Panels

07 41 13 – Metal Roof Panels

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
07 41 13.10 Aluminum Roof Panels		Crew			Labor	Equipment			
0010	ALUMINUM ROOF PANELS								
0020	Corrugated or ribbed, .0155" thick, natural	63	1200	.027	S.F.	1.02	1.39	2.41	3.22
0300	Painted		1200	.027		1.50	1.39	2.89	3.75
0400	Corrugated, .018" thick, on steel frame, natural finish		1200	.027		1.25	1.39	2.64	3.48
0600	Painted		1200	.027		1.57	1.39	2.96	3.83
0700	Corrugated, on steel frame, natural, .024" thick		1200	.027		1.82	1.39	3.21	4.10
0800	Painted		1200	.027		2.20	1.39	3.59	4.52
0900	.032" thick, natural		1200	.027		3.15	1.39	4.54	5.55
1200	Painted		1200	.027		3.41	1.39	4.80	5.85
1300	V-Beam, on steel frame construction, .032" thick, natural		1200	.027		2.73	1.39	4.12	5.10
1500	Painted		1200	.027		4.03	1.39	5.42	6.55
1600	.040" thick, natural		1200	.027		3.98	1.39	5.37	6.50
1800	Painted		1200	.027		4.79	1.39	6.18	7.35
1900	.050" thick, natural		1200	.027		4.11	1.39	5.50	6.60
2100	Painted		1200	.027		4.94	1.39	6.33	7.55
2200	For roofing on wood frame, deduct		4600	.007		.08	.36	.44	.64
2400	Ridge cap, .032" thick, natural		800	.040	L.F.	3.36	2.09	5.45	6.85

07 41 13.20 Steel Roofing Panels

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
0010 STEEL ROOFING PANELS		Crew			Labor	Equipment			
0012	Corrugated or ribbed, on steel framing, 30 ga. galv	63	1100	.029	S.F.	1.80	1.52	3.32	4.27
0100	28 ga.		1050	.030		1.63	1.59	3.22	4.19
0300	26 ga.		1000	.032		2	1.67	3.67	4.72
0400	24 ga.		950	.034		3.06	1.76	4.82	6.05
0600	Colored, 28 ga.		1050	.030		1.90	1.59	3.49	4.49
0700	26 ga.		1000	.032		2.15	1.67	3.82	4.89
0710	Flat profile, 1-3/4" standing seams, 10" wide, standard finish, 26 ga.		1000	.032		4.16	1.67	5.83	7.10
0715	24 ga.		950	.034		4.85	1.76	6.61	8
0720	22 ga.		900	.036		6	1.86	7.86	9.40
0725	Zinc aluminum alloy finish, 26 ga.		1000	.032		3.35	1.67	5.02	6.20
0730	24 ga.		950	.034		3.92	1.76	5.68	6.95
0735	22 ga.		900	.036		4.47	1.86	6.33	7.75
0740	12" wide, standard finish, 26 ga.		1000	.032		4.19	1.67	5.86	7.15
0745	24 ga.		950	.034		5.45	1.76	7.21	8.65
0750	Zinc aluminum alloy finish, 26 ga.		1000	.032		4.71	1.67	6.38	7.70
0755	24 ga.		950	.034		3.92	1.76	5.68	6.95
0840	Flat profile, 1" x 3/8" batten, 12" wide, standard finish, 26 ga.		1000	.032		3.66	1.67	5.33	6.55
0845	24 ga.		950	.034		4.31	1.76	6.07	7.40
0850	22 ga.		900	.036		5.15	1.86	7.01	8.50
0855	Zinc aluminum alloy finish, 26 ga.		1000	.032		3.53	1.67	5.20	6.40
0860	24 ga.		950	.034		4.02	1.76	5.78	7.10
0865	22 ga.		900	.036		4.56	1.86	6.42	7.80
0870	16-1/2" wide, standard finish, 24 ga.		950	.034		4.25	1.76	6.01	7.35
0875	22 ga.		900	.036		4.78	1.86	6.64	8.05
0880	Zinc aluminum alloy finish, 24 ga.		950	.034		3.71	1.76	5.47	6.75
0885	22 ga.		900	.036		4.20	1.86	6.06	7.45
0890	Flat profile, 2" x 2" batten, 12" wide, standard finish, 26 ga.		1000	.032		4.24	1.67	5.91	7.20
0895	24 ga.		950	.034		5.10	1.76	6.86	8.25
0900	22 ga.		900	.036		6.20	1.86	8.06	9.65
0905	Zinc aluminum alloy finish, 26 ga.		1000	.032		4.02	1.67	5.69	6.95
0910	24 ga.		950	.034		4.51	1.76	6.27	7.60
0915	22 ga.		900	.036		5.25	1.86	7.11	8.55
0920	16-1/2" wide, standard finish, 24 ga.		950	.034		4.67	1.76	6.43	7.80

07 41 Roof Panels

07 41 13 – Metal Roof Panels

07 41 13.20 Steel Roofing Panels		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
		G-3	900	.036	S.F.	5.40	1.86	7.26	8.75
0925	22 ga.		950	.034		4.20	1.76	5.96	7.30
0930	Zinc aluminum alloy finish, 24 ga.								
0935	22 ga.		900	.036		4.80	1.86	6.66	8.10
1200	Ridge, galvanized, 10" wide	G	800	.040	L.F.	3.29	2.09	5.38	6.80
1203	14" wide	G	2 Shee	.051		3.95	3.15	7.10	9.10
1205	18" wide	G	"	.052		4.61	3.24	7.85	9.95
1210	20" wide	G	G-3	.043		4.23	2.23	6.46	8

07 41 33 – Plastic Roof Panels

07 41 33.10 Fiberglass Panels

0010 FIBERGLASS PANELS		G-3	1000	.032	S.F.	2.55	1.67	4.22	5.35
0012	Corrugated panels, roofing, 8 oz./S.F.		1000	.032		4.68	1.67	6.35	7.65
0100	12 oz./S.F.								
0300	Corrugated siding, 6 oz./S.F.		880	.036		2.02	1.90	3.92	5.10
0400	8 oz./S.F.		880	.036		2.55	1.90	4.45	5.70
0500	Fire retardant		880	.036		4.02	1.90	5.92	7.30
0600	12 oz. siding, textured		880	.036		3.78	1.90	5.68	7.05
0700	Fire retardant		880	.036		4.74	1.90	6.64	8.05
0900	Flat panels, 6 oz./S.F., clear or colors		880	.036		2.78	1.90	4.68	5.95
1100	Fire retardant, class A		880	.036		3.64	1.90	5.54	6.85
1300	8 oz./S.F., clear or colors		880	.036		2.41	1.90	4.31	5.50
1700	Sandwich panels, fiberglass, 1-9/16" thick, panels to 20 S.F.		180	.178		36.50	9.30	45.80	54
1900	As above, but 2-3/4" thick, panels to 100 S.F.	↓	265	.121	↓	25.50	6.30	31.80	37.50

07 42 Wall Panels

07 42 13 – Metal Wall Panels

07 42 13.10 Mansard Panels

0010 MANSARD PANELS		1 Shee	115	.070	S.F.	4.48	4.33	8.81	11.50
0600	Aluminum, stock units, straight surfaces								
0700	Concave or convex surfaces, add		75	.107		2.16	6.65	8.81	12.50
0800	For framing, to 5' high, add		115	.070	L.F.	3.91	4.33	8.24	10.85
0900	Soffits, to 1' wide	↓	125	.064	S.F.	2.94	3.99	6.93	9.30

07 42 13.20 Aluminum Siding Panels

0010 ALUMINUM SIDING PANELS		G-3	775	.041	S.F.	1.72	2.16	3.88	5.15
0012	Corrugated, on steel framing, .019" thick, natural finish								
0100	Painted		775	.041		1.86	2.16	4.02	5.30
0400	Farm type, .021" thick on steel frame, natural		775	.041		1.76	2.16	3.92	5.20
0600	Painted		775	.041		1.86	2.16	4.02	5.30
0700	Industrial type, corrugated, on steel, .024" thick, mill		775	.041		2.42	2.16	4.58	5.90
0900	Painted		775	.041		2.57	2.16	4.73	6.10
1000	.032" thick, mill		775	.041		2.65	2.16	4.81	6.20
1200	Painted		775	.041		3.28	2.16	5.44	6.85
1300	V-Beam, on steel frame, .032" thick, mill		775	.041		2.94	2.16	5.10	6.50
1500	Painted		775	.041		3.28	2.16	5.44	6.85
1600	.040" thick, mill		775	.041		3.71	2.16	5.87	7.35
1800	Painted		775	.041		4.31	2.16	6.47	8
1900	.050" thick, mill		775	.041		4.37	2.16	6.53	8.05
2100	Painted		775	.041		5.05	2.16	7.21	8.80
2200	Ribbed, 3" profile, on steel frame, .032" thick, natural		775	.041		2.67	2.16	4.83	6.20
2400	Painted		775	.041		3.33	2.16	5.49	6.90
2500	.040" thick, natural		775	.041		3.09	2.16	5.25	6.65

07 42 Wall Panels

07 42 13 – Metal Wall Panels

07 42 13.20 Aluminum Siding Panels			Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P	
2700	Painted		G-3	775	.041	S.F.	3.57	2.16		5.73	7.20	
2750	.050" thick, natural			775	.041		3.52	2.16		5.68	7.15	
2760	Painted			775	.041		4.06	2.16		6.22	7.75	
3300	For siding on wood frame, deduct from above			2800	.011	↓	.09	.60		.69	1	
3400	Screw fasteners, aluminum, self tapping, neoprene washer, 1"					M	219			219	241	
3600	Stitch screws, self tapping, with neoprene washer, 5/8"					"	165			165	181	
3630	Flashing, sidewall, .032" thick		G-3	800	.040	L.F.	3.11	2.09		5.20	6.60	
3650	End wall, .040" thick			800	.040		3.64	2.09		5.73	7.15	
3670	Closure strips, corrugated, .032" thick			800	.040		.94	2.09		3.03	4.19	
3680	Ribbed, 4" or 8", .032" thick			800	.040		.99	2.09		3.08	4.25	
3690	V-beam, .040" thick			800	.040	↓	1.45	2.09		3.54	4.76	
3800	Horizontal, colored clapboard, 8" wide, plain		2 Corp	515	.031	S.F.	2.72	1.65		4.37	5.45	
3810	Insulated			515	.031		3.17	1.65		4.82	5.95	
4000	Vertical board & batten, colored, non-insulated			515	.031		2.36	1.65		4.01	5.10	
4200	For simulated wood design, add					↓	.16			.16	.18	
4300	Corners for above, outside		2 Corp	515	.031	V.L.F.	3.92	1.65		5.57	6.80	
4500	Inside corners			"	515	.031	"	1.81	1.65		3.46	4.47

07 42 13.30 Steel Siding

0010 STEEL SIDING											
0020	Beveled, vinyl coated, 8" wide		1 Corp	265	.030	S.F.	1.87	1.60		3.47	4.47
0050	10" wide		"	275	.029		1.95	1.55		3.50	4.47
0080	Galv, corrugated or ribbed, on steel frame, 30 ga.		G-3	800	.040		1.20	2.09		3.29	4.48
0100	28 ga.			795	.040		1.30	2.10		3.40	4.60
0300	26 ga.			790	.041		1.69	2.11		3.80	5.05
0400	24 ga.			785	.041		2.22	2.13		4.35	5.65
0600	22 ga.			770	.042		2.31	2.17		4.48	5.80
0700	Colored, corrugated/ribbed, on steel frame, 10 yr. finish, 28 ga.			800	.040		2.33	2.09		4.42	5.70
0900	26 ga.			795	.040		2.01	2.10		4.11	5.40
1000	24 ga.			790	.041		2.24	2.11		4.35	5.65
1020	20 ga.			785	.041		2.85	2.13		4.98	6.35
1200	Factory sandwich panel, 26 ga., 1" insulation, galvanized			380	.084		5.20	4.40		9.60	12.35
1300	Colored 1 side			380	.084		7	4.40		11.40	14.35
1500	Galvanized 2 sides			380	.084		7.95	4.40		12.35	15.40
1600	Colored 2 sides			380	.084		8.20	4.40		12.60	15.65
1800	Acrylic paint face, regular paint liner			380	.084		6.05	4.40		10.45	13.30
1900	For 2" thick polystyrene, add						1.01			1.01	1.11
2000	22 ga., galv, 2" insulation, baked enamel exterior		G-3	360	.089		11.80	4.64		16.44	20
2100	Polyvinylidene exterior finish		"	360	.089	↓	12.55	4.64		17.19	21

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.	4.22	2.66		6.88	8.65
0600	Double face			375	.043		5.30	2.66		7.96	9.90
0700	4' x 10' x 5/16" plywood backing, single face			375	.043		4.28	2.66		6.94	8.75
0900	Double face			375	.043		5.80	2.66		8.46	10.40
1000	4' x 12' x 5/16" plywood backing, single face			375	.043		4.52	2.66		7.18	9
1300	Smooth aluminum, 1/4" plywood panel, fluoropolymer finish, double face			375	.043		6.05	2.66		8.71	10.70
1350	Clear anodized finish, double face			375	.043		10.25	2.66		12.91	15.30
1400	Double face textured aluminum, structural panel, 1" EPS insulation			375	.043	↓	6	2.66		8.66	10.65

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	Material	2020 Bare Costs	Total	Total Incl O&P
1500	Accessories, outside corner	1 Shee	175	.046	L.F.	1.73	2.85	4.58	6.20
1600	Inside corner		175	.046		1.38	2.85	4.23	5.85
1800	Batten mounting clip		200	.040		.50	2.49	2.99	4.33
1900	Low profile batten		480	.017		.63	1.04	1.67	2.27
2100	High profile batten		480	.017		1.43	1.04	2.47	3.15
2200	Water table		200	.040		2.16	2.49	4.65	6.15
2400	Horizontal joint connector		200	.040		1.66	2.49	4.15	5.60
2500	Corner cap		200	.040		1.88	2.49	4.37	5.85
2700	H-moulding		480	.017		1.27	1.04	2.31	2.98

07 46 Siding

07 46 23 – Wood Siding

07 46 23.10 Wood Board Siding

0010 WOOD BOARD SIDING		Carp	295	.027	S.F.	4.46	1.44	5.90	7.10
3200	Wood, cedar bevel, A grade, 1/2" x 6"		330	.024		8.50	1.29	9.79	11.30
3300	1/2" x 8"		375	.021		8.45	1.13	9.58	11
3500	3/4" x 10", clear grade		375	.021		4.16	1.13	5.29	6.30
3600	"B" grade		220	.036		7.90	1.93	9.83	11.60
3800	Cedar, rough sawn, 1" x 4", A grade, natural		220	.036		8	1.93	9.93	11.70
3900	Stained		420	.019		4.77	1.01	5.78	6.75
4100	1" x 12", board & batten, #3 & Btr., natural		420	.019		5.20	1.01	6.21	7.20
4200	Stained		330	.024		5.15	1.29	6.44	7.60
4400	1" x 8" channel siding, #3 & Btr., natural		330	.024		5.05	1.29	6.34	7.50
4500	Stained		220	.036		5	1.93	6.93	8.40
4700	Redwood, clear, beveled, vertical grain, 1/2" x 4"		295	.027		5.35	1.44	6.79	8
4750	1/2" x 6"		330	.024		5.45	1.29	6.74	7.90
4800	1/2" x 8"		375	.021		5.35	1.13	6.48	7.55
5000	3/4" x 10"		375	.021		4.87	1.13	6	7.05
5200	Channel siding, 1" x 10", B grade		220	.036		7.10	1.93	9.03	10.70
5250	Redwood, T&G boards, B grade, 1" x 4"		330	.024		8.35	1.29	9.64	11.10
5270	1" x 8"		330	.024		2.55	1.29	3.84	4.75
5400	White pine, rough sawn, 1" x 8", natural		330	.024		2.41	1.29	3.70	4.59
5500	Stained								

07 46 29 – Plywood Siding

07 46 29.10 Plywood Siding Options

0010 PLYWOOD SIDING OPTIONS		Carp	750	.021	S.F.	1.35	1.13	2.48	3.19
0900	Plywood, medium density overlaid, 3/8" thick		700	.023		1.58	1.22	2.80	3.57
1000	1/2" thick		650	.025		2.29	1.31	3.60	4.49
1100	3/4" thick		675	.024		2.59	1.26	3.85	4.74
1600	Texture 1-11, cedar, 5/8" thick, natural		675	.024		2.93	1.26	4.19	5.10
1700	Factory stained		675	.024		1.21	1.26	2.47	3.22
1900	Texture 1-11, fir, 5/8" thick, natural		675	.024		2.05	1.26	3.31	4.15
2050	Texture 1-11, S.Y.P., 5/8" thick, natural		675	.024		1.44	1.26	2.70	3.47
2100	Factory stained		675	.024		1.54	1.26	2.80	3.58
2200	Rough sawn cedar, 3/8" thick, natural		675	.024		1.28	1.26	2.54	3.30
2300	Factory stained		675	.024		1.59	1.26	2.85	3.64
2500	Rough sawn fir, 3/8" thick, natural		675	.024		.97	1.26	2.23	2.96
2600	Factory stained		675	.024		1.10	1.26	2.36	3.10
2800	Redwood, textured siding, 5/8" thick		675	.024		2.05	1.26	3.31	4.15

07 46 Siding

07 46 29 - Plywood Siding

07 46 29.10 Plywood Siding Options

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P
3000	Polyvinyl chloride coated, 3/8" thick	2 Carp	750	.021 S.F.	1.18	1.13	2.31	3

07 46 33 - Plastic Siding

07 46 33.10 Vinyl Siding

0010 VINYL SIDING

3995	Clapboard profile, woodgrain texture, .048 thick, double 4	2 Carp	495	.032	S.F.	1.09	1.72	2.81	3.78
4000	Double 5		550	.029		1.09	1.55	2.64	3.52
4005	Single 8		495	.032		1.65	1.72	3.37	4.40
4010	Single 10		550	.029		1.98	1.55	3.53	4.50
4015	.044 thick, double 4		495	.032		1.08	1.72	2.80	3.77
4020	Double 5		550	.029		1.10	1.55	2.65	3.54
4025	.042 thick, double 4		495	.032		1.08	1.72	2.80	3.77
4030	Double 5		550	.029		1.08	1.55	2.63	3.51
4035	Cross sawn texture, .040 thick, double 4		495	.032		.72	1.72	2.44	3.38
4040	Double 5		550	.029		.65	1.55	2.20	3.04
4045	Smooth texture, .042 thick, double 4		495	.032		.91	1.72	2.63	3.59
4050	Double 5		550	.029		.80	1.55	2.35	3.21
4055	Single 8		495	.032		.80	1.72	2.52	3.47
4060	Cedar texture, .044 thick, double 4		495	.032		1.18	1.72	2.90	3.88
4065	Double 6		600	.027		1.31	1.42	2.73	3.58
4070	Dutch lap profile, woodgrain texture, .048 thick, double 5		550	.029		1.15	1.55	2.70	3.59
4075	.044 thick, double 4.5		525	.030		1.09	1.62	2.71	3.63
4080	.042 thick, double 4.5		525	.030		.92	1.62	2.54	3.45
4085	.040 thick, double 4.5		525	.030		.72	1.62	2.34	3.23
4100	Shake profile, 10" wide		400	.040		4.04	2.13	6.17	7.65
4105	Vertical pattern, .046 thick, double 5		550	.029		1.77	1.55	3.32	4.27
4110	.044 thick, triple 3		550	.029		1.77	1.55	3.32	4.27
4115	.040 thick, triple 4		550	.029		1.72	1.55	3.27	4.22
4120	.040 thick, triple 2.66		550	.029		1.88	1.55	3.43	4.39
4125	Insulation, fan folded extruded polystyrene, 1/4"		2000	.008		.29	.43	.72	.96
4130	3/8"		2000	.008		.32	.43	.75	1
4135	Accessories, J channel, 5/8" pocket		700	.023	L.F.	.57	1.22	1.79	2.45
4140	3/4" pocket		695	.023		.63	1.22	1.85	2.53
4145	1-1/4" pocket		680	.024		1.15	1.25	2.40	3.14
4150	Flexible, 3/4" pocket		600	.027		2.85	1.42	4.27	5.25
4155	Under sill finish trim		500	.032		.59	1.70	2.29	3.21
4160	Vinyl starter strip		700	.023		.73	1.22	1.95	2.63
4165	Aluminum starter strip		700	.023		.31	1.22	1.53	2.17
4170	Window casing, 2-1/2" wide, 3/4" pocket		510	.031		1.78	1.67	3.45	4.46
4175	Outside corner, woodgrain finish, 4" face, 3/4" pocket		700	.023		2.35	1.22	3.57	4.42
4180	5/8" pocket		700	.023		2.29	1.22	3.51	4.35
4185	Smooth finish, 4" face, 3/4" pocket		700	.023		2.36	1.22	3.58	4.43
4190	7/8" pocket		690	.023		1.91	1.23	3.14	3.96
4195	1-1/4" pocket		700	.023		1.35	1.22	2.57	3.32
4200	Soffit and fascia, 1' overhang, solid		120	.133		5.15	7.10	12.25	16.30
4205	Vented		120	.133		5.15	7.10	12.25	16.30
4207	18" overhang, solid		110	.145		6.05	7.75	13.80	18.25
4208	Vented		110	.145		6.05	7.75	13.80	18.25
4210	2' overhang, solid		100	.160		6.90	8.50	15.40	20.50
4215	Vented		100	.160		6.90	8.50	15.40	20.50
4217	3' overhang, solid		100	.160		8.70	8.50	17.20	22.50
4218	Vented		100	.160		8.70	8.50	17.20	22.50
4220	Colors for siding and soffits, odd				S.F.	.15		.15	.17

07 46 Siding

07 46 33 – Plastic Siding

07 46 33.10 Vinyl Siding

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
					L.F.		.31	.31 .34
4225	Colors for accessories and trim, add							

07 46 33.20 Polypropylene Siding

0010 POLYPROPYLENE SIDING

4090	Shingle profile, random grooves, double 7"	2 Carp	400	.040	S.F.	3.51	2.13	5.64	7.05
4092	Cornerpost for above	1 Carp	365	.022	L.F.	12.85	1.17	14.02	15.90
4095	Triple 5"	2 Carp	400	.040	S.F.	3.72	2.13	5.85	7.30
4097	Cornerpost for above	1 Carp	365	.022	L.F.	12.40	1.17	13.57	15.40
5000	Staggered butt, double 7"	2 Carp	400	.040	S.F.	3.64	2.13	5.77	7.20
5002	Cornerpost for above	1 Carp	365	.022	L.F.	13.35	1.17	14.52	16.45
5010	Half round, double 6-1/4"	2 Carp	360	.044	S.F.	4.27	2.36	6.63	8.25
5020	Shake profile, staggered butt, double 9"	"	510	.031	"	3.80	1.67	5.47	6.70
5022	Cornerpost for above	1 Carp	365	.022	L.F.	10	1.17	11.17	12.75
5030	Straight butt, double 7"	2 Carp	400	.040	S.F.	4.27	2.13	6.40	7.90
5032	Cornerpost for above	1 Carp	365	.022	L.F.	14.55	1.17	15.72	17.75
6000	Accessories, J channel, 5/8" pocket	2 Carp	700	.023		.57	1.22	1.79	2.45
6010	3/4" pocket		695	.023		.63	1.22	1.85	2.53
6020	1-1/4" pocket		680	.024		1.15	1.25	2.40	3.14
6030	Aluminum starter strip		700	.023		.31	1.22	1.53	2.17

07 46 46 – Fiber Cement Siding

07 46 46.10 Fiber Cement Siding

0010	FIBER CEMENT SIDING	2 Carp	415	.039	S.F.	1.41	2.05	3.46	4.63
0020	Lap siding, 5/16" thick, 6" wide, 4-3/4" exposure, smooth texture	2 Carp	415	.039	S.F.	1.41	2.05	3.46	4.63
0025	Woodgrain texture		415	.039		1.41	2.05	3.46	4.63
0030	7-1/2" wide, 6-1/4" exposure, smooth texture		425	.038		2	2	4	5.20
0035	Woodgrain texture		425	.038		2	2	4	5.20
0040	8" wide, 6-3/4" exposure, smooth texture		425	.038		1.31	2	3.31	4.46
0045	Rough sawn texture		425	.038		1.31	2	3.31	4.46
0050	9-1/2" wide, 8-1/4" exposure, smooth texture		440	.036		1.19	1.93	3.12	4.21
0055	Woodgrain texture		440	.036		1.19	1.93	3.12	4.21
0060	12" wide, 10-3/8" exposure, smooth texture		455	.035		2.18	1.87	4.05	5.20
0065	Woodgrain texture		455	.035		2.18	1.87	4.05	5.20
0070	Panel siding, 5/16" thick, smooth texture		750	.021		1.22	1.13	2.35	3.04
0075	Stucco texture		750	.021		1.22	1.13	2.35	3.04
0080	Grooved woodgrain texture		750	.021		1.22	1.13	2.35	3.04
0088	Shingle siding, 48" x 15-1/4" panels, 7" exposure		700	.023		4.31	1.22	5.53	6.55
0090	Wood starter strip		400	.040	L.F.	.47	2.13	2.60	3.71

07 46 73 – Soffit

07 46 73.10 Soffit Options

0010 SOFFIT OPTIONS

0012	Aluminum, residential, .020" thick	1 Carp	210	.038	S.F.	2.25	2.03	4.28	5.50
0100	Baked enamel on steel, 16 or 18 ga.		105	.076		6.45	4.05	10.50	13.20
0300	Polyvinyl chloride, white, solid		230	.035		2.24	1.85	4.09	5.25
0400	Perforated		230	.035		2.24	1.85	4.09	5.25
0500	For colors, add					.15		.15	.17

07 51 Built-Up Bituminous Roofing

07 51 13 – Built-Up Asphalt Roofing

07 51 13.10 Built-Up Roofing Components		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Ind O&P
BUILT-UP ROOFING COMPONENTS										
0012 Asphalt saturated felt, #30, 2 sq./roll		1 Rofc	58	.138	Sq.	10.20	6.35		16.55	21.50
0200 #15, 4 sq./roll, plain or perforated, not mopped			58	.138		5.25	6.35		11.60	16.30
0300 Roll roofing, smooth, #65			15	.533		10.30	24.50		34.80	52
0500 #90			12	.667		37.50	31		68.50	92
0520 Mineralized			12	.667		36	31		67	90.50
0540 D.C. (double coverage), 19" selvage edge			10	.800		48	37		85	114
0580 Adhesive (lap cement)					Gal.	8.50			8.50	9.35
0800 Steep, flat or dead level asphalt, 10 ton lots, packaged					Ton	885			885	975

07 51 13.13 Cold-Applied Built-Up Asphalt Roofing

0010 COLD-APPLIED BUILT-UP ASPHALT ROOFING		G-5	50	.800	Sq.		33.50	3.86	37.36	59.50
0020 3 ply system, installation only (components listed below)					Ea.	133			133	146
0100 Spunbond poly. fabric, 1.35 oz./S.Y., 36"W, 10.8 sq./roll					Gal.	8.10			8.10	8.95
0500 Base & finish coat, 3 gal./sq., 5 gal./can.					Ea.	23			23	25.50
0600 Coating, ceramic granules, 1/2 sq./bag					Gal.	12.45			12.45	13.70
0700 Aluminum, 2 gal./sq.					"	6.65			6.65	7.30
0800 Emulsion, fibered or non-fibered, 4 gal./sq.										

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 insulation, flashing or wood nailers		G-1	22	2.545	Sq.	108	110	26	244	330
0200 Asphalt base sheet, 3 plies #15 asphalt felt, mopped			21	2.667		100	115	27	242	330
0350 On nailable decks			20	2.800		133	121	28.50	282.50	375
0500 4 plies #15 asphalt felt, mopped			19	2.947		118	127	30	275	375
0550 On nailable decks			22	2.545		108	110	26	244	330
0700 Coated glass base sheet, 2 plies glass (type IV), mopped			20	2.800		130	121	28.50	279.50	375
0850 3 plies glass, mopped			19	2.947		123	127	30	280	380
0950 On nailable decks			20	2.800		161	121	28.50	310.50	410
1100 4 plies glass fiber felt (type IV), mopped			19	2.947		146	127	30	303	405
1150 On nailable decks			20	2.800		109	121	28.50	258.50	350
1200 Coated & saturated base sheet, 3 plies #15 asph. felt, mopped			19	2.947		102	127	30	259	355
1250 On nailable decks			22	2.545		127	110	26	263	350
1300 4 plies #15 asphalt felt, mopped			22	2.545						
2000 Asphalt flood coat, smooth surface		G-1	24	2.333	Sq.	102	101	23.50	226.50	305
2200 Asphalt base sheet & 3 plies #15 asphalt felt, mopped			23	2.435		95	105	24.50	224.50	305
2400 On nailable decks			24	2.333		120	101	23.50	244.50	325
2600 4 plies #15 asphalt felt, mopped			23	2.435		113	105	24.50	242.50	325
2700 On nailable decks			25	2.240	Sq.	102	96.50	22.50	221	298
2900 Coated glass fiber base sheet, mopped, and 2 plies of glass fiber felt (type IV)		G-1	24	2.333		97	101	23.50	221.50	299
2910 On nailable decks			23	2.435		125	105	24.50	254.50	335
3100 3 plies, mopped			22	2.545		118	110	26	254	340
3200 On nailable decks			23	2.435		148	105	24.50	277.50	360
3300 4 plies glass fiber felt (type IV), mopped			22	2.545		140	110	26	276	365
3800 On nailable decks			24	2.333		104	101	23.50	228.50	305
3900 Coated & saturated base sheet, 3 plies #15 asph. felt, mopped			23	2.435		96	105	24.50	225.50	305
4000 On nailable decks			22	2.545		121	110	26	257	345
4200 Coal tar pitch with gravel/slag surfacing			21	2.667	Sq.	204	115	27	346	445
4600 4 plies #15 tarred felt, mopped		G-1	19	2.947	"	168	127	30	325	425
4800 3 plies glass fiber felt (type IV), mopped										
5000 Coated glass fiber base sheet, and 2 plies of										

07 51 Built-Up Bituminous Roofing

07 51 13 – Built-Up Asphalt Roofing

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P		
07 51 13.20 Built-Up Roofing Systems						Labor	Equipment			
5010	glass fiber felt (type IV), mopped	G-1	19	2.947	Sq.	172	127	30	329	430
5300	On nailable decks		18	3.111		150	134	31.50	315.50	420
5600	4 plies glass fiber felt (type IV), mopped		21	2.667		233	115	27	375	475
5800	On nailable decks	↓	20	2.800	↓	212	121	28.50	361.50	465

07 51 13.30 Cants		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P		
						Labor	Equipment			
0010	CANTS	1 Rofc	325	.025	L.F.	1.89	1.14		3.03	3.96
0012	Lumber, treated, 4" x 4" cut diagonally		325	.025		31	1.14		1.45	2.22
0300	Mineral or fiber, trapezoidal, 1" x 4" x 48"		325	.025		48	1.14		1.62	2.41
0400	1-1/2" x 5-5/8" x 48"		325	.025	↓	48	1.14			

07 51 13.40 Felts		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P		
						Labor	Equipment			
0010	FELTS	1 Rofc	58	.138	Sq.	10.20	6.35		16.55	22
0012	Glass fibered roofing felt, #15, not mopped		58	.138		48.50	6.35		54.85	64
0300	Base sheet, #80, channel vented		58	.138		18.70	6.35		25.05	31
0400	#70, coated		58	.138		84.50	6.35		90.85	103
0500	Cap, #87, mineral surfaced		58	.138		10.30	23		33.30	49.50
0600	Flashing membrane, #65		16	.500		17.55	6.35		23.90	30
0800	Coal tar fibered, #15, no mopping		58	.138		5.25	6.35		11.60	16.30
0900	Asphalt felt, #15, 4 sq./roll, no mopping		58	.138		10.20	6.35		16.55	21.50
1100	#30, 2 sq./roll		58	.138		11.90	6.35		18.25	23.50
1200	Double coated, #33		58	.138		10.95	6.35		17.30	22.50
1400	#40, base sheet		58	.138		12.20	6.35		18.55	24
1450	Coated and saturated		58	.138		14.70	6.35		21.05	26.50
1500	Tarred felt, organic, #15, 4 sq. rolls		58	.138		25	6.35		31.35	38
1550	#30, 2 sq. roll	↓	58	.138		10.65	12.60	2.95	26.20	36
1700	Add for mopping above felts, per ply, asphalt, 24 lb./sq.	G-1	192	.292		18.50	13	3.05	34.55	45.50
1800	Coal tar mopping, 30 lb./sq.		186	.301		26.50	40.50	9.45	76.45	106
1900	Flood coat, with asphalt, 60 lb./sq.		60	.933		46	43	10.10	99.10	134
2000	With coal tar, 75 lb./sq.	↓	56	1	↓					

07 51 13.50 Walkways for Built-Up Roofs

0010 WALKWAYS FOR BUILT-UP ROOFS		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P		
						Labor	Equipment			
0020	Asphalt impregnated, 3' x 6' x 1/2" thick	1 Rofc	400	.020	S.F.	1.98	.92		2.90	3.71
0100	3' x 3' x 3/4" thick	"	400	.020		5.70	.92		6.62	7.85
0300	Concrete patio blocks, 2" thick, natural	1 Clob	115	.070		3.58	2.93		6.51	8.35
0400	Colors	"	115	.070	↓	3.71	2.93		6.64	8.50

07 52 Modified Bituminous Membrane Roofing

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

07 52 13.10 APP Modified Bituminous Membrane

		R075213-30	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P		
							Labor	Equipment			
0010	APP MODIFIED BITUMINOUS MEMBRANE		1 Rofc	.58	.138	Sq.	11.85	6.35	18.20	23.50	
0020	Base sheet, #15 glass fiber felt, nailed to deck		G-1	295	.190		15.55	8.20	1.92	25.67	33
0030	Spot mopped to deck		"	192	.292	↓	21	12.60	2.95	36.55	47.50
0040	Fully mopped to deck		"	192	.292	↓	21	12.60	2.95	36.55	47.50
0050	#15 organic felt, nailed to deck		1 Rofc	58	.138		6.90	6.35		13.25	18.10
0060	Spot mopped to deck		G-1	295	.190		10.60	8.20	1.92	20.72	27.50
0070	Fully mopped to deck		"	192	.292	↓	15.90	12.60	2.95	31.45	42
2100	APP mod., smooth surf. cap sheet, poly. reinf., torched, 160 mils		G-5	2100	.019	S.F.	.84	.80	.09	1.73	2.34
2150	170 mils			2100	.019		.76	.80	.09	1.65	2.26
2200	Granule surface cap sheet, poly. reinf., torched, 180 mils			2000	.020		.96	.84	.10	1.90	2.56
2250	Smooth surface flashing, torched, 160 mils			1260	.032		.84	1.33	.15	2.32	3.29
2300	170 mils			1260	.032	↓	.76	1.33	.15	2.24	3.21

07 52 Modified Bituminous Membrane Roofing

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

07 52 13.10 APP Modified Bituminous Membrane				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
				Crew				Labor	Equipment		
2350	Granule surface flashing, torched, 180 mils			G-5	1260	.032	S.F.	.96	1.33	.15	2.44
2400	Fibrated aluminum coating			1 Rofc	3800	.002	↓	.09	.10		.19
2450	Seam heat welding			"	205	.039	L.F.	.09	1.80		1.89

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

07 52 16.10 SBS Modified Bituminous Membrane

0010 SBS MODIFIED BITUMINOUS MEMBRANE				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
				Crew				Labor	Equipment		
0080	Mod. bit. rfgng., SBS mod, gran surf. cap sheet, poly. reinf.										
0650	120 to 149 mils thick			G-1	2000	.028	S.F.	1.36	1.21	.28	2.85
0750	150 to 160 mils			1 Rofc	2000	.028	↓	1.80	1.21	.28	3.29
1600	Smooth surface cap sheet, mopped, 145 mils			"	2100	.027	↓	.83	1.15	.27	2.25
1620	Lightweight base sheet, fiberglass reinforced, 35 to 47 mil			"	2100	.027	↓	.29	1.15	.27	1.71
1625	Heavyweight base/ply sheet, reinforced, 87 to 120 mil thick			"	2100	.027	↓	.93	1.15	.27	2.35
1650	Granulated walkpad, 180 to 220 mils			1 Rofc	400	.020	↓	1.86	.92		2.78
1700	Smooth surface flashing, 145 mils			G-1	1260	.044	↓	.83	1.92	.45	3.20
1800	150 mils			"	1260	.044	↓	.51	1.92	.45	2.88
1900	Granular surface flashing, 150 mils			"	1260	.044	↓	.69	1.92	.45	3.06
2000	160 mils			"	1260	.044	↓	.78	1.92	.45	3.15
2010	Elastomeric asphalt primer			1 Rofc	2600	.003	↓	.17	.14		.31
2015	Roofing asphalt, 30 lb./square			G-1	19000	.003	↓	.13	.13	.03	.29
2020	Cold process adhesive, 20 to 30 mils thick			1 Rofc	750	.011	↓	.26	.49		.75
2025	Self adhering vapor retarder, 30 to 45 mils thick			G-5	2150	.019	↓	1.07	.78	.09	1.94
2050	Seam heat welding			1 Rofc	205	.039	L.F.	.09	1.80		1.89

07 53 Elastomeric Membrane Roofing

07 53 16 – Chlorosulfonate-Polyethylene Roofing

07 53 16.10 Chlorosulfonated Polyethylene Roofing

0010 CHLOROSULFONATED POLYETHYLENE ROOFING				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
				Crew				Labor	Equipment		
0800	Chlorosulfonated polyethylene (CSPE)										
0900	45 mils, heat welded seams, plate attachment			G-5	35	1.143	Sq.	249	48	5.50	302.50
1100	Heat welded seams, plate attachment and ballasted			"	26	1.538	↓	260	64.50	7.40	331.90
1200	60 mils, heat welded seams, plate attachment			"	35	1.143	↓	335	48	5.50	388.50
1300	Heat welded seams, plate attachment and ballasted			"	26	1.538	↓	345	64.50	7.40	416.90

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

07 53 23.20 Ethylene-Propylene-Diene-Monomer Roofing

0010 ETHYLENE-PROPYLENE-DIENE-MONOMER ROOFING (EPDM)				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
				Crew				Labor	Equipment		
3500	Ethylene-propylene-diene-monomer (EPDM), 45 mils, 0.28 psf			G-5	51	.784	Sq.	92	33	3.78	128.78
3600	Loose-laid & ballasted with stone (10 psf)			"	35	1.143	↓	85.50	48	5.50	139.17
3700	Mechanically attached			"	35	1.143	↓	105	48	5.50	158.50
3800	Fully adhered with adhesive			"	26	1.538	↓	120	64.50	7.40	191.90
4500	60 mils, 0.40 psf			"	26	1.538	↓	139	64.50	7.40	210.90
4600	Loose-laid & ballasted with stone (10 psf)			G-5	51	.784	Sq.	112	33	3.78	148.78
4700	Mechanically attached			"	35	1.143	↓	105	48	5.50	158.50
4800	Fully adhered with adhesive			"	26	1.538	↓	139	64.50	7.40	210.90
4810	45 mil, 0.28 psf, membrane only			"				55		55	60.50
4820	60 mil, 0.40 psf, membrane only			"				72		72	79.50
4850	Seam tape for membrane, 3" x 100' roll			"			Eq.	49.50		49.50	54.50
4900	Batten strips, 10' sections			"				4.05		4.05	4.46
4910	Cover tape for batten strips, 6" x 100' roll			"			↓	181		181	199
4930	Plate anchors			"			M	82.50		82.50	91
4970	Adhesive for fully adhered systems, 60 S.F./gal.			"			Gal.	21		21	23

07 53 Elastomeric Membrane Roofing

07 53 29 – Polyisobutylene Roofing

07 53 29.10 Polyisobutylene Roofing	Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
						Labor	Equipment	Total		
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.	215	33	3.78	251.78	295	
7700 Partially adhered with adhesive		35	1.143		253	48	5.50	306.50	365	
7800 Hot asphalt attachment		35	1.143		241	48	5.50	294.50	350	
7900 Fully adhered with contact cement		26	1.538	↓	266	64.50	7.40	337.90	405	

07 54 Thermoplastic Membrane Roofing

07 54 16 – Ketone Ethylene Ester Roofing

07 54 16.10 Ketone Ethylene Ester Roofing

0010 KETONE ETHYLENE ESTER ROOFING

0100 Ketone ethylene ester roofing, 50 mil, fully adhered	G-5	26	1.538	Sq.	216	64.50	7.40	287.90	355
0120 Mechanically attached		35	1.143		140	48	5.50	193.50	239
0140 Ballasted with stone		51	.784		148	33	3.78	184.78	222
0160 50 mil, fleece backed, adhered w/ hot asphalt	G-1	26	2.154	↓	160	93	22	275	350
0180 Accessories, pipe boot	1 Rofc	32	.250	Ea.	26	11.55		37.55	47.50
0200 Pre-formed corners		32	.250	"	9.75	11.55		21.30	30
0220 Ketone clad metal, including up to 4 bends	↓	330	.024	S.F.	4.02	1.12		5.14	6.25
0240 Walkway pad	2 Rofc	800	.020	"	4.27	.92		5.19	6.25
0260 Stripping material	1 Rofc	310	.026	L.F.	.99	1.19		2.18	3.06

07 54 19 – Polyvinyl-Chloride Roofing

07 54 19.10 Polyvinyl-Chloride Roofing (PVC)

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.	127	33	3.78	163.78	199
8800 Mechanically attached		35	1.143		120	48	5.50	173.50	217
8850 Fully adhered with adhesive	↓	26	1.538	↓	166	64.50	7.40	237.90	297
8860 Reinforced, 60 mils, 0.40 psf									
8870 Loose-laid & ballasted with stone/gravel (12 psf)	G-5	51	.784	Sq.	129	33	3.78	165.78	201
8880 Mechanically attached		35	1.143		121	48	5.50	174.50	219
8890 Fully adhered with adhesive		26	1.538		167	64.50	7.40	238.90	299

07 54 23 – Thermoplastic-Polyolefin Roofing

07 54 23.10 Thermoplastic Polyolefin Roofing (T.P.O.)

0010 THERMOPLASTIC POLYOLEFIN ROOFING (T.P.O.)

0100 45 mil, loose laid & ballasted with stone (1/2 ton/sq.)	G-5	51	.784	Sq.	86.50	33	3.78	123.28	154
0120 Fully adhered		25	1.600		76	67	7.70	150.70	203
0140 Mechanically attached		34	1.176		75.50	49.50	5.65	130.65	171
0160 Self adhered		35	1.143		79	48	5.50	132.50	172
0180 60 mil membrane, heat welded seams, ballasted		50	.800		100	33.50	3.86	137.36	170
0200 Fully adhered		25	1.600		89	67	7.70	163.70	218
0220 Mechanically attached		34	1.176		93	49.50	5.65	148.15	190
0240 Self adhered	↓	35	1.143		106	48	5.50	159.50	202

07 55 Protected Membrane Roofing

07 55 10 – Protected Membrane Roofing Components

07 55 10.10 Protected Membrane Roofing Components		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Bare Costs	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.	10	.07				
0140	Ballast, 3/8" - 1/2" in place	6-1	36	1.556	Ton	22	.67	15.75	104.75	152	23
0150	3/4" - 1-1/2" in place	"	36	1.556	"	22	.67	15.75	104.75	152	
0200	2" concrete blocks, natural	1 Clab	115	.070	S.F.	3.58	2.93			6.51	8.35
0210	Colors	"	115	.070	"	3.71	2.93			6.64	8.50

07 56 Fluid-Applied Roofing

07 56 10 – Fluid-Applied Roofing Elastomers

07 56 10.10 Elastomeric Roofing

0010 ELASTOMERIC ROOFING		2 Rofc	2400	.007	S.F.	56	.31			.87	1.13
0020	Acrylic, 44% solids, 2 coats, on corrugated metal										
0025	On smooth metal		3000	.005		.45	.25			.70	.90
0030	On foam or modified bitumen		1500	.011		.90	.49			1.39	1.79
0035	On concrete		1500	.011		.90	.49			1.39	1.79
0040	On tar and gravel		1500	.011		.90	.49			1.39	1.79
0045	36% solids, 2 coats, on corrugated metal		2400	.007		.51	.31			.82	1.07
0050	On smooth metal		3000	.005		.41	.25			.66	.86
0055	On foam or modified bitumen		1500	.011		.82	.49			1.31	1.71
0060	On concrete		1500	.011		.82	.49			1.31	1.71
0065	On tar and gravel		1500	.011		.82	.49			1.31	1.71
0070	Primer if required, 2 coats on corrugated metal		2400	.007		.51	.31			.82	1.07
0075	On smooth metal		3000	.005		.51	.25			.76	.97
0080	On foam or modified bitumen		1500	.011		.69	.49			1.18	1.57
0085	On concrete		1500	.011		.52	.49			1.01	1.38
0090	On tar & gravel/rolled roof		1500	.011		.69	.49			1.18	1.57
0110	Acrylic rubber, fluid applied, 20 mils thick	6-5	2000	.020		2.20	.84	.10		3.14	3.92
0120	50 mils, reinforced		1200	.033		3.23	1.40	.16		4.79	6.05
0130	For walking surface, add		900	.044		1.34	1.86	.21		3.41	4.79
0300	Neoprene, fluid applied, 20 mil thick, not reinforced	G-1	1135	.049		1.31	2.13	.50		3.94	5.50
0600	Non-woven polyester, reinforced		960	.058		1.43	2.52	.59		4.54	6.40
0700	5 coat neoprene deck, 60 mil thick, under 10,000 S.F.		325	.172		4.37	7.45	1.74		13.56	19
0900	Over 10,000 S.F.		625	.090		4.37	3.87	.91		9.15	12.20

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.)		G-2A	3000	.008	S.F.	.51	.33	.21		1.05	1.31
0100	Primer for metal substrate (when required)										
0200	Primer for non-metal substrate (when required)										
0300	Closed cell spray, polyurethane foam, 3 lb./C.F. density, 1", R6.7		15000	.002		.64	.07	.04		.75	.86
0400	2", R13.4		13125	.002		1.29	.08	.05		1.42	1.59
0500	3", R18.6		11485	.002		1.93	.09	.06		2.08	2.33
0550	4", R24.8		10080	.002		2.58	.10	.06		2.74	3.06
0700	Spray-on silicone coating		2500	.010		1.28	.39	.25		1.92	2.32

07 58 Roll Roofing

07 58 10 – Asphalt Roll Roofing

07 58 10.10 Roll Roofing		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare 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.	69	89.50	21	179.50	247
0400 3 plies glass fiber felt (type IV), 1 ply mineral surfaced		G-1	25	2.240	Sq.	121	96.50	22.50	240	320
0500 Selvage roofing, lapped 19", mopped										
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.	130	96.50	22.50	249	330
0900 On nailable decks		"	24	2.333	"	119	101	23.50	243.50	325
1000 3 plies glass fiber felt (type III), 1 ply mineral surfaced										
1100 Selvage roofing, lapped 19", mopped		G-1	25	2.240	Sq.	121	96.50	22.50	240	320

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		1 Shee	1.30	6.154	Sq.	1,025	385	1,410	1,700
0400 Copper standing seam roofing, over 10 squares, 16 oz., 125 lb./sq.									
0600 18 oz., 140 lb./sq.			1.20	6.667		1,150	415	1,565	1,875
0700 20 oz., 150 lb./sq.			1.10	7.273		1,300	455	1,755	2,125
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		1 Shee	1.10	7.273	Sq.	1,300	455	1,755	2,100
0012 Copper batten seam roofing, over 10 sq., 16 oz., 130 lb./sq.									
0020 Lead batten seam roofing, 5 lb./S.F.			1.20	6.667		1,700	415	2,115	2,500
0100 Zinc/copper alloy batten seam roofing, .020" thick			1.20	6.667		1,550	415	1,965	2,325
0200 Copper roofing, batten seam, over 10 sq., 18 oz., 145 lb./sq.			1	8		1,450	500	1,950	2,350
0300 20 oz., 160 lb./sq.			1	8		1,650	500	2,150	2,575
0500 Stainless steel batten seam roofing, type 304, 28 ga.			1.20	6.667		680	415	1,095	1,375
0600 26 ga.			1.15	6.957		770	435	1,205	1,500
0800 Zinc, copper alloy roofing, batten seam, .027" thick			1.15	6.957		1,900	435	2,335	2,750
0900 .032" thick			1.10	7.273		2,025	455	2,480	2,900
1000 .040" thick			1.05	7.619		2,675	475	3,150	3,675

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		1 Shee	1.20	6.667	Sq.	945	415	1,360	1,675
0900 Copper flat seam roofing, over 10 squares, 16 oz., 115 lb./sq.									
0950 18 oz., 130 lb./sq.			1.15	6.957		1,050	435	1,485	1,825
1000 20 oz., 145 lb./sq.			1.10	7.273		1,225	455	1,680	2,000
1008 Zinc flat seam roofing, .020" thick			1.20	6.667		1,325	415	1,740	2,075
1010 .027" thick			1.15	6.957		1,625	435	2,060	2,425
1020 .032" thick			1.12	7.143		1,725	445	2,170	2,575
1030 .040" thick			1.05	7.619		2,300	475	2,775	3,250
1100 Lead flat seam roofing, 5 lb./S.F.			1.30	6.154		1,450	385	1,835	2,175

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	Material	2020 Bare Costs	Total	Total Incl O&P
						Labor	Equipment		
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.	1.01	2.55	3.56	5.30
0030	.016" thick		145	.055		1.15	2.55	3.70	5.50
0060	.019" thick		145	.055		1.50	2.55	4.05	5.85
0100	.032" thick		145	.055		1.38	2.55	3.93	5.75
0200	.040" thick		145	.055		2.33	2.55	4.88	6.75
0300	.050" thick		145	.055		3.22	2.55	5.77	7.75
0325	Mill finish 5" x 7" step flashing, .016" thick		1920	.004	Ea.	.15	.19	.34	.49
0350	Mill finish 12" x 12" step flashing, .016" thick		1600	.005	"	.60	.23	.83	1.04
0400	Painted finish, add				S.F.	.34		.34	.37
1000	Mastic-coated 2 sides, .005" thick	1 Rofc	330	.024		1.89	1.12	3.01	3.93
1100	.016" thick		330	.024		2.09	1.12	3.21	4.15
1600	Copper, 16 oz. sheets, under 1000 lb.		115	.070		8.15	3.21	11.36	14.30
1700	Over 4000 lb.		155	.052		8.15	2.38	10.53	12.95
1900	20 oz. sheets, under 1000 lb.		110	.073		10.45	3.36	13.81	17.05
2000	Over 4000 lb.		145	.055		9.95	2.55	12.50	15.15
2200	24 oz. sheets, under 1000 lb.		105	.076		15.30	3.52	18.82	22.50
2300	Over 4000 lb.		135	.059		14.55	2.74	17.29	20.50
2500	32 oz. sheets, under 1000 lb.		100	.080		21	3.70	24.70	29
2600	Over 4000 lb.		130	.062		19.75	2.84	22.59	26
2700	W shape for valleys, 16 oz., 24" wide		100	.080	L.F.	16.65	3.70	20.35	24.50
5800	Lead, 2.5 lb./S.F., up to 12" wide		135	.059	S.F.	6.10	2.74	8.84	11.20
5900	Over 12" wide		135	.059		4.05	2.74	6.79	9
8900	Stainless steel sheets, 32 ga.		155	.052		3.51	2.38	5.89	7.80
9000	28 ga.		155	.052		5	2.38	7.38	9.45
9100	26 ga.		155	.052		5.10	2.38	7.48	9.55
9200	24 ga.		155	.052		5.85	2.38	8.23	10.35
9290	For mechanically keyed flashing, add					40%			
9320	Steel sheets, galvanized, 20 ga.	1 Rofc	130	.062	S.F.	1.22	2.84	4.06	6.05
9322	22 ga.		135	.059		1.27	2.74	4.01	5.90
9324	24 ga.		140	.057		.97	2.64	3.61	5.45
9326	26 ga.		148	.054		.85	2.50	3.35	5.05
9328	28 ga.		155	.052		.73	2.38	3.11	4.75
9340	30 ga.		160	.050		.62	2.31	2.93	4.49
9400	Terne coated stainless steel, .015" thick, 28 ga.		155	.052		8.20	2.38	10.58	12.95
9500	.018" thick, 26 ga.		155	.052		9.15	2.38	11.53	14
9600	Zinc and copper alloy (brass), .020" thick		155	.052		10.10	2.38	12.48	15.05
9700	.027" thick		155	.052		12.25	2.38	14.63	17.45
9800	.032" thick		155	.052		15.45	2.38	17.83	21
9900	.040" thick		155	.052		20.50	2.38	22.88	26.50

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.	11.35		11.35	12.50
4900	Fabric, asphalt-saturated cotton, specification grade	1 Rofc	35	.229	S.Y.	3.26	10.55	13.81	21
5000	Utility grade		35	.229		1.55	10.55	12.10	19.15
5300	Close-mesh fabric, saturated, 17 oz./S.Y.		35	.229		2.21	10.55	12.76	19.90
5500	Fiberglass, resin-coated		35	.229		1.24	10.55	11.79	18.80
8500	Shower pan, bituminous membrane, 7 oz.		155	.052	S.F.	1.95	2.38	4.33	6.10

07 65 Flexible Flashing

07 65 13 – Laminated Sheet Flashing

07 65 13.10 Laminated Sheet Flashing		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	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.	1.58	1.12			2.70	3.59
0700	.005" thick		330	.024		1.88	1.12			3	3.92
0750	Mastic-backed, self adhesive		460	.017		3.41	.80			4.21	5.10
0800	Mastic-coated 2 sides, .004" thick		330	.024		1.58	1.12			2.70	3.59
2800	Copper, paperbacked 1 side, 2 oz.		330	.024		2.16	1.12			3.28	4.23
2900	3 oz.		330	.024		3.15	1.12			4.27	5.30
3100	Paperbacked 2 sides, 2 oz.		330	.024		2.39	1.12			3.51	4.48
3150	3 oz.		330	.024		2.24	1.12			3.36	4.31
3200	5 oz.		330	.024		3.65	1.12			4.77	5.85
3250	7 oz.		330	.024		6.85	1.12			7.97	9.35
3400	Mastic-backed 2 sides, copper, 2 oz.		330	.024		2.15	1.12			3.27	4.22
3500	3 oz.		330	.024		2.57	1.12			3.69	4.68
3700	5 oz.		330	.024		3.90	1.12			5.02	6.15
3800	Fabric-backed 2 sides, copper, 2 oz.		330	.024		2.05	1.12			3.17	4.11
4000	3 oz.		330	.024		2.88	1.12			4	5
4100	5 oz.		330	.024		4.03	1.12			5.15	6.30
4300	Copper-clad stainless steel, .015" thick, under 500 lb.		115	.070		7.05	3.21			10.26	13.05
4400	Over 2000 lb.		155	.052		7.05	2.38			9.43	11.70
4600	.018" thick, under 500 lb.		100	.080		7.95	3.70			11.65	14.85
4700	Over 2000 lb.		145	.055		8.10	2.55			10.65	13.10
8550	Shower pan, 3 ply copper and fabric, 3 oz.		155	.052		4.12	2.38			6.50	8.45
8600	7 oz.		155	.052		5.45	2.38			7.83	9.90
9300	Stainless steel, paperbacked 2 sides, .005" thick		330	.024		4.04	1.12			5.16	6.30

07 65 19 – Plastic Sheet Flashing

07 65 19.10 Plastic Sheet Flashing and Counter Flashing

0010 PLASTIC SHEET FLASHING AND COUNTER FLASHING		1 Rofc	285	.028	S.F.	.27	1.30			1.57	2.44
7300	Polyvinyl chloride, black, 10 mil		285	.028		.26	1.30			1.56	2.43
7400	20 mil		285	.028		.33	1.30			1.63	2.50
7600	30 mil		285	.028		.88	1.30			2.18	3.11
7700	60 mil		285	.028		1.11	1.30			2.41	3.36
7900	Black or white for exposed roofs, 60 mil		285	.028		Ea.	183			183	201
8060	PVC tape, 5" x 45 mils, for joint covers, 100 L.F./roll		1 Rofc	160	.050	S.F.	1.47	2.31		3.78	5.45

07 65 23 – Rubber Sheet Flashing

07 65 23.10 Rubber Sheet Flashing and Counter Flashing

0010 RUBBER SHEET FLASHING AND COUNTER FLASHING		1 Rofc	32	.250	Ea.	21	11.55			32.55	42
4810	EPDM 90 mils, 1" diameter pipe flashing		30	.267		21	12.30			33.30	43.50
4820	2" diameter		28	.286		24	13.20			37.20	48.50
4830	3" diameter		24	.333		29.50	15.40			44.90	58
4840	4" diameter		22	.364		29.50	16.80			46.30	59.50
4850	6" diameter		285	.028	S.F.	2.56	1.30			3.86	4.96
8100	Rubber, butyl, 1/32" thick		285	.028		3.83	1.30			5.13	6.35
8200	1/16" thick		285	.028		2.77	1.30			4.07	5.20
8300	Neoprene, cured, 1/16" thick		285	.028		6.15	1.30			7.45	8.95
8400	1/8" thick		285	.028							

07 65 Flexible Flashing

07 65 26 – Self-Adhering Sheet Flashing

07 65 26.10 Self-Adhering Sheet or Roll Flashing		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
0010	SELF-ADHERING SHEET OR ROLL FLASHING									
0020	Self-adhered flashing, 25 mil cross laminated HDPE, 4" wide	1 Rofc	960	.008	L.F.	.20	.38		.58	.86
0040	6" wide		896	.009		.31	.41		.72	1.02
0060	9" wide		832	.010		.46	.44		.90	1.23
0080	12" wide		768	.010		.61	.48		1.09	1.46

07 71 Roof Specialties

07 71 16 – Manufactured Counterflashing Systems

07 71 16.20 Pitch Pockets, Variable Sizes

0010 PITCH POCKETS, VARIABLE SIZES		1 Rofc	48	.167	Ea.	21.50	7.70		29.20	36.50
0100	Adjustable, 4" to 7", welded corners, 4" deep	"	240	.033	"	3.34	1.54		4.88	6.20
0200	Side extenders, 6"									

07 71 19 – Manufactured Gravel Stops and Fasciae

07 71 19.10 Gravel Stop

0010 GRAVEL STOP		1 Shee	145	.055	L.F.	6.95	3.44		10.39	12.85
0020	Aluminum, .050" thick, 4" face height, mill finish		145	.055		7.60	3.44		11.04	13.55
0080	Duranodic finish		145	.055		8.25	3.44		11.69	14.25
0100	Painted		145	.055		7.60	3.44		11.04	13.55
0300	6" face height		135	.059		7.45	3.69		11.14	13.75
0350	Duranodic finish		135	.059		8.25	3.69		11.94	14.65
0400	Painted		135	.059		8.85	3.69		12.54	15.35
0600	8" face height		125	.064		7.95	3.99		11.94	14.75
0650	Duranodic finish		125	.064		9.40	3.99		13.39	16.40
0700	Painted		125	.064		9.60	3.99		13.59	16.60
0900	12" face height, .080" thick, 2 piece		100	.080		11	4.98		15.98	19.65
0950	Duranodic finish		100	.080		10.95	4.98		15.93	19.60
1000	Painted		100	.080		14.45	4.98		19.43	23.50
1200	Copper, 16 oz., 3" face height		145	.055		28.50	3.44		31.94	36.50
1300	6" face height		135	.059		37	3.69		40.69	46
1350	Galv steel, 24 ga., 4" leg, plain, with continuous cleat, 4" face		145	.055		6.60	3.44		10.04	12.50
1360	6" face height		145	.055		6.95	3.44		10.39	12.85
1500	Polyvinyl chloride, 6" face height		135	.059		5.85	3.69		9.54	12
1600	9" face height		125	.064		7.05	3.99		11.04	13.80
1800	Stainless steel, 24 ga., 6" face height		135	.059		17	3.69		20.69	24.50
1900	12" face height		100	.080		22.50	4.98		27.48	32.50
2100	20 ga., 6" face height		135	.059		22.50	3.69		26.19	30
2200	12" face height		100	.080		27	4.98		31.98	37

07 71 19.30 Fascia

0010 FASCIA		1 Shee	145	.055	S.F.	7.20	3.44		10.64	13.15
0100	Aluminum, reverse board and batten, .032" thick, colored, no furring incl.		145	.055		5.65	3.44		9.09	11.40
0300	Steel, galv and enameled, stock, no furring, long panels		145	.055		5.35	4.33		9.68	12.45
0600	Short panels		115	.070						

07 71 23 – Manufactured Gutters and Downspouts

07 71 23.10 Downspouts

0010 DOWNSPOUTS		1 Shee	190	.042	L.F.	.95	2.62		3.57	5.05
0020	Aluminum, embossed, .020" thick, 2" x 3"		190	.042		1.37	2.62		3.99	5.50
0100	Enamaled		180	.044		2.17	2.77		4.94	6.60
0300	.024" thick, 2" x 3"		140	.057		2.29	3.56		5.85	7.90
0400	3" x 4"									

07 71 Roof Specialties

07 71 23 – Manufactured Gutters and Downspouts

07 71 23.10 Downspouts		Crew	Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
						Material	Labor	Equipment		
0600	Round, corrugated aluminum, 3" diameter, .020" thick	1 Shee	190	.042	LF.	2.13	2.62		4.75	6.30
0700	4" diameter, .025" thick		140	.057		3.21	3.56		6.77	8.95
0900	Wire strainer, round, 2" diameter		155	.052	Ea.	2.05	3.22		5.27	7.15
1000	4" diameter		155	.052		2.66	3.22		5.88	7.80
1200	Rectangular, perforated, 2" x 3"		145	.055		2.36	3.44		5.80	7.80
1300	3" x 4"		145	.055		3.42	3.44		6.86	8.95
1500	Copper, round, 16 oz., stock, 2" diameter		190	.042	LF.	8	2.62		10.62	12.80
1600	3" diameter		190	.042		9	2.62		11.62	13.90
1800	4" diameter		145	.055		10.65	3.44		14.09	16.95
1900	5" diameter		130	.062		14.85	3.83		18.68	22
2100	Rectangular, corrugated copper, stock, 2" x 3"		190	.042		9.20	2.62		11.82	14.15
2200	3" x 4"		145	.055		9.40	3.44		12.84	15.50
2400	Rectangular, plain copper, stock, 2" x 3"		190	.042		13.25	2.62		15.87	18.60
2500	3" x 4"		145	.055		13.85	3.44		17.29	20.50
2700	Wire strainers, rectangular, 2" x 3"		145	.055	Ea.	17.15	3.44		20.59	24
2800	3" x 4"		145	.055		20	3.44		23.44	27
3000	Round, 2" diameter		145	.055		7.65	3.44		11.09	13.65
3100	3" diameter		145	.055		10.40	3.44		13.84	16.65
3300	4" diameter		145	.055		12	3.44		15.44	18.40
3400	5" diameter		115	.070		23	4.33		27.33	31.50
3600	Lead-coated copper, round, stock, 2" diameter		190	.042	LF.	25.50	2.62		28.12	32
3700	3" diameter		190	.042		24.50	2.62		27.12	31
3900	4" diameter		145	.055		27.50	3.44		30.94	35.50
4000	5" diameter, corrugated		130	.062		26	3.83		29.83	34.50
4200	6" diameter, corrugated		105	.076		32	4.75		36.75	42
4300	Rectangular, corrugated, stock, 2" x 3"		190	.042		15.25	2.62		17.87	20.50
4500	Plain, stock, 2" x 3"		190	.042		27.50	2.62		30.12	34.50
4600	3" x 4"		145	.055		40.50	3.44		43.94	49.50
4800	Steel, galvanized, round, corrugated, 2" or 3" diameter, 28 ga.		190	.042		2.30	2.62		4.92	6.50
4900	4" diameter, 28 ga.		145	.055		2.19	3.44		5.63	7.60
5100	5" diameter, 26 ga.		130	.062		3.86	3.83		7.69	10.05
5400	6" diameter, 28 ga.		105	.076		3.72	4.75		8.47	11.30
5500	26 ga.		105	.076		4.08	4.75		8.83	11.70
5700	Rectangular, corrugated, 28 ga., 2" x 3"		190	.042		2.38	2.62		5	6.60
5800	3" x 4"		145	.055		1.96	3.44		5.40	7.35
6000	Rectangular, plain, 28 ga., galvanized, 2" x 3"		190	.042		3.98	2.62		6.60	8.35
6100	3" x 4"		145	.055		4.83	3.44		8.27	10.50
6300	Epoxy painted, 24 ga., corrugated, 2" x 3"		190	.042		2.53	2.62		5.15	6.75
6400	3" x 4"		145	.055		2.99	3.44		6.43	8.50
6600	Wire strainers, rectangular, 2" x 3"		145	.055	Ea.	20.50	3.44		23.94	27.50
6700	3" x 4"		145	.055		19.30	3.44		22.74	26
6900	Round strainers, 2" or 3" diameter		145	.055		4.50	3.44		7.94	10.15
7000	4" diameter		145	.055		6.55	3.44		9.99	12.40
7800	Stainless steel tubing, schedule 5, 2" x 3" or 3" diameter		190	.042	LF.	69	2.62		71.62	79.50
7900	3" x 4" or 4" diameter		145	.055		125	3.44		128.44	142
8100	4" x 5" or 5" diameter		135	.059		152	3.69		155.69	173
8200	Vinyl, rectangular, 2" x 3"		210	.038		2.17	2.37		4.54	6
8300	Round, 2-1/2"		220	.036		1.41	2.27		3.68	4.99

07 71 23.20 Downspout Elbows

0010	DOWNSPOUT ELBOWS	1 Shee	100	.080	Ea.	1	4.98		5.98	8.65
0020	Aluminum, embossed, 2" x 3", .020" thick		100	.080		2.45	4.98		7.43	10.25
0100	Enameling									

07 71 Roof Specialties

07 71 23 – Manufactured Gutters and Downspouts

07 71 23.20 Downspout Elbows

		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Ind O&P
0200	Embossed, 3" x 4", .025" thick	1 Shee	100	.080	Ea.	2.96	4.98		7.94	10.80
0300	Enamored			100	.080	3.81	4.98		8.79	11.75
0400	Embossed, corrugated, 3" diameter, .020" thick			100	.080	3.15	4.98		8.13	11
0500	4" diameter, .025" thick			100	.080	7	4.98		11.98	15.25
0600	Copper, 16 oz., 2" diameter			100	.080	10.90	4.98		15.88	19.55
0700	3" diameter			100	.080	10.30	4.98		15.28	18.90
0800	4" diameter			100	.080	12.95	4.98		17.93	22
1000	Rectangular, 2" x 3" corrugated			100	.080	10.20	4.98		15.18	18.80
1100	3" x 4" corrugated			100	.080	15.15	4.98		20.13	24.50
1300	Vinyl, 2-1/2" diameter, 45 or 75 degree bend			100	.080	4.04	4.98		9.02	12
1400	Tee Y junction			75	.107	13.10	6.65		19.75	24.50

07 71 23.30 Gutters

GUTTERS

0010										
0012	Aluminum, stock units, 5" K type, .027" thick, plain	1 Shee	125	.064	L.F.	2.85	3.99		6.84	9.20
0100	Enamored			125	.064	2.94	3.99		6.93	9.30
0300	5" K type, .032" thick, plain			125	.064	3.79	3.99		7.78	10.20
0400	Enamored			125	.064	3.58	3.99		7.57	10
0700	Copper, half round, 16 oz., stock units, 4" wide			125	.064	8.60	3.99		12.59	15.55
0900	5" wide			125	.064	7.65	3.99		11.64	14.50
1000	6" wide			118	.068	10.90	4.22		15.12	18.35
1200	K type, 16 oz., stock, 5" wide			125	.064	8.75	3.99		12.74	15.65
1300	6" wide			125	.064	8.45	3.99		12.44	15.35
1500	Lead coated copper, 16 oz., half round, stock, 4" wide			125	.064	17.55	3.99		21.54	25.50
1600	6" wide			118	.068	20	4.22		24.22	28.50
1800	K type, stock, 5" wide			125	.064	18.55	3.99		22.54	26.50
1900	6" wide			125	.064	21	3.99		24.99	29
2100	Copper clad stainless steel, K type, 5" wide			125	.064	7.60	3.99		11.59	14.40
2200	6" wide			125	.064	10.30	3.99		14.29	17.40
2400	Steel, galv, half round or box, 28 ga., 5" wide, plain			125	.064	2.40	3.99		6.39	8.70
2500	Enamored			125	.064	2.24	3.99		6.23	8.50
2700	26 ga., stock, 5" wide			125	.064	2.66	3.99		6.65	9
2800	6" wide			125	.064	2.64	3.99		6.63	8.95
3000	Vinyl, O.G., 4" wide	1 Carp	115	.070		1.39	3.70		5.09	7.10
3100	5" wide		115	.070		1.51	3.70		5.21	7.20
3200	4" half round, stock units		115	.070	Ea.	1.42	3.70		5.12	7.10
3250	Joint connectors					3.10			3.10	3.41
3300	Wood, clear treated cedar, fir or hemlock, 3" x 4"	1 Carp	100	.080	L.F.	12.70	4.25		16.95	20.50
3400	4" x 5"		"	100	.080	"	24.50	4.25	28.75	33.50
5000	Accessories, end cap, K type, aluminum 5"	1 Shee	625	.013	Ea.	.74	.80		1.54	2.02
5010	6"			625	.013	1.49	.80		2.29	2.85
5020	Copper, 5"			625	.013	3.41	.80		4.21	4.96
5030	6"			625	.013	3.59	.80		4.39	5.15
5040	Lead coated copper, 5"			625	.013	13.20	.80		14	15.70
5050	6"			625	.013	14.10	.80		14.90	16.70
5060	Copper clad stainless steel, 5"			625	.013	3.58	.80		4.38	5.15
5070	6"			625	.013	3.58	.80		4.38	5.15
5080	Galvanized steel, 5"			625	.013	1.57	.80		2.37	2.94
5090	6"			625	.013	2.72	.80		3.52	4.20
5100	Vinyl, 4"	1 Carp	625	.013		6.50	.68		7.18	8.15
5110	5"		"	625	.013	6.85	.68		7.53	8.55
5120	Half round, copper, 4"	1 Shee	625	.013		4.65	.80		5.45	6.30
5130	5"			625	.013	5.25	.80		6.05	6.95

07 71 Roof Specialties

07 71 23 – Manufactured Gutters and Downspouts

07 71 23.30 Gutters		Crew	Daily	Labor-	Unit	Material	2020 Bare Costs			Total
			Output	Hours			Labor	Equipment	Total	
5140	6"	1 Sheet	625	.013	Ea.	8.50	.80		9.30	10.55
5150	Lead coated copper, 5"		625	.013		14.85	.80		15.65	17.55
5160	6"		625	.013		22	.80		22.80	25.50
5170	Copper clad stainless steel, 5"		625	.013		5	.80		5.80	6.70
5180	6"		625	.013		4.62	.80		5.42	6.30
5190	Galvanized steel, 5"		625	.013		2.80	.80		3.60	4.29
5200	6"		625	.013		3.47	.80		4.27	5.05
5210	Outlet, aluminum, 2" x 3"		420	.019		.72	1.19		1.91	2.59
5220	3" x 4"		420	.019		1.18	1.19		2.37	3.10
5230	2-3/8" round		420	.019		.66	1.19		1.85	2.53
5240	Copper, 2" x 3"		420	.019		7.80	1.19		8.99	10.40
5250	3" x 4"		420	.019		8.80	1.19		9.99	11.50
5260	2-3/8" round		420	.019		4.87	1.19		6.06	7.15
5270	Lead coated copper, 2" x 3"		420	.019		26	1.19		27.19	31
5280	3" x 4"		420	.019		30	1.19		31.19	35
5290	2-3/8" round		420	.019		26.50	1.19		27.69	31
5300	Copper clad stainless steel, 2" x 3"		420	.019		7.30	1.19		8.49	9.85
5310	3" x 4"		420	.019		8.35	1.19		9.54	10.95
5320	2-3/8" round		420	.019		4.87	1.19		6.06	7.15
5330	Galvanized steel, 2" x 3"		420	.019		3.81	1.19		5	6
5340	3" x 4"		420	.019		6.10	1.19		7.29	8.50
5350	2-3/8" round		420	.019		4.95	1.19		6.14	7.25
5360	K type mitres, aluminum		65	.123		4.94	7.65		12.59	17.10
5370	Copper		65	.123		17.45	7.65		25.10	31
5380	Lead coated copper		65	.123		56	7.65		63.65	73
5390	Copper clad stainless steel		65	.123		28	7.65		35.65	42
5400	Galvanized steel		65	.123		28	7.65		35.65	42.50
5420	Half round mitres, copper		65	.123		70.50	7.65		78.15	89
5430	Lead coated copper		65	.123		91.50	7.65		99.15	113
5440	Copper clad stainless steel		65	.123		57.50	7.65		65.15	74.50
5450	Galvanized steel		65	.123		33.50	7.65		41.15	48.50
5460	Vinyl mitres and outlets		65	.123		11	7.65		18.65	24
5470	Sealant		940	.009	L.F.	.01	.53		.54	.81
5480	Soldering		96	.083	"	.29	5.20		5.49	8.15

07 71 23.35 Gutter Guard

0010	GUTTER GUARD									
0020	6" wide strip, aluminum mesh	1 Corp	500	.016	L.F.	2.46	.85		3.31	3.99
0100	Vinyl mesh	1 Corp	500	.016	"	2.89	.85		3.74	4.46

07 71 26 – Reglets

07 71 26.10 Reglets and Accessories

0010	REGLETS AND ACCESSORIES									
0020	Reglet, aluminum, .025" thick, in parapet	1 Corp	225	.036	L.F.	1.84	1.89		3.73	4.86
0300	16 oz. copper	1 Corp	225	.036	"	6.55	1.89		8.44	10.05
0400	Galvanized steel, 24 ga.		225	.036		1.37	1.89		3.26	4.35
0600	Stainless steel, .020" thick	↓	225	.036		4.21	1.89		6.10	7.45
0900	Counter flashing for above, 12" wide, .032" aluminum	1 Shee	150	.053		2.09	3.32		5.41	7.35
1200	16 oz. copper		150	.053		6.35	3.32		9.67	12.05
1300	Galvanized steel, 26 ga.		150	.053		1.33	3.32		4.65	6.50
1500	Stainless steel, .020" thick	↓	150	.053	"	6.80	3.32		10.12	12.55

07 71 Roof Specialties

07 71 29 – Manufactured Roof Expansion Joints

07 71 29.10 Expansion Joints		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Ind O&P
0010 EXPANSION JOINTS											
0300	Butyl or neoprene center with foam insulation, metal flanges										
0400	Aluminum, .032" thick for openings to 2-1/2"	1 Rofc	165	.048	L.F.	12.85	2.24			15.09	17.85
0600	For joint openings to 3-1/2"		165	.048		12.40	2.24			14.64	17.35
0610	For joint openings to 5"		165	.048		14.75	2.24			16.99	19.95
0620	For joint openings to 8"		165	.048		16.70	2.24			18.94	22
0700	Copper, 16 oz. for openings to 2-1/2"		165	.048		21.50	2.24			23.74	27.50
0900	For joint openings to 3-1/2"		165	.048		19.70	2.24			21.94	25
0910	For joint openings to 5"		165	.048		22.50	2.24			24.74	28.50
0920	For joint openings to 8"		165	.048		25	2.24			27.24	30.50
1000	Galvanized steel, 26 ga. for openings to 2-1/2"		165	.048		10.80	2.24			13.04	15.60
1200	For joint openings to 3-1/2"		165	.048		10.55	2.24			12.79	15.30
1210	For joint openings to 5"		165	.048		14.10	2.24			16.34	19.25
1220	For joint openings to 8"		165	.048		15.20	2.24			17.44	20.50
1300	Lead-coated copper, 16 oz. for openings to 2-1/2"		165	.048		35.50	2.24			37.74	42.50
1500	For joint openings to 3-1/2"		165	.048		37.50	2.24			39.74	44.50
1600	Stainless steel, .018", for openings to 2-1/2"		165	.048		13.35	2.24			15.59	18.35
1800	For joint openings to 3-1/2"		165	.048		14.15	2.24			16.39	19.25
1810	For joint openings to 5"		165	.048		15.25	2.24			17.49	20.50
1820	For joint openings to 8"		165	.048		23.50	2.24			25.74	29
1900	Neoprene, double-seal type with thick center, 4-1/2" wide		125	.064		14.95	2.96			17.91	21.50
1950	Polyethylene bellow, with galv steel flat flanges		100	.080		7.20	3.70			10.90	14
1960	With galvanized angle flanges		100	.080		7.75	3.70			11.45	14.65
2000	Roof joint with extruded aluminum cover, 2"	1 Shee	115	.070		31.50	4.33			35.83	41
2100	Expansion, stainless flange, foam center, standard	1 Rofc	100	.080		13.80	3.70			17.50	21.50
2200	Large		"	.080		18.35	3.70			22.05	26
2500	Roof to wall joint with extruded aluminum cover	1 Shee	115	.070		30.50	4.33			34.83	40
2700	Wall joint, closed cell foam on PVC cover, 9" wide	1 Rofc	125	.064		6.10	2.96			9.06	11.65
2800	12" wide		"	.070		7	3.21			10.21	13

07 71 43 – Drip Edge

07 71 43.10 Drip Edge, Rake Edge, Ice Belts

0010 DRIP EDGE, RAKE EDGE, ICE BELTS											
0020	Aluminum, .016" thick, 5" wide, mill finish	1 Corp	400	.020	L.F.	.59	1.06			1.65	2.25
0100	White finish		400	.020		.65	1.06			1.71	2.32
0200	8" wide, mill finish		400	.020		1.48	1.06			2.54	3.23
0300	Ice belt, 28" wide, mill finish		100	.080		8	4.25			12.25	15.20
0310	Vented, mill finish		400	.020		2.29	1.06			3.35	4.12
0320	Painted finish		400	.020		2.54	1.06			3.60	4.39
0400	Galvanized, 5" wide		400	.020		.62	1.06			1.68	2.28
0500	8" wide, mill finish		400	.020		.84	1.06			1.90	2.52
0510	Rake edge, aluminum, 1-1/2" x 1-1/2"		400	.020		.35	1.06			1.41	1.99
0520	3-1/2" x 1-1/2"		400	.020		.51	1.06			1.57	2.16

07 72 Roof Accessories

07 72 23 – Relief Vents

07 72 23.10 Roof Vents		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
0010	ROOF VENTS									
0020	Mushroom shape, for built-up roofs, aluminum	1 Rofc	30	.267	Ea.	74.50	12.30		86.80	103
0100	PVC, 6" high	"	30	.267	"	26	12.30		38.30	49

07 72 26 – Ridge Vents

07 72 26.10 Ridge Vents and Accessories

0010 RIDGE VENTS AND ACCESSORIES		1 Rofc	160	.050	L.F.	2.67	2.31		4.98	6.75
0100	Aluminum strips, mill finish									
0150	Painted finish		160	.050	"	4.23	2.31		6.54	8.45
0200	Connectors		48	.167	Ea.	5.20	7.70		12.90	18.40
0300	End caps		48	.167	"	2.49	7.70		10.19	15.45
0400	Galvanized strips		160	.050	L.F.	3.81	2.31		6.12	8
0430	Molded polyethylene, shingles not included		160	.050	"	2.85	2.31		5.16	6.95
0440	End plugs		48	.167	Ea.	2.49	7.70		10.19	15.45
0450	Flexible roll, shingles not included		160	.050	L.F.	2.54	2.31		4.85	6.60
2300	Ridge vent strip, mill finish	1 Shee	155	.052	"	3.95	3.22		7.17	9.25

07 72 33 – Roof Hatches

07 72 33.10 Roof Hatch Options

0010 ROOF HATCH OPTIONS		G-3	10	3.200	Ea.	900	167		1,067	1,250
0500	2'-6" x 3', aluminum curb and cover									
0520	Galvanized steel curb and aluminum cover		10	3.200		850	167		1,017	1,175
0540	Galvanized steel curb and cover		10	3.200		610	167		777	920
0600	2'-6" x 4'-6", aluminum curb and cover		9	3.556		1,150	186		1,336	1,550
0800	Galvanized steel curb and aluminum cover		9	3.556		1,025	186		1,211	1,400
0900	Galvanized steel curb and cover		9	3.556		995	186		1,181	1,375
1100	4' x 4' aluminum curb and cover		8	4		1,700	209		1,909	2,200
1120	Galvanized steel curb and aluminum cover		8	4		1,800	209		2,009	2,300
1140	Galvanized steel curb and cover		8	4		1,150	209		1,359	1,575
1200	2'-6" x 8'-0", aluminum curb and cover		6.60	4.848		2,175	253		2,428	2,775
1400	Galvanized steel curb and aluminum cover		6.60	4.848		1,900	253		2,153	2,475
1500	Galvanized steel curb and cover		6.60	4.848		1,200	253		1,453	1,700
1800	For plexiglass panels, 2'-6" x 3'-0", add to above					485			485	535

07 72 36 – Smoke Vents

07 72 36.10 Smoke Hatches

0010 SMOKE HATCHES						Ed.	25%	5%		
0200	For 3'-0" long, add to roof hatches from Section 07 72 33.10									
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		G-3	13	2.462	Ea.	2,200	128		2,328	2,625
0100	4' x 4' aluminum cover and frame									
0200	Galvanized steel cover and frame		13	2.462		1,725	128		1,853	2,100
0300	4' x 8' aluminum cover and frame		8	4		3,275	209		3,484	3,925
0400	Galvanized steel cover and frame		8	4		2,750	209		2,959	3,350

07 72 53 – Snow Guards

07 72 53.10 Snow Guard Options

0010 SNOW GUARD OPTIONS		1 Rofc	160	.050	Ea.	12.45	2.31		14.76	17.50
0100	Slate & asphalt shingle roofs, fastened with nails									
0200	Standing seam metal roofs, fastened with set screws		48	.167		17.75	7.70		25.45	32.50
0300	Surface mount for metal roofs, fastened with solder		48	.167		7.75	7.70		15.45	21.50
0400	Double rail pipe type, including pipe		130	.062	L.F.	35	2.84		37.84	43

07 72 Roof Accessories

07 72 80 – Vent Options

07 72 80.30 Vent Options				Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
		Crew					Labor	Equipment		
0010	VENT OPTIONS									
0020	Plastic, for insulated decks, 1 per M.S.F.	1 Rofc	40	.200	Ea.		24	9.25	33.25	42
0100	Heavy duty		20	.400			56.50	18.50	75	93
0300	Aluminum		30	.267			21.50	12.30	33.80	44
0800	Polystyrene baffles, 12" wide for 16" OC rafter spacing	1 Corp	90	.089			.53	4.72	5.25	7.70
0900	For 24" OC rafter spacing	"	110	.073	↓		.88	3.87	4.75	6.75

07 76 Roof Pavers

07 76 16 – Roof Decking Pavers

07 76 16.10 Roof Pavers and Supports

0010 ROOF PAVERS AND SUPPORTS				Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
		Crew					Labor	Equipment		
1000	Roof decking pavers, concrete blocks, 2" thick, natural	1 Club	115	.070	S.F.		3.58	2.93	6.51	8.35
1100	Colors		115	.070	"		3.71	2.93	6.64	8.50
1200	Support pedestal, bottom cap		960	.008	Ea.		2.66	.35	3.01	3.46
1300	Top cap		960	.008	↓		4.88	.35	5.23	5.90
1400	Leveling shims, 1/16"		1920	.004			1.22	.18	1.40	1.60
1500	1/8"		1920	.004			1.22	.18	1.40	1.60
1600	Buffer pad		960	.008	↓		2.54	.35	2.89	3.32
1700	PVC legs (4" SDR 35)		2880	.003	Inch		.14	.12	.26	.33
2000	Alternate pricing method, system in place		101	.079	S.F.		7.20	3.33	10.53	12.90

07 81 Applied Fireproofing

07 81 16 – Cementitious Fireproofing

07 81 16.10 Sprayed Cementitious Fireproofing

0010 SPRAYED CEMENTITIOUS FIREPROOFING				Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P	
		Crew					Labor	Equipment			
0050	Not including canvas protection, normal density	G-2	3000	.008	S.F.		.59	.36	.06	1.01	1.25
0100	Per 1" thick, on flat plate steel		2400	.010	↓		.59	.44	.08	1.11	1.40
0200	Flat decking		1500	.016			.59	.71	.13	1.43	1.85
0400	Beams		1250	.019			.88	.85	.15	1.88	2.41
0500	Corrugated or fluted decks		1100	.022			.66	.97	.17	1.80	2.37
0700	Columns, 1-1/8" thick		700	.034			1.53	1.52	.27	3.32	4.26
0800	2-3/16" thick		5000	.005	↓		.12	.21	.04	.37	.49
0900	For canvas protection, add										
1000	Not including canvas protection, high density	G-2	3000	.008	S.F.		2.28	.36	.06	2.70	3.11
1100	Per 1" thick, on flat plate steel		2400	.010	↓		2.28	.44	.08	2.80	3.26
1110	On flat decking		1500	.016			2.28	.71	.13	3.12	3.71
1120	On beams		1250	.019			2.28	.85	.15	3.28	3.95
1130	Corrugated or fluted decks		1100	.022			2.56	.97	.17	3.70	4.46
1140	Columns, 1-1/8" thick		1100	.022			5.15	.97	.17	6.29	7.30
1150	2-3/16" thick		5000	.005	↓		.12	.21	.04	.37	.49
1170	For canvas protection, add										
1200	Not including canvas protection, retrofitting	G-2	1500	.016	S.F.		.52	.71	.13	1.36	1.77
1210	Per 1" thick, on flat plate steel		1200	.020	↓		.52	.89	.16	1.57	2.07
1220	On flat decking		750	.032			.52	1.42	.25	2.19	2.97
1230	On beams		625	.038			.77	1.70	.30	2.77	3.73
1240	Corrugated or fluted decks		550	.044			.58	1.94	.34	2.86	3.92
1250	Columns, 1-1/8" thick		500	.048			1.16	2.13	.38	3.67	4.88
1260	2-3/16" thick		4500	.005	↓		.05	.24	.04	.33	.45
1400	Accessories, preliminary spattered texture coat										

07 81 Applied Fireproofing

07 81.16 – Cementitious Fireproofing

07 81 16.10 Sprayed Cementitious Fireproofing			Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
								Labor	Equipment		
1410	Bonding agent		1 Plas.	1000	.008	S.F.	.10	.39		.49	.69
1500	Intumescent epoxy fireproofing on wire mesh, 3/16" thick										
1550	1 hour rating, exterior use		G-2	136	.176	S.F.	7.75	7.85	1.39	16.99	21.50
1551	2 hour rating, exterior use			136	.176		7.75	7.85	1.39	16.99	21.50
1600	Magnesium oxychloride, 35# to 40# density, 1/4" thick			3000	.008		1.65	.36	.06	2.07	2.42
1650	1/2" thick			2000	.012		3.36	.53	.09	3.98	4.60
1700	60# to 70# density, 1/4" thick			3000	.008		2.17	.36	.06	2.59	2.99
1750	1/2" thick			2000	.012		4.34	.53	.09	4.96	5.65
2000	Vermiculite cement, troweled or sprayed, 1/4" thick			3000	.008		1.49	.36	.06	1.91	2.24
2050	1/2" thick			2000	.012		2.99	.53	.09	3.61	4.19

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 Corp.	16	.500	Ea.	3.67	26.50		30.17	44
0120	4" diameter			14	.571		8.20	30.50		38.70	54.50
0130	6" diameter			12	.667		12.60	35.50		48.10	67
0140	12" diameter			10	.800		25	42.50		67.50	91.50
0150	Through floors, 2" diameter			32	.250		1.86	13.30		15.16	22
0160	4" diameter			28	.286		3.28	15.20		18.48	26.50
0170	6" diameter			24	.333		6.45	17.70		24.15	33.50
0180	12" diameter			20	.400		12.80	21.50		34.30	46
0190	Metallic piping, insulated										
0200	Through walls, 2" diameter		1 Corp.	16	.500	Ea.	8.60	26.50		35.10	49.50
0210	4" diameter			14	.571		12.55	30.50		43.05	59.50
0220	6" diameter			12	.667		16.75	35.50		52.25	71.50
0230	12" diameter			10	.800		28.50	42.50		71	95.50
0240	Through floors, 2" diameter			32	.250		3.27	13.30		16.57	23.50
0250	4" diameter			28	.286		6.30	15.20		21.50	30
0260	6" diameter			24	.333		8.70	17.70		26.40	36
0270	12" diameter			20	.400		12.95	21.50		34.45	46
0280	Non metallic piping, non insulated										
0290	Through walls, 2" diameter		1 Corp.	12	.667	Ea.	52.50	35.50		88	111
0300	4" diameter			10	.800		101	42.50		143.50	175
0310	6" diameter			8	1		186	53		239	285
0330	Through floors, 2" diameter			16	.500		36.50	26.50		63	80
0340	4" diameter			6	1.333		62	71		133	175
0350	6" diameter			6	1.333		135	71		206	255
0370	Ductwork, insulated & non insulated, round										
0380	Through walls, 6" diameter		1 Corp.	12	.667	Ea.	16.55	35.50		52.05	71
0390	12" diameter			10	.800		28.50	42.50		71	95.50
0400	18" diameter			8	1		33.50	53		86.50	117
0410	Through floors, 6" diameter			16	.500		8.50	26.50		35	49.50
0420	12" diameter			14	.571		14.60	30.50		45.10	61.50
0430	18" diameter			12	.667		17.60	35.50		53.10	72.50
0440	Ductwork, insulated & non insulated, rectangular										
0450	With stiffener/closure angle, through walls, 6" x 12"		1 Corp.	8	1	Ea.	21	53		74	103
0460	12" x 24"			6	1.333		36	71		107	146
0470	24" x 48"			4	2		84	106		190	252

07 84 Firestopping

07 84.13 – Penetration Firestopping

		Crew	Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P	
						Material	Labor	Equipment			
07 84 13.10 Firestopping											
0480	With stiffener/closure angle, through floors, 6" x 12"	1 Corp	10	.800	Ea.	10.40	42.50		52.90	75.50	
0490	12" x 24"		8	1		20	53		73	102	
0500	24" x 48"		6	1.333		42	71		113	152	
0510	Multi trade openings										
0520	Through walls, 6" x 12"	1 Corp	2	4	Ea.	52	213		265	380	
0530	12" x 24"		"	1	8	189	425		614	850	
0540	24" x 48"	2 Corp	1	16		670	850		1,520	2,025	
0550	48" x 96"		"	.75	21.333		2,550	1,125		3,675	4,500
0560	Through floors, 6" x 12"	1 Corp	2	4		44.50	213		257.50	370	
0570	12" x 24"		"	1	8	69.50	425		494.50	715	
0580	24" x 48"	2 Corp	.75	21.333		154	1,125		1,279	1,875	
0590	48" x 96"		"	.50	32		365	1,700		2,065	2,950
0600	Structural penetrations, through walls										
0610	Steel beams, W8 x 10	1 Corp	8	1	Ea.	75	53		128	163	
0620	W12 x 14			6	1.333		109	71		180	225
0630	W21 x 44			5	1.600		154	85		239	297
0640	W36 x 135			3	2.667		229	142		371	465
0650	Bar joists, 18" deep			6	1.333		42	71		113	153
0660	24" deep			6	1.333		59	71		130	171
0670	36" deep			5	1.600		88.50	85		173.50	226
0680	48" deep			4	2		120	106		226	292
0690	Construction joints, floor slab at exterior wall										
0700	Precast, brick, block or drywall exterior										
0710	2" wide joint	1 Corp	125	.064	L.F.	10.30	3.40		13.70	16.45	
0720	4" wide joint	"	75	.107	"	16.60	5.65		22.25	27	
0730	Metal panel, glass or curtain wall exterior										
0740	2" wide joint	1 Corp	40	.200	L.F.	12.45	10.65		23.10	29.50	
0750	4" wide joint	"	25	.320	"	18.65	17		35.65	46	
0760	Floor slab to drywall partition										
0770	Flat joint	1 Corp	100	.080	L.F.	14.55	4.25		18.80	22.50	
0780	Fluted joint		50	.160		16.35	8.50		24.85	31	
0790	Etched fluted joint		75	.107		20.50	5.65		26.15	31	
0800	Floor slab to concrete/masonry partition										
0810	Flat joint	1 Corp	75	.107	L.F.	15.45	5.65		21.10	25.50	
0820	Fluted joint	"	50	.160	"	17.65	8.50		26.15	32.50	
0830	Concrete/CMU wall joints										
0840	1" wide	1 Corp	100	.080	L.F.	20.50	4.25		24.75	29	
0850	2" wide		75	.107		30	5.65		35.65	41.50	
0860	4" wide		50	.160		36	8.50		44.50	52.50	
0870	Concrete/CMU floor joints										
0880	1" wide	1 Corp	200	.040	L.F.	20.50	2.13		22.63	26	
0890	2" wide		150	.053		25	2.83		27.83	32	
0900	4" wide		100	.080		36.50	4.25		40.75	46.50	

07 91 Preformed Joint Seals

07 91 13 – Compression Seals

07 91 13.10 Compression Seals		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
0010	COMPRESSION SEALS									
4900	O-ring type cord, 1/4"	1 Bric	472	.017	L.F.	.40	.88		1.28	1.78
4910	1/2"		440	.018		1.01	.95		1.96	2.54
4920	3/4"		424	.019		2	.98		2.98	3.69
4930	1"		408	.020		3.93	1.02		4.95	5.85
4940	1-1/4"		384	.021		9.40	1.08		10.48	12
4950	1-1/2"		368	.022		11.50	1.13		12.63	14.35
4960	1-3/4"		352	.023		13.50	1.18		14.68	16.65
4970	2"		344	.023		22.50	1.21		23.71	27

07 91 16 – Joint Gaskets

07 91 16.10 Joint Gaskets

0010 JOINT GASKETS		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
4400	Joint gaskets, neoprene, closed cell w/adhesive, 1/8" x 3/8"	1 Bric	240	.033	L.F.	.36	1.73		2.09	3.03
4500	1/4" x 3/4"		215	.037		.66	1.94		2.60	3.67
4700	1/2" x 1"		200	.040		1.71	2.08		3.79	5.05
4800	3/4" x 1-1/2"		165	.048		1.85	2.52		4.37	5.85

07 91 23 – Backer Rods

07 91 23.10 Backer Rods

0010 BACKER RODS		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
0030	Backer rod, polyethylene, 1/4" diameter	1 Bric	4.60	1.739	C.L.F.	2.78	90.50		93.28	140
0050	1/2" diameter		4.60	1.739		4.10	90.50		94.60	142
0070	3/4" diameter		4.60	1.739		6.70	90.50		97.20	144
0090	1" diameter		4.60	1.739		14.80	90.50		105.30	153

07 91 26 – Joint Fillers

07 91 26.10 Joint Fillers

0010 JOINT FILLERS		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
4360	Butyl rubber filler, 1/4" x 1/4"	1 Bric	290	.028	L.F.	.23	1.44		1.67	2.43
4365	1/2" x 1/2"		250	.032		.92	1.67		2.59	3.53
4370	1/2" x 3/4"		210	.038		1.38	1.98		3.36	4.52
4375	3/4" x 3/4"		230	.035		2.06	1.81		3.87	5
4380	1" x 1"		180	.044		2.75	2.31		5.06	6.55
4390	For coloring, add					12%				
4980	Polyethylene joint backing, 1/4" x 2"	1 Bric	2.08	3.846	C.L.F.	14.25	200		214.25	320
4990	1/4" x 6"		1.28	6.250	"	32.50	325		357.50	530
5600	Silicone, room temp vulcanizing foam seal, 1/4" x 1/2"		1312	.006	L.F.	.46	.32		.78	.98
5610	1/2" x 1/2"		656	.012		.92	.64		1.56	1.97
5620	1/2" x 3/4"		442	.018		1.37	.94		2.31	2.94
5630	3/4" x 3/4"		328	.024		2.06	1.27		3.33	4.19
5640	1/8" x 1"		1312	.006		.46	.32		.78	.98
5650	1/8" x 3"		442	.018		1.37	.94		2.31	2.94
5670	1/4" x 3"		295	.027		2.75	1.41		4.16	5.15
5680	1/4" x 6"		148	.054		5.50	2.81		8.31	10.30
5690	1/2" x 6"		82	.098		11	5.10		16.10	19.80
5700	1/2" x 9"		52.50	.152		16.50	7.95		24.45	30
5710	1/2" x 12"		33	.242		22	12.60		34.60	43

07 92 Joint Sealants

07 92 13 – Elastomeric Joint Sealants

				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Ind O&P
				Crew			Labor	Equipment			
07 92 13.20 Caulking and Sealant Options											
0010 CAULKING AND SEALANT OPTIONS											
0050 Latex acrylic based, bulk						Gal.	31			31	34
0055 Bulk in place 1/4" x 1/4" bead				1 Bric	300	.027	L.F.	.10	1.39	1.49	2.21
0060 1/4" x 3/8"					294	.027		.16	1.42	1.58	2.33
0065 1/4" x 1/2"					288	.028		.22	1.45	1.67	2.43
0075 3/8" x 3/8"					284	.028		.24	1.47	1.71	2.49
0080 3/8" x 1/2"					280	.029		.32	1.49	1.81	2.61
0085 3/8" x 5/8"					276	.029		.40	1.51	1.91	2.74
0095 3/8" x 3/4"					272	.029		.48	1.53	2.01	2.85
0100 1/2" x 1/2"					275	.029		.43	1.51	1.94	2.78
0105 1/2" x 5/8"					269	.030		.54	1.55	2.09	2.94
0110 1/2" x 3/4"					263	.030		.65	1.58	2.23	3.11
0115 1/2" x 7/8"					256	.031		.76	1.63	2.39	3.30
0120 1/2" x 1"					250	.032		.87	1.67	2.54	3.47
0125 3/4" x 3/4"					244	.033		.97	1.71	2.68	3.66
0130 3/4" x 1"					225	.036		1.30	1.85	3.15	4.24
0135 1" x 1"					200	.040		1.73	2.08	3.81	5.05
0190 Cartridges						Gal.	33.50			33.50	37
0200 11 fl. oz. cartridge						Ea.	2.89			2.89	3.18
0500 1/4" x 1/2"				1 Bric	288	.028	L.F.	.24	1.45	1.69	2.45
0600 1/2" x 1/2"					275	.029		.47	1.51	1.98	2.82
0800 3/4" x 3/4"					244	.033		1.06	1.71	2.77	3.76
0900 3/4" x 1"					225	.036		1.42	1.85	3.27	4.37
1000 1" x 1"					200	.040		1.77	2.08	3.85	5.10
1400 Butyl based, bulk						Gal.	43.50			43.50	48
1500 Cartridges						"	43.50			43.50	48
1700 1/4" x 1/2", 154 L.F./gal.				1 Bric	288	.028	L.F.	.28	1.45	1.73	2.50
1800 1/2" x 1/2", 77 L.F./gal.					275	.029	"	.57	1.51	2.08	2.92
2300 Polysulfide compounds, 1 component, bulk						Gal.	88.50			88.50	97.50
2600 1 or 2 component, in place, 1/4" x 1/4", 308 L.F./gal.				1 Bric	300	.027	L.F.	.29	1.39	1.68	2.42
2700 1/2" x 1/4", 154 L.F./gal.					288	.028		.57	1.45	2.02	2.82
2900 3/4" x 3/8", 68 L.F./gal.					272	.029		1.30	1.53	2.83	3.75
3000 1" x 1/2", 38 L.F./gal.					250	.032		2.33	1.67	4	5.10
3200 Polyurethane, 1 or 2 component						Gal.	54			54	59.50
3500 Bulk, in place, 1/4" x 1/4"				1 Bric	300	.027	L.F.	.18	1.39	1.57	2.29
3655 1/2" x 1/4"					288	.028		.35	1.45	1.80	2.58
3800 3/4" x 3/8"					272	.029		.80	1.53	2.33	3.19
3900 1" x 1/2"					250	.032		1.40	1.67	3.07	4.06
4100 Silicone rubber, bulk						Gal.	68.50			68.50	75.50
4200 Cartridges						"	51.50			51.50	56.50

07 92 16 – Rigid Joint Sealants

07 92 16.10 Rigid Joint Sealants

0010 RIGID JOINT SEALANTS											
5800 Tapes, sealant, PVC foam adhesive, 1/16" x 1/4"						C.L.F.	9.05			9.05	10
5900 1/16" x 1/2"							9.30			9.30	10.25
5950 1/16" x 1"							16.20			16.20	17.85
6000 1/8" x 1/2"							9.20			9.20	10.10

07 92 19 – Acoustical Joint Sealants

07 92 19.10 Acoustical Sealant

0010 ACOUSTICAL SEALANT											
0020 Acoustical sealant, elastomeric, cartridges						Ea.	8.65			8.65	9.55
0025 In place, 1/4" x 1/4"				1 Bric	300	.027	L.F.	.35	1.39	1.74	2.49

07 92 Joint Sealants

07 92 19 – Acoustical Joint Sealants

07 92 19.10 Acoustical Sealant		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
0030	1/4" x 1/2"	1 Bric	288	.028	L.F.	.71	1.45			2.16	2.97
0035	1/2" x 1/2"		275	.029		1.41	1.51			2.92	3.86
0040	1/2" x 3/4"		263	.030		2.12	1.58			3.70	4.73
0045	3/4" x 3/4"		244	.033		3.18	1.71			4.89	6.10
0050	1" x 1"		200	.040		5.65	2.08			7.73	9.40

07 95 Expansion Control

07 95 13 – Expansion Joint Cover Assemblies

07 95 13.50 Expansion Joint Assemblies

0010 EXPANSION JOINT ASSEMBLIES		1 Sswk	38	.211	L.F.	26	12.15			38.15	47.50
0200	Floor cover assemblies, 1" space, aluminum		38	.211		52.50	12.15			64.65	77
0300	Bronze		38	.211		18.55	12.15			30.70	39.50
0500	2" space, aluminum		38	.211		61	12.15			73.15	86
0600	Bronze		38	.211		54	12.15			66.15	78.50
0800	Wall and ceiling assemblies, 1" space, aluminum		38	.211		22	12.15			34.15	43
0900	Bronze		38	.211		52.50	12.15			64.65	76.50
1100	2" space, aluminum		38	.211		65	12.15			77.15	90.50
1200	Bronze		38	.211		19.70	10.05			29.75	37.50
1400	Floor to wall assemblies, 1" space, aluminum		46	.174		20	12.15			32.15	41
1500	Bronze or stainless		46	.174		65	12.15			77.15	90.50
1700	Gym floor angle covers, aluminum, 3" x 3" angle		46	.174		22	10.05			32.05	40
1800	3" x 4" angle		46	.174		24	8.10			32.10	39
2000	Roof closures, aluminum, flat roof, low profile, 1" space		57	.140		34	8.10			42.10	50
2100	High profile		57	.140		23.50	8.10			31.60	38.50
2300	Roof to wall, low profile, 1" space		57	.140		34	8.10			42.10	50
2400	High profile		57	.140							

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 Common Work Results for Openings

08 05 05 – Selective Demolition for Openings

08 05 05.10 Selective Demolition Doors		R024119-10	Daily	Labor-	Unit	Material	2020 Bare Costs	Total	Total
Code	Description		Output	Hours		Labor	Equipment	Incl O&P	
0010	SELECTIVE DEMOLITION DOORS								
0200	Doors, exterior, 1-3/4" thick, single, 3' x 7' high	1 Clab	16	.500	Ea.	21		21	31.50
0220	Double, 6' x 7' high		12	.667		28		28	42
0500	Interior, 1-3/8" thick, single, 3' x 7' high		20	.400		16.85		16.85	25.50
0520	Double, 6' x 7' high		16	.500		21		21	31.50
0700	Bi-folding, 3' x 6'-8" high		20	.400		16.85		16.85	25.50
0720	6' x 6'-8" high		18	.444		18.70		18.70	28
0900	Bi-passing, 3' x 6'-8" high		16	.500		21		21	31.50
0940	6' x 6'-8" high		14	.571		24		24	36
0960	Interior metal door 1-3/4" thick, 3'-0" x 6'-8"		18	.444		18.70		18.70	28
0980	Interior metal door 1-3/4" thick, 3'-0" x 7'-0"		18	.444		18.70		18.70	28
1000	Interior wood door 1-3/4" thick, 3'-0" x 6'-8"		20	.400		16.85		16.85	25.50
1020	Interior wood door 1-3/4" thick, 3'-0" x 7'-0"		20	.400		16.85		16.85	25.50
1100	Door demo, floor door	2 Sswk	5	3.200		184		184	289
1500	Remove and reset, hollow core	1 Carp	8	1		53		53	80
1520	Solid		6	1.333		71		71	106
2000	Frames, including trim, metal		8	1		53		53	80
2200	Wood	2 Carp	32	.500		26.50		26.50	40
3000	Special doors, counter doors		6	2.667		142		142	213
3100	Double acting		10	1.600		85		85	128
3200	Floor door (trap type), or access type		8	2		106		106	160
3300	Glass, sliding, including frames		12	1.333		71		71	106
3400	Overhead, commercial, 12' x 12' high		4	4		213		213	320
3440	up to 20' x 16' high		3	5.333		283		283	425
3445	up to 35' x 30' high		1	16		850		850	1,275
3500	Residential, 9' x 7' high		8	2		106		106	160
3540	16' x 7' high		7	2.286		121		121	183
3620	Large		2.50	6.400		340		340	510
3700	Roll-up grille		5	3.200		170		170	256
3800	Revolving door, no wire or connections		2	8		425		425	640
3900	Storefront swing door		3	5.333	↓	283		283	425
6600	Demo flexible transparent strip entrance	3 Shee	115	.209	SF Surf	13		13	19.70
7100	Remove double swing pneumatic doors, openers and sensors	2 Skwk	.50	32	Opng.	1,750		1,750	2,650
7110	Remove automatic operators, industrial, sliding doors, to 12' wide	"	.40	40	"	2,200		2,200	3,325
7550	Hangar door demo	2 Sswk	330	.048	S.F.	2.79		2.79	4.39
7570	Remove shock absorbing door	"	1.90	8.421	Opng.	485		485	760

08 05 05.20 Selective Demolition of Windows

0010 SELECTIVE DEMOLITION OF WINDOWS		R024119-10	Daily	Labor-	Unit	Material	2020 Bare Costs	Total	Total
Code	Description		Output	Hours		Labor	Equipment	Incl O&P	
0200	Aluminum, including trim, to 12 S.F.	1 Clab	16	.500	Ea.	21		21	31.50
0240	To 25 S.F.		11	.727		30.50		30.50	46
0280	To 50 S.F.		5	1.600		67.50		67.50	101
0320	Storm windows/screens, to 12 S.F.		27	.296		12.45		12.45	18.75
0360	To 25 S.F.		21	.381		16.05		16.05	24
0400	To 50 S.F.		16	.500	↓	21		21	31.50
0600	Glass, up to 10 S.F./window		200	.040	S.F.	1.68		1.68	2.53
0620	Over 10 S.F./window		150	.053	"	2.25		2.25	3.37
1000	Steel, including trim, to 12 S.F.		13	.615	Ea.	26		26	39
1020	To 25 S.F.		9	.889		37.50		37.50	56
1040	To 50 S.F.		4	2		84		84	127
2000	Wood, including trim, to 12 S.F.		22	.364		15.30		15.30	23
2020	To 25 S.F.		18	.444		18.70		18.70	28
2060	To 50 S.F.		13	.615	↓	26		26	39

08 05 Common Work Results for Openings

08 05 05 – Selective Demolition for Openings

08 05 05.20 Selective Demolition of Windows				Daily Crew Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
							Labor	Equipment		
2065	To 180 S.F.			1 Clab	8	1	Ea.	42	42	63.50
4300	Remove bay/bow window			2 Carp	6	2.667		142	142	213
4410	Remove skylight, plstc domes, flush/curb mtd			"	395	.041	S.F.	2.15	2.15	3.23
4420	Remove skylight, plstc/glass up to 2' x 3'			1 Carp	15	.533	Ea.	28.50	28.50	42.50
4440	Remove skylight, plstc/glass up to 4' x 6'			2 Carp	10	1.600		85	85	128
4480	Remove roof window up to 3' x 4'			1 Carp	8	1		53	53	80
4500	Remove roof window up to 4' x 6'			2 Carp	6	2.667		142	142	213
5020	Remove and reset window, up to a 2' x 2' window			1 Carp	6	1.333		71	71	106
5040	Up to a 3' x 3' window				4	2		106	106	160
5080	Up to a 4' x 5' window				2	4		213	213	320

08 11 Metal Doors and Frames

08 11 16 – Aluminum Doors and Frames

08 11 16.10 Entrance Doors

0010	ENTRANCE DOORS and frame, aluminum, narrow stile									
0011	Including standard hardware, clear finish, no glass									
0012	Top and bottom offset pivots, 1/4" beveled glass stops, threshold									
0013	Dead bolt lock with inside thumb screw, standard push pull									
0020	3'-0" x 7'-0" opening	2 Sswk	2	8	Ea.	1,075	460		1,535	1,900
0025	Anodizing aluminum entr. door & frame, add					115			115	126
0030	3'-6" x 7'-0" opening	2 Sswk	2	8		865	460		1,325	1,675
0100	3'-0" x 10'-0" opening, 3' high transom		1.80	8.889		1,325	510		1,835	2,275
0200	3'-6" x 10'-0" opening, 3' high transom		1.80	8.889		1,400	510		1,910	2,350
0280	5'-0" x 7'-0" opening		2	8		1,575	460		2,035	2,450
0300	6'-0" x 7'-0" opening		1.30	12.308		1,050	710		1,760	2,300
0301	6'-0" x 7'-0" opening		1.30	12.308	Pr.	1,050	710		1,760	2,300
0400	6'-0" x 10'-0" opening, 3' high transom		1.10	14.545	"	1,500	840		2,340	2,975
0520	3'-0" x 7'-0" opening, wide stile		2	8	Ea.	905	460		1,365	1,725
0540	3'-6" x 7'-0" opening		2	8		990	460		1,450	1,825
0560	5'-0" x 7'-0" opening		2	8		1,500	460		1,960	2,375
0580	6'-0" x 7'-0" opening		1.30	12.308	Pr.	1,600	710		2,310	2,900
0600	7'-0" x 7'-0" opening		1	16	"	2,275	920		3,195	3,950
1200	For non-standard size, add				Leaf	80%				
1250	For installation of non-standard size, add						20%			
1300	Light bronze finish, add				Leaf	36%				
1400	Dark bronze finish, add					25%				
1500	For black finish, add					40%				
1600	Concealed panic device, add					1,075			1,075	1,175
1700	Electric striker release, add				Opng.	325			325	360
1800	Floor check, add				Leaf	705			705	780
1900	Concealed closer, add				"	575			575	630

08 11 63 – Metal Screen and Storm Doors and Frames

08 11 63.23 Aluminum Screen and Storm Doors and Frames

0010	ALUMINUM SCREEN AND STORM DOORS AND FRAMES									
0020	Combination storm and screen									
0420	Clear anodic coating, 2'-8" wide	2 Carp	14	1.143	Ea.	238	60.50		298.50	355
0440	3'-0" wide	"	14	1.143	"	192	60.50		252.50	305
0500	For 7'-0" door height, add					8%				
1020	Mill finish, 2'-8" wide	2 Carp	14	1.143	Ea.	249	60.50		309.50	365
1040	3'-0" wide	"	14	1.143		268	60.50		328.50	385

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			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
			Crew			Ea.	Labor	Equipment	
1100	For 7'-0" door, add					8%			
1520	White painted, 2'-8" wide		2 Corp	14	1.143	269	60.50	329.50	390
1540	3'-0" wide		"	14	1.143	315	60.50	375.50	435
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		G	2 Corp	16	1	Ea.	217	270	320
0025	3'-0" x 6'-8" single		G		16	1		270	53	323
0028	3'-6" wide, single		G		16	1		270	53	375
0030	4'-0" wide, single		G		16	1		305	53	358
0040	6'-0" wide, double		G		14	1.143		256	60.50	316.50
0045	8'-0" wide, double		G		14	1.143		248	60.50	308.50
0100	3'-0" x 7'-0" single		G		16	1		214	53	267
0110	3'-6" wide, single		G		16	1		221	53	274
0112	4'-0" wide, single		G		16	1		252	53	305
0140	6'-0" wide, double		G		14	1.143		268	60.50	328.50
0145	8'-0" wide, double		G		14	1.143		236	60.50	296.50
1000	16 ga., up to 4-7/8" deep, 3'-0" x 7'-0" single		G		16	1		202	53	255
1140	6'-0" wide, double		G		14	1.143		215	60.50	275.50
1200	16 ga., 8-3/4" deep, 3'-0" x 7'-0" single		G		16	1		206	53	259
1240	6'-0" wide, double		G		14	1.143		310	60.50	370.50
2800	14 ga., up to 3-7/8" deep, 3'-0" x 7'-0" single		G		16	1		251	53	304
2840	6'-0" wide, double		G		14	1.143		360	60.50	420.50
3000	14 ga., up to 5-3/4" deep, 3'-0" x 6'-8" single		G		16	1		159	53	212
3002	3'-6" wide, single		G		16	1		267	53	320
3005	4'-0" wide, single		G		16	1		158	53	211
3600	up to 5-3/4" jamb depth, 4'-0" x 7'-0" single		G		15	1.067		256	56.50	312.50
3620	6'-0" wide, double		G		12	1.333		201	71	272
3640	8'-0" wide, double		G		12	1.333		300	71	371
3700	8'-0" high, 4'-0" wide, single		G		15	1.067		305	56.50	361.50
3740	8'-0" wide, double		G		12	1.333		345	71	416
4000	6-3/4" deep, 4'-0" x 7'-0" single		G		15	1.067		310	56.50	366.50
4020	6'-0" wide, double		G		12	1.333		360	71	431
4040	8'-0" wide, double		G		12	1.333		258	71	329
4100	8'-0" high, 4'-0" wide, single		G		15	1.067		188	56.50	244.50
4140	8'-0" wide, double		G		12	1.333		450	71	521
4400	8-3/4" deep, 4'-0" x 7'-0", single		G		15	1.067		430	56.50	486.50
4440	8'-0" wide, double		G		12	1.333		455	71	526
4500	4'-0" x 8'-0", single		G		15	1.067		480	56.50	536.50
4540	8'-0" wide, double		G		12	1.333		490	71	561
4900	For welded frames, add							59.50		65.50
5400	14 ga., "B" label, up to 5-3/4" deep, 4'-0" x 7'-0" single		G	2 Corp	15	1.067		190	56.50	246.50
5440	8'-0" wide, double		G		12	1.333		243	71	314
5800	6-3/4" deep, 7'-0" high, 4'-0" wide, single		G		15	1.067		169	56.50	225.50
5840	8'-0" wide, double		G		12	1.333		335	71	406
6200	8-3/4" deep, 4'-0" x 7'-0", single		G		15	1.067		269	56.50	325.50
6240	8'-0" wide, double		G		12	1.333		370	71	441

08 12 Metal Frames

08 12 13 – Hollow Metal Frames

08 12 13.13 Standard Hollow Metal Frames		Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
6300	For "A" label use same price as "B" label								
6400	For baked enamel finish, add					30%	15%		
6500	For galvanizing, add					20%			
6600	For hospital stop, add			Ea.	251			251	276
6620	For hospital stop, stainless steel, add			"	118			118	130
7900	Transom lite frames, fixed, add	2 Corp	.155	.103	S.F.	49	5.50	54.50	62.50
8000	Movable, add	"	.130	.123	"	64	6.55	70.55	80.50

08 12 13.25 Channel Metal Frames

0010 CHANNEL METAL FRAMES		Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P		
0020	Steel channels with anchors and bar stops										
0100	6" channel @ 8.2#/L.F., 3' x 7' door, weighs 150#	G	E4	13	2,462	Ea.	259	143	11.30	413.30	520
0200	8" channel @ 11.5#/L.F., 6' x 8' door, weighs 275#	G		9	3,556		475	207	16.30	698.30	865
0300	8' x 12' door, weighs 400#	G		6.50	4,923		690	286	22.50	998.50	1,225
0400	10" channel @ 15.3#/L.F., 10' x 10' door, weighs 500#	G		6	5,333		860	310	24.50	1,194.50	1,450
0500	12' x 12' door, weighs 600#	G		5.50	5,818		1,025	340	26.50	1,391.50	1,700
0600	12" channel @ 20.7#/L.F., 12' x 12' door, weighs 825#	G		4.50	7,111		1,425	415	32.50	1,872.50	2,250
0700	12' x 16' door, weighs 1000#	G		4	8		1,725	465	36.50	2,226.50	2,675
0800	For frames without bar stops, light sections, deduct							15%			
0900	Heavy sections, deduct							10%			

08 13 Metal Doors

08 13 13 – Hollow Metal Doors

08 13 13.13 Standard Hollow Metal Doors

0010 STANDARD HOLLOW METAL DOORS		R081313-20								
0015	Flush, full panel, hollow core									
0017	When noted doors are prepared but do not include glass or louvers									
0020	1-3/8" thick, 20 ga., 2'-0" x 6'-8"	G	2 Corp	20	.800	Ea.	345	42.50	387.50	445
0040	2'-8" x 6'-8"	G		18	.889		355	47	402	465
0060	3'-0" x 6'-8"	G		17	.941		360	50	410	470
0100	3'-0" x 7'-0"	G		17	.941		375	50	425	485
0120	For vision lite, add						111		111	122
0140	For narrow lite, add						115		115	126
0320	Half glass, 20 ga., 2'-0" x 6'-8"	G	2 Corp	20	.800		695	42.50	737.50	830
0340	2'-8" x 6'-8"	G		18	.889		610	47	657	740
0360	3'-0" x 6'-8"	G		17	.941		605	50	655	740
0400	3'-0" x 7'-0"	G		17	.941		475	50	525	600
0410	1-3/8" thick, 18 ga., 2'-0" x 6'-8"	G		20	.800		465	42.50	507.50	580
0420	3'-0" x 6'-8"	G		17	.941		470	50	520	590
0425	3'-0" x 7'-0"	G		17	.941		460	50	510	580
0450	For vision lite, add						111		111	122
0452	For narrow lite, add						115		115	126
0460	Half glass, 18 ga., 2'-0" x 6'-8"	G	2 Corp	20	.800		635	42.50	677.50	765
0465	2'-8" x 6'-8"	G		18	.889		660	47	707	795
0470	3'-0" x 6'-8"	G		17	.941		645	50	695	785
0475	3'-0" x 7'-0"	G		17	.941		605	50	655	740
0500	Hollow core, 1-3/4" thick, full panel, 20 ga., 2'-8" x 6'-8"	G		18	.889		495	47	542	615
0520	3'-0" x 6'-8"	G		17	.941		495	50	545	620
0640	3'-0" x 7'-0"	G		17	.941		515	50	565	640
0680	4'-0" x 7'-0"	G		15	1.067		650	56.50	706.50	800
0700	4'-0" x 8'-0"	G		13	1.231		755	65.50	820.50	930
1000	18 ga., 2'-8" x 6'-8"	G		17	.941		525	50	575	650

08 13 Metal Doors

08 13 13 – Hollow Metal Doors

08 13 13.13 Standard Hollow Metal Doors		3'-0" x 6'-8"	Daily Output			Material	2020 Bare Costs			Total	Total Incl O&P
			Crew	Output	Labor-Hours		Labor	Equipment	Total		
1020		3'-0" x 6'-8"	[G]	2 Corp	.16	1 Ea.	510	53	563	640	
1120		3'-0" x 7'-0"	[G]		.17	.941	505	50	555	630	
1180		4'-0" x 7'-0"	[G]		.14	1.143	740	60.50	800.50	905	
1200		4'-0" x 8'-0"	[G]		.17	.941	850	50	900	1,000	
1212	For vision lite, add						111		111	122	
1214	For narrow lite, add						115		115	126	
1230	Half glass, 20 ga., 2'-8" x 6'-8"		[G]	2 Corp	.20	.800	575	42.50	617.50	695	
1240	3'-0" x 6'-8"		[G]		.18	.889	570	47	617	695	
1260	3'-0" x 7'-0"		[G]		.18	.889	600	47	647	730	
1280	Embossed panel, 1-3/4" thick, poly core, 20 ga., 3'-0" x 7'-0"				.18	.889	425	47	472	540	
1290	Half glass, 1-3/4" thick, poly core, 20 ga., 3'-0" x 7'-0"		[G]		.18	.889	625	47	672	755	
1320	18 ga., 2'-8" x 6'-8"		[G]		.18	.889	645	47	692	780	
1340	3'-0" x 6'-8"		[G]		.17	.941	640	50	690	780	
1360	3'-0" x 7'-0"		[G]		.17	.941	655	50	705	795	
1380	4'-0" x 7'-0"		[G]		.15	1.067	785	56.50	841.50	950	
1400	4'-0" x 8'-0"		[G]		.14	1.143	880	60.50	940.50	1,050	
1500	Flush full panel, 16 ga., steel hollow core										
1520	2'-0" x 6'-8"		[G]	2 Corp	.20	.800	Ea.	580	42.50	622.50	700
1530	2'-8" x 6'-8"		[G]		.20	.800		580	42.50	622.50	700
1540	3'-0" x 6'-8"		[G]		.20	.800		495	42.50	537.50	610
1560	2'-8" x 7'-0"		[G]		.18	.889		590	47	637	720
1570	3'-0" x 7'-0"		[G]		.18	.889		550	47	597	675
1580	3'-6" x 7'-0"		[G]		.18	.889		675	47	722	815
1590	4'-0" x 7'-0"		[G]		.18	.889		745	47	792	885
1600	2'-8" x 8'-0"		[G]		.18	.889		725	47	772	870
1620	3'-0" x 8'-0"		[G]		.18	.889		740	47	787	885
1630	3'-6" x 8'-0"		[G]		.18	.889		820	47	867	975
1640	4'-0" x 8'-0"		[G]		.18	.889		865	47	912	1,025
1720	Insulated, 1-3/4" thick, full panel, 18 ga., 3'-0" x 6'-8"		[G]		.15	1.067		500	56.50	556.50	640
1740	2'-8" x 7'-0"		[G]		.16	1		505	53	558	635
1760	3'-0" x 7'-0"		[G]		.15	1.067		520	56.50	576.50	660
1800	4'-0" x 8'-0"		[G]		.13	1.231		810	65.50	875.50	995
1820	Half glass, 18 ga., 3'-0" x 6'-8"		[G]		.16	1		630	53	683	775
1840	2'-8" x 7'-0"		[G]		.17	.941		660	50	710	800
1860	3'-0" x 7'-0"		[G]		.16	1		690	53	743	840
1900	4'-0" x 8'-0"		[G]		.14	1.143		590	60.50	650.50	740
2000	For vision lite, add						111		111	122	
2010	For narrow lite, add						115		115	126	
8100	For bottom louver, add						243		243	267	
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 Corp .20 .800 Ea. 420 42.50 462.50 525
0040	2'-8" x 6'-8"	18 .889 435 47 482 550
0060	3'-0" x 6'-8"	17 .941 435 50 485 555
0080	3'-0" x 7'-0"	17 .941 450 50 500 570
0140	18 ga., 3'-0" x 6'-8"	16 1 530 53 583 665
0160	2'-8" x 7'-0"	17 .941 560 50 610 695
0180	3'-0" x 7'-0"	16 1 510 53 563 640
0200	4'-0" x 7'-0"	15 1.067 645 56.50 701.50 795

08 13 Metal Doors

08 13 13 – Hollow Metal Doors

		Daily	Labor-	Unit	2020 Bare Costs			Total	Total
		Crew	Output	Hours	Material	Labor	Equipment	Incl O&P	
08 13 13.15 Metal Fire Doors									
0020	For "A" label, 3 hour, 18 ga., use same price as "B" label								
0240	For vision lite, add				Ea.				
0300	Full panel, 16 ga., 2'-0" x 6'-8"	2 Carp	20	.800		320	42.50	362.50	415
0310	2'-8" x 6'-8"		18	.889		560	47	607	685
0320	3'-0" x 6'-8"		17	.941		450	50	500	570
0350	2'-8" x 7'-0"		17	.941		580	50	630	710
0360	3'-0" x 7'-0"		16	1		560	53	613	700
0370	4'-0" x 7'-0"		15	1.067		725	56.50	781.50	885
0520	Flush, "B" label, 90 minutes, egress core, 20 ga., 2'-0" x 6'-8"		18	.889		680	47	727	820
0540	2'-8" x 6'-8"		17	.941		685	50	735	825
0560	3'-0" x 6'-8"		16	1		685	53	738	835
0580	3'-0" x 7'-0"		16	1		715	53	768	865
0640	Flush, "A" label, 3 hour, egress core, 18 ga., 3'-0" x 6'-8"		15	1.067		740	56.50	794.50	900
0660	2'-8" x 7'-0"		16	1		780	53	833	935
0680	3'-0" x 7'-0"		15	1.067		410	56.50	466.50	540
0700	4'-0" x 7'-0"		14	1.143		945	60.50	1,005.50	1,150

08 13 13.20 Residential Steel Doors

		Daily	Labor-	Unit	2020 Bare Costs			Total	Total	
		Crew	Output	Hours	Material	Labor	Equipment	Incl O&P		
0010	RESIDENTIAL STEEL DOORS									
0020	Prehung, insulated, exterior									
0030	Embossed, full panel, 2'-8" x 6'-8"	G	2 Carp	17	.941	Ea.	410	50	460	525
0040	3'-0" x 6'-8"	G		15	1.067		300	56.50	356.50	415
0060	3'-0" x 7'-0"	G		15	1.067		355	56.50	411.50	475
0070	5'-4" x 6'-8", double	G		8	2		590	106	696	810
0220	Half glass, 2'-8" x 6'-8"	G		17	.941		330	50	380	440
0240	3'-0" x 6'-8"	G		16	1		330	53	383	445
0260	3'-0" x 7'-0"	G		16	1		400	53	453	520
0270	5'-4" x 6'-8", double	G		8	2		985	106	1,091	1,225
1320	Flush face, full panel, 2'-8" x 6'-8"	G		16	1		335	53	388	450
1340	3'-0" x 6'-8"	G		15	1.067		335	56.50	391.50	455
1360	3'-0" x 7'-0"	G		15	1.067		315	56.50	371.50	430
1380	5'-4" x 6'-8", double	G		8	2		810	106	916	1,050
1420	Half glass, 2'-8" x 6'-8"	G		17	.941		350	50	400	460
1440	3'-0" x 6'-8"	G		16	1		350	53	403	465
1460	3'-0" x 7'-0"	G		16	1		455	53	508	585
1480	5'-4" x 6'-8", double	G		8	2		680	106	786	905
1500	Sidelight, full lite, 1'-0" x 6'-8" with grille	G					395		395	435
1510	1'-0" x 6'-8", low E	G					410		410	450
1520	1'-0" x 6'-8", half lite	G					299		299	330
1530	1'-0" x 6'-8", half lite, low E	G					300		300	330
2300	Interior, residential, closet, bi-fold, 2'-0" x 6'-8"	G	2 Carp	16	1		251	53	304	355
2330	3'-0" wide	G		16	1		284	53	337	395
2360	4'-0" wide	G		15	1.067		293	56.50	349.50	405
2400	5'-0" wide	G		14	1.143		370	60.50	430.50	495
2420	6'-0" wide	G		13	1.231		300	65.50	365.50	430

08 13 13.25 Doors Hollow Metal

		Daily	Labor-	Unit	2020 Bare Costs			Total	Total	
		Crew	Output	Hours	Material	Labor	Equipment	Incl O&P		
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.	287	56.50	343.50	400
0530	2'-8" wide	G		15	1.067		345	56.50	401.50	465
0560	3'-0" wide	G		14	1.143		345	60.50	405.50	470
1000	18 ga., 1-3/4" x 7'-0" x 2'-6" wide	G		15	1.067		300	56.50	356.50	415
1030	2'-8" wide	G		15	1.067		305	56.50	361.50	420
1060	3'-0" wide	G		14	1.143		296	60.50	356.50	415

08 13 Metal Doors

08 13 13 – Hollow Metal Doors

08 13 13.25 Doors Hollow Metal			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P	
			Crew			Labor	Equipment			
1500	16 ga., 1-3/4" x 7'-0" x 2'-6" wide	[G]	2 Corp	15	1.067	Ea.	385	56.50	441.50	510
1530	2'-8" wide	[G]		15	1.067		385	56.50	441.50	505
1560	3'-0" wide	[G]		14	1.143		455	60.50	515.50	590
1590	3'-6" wide	[G]		14	1.143		735	60.50	795.50	900
2900	Fire door, "A" label, 18 gauge, 1-3/4" x 2'-6" x 7'-0"	[G]		15	1.067		275	56.50	331.50	390
2930	2'-8" wide	[G]		15	1.067		275	56.50	331.50	390
2960	3'-0" wide	[G]		14	1.143		275	60.50	335.50	395
2990	3'-6" wide	[G]		14	1.143		495	60.50	555.50	635
3100	"B" label, 2'-6" wide	[G]		15	1.067		655	56.50	711.50	805
3130	2'-8" wide	[G]		15	1.067		675	56.50	731.50	825
3160	3'-0" wide	[G]		14	1.143		670	60.50	730.50	825

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.	1,250	460	1,710	2,075
5050	3'-0" x 7'-0", single		2.50	6,400	Ea.	730	370	1,100	1,375
5100	Pair of 3'-0" x 7'-0"		2	8	Pr.	1,500	460	1,960	2,375
5150	3'-6" x 7'-0", single	▼	2.50	6,400	Ea.	955	370	1,325	1,625

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 Corp	14	1.143	Ea.	1,125	60.50	1,185.50	1,350
3030	With two lites		10	1.600		3,475	85	3,560	3,950
3040	3'-6" x 8'-0", six panel		10	1.600		1,800	85	1,885	2,100
3050	With two lites		8	2		3,050	106	3,156	3,525
3100	Pine, 3'-0" x 7'-0", six panel		14	1.143		655	60.50	715.50	810
3110	With two lites		10	1.600		880	85	965	1,100
3120	3'-6" x 8'-0", six panel		10	1.600		1,125	85	1,210	1,375
3130	With two lites		8	2		2,000	106	2,106	2,375
3200	Red oak, 3'-0" x 7'-0", six panel		14	1.143		1,325	60.50	1,385.50	1,575
3210	With two lites		10	1.600		2,675	85	2,760	3,075
3220	3'-6" x 8'-0", six panel		10	1.600		2,825	85	2,910	3,225
3230	With two lites	▼	8	2	▼	3,575	106	3,681	4,100
4000	Hand carved door, mahogany								
4020	3'-0" x 7'-0", simple design	2 Corp	14	1.143	Ea.	1,875	60.50	1,935.50	2,175
4030	Intricate design		11	1.455		3,825	77.50	3,902.50	4,325
4040	3'-6" x 8'-0", simple design		10	1.600		2,875	85	2,960	3,300
4050	Intricate design		8	2		3,875	106	3,981	4,425
4400	For custom finish, add					640		640	705
4600	Side light, mahogany, 7'-0" x 1'-6" wide, 4 lites	2 Corp	18	.889		1,200	47	1,247	1,375
4610	6 lites		14	1.143		2,800	60.50	2,860.50	3,175
4620	8'-0" x 1'-6" wide, 4 lites		14	1.143		2,225	60.50	2,285.50	2,550
4630	6 lites		10	1.600		2,375	85	2,460	2,750
4640	Side light, oak, 7'-0" x 1'-6" wide, 4 lites		18	.889		1,425	47	1,472	1,625
4650	6 lites		14	1.143		2,475	60.50	2,535.50	2,825
4660	8'-0" x 1'-6" wide, 4 lites		14	1.143		1,325	60.50	1,385.50	1,575
4670	6 lites	▼	10	1.600	▼	2,475	85	2,560	2,850

08 14 Wood Doors

08 14 16 – Flush Wood Doors

08 14 16.09 Smooth Wood Doors		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
0010 SMOOTH WOOD DOORS										
0015 Flush, interior, hollow core										
0025 Luan face, 1-3/8", 3'-0" x 6'-8"		2 Corp	17	.941	Ea.	53.50	50		103.50	134
0030 4'-0" x 6'-8"			16	1		134	53		187	227
0080 1-3/4", 2'-0" x 6'-8"			17	.941		60	50		110	141
0108 3'-0" x 7'-0"			16	1		226	53		279	330
0112 Pair of 3'-0" x 7'-0"			9	1.778	Pr.	153	94.50		247.50	310
0140 Birch face, 1-3/8", 2'-6" x 6'-8"			17	.941	Ea.	122	50		172	209
0180 3'-0" x 6'-8"			17	.941		101	50		151	186
0200 4'-0" x 6'-8"			16	1		167	53		220	264
0202 1-3/4", 2'-0" x 6'-8"			17	.941		69	50		119	151
0210 3'-0" x 7'-0"			16	1		174	53		227	272
0214 Pair of 3'-0" x 7'-0"			9	1.778	Pr.	274	94.50		368.50	440
0220 Oak face, 1-3/8", 2'-0" x 6'-8"			17	.941	Ea.	117	50		167	203
0280 3'-0" x 6'-8"			17	.941		112	50		162	198
0300 4'-0" x 6'-8"			16	1		148	53		201	243
0305 1-3/4", 2'-6" x 6'-8"			17	.941		137	50		187	225
0310 3'-0" x 7'-0"			16	1		272	53		325	380
0320 Walnut face, 1-3/8", 2'-0" x 6'-8"			17	.941		206	50		256	300
0340 2'-6" x 6'-8"			17	.941		201	50		251	296
0380 3'-0" x 6'-8"			17	.941		210	50		260	305
0400 4'-0" x 6'-8"			16	1		231	53		284	335
0430 For 7'-0" high, add						31.50			31.50	35
0440 For 8'-0" high, add						46			46	50.50
0480 For prefinishing, clear, add						57			57	63
0500 For prefinishing, stain, add						67.50			67.50	74
1320 M.D. overlay on hardboard, 1-3/8", 2'-0" x 6'-8"		2 Corp	17	.941		134	50		184	222
1340 2'-6" x 6'-8"			17	.941		135	50		185	224
1380 3'-0" x 6'-8"			17	.941		136	50		186	225
1400 4'-0" x 6'-8"			16	1		231	53		284	335
1420 For 7'-0" high, add						18.95			18.95	21
1440 For 8'-0" high, add						42			42	46
1720 H.P. plastic laminate, 1-3/8", 2'-0" x 6'-8"		2 Corp	16	1		286	53		339	395
1740 2'-6" x 6'-8"			16	1		282	53		335	390
1780 3'-0" x 6'-8"			15	1.067		305	56.50		361.50	420
1800 4'-0" x 6'-8"			14	1.143		405	60.50		465.50	535
1820 For 7'-0" high, add						22.50			22.50	24.50
1840 For 8'-0" high, add						39			39	43
2020 Particle core, luan face, 1-3/8", 2'-6" x 6'-8"		2 Corp	15	1.067		105	56.50		161.50	201
2040 3'-0" x 6'-8"			14	1.143		108	60.50		168.50	211
2080 3'-0" x 7'-0"			13	1.231		128	65.50		193.50	240
2085 4'-0" x 7'-0"			12	1.333		140	71		211	260
2110 1-3/4", 3'-0" x 7'-0"			13	1.231		226	65.50		291.50	350
2120 Birch face, 1-3/8", 2'-6" x 6'-8"			15	1.067		120	56.50		176.50	217
2140 3'-0" x 6'-8"			14	1.143		130	60.50		190.50	235
2180 3'-0" x 7'-0"			13	1.231		143	65.50		208.50	256
2200 4'-0" x 7'-0"			12	1.333		156	71		227	278
2205 1-3/4", 3'-0" x 7'-0"			13	1.231		211	65.50		276.50	330
2220 Oak face, 1-3/8", 2'-6" x 6'-8"			15	1.067		132	56.50		188.50	231
2240 3'-0" x 6'-8"			14	1.143		145	60.50		205.50	252
2280 3'-0" x 7'-0"			13	1.231		152	65.50		217.50	266
2300 4'-0" x 7'-0"			12	1.333		176	71		247	300

08 14 Wood Doors

08 14 16 - Flush Wood Doors

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Ind O&P
		Crew			Labor	Equipment	Total		
08 14 16.09 Smooth Wood Doors									
2305	1-3/4", 3'-0" x 7'-0"	2 Corp	13	1.231 Ea.	256	65.50	321.50	380	
2320	Walnut face, 1-3/8", 2'-0" x 6'-8"		15	1.067	138	56.50	194.50	237	
2340	2'-6" x 6'-8"		14	1.143	155	60.50	215.50	262	
2380	3'-0" x 6'-8"		13	1.231	175	65.50	240.50	291	
2400	4'-0" x 6'-8"		12	1.333	229	71	300	360	
2440	For 8'-0" high, add				46.50		46.50	51.50	
2460	For 8'-0" high walnut, add				42.50		42.50	46.50	
2720	For prefinishing, clear, add				41.50		41.50	45.50	
2740	For prefinishing, stain, add				59.50		59.50	65.50	
3320	M.D. overlay on hardboard, 1-3/8", 2'-6" x 6'-8"	2 Corp	14	1.143	189	60.50	249.50	300	
3340	3'-0" x 6'-8"		13	1.231	213	65.50	278.50	335	
3380	3'-0" x 7'-0"		12	1.333	216	71	287	345	
3400	4'-0" x 7'-0"		10	1.600	298	85	383	460	
3440	For 8'-0" height, add				42		42	46	
3460	For solid wood core, add				75.50		75.50	83	
3720	H.P. plastic laminate, 1-3/8", 2'-6" x 6'-8"	2 Corp	13	1.231	172	65.50	237.50	288	
3740	3'-0" x 6'-8"		12	1.333	194	71	265	320	
3780	3'-0" x 7'-0"		11	1.455	208	77.50	285.50	345	
3800	4'-0" x 7'-0"		8	2	415	106	521	620	
3840	For 8'-0" height, add				42		42	46	
3860	For solid wood core, add				44		44	48.50	
4000	Exterior, flush, solid core, birch, 1-3/4" x 2'-6" x 7'-0"	2 Corp	15	1.067	165	56.50	221.50	267	
4020	2'-8" wide		15	1.067	239	56.50	295.50	350	
4040	3'-0" wide		14	1.143	182	60.50	242.50	292	
4100	Oak faced 1-3/4" x 2'-6" x 7'-0"		15	1.067	238	56.50	294.50	345	
4120	2'-8" wide		15	1.067	264	56.50	320.50	375	
4140	3'-0" wide		14	1.143	255	60.50	315.50	370	
4200	Walnut faced, 1-3/4" x 2'-6" x 7'-0"		15	1.067	340	56.50	396.50	460	
4220	2'-8" wide		15	1.067	375	56.50	431.50	495	
4240	3'-0" wide		14	1.143	315	60.50	375.50	435	
4300	For 6'-8" high door, deduct from 7'-0" door				18.70		18.70	20.50	
5000	Wood doors, for vision lite, add				111		111	122	
5010	Wood doors, for narrow lite, add				115		115	126	
5015	Wood doors, for bottom (or top) louver, add				243		243	267	

08 14 16.20 Wood Fire Doors

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 Corp	14	1.143 Ea.	465	60.50	525.50	605	
0080	3'-0" x 6'-8"		13	1.231	540	65.50	605.50	695	
0090	3'-0" x 7'-0"		12	1.333	500	71	571	655	
0100	4'-0" x 7'-0"		12	1.333	730	71	801	910	
0140	Oak face, 2'-6" x 6'-8"		14	1.143	585	60.50	645.50	735	
0180	3'-0" x 6'-8"		13	1.231	525	65.50	590.50	675	
0190	3'-0" x 7'-0"		12	1.333	585	71	656	745	
0200	4'-0" x 7'-0"		12	1.333	685	71	756	860	
0240	Walnut face, 2'-6" x 6'-8"		14	1.143	545	60.50	605.50	690	
0280	3'-0" x 6'-8"		13	1.231	555	65.50	620.50	710	
0290	3'-0" x 7'-0"		12	1.333	620	71	691	790	
0300	4'-0" x 7'-0"		12	1.333	865	71	936	1,050	
0440	M.D. overlay on hardboard, 2'-6" x 6'-8"		15	1.067	370	56.50	426.50	495	
0480	3'-0" x 6'-8"		14	1.143	460	60.50	520.50	595	
0490	3'-0" x 7'-0"		13	1.231	490	65.50	555.50	635	

08 14 Wood Doors

08 14 16 - Flush Wood Doors

08 14 16.20 Wood Fire Doors		Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Ind O&P
					Material	Labor	Equipment		
0500	4'-0" x 7'-0"	2 Carp	12	1.333	Ea.	475	71	546	625
0740	90 minutes, birch face, 1-3/4" x 2'-6" x 6'-8"		14	1.143		345	60.50	405.50	465
0780	3'-0" x 6'-8"		13	1.231		410	65.50	475.50	550
0790	3'-0" x 7'-0"		12	1.333		460	71	531	610
0800	4'-0" x 7'-0"		12	1.333		555	71	626	715
0840	Oak face, 2'-6" x 6'-8"		14	1.143		470	60.50	530.50	605
0880	3'-0" x 6'-8"		13	1.231		520	65.50	585.50	675
0890	3'-0" x 7'-0"		12	1.333		555	71	626	715
0900	4'-0" x 7'-0"		12	1.333		680	71	751	855
0940	Walnut face, 2'-6" x 6'-8"		14	1.143		545	60.50	605.50	690
0980	3'-0" x 6'-8"		13	1.231		465	65.50	530.50	610
0990	3'-0" x 7'-0"		12	1.333		570	71	641	730
1000	4'-0" x 7'-0"		12	1.333		695	71	766	870
1140	M.D. overlay on hardboard, 2'-6" x 6'-8"		15	1.067		455	56.50	511.50	585
1180	3'-0" x 6'-8"		14	1.143		435	60.50	495.50	570
1190	3'-0" x 7'-0"		13	1.231		515	65.50	580.50	670
1200	4'-0" x 7'-0"		12	1.333		595	71	666	755
1240	For 8'-0" height, add					86		86	94.50
1260	For 8'-0" height walnut, add					105		105	115
2200	Custom architectural "B" label, flush, 1-3/4" thick, birch,								
2210	Solid core								
2220	2'-6" x 7'-0"	2 Carp	15	1.067	Ea.	425	56.50	481.50	555
2260	3'-0" x 7'-0"		14	1.143		370	60.50	430.50	495
2300	4'-0" x 7'-0"		13	1.231		565	65.50	630.50	720
2420	4'-0" x 8'-0"		11	1.455		565	77.50	642.50	740
2480	For oak veneer, add					50%			
2500	For walnut veneer, add					75%			

08 14 33 - Stile and Rail Wood Doors

08 14 33.10 Wood Doors Paneled

0010	WOOD DOORS PANELED								
0020	Interior, six panel, hollow core, 1-3/8" thick								
0040	Molded hardboard, 2'-0" x 6'-8"	2 Carp	17	.941	Ea.	65.50	50	115.50	148
0060	2'-6" x 6'-8"		17	.941		69	50	119	151
0070	2'-8" x 6'-8"		17	.941		72	50	122	154
0080	3'-0" x 6'-8"		17	.941		89.50	50	139.50	174
0140	Embossed print, molded hardboard, 2'-0" x 6'-8"		17	.941		69	50	119	151
0160	2'-6" x 6'-8"		17	.941		69	50	119	151
0180	3'-0" x 6'-8"		17	.941		89.50	50	139.50	174
0540	Six panel, solid, 1-3/8" thick, pine, 2'-0" x 6'-8"		15	1.067		166	56.50	222.50	268
0560	2'-6" x 6'-8"		14	1.143		164	60.50	224.50	273
0580	3'-0" x 6'-8"		13	1.231		150	65.50	215.50	264
1020	Two panel, bored rail, solid, 1-3/8" thick, pine, 1'-6" x 6'-8"		16	1		257	53	310	365
1040	2'-0" x 6'-8"		15	1.067		335	56.50	391.50	455
1060	2'-6" x 6'-8"		14	1.143		380	60.50	440.50	510
1340	Two panel, solid, 1-3/8" thick, fir, 2'-0" x 6'-8"		15	1.067		173	56.50	229.50	275
1360	2'-6" x 6'-8"		14	1.143		230	60.50	290.50	345
1380	3'-0" x 6'-8"		13	1.231		420	65.50	485.50	560
1740	Five panel, solid, 1-3/8" thick, fir, 2'-0" x 6'-8"		15	1.067		310	56.50	366.50	430
1760	2'-6" x 6'-8"		14	1.143		400	60.50	460.50	530
1780	3'-0" x 6'-8"		13	1.231		400	65.50	465.50	540

08 14 Wood Doors

08 14 33 – Stile and Rail Wood Doors

08 14 33.20 Wood Doors Residential		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
0010	WOOD DOORS RESIDENTIAL						Labor	Equipment		
0200	Exterior, combination storm & screen, pine									
0260	2'-8" wide	2 Corp	10	1.600	Ea.	330	85		415	490
0280	3'-0" wide		9	1.778		345	94.50		439.50	520
0300	7'-1" x 3'-0" wide		9	1.778		365	94.50		459.50	540
0400	Full lite, 6'-9" x 2'-6" wide		11	1.455		355	77.50		432.50	505
0420	2'-8" wide		10	1.600		345	85		430	510
0440	3'-0" wide		9	1.778		355	94.50		449.50	530
0500	7'-1" x 3'-0" wide		9	1.778		385	94.50		479.50	560
0700	Dutch door, pine, 1-3/4" x 2'-8" x 6'-8", 6 panel		12	1.333		740	71		811	920
0720	Half glass		10	1.600		1,025	85		1,110	1,250
0800	3'-0" wide, 6 panel		12	1.333		660	71		731	835
0820	Half glass		10	1.600		1,050	85		1,135	1,275
1000	Entrance door, colonial, 1-3/4" x 6'-8" x 2'-8" wide		16	1		625	53		678	770
1020	6 panel pine, 3'-0" wide		15	1.067		610	56.50		666.50	755
1100	8 panel pine, 2'-8" wide		16	1		735	53		788	890
1120	3'-0" wide		15	1.067		670	56.50		726.50	825
1200	For tempered safety glass lites (min. of 2), add					92.50			92.50	102
1300	Flush, birch, solid core, 1-3/4" x 6'-8" x 2'-8" wide	2 Corp	16	1		169	53		222	266
1320	3'-0" wide		15	1.067		153	56.50		209.50	254
1350	7'-0" x 2'-8" wide		16	1		141	53		194	235
1360	3'-0" wide		15	1.067		149	56.50		205.50	249
1380	For tempered safety glass lites, add					120			120	132
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 Corp	13	1.231	Ea.	80.50	65.50		146	187
2740	3'-0" wide		13	1.231		78	65.50		143.50	185
2760	4'-0" wide		12	1.333		123	71		194	241
2780	5'-0" wide		11	1.455		121	77.50		198.50	249
2800	6'-0" wide		10	1.600		137	85		222	279
3000	Raised panel pine, 6'-6" or 6'-8" x 2'-6" wide		13	1.231		207	65.50		272.50	325
3020	3'-0" wide		13	1.231		305	65.50		370.50	435
3040	4'-0" wide		12	1.333		330	71		401	470
3060	5'-0" wide		11	1.455		425	77.50		502.50	585
3080	6'-0" wide		10	1.600		470	85		555	645
3200	Louvered, pine, 6'-6" or 6'-8" x 2'-6" wide		13	1.231		170	65.50		235.50	286
3220	3'-0" wide		13	1.231		284	65.50		349.50	415
3240	4'-0" wide		12	1.333		256	71		327	390
3260	5'-0" wide		11	1.455		276	77.50		353.50	420
3280	6'-0" wide		10	1.600		335	85		420	495
4400	Bi-passing closet, incl. hardware and frame, no trim incl.									
4420	Flush, lauan, 6'-8" x 4'-0" wide	2 Corp	12	1.333	Opng.	178	71		249	300
4440	5'-0" wide		11	1.455		196	77.50		273.50	330
4460	6'-0" wide		10	1.600		177	85		262	325
4600	Flush, birch, 6'-8" x 4'-0" wide		12	1.333		270	71		341	405
4620	5'-0" wide		11	1.455		227	77.50		304.50	365
4640	6'-0" wide		10	1.600		360	85		445	525
4800	Louvered, pine, 6'-8" x 4'-0" wide		12	1.333		525	71		596	680
4820	5'-0" wide		11	1.455		740	77.50		817.50	930
4840	6'-0" wide		10	1.600		770	85		855	975
5000	Paneled, pine, 6'-8" x 4'-0" wide		12	1.333		505	71		576	660
5020	5'-0" wide		11	1.455		760	77.50		837.50	950

08 14 Wood Doors

08 14 33 – Stile and Rail Wood Doors

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
		Crew			Labor	Equipment	Total		
08 14 33.20	Wood Doors Residential								
5040	6'-0" wide	2 Corp	10	1.600	Opng.	900	85	985	1,125
5042	8'-0" wide	↓	12	1.333	↓	1,000	71	1,071	1,200
6100	Folding accordion, closet, including track and frame								
6120	Vinyl, 2 layer, stock	2 Corp	10	1.600	Ea.	81	85	166	217
6140	Woven mahogany and vinyl, stock		10	1.600		65	85	150	200
6160	Wood slats with vinyl overlay, stock		10	1.600		174	85	259	320
6180	Economy vinyl, stock		10	1.600		42	85	127	175
6200	Rigid PVC		10	1.600		124	85	209	265
7310	Passage doors, flush, no frame included								
7320	Hardboard, hollow core, 1-3/8" x 6'-8" x 1'-6" wide	2 Corp	18	.889	Ea.	43	47	90	119
7330	2'-0" wide		18	.889		48	47	95	124
7340	2'-6" wide		18	.889		55	47	102	132
7350	2'-8" wide		18	.889		57	47	104	134
7360	3'-0" wide		17	.941		58	50	108	139
7420	Luan, hollow core, 1-3/8" x 6'-8" x 1'-6" wide		18	.889		59.50	47	106.50	137
7440	2'-0" wide		18	.889		63	47	110	141
7450	2'-4" wide		18	.889		71.50	47	118.50	150
7460	2'-6" wide		18	.889		71.50	47	118.50	150
7480	2'-8" wide		18	.889		74	47	121	153
7500	3'-0" wide		17	.941		90.50	50	140.50	175
7700	Birch, hollow core, 1-3/8" x 6'-8" x 1'-6" wide		18	.889		78	47	125	157
7720	2'-0" wide		18	.889		86	47	133	166
7740	2'-6" wide		18	.889		87.50	47	134.50	168
7760	2'-8" wide		18	.889		91	47	138	171
7780	3'-0" wide		17	.941		94.50	50	144.50	179
8000	Pine louvered, 1-3/8" x 6'-8" x 1'-6" wide		19	.842		160	45	205	243
8020	2'-0" wide		18	.889		177	47	224	265
8040	2'-6" wide		18	.889		200	47	247	291
8060	2'-8" wide		18	.889		220	47	267	315
8080	3'-0" wide		17	.941		233	50	283	330
8300	Pine paneled, 1-3/8" x 6'-8" x 1'-6" wide		19	.842		201	45	246	288
8320	2'-0" wide		18	.889		251	47	298	345
8330	2'-4" wide		18	.889		252	47	299	350
8340	2'-6" wide		18	.889		265	47	312	360
8360	2'-8" wide		18	.889		271	47	318	370
8380	3'-0" wide	↓	17	.941	↓	291	50	341	395

08 14 35 – Torriified Doors

08 14 35.10 Torriified Exterior Doors

0010 TORRIIFIED EXTERIOR DOORS

0020 Wood doors made from torriified 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 Corp	12	1.333	Ea.	1,425	71	1,496	1,675
0120	Half glass 3'-0" x 6'-8"	"	12	1.333		1,550	71	1,621	1,800
0200	Side lite, full glass, 1-3/4" x 1'-2" x 6'-8"					1,025		1,025	1,125
0220	Side lite, half glass, 1-3/4" x 1'-2" x 6'-8"					995		995	1,100
0300	Raised face, 2 panel, paint grade poplar, 1-3/4" x 3'-0" x 7'-0"	2 Corp	12	1.333		1,425	71	1,496	1,675
0320	Side lite, raised face, half glass, 1-3/4" x 1'-2" x 7'-0"					1,150		1,150	1,275
0500	6 panel, Fir, 1-3/4" x 3'-0" x 6'-8"	2 Corp	12	1.333		2,050	71	2,121	2,350
0520	Half glass 3'-0" x 6'-8"	"	12	1.333		2,025	71	2,096	2,325
0600	Side lite, full glass, 1-3/4" x 1'-2" x 6'-8"					1,025		1,025	1,125
0620	Side lite, half glass, 1-3/4" x 1'-2" x 6'-8"					1,050		1,050	1,175

08 14 Wood Doors

08 14 35 – Torrified Doors

08 14 35.10 Torrified Exterior Doors				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Ind O&P
	Crew							Labor	Equipment			
0700	6 panel, Mahogany, 1-3/4" x 3'-0" x 6'-8"	2 Carp	12	1,333	Ea.		2,525	71			2,596	2,875
0800	Side lite, full glass, 1-3/4" x 1'-2" x 6'-8"						1,150				1,150	1,250
0820	Side lite, half glass, 1-3/4" x 1'-2" x 6'-8"						1,150				1,150	1,275

08 14 40 – Interior Cafe Doors

08 14 40.10 Cafe Style Doors

0010 CAFE STYLE DOORS				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Ind O&P
	Crew							Labor	Equipment			
6520	Interior cafe doors, 2'-6" opening, stock, panel pine	2 Carp	16	1	Ea.		430	53			483	555
6540	3'-0" opening	"	16	1	"		455	53			508	580
6550	Louvered pine											
6560	2'-6" opening	2 Carp	16	1	Ea.		345	53			398	455
8000	3'-0" opening		16	1			370	53			423	490
8010	2'-6" opening, hardwood		16	1			375	53			428	495
8020	3'-0" opening		16	1			425	53			478	545

08 16 Composite Doors

08 16 13 – Fiberglass Doors

08 16 13.10 Entrance Doors, Fibrous Glass

0010 ENTRANCE DOORS, FIBROUS GLASS				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Ind O&P
	Crew							Labor	Equipment			
0020	Exterior, fiberglass, door, 2'-8" wide x 6'-8" high	G	2 Carp	15	1,067	Ea.	276	56.50			332.50	390
0040	3'-0" wide x 6'-8" high	G		15	1,067		279	56.50			335.50	390
0060	3'-0" wide x 7'-0" high	G		15	1,067		520	56.50			576.50	655
0080	3'-0" wide x 6'-8" high, with two lites	G		15	1,067		345	56.50			401.50	465
0100	3'-0" wide x 8'-0" high, with two lites	G		15	1,067		535	56.50			591.50	675
0110	Half glass, 3'-0" wide x 6'-8" high	G		15	1,067		485	56.50			541.50	620
0120	3'-0" wide x 6'-8" high, low E	G		15	1,067		525	56.50			581.50	665
0130	3'-0" wide x 8'-0" high	G		15	1,067		605	56.50			661.50	750
0140	3'-0" wide x 8'-0" high, low E	G		15	1,067		685	56.50			741.50	840
0150	Side lights, 1'-0" wide x 6'-8" high	G					284				284	310
0160	1'-0" wide x 6'-8" high, low E	G					305				305	335
0180	1'-0" wide x 6'-8" high, full glass	G					340				340	375
0190	1'-0" wide x 6'-8" high, low E	G					385				385	420

08 16 14 – French Doors

08 16 14.10 Exterior Doors With Glass Lites

0010 EXTERIOR DOORS WITH GLASS LITES				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Ind O&P
	Crew							Labor	Equipment			
0020	French, Fir, 1-3/4", 3'-0" wide x 6'-8" high	2 Carp	12	1,333	Ea.		650	71			721	820
0025	Double		12	1,333			1,300	71			1,371	1,525
0030	Maple, 1-3/4", 3'-0" wide x 6'-8" high		12	1,333			725	71			796	905
0035	Double		12	1,333			1,450	71			1,521	1,700
0040	Cherry, 1-3/4", 3'-0" wide x 6'-8" high		12	1,333			850	71			921	1,050
0045	Double		12	1,333			1,700	71			1,771	1,975
0100	Mahogany, 1-3/4", 3'-0" wide x 8'-0" high		10	1,600			875	85			960	1,100
0105	Double		10	1,600			1,750	85			1,835	2,050
0110	Fir, 1-3/4", 3'-0" wide x 8'-0" high		10	1,600			1,300	85			1,385	1,550
0115	Double		10	1,600			2,625	85			2,710	3,000
0120	Oak, 1-3/4", 3'-0" wide x 8'-0" high		10	1,600			1,975	85			2,060	2,275
0125	Double		10	1,600			3,925	85			4,010	4,450

08 17 Integrated Door Opening Assemblies

08 17 13 – Integrated Metal Door Opening Assemblies

08 17 13.20 Stainless Steel Doors and Frames		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
0010 STAINLESS STEEL DOORS AND FRAMES										
0500	Stainless steel, prehung door, foam core, 14 ga., 3'-0" x 7'-0"	[G]	2 Carp	5	3.200	Ea.	3,125	170	3,295	3,675
0600	Stainless steel, prehung double door, foam core, 14 ga., 3'-0" x 7'-0"	[G]	"	4	4	"	6,150	213	6,363	7,100

08 17 23 – Integrated Wood Door Opening Assemblies

08 17 23.10 Pre-Hung Doors

0010 PRE-HUNG DOORS		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
0300 Exterior, wood, comb. storm & screen, 6'-9" x 2'-6" wide		2 Carp	15	1.067	Ea.	262	56.50	318.50	375	
0320 2'-8" wide			15	1.067		350	56.50	406.50	470	
0340 3'-0" wide			15	1.067		330	56.50	386.50	450	
0360 For 7'-0" high door, add						45.50		45.50	50	
1600 Entrance door, flush, birch, solid core										
1620 4-5/8" solid jamb, 1-3/4" x 6'-8" x 2'-8" wide		2 Carp	16	1	Ea.	299	53	352	410	
1640 3'-0" wide			16	1		405	53	458	530	
1642 5-5/8" jamb			16	1		350	53	403	465	
1680 For 7'-0" high door, add						25.50		25.50	28	
2000 Entrance door, colonial, 6 panel pine										
2020 4-5/8" solid jamb, 1-3/4" x 6'-8" x 2'-8" wide		2 Carp	16	1	Ea.	670	53	723	820	
2040 3'-0" wide		"	16	1		705	53	758	855	
2060 For 7'-0" high door, add						57		57	63	
2200 For 5-5/8" solid jamb, add						44		44	48.50	
4000 Interior, passage door, 4-5/8" solid jamb										
4400 Lauan, flush, solid core, 1-3/8" x 6'-8" x 2'-6" wide		2 Carp	17	.941	Ea.	194	50	244	289	
4420 2'-8" wide			17	.941		194	50	244	289	
4440 3'-0" wide			16	1		212	53	265	315	
4600 Hollow core, 1-3/8" x 6'-8" x 2'-6" wide			17	.941		136	50	186	225	
4620 2'-8" wide			17	.941		136	50	186	224	
4640 3'-0" wide			16	1		145	53	198	240	
4700 For 7'-0" high door, add						41		41	45	
5000 Birch, flush, solid core, 1-3/8" x 6'-8" x 2'-6" wide		2 Carp	17	.941		315	50	365	420	
5020 2'-8" wide			17	.941		210	50	260	305	
5040 3'-0" wide			16	1		315	53	368	425	
5200 Hollow core, 1-3/8" x 6'-8" x 2'-6" wide			17	.941		260	50	310	360	
5220 2'-8" wide			17	.941		273	50	323	375	
5240 3'-0" wide			16	1		277	53	330	385	
5280 For 7'-0" high door, add						35		35	38.50	
5500 Hardboard paneled, 1-3/8" x 6'-8" x 2'-6" wide		2 Carp	17	.941		156	50	206	247	
5520 2'-8" wide			17	.941		163	50	213	254	
5540 3'-0" wide			16	1		165	53	218	261	
6000 Pine paneled, 1-3/8" x 6'-8" x 2'-6" wide			17	.941		278	50	328	380	
6020 2'-8" wide			17	.941		294	50	344	400	
6040 3'-0" wide			16	1		305	53	358	415	

08 31 Access Doors and Panels

08 31.13 – Access Doors and Frames

08 31 13.10 Types of Framed Access Doors		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
0010	TYPES OF FRAMED ACCESS DOORS									
1000	Fire rated door with lock									
1100	Metal, 12" x 12"	1 Corp	10	.800	Ea.	164	42.50		206.50	244
1150	18" x 18"		9	.889		221	47		268	315
1200	24" x 24"		9	.889		345	47		392	450
1250	24" x 36"		8	1		350	53		403	465
1300	24" x 48"		8	1		415	53		468	535
1350	36" x 36"		7.50	1.067		515	56.50		571.50	650
1400	48" x 48"		7.50	1.067		670	56.50		726.50	820
1600	Stainless steel, 12" x 12"		10	.800		340	42.50		382.50	440
1650	18" x 18"		9	.889		375	47		422	485
1700	24" x 24"		9	.889		550	47		597	675
1750	24" x 36"	▼	8	1	▼	655	53		708	805
2000	Flush door for finishing									
2100	Metal 8" x 8"	1 Corp	10	.800	Ea.	37.50	42.50		80	105
2150	12" x 12"	"	10	.800	"	37.50	42.50		80	106
3000	Recessed door for acoustic tile									
3100	Metal, 12" x 12"	1 Corp	4.50	1.778	Ea.	57	94.50		151.50	205
3150	12" x 24"		4.50	1.778		111	94.50		205.50	264
3200	24" x 24"		4	2		107	106		213	278
3250	24" x 36"	▼	4	2	▼	165	106		271	340
4000	Recessed door for drywall									
4100	Metal 12" x 12"	1 Corp	6	1.333	Ea.	76.50	71		147.50	190
4150	12" x 24"		5.50	1.455		119	77.50		196.50	246
4200	24" x 36"	▼	5	1.600	▼	177	85		262	325
6000	Standard door									
6100	Metal, 8" x 8"	1 Corp	10	.800	Ea.	30	42.50		72.50	97
6150	12" x 12"		10	.800		30.50	42.50		73	97.50
6200	18" x 18"		9	.889		35.50	47		82.50	110
6250	24" x 24"		9	.889		50	47		97	126
6300	24" x 36"		8	1		88	53		141	177
6350	36" x 36"		8	1		103	53		156	193
6500	Stainless steel, 8" x 8"		10	.800		80.50	42.50		123	153
6550	12" x 12"		10	.800		97	42.50		139.50	170
6600	18" x 18"		9	.889		177	47		224	266
6650	24" x 24"	▼	9	.889	▼	276	47		323	375

08 31 13.20 Bulkhead/Cellar Doors

0010 BULKHEAD/CELLAR DOORS										
0020	Steel, not incl. sides, 44" x 62"	1 Corp	5.50	1.455	Ea.	705	77.50		782.50	890
0100	52" x 73"		5.10	1.569		865	83.50		948.50	1,075
0500	With sides and foundation plates, 57" x 45" x 24"		4.70	1.702		895	90.50		985.50	1,125
0600	42" x 49" x 51"	▼	4.30	1.860	▼	600	99		699	810

08 31 13.30 Commercial Floor Doors

0010 COMMERCIAL FLOOR DOORS										
0020	Aluminum tile, steel frame, one leaf, 2' x 2' opong.	2 Sswk	3.50	4.571	Opng.	725	264		989	1,200
0050	3'-6" x 3'-6" opening		3.50	4.571		1,325	264		1,589	1,900
0500	Double leaf, 4' x 4' opening		3	5.333		1,650	305		1,955	2,275
0550	5' x 5' opening	▼	3	5.333	▼	2,700	305		3,005	3,450

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.	810	154		964	1,125
0050	3' x 3' opening, 300#		5.50	2.909		1,300	168		1,468	1,700

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	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
0300	Double leaf, 4' x 4' opening, 455#	2 Sswk	5	3.200	Opng.	2,450	184		2,634	3,000
0350	5' x 5' opening, 645#		4.50	3.556		2,925	205		3,130	3,525
1000	Aluminum, 300 psf L.L., single leaf, 2' x 2', 60#		6	2.667		720	154		874	1,025
1050	3' x 3' opening, 100#		5.50	2.909		995	168		1,163	1,375
1500	Double leaf, 4' x 4' opening, 160#		5	3.200		2,825	184		3,009	3,400
1550	5' x 5' opening, 235#		4.50	3.556		3,250	205		3,455	3,900
2000	Aluminum, 150 psf L.L., single leaf, 2' x 2', 60#		6	2.667		715	154		869	1,025
2050	3' x 3' opening, 95#		5.50	2.909		1,050	168		1,218	1,425
2500	Double leaf, 4' x 4' opening, 150#		5	3.200		1,475	184		1,659	1,925
2550	5' x 5' opening, 230#		4.50	3.556		1,975	205		2,180	2,500

08 31 13.40 Kennel Doors

0010 KENNEL DOORS		Crew	11	1.455	Opng.	88.50	77.50		166	214
0020	2 way, swinging type, 13" x 19" opening	2 Corp	11	1.455	Opng.	88.50	77.50		166	214
0100	17" x 29" opening		11	1.455		132	77.50		209.50	261
0200	9" x 9" opening, electronic with accessories		11	1.455		153	77.50		230.50	284

08 32 Sliding Glass Doors

08 32 13 – Sliding Aluminum-Framed Glass Doors

08 32 13.10 Sliding Aluminum Doors

0010 SLIDING ALUMINUM DOORS		2 Corp	4	4	Ea.	1,600	213		1,813	2,100
0350	Aluminum, 5/8" tempered insulated glass, 6' wide		4	4		890	213		1,103	1,300
0400	Premium		3	5.333		1,775	283		2,058	2,375
0450	Economy		3	5.333		1,575	283		1,858	2,150
0500	8' wide, premium		2.50	6.400		3,100	340		3,440	3,925
0550	Economy		2.50	6.400		1,675	340		2,015	2,325
0600	12' wide, premium		4	4		1,200	213		1,413	1,625
0650	Economy		4	4		975	213		1,188	1,400
4000	Aluminum, baked on enamel, temp glass, 6'-8" x 10'-0" wide		3	5.333		1,175	283		1,458	1,725
4020	Insulating glass, 6'-8" x 6'-0" wide		2	8		1,450	425		1,875	2,250
4040	8'-0" wide		4	4		495	213		708	865
4060	10'-0" wide		3	5.333		605	283		888	1,100
4080	Anodized, temp glass, 6'-8" x 6'-0" wide		2	8		710	425		1,135	1,425
4100	8'-0" wide		2	8						
4120	10'-0" wide		2	8						
5000	Aluminum sliding glass door system		2 Corp	2	8	Ea.	6,475	425	6,900	7,750
5010	Sliding door 4' wide opening single side		2	8		9,700	425		10,125	11,300
5015	8' wide opening single side		2	8		5,525	425		5,950	6,725
5020	Telescoping glass door system, 4' wide opening biparting		2	8		6,475	425		6,900	7,750
5025	8' wide opening biparting		2	8						
5030	Folding glass door, 4' wide opening biparting		2	8		8,625	425		9,050	10,100
5035	8' wide opening biparting		2	8		10,800	425		11,225	12,500
5040	ICU-CCU sliding telescoping glass door, 4' x 7', single side opening		2	8		3,300	425		3,725	4,275
5045	8' x 7', single side opening		2	8		5,000	425		5,425	6,150

08 32 19 – Sliding Wood-Framed Glass Doors

08 32 19.15 Sliding Glass Vinyl-Clad Wood Doors

0010 SLIDING GLASS VINYL-CLAD WOOD DOORS		G	2 Corp	4	4	Opng.	1,575	213	1,788	2,075
0020	Glass, sliding vinyl-clad, insul. glass, 6'-0" x 6'-8"	G	4	4						
0025	6'-0" x 6'-10" high	G	4	4						
0030	6'-0" x 8'-0" high	G	4	4						
0050	5'-0" x 6'-8" high	G	4	4						

08 32 Sliding Glass Doors

08 32 19 – Sliding Wood-Framed Glass Doors

08 32 19.15 Sliding Glass Vinyl-Clad Wood Doors				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
			G	Carp.	4	4	Opng.	Labor	Equipment	
0100	8'-0" x 6'-10" high		G	2 Carp.	4	4	Opng.	2,125	213	2,338
0500	4 leaf, 9'-0" x 6'-10" high		G		3	5.333		3,675	283	3,958
0600	12'-0" x 6'-10" high		G		3	5.333	↓	4,350	283	4,633
										5,200

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.	1,325	425	1,750	2,100
0300	Galvanized steel, UL label		1.80	8.889		1,325	470	1,795	2,150
0600	Stainless steel, 4' high roll-up, 6' long		2	8		2,200	425	2,625	3,075
0700	10' long		1.80	8.889		2,625	470	3,095	3,600
2000	Aluminum, 4' high, 4' long		2.20	7.273		1,725	385	2,110	2,450
2020	6' long		2	8		2,000	425	2,425	2,850
2040	8' long		1.90	8.421		2,300	450	2,750	3,200
2060	10' long		1.80	8.889		2,300	470	2,770	3,225
2080	14' long		1.40	11.429		2,975	605	3,580	4,200
2100	6' high, 4' long		2	8		2,025	425	2,450	2,875
2120	6' long		1.60	10		1,825	530	2,355	2,800
2140	10' long		1.40	11.429		2,400	605	3,005	3,575

08 33 16 – Coiling Counter Grilles

08 33 16.10 Coiling Grilles

0010 COILING GRILLES

0015	Aluminum, manual, incl. frame, mill finish	2 Sswk	3.20	5	Opng.	1,500	288	1,788	2,100
0020	Top coiling, 4' high, 4' long		3.20	5		1,725	288	2,013	2,350
0030	6' long		2.40	6.667		1,925	385	2,310	2,725
0040	8' long		2.40	6.667		2,375	385	2,760	3,225
0050	12' long		1.60	10		2,550	575	3,125	3,725
0060	16' long		3.20	5		1,775	288	2,063	2,400
0070	6' high, 4' long		3.20	5		1,775	288	2,063	2,400
0080	6' long		3.20	5		1,775	288	2,063	2,400
0090	8' long		2.40	6.667		1,725	385	2,110	2,500
0100	12' long		1.60	10		2,300	575	2,875	3,425
0110	16' long		1.20	13.333		2,800	770	3,570	4,275
0200	Side coiling, 8' high, 12' long		.60	26.667		2,250	1,525	3,775	4,875
0220	18' long		.50	32		5,050	1,850	6,900	8,450
0240	24' long		.40	40		3,675	2,300	5,975	7,675
0260	12' high, 12' long		.50	32		3,275	1,850	5,125	6,500
0280	18' long		.40	40		4,950	2,300	7,250	9,050
0300	24' long		.28	57.143		6,500	3,300	9,800	12,300

08 33 23 – Overhead Coiling Doors

08 33 23.10 Coiling Service Doors

0010 COILING SERVICE DOORS Steel, manual, 20' go., incl. hardware

0050	8' x 8' high	2 Sswk	1.60	10	Ea.	710	575	1,285	1,675
0100	10' x 10' high		1.40	11.429		1,050	660	1,710	2,200
0200	20' x 10' high		1	16		3,050	920	3,970	4,800
0300	12' x 12' high		1.20	13.333		1,250	770	2,020	2,575
0400	20' x 12' high		.90	17.778		2,050	1,025	3,075	3,850
0500	14' x 14' high		.80	20		2,925	1,150	4,075	5,025
0600	20' x 16' high		.60	26.667		3,700	1,525	5,225	6,475

08 33 Coiling Doors and Grilles

08 33 23 – Overhead Coiling Doors

08 33 23.10 Coiling Service Doors		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
		Crew			Labor	Equipment		
0700	10' x 20' high	2 Sswk	.50	32	Ea.	2,600	1,850	4,450
1000	12' x 12', crank operated, crank on door side		.80	20		1,800	1,150	2,950
1100	Crank thru wall		.70	22.857		2,075	1,325	3,400
1300	For vision panel, add					360		360
1600	3' x 7' pass door within rolling steel door, new construction					1,725		1,725
1700	Existing construction	2 Sswk	2	8		2,050	460	2,510
2000	Class A fire doors, manual, 20 ga., 8' x 8' high		1.40	11.429		1,575	660	2,235
2100	10' x 10' high		1.10	14.545		2,150	840	2,990
2200	20' x 10' high		.80	20		4,400	1,150	5,550
2300	12' x 12' high		1	16		3,400	920	4,320
2400	20' x 12' high		.80	20		4,775	1,150	5,925
2500	14' x 14' high		.60	26.667		3,700	1,525	5,225
2600	20' x 16' high		.50	32		5,950	1,850	7,800
2700	10' x 20' high		.40	40		4,725	2,300	7,025
3000	For 18 ga. doors, add				S.F.	1.52		1.52
3300	For enamel finish, add				"	2.84		2.84
3600	For safety edge bottom bar, pneumatic, add				L.F.	24.50		24.50
3700	Electric, add					42.50		42.50
4000	For weatherstripping, extruded rubber, jambs, add					19.15		19.15
4100	Hood, add					8.65		8.65
4200	Sill, add					8.85		8.85
4500	Motor operators, to 14' x 14' opening	2 Sswk	5	3.200	Ea.	1,200	184	1,384
4600	Over 14' x 14', jack shaft type	"	5	3.200		1,325	184	1,509
4700	For fire door, additional fusible link, add					77.50		77.50
								85.50

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									
		2 Corp	2	8	Ea.	3,150	425	3,575	4,100
0020	Single, 20 ga. galvanized steel								
0300	Horizontal sliding, 5' x 7', manual operation, 3.5" thick		2 Corp	2	8	Ea.	3,150	425	3,575
0400	4" thick			2	8		3,650	425	4,075
0500	6" thick			2	8		3,400	425	3,825
0800	5' x 7', power operation, 2" thick			1.90	8.421		5,675	450	6,125
0900	4" thick			1.90	8.421		5,675	450	6,125
1000	6" thick			1.90	8.421		6,475	450	6,925
1300	9' x 10', manual operation, 2" insulation			1.70	9.412		4,450	500	4,950
1400	4" insulation			1.70	9.412		4,825	500	5,325
1500	6" insulation			1.70	9.412		5,675	500	6,175
1800	Power operation, 2" insulation			1.60	10		7,825	530	8,355
1900	4" insulation			1.60	10		7,975	530	8,505
2000	6" insulation			1.70	9.412		8,225	500	8,725
2300	For stainless steel face, add						25%		
3000	Hinged, lightweight, 3' x 7'-0", 2" thick	2 Corp	2	8	Ea.	1,300	425	1,725	2,075
3050	4" thick			1.90	8.421		1,625	450	2,075
3300	Polymer doors, 3' x 7'-0"			1.90	8.421		1,350	450	1,800
3350	6" thick			1.40	11.429		2,375	605	2,980
3600	Stainless steel, 3' x 7'-0", 4" thick			1.90	8.421		1,725	450	2,175
3650	6" thick			1.40	11.429		2,875	605	3,480
3900	Painted, 3' x 7'-0", 4" thick			1.90	8.421		1,350	450	1,800
3950	6" thick			1.40	11.429		2,325	605	2,930
									3,500

08 34 Special Function Doors

08 34 13 - Cold Storage Doors

08 34 13.10 Doors for Cold Area Storage		Daily Output	Labor-Hrs	Unit	Material	2020 Labor	Bare Costs	Total	Total Ind O&P
		Crew				Labor	Equipment		
5000	Bi-parting, electric operated								
5010	6' x 8' opening, galv. faces, 4" thick for cooler	2 Corp	.80	20	Opng.	7,350	1,075	8,425	9,700
5050	For freezer, 4" thick		.80	20		8,100	1,075	9,175	10,500
5300	For door buck framing and door protection, add		2.50	6.400		680	340	1,020	1,250
6000	Galvanized batten door, galvanized hinges, 4' x 7'		2	8		1,875	425	2,300	2,700
6050	6' x 8'		1.80	8.889		2,475	470	2,945	3,425
6500	Fire door, 3 hr., 6' x 8', single slide		.80	20		8,725	1,075	9,800	11,200
6550	Double, bi-parting		.70	22.857		11,300	1,225	12,525	14,300

08 34 36 - Darkroom Doors

08 34 36.10 Various Types of Darkroom Doors

0010 VARIOUS TYPES OF DARKROOM DOORS		Daily Output	Labor-Hrs	Unit	Material	2020 Labor	Bare Costs	Total	Total Ind O&P
		Crew				Labor	Equipment		
0015	Revolving, standard, 2 way, 36" diameter	2 Corp	3.10	5.161	Opng.	3,350	274	3,624	4,100
0020	41" diameter		3.10	5.161		3,850	274	4,124	4,650
0050	3 way, 51" diameter		1.40	11.429		4,125	605	4,730	5,450
1000	4 way, 49" diameter		1.40	11.429		4,075	605	4,680	5,400
2000	Hinged safety, 2 way, 41" diameter		2.30	6.957		4,050	370	4,420	5,025
2500	" 3 way, 51" diameter		1.40	11.429		5,025	605	5,630	6,450
3000	Pop out safety, 2 way, 41" diameter		3.10	5.161		4,875	274	5,149	5,750
4000	3 way, 51" diameter		1.40	11.429		5,375	605	5,980	6,850
5000	Wheelchair-type, pop out, 51" diameter		1.40	11.429		5,925	605	6,530	7,450
5020	72" diameter		.90	17.778		10,400	945	11,345	12,900
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.		Daily Output	Labor-Hrs	Unit	Material	2020 Labor	Bare Costs	Total	Total Ind O&P
		Crew				Labor	Equipment		
0120	UL 752 Level 3, 1-3/4", 3'-0" x 7'-0"	2 Corp	1.50	10.667	Opng.	2,700	565	3,265	3,800
0125	1-3/4", 3'-6" x 7'-0"		1.50	10.667		2,950	565	3,515	4,100
0130	1-3/4", 4'-0" x 7'-0"		1.20	13.333		3,175	710	3,885	4,550
0150	UL 752 Level 8, 1-3/4", 3'-0" x 7'-0"		1.50	10.667		14,100	565	14,665	16,400
0155	1-3/4", 3'-6" x 7'-0"		1.50	10.667		15,400	565	15,965	17,800
0160	1-3/4", 4'-0" x 7'-0"		1.20	13.333		15,300	710	16,010	18,000
1000	Safe room sliding door and hardware, 1-3/4", 3'-0" x 7'-0" UL 752 Level 3	.50	32		24,300	1,700	26,000	29,300	
1050	Safe room swinging door and hardware, 1-3/4", 3'-0" x 7'-0" UL 752 Level 3	.50	32		29,100	1,700	30,800	34,600	

08 34 53.30 Wood Ballistic Doors

0010 WOOD BALLISTIC DOORS with frames and hardware		Daily Output	Labor-Hrs	Unit	Material	2020 Labor	Bare Costs	Total	Total Ind O&P
		Crew				Labor	Equipment		
0050	Wood, 1-3/4", 3'-0" x 7'-0" UL 752 Level 3	2 Corp	1.50	10.667	Opng.	2,700	565	3,265	3,800

08 34 56 - Security Gates

08 34 56.10 Gates

0010 GATES		Daily Output	Labor-Hrs	Unit	Material	2020 Labor	Bare Costs	Total	Total Ind O&P
		Crew				Labor	Equipment		
0015	Driveway gates include mounting hardware								
0500	Wood, security gate, driveway, dual, 10' wide	H-4	.80	25	Opng.	3,825	1,250	5,075	6,100
0505	12' wide		.80	25		3,700	1,250	4,950	5,925
0510	15' wide		.80	25		4,400	1,250	5,650	6,700
0600	Steel, security gate, driveway, single, 10' wide		.80	25		1,825	1,250	3,075	3,875
0605	12' wide		.80	25		2,150	1,250	3,400	4,250
0620	Steel, security gate, driveway, dual, 12' wide		.80	25		2,200	1,250	3,450	4,275
0625	14' wide		.80	25		2,525	1,250	3,775	4,650
0630	16' wide		.80	25		2,500	1,250	3,750	4,625
0700	Aluminum, security gate, driveway, dual, 10' wide		.80	25		3,275	1,250	4,525	5,475
0705	12' wide		.80	25		4,050	1,250	5,300	6,350
0710	16' wide		.80	25		4,625	1,250	5,875	6,950

08 34 Special Function Doors

08 34 56 – Security Gates

08 34 56.10 Gates		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
1000	Security gate, driveway, opener 12 VDC				Ea.	840				840	925
1010	Wireless					1,950				1,950	2,150
1020	Security gate, driveway, opener 24 VDC					1,500				1,500	1,625
1030	Wireless					1,650				1,650	1,825
1040	Security gate, driveway, opener 12 VDC, solar panel 10 watt	1 Elec	2	4		495	245			740	910
1050	20 watt	"	2	4		635	245			880	1,050

08 34 59 – Vault Doors and Day Gates

08 34 59.10 Secure Storage Doors

0010 SECURE STORAGE DOORS		2 Sswk	1.50	10.667	Opng.	7,150	615			7,765	8,825
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.	7,150	615			7,765	8,825
0200	2 hour test, 32" door, weighs 950 lb.		1.30	12.308		8,250	710			8,960	10,200
0250	40" door, weighs 1130 lb.		1	16		8,975	920			9,895	11,300
0300	4 hour test, 32" door, weighs 1025 lb.		1.20	13.333		10,300	770			11,070	12,500
0350	40" door, weighs 1140 lb.		.90	17.778		11,400	1,025			12,425	14,100
0600	For time lock, two movement, add	1 Elec	2	4	Ea.	1,775	245			2,020	2,325
0800	Day gate, painted, steel, 32" wide	2 Sswk	1.50	10.667		2,025	615			2,640	3,225
0850	40" wide		1.40	11.429		2,300	660			2,960	3,550
0900	Aluminum, 32" wide		1.50	10.667		2,900	615			3,515	4,175
0950	40" wide		1.40	11.429		3,150	660			3,810	4,500
2050	Security vault door, class I, 3' wide, 3-1/2" thick	E-24	.19	167	Opng.	14,600	9,575	3,025		27,200	34,200
2100	Class II, 3' wide, 7" thick		.19	167		17,400	9,575	3,025		30,000	37,200
2150	Class III, 9R, 3' wide, 10" thick		.13	250		21,800	14,400	4,550		40,750	51,500
2160	Class V, type 1, 40" door		2.48	12.903	Ea.	6,500	740	234		7,474	8,550
2170	Class V, type 2, 40" door		2.48	12.903		6,400	740	234		7,374	8,450
2180	Day gate for class V vault	2 Sswk	2	8		1,675	460			2,135	2,575

08 34 73 – Sound Control Door Assemblies

08 34 73.10 Acoustical Doors

0010 ACOUSTICAL DOORS		2 Corp	1.50	10.667	Ea.	3,875	565			4,440	5,125
0020	Including framed seals, 3' x 7', wood, 40 STC rating										
0100	Steel, 41 STC rating		1.50	10.667		3,850	565			4,415	5,075
0200	45 STC rating		1.50	10.667		4,175	565			4,740	5,450
0300	48 STC rating		1.50	10.667		4,925	565			5,490	6,250
0400	52 STC rating		1.50	10.667		5,400	565			5,965	6,800

08 36 Panel Doors

08 36 13 – Sectional Doors

08 36 13.10 Overhead Commercial Doors

0010 OVERHEAD COMMERCIAL DOORS		2 Corp	2	8	Ea.	1,250	425			1,675	2,025
1000	Stock, sectional, heavy duty, wood, 1-3/4" thick, 8' x 8' high										
1100	10' x 10' high		1.80	8.889		1,725	470			2,195	2,600
1200	12' x 12' high		1.50	10.667		2,775	565			3,340	3,900
1300	Chain hoist, 14' x 14' high		1.30	12.308		3,825	655			4,480	5,175
1400	12' x 16' high		1	16		3,875	850			4,725	5,525
1500	20' x 8' high		1.30	12.270		2,950	650			3,600	4,225
1600	20' x 16' high		.65	24.615		5,975	1,300			7,275	8,550
1800	Center mullion openings, 8' high			4	4	1,300	213			1,513	1,750
1900	20' high		2	8		2,225	425			2,650	3,100
2100	For medium duty custom door, deduct						5%	5%			
2150	For medium duty stock doors, deduct						10%	5%			

08 36 Panel Doors

08 36 13 – Sectional Doors

08 36 13.10 Overhead Commercial Doors			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
			Crew			Labor	Equipment		
2300	Fiberglass and aluminum, heavy duty, sectional, 12' x 12' high		2 Corp	1.50	10.667	Ea.	3,425	565	3,990
2450	Chain hoist, 20' x 20' high			.50	32		7,775	1,700	9,475
2600	Steel, 24 ga. sectional, manual, 8' x 8' high			2	8		1,125	425	1,550
2650	10' x 10' high			1.80	8.889		1,375	470	1,845
2700	12' x 12' high			1.50	10.667		1,650	565	2,215
2800	Chain hoist, 20' x 14' high			.70	22.857		3,725	1,225	4,950
2850	For 1-1/4" rigid insulation and 26 ga. galv.					S.F.	5		5.50
2860	back panel, add								
2900	For electric trolley operator, 1/3 HP, to 12' x 12', add		1 Corp	2	4	Ea.	1,125	213	1,338
2950	Over 12' x 12', 1/2 HP, add			1	8		1,250	425	1,675
2980	Overhead, for row of clear lites, add			1	8		169	425	594
									825

08 36 13.20 Residential Garage Doors

0010 RESIDENTIAL GARAGE DOORS			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
			Crew			Labor	Equipment		
0050	Hinged, wood, custom, double door, 9' x 7'		2 Corp	4	4	Ea.	935	213	1,148
0070	16' x 7'			3	5.333		1,300	283	1,583
0200	Overhead, sectional, incl. hardware, fiberglass, 9' x 7', standard			5	3.200		975	170	1,145
0220	Deluxe			5	3.200		1,200	170	1,370
0300	16' x 7', standard			6	2.667		1,950	142	2,092
0320	Deluxe			6	2.667		2,325	142	2,467
0500	Hardboard, 9' x 7', standard			8	2		750	106	856
0520	Deluxe			8	2		905	106	1,011
0600	16' x 7', standard			6	2.667		1,325	142	1,467
0620	Deluxe			6	2.667		1,600	142	1,742
0700	Metal, 9' x 7', standard			8	2		1,000	106	1,106
0720	Deluxe			6	2.667		1,025	142	1,167
0800	16' x 7', standard			6	2.667		1,200	142	1,342
0820	Deluxe			5	3.200		1,450	170	1,620
0900	Wood, 9' x 7', standard			8	2		1,075	106	1,181
0920	Deluxe			8	2		2,325	106	2,431
1000	16' x 7', standard			6	2.667		1,750	142	1,892
1020	Deluxe			6	2.667		3,150	142	3,292
1800	Door hardware, sectional		1 Corp	4	2		375	106	481
1810	Door tracks only			4	2		173	106	279
1820	One side only			7	1.143		129	60.50	189.50
4000	For electric operator, economy, add			8	1		460	53	513
4100	Deluxe, including remote control			8	1		640	53	693
4500	For transmitter/receiver control, add to operator					Total	119		131
4600	Transmitters, additional					"	67		67
									74

08 36 19 – Multi-Leaf Vertical Lift Doors

08 36 19.10 Sectional Vertical Lift Doors

0010 SECTIONAL VERTICAL LIFT DOORS			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
			Crew			Labor	Equipment		
0020	Motorized, 14 ga. steel, incl. frame and control panel								
0050	16' x 16' high		L-10	.50	48	Ea.	22,600	2,825	26,365
0100	10' x 20' high			1.30	18.462		42,800	1,075	44,235
0120	15' x 20' high			1.30	18.462		51,500	1,075	52,935
0140	20' x 20' high			1	24		61,500	1,400	63,370
0160	25' x 20' high			1	24		59,000	1,400	60,870
0170	32' x 24' high			.75	32		54,500	1,875	57,005
0180	20' x 25' high			1	24		60,500	1,400	62,370
0200	25' x 25' high			.70	34.286		78,000	2,025	80,700
0220	25' x 30' high			.70	34.286		83,500	2,025	86,200
0240	30' x 30' high			.70	34.286		99,000	2,025	101,700
									113,000

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	Material	2020 Bare Costs		Total	Total Incl O&P
		L-10	.70	34.286	Ea.	98,500	Labor	Equipment	Total	112,500
0260	35' x 30' high									

08 38 Traffic Doors

08 38 13 – Flexible Strip Doors

08 38 13.10 Flexible Transparent Strip Doors

0010 FLEXIBLE TRANSPARENT STRIP DOORS		3 Shee	135	.178	SF Surf	7.75	11.10		18.85	25.50
0100	12" strip width, 2/3 overlap									
0200	Full overlap		115	.209		9.85	13		22.85	30.50
0220	8" strip width, 1/2 overlap		140	.171		6.35	10.70		17.05	23
0240	Full overlap		120	.200		7.90	12.45		20.35	27.50
0300	Add for suspension system, header mount				L.F.	9.20			9.20	10.10
0400	Wall mount				"	9.75			9.75	10.70

08 38 19 – Rigid Traffic Doors

08 38 19.20 Double Acting Swing Doors

0010 DOUBLE ACTING SWING DOORS		2 Corp	4.20	3.810	Pr.	2,100	202		2,302	2,600
0020	Including frame, closer, hardware and vision panel									
1000	Polymer, 7'-0" high, 4'-0" wide	↓	4	4	↓	2,425	213		2,638	3,000
1025	6'-0" wide								2,438	2,775
1050	6'-8" wide									
2000	3/4" thick, stainless steel	↓	4	4	↓	2,425	213		2,638	3,000
2010	Stainless steel, 7' high opening, 4' wide	2 Corp	4	4	Pr.	2,625	213		2,838	3,200
2050	7' wide	"	3.80	4.211	"	2,800	224		3,024	3,400

08 38 19.30 Shock Absorbing Doors

0010 SHOCK ABSORBING DOORS		2 Sswk	1.90	8.421	Opng.	1,550	485		2,035	2,450
0020	Rigid, no frame, 1-1/2" thick, 5' x 7'									
0100	8' x 8'		1.80	8.889		2,025	510		2,535	3,025
0500	Flexible, no frame, insulated, .16" thick, economy, 5' x 7'		2	8		1,775	460		2,235	2,700
0600	Deluxe		1.90	8.421		2,675	485		3,160	3,700
1000	8' x 8' opening, economy		2	8		2,825	460		3,285	3,825
1100	Deluxe	↓	1.90	8.421	↓	3,575	485		4,060	4,675

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		2 Glaz	103	.155	L.F.	11.15	7.90		19.05	24
0050	Plain tube frame, mill finish, 1-3/4" x 1-3/4"									
0150	1-3/4" x 4"		98	.163		14.95	8.35		23.30	29
0200	1-3/4" x 4-1/2"		95	.168		17	8.60		25.60	31.50
0250	2" x 6"		89	.180		26	9.15		35.15	42.50
0350	4" x 4"		87	.184		27.50	9.40		36.90	44.50
0400	4-1/2" x 4-1/2"		85	.188		31	9.60		40.60	48.50
0450	Glass bead		240	.067		3.36	3.40		6.76	8.80
1000	Flush tube frame, mill finish, 1/4" glass, 1-3/4" x 4", open header		80	.200		14.90	10.20		25.10	31.50
1050	Open sill		82	.195		12	9.95		21.95	28
1100	Closed back header		83	.193		21	9.85		30.85	38.50
1150	Closed back sill	↓	85	.188	↓	20	9.60		29.60	36.50
1160	Tube fmng., spandrel cover both sides, alum 1" wide	↓	85	.094	S.F.	98	5.45		103.45	117
1170	Tube fmng., spandrel cover both sides, alum 2" wide	"	85	.094	"	40	5.45		45.45	52.50

08 41 Entrances and Storefronts

08 41 13 – Aluminum-Framed Entrances and Storefronts

08 41 13.20 Tube Framing		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P
					Labor	Equipment		
1200	Vertical mullion, one piece	2 Glaz	.75	.213 L.F.	21.50	10.90	32.40	40
1250	Two piece		.73	.219	23	11.20	34.20	42
1300	90° or 180° vertical corner post		.75	.213	34.50	10.90	45.40	54.50
1400	1-3/4" x 4-1/2", open header		.80	.200	17.45	10.20	27.65	34.50
1450	Open sill		.82	.195	14.40	9.95	24.35	31
1500	Closed back header		.83	.193	21	9.85	30.85	38
1550	Closed back sill		.85	.188	20	9.60	29.60	36.50
1600	Vertical mullion, one piece		.75	.213	22.50	10.90	33.40	41.50
1650	Two piece		.73	.219	24	11.20	35.20	43.50
1700	90° or 180° vertical corner post		.75	.213	24.50	10.90	35.40	43.50
2000	Flush tube frame, mil fin., ins. glass w/thml brk, 2" x 4-1/2", open header		.75	.213	15.95	10.90	26.85	34
2050	Open sill		.77	.208	13.45	10.60	24.05	30.50
2100	Closed back header		.78	.205	14.85	10.45	25.30	32
2150	Closed back sill		.80	.200	15.75	10.20	25.95	32.50
2200	Vertical mullion, one piece		.70	.229	16.95	11.65	28.60	36
2250	Two piece		.68	.235	18.30	12	30.30	38
2300	90° or 180° vertical corner post		.70	.229	19.05	11.65	30.70	38.50
5000	Flush tube frame, mill fin., thermal brk., 2-1/4" x 4-1/2", open header		.74	.216	16.50	11.05	27.55	34.50
5050	Open sill		.75	.213	14.25	10.90	25.15	32
5100	Vertical mullion, one piece		.69	.232	19.35	11.85	31.20	39
5150	Two piece		.67	.239	21	12.20	33.20	41.50
5200	90° or 180° vertical corner post		.69	.232	18.80	11.85	30.65	38
6980	Door stop (snap in)		380	.042	3.61	2.15	5.76	7.20
7000	For joints, 90°, clip type, add				Ea.	26.50	26.50	29
7050	Screw spline joint, add					24.50	24.50	27
7100	For joint other than 90°, add					51	51	56
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.	11.55	4.08	15.63	18.80
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		2 Sswk	1.60	10	Opng.	7,650	575	8,225	9,325
0020	3' x 7' opening, including hardware, minimum								
0050	Average		1.40	11.429		8,075	660	8,735	9,900
0100	Maximum		1.20	13.333		8,700	770	9,470	10,800
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.	10,300	1,025	11,325	13,000
2100	Premium	"	.70	22.857	"	16,800	1,325	18,125	20,600

08 41 26 – All-Glass Entrances and Storefronts

08 41 26.10 Window Walls Aluminum, Stock

0010 WINDOW WALLS ALUMINUM, STOCK, including glazing		H-2	160	.150	S.F.	51.50	7.20	58.70	67.50
0020	Minimum								
0050	Average		140	.171		71.50	8.25	79.75	91
0100	Maximum		110	.218		188	10.50	198.50	223
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								

08 42 Entrances

08 42 26 – All-Glass Entrances

08 42 26.10 Swinging Glass Doors		Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	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	410		2,810	3,225
0100	6' x 7' opening	"	1.40	11.429	"	4,650	585		5,235	6,000

08 42 33 – Revolving Door Entrances

08 42 33.10 Circular Rotating Entrance Doors

0010 CIRCULAR ROTATING ENTRANCE DOORS, Aluminum		Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
0020	6'-10" to 7' high, stock units, minimum	4 Sswk	.75	42.667	Opng.	38,000	2,450		40,450	45,800
0050	Average		.60	53.333		43,400	3,075		46,475	52,500
0100	Maximum		.45	71.111		44,300	4,100		48,400	55,000
1000	Stainless steel		.30	106		50,500	6,100		56,600	65,000
1100	Solid bronze		.15	213		50,500	12,300		62,800	75,000
1500	For automatic controls, add	2 Elec	2	8		15,400	490		15,890	17,700

08 42 36 – Balanced Door Entrances

08 42 36.10 Balanced Entrance Doors

0010 BALANCED ENTRANCE DOORS		Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
0020	Hardware & frame, alum. & glass, 3' x 7', econ.	2 Sswk	.90	17.778	Ea.	7,200	1,025		8,225	9,525
0150	Premium	"	.70	22.857	"	8,725	1,325		10,050	11,700

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		Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
0020	Entrance door, 3' x 7' opening, clear anodized finish	2 Sswk	7	2.286	Opng.	680	132		812	955
0040	Bronze finish		7	2.286		835	132		967	1,125
0060	Black finish		7	2.286		815	132		947	1,100
0200	3'-6" x 7'-0", mill finish		7	2.286		835	132		967	1,125
0220	Bronze finish		7	2.286		960	132		1,092	1,250
0240	Black finish		7	2.286		985	132		1,117	1,275
0500	6' x 7' opening, clear finish		6	2.667		1,075	154		1,229	1,425
0520	Bronze finish		6	2.667		1,175	154		1,329	1,550
0540	Black finish		6	2.667		1,300	154		1,454	1,675
0600	Door frame for above doors 3'-0" x 7'-0", mill finish		6	2.667		560	154		714	855
0620	Bronze finish		6	2.667		595	154		749	895
0640	Black finish		6	2.667		670	154		824	980
0700	3'-6" x 7'-0", mill finish		6	2.667		410	154		564	690
0720	Bronze finish		6	2.667		410	154		564	690
0740	Black finish		6	2.667		410	154		564	690
0800	6'-0" x 7'-0", mill finish		6	2.667		410	154		564	690
0820	Bronze finish		6	2.667		415	154		569	695
0840	Black finish		6	2.667		445	154		599	730
1000	With 3' high transom above, 3' x 7' opening, clear finish		5.50	2.909		635	168		803	965
1050	Bronze finish		5.50	2.909		630	168		798	960
1100	Black finish		5.50	2.909		695	168		863	1,025
1300	3'-6" x 7'-0" opening, clear finish		5.50	2.909		420	168		588	725
1320	Bronze finish		5.50	2.909		440	168		608	750
1340	Black finish		5.50	2.909		450	168		618	760
1500	6' x 7' opening, clear finish		5.50	2.909		695	168		863	1,025
1550	Bronze finish		5.50	2.909		785	168		953	1,125
1600	Black finish		5.50	2.909		870	168		1,038	1,225

08 43 Storefronts

08 43 13 – Aluminum-Framed Storefronts

08 43 13.20 Storefront Systems		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	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.	27.50	5.45			32.95	38
0600	Institutional grade			130	.123		32	6.30		38.30	44.50
0700	Monumental grade			115	.139		84.50	7.10		91.60	104
1000	6' x 7' door with hardware, commercial grade			135	.119		76	6.05		82.05	92.50
1100	Institutional grade			115	.139		50	7.10		57.10	65.50
1200	Monumental grade			100	.160		117	8.15		125.15	140
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

08 43 29.10 Sliding Panels		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
0010	SLIDING PANELS										
0020	Mall fronts, aluminum & glass, 15' x 9' high	2 Glaz	1.30	12.308	Opng.	4,300	630			4,930	5,700
0100	24' x 9' high			.70	22.857		6,125	1,175		7,300	8,500
0200	48' x 9' high, with fixed panels			.90	17.778		11,000	905		11,905	13,500
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

08 44 13.10 Glazed Curtain Walls		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
0010	GLAZED CURTAIN WALLS, aluminum, stock, including glazing										
0020	Minimum	H-1	205	.156	S.F.	43.50	8.50			52	61
0050	Average, single glazed			195	.164		62.50	8.90		71.40	82.50
0150	Average, double glazed			180	.178		81	9.65		90.65	104
0200	Maximum			160	.200		206	10.85		216.85	243

08 45 Translucent Wall and Roof Assemblies

08 45 10 – Translucent Roof Assemblies

08 45 10.10 Skyroofs

08 45 10.10 Skyroofs		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
1200	Skylights, circular, clear, double glazed acrylic	2 Carp	3	5.333	Ea.	3,075	283			3,358	3,800
1230	30" diameter			3	5.333		4,075	283		4,358	4,925
1250	60" diameter										
1290	96" diameter			2	8		5,100	425		5,525	6,275
1300	Skylight Barrel Vault, clear, double glazed, acrylic	G-3	3	10.667	Ea.	5,100	555			5,655	6,475
1330	3'-0" x 12'-0"			3	10.667		5,625	555		6,180	7,025
1350	4'-0" x 12'-0"										
1390	5'-0" x 12'-0"			2	16		6,125	835		6,960	8,000
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.	6,125	555			6,680	7,600
1440	4' x 4'			3	10.667		7,150	555		7,705	8,700
1450	5' x 5', glass must be field installed			3	10.667		8,175	555		8,730	9,825
1460	6' x 6', glass must be field installed			2	16		10,200	835		11,035	12,500
1550	Install pre-cut laminated glass in aluminum frame on a flat roof	2 Glaz	55	.291	SF Surf		14.85			14.85	22
1560	Install pre-cut laminated glass in aluminum frame on a sloped roof	"	40	.400	"		20.50			20.50	30.50

08 51 Metal Windows

08 51 13 – Aluminum Windows

08 51 13.10 Aluminum Sash		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	Total	Total Incl O&P
0010 ALUMINUM SASH										
0020 Stock, grade C, glaze & trim not incl., casement		2 Sswk	200	.080	S.F.	43	4.61	47.61	47.61	54.50
0050 Double-hung			200	.080		42	4.61		46.61	54
0100 Fixed casement			200	.080		18.45	4.61		23.06	28
0150 Picture window			200	.080		19.75	4.61		24.36	29
0200 Projected window			200	.080		38.50	4.61		43.11	50
0250 Single-hung			200	.080		17.40	4.61		22.01	26.50
0300 Sliding			200	.080		23	4.61		27.61	33
1000 Mullions for above, tubular			240	.067	L.F.	6.55	3.84		10.39	13.25
2000 Custom aluminum sash, grade HC, glazing not included			140	.114	S.F.	41.50	6.60		48.10	56

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.	395	92		487	487	575
1050 Add for storms					126				126	138
1600 Projected, with screen, 3'-1" x 3'-2" opening	2 Sswk	10	1.600		370	92		462	462	555
1700 Add for storms					123				123	135
2000 4'-5" x 5'-3" opening	2 Sswk	8	2		410	115		525	525	635
2100 Add for storms					132				132	145
2500 Enamel finish windows, 3'-1" x 3'-2"	2 Sswk	10	1.600		380	92		472	472	560
2600 4'-5" x 5'-3"		8	2		425	115		540	540	650
3000 Single-hung, 2' x 3' opening, enameled, standard glazed		10	1.600		219	92		311	311	385
3100 Insulating glass		10	1.600		265	92		357	357	435
3300 2'-8" x 6'-8" opening, standard glazed		8	2		375	115		490	490	590
3400 Insulating glass		8	2		480	115		595	595	710
3700 3'-4" x 5'-0" opening, standard glazed		9	1.778		315	102		417	417	510
3800 Insulating glass		9	1.778		345	102		447	447	535
3890 Awning type, 3' x 3' opening, standard glass		14	1.143		435	66		501	501	585
3900 Insulating glass		14	1.143		475	66		541	541	625
3910 3' x 4' opening, standard glass		10	1.600		510	92		602	602	705
3920 Insulating glass		10	1.600		590	92		682	682	795
3930 3' x 5'-4" opening, standard glass		10	1.600		615	92		707	707	820
3940 Insulating glass		10	1.600		725	92		817	817	945
3950 4' x 5'-4" opening, standard glass		9	1.778		675	102		777	777	905
3960 Insulating glass		9	1.778		780	102		882	882	1,025
4000 Sliding aluminum, 3' x 2' opening, standard glazed		10	1.600		218	92		310	310	385
4100 Insulating glass		10	1.600		241	92		333	333	410
4300 5' x 3' opening, standard glazed		9	1.778		345	102		447	447	540
4400 Insulating glass		9	1.778		385	102		487	487	585
4600 8' x 4' opening, standard glazed		6	2.667		365	154		519	519	640
4700 Insulating glass		6	2.667		590	154		744	744	890
5000 9' x 5' opening, standard glazed		4	4		550	231		781	781	965
5100 Insulating glass		4	4		850	231		1,081	1,081	1,300
5500 Sliding, with thermal barrier and screen, 6' x 4', 2 track		8	2		725	115		840	840	980
5700 4 track		8	2		915	115		1,030	1,030	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	2 Corp	9	1.778	Ea.	1,250	94.50		1,344.50	1,344.50	1,525
0120 3'-0" x 5'-0"		9	1.778		1,350	94.50		1,444.50	1,444.50	1,650
0130 4'-0" x 5'-0"		9	1.778		1,450	94.50		1,544.50	1,544.50	1,750
0250 Horizontal slider, impact resistant, 5'-5" x 5'-2"		9	1.778		1,625	94.50		1,719.50	1,719.50	1,925

08 51 Metal Windows

08 51 23 – Steel Windows

08 51 23.10 Steel Sash			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
		R085123-10	Crew			Labor	Equipment		
0010	STEEL SASH Custom units, glazing and trim not included								
0100	Casement, 100% vented		2 Sswk	200	.080	S.F.	69.50	4.61	74.11
0200	50% vented			200	.080		56	4.61	60.61
0300	Fixed			200	.080		29	4.61	33.61
1000	Projected, commercial, 40% vented			200	.080		53	4.61	57.61
1100	Intermediate, 50% vented			200	.080		62.50	4.61	67.11
1500	Industrial, horizontally pivoted			200	.080		56	4.61	60.61
1600	Fixed			200	.080		32.50	4.61	37.11
2000	Industrial security sash, 50% vented			200	.080		61.50	4.61	66.11
2100	Fixed			200	.080		49	4.61	53.61
2500	Picture window			200	.080		32	4.61	36.61
3000	Double-hung			200	.080		62	4.61	66.61
5000	Mullions for above, open interior face			240	.067	L.F.	10.95	3.84	14.79
5100	With interior cover			240	.067	"	18.10	3.84	21.94

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.	730	77	807
1100	2'-4" x 3'-9" opening			12	1.333		600	77	677
1500	Commercial projected, 3'-9" x 5'-5" opening			10	1.600		1,275	92	1,367
1600	6'-9" x 4'-1" opening			7	2.286		1,675	132	1,807
2000	Intermediate projected, 2'-9" x 4'-1" opening			12	1.333		710	77	787
2100	4'-1" x 5'-5" opening			10	1.600		1,450	92	1,542

08 51 23.40 Basement Utility Windows

0010	BASEMENT UTILITY WINDOWS								
0015	1'-3" x 2'-8"		1 Carp	16	.500	Ea.	156	26.50	182.50
1100	1'-7" x 2'-8"			"	16	.500	"	151	26.50

08 51 66 – Metal Window Screens

0010	SCREENS								
0020	For metal sash, aluminum or bronze mesh, flat screen		2 Sswk	1200	.013	S.F.	4.63	.77	5.40
0500	Wicket screen, inside window			1000	.016		6.95	.92	7.87
0800	Security screen, aluminum frame with stainless steel cloth			1200	.013		24.50	.77	25.27
0900	Steel grate, painted, on steel frame			1600	.010		13.95	.58	14.53
1000	Screens for solar louvers			160	.100		25.50	5.75	31.25
4000	See Section 05 58 23.90 for window guards								37

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.	300	42.50	342.50
0200	Low E glass			10	.800		330	42.50	372.50
0300	40" x 28", insulated glass			9	.889		315	47	362
0400	Low E glass			9	.889		350	47	397
0500	48" x 36", insulated glass			8	1		480	53	533
0600	Low E glass			8	1		505	53	558

08 52 Wood Windows

08 52 10 – Plain Wood Windows

			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
		Crew				Labor	Equipment		
0010	CASEMENT WINDOW , including frame, screen and grilles								
0100	2'-0" x 3'-0" H, double insulated glass	[G]	1 Corp	10 .800	Ea.	275	42.50	317.50	365
0150	Low E glass	[G]		10 .800		285	42.50	327.50	380
0200	2'-0" x 4'-6" high, double insulated glass	[G]		9 .889		390	47	437	500
0250	Low E glass	[G]		9 .889		440	47	487	555
0260	Casement 4'-2" x 4'-2" double insulated glass	[G]		11 .727		940	38.50	978.50	1,075
0270	4'-0" x 4'-0" Low E glass	[G]		11 .727		575	38.50	613.50	690
0290	6'-4" x 5'-7" Low E glass	[G]		9 .889		1,200	47	1,247	1,400
0300	2'-4" x 6'-0" high, double insulated glass	[G]		8 1		470	53	523	600
0350	Low E glass	[G]		8 1		450	53	503	575
0522	Vinyl-clad, premium, double insulated glass, 2'-0" x 3'-0"	[G]		10 .800		281	42.50	323.50	375
0524	2'-0" x 4'-0"	[G]		9 .889		335	47	382	435
0525	2'-0" x 5'-0"	[G]		8 1		365	53	418	480
0528	2'-0" x 6'-0"	[G]		8 1		410	53	463	530
0600	3'-0" x 5'-0"	[G]		8 1		685	53	738	835
0700	4'-0" x 3'-0"	[G]		8 1		770	53	823	925
0710	4'-0" x 4'-0"	[G]		8 1		645	53	698	790
0720	4'-8" x 4'-0"	[G]		8 1		710	53	763	860
0730	4'-8" x 5'-0"	[G]		6 1.333		830	71	901	1,025
0740	4'-8" x 6'-0"	[G]		6 1.333		920	71	991	1,100
0750	6'-0" x 4'-0"	[G]		6 1.333		835	71	906	1,025
0800	6'-0" x 5'-0"	[G]		6 1.333		1,025	71	1,096	1,225
0900	5'-6" x 5'-6"	[G]	2 Corp	15 1.067	↓	1,500	56.50	1,556.50	1,725
2000	Bay, casement units, 8' x 5', w/screens, double insulated glass			2.50 6.400	Opng.	1,675	340	2,015	2,350
2100	Low E glass			2.50 6.400		1,750	340	2,090	2,425
8190	For installation, add per leaf				Ea.		15%		
8200	For multiple leaf units, deduct for stationary sash								
8220	2' high				Ea.	24.50		24.50	27
8240	4'-6" high					28		28	30.50
8260	6' high				↓	37		37	41

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 Corp	10 .800	Ea.	193	42.50	235.50	276
0200	3'-0" x 4'-0" high, double insulated glass	[G]		9 .889		290	47	337	390
0300	4'-0" x 4'-6" high, low E insulated glass	[G]	↓	8 1	↓	325	53	378	440

08 52 10.55 Picture Window

0010	PICTURE WINDOW , Including frame and grilles								
0100	3'-6" x 4'-0" high, double insulated glass		2 Corp	12 1.333	Ea.	440	71	511	590
0150	Low E glass			12 1.333		450	71	521	600
0200	4'-0" x 4'-6" high, double insulated glass			11 1.455		545	77.50	622.50	715
0250	Low E glass			11 1.455		560	77.50	637.50	730
0300	5'-0" x 4'-0" high, double insulated glass			11 1.455		610	77.50	687.50	790
0350	Low E glass			11 1.455		620	77.50	697.50	795
0400	6'-0" x 4'-6" high, double insulated glass			10 1.600		655	85	740	850
0450	Low E glass		↓	10 1.600	↓	645	85	730	840

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 Corp	3.20 5	Ea.	244	266	510	670
0100	1/4" thick lites			5 3.200		293	170	463	575
0200	1" thick, triple glazed			5 3.200		430	170	600	730
0300	7'-0" x 4'-6" high, 1" double glazed, 3/16" thick lites		↓	4.30 3.721	↓	430	198	628	770

08 52 Wood Windows

08 52 10 – Plain Wood Windows

08 52 10.65 Wood Sash		Crew	Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
						Material	Labor	Equipment		
0400	1/4" thick lites	2 Corp	4.30	3.721	Ea.	495	198		693	835
0500	1" thick, triple glazed		4.30	3.721		560	198		758	915
0600	8'-6" x 5'-0" high, 1" double glazed, 3/16" thick lites		3.50	4.571		585	243		828	1,000
0700	1/4" thick lites		3.50	4.571		640	243		883	1,075
0800	1" thick, triple glazed		3.50	4.571		725	243		968	1,150
0900	Window frames only, based on perimeter length				L.F.	4.10			4.10	4.51
1200	Window sill, stock, per lineal foot					9.05			9.05	9.95
1250	Casing, stock					3.36			3.36	3.70

08 52 10.70 Sliding Windows

0010 SLIDING WINDOWS		G	1 Corp	10	.800	Ea.	2020 Bare Costs			Total	Total Incl O&P
							Material	Labor	Equipment		
0100	3'-0" x 3'-0" high, double insulated	G	1 Corp	10	.800	Ea.	286	42.50		328.50	380
0120	Low E glass	G		10	.800		310	42.50		352.50	410
0200	4'-0" x 3'-6" high, double insulated	G		9	.889		425	47		472	535
0220	Low E glass	G		9	.889		420	47		467	535
0300	6'-0" x 5'-0" high, double insulated	G		8	1		495	53		548	620
0320	Low E glass	G		8	1		605	53		658	745

08 52 13 – Metal-Clad Wood Windows

08 52 13.10 Awning Windows, Metal-Clad

0010 AWNING WINDOWS, METAL-CLAD		1 Corp	9	.889	Ea.	251	2020 Bare Costs			298	350
							Material	Labor	Equipment		
2000	Metal-clad, awning deluxe, double insulated glass, 34" x 22"	1 Corp	9	.889	Ea.	251	47			298	350
2050	36" x 25"		9	.889		280	47			327	380
2100	40" x 22"		9	.889		297	47			344	395
2150	40" x 30"		9	.889		345	47			392	450
2200	48" x 28"		8	1		355	53			408	470
2250	60" x 36"		8	1		380	53			433	500

08 52 13.20 Casement Windows, Metal-Clad

0010 CASEMENT WINDOWS, METAL-CLAD		G	1 Corp	10	.800	Ea.	300	2020 Bare Costs			342.50	395
								Material	Labor	Equipment		
0100	Metal-clad, deluxe, dbl. insul. glass, 2'-0" x 3'-0" high	G	1 Corp	10	.800	Ea.	300	42.50			342.50	395
0120	2'-0" x 4'-0" high	G		9	.889		325	47			372	430
0130	2'-0" x 5'-0" high	G		8	1		360	53			413	475
0140	2'-0" x 6'-0" high	G		8	1		390	53			443	510
0300	Metal-clad, casement, bldrs mdly, 6'-0" x 4'-0", dbl. insul. glass, 3 panels	2 Corp	10	1.600		1,250	85			1,335	1,525	
0310	9'-0" x 4'-0", 4 panels			8	2		1,600	106			1,706	1,900
0320	10'-0" x 5'-0", 5 panels			7	2.286		2,175	121			2,296	2,575
0330	12'-0" x 6'-0", 6 panels			6	2.667		2,750	142			2,892	3,250

08 52 13.30 Double-Hung Windows, Metal-Clad

0010 DOUBLE-HUNG WINDOWS, METAL-CLAD		G	1 Corp	10	.800	Ea.	294	2020 Bare Costs			336.50	390
								Material	Labor	Equipment		
0100	Metal-clad, deluxe, dbl. insul. glass, 2'-6" x 3'-0" high	G	1 Corp	10	.800	Ea.	294	42.50			336.50	390
0120	3'-0" x 3'-6" high	G		10	.800		330	42.50			372.50	430
0140	3'-0" x 4'-0" high	G		9	.889		340	47			387	445
0160	3'-0" x 4'-6" high	G		9	.889		365	47			412	470
0180	3'-0" x 5'-0" high	G		8	1		395	53			448	515
0200	3'-6" x 6'-0" high	G		8	1		475	53			528	605

08 52 13.35 Picture and Sliding Windows Metal-Clad

0010 PICTURE AND SLIDING WINDOWS METAL-CLAD		2 Corp	12	1.333	Ea.	385	71	2020 Bare Costs			456	530
								Material	Labor	Equipment		
2000	Metal-clad, dlx picture, dbl. insul. glass, 4'-0" x 4'-0" high	2 Corp	12	1.333	Ea.	385	71				456	530
2100	4'-0" x 6'-0" high		11	1.455		575	77.50				652.50	745
2200	5'-0" x 6'-0" high		10	1.600		635	85				720	830
2300	6'-0" x 6'-0" high		10	1.600		725	85				810	930
2400	Metal-clad, dlx sliding, dbl. insul. glass, 3'-0" x 3'-0" high	2 Corp	10	1.800		330	42.50				372.50	425
2420	4'-0" x 3'-6" high	G	9	.889		400	47				447	510

08 52 Wood Windows

08 52 13 – Metal-Clad Wood Windows

08 52 13.35 Picture and Sliding Windows Metal-Clad			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
		G	1 Carp	9	.889	Ea.	Labor	Equipment	
2440	5'-0" x 4'-0" high					480	47		527
2460	6'-0" x 5'-0" high	G		8	1		770	53	823

08 52 13.40 Bow and Bay Windows, Metal-Clad

0010 BOW AND BAY WINDOWS, METAL-CLAD			2 Corp	10	1,600	Ea.	1,725	85	1,810	2,025
0100	Metal-clad, deluxe, dbl. insul. glass, 8'-0" x 5'-0" high, 4 panels									
0120	10'-0" x 5'-0" high, 5 panels			8	2		1,875	106	1,981	2,200
0140	10'-0" x 6'-0" high, 5 panels			7	2.286		2,200	121	2,321	2,600
0160	12'-0" x 6'-0" high, 6 panels			6	2.667		2,950	142	3,092	3,475
0400	Double-hung, bldrs. model, bay, 8' x 4' high, dbl. insul. glass			10	1,600		1,375	85	1,460	1,650
0440	Low E glass			10	1,600		1,475	85	1,560	1,750
0460	9'-0" x 5'-0" high, dbl. insul. glass			6	2.667		1,475	142	1,617	1,850
0480	Low E glass			6	2.667		1,550	142	1,692	1,950
0500	Metal-clad, deluxe, dbl. insul. glass, 7'-0" x 4'-0" high			10	1,600		1,325	85	1,410	1,575
0520	8'-0" x 4'-0" high			8	2		1,375	106	1,481	1,650
0540	8'-0" x 5'-0" high			7	2.286		1,400	121	1,521	1,725
0560	9'-0" x 5'-0" high			6	2.667		1,500	142	1,642	1,875

08 52 16 – Plastic-Clad Wood Windows

08 52 16.10 Bow Window

0010 BOW WINDOW including frames, screens, and grilles			2 Corp	10	1,600	Ea.	1,600	85	1,685	1,875
0020	End panels operable									
1000	Bow type, casement, wood, bldrs. mdls., 8' x 5' dbl. insul. glass, 4 panel			2 Corp	10	1,600	Ea.	1,600	85	1,685
1050	Low E glass				10	1,600		1,325	85	1,410
1100	10'-0" x 5'-0", dbl. insul. glass, 6 panels				6	2.667		1,375	142	1,517
1200	Low E glass, 6 panels				6	2.667		1,475	142	1,617
1300	Vinyl-clad, bldrs. model, dbl. insul. glass, 6'-0" x 4'-0", 3 panel				10	1,600		1,050	85	1,135
1340	9'-0" x 4'-0", 4 panel				8	2		1,450	106	1,556
1380	10'-0" x 6'-0", 5 panels				7	2.286		2,375	121	2,496
1420	12'-0" x 6'-0", 6 panels				6	2.667		3,100	142	3,242
2000	Bay window, 8' x 5', dbl. insul. glass				10	1,600		1,975	85	2,060
2050	Low E glass				10	1,600		2,375	85	2,460
2100	12'-0" x 6'-0", dbl. insul. glass, 6 panels				6	2.667		2,450	142	2,592
2200	Low E glass				6	2.667		3,175	142	3,317
2280	6'-0" x 4'-0"				11	1,455		1,300	77.50	1,377.50
2300	Vinyl-clad, premium, dbl. insul. glass, 8'-0" x 5'-0"				10	1,600		1,825	85	1,910
2340	10'-0" x 5'-0"				8	2		2,500	106	2,606
2380	10'-0" x 6'-0"				7	2.286		3,075	121	3,196
2420	12'-0" x 6'-0"				6	2.667		3,325	142	3,467
3300	Vinyl-clad, premium, dbl. insul. glass, 7'-0" x 4'-6"				10	1,600		1,400	85	1,485
3340	8'-0" x 4'-0"				8	2		1,450	106	1,556
3380	8'-0" x 5'-0"				7	2.286		1,525	121	1,646
3420	9'-0" x 5'-0"				6	2.667		1,550	142	1,692

08 52 16.15 Awning Window Vinyl-Clad

0010 AWNING WINDOW VINYL-CLAD including frames, screens, and grilles			1 Carp	10	.800	Ea.	272	42.50	314.50	365
0240	Vinyl-clad, 34" x 22"									
0280	36" x 28"				9	.889		310	47	357
0300	36" x 36"				9	.889		350	47	397
0340	40" x 22"				10	.800		298	42.50	340.50
0360	48" x 28"				8	1		375	53	428
0380	60" x 36"				8	1		515	53	568

08 52 Wood Windows

08 52 16 – Plastic-Clad Wood Windows

08 52 16.30 Palladian Windows		Crew	Daily Output	Labor Hours	Unit	Material	2020 Labor	Bare Costs Equipment	Total	Total Incl O&P
PALLADIAN WINDOWS										
0020	Vinyl-clad, double insulated glass, including frame and grilles									
0040	3'-2" x 2'-6" high	2 Corp	11	1.455	Ea.	1,275	77.50		1,352.50	1,525
0060	3'-2" x 4'-10"		11	1.455		1,775	77.50		1,852.50	2,075
0080	3'-2" x 6'-4"		10	1.600		1,775	85		1,860	2,075
0100	4'-0" x 4'-0"		10	1.600		1,575	85		1,660	1,875
0120	4'-0" x 5'-4"	3 Corp	10	2.400		1,900	128		2,028	2,300
0140	4'-0" x 6'-0"		9	2.667		2,000	142		2,142	2,450
0160	4'-0" x 7'-4"		9	2.667		2,150	142		2,292	2,575
0180	5'-5" x 4'-10"		9	2.667		2,325	142		2,467	2,775
0200	5'-5" x 6'-10"		9	2.667		2,650	142		2,792	3,150
0220	5'-5" x 7'-9"		9	2.667		2,825	142		2,967	3,350
0240	6'-0" x 7'-11"		8	3		3,625	159		3,784	4,225
0260	8'-0" x 6'-0"		8	3	↓	3,225	159		3,384	3,800

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 Corp	10	.800	Ea.	365	42.50	407.50	465
0305	2'-6" x 4'-0"	G		10	.800		385	42.50	427.50	485
0400	3'-0" x 3'-6"	G		10	.800		355	42.50	397.50	455
0500	3'-0" x 4'-0"	G		9	.889		405	47	452	515
0600	3'-0" x 4'-6"	G		9	.889		445	47	492	560
0700	3'-0" x 5'-0"	G		8	1		465	53	518	595
0790	3'-4" x 5'-0"	G		8	1		470	53	523	600
0800	3'-6" x 6'-0"	G		8	1		525	53	578	660
0820	4'-0" x 5'-0"	G		7	1.143		570	60.50	630.50	720
0830	4'-0" x 6'-0"	G		7	1.143		715	60.50	775.50	875

08 52 16.40 Transom Windows

0010	TRANSOM WINDOWS									
0050	Vinyl-clad, premium, dbl. insul. glass, 32" x 8"		1 Corp	16	.500	Ea.	189	26.50	215.50	248
0100	36" x 8"			16	.500		209	26.50	235.50	270
0110	36" x 12"			16	.500		225	26.50	251.50	287
0200	44" x 48"		↓	12	.667		590	35.50	625.50	705
1000	Vinyl-clad, premium, dbl. insul. glass, 4'-0" x 4'-0"	2 Corp	12	1.333		535	71		606	695
1100	4'-0" x 6'-0"			11	1.455		995	77.50	1,072.50	1,225
1200	5'-0" x 6'-0"			10	1.600		1,100	85	1,185	1,325
1300	6'-0" x 6'-0"			10	1.600		1,125	85	1,210	1,350

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 Corp	10	.800	Ea.	645	42.50	687.50	775
1050	4'-0" x 3'-6"	G		9	.889		695	47	742	835
1100	5'-0" x 4'-0"	G		9	.889		940	47	987	1,100
1150	6'-0" x 5'-0"	G	↓	8	1		1,200	53	1,253	1,400

08 52 50 – Window Accessories

0010	WINDOW GRILLE OR MUNTIN , snap in type									
0020	Standard pattern interior grilles									
2000	Wood, awning window, glass size, 28" x 16" high		1 Corp	30	.267	Ea.	30.50	14.15	44.65	55
2060	44" x 24" high			32	.250		44	13.30	57.30	68.50
2100	Casement, glass size, 20" x 36" high			30	.267		34.50	14.15	48.65	59.50
2180	20" x 56" high			32	.250	↓	46	13.30	59.30	71
2200	Double-hung, glass size, 16" x 24" high			24	.333	Set	61	17.70	78.70	93.50

08 52 Wood Windows

08 52 50 – Window Accessories

			Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P	
						Material	Labor	Equipment			
08 52 50.10	Window Grille or Muntin										
2280	32" x 32" high		1 Carp	.34	.235	Set	141	12.50	153.50	174	
2500	Picture, glass size, 48" x 48" high			30	.267	Ea.	128	14.15	142.15	163	
2580	60" x 68" high				28	.286	"	206	15.20	221.20	249
2600	Sliding, glass size, 14" x 36" high				24	.333	Set	41	17.70	58.70	71.50
2680	36" x 36" high				22	.364	"	47	19.35	66.35	81

08 52 66 – Wood Window Screens

08 52 66.10 Wood Screens

0010	WOOD SCREENS										
0020	Over 3 S.F., 3/4" frames		2 Carp	375	.043	S.F.	4.79	2.27	7.06	8.65	
0100	1-1/8" frames			"	375	.043	"	8.45	2.27	10.72	12.70

08 52 69 – Wood Storm Windows

08 52 69.10 Storm Windows

0010	STORM WINDOWS, aluminum residential										
0300	Basement, mill finish, incl. fiberglass screen										
0320	1'-10" x 1'-0" high		G	2 Carp	.30	.533	Ea.	37.50	28.50	66	84
0340	2'-9" x 1'-6" high		G		30	.533		41.50	28.50	70	88
0360	3'-4" x 2'-0" high		G		30	.533		44	28.50	72.50	91
1600	Double-hung, combination, storm & screen										
2000	Clear anodic coating, 2'-0" x 3'-5" high		G	2 Carp	.30	.533	Ea.	98	28.50	126.50	151
2020	2'-6" x 5'-0" high		G		28	.571		126	30.50	156.50	184
2040	4'-0" x 6'-0" high		G		25	.640		133	34	167	197
2400	White painted, 2'-0" x 3'-5" high		G		30	.533		104	28.50	132.50	157
2420	2'-6" x 5'-0" high		G		28	.571		102	30.50	132.50	158
2440	4'-0" x 6'-0" high		G		25	.640		120	34	154	183
2600	Mill finish, 2'-0" x 3'-5" high		G		30	.533		86.50	28.50	115	138
2620	2'-6" x 5'-0" high		G		28	.571		103	30.50	133.50	159
2640	4'-0" x 6'-8" high		G		25	.640		130	34	164	195

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.	201	42.50	243.50	285
0140	25" x 49"		G		18	.889		208	47	255	300
0150	25" x 57"		G		17	.941		225	50	275	320
0160	25" x 65"		G		16	1		239	53	292	345
0170	29" x 41"		G		18	.889		202	47	249	293
0180	29" x 53"		G		18	.889		217	47	264	310
0190	29" x 57"		G		17	.941		235	50	285	335
0200	29" x 65"		G		16	1		279	53	332	385
0210	33" x 41"		G		20	.800		216	42.50	258.50	300
0220	33" x 53"		G		18	.889		231	47	278	325
0230	33" x 57"		G		17	.941		279	50	329	380
0240	33" x 65"		G		16	1		284	53	337	395
0250	37" x 41"		G		20	.800		236	42.50	278.50	325
0260	37" x 53"		G		18	.889		271	47	318	370
0270	37" x 57"		G		17	.941		282	50	332	385
0280	37" x 65"		G		16	1		320	53	373	435

08 53 Plastic Windows

08 53 13 – Vinyl Windows

			Daily Crew	Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P
08 53 13.30 Vinyl Double-Hung Windows							Labor	Equipment		
0010	VINYL DOUBLE-HUNG WINDOWS, insulated glass									
0100	Grids, low E, J fin, ext. jambs, 21" x 53"	[G]	2 Carp	18	.889	Ea.	213	47	260	305
0102	21" x 37"	[G]		18	.889		249	47	296	345
0104	21" x 41"	[G]		18	.889		259	47	306	355
0106	21" x 49"	[G]		18	.889		263	47	310	360
0110	21" x 57"	[G]		17	.941		283	50	333	385
0120	21" x 65"	[G]		16	1		300	53	353	410
0128	25" x 37"	[G]		20	.800		249	42.50	291.50	335
0130	25" x 41"	[G]		20	.800		258	42.50	300.50	350
0140	25" x 49"	[G]		18	.889		260	47	307	355
0145	25" x 53"	[G]		18	.889		285	47	332	385
0150	25" x 57"	[G]		17	.941		293	50	343	395
0160	25" x 65"	[G]		16	1		269	53	322	375
0162	25" x 69"	[G]		16	1		315	53	368	430
0164	25" x 77"	[G]		16	1		360	53	413	475
0168	29" x 37"	[G]		18	.889		258	47	305	355
0170	29" x 41"	[G]		18	.889		278	47	325	375
0172	29" x 49"	[G]		18	.889		283	47	330	380
0180	29" x 53"	[G]		18	.889		292	47	339	390
0190	29" x 57"	[G]		17	.941		305	50	355	410
0200	29" x 65"	[G]		16	1		320	53	373	435
0202	29" x 69"	[G]		16	1		345	53	398	460
0205	29" x 77"	[G]		16	1		340	53	393	455
0208	33" x 37"	[G]		20	.800		273	42.50	315.50	365
0210	33" x 41"	[G]		20	.800		278	42.50	320.50	370
0215	33" x 49"	[G]		20	.800		295	42.50	337.50	390
0220	33" x 53"	[G]		18	.889		310	47	357	410
0230	33" x 57"	[G]		17	.941		287	50	337	390
0240	33" x 65"	[G]		16	1		330	53	383	445
0242	33" x 69"	[G]		16	1		360	53	413	475
0246	33" x 77"	[G]		16	1		340	53	393	455
0250	37" x 41"	[G]		20	.800		305	42.50	347.50	400
0255	37" x 49"	[G]		20	.800		320	42.50	362.50	415
0260	37" x 53"	[G]		18	.889		330	47	377	430
0270	37" x 57"	[G]		17	.941		350	50	400	460
0280	37" x 65"	[G]		16	1		380	53	433	500
0282	37" x 69"	[G]		16	1		395	53	448	515
0286	37" x 77"	[G]		16	1		390	53	443	510
0300	Solid vinyl, average quality, double insulated glass, 2'-0" x 3'-0"	[G]	1 Carp	10	.800		295	42.50	337.50	390
0310	3'-0" x 4'-0"	[G]		9	.889		247	47	294	340
0330	Premium, double insulated glass, 2'-6" x 3'-0"	[G]		10	.800		305	42.50	347.50	400
0340	3'-0" x 3'-6"	[G]		9	.889		335	47	382	435
0350	3'-0" x 4'-0"	[G]		9	.889		345	47	392	450
0360	3'-0" x 4'-6"	[G]		9	.889		360	47	407	465
0370	3'-0" x 5'-0"	[G]		8	1		400	53	453	520
0380	3'-6" x 6'-0"	[G]		8	1		420	53	473	540

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.	350	42.50	392.50	450
0110	21" x 47"	[G]		20	.800		360	42.50	402.50	460
0120	21" x 53"	[G]		20	.800		390	42.50	432.50	495

08 53 Plastic Windows

08 53 13 - Vinyl Windows

08 53 13.40 Vinyl Casement Windows		Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P	
					Material	Labor	Equipment			
0128	24" x 35"	G	2 Corp	.19	.842	Ea.	305	45	350	400
0130	24" x 41"	G		.19	.842		355	45	400	455
0140	24" x 47"	G		.19	.842		380	45	425	480
0150	24" x 53"	G		.19	.842		400	45	445	505
0158	28" x 35"	G		.19	.842		350	45	395	450
0160	28" x 41"	G		.19	.842		310	45	355	410
0170	28" x 47"	G		.19	.842		400	45	445	505
0180	28" x 53"	G		.19	.842		390	45	435	495
0184	28" x 59"	G		.19	.842		440	45	485	545
0188	Two lites, 33" x 35"	G		.18	.889		525	47	572	645
0190	33" x 41"	G		.18	.889		510	47	557	630
0200	33" x 47"	G		.18	.889		540	47	587	660
0210	33" x 53"	G		.18	.889		550	47	597	675
0212	33" x 59"	G		.18	.889		605	47	652	740
0215	33" x 72"	G		.18	.889		620	47	667	755
0220	41" x 41"	G		.18	.889		580	47	627	705
0230	41" x 47"	G		.18	.889		580	47	627	710
0240	41" x 53"	G		.17	.941		625	50	675	760
0242	41" x 59"	G		.17	.941		660	50	710	800
0246	41" x 72"	G		.17	.941		685	50	735	830
0250	47" x 41"	G		.17	.941		560	50	610	690
0260	47" x 47"	G		.17	.941		585	50	635	715
0270	47" x 53"	G		.17	.941		620	50	670	760
0272	47" x 59"	G		.17	.941		695	50	745	840
0280	56" x 41"	G		.15	1.067		600	56.50	656.50	745
0290	56" x 47"	G		.15	1.067		620	56.50	676.50	770
0300	56" x 53"	G		.15	1.067		695	56.50	751.50	850
0302	56" x 59"	G		.15	1.067		720	56.50	776.50	875
0310	56" x 72"	G		.15	1.067		880	56.50	936.50	1,050
0340	Solid vinyl, premium, double insulated glass, 2'-0" x 3'-0" high	G	1 Corp	.10	.800		276	42.50	318.50	370
0360	2'-0" x 4'-0" high	G		.9	.889		300	47	347	400
0380	2'-0" x 5'-0" high	G		.8	1		345	53	398	455

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 Corp	12	1.333	Ea.	290	71	361	425
0130	47" x 41"			12	1.333		430	71	501	575
0140	47" x 47"			12	1.333		355	71	426	495
0150	47" x 53"			11	1.455		410	77.50	487.50	570
0160	71" x 35"			11	1.455		420	77.50	497.50	575
0170	71" x 41"			11	1.455		440	77.50	517.50	600
0180	71" x 47"			11	1.455		470	77.50	547.50	635

08 54 Composite Windows

08 54 13 – Fiberglass Windows

08 54 13.10 Fiberglass Single-Hung Windows		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Ind O&P
0010 FIBERGLASS SINGLE-HUNG WINDOWS										
0100	Grids, low E, 18" x 24"	[G]	2 Corp	18	.889	Ea.	390	47	437	500
0110	18" x 40"	[G]		17	.941		400	50-	450	515
0130	24" x 40"	[G]		20	.800		400	42.50	442.50	505
0230	36" x 36"	[G]		17	.941		420	50	470	540
0250	36" x 48"	[G]		20	.800		455	42.50	497.50	565
0260	36" x 60"	[G]		18	.889		505	47	552	625
0280	36" x 72"	[G]		16	1		550	53	603	685
0290	48" x 40"	[G]		16	1		550	53	603	685

08 62 Unit Skylights

08 62 13 – Domed Unit Skylights

08 62 13.20 Skylights

0010	SKYLIGHTS, flush or curb mounted	[G]	G-3	12	2.667	Ea.	490	139	629	745
2120	Ventilating insulated plexiglass dome with	[G]		12	2.667		665	139	804	945
2130	curb mounting, 36" x 36"	[G]								
2150	52" x 52"	[G]								
2160	28" x 52"	[G]		10	3.200		525	167	692	825
2170	36" x 52"	[G]	↓	10	3.200		630	167	797	940
2180	For electric opening system, add	[G]					335		335	370
2300	Insulated safety glass with aluminum frame	[G]	G-3	160	.200	S.F.	95	10.45	105.45	121

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	[G-3]	10	3.200	Ea.	222	167	389	495
0050	Fixed acrylic double domes, curb mount, 25-1/2" x 25-1/2"	[G-3]	10	3.200	Ea.	250	167	417	525
0060	25-1/2" x 33-1/2"	[G-3]	10	3.200	Ea.	250	167	417	525
0070	25-1/2" x 49-1/2"	[G-3]	6	5.333		294	278	572	745
0080	33-1/2" x 33-1/2"	[G-3]	8	4		320	209	529	665
0090	37-1/2" x 25-1/2"	[G-3]	8	4		258	209	467	600
0100	37-1/2" x 37-1/2"	[G-3]	8	4		253	209	462	595
0110	37-1/2" x 49-1/2"	[G-3]	6	5.333		435	278	713	895
0120	49-1/2" x 33-1/2"	[G-3]	6	5.333		385	278	663	845
0130	49-1/2" x 49-1/2"	[G-3]	6	5.333		495	278	773	960
1000	Fixed tempered glass, curb mount, 17-1/2" x 33-1/2"	[G-3]	10	3.200		159	167	326	425
1020	17-1/2" x 49-1/2"	[G-3]	6	5.333		180	278	458	620
1030	25-1/2" x 25-1/2"	[G-3]	10	3.200		159	167	326	425
1040	25-1/2" x 33-1/2"	[G-3]	10	3.200		189	167	356	460
1050	25-1/2" x 37-1/2"	[G-3]	8	4		201	209	410	535
1060	25-1/2" x 49-1/2"	[G-3]	6	5.333		229	278	507	670
1070	25-1/2" x 73-1/2"	[G-3]	6	5.333		365	278	643	825
1080	33-1/2" x 33-1/2"	[G-3]	8	4		220	209	429	555
2000	Manual vent tempered glass & screen, curb, 25-1/2" x 25-1/2"	[G-3]	10	3.200		420	167	587	710
2020	25-1/2" x 37-1/2"	[G-3]	10	3.200		480	167	647	780
2030	25-1/2" x 49-1/2"	[G-3]	8	4		520	209	729	885
2040	33-1/2" x 33-1/2"	[G-3]	8	4		555	209	764	925
2050	33-1/2" x 49-1/2"	[G-3]	6	5.333		700	278	978	1,200
2060	37-1/2" x 37-1/2"	[G-3]	6	5.333		635	278	913	1,125

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	Material	2020 Bare Costs	Equipment	Total	Total Ind O&P
2070 49-1/2" x 49-1/2"		G-3	6	5.333	Ea.	820	278		1,098	1,325
3000 Electric vent tempered glass, curb mount, 25-1/2" x 25-1/2"			10	3.200		1,075	167		1,242	1,425
3020 25-1/2" x 37-1/2"			10	3.200		1,150	167		1,317	1,525
3030 25-1/2" x 49-1/2"			8	4		1,225	209		1,434	1,675
3040 33-1/2" x 33-1/2"			8	4		1,250	209		1,459	1,700
3050 33-1/2" x 49-1/2"			6	5.333		1,325	278		1,603	1,875
3060 37-1/2" x 37-1/2"			6	5.333		1,300	278		1,578	1,850
3070 49-1/2" x 49-1/2"			6	5.333	↓	1,425	278		1,703	1,975

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.	4,900	1,100		6,000	7,025
0100 Pair, per opening			.50	32	Opng.	7,875	1,750		9,625	11,300
1000 For single sliding door, per opening			.60	26.667		5,275	1,475		6,750	8,000
1300 Bi-parting pair		↓	.50	32	↓	7,800	1,750		9,550	11,200
1420 Electronic door opener incl. motion sens, 12 V control box, motor										
1450 For single swing door, per opening		2 Skwk	.80	20	Opng.	3,925	1,100		5,025	5,975
1500 Pair, per opening			.50	32		7,825	1,750		9,575	11,300
1600 For single sliding door, per opening			.60	26.667		5,150	1,475		6,625	7,850
1700 Bi-parting pair			.50	32	↓	5,725	1,750		7,475	8,950
1750 Handicap actuator buttons, 2, incl. 12 V DC wiring, add		♿	1 Carp	1.50	5.333	Pr.	495	283	778	970

08 71 13.20 Automatic Openers Industrial

0010 AUTOMATIC OPENERS INDUSTRIAL										
0015 Sliding doors up to 6' wide		2 Skwk	.60	26.667	Opng.	6,250	1,475		7,725	9,075
0200 To 12' wide			.40	40	40	7,500	2,200		9,700	11,600
0400 Over 12' wide, add per L.F. of excess					L.F.	840			840	925
1000 Swing doors, to 5' wide		2 Skwk	.80	20	Ea.	4,025	1,100		5,125	6,075
1860 Add for controls, wall pushbutton, 3 button			4	4		241	219		460	595
1870 Control pull cord		↓	4.30	3.721	↓	206	204		410	535
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.	25.50	60.50		86	120
0800 Automatic fire exit		"	5	1.600		189	85		274	335
1600 Electrified dead bolt		1 Elec	3	2.667		183	164		347	445
3000 Barrel, brass, 2" long		1 Carp	40	.200		5.25	10.65		15.90	21.50
3020 4" long			40	.200		13.75	10.65		24.40	31
3060 6" long		↓	40	.200	↓	24.50	10.65		35.15	43

08 71 20.15 Hardware

0010 HARDWARE										
0020 Average hardware cost										
1000 Door hardware, apartment, interior		1 Corp	4	2	Door	570	106		676	785
1300 Average, door hardware, motel/hotel interior, with access card			4	2		700	106		806	930
1500 Hospital bedroom, average quality			4	2		720	106		826	950
2000 High quality			3	2.667	↓	725	142		867	1,000
2100 Pocket door			6	1.333	Ea.	118	71		189	236

08 71 Door Hardware

08 71 20 – Hardware

08 71 20.15 Hardware			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Ind O&P
			Crew			Labor	Equipment	Total			
2250	School, single exterior, incl. lever, incl. panic device		1 Carp	3	2.667	Door	1,600	142	1,742	2,000	
2500	Single interior, regular use, lever included			3	2.667		585	142	727	860	
2550	Ave., door hdwe., school, classroom, ANSI F84, lever handle			3	2.667		845	142	987	1,150	
2600	Ave., door hdwe. set, school, classroom, ANSI F88, incl. lever			3	2.667		915	142	1,057	1,225	
2850	Stairway, single interior			3	2.667		645	142	787	925	
3100	Double exterior, with panic device		↓	2	4	Pr.	3,025	213	3,238	3,675	
6020	Add for fire alarm door holder, electro-magnetic		1 Elec	4	2	Ea.	92	123	215	284	
08 71 20.20 Door Protectors											
0010	DOOR PROTECTORS										
0020	1-3/4" x 3/4" U channel		2 Carp	80	.200	L.F.	25	10.65	35.65	43.50	
0021	1-3/4" x 1-1/4" U channel			80	.200	"	22.50	10.65	33.15	40.50	
1000	Tear drop, spring stl., 8" high x 19" long			15	1.067	Ea.	107	56.50	163.50	203	
1010	8" high x 32" long			15	1.067		133	56.50	189.50	231	
1100	Tear drop, stainless stl., 8" high x 19" long			15	1.067		315	56.50	371.50	430	
1200	8" high x 32" long		↓	15	1.067	↓	375	56.50	431.50	495	
08 71 20.30 Door Closers											
0010	DOOR CLOSERS	adjustable backcheck, multiple mounting									
0015	and rack and pinion										
0020	Standard Regular Arm		1 Corp	6	1.333	Ea.	211	71	282	340	
0040	Hold open arm			6	1.333		99.50	71	170.50	215	
0100	Fusible link			6.50	1.231		205	65.50	270.50	325	
0210	Light duty, regular arm			6	1.333		122	71	193	240	
0220	Parallel arm			6	1.333		147	71	218	268	
0230	Hold open arm			6	1.333		147	71	218	268	
0240	Fusible link arm			6	1.333		164	71	235	286	
0250	Medium duty, regular arm			6	1.333		146	71	217	266	
0500	Surface mount regular arm			6.50	1.231		160	65.50	225.50	275	
0550	Fusible link			6.50	1.231		156	65.50	221.50	271	
1520	Overhead concealed, all sizes, regular arm			5.50	1.455		246	77.50	323.50	385	
1525	Concealed arm			5	1.600		365	85	450	530	
1530	Concealed in door, all sizes, regular arm			5.50	1.455		385	77.50	462.50	535	
1535	Concealed arm			5	1.600		272	85	357	425	
1560	Floor concealed, all sizes, single acting			2.20	3.636		570	193	763	915	
1565	Double acting			2.20	3.636		675	193	868	1,025	
1610	Hold open arm			6	1.333		455	71	526	605	
1620	Double acting, standard arm			6	1.333		905	71	976	1,100	
1630	Hold open arm			6	1.333		935	71	1,006	1,125	
1640	Floor, center hung, single acting, bottom arm			6	1.333		480	71	551	635	
1650	Double acting			6	1.333		540	71	611	700	
1660	Offset hung, single acting, bottom arm		↓	6	1.333	↓	645	71	716	815	
2000	Backcheck and adjustable power, hinge face mount										
5000	For cast aluminum cylinder, deduct					Ea.	41.50		41.50	45.50	
5010	For delayed action surface mounted, add		1 Corp	6	1.333		43	71	114	153	
5040	For delayed action, add						55		55	60.50	
5080	For fusible link arm, add						54		54	59.50	
5120	For shock absorbing arm, add						55		55	60.50	
5160	For spring power adjustment, add						41.50		41.50	46	
6000	Closer-holder, hinge face mount, all sizes, exposed arm		1 Corp	6.50	1.231	↓	235	65.50	300.50	355	
6500	Electro magnetic closer/holder										
6510	Single point, no detector		1 Corp	4	2	Ea.	595	106	701	815	
6515	Including detector			4	2		795	106	901	1,025	
6520	Multi-point, no detector		↓	4	2	↓	995	106	1,101	1,250	

08 71 Door Hardware

08 71 20 - Hardware

		Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total Incl O&P
					Material	Labor	Equipment	
08 71 20.30 Door Closers								
6524	Including detector	1 Corp	4	2	Ea.	1,550	106	1,656
6550	Electric automatic operators	1 Corp	4	2	Ea.	2,150	106	2,256
6555	Operator		4	2		269	106	375
6570	Wall plate actuator							455
7000	Electronic closer-holder, hinge facemount; concealed arm		5	1.600		490	85	575
7400	With built-in detector		5	1.600		620	85	705
8000	Surface mounted, standard duty, parallel arm, primed, traditional		6	1.333		210	71	281
8030	Light duty		6	1.333		170	71	241
8042	Extra duty parallel arm		6	1.333		126	71	197
8044	Hold open arm		6	1.333		173	71	244
8046	Positive stop arm		6	1.333		243	71	314
8050	Heavy duty		6	1.333		255	71	326
8052	Heavy duty, regular arm		6	1.333		245	71	316
8054	Top jamb mount		6	1.333		245	71	316
8056	Extra duty parallel arm		6	1.333		315	71	386
8058	Hold open arm		6	1.333		305	71	376
8060	Positive stop arm		6	1.333		269	71	340
8062	Fusible link arm		6	1.333		294	71	365
8080	Universal heavy duty, regular arm		6	1.333		273	71	344
8084	Parallel arm		6	1.333		261	71	332
8088	Extra duty, parallel arm		6	1.333		290	71	361
8090	Hold open arm		6	1.333		288	71	359
8094	Positive stop arm		6	1.333		305	71	376
8100	Standard duty, parallel arm, modern		6	1.333		275	71	346
8150	Heavy duty	▼	6	1.333	▼	340	71	411
								480

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 Corp	5	1.600	Ea.	287	85	372
0060	Standard duty US28		5	1.600		820	85	905
0065	US26D		5	1.600		810	85	895
0070	US10		5	1.600		880	85	965
0075	US3		5	1.600		1,000	85	1,085
0080	Night latch, economy US28		5	1.600		365	85	450
0085	Standard duty, night latch US28		5	1.600		910	85	995
0090	US26D		5	1.600		990	85	1,075
0095	US10		5	1.600		1,050	85	1,135
0100	US3	▼	5	1.600	▼	1,225	85	1,310
0500	Single door exit only, rim device, narrow stile							
0540	Economy US28	1 Corp	5	1.600	Ea.	470	85	555
0550	Standard duty US28		5	1.600		895	85	980
0565	US26D		5	1.600		815	85	900
0570	US10		5	1.600		900	85	985
0575	US3		5	1.600		1,125	85	1,210
0580	Economy with night latch US28		5	1.600		355	85	440
0585	Standard duty US28		5	1.600		985	85	1,070
0590	US26D		5	1.600		1,100	85	1,185
0595	US10		5	1.600		990	85	1,075
0600	US32D	▼	5	1.600	▼	1,275	85	1,360
1040	Single door exit only, surface vertical rod							
1050	Surface vertical rod, economy US28	1 Corp	4	2	Ea.	540	106	646
								750

08 71 Door Hardware

08 71 20 - Hardware

			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P
		1 Carp	4	2	Ea.	1,075	Labor	Equipment	
08 71 20.36 Panic Devices									
1060	Surface vertical rod, standard duty US28		1 Carp	4	2	Ea.	1,075	106	1,181
1065	US26D			4	2		1,150	106	1,256
1070	US10			4	2		1,175	106	1,281
1075	US3			4	2		1,200	106	1,306
1080	US32D			4	2		1,425	106	1,531
1500	Single door exit, rim, narrow stile, economy, surface vertical rod								
1540	Surface vertical rod, narrow, economy US28		1 Carp	4	2	Ea.	540	106	646
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.	1,125	106	1,231
2065	US26D			4	2		1,225	106	1,331
2070	US10			4	2		1,350	106	1,456
2560	Concealed rod, narrow, standard duty US28			4	2		1,275	106	1,381
2565	US26D			4	2		1,500	106	1,606
2567	US26			4	2		1,575	106	1,681
2570	US10			4	2		1,325	106	1,431
2575	US3			4	2		1,550	106	1,656
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.	1,175	106	1,281
3065	US26D			4	2		1,150	106	1,256
3067	US26			4	2		1,400	106	1,506
3070	US10			4	2		1,275	106	1,381
3075	US3			4	2		1,175	106	1,281
3080	US32D			4	2		1,225	106	1,331
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.	425	106	531
08 71 20.40 Lockset									
0010	LOCKSET, Standard duty								
0020	Non-keyed, passage, w/sect. trim		1 Carp	12	.667	Ea.	81	35.50	116.50
0100	Privacy			12	.667		77.50	35.50	113
0400	Keyed, single cylinder function			10	.800		163	42.50	205.50
0420	Hotel (see also Section 08 71 20.15)			8	1		210	53	263
0500	Lever handled, keyed, single cylinder function			10	.800		159	42.50	201.50
1000	Heavy duty with sectional trim, non-keyed, passages			12	.667		129	35.50	164.50
1100	Privacy			12	.667		160	35.50	195.50
1400	Keyed, single cylinder function			10	.800		201	42.50	243.50
1420	Hotel			8	1		580	53	633
1600	Communicating			10	.800		325	42.50	367.50
1690	For re-core cylinder, add						62.50		62.50
3800	Cipher lockset w/key pad (security item)		1 Carp	13	.615		1,050	32.50	1,082.50
3900	Cipher lockset with dial for swinging doors (security item)			13	.615		1,950	32.50	1,982.50
3920	with dial for swinging doors & drill resistant plate (security item)			12	.667		2,375	35.50	2,410.50
3950	Cipher lockset with dial for safe/vault door (security item)			12	.667		1,675	35.50	1,710.50
3980	Keyless, pushbutton type								
4000	Residential/light commercial, deadbolt, standard		1 Carp	9	.889	Ea.	156	47	203
4010	Heavy duty			9	.889		258	47	305
4020	Industrial, heavy duty, with deadbolt			9	.889		475	47	522
4030	Key override			9	.889		470	47	517
4040	Lever activated handle			9	.889		480	47	527
4050	Key override			9	.889		495	47	542

08 71 Door Hardware

08 71 20 - Hardware

08 71 20.40 Lockset

		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
4060	Double sided pushbutton type	1 Corp	8	1	Ea.	960	53		1,013	1,125
4070	Key override	1 Corp	8	1	Ea.	875	53		928	1,050

08 71 20.41 Dead Locks

0010 DEAD LOCKS

0011	Mortise heavy duty outside key (security item)	1 Corp	9	.889	Ea.	193	47		240	284
0020	Double cylinder	1 Corp	9	.889	Ea.	193	47		240	283
0100	Medium duty, outside key		10	.800		117	42.50		159.50	192
0110	Double cylinder		10	.800		143	42.50		185.50	221
1000	Tubular, standard duty, outside key		10	.800		54	42.50		96.50	124
1010	Double cylinder		10	.800		71.50	42.50		114	143
1200	Night latch, outside key		10	.800		58	42.50		100.50	128

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 Corp	9	.889	Ea.	164	47		211	251
0030	Grade 1	1 Corp	8	1	Ea.	440	53		493	565
0040	Privacy set, Grade 3	1 Corp	9	.889	Ea.	176	47		223	264
0050	Grade 1	1 Corp	8	1	Ea.	485	53		538	615
0100	Keyed, office/entrance/apartment, Grade 2	1 Corp	8	1	Ea.	205	53		258	305
0110	Grade 1	1 Corp	7	1.143	Ea.	510	60.50		570.50	650
0120	Single cylinder, typical, Grade 3	1 Corp	8	1	Ea.	199	53		252	299
0130	Grade 1	1 Corp	7	1.143	Ea.	540	60.50		600.50	685
0200	Hotel, room, Grade 3	1 Corp	7	1.143	Ea.	234	60.50		294.50	350
0210	Grade 1 (see also Section 08 71 20.15)	1 Corp	6	1.333	Ea.	570	71		641	730
0300	Double cylinder, Grade 3	1 Corp	8	1	Ea.	241	53		294	345
0310	Grade 1	1 Corp	7	1.143	Ea.	560	60.50		620.50	705
1000	Wrought knobs and sectional trim, non-keyed, passage, Grade 3	1 Corp	10	.800	Ea.	138	42.50		180.50	216
1010	Grade 1	1 Corp	9	.889	Ea.	440	47		487	555
1040	Privacy, Grade 3	1 Corp	10	.800	Ea.	161	42.50		203.50	241
1050	Grade 1	1 Corp	9	.889	Ea.	495	47		542	615
1100	Keyed, entrance, office/apartment, Grade 3	1 Corp	9	.889	Ea.	239	47		286	335
1103	Install lockset	1 Corp	6.92	1.156	Ea.	239	61.50		300.50	355
1110	Grade 1	1 Corp	8	1	Ea.	565	53		618	700
1120	Single cylinder, Grade 3	1 Corp	9	.889	Ea.	236	47		283	330
1130	Grade 1	1 Corp	8	1	Ea.	520	53		573	655
2000	Cast knobs and full escutcheon trim	1 Corp	9	.889	Ea.	287	47		334	385
2010	Non-keyed, passage, Grade 3	1 Corp	9	.889	Ea.	287	47		334	385
2020	Grade 1	1 Corp	8	1	Ea.	425	53		478	550
2040	Privacy, Grade 3	1 Corp	9	.889	Ea.	340	47		387	440
2050	Grade 1	1 Corp	8	1	Ea.	450	53		503	575
2120	Keyed, single cylinder, Grade 3	1 Corp	8	1	Ea.	345	53		398	460
2123	Mortise lock	1 Corp	6.15	1.301	Ea.	345	69		414	485
2130	Grade 1	1 Corp	7	1.143	Ea.	550	60.50		610.50	690
3000	Cast knob and sectional trim, non-keyed, passage, Grade 3	1 Corp	10	.800	Ea.	221	42.50		263.50	305
3010	Grade 1	1 Corp	10	.800	Ea.	395	42.50		437.50	500
3040	Privacy, Grade 3	1 Corp	10	.800	Ea.	231	42.50		278.50	320
3050	Grade 1	1 Corp	10	.800	Ea.	480	42.50		522.50	590
3100	Keyed, office/entrance/apartment, Grade 3	1 Corp	9	.889	Ea.	261	47		308	360
3110	Grade 1	1 Corp	9	.889	Ea.	605	47		652	735
3120	Single cylinder, Grade 3	1 Corp	9	.889	Ea.	273	47		320	370
3130	Grade 1	1 Corp	9	.889	Ea.	550	47		597	680
3190	For re-core cylinder, add					90.50			90.50	99.50

08 71 Door Hardware

08 71 20 – Hardware

		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Ind O&P
08 71 20.44 Anti-Ligature Locksets Grade 1										
0010	ANTI-LIGATURE LOCKSETS GRADE 1									
0100	Anti-ligature cylindrical locksets									
0500	Arch handle passage set, US32D	1 Corp	8	1	Ea.	535	53		588	670
0510	privacy set		8	1		575	53		628	710
0520	classroom set		8	1		590	53		643	730
0530	storeroom set		8	1		590	53		643	730
0550	Lever handle passage set US32D		8	1		405	53		458	525
0560	Hospital/privacy set		8	1		420	53		473	540
0570	Office set		8	1		425	53		478	545
0580	Classroom set		8	1		435	53		488	560
0590	Storeroom set		8	1		420	53		473	545
0600	Exit set		8	1		515	53		568	645
0610	Entry set		8	1		445	53		498	570
0620	Asylum set		8	1		485	53		538	615
0630	Back to back dummy set		8	1		310	53		363	420
0690	Anti-ligature mortise locksets									
0700	Knob handle privacy set, US32D	1 Corp	8	1	Ea.	605	53		658	745
0710	Office set		8	1		590	53		643	725
0720	Classroom set		8	1		590	53		643	725
0730	Hotel set		8	1		605	53		658	745
0740	Apartment set		8	1		605	53		658	745
0750	Institutional privacy set		8	1		650	53		703	795
0760	Lever handle office set		8	1		585	53		638	725
0770	Classroom set sectional trim		8	1		585	53		638	725
0780	Hotel set		8	1		600	53		653	740
0790	Apartment set		8	1		600	53		653	740
0800	Institutional privacy set		8	1		650	53		703	795
0810	Office set US32D		8	1		630	53		683	770
0820	Classroom set escutcheon trim		8	1		745	53		798	900
0830	Hotel set escutcheon trim		8	1		765	53		818	920
0840	Apartment set escutcheon trim		8	1		765	53		818	920
0850	Institutional privacy set escutcheon trim		8	1		765	53		818	920

08 71 20.45 Peepholes

0010	PEEPOLES									
2010	Peephole	1 Corp	32	.250	Ea.	9.45	13.30		22.75	30.50
2020	Peephole, wide view	"	32	.250	"	11.25	13.30		24.55	32.50

08 71 20.50 Door Stops

0010	DOOR STOPS									
0020	Holder & bumper, floor or wall	1 Corp	32	.250	Ea.	36.50	13.30		49.80	60
1300	Wall bumper, 4" diameter, with rubber pad, aluminum		32	.250		13.55	13.30		26.85	35
1600	Door bumper, floor type, aluminum		32	.250		3.94	13.30		17.24	24.50
1900	Plunger type, door mounted		32	.250		32	13.30		45.30	55.50

08 71 20.55 Push-Pull Plates

0010	PUSH-PULL PLATES									
0090	Push plate, 0.050 thick, 3" x 12", aluminum	1 Corp	12	.667	Ea.	6.20	35.50		41.70	60
0100	4" x 16"		12	.667		15.50	35.50		51	70
0110	6" x 16"		12	.667		8.30	35.50		43.80	62
0120	8" x 16"		12	.667		9.75	35.50		45.25	64
0200	Push plate, 0.050 thick, 3" x 12", brass		12	.667		14.20	35.50		49.70	68.50
0210	4" x 16"		12	.667		17.75	35.50		53.25	72.50
0220	6" x 16"		12	.667		27.50	35.50		63	83

08 71 Door Hardware

08 71 20 – Hardware

08 71 20.55 Push-Pull Plates		Crew	Daily	Labor-	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
			Output	Hours			Labor	Equipment	Total		
0230	8" x 16"	1 Corp	12	.667	Ea.	35.50	35.50		71	92.50	
0250	Push plate, 0.050 thick, 3" x 12", satin brass		12	.667		14.45	35.50		49.95	69	
0260	4" x 16"		12	.667		17.95	35.50		53.45	73	
0270	6" x 16"		12	.667		27.50	35.50		63	83	
0280	8" x 16"		12	.667		36	35.50		71.50	92.50	
0490	Push plate, 0.050 thick, 3" x 12", bronze		12	.667		17.15	35.50		52.65	72	
0500	4" x 16"		12	.667		27	35.50		62.50	82.50	
0510	6" x 16"		12	.667		32.50	35.50		68	89	
0520	8" x 16"		12	.667		39.50	35.50		75	96.50	
0740	Push plate, 0.050 thick, 3" x 12", stainless steel		12	.667		12.10	35.50		47.60	66.50	
0760	6" x 16"		12	.667		19	35.50		54.50	74	
0780	8" x 16"		12	.667		24	35.50		59.50	79.50	
0790	Push plate, 0.050 thick, 3" x 12", satin stainless steel		12	.667		6.85	35.50		42.35	60.50	
0820	6" x 16"		12	.667		11.95	35.50		47.45	66	
0830	8" x 16"		12	.667		16.15	35.50		51.65	71	
0980	Pull plate, 0.050 thick, 3" x 12", aluminum		12	.667		26.50	35.50		62	82	
1050	Pull plate, 0.050 thick, 3" x 12", brass		12	.667		41	35.50		76.50	98	
1080	Pull plate, 0.050 thick, 3" x 12", bronze		12	.667		51.50	35.50		87	110	
1180	Pull plate, 0.050 thick, 3" x 12", stainless steel		12	.667		47	35.50		82.50	105	
1250	Pull plate, 0.050 thick, 3" x 12", chrome		12	.667		47	35.50		82.50	105	
1500	Pull handle and push bar, aluminum		11	.727		125	38.50		163.50	195	
2000	Bronze		10	.800		169	42.50		211.50	250	

08 71 20.60 Entrance Locks

0010	ENTRANCE LOCKS									
0015	Cylinder, grip handle deadlocking latch	1 Corp	9	.889	Ea.	190	47		237	280
0020	Deadbolt		8	1		195	53		248	294
0100	Push and pull plate, dead bolt		8	1		241	53		294	345
0900	For handicapped lever, add					158			158	173

08 71 20.65 Thresholds

0010	THRESHOLDS									
0011	Threshold 3' long saddles aluminum	1 Corp	48	.167	L.F.	11.10	8.85		19.95	25.50
0100	Aluminum, 8" wide, 1/2" thick		12	.667	Ea.	56.50	35.50		92	115
0500	Bronze		60	.133	L.F.	40.50	7.10		47.60	55.50
0600	Bronze, panic threshold, 5" wide, 1/2" thick		12	.667	Ea.	165	35.50		200.50	235
0700	Rubber, 1/2" thick, 5-1/2" wide		20	.400		43	21.50		64.50	79.50
0800	2-3/4" wide		20	.400		54.50	21.50		76	91.50
1950	ADA compliant thresholds									
2300	Threshold, aluminum 4" wide x 36" long	1 Corp	12	.667	Ea.	26	35.50		61.50	82
2310	4" wide x 48" long		12	.667		31.50	35.50		67	87.50
2360	6" wide x 36" long		12	.667		47	35.50		82.50	105
2370	6" wide x 48" long		12	.667		50.50	35.50		86	109

08 71 20.70 Floor Checks

0010	FLOOR CHECKS									
0020	For over 3' wide doors single acting	1 Corp	2.50	3.200	Ea.	800	170		970	1,125
0500	Double acting	"	2.50	3.200	"	915	170		1,085	1,250

08 71 20.75 Door Hardware Accessories

0010	DOOR HARDWARE ACCESSORIES									
0050	Door closing coordinator, 36" (for paired openings up to 56")	1 Corp	8	1	Ea.	131	53		184	224
0060	48" (for paired openings up to 84")		8	1		139	53		192	233
0070	56" (for paired openings up to 96")		8	1		148	53		201	243

08 71 Door Hardware

08 71 20 - Hardware

		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Ind O&P
08 71 20.80 Hasps										
0010	HASPS, steel assembly									
0015	3"	1 Carp	26	.308	Ea.	5.95	16.35		22.30	31
0020	4-1/2"			.615		7.10	32.50		39.60	57
0040	6"				12.50	.640		10.45	34	44.45
08 71 20.90 Hinges										
0010	HINGES									
0012	Full mortise, avg. freq., steel base, USP, 4-1/2" x 4-1/2"					Pr.	47.50		47.50	52.50
0100	5" x 5", USP						68.50		68.50	75
0200	6" x 6", USP						144		144	158
0400	Brass base, 4-1/2" x 4-1/2", US10						73.50		73.50	81
0500	5" x 5", US10						78		78	85.50
0600	6" x 6", US10						171		171	188
0800	Stainless steel base, 4-1/2" x 4-1/2", US32						93		93	102
0900	For non removable pin, add (security item)					Ea.	5.80		5.80	6.40
0910	For floating pin, driven tips, add						3.29		3.29	3.62
0930	For hospital type tip on pin, add						14.85		14.85	16.35
0940	For steeple type tip on pin, add						20.50		20.50	23
0950	Full mortise, high frequency, steel base, 3-1/2" x 3-1/2", US26D					Pr.	31.50		31.50	34.50
1000	4-1/2" x 4-1/2", USP						67.50		67.50	74
1100	5" x 5", USP						54		54	59.50
1200	6" x 6", USP						143		143	157
1400	Brass base, 3-1/2" x 3-1/2", US4						53.50		53.50	58.50
1430	4-1/2" x 4-1/2", US10						74.50		74.50	82
1500	5" x 5", US10						139		139	152
1600	6" x 6", US10						175		175	192
1800	Stainless steel base, 4-1/2" x 4-1/2", US32						107		107	117
1810	5" x 4-1/2", US32						141		141	155
1930	For hospital type tip on pin, add					Ea.	14.65		14.65	16.15
1950	Full mortise, low frequency, steel base, 3-1/2" x 3-1/2", US26D					Pr.	33		33	36.50
2000	4-1/2" x 4-1/2", USP						25		25	27.50
2100	5" x 5", USP						54		54	59.50
2200	6" x 6", USP						97		97	107
2300	4-1/2" x 4-1/2", US3						18.75		18.75	20.50
2310	5" x 5", US3						43		43	47.50
2400	Brass base, 4-1/2" x 4-1/2", US10						58.50		58.50	64.50
2500	5" x 5", US10						93		93	102
2800	Stainless steel base, 4-1/2" x 4-1/2", US32						80		80	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.	226		226	248
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.	151		151	167
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.	261		261	287
1600	Double weight, 800 lb., steel base, removable pin, 5" x 6", USP						535		535	590
1700	Steel base-welded pin, 5" x 6", USP						172		172	190
1800	Triple weight, 2000 lb., steel base, welded pin, 5" x 6", USP						700		700	770

08 71 Door Hardware

08 71 20 - Hardware

08 71 20.91 Special Hinges			Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Ind O&P
							Pr.	Labor	Equipment		
2000	Pivot reinf., high frequency, steel base, 7-3/4" door plate, USP					Pr.	182			182	200
2200	Bronze base, 7-3/4" door plate, US10					↓	248			248	273
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					↓	121			121	133
4600	Spring hinge, single acting, 6" flange, steel						Ea.	49.50		49.50	54.50
4700	Brass							96		96	106
4900	Double acting, 6" flange, steel							89		89	98
4950	Brass							133		133	146
8000	Continuous hinges										
8010	Steel, piano, 2" x 72"		1 Carp	20	.400	Ea.	24	21.50		45.50	58.50
8020	Brass, piano, 1-1/16" x 30"			30	.267		9.45	14.15		23.60	32
8030	Acrylic, piano, 1-3/4" x 12"			40	.200		15.65	10.65		26.30	33
9000	Continuous hinge, steel, full mortise, heavy duty, 96"		↓	2	4	↓	725	213		938	1,125

08 71 20.95 Kick Plates

0010 KICK PLATES			Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Ind O&P
							Pr.	Labor	Equipment		
0020	Stainless steel, .050", 16 ga., 8" x 28", US32		1 Carp	15	.533	Ea.	43	28.50		71.50	89.50
0030	8" x 30"			15	.533		46.50	28.50		75	93.50
0040	8" x 34"			15	.533		52.50	28.50		81	100
0050	10" x 28"			15	.533		86	28.50		114.50	137
0060	10" x 30"			15	.533		93	28.50		121.50	145
0070	10" x 34"			15	.533		104	28.50		132.50	158
0080	Mop/Kick, 4" x 28"			15	.533		38.50	28.50		67	85
0090	4" x 30"			15	.533		41	28.50		69.50	87.50
0100	4" x 34"			15	.533		46.50	28.50		75	93.50
0110	6" x 28"			15	.533		44	28.50		72.50	91
0120	6" x 30"			15	.533		53.50	28.50		82	101
0130	6" x 34"			15	.533		60	28.50		88.50	109
0500	Bronze, .050", 8" x 28"			15	.533		77.50	28.50		106	128
0510	8" x 30"			15	.533		73	28.50		101.50	123
0520	8" x 34"			15	.533		75.50	28.50		104	126
0530	10" x 28"			15	.533		79	28.50		107.50	130
0540	10" x 30"			15	.533		86	28.50		114.50	137
0550	10" x 34"			15	.533		96	28.50		124.50	149
0560	Mop/Kick, 4" x 28"			15	.533		37	28.50		65.50	83
0570	4" x 30"			15	.533		41	28.50		69.50	87.50
0580	4" x 34"			15	.533		41.50	28.50		70	88
0590	6" x 28"			15	.533		51.50	28.50		80	99
0600	6" x 30"			15	.533		52	28.50		80.50	99.50
0610	6" x 34"			15	.533		64.50	28.50		93	114
1000	Acrylic, .125", 8" x 26"			15	.533		28	28.50		56.50	73.50
1010	8" x 36"			15	.533		39.50	28.50		68	86
1020	8" x 42"			15	.533		45.50	28.50		74	92.50
1030	10" x 26"			15	.533		35.50	28.50		64	81.50
1040	10" x 36"			15	.533		49.50	28.50		78	97
1050	10" x 42"			15	.533		57.50	28.50		86	106
1060	Mop/Kick, 4" x 26"			15	.533		16.70	28.50		45.20	61
1070	4" x 36"			15	.533		23.50	28.50		52	68.50
1080	4" x 42"			15	.533		27	28.50		55.50	72.50

08 71 Door Hardware

08 71 20 - Hardware

08 71 20.95 Kick Plates		Crew	Daily	Labor-	Unit	Material	2020 Bare Costs		Total	Total
			Output	Hours			Labor	Equipment		Ind O&P
1090	6" x 26"	1 Corp	15	.533	Ea.	25	28.50		53.50	70
1100	6" x 36"		15	.533		34.50	28.50		63	80.50
1110	6" x 42"		15	.533		40.50	28.50		69	87
1220	Brass, .050", 8" x 26"		15	.533		72.50	28.50		101	123
1230	8" x 36"		15	.533		72	28.50		100.50	122
1240	8" x 42"		15	.533		88.50	28.50		117	140
1250	10" x 26"		15	.533		73.50	28.50		102	123
1260	10" x 36"		15	.533		94	28.50		122.50	147
1270	10" x 42"		15	.533		108	28.50		136.50	162
1320	Mop/Kick, 4" x 26"		15	.533		27	28.50		55.50	72
1330	4" x 36"		15	.533		37.50	28.50		66	83.50
1340	4" x 42"		15	.533		43.50	28.50		72	90.50
1350	6" x 26"		15	.533		40.50	28.50		69	87
1360	6" x 36"		15	.533		48.50	28.50		77	96
1370	6" x 42"		15	.533		57.50	28.50		86	106
1800	Aluminum, .050", 8" x 26"		15	.533		40.50	28.50		69	87
1810	8" x 36"		15	.533		37.50	28.50		66	84
1820	8" x 42"		15	.533		44.50	28.50		73	91.50
1830	10" x 26"		15	.533		34	28.50		62.50	80
1840	10" x 36"		15	.533		47	28.50		75.50	94
1850	10" x 42"		15	.533		65.50	28.50		94	115
1860	Mop/Kick, 4" x 26"		15	.533		16.80	28.50		45.30	61
1870	4" x 36"		15	.533		22	28.50		50.50	67
1880	4" x 42"		15	.533		27	28.50		55.50	72
1890	6" x 26"		15	.533		24.50	28.50		53	69.50
1900	6" x 36"		15	.533		33	28.50		61.50	79
1910	6" x 42"		15	.533		38.50	28.50		67	85

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 Corp	90	.089	L.F.	4.12	4.72		8.84	11.65
0600	Prime coated steel, flat, 1/8" x 3"		90	.089		6.25	4.72		10.97	13.95
0800	Stainless steel, flat, 3/32" x 1-5/8"		90	.089		18.10	4.72		22.82	27
1000	Aluminum, flat, 1/8" x 2"		90	.089		4.16	4.72		8.88	11.70
1200	Nail on, "T" extrusion		120	.067		2.21	3.54		5.75	7.75
1300	Vinyl bulb insert		105	.076		2.78	4.05		6.83	9.15
1600	Screw on, "T" extrusion		90	.089		4.16	4.72		8.88	11.70
1700	Vinyl insert		75	.107		4.65	5.65		10.30	13.60
2000	"L" extrusion, neoprene bulbs		75	.107		4.51	5.65		10.16	13.45
2100	Neoprene sponge insert		75	.107		6.75	5.65		12.40	15.95
2200	Magnetic		75	.107		10.50	5.65		16.15	20
2400	Spring hinged security seal, with cam		75	.107		6.75	5.65		12.40	15.90
2600	Spring loaded locking bolt, vinyl insert		45	.178		9.15	9.45		18.60	24.50
2800	Neoprene sponge strip, "Z" shaped, aluminum		60	.133		8.25	7.10		15.35	19.70
2900	Solid neoprene strip, nail on aluminum strip		90	.089		3.82	4.72		8.54	11.30
3000	One piece stile protection									
3020	Neoprene fabric loop, nail on aluminum strips	1 Corp	60	.133	L.F.	3.25	7.10		8.35	12.05
3110	Flush mounted aluminum extrusion, 1/2" x 1-1/4"		60	.133		6.85	7.10		13.95	18.15
3140	3/4" x 1-3/8"		60	.133		4.13	7.10		11.23	15.20
3160	1-1/8" x 1-3/4"		60	.133		5	7.10		12.10	16.15
3300	Mortise, 9/16" x 3/4"		60	.133		4.13	7.10		11.23	15.20
3320	13/16" x 1-3/8"		60	.133		4.20	7.10		11.30	15.25

08 71 Door Hardware

08 71 21 – Astragals

		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
							Labor	Equipment	Total	
3600	Spring bronze strip, nail on type	1 Corp	105	.076	L.F.	2.16	4.05		6.21	8.50
3820	Screw on, with retainer		75	.107		2.69	5.65		8.34	11.45
3800	Flexible stainless steel housing, pile insert, 1/2" door		105	.076		7.25	4.05		11.30	14.10
3820	3/4" door		105	.076		8.05	4.05		12.10	14.95
4000	Extruded aluminum retainer, flush mount, pile insert		105	.076		2.49	4.05		6.54	8.85
4080	Mortise, felt insert		90	.089		4.50	4.72		9.22	12.05
4160	Mortise with spring, pile insert		90	.089		3.62	4.72		8.34	11.10
4400	Rigid vinyl retainer, mortise, pile insert		105	.076		2.85	4.05		6.90	9.25
4600	Wool pile filler strip, aluminum backing		105	.076		2.94	4.05		6.99	9.35
Two piece overlapping astragal, extruded aluminum retainer										
5010	Pile insert	1 Corp	60	.133	L.F.	3.26	7.10		10.36	14.25
5020	Vinyl bulb insert		60	.133		1.91	7.10		9.01	12.75
5040	Vinyl flap insert		60	.133		3.97	7.10		11.07	15
5060	Solid neoprene flap insert		60	.133		6.50	7.10		13.60	17.80
5080	Hypalon rubber flap insert		60	.133		6.65	7.10		13.75	17.95
5090	Snap on cover, pile insert		60	.133		9.75	7.10		16.85	21.50
5400	Magnetic aluminum, surface mounted		60	.133		25.50	7.10		32.60	38.50
5500	Interlocking aluminum, 5/8" x 1" neoprene bulb insert		45	.178		5.30	9.45		14.75	20
5600	Adjustable aluminum, 9/16" x 21/32", pile insert		45	.178		17.65	9.45		27.10	33.50
5800	Magnetic, adjustable, 9/16" x 21/32"		45	.178		23	9.45		32.45	39.50
Two piece stile protection										
6010	Cloth backed rubber loop, 1" gap, nail on aluminum strips	1 Corp	45	.178	L.F.	4.33	9.45		13.78	18.95
6040	Screw on aluminum strips		45	.178		6.50	9.45		15.95	21.50
6100	1-1/2" gap, screw on aluminum extrusion		45	.178		5.80	9.45		15.25	20.50
6240	Vinyl fabric loop, slotted aluminum extrusion, 1" gap		45	.178		2.28	9.45		11.73	16.70
6300	1-1/4" gap		45	.178		6.15	9.45		15.60	21

08 71 25 – Door Weatherstripping

08 71 25.10 Mechanical Seals, Weatherstripping

		Crew	Daily Output	Opgn.		133%				
1000	Doors, wood frame, interlocking, for 3' x 7' door, zinc	1 Corp	3	2.667	Opgn.	58.50	142		200.50	278
1100	Bronze		3	2.667		71	142		213	291
1300	6' x 7' opening, zinc		2	4		60.50	213		273.50	385
1400	Bronze		2	4		71	213		284	400
1700	Wood frame, spring type, bronze									
1800	3' x 7' door	1 Corp	7.60	1.053	Opgn.	24.50	56		80.50	111
1900	6' x 7' door	"	7	1.143	"	32	60.50		92.50	127
2200	Metal frame, spring type, bronze									
2300	3' x 7' door	1 Corp	3	2.667	Opgn.	52	142		194	270
2400	6' x 7' door	"	2.50	3.200	"	53.50	170		223.50	315
2500	For stainless steel, spring type, add									
2700	Metal frame, extruded sections, 3' x 7' door, aluminum	1 Corp	3	2.667	Opgn.	31	142		173	247
2800	Bronze		3	2.667		90	142		232	310
3100	6' x 7' door, aluminum		1.50	5.333		38	283		321	465
3200	Bronze		1.50	5.333		148	283		431	585
3500	Threshold weatherstripping									
3650	Door sweep, flush mounted, aluminum	1 Corp	25	.320	Ea.	22	17		39	49.50
3700	Vinyl		25	.320		19.90	17		36.90	47.50
5000	Garage door bottom weatherstrip, 12' aluminum, clear		14	.571		26	30.50		56.50	74
5010	Bronze		14	.571		94.50	30.50		125	150
5050	Bottom protection, rubber		14	.571		54.50	30.50		85	106
5100	Threshold		14	.571		70.50	30.50		101	123

08 75 Window Hardware

08 75 30 – Window Weatherstripping

08 75 30.10 Mechanical Weather Seals		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
0010 MECHANICAL WEATHER SEALS, Window, double-hung, 3' x 5'										
0020	Zinc	1 Corp	7.20	1.111	Opng.	22.50	59		81.50	114
0100	Bronze		7.20	1.111		42.50	59		101.50	136
0500	As above but heavy duty, zinc		4.60	1.739		21	92.50		113.50	162
0600	Bronze	↓	4.60	1.739	↓	79	92.50		171.50	226

08 79 Hardware Accessories

08 79 13 – Key Storage Equipment

08 79 13.10 Key Cabinets

0010 KEY CABINETS		1 Corp	20	.400	Ea.	107	21.50		128.50	150
0020 Wall mounted, 60 key capacity										
0400 Wall mounted, 30 key capacity		1 Clad	50	.160		75.50	6.75		82.25	93.50
0500 Wall mounted, 80 key capacity		"	40	.200		142	8.40		150.40	169

08 79 20 – Door Accessories

08 79 20.10 Door Hardware Accessories

0010 DOOR HARDWARE ACCESSORIES		1 Corp	32	.250	Ea.	18.80	13.30		32.10	40.50
0140 Door bolt, surface, 4"										
0160 Door latch		"	12	.667	"	8.80	35.50		44.30	62.50
0200 Sliding closet door										
0220 Track and hanger, single		1 Corp	10	.800	Ea.	67.50	42.50		110	139
0240 Double			8	1		85	53		138	174
0260 Door guide, single			48	.167		32.50	8.85		41.35	49
0280 Double			48	.167		41.50	8.85		50.35	59
0600 Deadbolt and lock cover plate, brass or stainless steel			30	.267		33	14.15		47.15	57.50
0620 Hole cover plate, brass or chrome			35	.229		8.70	12.15		20.85	28
2240 Mortise lockset, passage, lever handle			9	.889		173	47		220	261
4000 Security chain, standard		▼	18	.444	▼	15	23.50		38.50	52

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.E.	7.10	6.30		13.40	17.25
0200	Tempered, clear		130	.123		7.50	6.30		13.80	17.65
0300	Tinted		130	.123		7.60	6.30		13.90	17.75
0600	1/4" thick, clear, plain		120	.133		8.40	6.80		15.20	19.40
0700	Tinted		120	.133		9.75	6.80		16.55	21
0800	Tempered, clear		120	.133		7.95	6.80		14.75	18.95
0900	Tinted		120	.133		12.15	6.80		18.95	23.50
1600	3/8" thick, clear, plain		75	.213		11.70	10.90		22.60	29
1700	Tinted		75	.213		16.85	10.90		27.75	35
1800	Tempered, clear		75	.213		18.45	10.90		29.35	37
1900	Tinted		75	.213		21	10.90		31.90	40
2200	1/2" thick, clear, plain		55	.291		18.95	14.85		33.80	43
2300	Tinted		55	.291		29.50	14.85		44.35	54.50
2400	Tempered, clear		55	.291		27.50	14.85		42.35	52.50
2500	Tinted		55	.291		28	14.85		42.85	52.50
2800	5/8" thick, clear, plain		45	.356		29.50	18.15		47.65	59.50
2900	Tempered, clear		45	.356		33.50	18.15		51.65	64

08 81 Glass Glazing

08 81 10 – Float Glass

08 81 10.10 Various Types and Thickness of Float Glass		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
3200	3/4" thick, clear, plain	2 Glaz	35	.457	S.F.	38	23.50		61.50	77
3300	Tempered, clear		35	.457		45	23.50		68.50	84
3600	1" thick, clear, plain		30	.533		63	27		90	111
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	2 Glaz	150	.107	S.F.	65.50	5.45		70.95	80
0020	Simple pattern	"	125	.128	"	144	6.55		150.55	168
0050	Intricate pattern									

08 81 13.30 Sandblasted Glass

0010	SANDBLASTED GLASS, float glass	2 Glaz	160	.100	S.F.	12.20	5.10		17.30	21
0020	1/8" thick	"	130	.123	"	13.50	6.30		19.80	24.50
0100	3/16" thick		120	.133		14.05	6.80		20.85	25.50
0500	1/4" thick		75	.213		14.80	10.90		25.70	32.50
0600	3/8" thick									

08 81 17 – Fire Glass

08 81 17.10 Fire Resistant Glass

0010	FIRE RESISTANT GLASS	2 Glaz	40	.400	S.F.	42.50	20.50		63	77
0020	Fire glass minimum	"	40	.400	"	85.50	20.50		106	125
0030	Mid range		40	.400		375	20.50		395.50	440
0050	High end									

08 81 20 – Vision Panels

08 81 20.10 Full Vision

0010	FULL VISION, window system with 3/4" glass mullions	H-2	130	.185	S.F.	71	8.85		79.85	91.50
0020	Up to 10' high	"	110	.218	"	75.50	10.50		86	98.50
0100	10' to 20' high, minimum		100	.240		81	11.55		92.55	106
0150	Average		80	.300		91	14.40		105.40	122
0200	Maximum									

08 81 25 – Glazing Variables

08 81 25.10 Applications of Glazing

0010	APPLICATIONS OF GLAZING	R088110-10			S.F.	100%				
0600	For glass replacement, add				L.F.	6.40			6.40	7
0700	For gasket settings, add				S.F.	26%				
0900	For sloped glazing, add				Inch	.61			.61	.67
2000	Fabrication, polished edges, 1/4" thick									
2100	1/2" thick								1.44	1.58
2500	Mitered edges, 1/4" thick								1.44	1.58
2600	1/2" thick								2.38	2.62

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.	G	2 Glaz	95	.168	S.F.	10.60	8.60		19.20	24.50
0020	Clear	G		95	.168		14.75	8.60		23.35	29
0100	Tinted	G									
0200	2 lites 3/16" float, for 5/8" thk unit, 15 to 30 S.F., clear	G		90	.178		14.25	9.05		23.30	29.50
0300	Tinted	G		90	.178		14.70	9.05		23.75	30
0400	1" thk, dbl. glazed, 1/4" float, 30 to 70 S.F., clear	G		75	.213		17.10	10.90		28	35
0500	Tinted	G		75	.213		24	10.90		34.90	43
0600	1" thk, dbl. glazed, 1/4" float, 1/4" wire	G		75	.213		24.50	10.90		35.40	43.50
0700	1/4" float, 1/4" tempered	G		75	.213		34	10.90		44.90	54

08 81 Glass Glazing

08 81 30 – Insulating Glass

08 81 30.10 Reduce Heat Transfer Glass		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
						Labor	Equipment		
0800	1/4" wire, 1/4" tempered		2 Glaz	75	.213 S.F.	35	10.90	45.90	55
2000	Both lites, light & heat reflective	G		85	.188	33	9.60	42.60	50.50
2500	Heat reflective, film inside, 1" thick unit, clear	G		85	.188	28.50	9.60	38.10	46
2600	Tinted	G		85	.188	31	9.60	40.60	48.50
3000	Film on weatherside, clear, 1/2" thick unit	G		95	.168	20	8.60	28.60	35
3100	5/8" thick unit	G		90	.178	21	9.05	30.05	36.50
3200	1" thick unit	G		85	.188	28.50	9.60	38.10	46

08 81 35 – Translucent Glass

08 81 35.10 Obscure Glass

0010 OBSCURE GLASS		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
						Labor	Equipment		
0020	1/8" thick, textured		2 Glaz	140	.114 S.F.	12.65	5.85	18.50	22.50
0100	Color			125	.128	14.95	6.55	21.50	26.50
0300	7/32" thick, textured			120	.133	13.85	6.80	20.65	25.50
0400	Color		▼	105	.152	17.55	7.75	25.30	31

08 81 35.20 Patterned Glass

0010 PATTERNED GLASS, colored		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
						Labor	Equipment		
0020	1/8" thick		2 Glaz	140	.114 S.F.	10.30	5.85	16.15	20
0300	7/32" thick		"	120	.133 "	13.75	6.80	20.55	25.50

08 81 45 – Sheet Glass

08 81 45.10 Window Glass, Sheet

0010 WINDOW GLASS, SHEET gray		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
						Labor	Equipment		
0020	1/8" thick		2 Glaz	160	.100 S.F.	6.80	5.10	11.90	15.10
0200	1/4" thick		"	130	.123 "	8	6.30	14.30	18.20

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		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
						Labor	Equipment		
0020	Up to 1,000 S.F.		2 Glaz	110	.145 S.F.	19.50	7.40	26.90	32.50
0200	1,000 to 2,000 S.F.		"	120	.133 "	16.80	6.80	23.60	28.50
0300	For custom colors, add					Total	10%		
0500	For 3/8" thick, add					S.F.	13.15	13.15	14.45
1000	For double coated, 1/4" thick, add						4.70	4.70	5.15
1200	For insulation on panels, add						7.70	7.70	8.45
2000	Panels, insulated, with aluminum backed fiberglass, 1" thick		2 Glaz	120	.133	17.50	6.80	24.30	29.50
2100	2" thick		"	120	.133	22.50	6.80	29.30	35

08 81 55 – Window Glass

08 81 55.10 Sheet Glass

0010 SHEET GLASS (window), clear float, stops, putty bed		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
						Labor	Equipment		
0015	1/8" thick, clear float		2 Glaz	480	.033 S.F.	4.27	1.70	5.97	7.25
0500	3/16" thick, clear			480	.033	6.65	1.70	8.35	9.85
0600	Tinted			480	.033	8.15	1.70	9.85	11.50
0700	Tempered		▼	480	.033	10	1.70	11.70	13.55

08 81 65 – Wire Glass

08 81 65.10 Glass Reinforced With Wire

0010 GLASS REINFORCED WITH WIRE		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
						Labor	Equipment		
0012	1/4" thick rough obscure		2 Glaz	135	.119 S.F.	27.50	6.05	33.55	39
1000	Polished wire, 1/4" thick, diamond, clear			135	.119	33	6.05	39.05	45
1500	Pinstripe, obscure		▼	135	.119	55	6.05	61.05	69.50

08 83 Mirrors

08 83 13 – Mirrored Glass Glazing

08 83 13.10 Mirrors		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
						Labor	Equipment	Total	
0010	MIRRORS, No frames, wall type, 1/4" plate glass, polished edge								
0100	Up to 5 S.F.	2 Glaz	125	.128	S.F.	9.85	6.55	16.40	20.50
0200	Over 5 S.F.		160	.100		9.45	5.10	14.55	18.05
0500	Door type, 1/4" plate glass, up to 12 S.F.		160	.100		9.55	5.10	14.65	18.15
1000	Float glass, up to 10 S.F., 1/8" thick		160	.100		6.75	5.10	11.85	15.05
1100	3/16" thick		150	.107		7.85	5.45	13.30	16.80
1500	12" x 12" wall tiles, square edge, clear		195	.082		2.80	4.18	6.98	9.35
1600	Veined		195	.082		6.60	4.18	10.78	13.50
2000	1/4" thick, stock sizes, one way transparent		125	.128		21	6.55	27.55	33.50
2010	Bathroom, unframed, laminated		160	.100		16	5.10	21.10	25.50

08 83 13.15 Reflective Glass

0010 REFLECTIVE GLASS		G	2 Glaz	115	.139	S.F.	18.30	7.10	25.40	30.50
0100 1/4" float with fused metallic oxide fixed		G	"	115	.139	"	14.95	7.10	22.05	27
0500 1/4" float glass with reflective applied coating		G	"	115	.139	"	14.95	7.10	22.05	27

08 84 Plastic Glazing

08 84 10 – Plexiglass Glazing

08 84 10.10 Plexiglass Acrylic

0010 PLEXIGLASS ACRYLIC, clear, masked,		2 Glaz	170	.094	S.F.	13.90	4.80	18.70	22.50
0020	1/8" thick, cut sheets		195	.082		6.20	4.18	10.38	13.10
0200	Full sheets		165	.097		14.65	4.95	19.60	23.50
0500	1/4" thick, cut sheets		185	.086		10.10	4.41	14.51	17.70
0600	Full sheets		155	.103		23	5.25	28.25	33
0900	3/8" thick, cut sheets		180	.089		17	4.53	21.53	25.50
1000	Full sheets		135	.119		34	6.05	40.05	46.50
1300	1/2" thick, cut sheets		150	.107		22	5.45	27.45	32.50
1400	Full sheets		115	.139		32	7.10	39.10	45.50
1700	3/4" thick, cut sheets		130	.123		18.35	6.30	24.65	29.50
1800	Full sheets		105	.152		36	7.75	43.75	51
2100	1" thick, cut sheets		125	.128		22	6.55	28.55	34.50
2200	Full sheets		170	.094		20	4.80	24.80	29
3000	Colored, 1/8" thick, cut sheets		195	.082		11.95	4.18	16.13	19.40
3200	Full sheets		165	.097		22.50	4.95	27.45	32
3500	1/4" thick, cut sheets		185	.086		16.35	4.41	20.76	24.50
3600	Full sheets		185	.086		16.15	4.41	20.56	24.50
4000	Mirrors, untinted, cut sheets, 1/8" thick		180	.089		18.70	4.53	23.23	27.50
4200	1/4" thick								

08 84 20 – Polycarbonate

08 84 20.10 Thermoplastic

0010 THERMOPLASTIC, clear, masked, cut sheets		2 Glaz	170	.094	S.F.	16	4.80	20.80	25
0020	1/8" thick		165	.097		20	4.95	24.95	29.50
0500	3/16" thick		155	.103		19.20	5.25	24.45	29
1000	1/4" thick		150	.107		30	5.45	35.45	41
1500	3/8" thick								

08 87 Glazing Surface Films

08 87 13 – Solar Control Films

08 87 13.10 Solar Films On Glass		Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Ind O&P
0010	SOLAR FILMS ON GLASS (glass not included)								
1000	Bronze, 20% VLT	H-2	180	.133	S.F.	1.67	6.40	8.07	11.45
1020	50% VLT		180	.133		1.87	6.40	8.27	11.65
1050	Neutral, 20% VLT		180	.133		1.87	6.40	8.27	11.65
1100	Silver, 15% VLT		180	.133		1.08	6.40	7.48	10.80
1120	35% VLT		180	.133		3.14	6.40	9.54	13.05
1150	68% VLT		180	.133		.42	6.40	6.82	10.05
3000	One way mirror with night vision 5% in and 15% out VLT		180	.133		3.15	6.40	9.55	13.05

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.	1.26	6.40	7.66	11
0100	Safety film, clear, 4 mil		180	.133		1.88	6.40	8.28	11.65
0110	Safety film, tinted, 4 mil		180	.133		3.60	6.40	10	13.55
0150	Safety film, black tint, 8 mil		180	.133		2.32	6.40	8.72	12.15

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.	7	4.53	11.53	14.50
0200	Decals small, adhered to glass	1 Glaz	50	.160	Ea.	2.57	8.15	10.72	15.05
0250	Decals large, adhered to glass		50	.160	"	8.20	8.15	16.35	21
0300	Decals set of 4, adhered to glass		25	.320	Set	7.55	16.30	23.85	33
0400	Bird control film tape		10	.800	Roll	20.50	41	61.50	84

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.	224	2.04	226.04	250
0120	6 S.F.		180	.044		335	2.27	337.27	375
0160	9 S.F.		170	.047		505	2.40	507.40	560
0180	10 S.F.		150	.053		585	2.72	587.72	645
0200	12 S.F.		144	.056		670	2.83	672.83	745
0220	14 S.F.		140	.057		785	2.91	787.91	865
0240	16 S.F.		128	.063		895	3.19	898.19	990
0260	18 S.F.		126	.063		1,000	3.24	1,003.24	1,100
0280	20 S.F.		120	.067		1,125	3.40	1,128.40	1,225

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.	1.13	2.04	3.17	4.30
0030	8 mil		200	.040		2.04	2.04	4.08	5.30
0040	9 mil		200	.040		1.12	2.04	3.16	4.29
0050	10 mil		200	.040		1.93	2.04	3.97	5.20
0060	12 mil		200	.040		1.91	2.04	3.95	5.15
0075	15 mil		200	.040		2.41	2.04	4.45	5.70
0100	Security film, sealed with structural adhesive, 7 mil		180	.044		5.75	2.27	8.02	9.75
0110	8 mil		180	.044		6.70	2.27	8.97	10.75
0140	14 mil		180	.044		7.35	2.27	9.62	11.45

08 88 Special Function Glazing

08 88 40 – Acoustical Glass Units

08 88 40.10 Sound Reduction Units		Daily Crew	Output	Labor Hours	Unit	Material	2020 Labor	Bare 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.	37	8.15		45.15	52.50
0100	For 4" thick	"	80	.200	"	62	10.20		72.20	83.50

08 88 56 – Ballistics-Resistant Glazing

08 88 56.10 Laminated Glass

0010 LAMINATED GLASS		Daily Crew	Output	Labor Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
0020 Clear float .03" vinyl 1/4" thick		2 Glaz	90	.178	S.F.	13.30	9.05		22.35	28.50
0100 3/8" thick		"	78	.205	"	31	10.45		41.45	49.50
0200 .06" vinyl, 1/2" thick		"	65	.246	"	28	12.55		40.55	50
1000 5/8" thick		"	90	.178	"	32.50	9.05		41.55	49.50
2000 Bullet-resisting, 1-3/16" thick, to 15 S.F.		"	16	1	"	126	51		177	215
2100 Over 15 S.F.		"	16	1	"	157	51		208	250
2500 2-1/4" thick, to 15 S.F.		"	12	1.333	"	216	68		284	340
2600 Over 15 S.F.		"	12	1.333	"	205	68		273	330
2700 Level 2 (.357 magnum), NIJ and UL		"	12	1.333	"	56	68		124	164
2750 Level 3A (.44 magnum) NIJ, UL 3		"	12	1.333	"	60	68		128	168
2800 Level 4 (AK-47) NIJ, UL 7 & 8		"	12	1.333	"	82.50	68		150.50	193
2850 Level 5 (M-16) UL		"	12	1.333	"	81.50	68		149.50	192
2900 Level 3 (7.62 Armor Piercing) NIJ, UL 4 & 5		"	12	1.333	"	96	68		164	208

08 91 Louvers

08 91 19 – Fixed Louvers

08 91 19.10 Aluminum Louvers

0010 ALUMINUM LOUVERS		Daily Corp	Output	Labor Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
0020 Aluminum with screen, residential, 8" x 8"		1 Corp	38	.211	Ea.	21.50	11.20		32.70	40.50
0100 12" x 12"		"	38	.211	"	17.85	11.20		29.05	36.50
0200 12" x 18"		"	35	.229	"	22.50	12.15		34.65	43
0250 14" x 24"		"	30	.267	"	32.50	14.15		46.65	57
0300 18" x 24"		"	27	.296	"	33.50	15.75		49.25	60.50
0500 24" x 30"		"	24	.333	"	70.50	17.70		88.20	104
0700 Triangle, adjustable, small		"	20	.400	"	73.50	21.50		95	113
0800 Large		"	15	.533	"	94	28.50		122.50	146
1200 Extruded aluminum, see Section 23 37 15.40										
2100 Midget, aluminum, 3/4" deep, 1" diameter		1 Corp	85	.094	Ea.	.98	5		5.98	8.60
2150 3" diameter		"	60	.133	"	3.22	7.10		10.32	14.20
2200 4" diameter		"	50	.160	"	6	8.50		14.50	19.40
2250 6" diameter		"	30	.267	"	3.87	14.15		18.02	26

08 91 26 – Door Louvers

08 91 26.10 Steel Louvers, 18 Gauge, Fixed Blade

0010 STEEL LOUVERS, 18 GAUGE, FIXED BLADE		Daily Corp	Output	Labor Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
0050 12" x 12", with powder coat		1 Corp	20	.400	Ea.	101	21.50		122.50	143
0055 18" x 12"		"	20	.400	"	106	21.50		127.50	149
0060 18" x 18"		"	20	.400	"	109	21.50		130.50	152
0065 24" x 12"		"	20	.400	"	123	21.50		144.50	167
0070 24" x 18"		"	20	.400	"	130	21.50		151.50	175
0075 24" x 24"		"	20	.400	"	164	21.50		185.50	213
0100 12" x 12", galvanized		"	20	.400	"	82	21.50		103.50	122
0105 18" x 12"		"	20	.400	"	94	21.50		115.50	135
0115 24" x 12"		"	20	.400	"	110	21.50		131.50	153
0125 24" x 24"		"	20	.400	"	150	21.50		171.50	197

08 91 Louvers

08 91 26 - Door Louvers

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Ind O&P
		Crew			Labor	Equipment			
08 91 26.10 Steel Louvers, 18 Gauge, Fixed Blade									
0300	6" x 12", painted	1 Corp	20	.400	Ea.	45.50	21.50	67	82
0320	10" x 16"		20	.400		71	21.50	92.50	111
0340	12" x 22"		20	.400		108	21.50	129.50	150
0360	14" x 14"		20	.400		109	21.50	130.50	151
0400	18" x 18"		20	.400		85	21.50	106.50	126
0420	20" x 26"		20	.400		147	21.50	168.50	194
0440	22" x 22"		20	.400		139	21.50	160.50	185
0460	26" x 26"		20	.400		226	21.50	247.50	280
3000	Fire rated								
3010	12" x 12"	1 Corp	10	.800	Ea.	183	42.50	225.50	265
3050	18" x 18"		10	.800		268	42.50	310.50	360
3100	24" x 12"		10	.800		274	42.50	316.50	365
3120	24" x 18"		10	.800		300	42.50	342.50	395
3130	24" x 24"		10	.800		300	42.50	342.50	395

08 91 26.20 Aluminum Louvers

0010 ALUMINUM LOUVERS, 18 ga., fixed blade, clear anodized									
0050	6" x 12"	1 Corp	20	.400	Ea.	65.50	21.50	87	104
0060	10" x 10"		20	.400		61.50	21.50	83	99.50
0065	10" x 14"		20	.400		70	21.50	91.50	109
0080	12" x 22"		20	.400		98	21.50	119.50	140
0090	14" x 14"		20	.400		88	21.50	109.50	129
0100	18" x 10"		20	.400		73	21.50	94.50	112
0110	18" x 18"		20	.400		131	21.50	152.50	176
0120	22" x 22"		20	.400		159	21.50	180.50	207
0130	26" x 26"		20	.400		203	21.50	224.50	256

08 95 Vents

08 95 13 - Soffit Vents

08 95 13.10 Wall Louvers

0010 WALL LOUVERS									
2340	Baked enamel finish	1 Corp	200	.040	L.F.	4.81	2.13	6.94	8.50
2400	Under eaves vent, aluminum, mill finish, 16" x 4"		48	.167	Ea.	2.01	8.85	10.86	15.50
2500	16" x 8"		48	.167	"	2.85	8.85	11.70	16.45

08 95 16 - Wall Vents

08 95 16.10 Louvers

0010 LOUVERS									
0020	Redwood, 2'-0" diameter, full circle	1 Corp	16	.500	Ea.	310	26.50	336.50	385
0100	Half circle		16	.500		210	26.50	236.50	271
0200	Octagonal		16	.500		214	26.50	240.50	275
0300	Triangular, 5/12 pitch, 5'-0" at base		16	.500		655	26.50	681.50	760
7000	Vinyl gable vent, 8" x 8"		38	.211		16.55	11.20	27.75	35
7020	12" x 12"		38	.211		32	11.20	43.20	52
7080	12" x 18"		35	.229		41	12.15	53.15	64
7200	18" x 24"		30	.267		58.50	14.15	72.65	86

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 or 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 Maintenance of Finishes

09 01 60 – Maintenance of Flooring

09 01 60.10 Carpet Maintenance		Daily Crew Output	Labor-Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
0010	CARPET MAINTENANCE								
0020	Steam clean, per cleaning, routine maintenance	1 Clab	3000	.003	S.F.	.09	.11	.20	.27
0500	Stain removal	"	2000	.004	"	.15	.17	.32	.42

09 01 70 – Maintenance of Wall Finishes

09 01 70.10 Gypsum Wallboard Repairs

0010 GYPSUM WALLBOARD REPAIRS		1 Corp	960	.008	Ea.	.44	.44	.67
0100	Fill and sand, pin/nail holes							
0110	Screw head pops		480	.017		.89	.89	1.33
0120	Dents, up to 2" square		48	.167		.01	8.85	8.86
0130	2" to 4" square		24	.333		.04	17.70	17.74
0140	Cut square, patch, sand and finish, holes, up to 2" square		12	.667		.04	35.50	35.54
0150	2" to 4" square		11	.727		.09	38.50	38.59
0160	4" to 8" square		10	.800		.24	42.50	42.74
0170	8" to 12" square		8	1		.47	53	53.47
0180	12" to 32" square		6	1.333		1.58	71	72.58
0210	16" by 48"		5	1.600		2.68	85	87.68
0220	32" by 48"		4	2		4.45	106	110.45
0230	48" square		3.50	2.286		6.30	121	127.30
0240	60" square		3.20	2.500		9.55	133	142.55
0500	Skim coat surface with joint compound		1600	.005	S.F.	.04	.27	.31
0510	Prepare, retape and refinish joints		60	.133	L.F.	.70	7.10	7.80
								11.40

09 01 90 – Maintenance of Painting and Coating

09 01 90.92 Sanding

0010 SANDING and puttying interior trim, compared to		R099100-10	L.F.	100%
0100	Painting 1 coat, on quality work			
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.
0520	Masking with paper		800	.010
0530	Volume cover up (using plastic sheathing or building paper)		16000	.001

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.	.58	.58	.86	
0040	Wood, detail		496	.016		.72	.72	1.07	
0050	Wood, louvered		280	.029		1.27	1.27	1.89	
0060	Wood, overhead		616	.013		.58	.58	.86	
0070	Wire brush								
0080	Metal, flush	1 Pord	640	.013	S.F.	.56	.56	.83	
0090	Metal, detail		520	.015		.68	.68	1.02	
0100	Metal, louvered		360	.022		.99	.99	1.47	
0110	Metal or fibr., overhead		640	.013		.56	.56	.83	
0120	Metal, roll up		560	.014		.63	.63	.94	
0130	Metal, bulkhead		640	.013		.56	.56	.83	
0140	Power wash, based on 2500 lb. operating pressure	A-1H	2240	.004	S.F.	.15	.03	.18	.27
0150	Metal, flush								
0160	Metal, detail		2120	.004		.16	.04	.20	.28
0170	Metal, louvered		2000	.004		.17	.04	.21	.29
0180	Metal or fibr., overhead		2400	.003		.14	.03	.17	.24

09 01 Maintenance of Finishes

09 01 90 – Maintenance of Painting and Coating

09 01 90.93 Exterior Surface Preparation				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
				Crew				Labor	Equipment	Total		
0190	Metal, roll up			A-1H	2400	.003	S.F.		.14	.03	.17	.24
0200	Metal, bulkhead				2200	.004			.15	.03	.18	.27
0400	Windows, per side, not incl. trim											
0410	Scrape & sand											
0420	Wood, 1-2 lite			1 Pord	320	.025	S.F.		.11		.11	1.65
0430	Wood, 3-6 lite				280	.029			.27		.27	1.89
0440	Wood, 7-10 lite				240	.033			.48		.48	2.20
0450	Wood, 12 lite				200	.040			.78		.78	2.64
0460	Wood, Bay/Bow											
0470	Wire brush											
0480	Metal, 1-2 lite			1 Pord	480	.017	S.F.		.74		.74	1.10
0490	Metal, 3-6 lite				400	.020			.89		.89	1.32
0500	Metal, Bay/Bow											
0510	Power wash, based on 2500 lb. operating pressure			A-1H	4400	.002	S.F.		.08	.02	.10	.14
0520	1-2 lite				4320	.002			.08	.02	.10	.14
0530	3-6 lite											
0540	7-10 lite				4240	.002			.08	.02	.10	.14
0550	12 lite				4160	.002			.08	.02	.10	.14
0560	Bay/Bow											
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.		.74		.74	1.10
0660	Med.				440	.018			.81		.81	1.20
0670	Heavy				360	.022			.99		.99	1.47
0680	Wood shingles, shakes, light				440	.018			.81		.81	1.20
0690	Med.				360	.022			.99		.99	1.47
0700	Heavy				280	.029			1.27		1.27	1.89
0710	Clapboard, light				520	.015			.68		.68	1.02
0720	Med.				480	.017			.74		.74	1.10
0730	Heavy											
0740	Wire brush				400	.020			.89		.89	1.32
0750	Aluminum, light			1 Pord	600	.013	S.F.		.59		.59	.88
0760	Med.				520	.015			.68		.68	1.02
0770	Heavy											
0780	Pressure wash, based on 2500 lb. operating pressure			A-1H	440	.018			.81		.81	1.20
0790	Stucco											
0800	Aluminum or vinyl			A-1H	3080	.003	S.F.		.11	.02	.13	.19
0810	Siding, masonry, brick & block				3200	.003			.11	.02	.13	.19
1300	Miscellaneous, wire brush											
1310	Metal, pedestrian gate			1 Pord	100	.080	S.F.		3.55		3.55	5.30
1320	Aluminum chain link, both sides				250	.032			1.42		1.42	2.11
1400	Existing galvanized surface, clean and prime, prep for painting											
8000	For chemical washing, see Section 04 01 30			1 Pord	380	.021			.93		.93	1.53
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.		.58		.58	.86
0050	Wood, detail				496	.016			.72		.72	1.07
0060	Wood, louvered											

09 01 Maintenance of Finishes

09 01 90 – Maintenance of Painting and Coating

09 01 90.94 Interior Surface Preparation		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
		1 Pord		S.F.	Labor	Equipment	Total	
0070	Wire brush							
0080	Metal, flush							
0090	Metal, detail							
0100	Metal, louvered							
0110	Hond wash							
0120	Wood, flush							
0130	Wood, detail							
0140	Wood, louvered							
0150	Metal, flush							
0160	Metal, detail							
0170	Metal, louvered							
0400	Windows, per side, not incl. trim							
0410	Scrape & sand							
0420	Wood, 1-2 lite							
0430	Wood, 3-6 lite							
0440	Wood, 7-10 lite							
0450	Wood, 12 lite							
0460	Wood, Bay/Bow							
0470	Wire brush							
0480	Metal, 1-2 lite							
0490	Metal, 3-6 lite							
0500	Metal, Bay/Bow							
0600	Walls, sanding, light=10-30%, medium=30-70%, heavy=70-100% of surface to sand							
0610	Walls, sand							
0660	Gypsum board or plaster, light							
0670	Gypsum board or plaster, medium							
0680	Gypsum board or plaster, heavy							
0690	Wood, T&G, light							
0700	Wood, T&G, medium							
0710	Wood, T&G, heavy							
0720	Walls, wash							
0730	Gypsum board or plaster							
0740	Wood, T&G							
0750	Masonry, brick & block, smooth							
0760	Masonry, brick & block, coarse							
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							
0220	On metal frame							
0240	On suspension system, including system							
1000	Plaster, lime and horse hair, on wood lath, incl. lath							
1020	On metal lath							
1100	Gypsum, on gypsum lath							
1120	On metal lath							

09 05 Common Work Results for Finishes

09 05 05 – Selective Demolition for Finishes

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
09 05 05.10	Selective Demolition, Ceilings	Crew				Labor			
1200	Suspended ceiling, mineral fiber, 2' x 2' or 2' x 4'	2 Clab	1500	.011	S.F.	.45		.45	.67
1250	On suspension system, incl. system		1200	.013		.56		.56	.84
1500	Tile, wood fiber, 12" x 12", glued		900	.018		.75		.75	1.12
1540	Stapled		1500	.011		.45		.45	.67
1580	On suspension system, incl. system		760	.021		.89		.89	1.33
2000	Wood, tongue and groove, 1" x 4"		1000	.016		.67		.67	1.01
2040	1" x 8"		1100	.015		.61		.61	.92
2400	Plywood or wood fiberboard, 4' x 8' sheets		1200	.013		.56		.56	.84
2500	Remove & refinish textured ceiling	1 Plus	222	.036		.04	1.75	1.79	2.65

09 05 05.20 Selective Demolition, Flooring

0010 SELECTIVE DEMOLITION, FLOORING		R024119-10								
0200	Brick with mortar	2 Clab	475	.034	S.F.	1.42		1.42	2.13	
0400	Carpet, bonded, including surface scraping		2000	.008		.34		.34	.51	
0440	Scrim applied		8000	.002		.08		.08	.13	
0480	Tackless		9000	.002		.07		.07	.11	
0550	Carpet tile, releasable adhesive		5000	.003		.13		.13	.20	
0560	Permanent adhesive		1850	.009		.36		.36	.55	
0600	Composition, acrylic or epoxy		400	.040		1.68		1.68	2.53	
0700	Concrete, scarify skin	A-1A	225	.036		1.95	.92	2.87	3.96	
0800	Resilient, sheet goods	2 Clab	1400	.011		.48		.48	.72	
0820	For gym floors	"	900	.018		.75		.75	1.12	
0850	Vinyl or rubber cove base	1 Clab	1000	.008	L.F.	.34		.34	.51	
0860	Vinyl or rubber cove base, molded corner	"	1000	.008	Ea.	.34		.34	.51	
0870	For glued and caulked installation, add to labor					50%				
0900	Vinyl composition tile, 12" x 12"	2 Clab	1000	.016	S.F.	.67		.67	1.01	
2000	Tile, ceramic, thin set		675	.024		1		1	1.50	
2020	Mud set		625	.026		1.08		1.08	1.62	
2200	Marble, slate, thin set		675	.024		1		1	1.50	
2220	Mud set		625	.026		1.08		1.08	1.62	
2600	Terrazzo, thin set		450	.036		1.50		1.50	2.25	
2620	Mud set		425	.038		1.59		1.59	2.38	
2640	Terrazzo, cast in place		300	.053		2.25		2.25	3.37	
3000	Wood, block, on end	1 Corp	400	.020		1.06		1.06	1.60	
3200	Parquet		450	.018		.95		.95	1.42	
3400	Strip flooring, interior, 2-1/4" x 25/32" thick		325	.025		1.31		1.31	1.97	
3500	Exterior, porch flooring, 1" x 4"		220	.036		1.93		1.93	2.90	
3800	Subfloor, tongue and groove, 1" x 6"		325	.025		1.31		1.31	1.97	
3820	1" x 8"		430	.019		.99		.99	1.49	
3840	1" x 10"		520	.015		.82		.82	1.23	
4000	Plywood, nailed		600	.013		.71		.71	1.06	
4100	Glued and nailed		400	.020		1.06		1.06	1.60	
4200	Hardboard, 1/4" thick		760	.011		.56		.56	.84	
8000	Remove flooring, bead blast, simple floor plan	A-1A	1000	.008		.05	.44	.21	.70	.95
8100	Complex floor plan		400	.020		.05	1.10	.52	1.67	2.29
8150	Mastic only		1500	.005		.05	.29	.14	.48	.65
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.	17.70	2.98	20.68	30
0025	Plain	"	160	.300		13.30	2.23	15.53	22.50
0100	Brick, 4" to 12" thick	B-9	220	.182		7.75	1.62	9.37	13.40
0200	Concrete block, 4" thick		1150	.035	S.F.	1.48	.31	1.79	2.56

09 05 Common Work Results for Finishes

09 05 05 – Selective Demolition for Finishes

09 05 05.30 Selective Demolition, Walls and Partitions	Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
						Labor	Equipment	Total		
0280 8" thick	B-9	1050	.038	S.F.		1.62	.34	1.96	2.80	
0300 Exterior stucco 1" thick over mesh	↓	3200	.013			.53	.11	.64	.92	
1000 Gypsum wallboard, nailed or screwed	1 Clab	1000	.008			.34		.34	.51	
1010 2 layers		400	.020			.84		.84	1.27	
1020 Glued and nailed		900	.009			.37		.37	.56	
1500 Fiberboard, nailed		900	.009			.37		.37	.56	
1520 Glued and nailed		800	.010			.42		.42	.63	
1568 Plenum barrier, sheet lead		300	.027			1.12		1.12	1.69	
2000 Movable walls, metal, 5' high		300	.027			1.12		1.12	1.69	
2020 8' high	↓	400	.020			.84		.84	1.27	
2200 Metal or wood studs, finish 2 sides, fiberboard	B-1	520	.046			1.97		1.97	2.97	
2250 Lath and plaster		260	.092			3.95		3.95	5.95	
2300 Gypsum wallboard		520	.046			1.97		1.97	2.97	
2350 Plywood	↓	450	.053			2.28		2.28	3.43	
2800 Paneling, 4' x 8' sheets	1 Clab	475	.017			.71		.71	1.07	
3000 Plaster, lime and horsehair, on wood lath		400	.020			.84		.84	1.27	
3020 On metal lath		335	.024			1.01		1.01	1.51	
3400 Gypsum or perlite, on gypsum lath		410	.020			.82		.82	1.23	
3420 On metal lath		300	.027	↓		1.12		1.12	1.69	
3450 Plaster, interior gypsum, acoustic, or cement		60	.133	S.Y.		5.60		5.60	8.45	
3500 Stucco, on masonry		145	.055			2.32		2.32	3.49	
3510 Commercial 3-coat		80	.100			4.21		4.21	6.35	
3520 Interior stucco	↓	25	.320	↓		13.45		13.45	20	
3600 Plywood, one side	B-1	1500	.016	S.F.		.68		.68	1.03	
3750 Terra cotta block and plaster, to 6" thick	"	175	.137			5.85		5.85	8.80	
3760 Tile, ceramic, on walls, thin set	1 Clab	300	.027			1.12		1.12	1.69	
3765 Mud set		250	.032	↓		1.35		1.35	2.02	
3800 Toilet partitions, slate or marble		5	1.600	Ea.		67.50		67.50	101	
3820 Metal or plastic	↓	8	1	"		42		42	63.50	
5000 Wallcovering, vinyl	1 Paper	700	.011	S.F.		.51		.51	.76	
5010 With release agent		1500	.005			.24		.24	.35	
5025 Wallpaper, 2 layers or less, by hand		250	.032			1.43		1.43	2.12	
5035 3 layers or more	↓	165	.048	↓		2.16		2.16	3.21	

09 05 71 – Acoustic Underlayment

09 05 71.10 Acoustical Underlayment

0010 ACOUSTICAL UNDERLAYMENT	1 Tlf	275	.029	S.F.	.32	1.44		1.76	2.46
0100 Rubber underlayment, 5/64"		275	.029		.52	1.44		1.96	2.68
0110 1/8" thk.		275	.029		.71	1.47		2.18	2.93
0120 13/64" thk.		270	.030		.94	1.47		2.41	3.18
0130 15/64" thk.		270	.030		1.29	1.49		2.78	3.61
0140 23/64" thk.		265	.030		1.50	1.49		2.99	3.84
0150 15/32" thk.		265	.030		.40	1.44		1.84	2.55
0400 Cork underlayment, 3/32"		275	.029		.41	1.44		1.85	2.56
0410 1/8" thk.		275	.029		.48	1.44		1.92	2.64
0420 5/32" thk.		275	.029		.62	1.47		2.09	2.83
0430 15/64" thk.		270	.030		1.30	1.49		2.79	3.62
0440 15/32" thk.		265	.030		.55	1.44		1.99	2.72
0600 Rubber cork underlayment, 3/64"		275	.029		.31	1.44		1.75	2.45
0610 13/64" thk.		270	.030		1.60	1.47		3.07	3.91
0620 3/8" thk.		270	.030		2.70	1.47		4.17	5.10
0630 25/64" thk.		270	.030		2.79	1.47		4.26	5.20
0800 Foam underlayment, 5/64"		275	.029	↓	.55	1.44		1.99	2.72

09 05 Common Work Results for Finishes

09 05 71 – Acoustic Underlayment

09 05 71.10 Acoustical Underlayment				Daily Output	Labor-Hrs.	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
0810 1/8" thk.				1 Tif	.275	.029	S.F.	.67	1.44	2.11	2.85
0820 15/32" thk.				↓	265	.030	S.F.	.54	1.49	2.03	2.78
4000 Nylon matting 0.4" thick, with carbon black spinerette											
4010 plus polyester fabric, on floor				D-7	1600	.010	S.F.	1.44	.44	1.88	2.23

09 21 Plaster and Gypsum Board Assemblies

09 21 13 – Plaster Assemblies

09 21 13.10 Plaster Partition Wall

0010 PLASTER PARTITION WALL				Daily Output	Labor-Hrs.	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
0400 Stud walls, 3.4 lb. metal lath, 3 coat gypsum plaster, 2 sides				J-2	315	.152	S.F.	3.01	7.20	.37	10.58
0600 2" x 4" wood studs, 16" OC				↓	325	.148	S.F.	2.71	6.95	.36	10.02
0700 2-1/2" metal studs, 25 ga., 12" OC				↓	320	.150	S.F.	2.68	7.05	.37	10.10
0800 3-5/8" metal studs, 25 ga., 16" OC				J-2	355	.135	S.F.	2.63	6.35	.33	9.31
0900 Gypsum lath, 2 coat vermiculite plaster, 2 sides				↓	365	.132	S.F.	2.54	6.20	.32	9.06
1000 2" x 4" wood studs, 16" OC				↓	360	.133	S.F.	2.51	6.30	.33	9.14
1200 2-1/2" metal studs, 25 ga., 12" OC											
1300 3-5/8" metal studs, 25 ga., 16" OC											

09 21 16 – Gypsum Board Assemblies

09 21 16.23 Gypsum Board Shaft Wall Assemblies

0010 GYPSUM BOARD SHAFT WALL ASSEMBLIES				Daily Output	Labor-Hrs.	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
0020 Cavity type on 25 ga. J-track & C-H studs, 24" OC				2 Corp	220	.073	S.F.	2.99	3.87		6.86
0030 1" thick coreboard wall liner on shaft side				↓	220	.073	S.F.	3.15	3.87		7.02
0040 2-hour assembly with double layer				↓	220	.073	S.F.	3.36	3.87		7.23
0060 5/8" f.r. gyp bd on rm side, 2-1/2" J-track & C-H studs				2 Corp	180	.089	S.F.	2.66	4.72		7.38
0065 4" J-track & C-H studs				↓	180	.089	S.F.	2.82	4.72		7.54
0070 6" J-track & C-H studs				↓	180	.089	S.F.	3.03	4.72		7.75
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 Corp	110	.145	S.F.	3.36	7.75		11.11
0305 4" J-track & C-H studs				↓	110	.145	S.F.	3.15	7.75		10.90
0310 6" J-track & C-H studs				↓	110	.145	S.F.	3.36	7.75		11.11
0400 4-hour assembly, 1" coreboard, 5/8" fire rated gypsum board and 3/4" galv. metal furring channels, 24" OC, with				1 Corp	1050	.008	S.F.	.05	.41		.46
0600 Dbl. layer 5/8" f.r. gyp bd on rm side, 2-1/2" trk. & C-H studs				↓	1050	.008	S.F.	.05	.41		.46
0700 4" J-track & C-H studs				↓	1050	.008	S.F.	.05	.41		.46
0705 6" J-track & C-H studs				↓	1050	.008	S.F.	.05	.41		.46
0710 For taping & finishing, add per side				↓	1050	.008	S.F.	.05	.41		.46
1000 For insulation, see Section 07 21											
5200 For work over 8' high, add				2 Corp	3060	.005	S.F.	.28			.28
5300 For distribution cost 3 stories and above, add per story				↓	6100	.003	S.F.	.14			.14

09 21 16.33 Partition Wall

0010 PARTITION WALL Stud wall, 8' to 12' high				Daily Output	Labor-Hrs.	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
0050 1/2", interior, gypsum board, std, tape & finish 2 sides				2 Corp	310	.052	S.F.	1.29	2.74		4.03
0500 Installed on incl., 2" x 4" wood studs, 16" OC				↓	350	.046	S.F.	1.17	2.43		3.60
1000 Metal studs, NLB, 25 ga., 16" OC, 3-5/8" wide				↓	330	.048	S.F.	1.30	2.58		3.94
1200 6" wide				↓	310	.052	S.F.	1.45	2.74		4.19
1400 Water resistant, on 2" x 4" wood studs, 16" OC				↓	350	.046	S.F.	1.33	2.43		3.76
1600 Metal studs, NLB, 25 ga., 16" OC, 3-5/8" wide				↓	330	.048	S.F.	1.46	2.58		4.04
1800 6" wide				↓	210	.076	S.F.	2.15	4.05		6.20
2000 Fire res., 2 layers, 1-1/2 hr., on 2" x 4" wood studs, 16" OC				↓	250	.064	S.F.	2.03	3.40		5.43
2200 Metal studs, NLB, 25 ga., 16" OC, 3-5/8" wide											

09 21 Plaster and Gypsum Board Assemblies

09 21 16 – Gypsum Board Assemblies

			Daily	Labor-	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
			Crew	Output			Labor	Equipment		
09 21 16.33 Partition Wall										
2400	6" wide		2 Carp	230	.070	S.F.	2.16	3.70	5.86	7.95
2600	Fire & water res., 2 layers, 1-1/2 hr., 2" x 4" studs, 16" OC			210	.076		2.15	4.05	6.20	8.45
2800	Metal studs, NLB, 25 ga., 16" OC, 3-5/8" wide			250	.064		2.03	3.40	5.43	7.35
3000	6" wide			230	.070		2.16	3.70	5.86	7.95
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.	1.29	2.83	4.12	5.70
3600	24" OC			330	.048		1.17	2.58	3.75	5.15
3800	Metal studs, NLB, 25 ga., 16" OC, 3-5/8" wide			340	.047		1.17	2.50	3.67	5.05
4000	6" wide			320	.050		1.30	2.66	3.96	5.40
4200	24" OC, 3-5/8" wide			360	.044		1.06	2.36	3.42	4.72
4400	6" wide			340	.047		1.16	2.50	3.66	5.05
4800	Water resistant, on 2" x 4" wood studs, 16" OC			300	.053		1.51	2.83	4.34	5.90
5000	24" OC			330	.048		1.39	2.58	3.97	5.40
5200	Metal studs, NLB, 25 ga., 16" OC, 3-5/8" wide			340	.047		1.39	2.50	3.89	5.30
5400	6" wide			320	.050		1.52	2.66	4.18	5.65
5600	24" OC, 3-5/8" wide			360	.044		1.28	2.36	3.64	4.96
5800	6" wide			340	.047		1.38	2.50	3.88	5.30
6000	Fire resistant, 2 layers, 2 hr., on 2" x 4" wood studs, 16" OC			205	.078		2.15	4.15	6.30	8.60
6200	24" OC			235	.068		2.03	3.62	5.65	7.70
6400	Metal studs, NLB, 25 ga., 16" OC, 3-5/8" wide			245	.065		2.06	3.47	5.53	7.45
6600	6" wide			225	.071		2.16	3.78	5.94	8.10
6800	24" OC, 3-5/8" wide			265	.060		1.92	3.21	5.13	6.95
7000	6" wide			245	.065		2.02	3.47	5.49	7.40
7200	Fire & water resistant, 2 layers, 2 hr., 2" x 4" studs, 16" OC			205	.078		2.15	4.15	6.30	8.60
7400	24" OC			235	.068		2.03	3.62	5.65	7.70
7600	Metal studs, NLB, 25 ga., 16" OC, 3-5/8" wide			245	.065		2.03	3.47	5.50	7.45
7800	6" wide			225	.071		2.16	3.78	5.94	8.10
8000	24" OC, 3-5/8" wide			265	.060		1.92	3.21	5.13	6.95
8200	6" wide			245	.065		2.02	3.47	5.49	7.40
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.	1.45	2.83	4.28	5.85
8640	Metal studs, NLB, 25 ga., 16" OC, 3-5/8" wide			340	.047		1.33	2.50	3.83	5.25
8660	6" wide			320	.050		1.46	2.66	4.12	5.60
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.	4.67	4.09	8.76	11.30
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			290	.055	S.F.	1.90	2.93	4.83	6.50
9400	6" wide			270	.059		2.15	3.15	5.30	7.10
9600	Partitions, for work over 8' high, odd			1530	.010			.56	.56	.84

09 22 Supports for Plaster and Gypsum Board

09 22 03 – Fastening Methods for Finishes

09 22 03.20 Drilling Plaster/Drywall		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
0010	DRILLING PLASTER/DRYWALL						Labor	Equipment	
1100	Drilling & layout for drywall/plaster walls, up to 1" deep, no anchor								
1200	Holes, 1/4" diameter	1 Corp	150	.053	ea.	.01	2.83		2.84
1300	3/8" diameter		140	.057		.01	3.04		3.05
1400	1/2" diameter		130	.062		.01	3.27		3.28
1500	3/4" diameter		120	.067		.01	3.54		3.55
1600	1" diameter		110	.073		.02	3.87		3.89
1700	1-1/4" diameter		100	.080		.04	4.25		4.29
1800	1-1/2" diameter		90	.089		.05	4.72		4.77
1900	For ceiling installations, add						40%		7.15

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.	.46	2.69		3.15
0050	16" OC		170	.047		.37	2.45		2.82
0070	24" OC		185	.043		.25	2.25		2.50
0100	Ceilings, on steel, 7/8" hat channels, galvanized, 12" OC		210	.038		.42	1.98		2.40
0300	16" OC		290	.028		.37	1.44		1.81
0400	24" OC		420	.019		.25	.99		1.24
0600	1-5/8" hat channels, galvanized, 12" OC		190	.042		.56	2.19		2.75
0700	16" OC		260	.031		.50	1.60		2.10
0900	24" OC		390	.021		.34	1.07		1.41
0930	7/8" hat channels with sound isolation clips, 12" OC		120	.067		1.73	3.47		5.20
0940	16" OC		100	.080		1.30	4.16		5.46
0950	24" OC		165	.048		.87	2.52		3.39
0960	1-5/8" hat channels, galvanized, 12" OC		110	.073		1.88	3.79		5.67
0970	16" OC		100	.080		1.41	4.16		5.57
0980	24" OC		155	.052		.94	2.69		3.63
1000	Walls, 7/8" hat channels, galvanized, 12" OC		235	.034		.42	1.77		2.19
1200	16" OC		265	.030		.37	1.57		1.94
1300	24" OC		350	.023		.25	1.19		1.44
1500	1-5/8" hat channels, galvanized, 12" OC		210	.038		.56	1.98		2.54
1600	16" OC		240	.033		.50	1.73		2.23
1800	24" OC		305	.026		.34	1.37		1.71
1920	7/8" hat channels with sound isolation clips, 12" OC		125	.064		1.73	3.33		5.06
1940	16" OC		100	.080		1.30	4.16		5.46
1950	24" OC		150	.053		.87	2.78		3.65
1960	1-5/8" hat channels, galvanized, 12" OC		115	.070		1.88	3.62		5.50
1970	16" OC		95	.084		1.41	4.38		5.79
1980	24" OC		140	.057		.94	2.97		3.91
3000	Z Furring, walls, 1" deep, 25 ga., 24" OC		350	.023		1.37	1.19		2.56
3010	48" OC		700	.011		.68	.59		1.27
3020	1-1/2" deep, 24" OC		345	.023		1.59	1.21		2.80
3030	48" OC		695	.012		.80	.60		1.40
3040	2" deep, 24" OC		340	.024		1.91	1.22		3.13
3050	48" OC		690	.012		.96	.60		1.56
3060	1" deep, 20 ga., 24" OC		350	.023		2.26	1.19		3.45
3070	48" OC		700	.011		1.13	.59		1.72
3080	1-1/2" deep, 24" OC		345	.023		2.60	1.21		3.81
3090	48" OC		695	.012		1.30	.60		1.90
4000	2" deep, 24" OC		340	.024		3.19	1.22		4.41
4010	48" OC		690	.012		1.59	.60		2.19

09 22 Supports for Plaster and Gypsum Board

09 22 16 – Non-Structural Metal Framing

09 22 16.13 Non-Structural Metal Stud Framing		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total
						Labor	Equipment	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.	.28	.59	.97	1.34
1610	24" OC		950	.008		.21	.45	.66	.90
1620	2-1/2" wide, 16" OC		613	.013		.36	.69	1.05	1.44
1630	24" OC		938	.009		.27	.45	.72	.98
1640	3-5/8" wide, 16" OC		600	.013		.43	.71	1.14	1.53
1650	24" OC		925	.009		.32	.46	.78	1.04
1660	4" wide, 16" OC		594	.013		.48	.72	1.20	1.61
1670	24" OC		925	.009		.36	.46	.82	1.09
1680	6" wide, 16" OC		588	.014		.57	.72	1.29	1.72
1690	24" OC		906	.009		.43	.47	.90	1.18
1700	20 ga. studs, 1-5/8" wide, 16" OC		494	.016		.38	.86	1.24	1.71
1710	24" OC		763	.010		.28	.56	.84	1.15
1720	2-1/2" wide, 16" OC		488	.016		.48	.87	1.35	1.83
1730	24" OC		750	.011		.36	.57	.93	1.25
1740	3-5/8" wide, 16" OC		481	.017		.55	.88	1.43	1.93
1750	24" OC		738	.011		.41	.58	.99	1.32
1760	4" wide, 16" OC		475	.017		.67	.90	1.57	2.08
1770	24" OC		738	.011		.50	.58	1.08	1.42
1780	6" wide, 16" OC		469	.017		.81	.91	1.72	2.25
1790	24" OC		725	.011		.61	.59	1.20	1.55
2000	Non-load bearing, galv., 10' high, 25 ga. 1-5/8" wide, 16" OC		495	.016		.26	.86	1.12	1.58
2100	24" OC		760	.011		.19	.56	.75	1.05
2200	2-1/2" wide, 16" OC		490	.016		.35	.87	1.22	1.68
2250	24" OC		750	.011		.25	.57	.82	1.13
2300	3-5/8" wide, 16" OC		480	.017		.41	.89	1.30	1.78
2350	24" OC		740	.011		.30	.57	.87	1.19
2400	4" wide, 16" OC		475	.017		.46	.90	1.36	1.84
2450	24" OC		740	.011		.34	.57	.91	1.23
2500	6" wide, 16" OC		470	.017		.54	.90	1.44	1.96
2550	24" OC		725	.011		.40	.59	.99	1.32
2600	20 ga. studs, 1-5/8" wide, 16" OC		395	.020		.36	1.08	1.44	2.01
2650	24" OC		610	.013		.26	.70	.96	1.34
2700	2-1/2" wide, 16" OC		390	.021		.45	1.09	1.54	2.14
2750	24" OC		600	.013		.33	.71	1.04	1.42
2800	3-5/8" wide, 16" OC		385	.021		.52	1.10	1.62	2.23
2850	24" OC		590	.014		.38	.72	1.10	1.50
2900	4" wide, 16" OC		380	.021		.63	1.12	1.75	2.38
2950	24" OC		590	.014		.47	.72	1.19	1.59
3000	6" wide, 16" OC		375	.021		.77	1.13	1.90	2.54
3050	24" OC		580	.014		.56	.73	1.29	1.72
3060	Non-load bearing, galv., 12' high, 25 ga. 1-5/8" wide, 16" OC		413	.019		.25	1.03	1.28	1.82
3070	24" OC		633	.013		.18	.67	.85	1.21
3080	2-1/2" wide, 16" OC		408	.020		.33	1.04	1.37	1.93
3090	24" OC		625	.013		.24	.68	.92	1.28
3100	3-5/8" wide, 16" OC		400	.020		.39	1.06	1.45	2.03
3110	24" OC		617	.013		.28	.69	.97	1.35
3120	4" wide, 16" OC		396	.020		.44	1.07	1.51	2.09
3130	24" OC		617	.013		.32	.69	1.01	1.39
3140	6" wide, 16" OC		392	.020		.52	1.08	1.60	2.20
3150	24" OC		604	.013		.38	.70	1.08	1.47
3160	20 ga. studs, 1-5/8" wide, 16" OC		329	.024		.34	1.29	1.63	2.32

09 22 Supports for Plaster and Gypsum Board

09 22 16 – Non-Structural Metal Framing

09 22 16.13 Non-Structural Metal Stud Framing	Crew	Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
					Material	Labor	Equipment		
3170 24" OC	1 Carp	508	.016	S.F.	.25	.84		1.09	1.53
3180 2-1/2" wide, 16" OC		325	.025		.43	1.31		1.74	2.44
3190 24" OC		500	.016		.31	.85		1.16	1.63
3200 3-5/8" wide, 16" OC		321	.025		.50	1.32		1.82	2.54
3210 24" OC		492	.016		.36	.86		1.22	1.70
3220 4" wide, 16" OC		317	.025		.61	1.34		1.95	2.69
3230 24" OC		492	.016		.44	.86		1.30	1.79
3240 6" wide, 16" OC		313	.026		.73	1.36		2.09	2.85
3250 24" OC		483	.017		.53	.88		1.41	1.91
3260 Non-load bearing, galv., 16' high, 25 ga. 4" wide, 12" OC		195	.041		.56	2.18		2.74	3.90
3270 16" OC		275	.029		.44	1.55		1.99	2.81
3280 24" OC		400	.020		.32	1.06		1.38	1.95
3290 6" wide, 12" OC		190	.042		.67	2.24		2.91	4.09
3300 16" OC		280	.029		.52	1.52		2.04	2.86
3310 24" OC		400	.020		.38	1.06		1.44	2.02
3320 20 ga. studs, 2-1/2" wide, 12" OC		180	.044		.55	2.36		2.91	4.16
3330 16" OC		254	.032		.43	1.67		2.10	3
3340 24" OC		390	.021		.32	1.09		1.41	1.99
3350 3-5/8" wide, 12" OC		170	.047		.65	2.50		3.15	4.47
3360 16" OC		251	.032		.51	1.69		2.20	3.10
3370 24" OC		384	.021		.37	1.11		1.48	2.07
3380 4" wide, 12" OC		170	.047		.78	2.50		3.28	4.61
3390 16" OC		247	.032		.61	1.72		2.33	3.26
3400 24" OC		384	.021		.45	1.11		1.56	2.15
3410 6" wide, 12" OC		175	.046		.94	2.43		3.37	4.68
3420 16" OC		245	.033		.74	1.74		2.48	3.42
3430 24" OC		400	.020		.54	1.06		1.60	2.19
3440 Non-load bearing, galv., 20' high, 25 ga. 6" wide, 12" OC		125	.064		.65	3.40		4.05	5.80
3450 16" OC		220	.036		.51	1.93		2.44	3.46
3460 24" OC		360	.022		.37	1.18		1.55	2.18
3470 20 ga. studs, 4" wide, 12" OC		120	.067		.76	3.54		4.30	6.15
3480 16" OC		215	.037		.61	1.98		2.59	3.64
3490 6" wide, 12" OC		115	.070		.92	3.70		4.62	6.55
3500 16" OC		215	.037		.72	1.98		2.70	3.76
3510 24" OC		331	.024		.52	1.28		1.80	2.50

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

8000 Suspended ceilings, including carriers									
8200 1-1/2" carriers, 24" OC with:									
8300 7/8" channels, 16" OC	1 Lath	275	.029	S.F.	.59	1.51		2.10	2.87
8320 24" OC		310	.026		.47	1.34		1.81	2.49
8400 1-5/8" channels, 16" OC		205	.039		.72	2.03		2.75	3.78
8420 24" OC		250	.032		.56	1.67		2.23	3.05
8600 2" carriers, 24" OC with:									
8700 7/8" channels, 16" OC	1 Lath	250	.032	S.F.	.69	1.67		2.36	3.20
8720 24" OC		285	.028		.57	1.46		2.03	2.77
8800 1-5/8" channels, 16" OC		190	.042		.82	2.19		3.01	4.12
8820 24" OC		225	.036		.66	1.85		2.51	3.43

09 22 Supports for Plaster and Gypsum Board

09 22 36 – Lath

			Daily Crew	Output	Labor- Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Ind O&P
09 22 36.13 Gypsum Lath		R092000-50									
0010	GYPSUM LATH										
0020	Plain or perforated, nailed, 3/8" thick		1 Lath	85	.094	S.Y.	3.51	4.90		8.41	11.05
0100	1/2" thick			80	.100		2.70	5.20		7.90	10.60
0300	Clipped to steel studs, 3/8" thick			75	.107		3.51	5.55		9.06	12
0400	1/2" thick			70	.114		2.70	5.95		8.65	11.65
1500	For ceiling installations, add			216	.037			1.93		1.93	2.83
1600	For columns and beams, add			↓	170	.047	↓	2.45		2.45	3.59
09 22 36.23 Metal Lath		R092000-50									
0010	METAL LATH										
0020	Diamond, expanded, 2.5 lb./S.Y., painted					S.Y.	4.04			4.04	4.44
0100	Galvanized						3.80			3.80	4.18
0300	3.4 lb./S.Y., painted						4.23			4.23	4.65
0400	Galvanized						4.72			4.72	5.20
0600	For #15 asphalt sheathing paper, add						.47			.47	.52
0900	Flat rib, 1/8" high, 2.75 lb., painted						3.51			3.51	3.86
1000	Foil backed						3.69			3.69	4.06
1200	3.4 lb./S.Y., painted						4.29			4.29	4.72
1300	Galvanized						4.60			4.60	5.05
1500	For #15 asphalt sheathing paper, add						.47			.47	.52
1800	High rib, 3/8" high, 3.4 lb./S.Y., painted						4.83			4.83	5.30
1900	Galvanized					↓	4.01			4.01	4.41
2400	3/4" high, painted, .60 lb./S.F.					S.F.	.77			.77	.85
2500	.75 lb./S.F.					"	1.61			1.61	1.77
2800	Stucco mesh, painted, 3.6 lb.					S.Y.	4.17			4.17	4.59
3000	K-lath, perforated, absorbent paper, regular						4.36			4.36	4.80
3100	Heavy duty						5.15			5.15	5.65
3300	Waterproof, heavy duty, grade B backing						5.05			5.05	5.55
3400	Fire resistant backing						5.55			5.55	6.15
3600	2.5 lb. diamond painted, on wood framing, on walls		1 Lath	85	.094		4.04	4.90		8.94	11.65
3700	On ceilings			75	.107		4.04	5.55		9.59	12.60
3900	3.4 lb. diamond painted, on wood framing, on walls			80	.100		4.29	5.20		9.49	12.35
4000	On ceilings			70	.114		4.29	5.95		10.24	13.40
4200	3.4 lb. diamond painted, wired to steel framing			75	.107		4.29	5.55		9.84	12.85
4300	On ceilings			60	.133		4.29	6.95		11.24	14.85
4500	Columns and beams, wired to steel			40	.200		4.29	10.40		14.69	19.95
4600	Cornices, wired to steel			35	.229		4.29	11.90		16.19	22
4800	Screwed to steel studs, 2.5 lb.			80	.100		4.04	5.20		9.24	12.10
4900	3.4 lb.			75	.107		4.23	5.55		9.78	12.80
5100	Rib lath, painted, wired to steel, on walls, 2.5 lb.			75	.107		3.51	5.55		9.06	12
5200	3.4 lb.			70	.114		4.83	5.95		10.78	14
5400	4.0 lb.			↓	65	.123	5.70	6.40		12.10	15.65
5500	For self-furring lath, add						.12			.12	.13
5700	Suspended ceiling system, incl. 3.4 lb. diamond lath, painted		1 Lath	15	.533		4.30	28		32.30	45
5800	Galvanized		"	15	.533	↓	4.64	28		32.64	45.50
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.	13.60	20.50		34.10	45
6300	16" OC			21.10	.379		12.75	19.75		32.50	43
6350	24" OC			22.70	.352		11.95	18.35		30.30	40
6400	3-5/8" studs, 16" OC			19.50	.410		13.35	21.50		34.85	46
6600	24" OC			20.40	.392		12.35	20.50		32.85	43.50
6700	4" studs, 16" OC			20.40	.392		13.80	20.50		34.30	45
6900	24" OC			21.60	.370		12.70	19.30		32	42.50

09 22 Supports for Plaster and Gypsum Board

09 22 36 – Lath

09 22 36.23 Metal Lath		Daily Output	Labor Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
					Material	Labor	Equipment		
7000	6" studs, 16" OC	1 Lath	19.50	.410	S.Y.	14.55	21.50	36.05	47.50
7100	24" OC	"	21.10	.379	"	13.25	19.75	33	43.50
7200	L.B. partitions, 16 ga., w/rib lath, 2-1/2" studs, 16" OC	"	20	.400	"	13.05	21	34.05	45
7300	3-5/8" studs, 16 ga.	"	19.70	.406	"	14.70	21	35.70	47
7500	4" studs, 16 ga.	"	19.50	.410	"	15.50	21.50	37	48.50
7600	6" studs, 16 ga.	"	18.70	.428	"	18.10	22.50	40.60	52.50

09 22 36.43 Security Mesh

0010	SECURITY MESH, expanded metal, flat, screwed to framing	2 Corp	1500	.011	S.E.	2.31	.57	2.88	3.39
0100	On walls, 3/4", 1.76 lb./S.F.	1600	.010			1.74	.53	2.27	2.71
0110	1-1/2", 1.14 lb./S.F.	1850	.012			2.31	.63	2.94	3.49
0200	On ceilings, 3/4", 1.76 lb./S.F.	1450	.011			1.74	.59	2.33	2.79
0210	1-1/2", 1.14 lb./S.F.								

09 22 36.83 Accessories, Plaster

0010	ACCESSORIES, PLASTER	1 Lath	2.70	2.963	C.L.F.	52.50	154	206.50	284
0200	Casing bead, expanded flange, galvanized	"	2.70	2.963	"	58	154	207	285
0900	Foundation weep screed, galvanized	"				41.50		41.50	46
1200	Channels, cold rolled, 16 ga., 3/4" deep, galvanized	"				56		56	61.50
1620	1-1/2" deep, 16 ga., galvanized	"							
1620	Corner bead, expanded bullnose, 3/4" radius, #10, galvanized	1 Lath	2.60	3.077	"	26	160	186	264
1650	#1, galvanized	"	2.55	3.137	"	47.50	163	210.50	291
1670	Expanded wing, 2-3/4" wide, #1, galvanized	"	2.65	3.019	"	41	157	198	275
1700	Inside corner (corner rite), 3" x 3", painted	"	2.60	3.077	"	21	160	181	259
1750	Strip-ex, 4" wide, painted	"	2.55	3.137	"	27.50	163	190.50	270
1800	Expansion joint, 3/4" grounds, limited expansion, galv., 1 piece	"	2.70	2.963	"	71	154	225	305
2100	Extreme expansion, galvanized, 2 piece	"	2.60	3.077	"	137	160	297	385

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							
0200	In 100 lb. bags, under 200 bags				Bag	19.10		19.10	21
0100	Over 200 bags				"	17.60		17.60	19.35
0300	2 coats, no lath included, on walls	J-1	92	.435	S.Y.	5.95	20	1.27	27.22
0400	On ceilings	"	79	.506	"	5.95	23.50	1.48	30.93
0600	On and incl. 3/8" gypsum lath, on metal studs	J-2	84	.571	"	9.95	27	1.39	38.34
0700	On ceilings	"	70	.686	"	9.95	32.50	1.67	44.12
0900	3 coats, no lath included, on walls	J-1	74	.541	"	6.65	25	1.58	33.23
1000	On ceilings	"	63	.635	"	6.65	29.50	1.86	38.01
1200	On and incl. painted metal lath, on metal studs	J-2	72	.667	"	11.50	31.50	1.63	44.63
1300	On ceilings	"	61	.787	"	11.50	37	1.92	50.42
1500	On and incl. suspended metal lath ceiling	"	37	1.297	"	10.95	61	3.17	75.12
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							
0200	80# bag, less than 1 ton				Bag	15.90		15.90	17.50
0100	Over 1 ton				"	13.70		13.70	15.05
0300	2 coats, no lath included, on walls	J-1	105	.381	S.Y.	3.90	17.55	1.12	22.57

09 23 Gypsum Plastering

09 23 20 – Gypsum Plaster

			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl Q&P
			Crew				Labor	Equipment	Total		
09 23 20.10	Gypsum Plaster On Walls and Ceilings										
0400	On ceilings	J-1	92	.435	S.Y.	3.90	20	1.27	25.17		35.50
0600	On and incl. 3/8" gypsum lath on steel, on walls	J-2	97	.495		7.40	23.50	1.21	32.11		44
0700	On ceilings	"	83	.578		7.40	27	1.41	35.81		50
0900	3 coats, no lath included, on walls	J-1	87	.460		5.55	21	1.35	27.90		39
1000	On ceilings	"	78	.513		5.55	23.50	1.50	30.55		43.50
1200	On and including painted metal lath, on wood studs	J-2	86	.558		10.70	26.50	1.36	38.56		52.50
1300	On ceilings	"	76.50	.627		10.70	29.50	1.53	41.73		57.50
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	20.50		20.50	22.50
0100	Over 1 ton						"	19.45		19.45	21.50

09 23 20.30 Keenes Cement

0010	KEENES CEMENT	R092000-50									
0020	In 100 lb. bags, less than 1 ton						Bag	24		24	26.50
0100	Over 1 ton						"	24		24	26
0300	Finish only, add to plaster prices, standard		J-1	215	.186	S.Y.	2.29	8.60	.55	11.44	15.90
0400	High quality		"	144	.278	"	2.32	12.80	.81	15.93	22.50

09 24 Cement Plastering

09 24 23 – Cement Stucco

0010	STUCCO	R092000-50									
0015	3 coats 7/8" thick, float finish, with mesh, on wood frame		J-2	63	.762	S.Y.	7.65	36	1.86	45.51	64
0100	On masonry construction, no mesh incl.		J-1	67	.597		3.02	27.50	1.75	32.27	46.50
0300	For trowel finish, add		1 Plas	170	.047			2.29		2.29	3.41
0600	For coloring, add		J-1	685	.058		.43	2.69	.17	3.29	4.68
0700	For special texture, add		"	200	.200		1.50	9.20	.59	11.29	16.05
0900	For soffits, add		J-2	155	.310		2.29	14.60	.76	17.65	25
1000	Stucco, with bonding agent, 3 coats, on walls, no mesh incl.		J-1	200	.200		4.23	9.20	.59	14.02	19.05
1200	Ceilings		180	.222			3.83	10.25	.65	14.73	20
1300	Beams		80	.500			3.83	23	1.47	28.30	40.50
1500	Columns		100	.400			3.83	18.45	1.17	23.45	33
1600	Mesh, galvanized, nailed to wood, 1.8 lb.		1 Lath	60	.133		7.50	6.95		14.45	18.40
1800	3.6 lb.		55	.145			4.17	7.55		11.72	15.70
1900	Wired to steel, galvanized, 1.8 lb.		53	.151			7.50	7.85		15.35	19.75
2100	3.6 lb.		50	.160			4.17	8.35		12.52	16.80

09 25 Other Plastering

09 25 23 – Lime Based Plastering

			Crew	Daily Output	Labor Hours	Unit	Material	2020 Labor	Bare Costs	Total	Total Incl O&P
09 25 23.10 Venetian Plaster								Labor	Equipment	Total	
0010	VENETIAN PLASTER										
0100	Walls, 1 coat primer, roller applied	1 Plas	950	.008	S.F.		.17	.41		.58	.80
0200	Plaster, 3 coats, incl. sanding	2 Plas	700	.023			.41	1.11		1.52	2.11
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			.38	1.30		1.68	2.35

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 Corp	1900	.008	S.F.		.33	.45		.78	1.03
1100	With thin coat plaster finish		875	.018			.43	.97		1.40	1.94
1400	On beams, columns, or soffits, standard, no finish included		675	.024			.38	1.26		1.64	2.31
1450	With thin coat plaster finish		475	.034			.48	1.79		2.27	3.22
3000	1/2" thick, on walls or ceilings, standard, no finish included		1900	.008			.33	.45		.78	1.03
3100	With thin coat plaster finish		875	.018			.43	.97		1.40	1.94
3300	Fire resistant, no finish included		1900	.008			.33	.45		.78	1.03
3400	With thin coat plaster finish		875	.018			.43	.97		1.40	1.94
3450	On beams, columns, or soffits, standard, no finish included		675	.024			.38	1.26		1.64	2.31
3500	With thin coat plaster finish		475	.034			.48	1.79		2.27	3.22
3700	Fire resistant, no finish included		675	.024			.38	1.26		1.64	2.31
3800	With thin coat plaster finish		475	.034			.48	1.79		2.27	3.22
5000	5/8" thick, on walls or ceilings, fire resistant, no finish included		1900	.008			.35	.45		.80	1.06
5100	With thin coat plaster finish		875	.018			.45	.97		1.42	1.96
5500	On beams, columns, or soffits, no finish included		675	.024			.40	1.26		1.66	2.33
5600	With thin coat plaster finish		475	.034			.51	1.79		2.30	3.25
6000	For high ceilings, over 8' high, add		3060	.005				.28		.28	.42
6500	For distribution costs 3 stories and above, add per story		6100	.003				.14		.14	.21

09 26 13.80 Thin Coat Plaster

0010	THIN COAT PLASTER										
0012	1 coat veneer, not incl. lath		3600	.011	S.F.		.10	.51	.03	.64	.91
1000	In 50 lb. bags	Bag					.14			14	15.40

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 Corp	525	.030	S.F.		.92	1.62		2.54	3.44
0080	3' x 5' x 1/2" sheets		525	.030			.80	1.62		2.42	3.30
0090	3' x 6' x 1/2" sheets		525	.030			.78	1.62		2.40	3.29
0100	3' x 4' x 5/8" sheets		525	.030			.98	1.62		2.60	3.51
0110	3' x 5' x 5/8" sheets		525	.030			1	1.62		2.62	3.53
0120	3' x 6' x 5/8" sheets		525	.030			.98	1.62		2.60	3.51
0150	On wall, 3' x 4' x 1/2" sheets		350	.046			.92	2.43		3.35	4.66
0160	3' x 5' x 1/2" sheets		350	.046			.80	2.43		3.23	4.52
0170	3' x 6' x 1/2" sheets		350	.046			.78	2.43		3.21	4.51
0180	3' x 4' x 5/8" sheets		350	.046			.98	2.43		3.41	4.73

09 28 Backing Boards and Underlays

09 28 13 – Cementitious Backing Boards

09 28 13.10 Cementitious Backerboard		Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
					Material	Labor	Equipment		
0190	3' x 5' x 5/8" sheets	2 Corp	.350	.046 S.F.	1	2.43		3.43	4.75
0200	3' x 6' x 5/8" sheets		.350	.046		.98	2.43	3.41	4.73
0250	On counter, 3' x 4' x 1/2" sheets		.180	.089		.92	4.72	5.64	8.10
0260	3' x 5' x 1/2" sheets		.180	.089		.80	4.72	5.52	7.95
0270	3' x 6' x 1/2" sheets		.180	.089		.78	4.72	5.50	7.95
0300	3' x 4' x 5/8" sheets		.180	.089		.98	4.72	5.70	8.20
0310	3' x 5' x 5/8" sheets		.180	.089	1	4.72		5.72	8.20
0320	3' x 6' x 5/8" sheets		.180	.089		.98	4.72	5.70	8.20

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 Corp	1330	.012 S.F.	.38	.64		1.02	1.38
0115	1/4" thick, on walls or ceilings, flexible, no finish included		1050	.015	.54	.81		1.35	1.81
0117	1/4" thick, on columns or soffits, flexible, no finish included		1050	.015	.54	.81		1.35	1.81
0130	1/4" thick, standard, no finish included, less than 800 S.F.		510	.031	.38	1.67		2.05	2.92
0150	3/8" thick, on walls, standard, no finish included		2000	.008	.35	.43		.78	1.03
0200	On ceilings, standard, no finish included		1800	.009	.35	.47		.82	1.10
0250	On beams, columns, or soffits, no finish included		675	.024	.35	1.26		1.61	2.28
0300	1/2" thick, on walls, standard, no finish included		2000	.008	.33	.43		.76	1
0350	Taped and finished (level 4 finish)		965	.017	.38	.88		1.26	1.74
0390	With compound skim coat (level 5 finish)		775	.021	.44	1.10		1.54	2.13
0400	Fire resistant, no finish included		2000	.008	.38	.43		.81	1.06
0450	Taped and finished (level 4 finish)		965	.017	.43	.88		1.31	1.79
0490	With compound skim coat (level 5 finish)		775	.021	.49	1.10		1.59	2.19
0500	Water resistant, no finish included		2000	.008	.41	.43		.84	1.09
0550	Taped and finished (level 4 finish)		965	.017	.46	.88		1.34	1.83
0590	With compound skim coat (level 5 finish)		775	.021	.52	1.10		1.62	2.22
0600	Prefinished, vinyl, clipped to studs		900	.018	.52	.95		1.47	1.99
0700	Mold resistant, no finish included		2000	.008	.44	.43		.87	1.12
0710	Taped and finished (level 4 finish)		965	.017	.49	.88		1.37	1.86
0720	With compound skim coat (level 5 finish)		775	.021	.55	1.10		1.65	2.25
1000	On ceilings, standard, no finish included		1800	.009	.33	.47		.80	1.07
1050	Taped and finished (level 4 finish)		765	.021	.38	1.11		1.49	2.09
1090	With compound skim coat (level 5 finish)		610	.026	.44	1.39		1.83	2.57
1100	Fire resistant, no finish included		1800	.009	.38	.47		.85	1.13
1150	Taped and finished (level 4 finish)		765	.021	.43	1.11		1.54	2.14
1195	With compound skim coat (level 5 finish)		610	.026	.49	1.39		1.88	2.63
1200	Water resistant, no finish included		1800	.009	.41	.47		.88	1.16
1250	Taped and finished (level 4 finish)		765	.021	.46	1.11		1.57	2.18
1290	With compound skim coat (level 5 finish)		610	.026	.52	1.39		1.91	2.66
1310	Mold resistant, no finish included		1800	.009	.44	.47		.91	1.19
1320	Taped and finished (level 4 finish)		765	.021	.49	1.11		1.60	2.21
1330	With compound skim coat (level 5 finish)		610	.026	.55	1.39		1.94	2.69
1350	Sag resistant, no finish included		1600	.010	.33	.53		.86	1.16
1360	Taped and finished (level 4 finish)		765	.021	.38	1.11		1.49	2.09
1370	With compound skim coat (level 5 finish)		610	.026	.44	1.39		1.83	2.57
1500	On beams, columns, or soffits, standard, no finish included		675	.024	.38	1.26		1.64	2.31
1550	Taped and finished (level 4 finish)		540	.030	.38	1.57		1.95	2.79

09 29 Gypsum Board

09 29 10 - Gypsum Board Panels

09 29 10.30 Gypsum Board	Description	Crew	Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
						Material	Labor	Equipment		
1590	With compound skim coat (level 5 finish)	2 Corp	475	.034	S.F.	.44	1.79		2.23	3.17
1600	Fire resistant, no finish included		675	.024		.38	1.26		1.64	2.31
1650	Taped and finished (level 4 finish)		540	.030		.43	1.57		2.00	2.84
1690	With compound skim coat (level 5 finish)		475	.034		.49	1.79		2.28	3.23
1700	Water resistant, no finish included		675	.024		.47	1.26		1.73	2.41
1750	Taped and finished (level 4 finish)		540	.030		.46	1.57		2.03	2.88
1790	With compound skim coat (level 5 finish)		475	.034		.52	1.79		2.31	3.26
1800	Mold resistant, no finish included		675	.024		.51	1.26		1.77	2.45
1810	Taped and finished (level 4 finish)		540	.030		.49	1.57		2.06	2.91
1820	With compound skim coat (level 5 finish)		475	.034		.55	1.79		2.34	3.29
1850	Sag resistant, no finish included		675	.024		.38	1.26		1.64	2.31
1860	Taped and finished (level 4 finish)		540	.030		.38	1.57		1.95	2.79
1870	With compound skim coat (level 5 finish)		475	.034		.44	1.79		2.23	3.17
2000	5/8" thick, on walls, standard, no finish included		2000	.008		.33	.43		.76	1
2050	Taped and finished (level 4 finish)		965	.017		.38	.88		1.26	1.74
2090	With compound skim coat (level 5 finish)		775	.021		.44	1.10		1.54	2.13
2100	Fire resistant, no finish included		2000	.008		.38	.43		.81	1.06
2150	Taped and finished (level 4 finish)		965	.017		.43	.88		1.31	1.79
2195	With compound skim coat (level 5 finish)		775	.021		.49	1.10		1.59	2.19
2200	Water resistant, no finish included		2000	.008		.44	.43		.87	1.12
2250	Taped and finished (level 4 finish)		965	.017		.49	.88		1.37	1.86
2290	With compound skim coat (level 5 finish)		775	.021		.55	1.10		1.65	2.25
2300	Prefinished, vinyl, clipped to studs		900	.018		.95	.95		1.90	2.47
2510	Mold resistant, no finish included		2000	.008		.54	.43		.97	1.23
2520	Taped and finished (level 4 finish)		965	.017		.59	.88		1.47	1.97
2530	With compound skim coat (level 5 finish)		775	.021		.65	1.10		1.75	2.36
3000	On ceilings, standard, no finish included		1800	.009		.33	.47		.80	1.07
3050	Taped and finished (level 4 finish)		765	.021		.38	1.11		1.49	2.09
3090	With compound skim coat (level 5 finish)		615	.026		.44	1.38		1.82	2.56
3100	Fire resistant, no finish included		1800	.009		.38	.47		.85	1.13
3150	Taped and finished (level 4 finish)		765	.021		.43	1.11		1.54	2.14
3190	With compound skim coat (level 5 finish)		615	.026		.49	1.38		1.87	2.62
3200	Water resistant, no finish included		1800	.009		.44	.47		.91	1.19
3250	Taped and finished (level 4 finish)		765	.021		.49	1.11		1.60	2.21
3290	With compound skim coat (level 5 finish)		615	.026		.55	1.38		1.93	2.68
3300	Mold resistant, no finish included		1800	.009		.54	.47		1.01	1.30
3310	Taped and finished (level 4 finish)		765	.021		.59	1.11		1.70	2.32
3320	With compound skim coat (level 5 finish)		615	.026		.65	1.38		2.03	2.79
3500	On beams, columns, or soffits, no finish included		675	.024		.38	1.26		1.64	2.31
3550	Taped and finished (level 4 finish)		475	.034		.44	1.79		2.23	3.17
3590	With compound skim coat (level 5 finish)		380	.042		.51	2.24		2.75	3.92
3600	Fire resistant, no finish included		675	.024		.44	1.26		1.70	2.37
3650	Taped and finished (level 4 finish)		475	.034		.50	1.79		2.29	3.24
3690	With compound skim coat (level 5 finish)		380	.042		.49	2.24		2.73	3.90
3700	Water resistant, no finish included		675	.024		.51	1.26		1.77	2.45
3750	Taped and finished (level 4 finish)		475	.034		.55	1.79		2.34	3.29
3790	With compound skim coat (level 5 finish)		380	.042		.56	2.24		2.80	3.98
3800	Mold resistant, no finish included		675	.024		.62	1.26		1.88	2.57
3810	Taped and finished (level 4 finish)		475	.034		.65	1.79		2.44	3.40
3820	With compound skim coat (level 5 finish)		380	.042		.68	2.24		2.92	4.11
4000	Fireproofing, beams or columns, 2 layers, 1/2" thick, incl finish		330	.048		.86	2.58		3.44	4.82
4010	Mold resistant		330	.048		.98	2.58		3.56	4.95
4050	5/8" thick		300	.053		.86	2.83		3.69	5.20

09 29 Gypsum Board

09 29 10 – Gypsum Board Panels

09 29 10.30 Gypsum Board		Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
					Material	Labor	Equipment		
4060	Mold resistant	2 Carp	300	.053	S.F.	1.18	2.83	4.01	5.55
4100	3 layers, 1/2" thick		225	.071		1.29	3.78	5.07	7.10
4110	Mold resistant		225	.071		1.47	3.78	5.25	7.30
4150	5/8" thick		210	.076		1.29	4.05	5.34	7.50
4160	Mold resistant		210	.076		1.77	4.05	5.82	8.05
5050	For 1" thick coreboard on columns		480	.033		.89	1.77	2.66	3.64
5100	For foil-backed board, add					.21		.21	.23
5200	For work over 8' high, add	2 Carp	3060	.005			.28	.28	.42
5270	For textured spray, add	2 Lath	1600	.010		.04	.52	.56	.80
5300	For distribution cost 3 stories and above, add per story	2 Carp	6100	.003	▼		.14	.14	.21
5350	For finishing inner corners, add		950	.017	L.F.	.11	.90	1.01	1.46
5355	For finishing outer corners, add		1250	.013		.24	.68	.92	1.29
5500	For acoustical sealant, add per bead	1 Carp	500	.016		.04	.85	.89	1.33
5550	Sealant, 1 quart tube				Ea.	7.15		7.15	7.90
6000	Gypsum sound dampening panels								
6010	1/2" thick on walls, multi-layer, lightweight, no finish included	2 Carp	1500	.011	S.F.	2.25	.57	2.82	3.33
6015	Taped and finished (level 4 finish)		725	.022		2.30	1.17	3.47	4.29
6020	With compound skim coat (level 5 finish)		580	.028		2.36	1.47	3.83	4.80
6025	5/8" thick on walls, for wood studs, no finish included		1500	.011		2.46	.57	3.03	3.56
6030	Taped and finished (level 4 finish)		725	.022		2.51	1.17	3.68	4.52
6035	With compound skim coat (level 5 finish)		580	.028		2.57	1.47	4.04	5.05
6040	For metal stud, no finish included		1500	.011		2.22	.57	2.79	3.29
6045	Taped and finished (level 4 finish)		725	.022		2.27	1.17	3.44	4.26
6050	With compound skim coat (level 5 finish)		580	.028		2.33	1.47	3.80	4.76
6055	Abuse resist, no finish included		1500	.011		4.23	.57	4.80	5.50
6060	Taped and finished (level 4 finish)		725	.022		4.28	1.17	5.45	6.45
6065	With compound skim coat (level 5 finish)		580	.028		4.34	1.47	5.81	6.95
6070	Shear rated, no finish included		1500	.011		5.60	.57	6.17	7.05
6075	Taped and finished (level 4 finish)		725	.022		5.65	1.17	6.82	8
6080	With compound skim coat (level 5 finish)		580	.028		5.75	1.47	7.22	8.50
6085	For SCIF applications, no finish included		1500	.011		5.30	.57	5.87	6.70
6090	Taped and finished (level 4 finish)		725	.022		5.35	1.17	6.52	7.65
6095	With compound skim coat (level 5 finish)		580	.028		5.40	1.47	6.87	8.15
6100	1-3/8" thick on walls, THX certified, no finish included		1500	.011		9.35	.57	9.92	11.15
6105	Taped and finished (level 4 finish)		725	.022		9.40	1.17	10.57	12.10
6110	With compound skim coat (level 5 finish)		580	.028		9.50	1.47	10.97	12.65
6115	5/8" thick on walls, score & snap installation, no finish included		2000	.008		1.99	.43	2.42	2.83
6120	Taped and finished (level 4 finish)		965	.017		2.04	.88	2.92	3.57
6125	With compound skim coat (level 5 finish)		775	.021		2.10	1.10	3.20	3.96
7020	5/8" thick on ceilings, for wood joists, no finish included		1200	.013		2.46	.71	3.17	3.77
7025	Taped and finished (level 4 finish)		510	.031		2.51	1.67	4.18	5.25
7030	With compound skim coat (level 5 finish)		410	.039		2.57	2.07	4.64	5.95
7035	For metal joists, no finish included		1200	.013		2.22	.71	2.93	3.50
7040	Taped and finished (level 4 finish)		510	.031		2.27	1.67	3.94	5
7045	With compound skim coat (level 5 finish)		410	.039		2.33	2.07	4.40	5.70
7050	Abuse resist, no finish included		1200	.013		4.23	.71	4.94	5.70
7055	Taped and finished (level 4 finish)		510	.031		4.28	1.67	5.95	7.20
7060	With compound skim coat (level 5 finish)		410	.039		4.34	2.07	6.41	7.90
7065	Shear rated, no finish included		1200	.013		5.60	.71	6.31	7.25
7070	Taped and finished (level 4 finish)		510	.031		5.65	1.67	7.32	8.75
7075	With compound skim coat (level 5 finish)		410	.039		5.75	2.07	7.82	9.40
7080	For SCIF applications, no finish included		1200	.013		5.30	.71	6.01	6.90
7085	Taped and finished (level 4 finish)		510	.031		5.35	1.67	7.02	8.40

09 29 Gypsum Board

09 29 10 - Gypsum Board Panels

09 29 10.30 Gypsum Board		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
		Crew			Labor				
7090	With compound skim coat (level 5 finish)	2 Carp	410	.039	S.F.	5.40	2.07	7.47	9.05
8010	5/8" thick on ceilings, score & snap installation, no finish included		1600	.010		1.99	.53	2.52	2.99
8015	Taped and finished (level 4 finish)		680	.024		2.04	1.25	3.29	4.13
8020	With compound skim coat (level 5 finish)	↓	545	.029		2.10	1.56	3.66	4.65

09 29 10.50 High Abuse Gypsum Board

0010	HIGH ABUSE GYPSUM BOARD, fiber reinforced, nailed or screwed to studs unless otherwise noted								
0110	1/2" thick, on walls, no finish included	2 Carp	1800	.009	S.F.	.82	.47	1.29	1.61
0120	Taped and finished (level 4 finish)		870	.018		.87	.98	1.85	2.43
0130	With compound skim coat (level 5 finish)		700	.023		.93	1.22	2.15	2.85
0150	On ceilings, no finish included		1620	.010		.82	.53	1.35	1.69
0160	Taped and finished (level 4 finish)		690	.023		.87	1.23	2.10	2.81
0170	With compound skim coat (level 5 finish)		550	.029		.93	1.55	2.48	3.34
0210	5/8" thick, on walls, no finish included		1800	.009		.87	.47	1.34	1.67
0220	Taped and finished (level 4 finish)		870	.018		.92	.98	1.90	2.48
0230	With compound skim coat (level 5 finish)		700	.023		.98	1.22	2.20	2.91
0250	On ceilings, no finish included		1620	.010		.87	.53	1.40	1.75
0260	Taped and finished (level 4 finish)		690	.023		.92	1.23	2.15	2.86
0270	With compound skim coat (level 5 finish)		550	.029		.98	1.55	2.53	3.40
0272	5/8" thick, on roof sheathing for 1-hour rating		1620	.010		.87	.53	1.40	1.75
0310	5/8" thick, on walls, very high impact, no finish included		1800	.009		.95	.47	1.42	1.76
0320	Taped and finished (level 4 finish)		870	.018		1.07	.98	1.98	2.57
0330	With compound skim coat (level 5 finish)		700	.023		1.06	1.22	2.28	3
0350	On ceilings, no finish included		1620	.010		.95	.53	1.48	1.84
0360	Taped and finished (level 4 finish)		690	.023		1.06	1.23	2.23	2.95
0370	With compound skim coat (level 5 finish)	↓	550	.029		1.06	1.55	2.61	3.49
0400	High abuse, gypsum core, paper face								
0410	1/2" thick, on walls, no finish included	2 Carp	1800	.009	S.F.	.74	.47	1.21	1.52
0420	Taped and finished (level 4 finish)		870	.018		.79	.98	1.77	2.34
0430	With compound skim coat (level 5 finish)		700	.023		.85	1.22	2.07	2.76
0450	On ceilings, no finish included		1620	.010		.74	.53	1.27	1.60
0460	Taped and finished (level 4 finish)		690	.023		.79	1.23	2.02	2.72
0470	With compound skim coat (level 5 finish)		550	.029		.85	1.55	2.40	3.25
0510	5/8" thick, on walls, no finish included		1800	.009		.82	.47	1.29	1.61
0520	Taped and finished (level 4 finish)		870	.018		.87	.98	1.85	2.43
0530	With compound skim coat (level 5 finish)		700	.023		.93	1.22	2.15	2.85
0550	On ceilings, no finish included		1620	.010		.82	.53	1.35	1.69
0560	Taped and finished (level 4 finish)		690	.023		.87	1.23	2.10	2.81
0570	With compound skim coat (level 5 finish)		550	.029		.93	1.55	2.48	3.34
1000	For high ceilings, over 8' high, add					2750	.006	.31	.46
1010	For distribution cost 3 stories and above, add per story					5500	.003	.15	.23

09 29 15 - Gypsum Board Accessories

09 29 15.10 Accessories, Gypsum Board									
0010 ACCESSORIES, GYPSUM BOARD									
0020	Casing bead, galvanized steel	1 Carp	2.90	2.759	C.L.F.	24.50	147		171.50
0100	Vinyl		3	2.667		23.50	142		165.50
0300	Corner bead, galvanized steel, 1" x 1"		4	2		15.90	106		121.90
0400	1-1/4" x 1-1/4"			3.50	2.286		17.35	121	138.35
0600	Vinyl		4	2		19.95	106		125.95
0900	Furring channel, galv. steel, 7/8" deep, standard			2.60	3.077		35	164	199
1000	Resilient			2.55	3.137		27	167	194
1100	J trim, galvanized steel, 1/2" wide			3	2.667		23	142	165

09 29 Gypsum Board

09 29 15 – Gypsum Board Accessories

09 29 15.10 Accessories, Gypsum Board			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
			Crew				Labor	Equipment	Total	
1120	5/8" wide		1 Carp	2.95	2.712 C.L.F.	31	144		175	251
1140	L trim, galvanized			3	2.667	22	142		164	238
1150	U trim, galvanized			2.95	2.712	24	144		168	244
1160	Screws #6 x 1" A				M	12.35			12.35	13.60
1170	#6 x 1-5/8" A				"	14.60			14.60	16.05
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.	43.50	164		207.50	294
1600	2" wide			"	2.55 3.137 "	68.50	167		235.50	325

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 Clbf	.240	.033 L.F.		1.40		1.40	2.11
1100	RegROUT tile 4-1/2" x 4-1/2" or larger, wall		1 Tilf	.100	.080 S.F.	.15	3.96		4.11	5.95
1150	Floor			.125	.064	.16	3.17		3.33	4.83
1200	Seal tile and grout			↓ 360	.022	↓	1.10		1.10	1.61

09 30 13.45 Ceramic Tile Accessories

0010 CERAMIC TILE ACCESSORIES										
0100	Spacers, 1/8"						2.27		2.27	2.50
1310	Sealer for natural stone tile, installed		1 Tilf	650	.012 S.F.	.05	.61		.66	.95

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.	28	1.66		29.66	33.50
0400	Aluminized steel		"	512	.031 "	20.50	1.66		22.16	25

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.	1.14	2.57		3.71	5

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.	3.30	7.90		11.20	15.25
0022	Custom grade tiles			50	.160		6.60	7.90		14.50
0024	Luxury grade tiles			50	.160		13.20	7.90		21.10
0026	Economy grade tiles		↓	50	.160	↓	3.02	7.90		10.92
0100	Base, using 1" x 4" high piece with 1" x 1" tiles		D-7	128	.125 L.F.	5	5.50		10.50	13.60
0300	For 6" high base, 1" x 1" tile face, add					1.29			1.29	1.42
0400	For 2" x 2" tile face, add to above					.70			.70	.77
0700	Cove base, 4-1/4" x 4-1/4"		D-7	128	.125		4.11	5.50		9.61
1000	6" x 4-1/4" high			137	.117	5	5.15		10.15	13.05
1300	Sanitary cove base, 6" x 4-1/4" high			124	.129		4.84	5.70		10.54
1600	6" x 6" high			117	.137	5	6.05		11.05	14.35
1800	Bathroom accessories, average (soap dish, toothbrush holder)			82	.195 Ea.	10.20	8.60		18.80	24
1900	Bathtub, 5', rec. 4-1/4" x 4-1/4" tile wainscot, adhesive set 6' high			2.90	5.517	204	244		448	580

09 31 Thin-Set Tiling

09 31 13 – Thin-Set Ceramic Tiling

09 31 13.10 Thin-Set Ceramic Tile		Crew	Daily	Labor-	Material	2020 Bare Costs			Total	Total Incl O&P
			Output	Hours		Labor	Equipment	Total		
2100	7' high wainscot	D-7	2.50	6.400	Ea.	238	283	521	675	
2200	8' high wainscot		2.20	7.273		272	320	592	770	
2500	Bullnose trim, 4-1/4" x 4-1/4"		128	.125	L.F.	4.35	5.50	9.85	12.90	
2800	2" x 6"		124	.129	"	4.75	5.70	10.45	13.60	
3300	Ceramic tile, porcelain type, 1 color, color group 2, 1" x 1"		183	.087	S.F.	6.25	3.86	10.11	12.50	
3310	2" x 2" or 2" x 1"		190	.084		6.35	3.72	10.07	12.45	
3350	For random blend, 2 colors, add					1.02		1.02	1.12	
3360	4 colors, add					1.43		1.43	1.57	
3370	For color group 3, add					.65		.65	.72	
3380	For abrasive non-slip tile, add					.45		.45	.50	
4300	Specialty tile, 4-1/4" x 4-1/4" x 1/2", decorator finish	D-7	183	.087		12.85	3.86	16.71	19.75	
4500	Add for epoxy grout, 1/16" joint, 1" x 1" tile		800	.020		.67	.88	1.55	2.04	
4600	2" x 2" tile		820	.020		.63	.86	1.49	1.95	
4610	Add for epoxy grout, 1/8" joint, 8" x 8" x 3/8" tile, add		900	.018		1.43	.79	2.22	2.72	
4800	Pregrooved sheets, walls, 4-1/4" x 4-1/4", 6" x 4-1/4"	D-7	240	.067	S.F.	5.70	2.94	8.64	10.60	
4810	and 8-1/2" x 4-1/4", 4 S.F. sheets, silicone grout									
5100	Floors, unglazed, 2 S.F. sheets,	D-7	180	.089	S.F.	2.17	3.92	6.09	8.15	
5110	urethane adhesive									
5400	Walls, interior, 4-1/4" x 4-1/4" tile		190	.084		3.10	3.72	6.82	8.85	
5500	6" x 4-1/4" tile		190	.084		3.25	3.72	6.97	9	
5700	8-1/2" x 4-1/4" tile		190	.084		5.95	3.72	9.67	12	
5800	6" x 6" tile		175	.091		4.08	4.04	8.12	10.40	
5810	8" x 8" tile		170	.094		5.20	4.16	9.36	11.85	
5820	12" x 12" tile		160	.100		5	4.42	9.42	12	
5830	16" x 16" tile		150	.107		5.45	4.71	10.16	12.90	
6000	Decorated wall tile, 4-1/4" x 4-1/4", color group 1		270	.059		3.52	2.62	6.14	7.70	
6100	Color group 4		180	.089		54.50	3.92	58.42	66	
9300	Ceramic tiles, recycled glass, standard colors, 2" x 2" thru 6" x 6"	G	190	.084		28	3.72	26.72	30.50	
9310	6" x 6"	G	175	.091		28	4.04	27.04	31	
9320	8" x 8"	G	170	.094		23.50	4.16	27.66	32	
9330	12" x 12"	G	160	.100		23.50	4.42	27.92	32.50	
9340	Earthtones, 2" x 2" to 4" x 8"	G	190	.084		27	3.72	30.72	35	
9350	6" x 6"	G	175	.091		27	4.04	31.04	35.50	
9360	8" x 8"	G	170	.094		27	4.16	31.16	36	
9370	12" x 12"	G	160	.100		27	4.42	31.42	36.50	
9380	Deep colors, 2" x 2" to 4" x 8"	G	190	.084		30.50	3.72	34.22	39.50	
9390	6" x 6"	G	175	.091		30.50	4.04	34.54	39.50	
9400	8" x 8"	G	170	.094		32	4.16	36.16	41.50	
9410	12" x 12"	G	160	.100		32	4.42	36.42	42	

09 31 33 – Thin-Set Stone Tiling

09 31 33.10 Tiling, Thin-Set Stone

0010	TILING, THIN-SET STONE		D-7	183	.087	S.F.	4.55	3.86	8.41	10.65
3000	Floors, natural clay, random or uniform, color group 1									
3100	Color group 2			183	.087		5.95	3.86	9.81	12.15
3255	Floors, glazed, 6" x 6", color group 1			300	.053		5.60	2.35	7.95	9.60
3260	8" x 8" tile			300	.053		5.55	2.35	7.90	9.55
3270	12" x 12" tile			290	.055		6.30	2.44	8.74	10.50
3280	16" x 16" tile			280	.057		7.75	2.52	10.27	12.25
3281	18" x 18" tile			270	.059		7.40	2.62	10.02	11.95
3282	20" x 20" tile			260	.062		8.67	2.72	11.39	13.50
3283	24" x 24" tile			250	.064		9.65	2.83	12.48	14.75
3285	Border, 6" x 12" tile			200	.080		12.20	3.53	15.73	18.65

09 31 Thin-Set Tiling

09 31 33 – Thin-Set Stone Tiling

09 31 33.10 Tiling, Thin-Set Stone	3290 3" x 12" tile	Daily	Labor-	2020 Bare Costs	Labor	Equipment	Total	Total
		Crew Output	Hours Unit					Incl O&P
		D-7	200 .080 S.E.	12.70	3.53		16.23	19.15

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.	5.35	8.60		13.95	18.55
0600 Cove base, 4-1/4" x 4-1/4" high			91 .176	4.22	7.75		11.97	16.05
0900 6" x 4-1/4" high			100 .160	5.10	7.05		12.15	16
1200 Sanitary cove base, 6" x 4-1/4" high			93 .172	4.95	7.60		12.55	16.60
1500 6" x 6" high			84 .190	5.10	8.40		13.50	18
2400 Bullnose trim, 4-1/4" x 4-1/4"			82 .195	4.43	8.60		13.03	17.50
2700 2" x 6" bullnose trim			84 .190	4.82	8.40		13.22	17.65
6210 Wall tile, 4-1/4" x 4-1/4", better grade	1 Tilf	50 .160 S.E.	9.55	7.90			17.45	22
6240 2" x 2"			50 .160	7.75	7.90		15.65	20
6250 6" x 6"			55 .145	9.75	7.20		16.95	21.50
6260 8" x 8"			60 .133	9.75	6.60		16.35	20.50
6300 Exterior walls, frostproof, 4-1/4" x 4-1/4"	D-7	102 .157		7.25	6.95		14.20	18.15
6400 1-3/8" x 1-3/8"			93 .172	6.60	7.60		14.20	18.40
6600 Crystalline glazed, 4-1/4" x 4-1/4", plain			100 .160	4.77	7.05		11.82	15.60
6700 4-1/4" x 4-1/4", scored tile			100 .160	6.60	7.05		13.65	17.60
6900 6" x 6" plain			93 .172	5.70	7.60		13.30	17.40
7000 For epoxy grout, 1/16" joints, 4-1/4" tile, add			800 .020	.42	.88		1.30	1.76
7200 For tile set in dry mortar, add			1735 .009		.41		.41	.60
7300 For tile set in Portland cement mortar, add			290 .055	.17	2.44		2.61	3.76

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.	6.35	6.40			12.75	16.35
0300 Bullnose trim, red, 6"x 6" x 1/2" thick		120 .133		5.10	5.90		11	14.25
0400 4" x 4" x 1/2" thick		110 .145		5.15	6.40		11.55	15.05
0600 4" x 8" x 1/2" thick, using 8" as edge		130 .123		5.40	5.45		10.85	13.90
0700 Floors, 1,000 S.F. lots, red, 4" x 4" x 1/2" thick		120 .133 S.F.	8.55	5.90			14.45	18.05
0900 6" x 6" x 1/2" thick		140 .114		8.70	5.05		13.75	17
1000 4" x 8" x 1/2" thick		130 .123		6.65	5.45		12.10	15.25
1300 For waxed coating, add				.77			.77	.85
1500 For non-standard colors, add				.49			.49	.54
1600 For abrasive surface, add				.53			.53	.58
1800 Brown tile, imported, 6" x 6" x 3/4"	D-7	120 .133		7.20	5.90		13.10	16.55
1900 8" x 8" x 1"		110 .145		9.60	6.40		16	20
2100 For thin set mortar application, deduct		700 .023			1.01		1.01	1.48
2200 For epoxy grout & mortar, 6" x 6" x 1/2", add		350 .046		2.36	2.02		4.38	5.55
2700 Stair tread, 6" x 6" x 3/4", plain		50 .320		7.80	14.15		21.95	29
2800 Abrasive		47 .340		9.10	15.05		24.15	32
3000 Wainscot, 6" x 6" x 1/2", thin set, red		105 .152		6.55	6.75		13.30	17.05
3100 Non-standard colors		105 .152		6.55	6.75		13.30	17.05
3300 Window sill, 6" wide, 3/4" thick		90 .178 L.F.	8.85	7.85			16.70	21.50
3400 Corners		80 .200 Eo.	6.10	8.85			14.95	19.70

09 32 Mortar-Bed Tiling

09 32 23 – Mortar-Bed Glass Mosaic Tiling

09 32 23.10 Glass Mosaics

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	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.	21	9.70	30.70
0350	Color group 3		73	.219		22	9.70	31.70
0400	Color group 4		73	.219		29.50	9.70	39.20
0450	Color group 5		73	.219		31	9.70	40.70
0500	Color group 6		73	.219		39.50	9.70	49.20
0600	Color group 7		73	.219		41.50	9.70	51.20
0700	Color group 8, golds, silvers & specialties		64	.250		42	11.05	53.05
1020	1" tile on 12" sheets, opalescent finish		73	.219		18.40	9.70	28.10
1040	1" x 2" tile on 12" sheet, blend		73	.219		21	9.70	30.70
1060	2" tile on 12" sheet, blend		73	.219		17.15	9.70	26.85
1080	5/8" x random tile, linear, on 12" sheet, blend		73	.219		25	9.70	34.70
1600	Dots on 12" sheet		73	.219		25	9.70	34.70
1700	For glass mosaic tiles set in dry mortar, add		290	.055		.45	2.44	2.89
1720	For glass mosaic tiles set in Portland cement mortar, add		290	.055		.01	2.44	2.45
1730	For polyblend sanded tile grout	↓	96.15	.166	lb.	2.19	7.35	9.54
								13.15

09 34 Waterproofing-Membrane Tiling

09 34 13 – Waterproofing-Membrane Ceramic Tiling

09 34 13.10 Ceramic Tile Waterproofing Membrane

	CERAMIC TILE WATERPROOFING MEMBRANE	D-7	250	.064	S.F.	2.13	2.83	4.96	6.50
0020	On floors, including thinset	"	250	.064	"	2.61	2.83	5.44	7
0030	Fleece laminated polyethylene grid, 1/8" thick	D-7	250	.064	"	2.61	2.83	5.44	7
0040	5/16" thick								
0050	On walls, including thinset								
0060	Fleece laminated polyethylene sheet, 8 mil thick	D-7	480	.033	S.F.	2.30	1.47	3.77	4.69
0070	Accessories, including thinset								
0080	Joint and corner sheet, 4 mils thick, 5" wide	1 Tilf	240	.033	L.F.	1.35	1.65	3	3.90
0090	7-1/4" wide		180	.044		1.72	2.20	3.92	5.10
0100	10" wide		120	.067	↓	2.09	3.30	5.39	7.15
0110	Pre-formed corners, inside		32	.250	Ed.	7.85	12.40	20.25	27
0120	Outside		32	.250		7.70	12.40	20.10	26.50
0130	2" flanged floor drain with 6" stainless steel grate		16	.500	↓	390	25	415	465
0140	EPS, sloped shower floor		480	.017	S.F.	5.55	.83	6.38	7.30
0150	Curb	↓	32	.250	L.F.	14.10	12.40	26.50	33.50

09 35 Chemical-Resistant Tiling

09 35 13 – Chemical-Resistant Ceramic Tiling

09 35 13.10 Chemical-Resistant Ceramic Tiling

	CHEMICAL-RESISTANT CERAMIC TILING	D-7	130	.123	S.F.	12.25	5.45	17.70	21.50
0100	4-1/4" x 4-1/4" x 1/4", 1/8" joint		120	.133		9.95	5.90	15.85	19.60
0200	6" x 6" x 1/2" thick		110	.145		11.35	6.40	17.75	22
0300	8" x 8" x 1/2" thick		130	.123		13.05	5.45	18.50	22.50
0400	4-1/4" x 4-1/4" x 1/4", 1/4" joint		120	.133		11.15	5.90	17.05	21
0500	6" x 6" x 1/2" thick		110	.145		12	6.40	18.40	22.50
0600	8" x 8" x 1/2" thick		130	.123		13.80	5.45	19.25	23
0700	4-1/4" x 4-1/4" x 1/4", 3/8" joint		120	.133		12.15	5.90	18.05	22
0800	6" x 6" x 1/2" thick		110	.145	↓	13.25	6.40	19.65	24
0900	8" x 8" x 1/2" thick	↓							

09 35 Chemical-Resistant Tiling

09 35 16 – Chemical-Resistant Quarry Tiling

09 35 16.10 Chemical-Resistant Quarry Tiling		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Labor	Bare 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.	11.45	5.45		16.90	20.50
0200	6" x 6" x 1/2" thick		120	.133		11.50	5.90		17.40	21.50
0300	8" x 8" x 1/2" thick		110	.145		10.55	6.40		16.95	21
0400	4" x 8" x 1/2" thick, 1/4" joint		130	.123		12.75	5.45		18.20	22
0500	6" x 6" x 1/2" thick		120	.133		12.65	5.90		18.55	22.50
0600	8" x 8" x 1/2" thick		110	.145		11.25	6.40		17.65	22
0700	4" x 8" x 1/2" thick, 3/8" joint		130	.123		13.90	5.45		19.35	23.50
0800	6" x 6" x 1/2" thick		120	.133		13.65	5.90		19.55	23.50
0900	8" x 8" x 1/2" thick		110	.145		12.50	6.40		18.90	23

09 51 Acoustical Ceilings

09 51 13 – Acoustical Panel Ceilings

09 51 13.10 Ceiling, Acoustical Panel

0010 CEILING, ACOUSTICAL PANEL										
0100	Fiberglass boards, film faced, 2' x 2' or 2' x 4', 5/8" thick	1 Corp	625	.013	S.F.	1.34	.68		2.02	2.49
0120	3/4" thick		600	.013		3.09	.71		3.80	4.46
0130	3" thick, thermal, R11		450	.018		3.87	.95		4.82	5.70

09 51 14 – Acoustical Fabric-Faced Panel Ceilings

09 51 14.10 Ceiling, Acoustical Fabric-Faced Panel

0010 CEILING, ACOUSTICAL FABRIC-FACED PANEL										
0100	Glass cloth faced fiberglass, 3/4" thick	1 Corp	500	.016	S.F.	3.57	.85		4.42	5.20
0120	1" thick		485	.016		3.48	.88		4.36	5.15
0130	1-1/2" thick, nubby face		475	.017		2.80	.90		3.70	4.42

09 51 23 – Acoustical Tile Ceilings

09 51 23.10 Suspended Acoustic Ceiling Tiles

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 Corp	625	.013	S.F.	.85	.68		1.53	1.96
1115	Rough textured		625	.013		.64	.68		1.32	1.72
1125	3/4" thick, fine textured		600	.013		2.16	.71		2.87	3.44
1130	Rough textured		600	.013		1.99	.71		2.70	3.25
1135	Fissured		600	.013		2.16	.71		2.87	3.44
1150	Regular, 5/8" thick, fine textured		470	.017		1.28	.90		2.18	2.77
1155	Rough textured		470	.017		1.40	.90		2.30	2.90
1165	3/4" thick, fine textured		450	.018		2.38	.95		3.33	4.04
1170	Rough textured		450	.018		1.51	.95		2.46	3.08
1175	Fissured		450	.018		2.83	.95		3.78	4.53
1185	For plastic film face, add					.86			.86	.95
1190	For fire rating, add					.54			.54	.59
3720	Mineral fiber, 24" x 24" or 48", reveal edge, painted, 5/8" thick	1 Corp	600	.013		1.36	.71		2.07	2.56
3740	3/4" thick		575	.014		1.72	.74		2.46	3
5020	66-78% recycled content, 3/4" thick	[G]	600	.013		2.08	.71		2.79	3.35
5040	Mylar, 42% recycled content, 3/4" thick	[G]	600	.013		4.66	.71		5.37	6.20
6000	Remove & install new ceiling tiles, min fiber, 2' x 2" or 2' x 4', 5/8" thk.		335	.024		.85	1.27		2.12	2.85

09 51 Acoustical Ceilings

09 51 23 – Acoustical Tile Ceilings

09 51 23.30 Suspended Ceilings, Complete		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
0010	SUSPENDED CEILINGS, COMPLETE, incl. standard suspension system but not incl. 1-1/2" carrier channels									
0100	Fiberglass ceiling board, 2' x 4' x 5/8", plain faced	1 Carp	500	.016	S.F.	2.27	.85		3.12	3.78
0700	Offices, 2' x 4' x 3/4"		380	.021		4.02	1.12		5.14	6.10
0800	Mineral fiber, on 15/16" T bar susp. 2' x 2' x 3/4" lay-in board		345	.023		3.32	1.23		4.55	5.50
0810	2' x 4' x 5/8" tile		380	.021		2.44	1.12		3.56	4.36
0820	Tegular, 2' x 2' x 5/8" tile on 9/16" grid		250	.032		2.92	1.70		4.62	5.80
0830	2' x 4' x 3/4" tile		275	.029		3	1.55		4.55	5.60
0900	Luminous panels, prismatic, acrylic		255	.031		4.08	1.67		5.75	7
1200	Metal pan with acoustic pad, steel		75	.107		5.15	5.65		10.80	14.15
1300	Painted aluminum		75	.107		3.83	5.65		9.48	12.70
1500	Aluminum, degreased finish		75	.107		5.10	5.65		10.75	14.10
1600	Stainless steel		75	.107		9.65	5.65		15.30	19.15
1800	Tile, Z bar suspension, 5/8" mineral fiber tile		150	.053		2.15	2.83		4.98	6.65
1900	3/4" mineral fiber tile		150	.053		2.44	2.83		5.27	6.95
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.	11.10	.85		11.95	13.50
0110	Tegular edge		500	.016		14.20	.85		15.05	16.90
0120	2' x 4', sq. edge		500	.016		13.95	.85		14.80	16.65
0130	Tegular edge		500	.016		14.05	.85		14.90	16.75
0140	Perforated alum. clip-in, 2' x 2'		500	.016		14.20	.85		15.05	16.90
0150	2' x 4'		500	.016		11.60	.85		12.45	14.05

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.	2.23	1.42		3.65	4.58
0700	3/4" thick		300	.027		3.15	1.42		4.57	5.60
0900	Fire rated, 3/4" thick, plain faced		300	.027		1.47	1.42		2.89	3.75
1000	Plastic coated face		300	.027		2.26	1.42		3.68	4.62
1200	Aluminum faced, 5/8" thick, plain		300	.027		1.92	1.42		3.34	4.24
3700	Wall application of above, add		1000	.008			.43		.43	.64
3900	For ceiling primer, add					.12			.12	.13
4000	For ceiling cement, add					.42			.42	.46

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.	.93	.53		1.46	1.83
0300	2' x 2' grid		650	.012		1.16	.65		1.81	2.26
0310	25% recycled steel, 2' x 4' grid	G	800	.010		.91	.53		1.44	1.80
0320	2' x 2' grid	G	650	.012		1.13	.65		1.78	2.22
0350	For 9/16" grid, add					.16			.16	.18
0360	For fire rated grid, add					.09			.09	.10

09 53 Acoustical Ceiling Suspension Assemblies

09 53 23 – Metal Acoustical Ceiling Suspension Assemblies

			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
09 53 23.30 Ceiling Suspension Systems							Labor	Equipment		
0370	For colored grid, add				S.F.	.22			.22	.24
0400	Concealed Z bar suspension system, 12" module	1 Corp	520	.015		.86	.82		1.68	2.18
0600	1-1/2" carrier channels, 4' OC, add	"	470	.017		.12	.90		1.02	1.49
0700	Carrier channels for ceilings with									
0900	recessed lighting fixtures, add	1 Corp	460	.017	S.F.	.22	.92		1.14	1.63
1040	Hanging wire, 12 ga., 4' long		65	.123	C.S.F.	3.10	6.55		9.65	13.25
1080	8' long	↓	65	.123	"	6.20	6.55		12.75	16.65
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 Corp	180	.044	Ea.	.98	2.36		3.34	4.63
3100	For ceilings greater than 2500 S.F., add	1 Corp	120	.067	Ea.	2	3.54		5.54	7.50
3120	Seismic clips, joints at cross tees	1 Corp	120	.067	Ea.	2	3.54		5.54	7.50
3140	At cross tees and mains, mains field cut	"	60	.133	"	2	7.10		9.10	12.85
3200	Compression posts, telescopic, attached to structure above									
3210	To 30" high	1 Corp	26	.308	Ea.	40	16.35		56.35	68.50
3220	30" to 48" high	"	25.50	.314		42	16.65		58.65	71
3230	48" to 84" high	"	25	.320		50.50	17		67.50	81
3240	84" to 102" high		24.50	.327		57.50	17.35		74.85	89
3250	102" to 120" high		24	.333		83	17.70		100.70	118
3260	120" to 144" high		24	.333		92	17.70		109.70	128
3300	Stabilizer bars									
3310	12" long	1 Corp	240	.033	Ea.	1.11	1.77		2.88	3.88
3320	24" long	"	235	.034		1.04	1.81		2.85	3.86
3330	36" long	"	230	.035		1.02	1.85		2.87	3.90
3340	48" long	↓	220	.036		.82	1.93		2.75	3.81
3400	Wire support for light fixtures, per L.F. height to structure above									
3410	Less than 10 lb.	1 Corp	400	.020	L.F.	.30	1.06		1.36	1.93
3420	10 lb. to 56 lb.	"	240	.033	"	.59	1.77		2.36	3.31

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 Corp	500	.016	S.F.	23.50	.85		24.35	27
0030	2' x 6'	"	500	.016	"	18.05	.85		18.90	21

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 Corp	500	.016	S.F.	2.38	.85		3.23	3.90
0020	Closed reveal	"	500	.016		3.05	.85		3.90	4.64
0030	7-1/4" x 12", open reveal	"	500	.016		4.07	.85		4.92	5.75
0040	Closed reveal	"	500	.016		5.20	.85		6.05	7
0050	Metal, open cell, 2' x 2', 6" cell	"	500	.016		8.80	.85		9.65	10.95
0060	8" cell	"	500	.016		9.70	.85		10.55	12
0070	2' x 4', 6" cell	"	500	.016		5.80	.85		6.65	7.65
0080	8" cell	"	500	.016		5.80	.85		6.65	7.65

09 54 Specialty Ceilings

09 54 26 – Suspended Wood Ceilings

09 54 26.10 Wood Ceilings		Daily Output	Labor Hours	Unit	Material	2020 Labor	Bare Equipment	Total Costs	Total Incl O&P
0010	WOOD CEILINGS								
1000	4"-6" wood slats on heavy duty 15/16" T-bar grid	2 Corp	.250	.064	S.F.	26	3.40	29.40	33.50

09 54 33 – Decorative Panel Ceilings

09 54 33.20 Metal Panel Ceilings

09 54 33.20 Metal Panel Ceilings		Daily Output	Labor Hours	Unit	Material	2020 Labor	Bare Equipment	Total Costs	Total Incl O&P
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 Corp	.300	.053	S.F.	2.22	2.83	5.05	6.70
0120	Painted white finish					3.53	2.83	6.36	8.15
0140	Copper, chrome or brass finish					6.30	2.83	9.13	11.20
0200	Cornice molding, 2-1/2" to 3-1/2" wide, 4' long, bare steel finish					2.17	4.25	6.42	8.80
0220	Painted white finish					2.87	4.25	7.12	9.55
0240	Copper, chrome or brass finish					3.96	4.25	8.21	10.75
0320	5" to 6-1/2" wide, 4' long, bare steel finish					3.37	5.65	9.02	12.20
0340	Painted white finish					3.89	5.65	9.54	12.80
0360	Copper, chrome or brass finish					5.70	5.65	11.35	14.75
0420	Flat molding, 3-1/2" to 5" wide, 4' long, bare steel finish					3.89	3.40	7.29	9.35
0440	Painted white finish					3.94	3.40	7.34	9.45
0460	Copper, chrome or brass finish					7.15	3.40	10.55	12.95

09 57 Special Function Ceilings

09 57 53 – Security Ceiling Assemblies

09 57 53.10 Ceiling Assem., Security, Radio Freq. Shielding

09 57 53.10 Ceiling Assem., Security, Radio Freq. Shielding		Daily Output	Labor Hours	Unit	Material	2020 Labor	Bare Equipment	Total Costs	Total Incl O&P
0010	CEILING ASSEMBLY, SECURITY, RADIO FREQUENCY SHIELDING								
0020	Prefabricated, galvanized steel	2 Corp	.375	.043	SF Surf	5.65	2.27	7.92	9.65
0050	5 oz., copper ceiling panel					4.72	5.50	10.22	13.45
0110	12 oz., copper ceiling panel					9.65	6.05	15.70	19.75
0250	Ceiling hangers	E-1	.45	.533	Ea.	40	30	3.27	73.27
0300	Shielding transition, 11 ga. preformed angles	"	1365	.018	L.F.	40	1	.11	41.11

09 61 Flooring Treatment

09 61 19 – Concrete Floor Staining

09 61 19.40 Floors, Interior

09 61 19.40 Floors, Interior		Daily Output	Labor Hours	Unit	Material	2020 Labor	Bare Equipment	Total Costs	Total Incl O&P
0010	FLOORS, INTERIOR								
0300	Acid stain and sealer								
0310	Stain, one coat	1 Pord	.650	.012	S.F.	.15	.55	.70	.97
0320	Two coats					.29	.62	.91	1.25
0330	Acrylic sealer, one coat					.25	.14	.39	.48
0340	Two coats					.51	.25	.76	.94

09 62 Specialty Flooring

09 62 19 – Laminate Flooring

09 62 19.10 Floating Floor		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
0010	FLOATING FLOOR										
8300	Floating floor, laminate, wood pattern strip, complete	1 Club	133	.060	S.F.	4.95	2.53			7.48	9.25
8310	Components, T&G wood composite strips					4.36	"			4.36	4.79
8320	Film					.21				.21	.23
8330	Foam					.30				.30	.33
8340	Adhesive					.47				.47	.52
8350	Installation kit					.24				.24	.26
8360	Trim, 2" wide x 3' long				L.F.	5.20				5.20	5.70
8370	Reducer moulding				"	6.15				6.15	6.80

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.	5.25	1.26		6.51	7.60
2250	3/16" thick	G		315	.025		6.20	1.26		7.46	8.65
2300	5/16" thick	G		315	.025		6.65	1.26		7.91	9.20
2350	1/2" thick	G		315	.025		6.95	1.26		8.21	9.50
2500	Urethane finish, 1/8" thick	G		315	.025		5.10	1.26		6.36	7.45
2550	3/16" thick	G		315	.025		8.20	1.26		9.46	10.85
2600	5/16" thick	G		315	.025		7.50	1.26		8.76	10.10
2650	1/2" thick	G		315	.025		7.80	1.26		9.06	10.40

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	725	1,650			2,375	3,200
0050	2-1/4" thick	D-1	.40	40		1,075	1,875			2,950	4,050
0200	Acid-proof clay brick, 8" x 3-3/4" x 2-1/4" thick	G	.40	40		1,025	1,875			2,900	3,975
0250	9" x 4-1/2" x 3"	G	95	.168	S.F.	4.42	7.90			12.32	16.80
0260	Cast ceramic, pressed, 4" x 8" x 1/2", unglazed	D-7	100	.160		7.55	7.05			14.60	18.70
0270	Glazed		100	.160		10.10	7.05			17.15	21.50
0280	Hand molded flooring, 4" x 8" x 3/4", unglazed		95	.168		10	7.45			17.45	22
0290	Glazed		95	.168		11.40	7.45			18.85	23.50
0300	8" hexagonal, 3/4" thick, unglazed		85	.188		9.95	8.30			18.25	23
0310	Glazed		85	.188		18	8.30			26.30	32
0400	Heavy duty industrial, cement mortar bed, 2" thick, not incl. brick	D-1	80	.200		1.18	9.40			10.58	15.50
0450	Acid-proof joints, 1/4" wide		"	65	.246		1.74	11.55		13.29	19.40
0500	Pavers, 8" x 4", 1" to 1-1/4" thick, red	D-7	95	.168		4.39	7.45			11.84	15.75
0510	Ironspot		"	95	.168		5.65	7.45		13.10	17.10
0540	1-3/8" to 1-3/4" thick, red	D-1	95	.168		4.24	7.90			12.14	16.60
0560	Ironspot		"	95	.168		5.60	7.90		13.50	18.10
0580	2-1/4" thick, red		90	.178		4.32	8.35			12.67	17.40
0590	Ironspot		"	90	.178		6.70	8.35		15.05	20
0700	Paver, adobe brick, 6" x 12", 1/2" joint	G	42	.381		1.47	17.85			19.32	28.50
0710	Mexican red, 12" x 12"	G	1 Tilf	48	.167		2.08	8.25		10.33	14.40
0720	Saltillo, 12" x 12"	G	"	48	.167		1.66	8.25		9.91	13.95
0800	For sidewalks and patios with pavers, see Section 32 14 16.10		D-1	600	.027	S.F.	3.15	1.25		4.40	5.35
0870	For epoxy joints, add		"	600	.027		2.60	1.25		3.85	4.76
0880	For Furon underlayment, add		"	600	.027		2.60	1.25		3.85	4.76
0890	For waxed surface, steam cleaned, add	A-1H	1000	.008		.21	.34	.08	.63	.82	

09 63 Masonry Flooring

09 63 40 – Stone Flooring

				Daily Output	Labor Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
				Crew			Labor	Equipment			
0010	MARBLE										
0020	Thin gauge tile, 12" x 6", 3/8", white Carrara	D-7	60	.267	S.F.		17.05	11.75		28.80	36
0100	Travertine		60	.267			9.50	11.75		21.25	27.50
0200	12" x 12" x 3/8", thin set, floors		60	.267			11.65	11.75		23.40	30
0300	On walls		52	.308			10	13.60		23.60	31
1000	Marble threshold, 4" wide x 36" long x 5/8" thick, white		60	.267	Ea.		11.65	11.75		23.40	30

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.		7.85	3.92		11.77	14.35
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 Corp	295	.027	S.F.		3.78	1.44		5.22	6.35
0400	Natural finish, 1" thick, fir		125	.064			3.91	3.40		7.31	9.40
0600	1-1/2" thick, pine		125	.064			3.83	3.40		7.23	9.30
0700	2" thick, pine		125	.064			5.70	3.40		9.10	11.35

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.		8.20	4.71		12.91	15.95
0200	Thin set, on concrete	"	250	.064			5.80	2.83		8.63	10.55
0300	Sanding and finishing, odd	1 Corp	200	.040			.90	2.13		3.03	4.18

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 Corp	160	.050	S.F.		5.50	2.66		8.16	10.05
5300	Intricate pattern		100	.080			10.55	4.25		14.80	18
5500	Teak, plain pattern		160	.050			6.05	2.66		8.71	10.70
5600	Intricate pattern		100	.080			10.35	4.25		14.60	17.80
5650	13/16" thick, select grade oak, plain pattern		160	.050			11.35	2.66		14.01	16.50
5700	Intricate pattern		100	.080			17.05	4.25		21.30	25
5800	Custom parquetry, including finish, plain pattern		100	.080			17.75	4.25		22	26
5900	Intricate pattern		50	.160			24.50	8.50		33	40
6700	Parquetry, prefinished white oak, 5/16" thick, plain pattern		160	.050			8.80	2.66		11.46	13.70
6800	Intricate pattern		100	.080			8.60	4.25		12.85	15.90
7000	Walnut or teak, parquetry, plain pattern		160	.050			9.20	2.66		11.86	14.15
7100	Intricate pattern		100	.080			16.40	4.25		20.65	24.50
7200	Acrylic wood parquet blocks, 12" x 12" x 5/16", irradiated, set in epoxy	1 Corp	160	.050	S.F.		10.90	2.66		13.56	16

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 Corp	255	.031	S.F.		3.65	1.67		5.32	6.50
0100	Grade C & better		255	.031			3.43	1.67		5.10	6.25
4000	Maple, strip, 25/32" x 2-1/4", not incl. finish, select		170	.047			5.10	2.50		7.60	9.35

09 64 Wood Flooring

09 64 29 – Wood Strip and Plank Flooring

			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
09 64 29.10 Wood		Crew				Labor	Equipment		
4100	#2 & better	1 Carp	170	.047	S.F.	5.15	2.50	7.65	9.40
4300	33/32" x 3-1/4", not incl. finish, #1 grade		170	.047		6.05	2.50	8.55	10.40
4400	#2 & better	↓	170	.047	↓	5.25	2.50	7.75	9.50
4600	Oak, white or red, 25/32" x 2-1/4", not incl. finish								
4700	#1 common	1 Carp	170	.047	S.F.	3.62	2.50	6.12	7.75
4900	Select quartered, 2-1/4" wide		170	.047		4.48	2.50	6.98	8.70
5000	Clear		170	.047		4.43	2.50	6.93	8.65
6100	Prefinished, white oak, prime grade, 2-1/4" wide		170	.047		6.60	2.50	9.10	11
6200	3-1/4" wide		185	.043		5.85	2.30	8.15	9.85
6400	Ranch plank		145	.055		6.90	2.93	9.88	12
6500	Hardwood blocks, 9" x 9", 25/32" thick		160	.050		7.90	2.66	10.56	12.70
7400	Yellow pine, 3/4" x 3-1/8", T&G, C & better, not incl. finish	↓	200	.040		1.93	2.13	4.06	5.30
7500	Refinish wood floor, sand, 2 coats poly, wax, soft wood	1 Club	400	.020		.23	.84	1.07	1.52
7600	Hardwood		130	.062		.23	2.59	2.82	4.14
7800	Sanding and finishing, 2 coats polyurethane		295	.027		.23	1.14	1.37	1.97
7900	Subfloor and underlayment, see Section 06 16								
8015	Transition molding, 2-1/4" wide, 5' long	1 Carp	19.20	.417	Ea.	21	22	43	57

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.	6	1.67	7.67
8610	5/8" x 4" x 4'	G		275	.029		6.25	1.55	7.80
8620	5/8" x 4" x 6'	G		295	.027		6.85	1.44	8.29
8630	Finished, 5/8" x 4" x 3'	G		255	.031		6.60	1.67	8.27
8640	5/8" x 4" x 4'	G		275	.029		6.95	1.55	8.50
8650	5/8" x 4" x 6'	G		295	.027	↓	5.10	1.44	6.54
8660	Stair treads, unfinished, 1-1/16" x 11-1/2" x 4'	G		18	.444	Ea.	57.50	23.50	81
8670	Finished, 1-1/16" x 11-1/2" x 4'	G		18	.444		91	23.50	114.50
8680	Stair risers, unfinished, 5/8" x 7-1/2" x 4'	G		18	.444		21.50	23.50	45
8690	Finished, 5/8" x 7-1/2" x 4'	G		18	.444		40.50	23.50	64
8700	Stair nosing, unfinished, 6' long	G		16	.500		47	26.50	73.50
8710	Finished, 6' long	G	↓	16	.500	↓	45	26.50	71.50

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.	4.30	4.25	8.55	11.15
0900	33/32" thick maple		98	.082		7.15	4.34	11.49	14.35
1000	For 1/2" corkboard underlayment, add	↓	750	.011		1.25	.57	1.82	2.23
1300	For #1 grade maple, add	↑			↓	.64		.64	.70
1600	Maple flooring, over sleepers, #2 & better								
1700	25/32" thick	1 Carp	85	.094	S.F.	6.25	5	11.25	14.35
1900	33/32" thick	"	83	.096		7.05	5.10	12.15	15.45
2000	For #1 grade, add					.71		.71	.78
2200	For 3/4" subfloor, add	1 Carp	350	.023		1.60	1.22	2.82	3.59
2300	With two 1/2" subfloors, 25/32" thick	"	69	.116	↓	7.80	6.15	13.95	17.80
2500	Maple, incl. finish, #2 & brt., 25/32" thick, on rubber								
2600	Sleepers, with two 1/2" subfloors	1 Carp	76	.105	S.F.	8.10	5.60	13.70	17.30
2800	With steel spline, double connection to channels	"	73	.110		8.90	5.80	14.70	18.55
2900	For 33/32" maple, add					.92		.92	1.01
3100	For #1 grade maple, add					.71		.71	.78
3500	For termite proofing all of the above, add					.38		.38	.42

09 64 Wood Flooring

09 64 66 – Wood Athletic Flooring

				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
				Crew			Labor				
09 64 66.10 Gymnasium Flooring											
3700	Portable hardwood, prefinished panels			1 Corp	83	.096	S.F.	10.80	5.10	15.90	19.60
3720	Insulated with polystyrene, 1" thick, add				165	.048		3.92	2.58	3.50	4.88
3750	Running tracks, Sitka spruce surface, 25/32" x 2-1/4"				62	.129		20.50	6.85	27.35	33
3770	3/4" plywood surface, finished				↓	100	.080	4.70	4.25	8.95	11.55

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.	1.29	2.48	3.77	5.05
4000	Liquid, fortified						Gal.	30.50		30.50	33.50

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.	.78	1.26	2.04	2.70	
0700	4" high				315	.025		1.17	1.26	2.43	3.13	
0710	6" high				315	.025	↓	1.50	1.26	2.76	3.49	
0720	Corners, 2-1/2" high				315	.025	Ea.	2.27	1.26	3.53	4.34	
0730	4" high				315	.025		3.08	1.26	4.34	5.25	
0740	6" high				315	.025	↓	2.91	1.26	4.17	5.05	
0800	1/8" rubber base, 2-1/2" H, straight or cove, standard colors				315	.025	L.F.	1.20	1.26	2.46	3.16	
1100	4" high				315	.025		1.43	1.26	2.69	3.41	
1110	6" high				315	.025	↓	2.08	1.26	3.34	4.13	
1150	Corners, 2-1/2" high				315	.025	Ea.	2.52	1.26	3.78	4.61	
1153	4" high				315	.025		2.60	1.26	3.86	4.70	
1155	6" high				↓	315	.025	↓	3.58	1.26	4.84	5.80
1450	For premium color/finish add							50%				
1500	Millwork profile				1 Tilf	315	.025	L.F.	6.45	1.26	7.71	8.90

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.	14.35	3.44	17.79	21
0400	Colors				115	.070		15	3.44	18.44	21.50
0600	1/4" thick, black				115	.070		13.45	3.44	16.89	19.85
0700	Colors				115	.070		16.25	3.44	19.69	23
0900	Grip strip safety tread, colors, 5/16" thick				115	.070		20.50	3.44	23.94	27.50
1000	3/16" thick				120	.067	↓	16.70	3.30	20	23
1200	Landings, smooth sheet rubber, 1/8" thick				120	.067	S.F.	8.60	3.30	11.90	14.30
1300	3/16" thick				120	.067	"	9.35	3.30	12.65	15.10
1500	Nosings, 3" wide, 3/16" thick, black				140	.057	L.F.	4.79	2.83	7.62	9.40
1600	Colors				140	.057		6.50	2.83	9.33	11.30
1800	Risers, 7" high, 1/8" thick, flat				250	.032		8.55	1.58	10.13	11.70
1900	Coved				250	.032		9.55	1.58	11.13	12.80
2100	Vinyl, molded tread, 12" wide, colors, 1/8" thick				115	.070		6.05	3.44	9.49	11.70
2200	1/4" thick				115	.070	↓	8.15	3.44	11.59	14
2300	Landing material, 1/8" thick				200	.040	S.F.	6.35	1.98	8.33	9.90
2400	Riser, 7" high, 1/8" thick, coved				175	.046	L.F.	3.39	2.26	5.65	7.05
2500	Tread and riser combined, 1/8" thick				80	.100	"	9.90	4.95	14.85	18.15

09 65 Resilient Flooring

09 65 13 – Resilient Base and Accessories

09 65 13.37 Vinyl Transition Strips		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
0010	VINYL TRANSITION STRIPS						Labor	Equipment	
0100	Various mats. to various mats., adhesive applied, 1/4" to 1/8"	1 Tilf	315	.025	L.F.	1.51	1.26	2.77	3.50
0105	0.08" to 1/8"		315	.025		1.36	1.26	2.62	3.34
0110	0.08" to 1/4"		315	.025		1.49	1.26	2.75	3.48
0115	1/4" to 3/8"		315	.025		1.38	1.26	2.64	3.36
0120	1/4" to 1/2"		315	.025		1.38	1.26	2.64	3.36
0125	1/4" to 0.08"		315	.025		1.49	1.26	2.75	3.48
0200	Vinyl wheeled trans. strips, carpet to var. mats., 1/4" to 1/8" x 2-1/2"		315	.025		5.15	1.26	6.41	7.50
0205	1/4" to 1/8" x 4"		315	.025		6.25	1.26	7.51	8.75
0210	Various mats. to various mats. 1/4" to 0.08" x 2-1/2"		315	.025		5.15	1.26	6.41	7.55
0215	Carpet to various materials, 1/4" to flush x 2-1/2"		315	.025		4.29	1.26	5.55	6.55
0220	1/4" to flush x 4"		315	.025		6.60	1.26	7.86	9.10
0225	Various materials to resilient, 3/8" to 1/8" x 2-1/2"		315	.025		4.29	1.26	5.55	6.55
0230	Carpet to various materials, 3/8" to 1/4" x 2-1/2"		315	.025		5.90	1.26	7.16	8.35
0235	1/4" to 1/4" x 2-1/2"		315	.025		6.60	1.26	7.86	9.10
0240	Various materials to resilient, 1/8" to 1/8" x 2-1/2"		315	.025		5	1.26	6.26	7.35
0245	Various materials to var. mats., 1/8" to flush x 2-1/2"		315	.025		3.35	1.26	4.61	5.55
0250	3/8" to flush x 4"		315	.025		6.75	1.26	8.01	9.25
0255	1/2" to flush x 4"		315	.025		9.05	1.26	10.31	11.80
0260	Various materials to resilient, 1/8" to 0.08" x 2-1/2"		315	.025		3.88	1.26	5.14	6.10
0265	0.08" to 0.08" x 2-1/2"		315	.025		3.68	1.26	4.94	5.90
0270	3/8" to 0.08" x 2-1/2"		315	.025		3.68	1.26	4.94	5.90

09 65 16 – Resilient Sheet Flooring

09 65 16.10 Rubber and Vinyl Sheet Flooring

0010	RUBBER AND VINYL SHEET FLOORING	G	1 Tilf	360	.022	S.F.	3.63	1.10	4.73	5.60
5500	Linoleum, sheet goods			120	.067		9.25	3.30	12.55	15
5900	Rubber, sheet goods, 36" wide, 1/8" thick			100	.080		10	3.96	13.96	16.80
5950	3/16" thick			90	.089		11.75	4.40	16.15	19.40
6000	1/4" thick			250	.032		4.52	1.58	6.10	7.30
8000	Vinyl sheet goods, backed, .065" thick, plain pattern/colors			200	.040		3.82	1.98	5.80	7.10
8050	Intricate pattern/colors			230	.035		4.15	1.72	5.87	7.10
8100	.080" thick, plain pattern/colors			200	.040		6.40	1.98	8.38	9.95
8150	Intricate pattern/colors			230	.035		4.19	1.72	5.91	7.15
8200	.125" thick, plain pattern/colors			200	.040		7.35	1.98	9.33	10.95
8250	Intricate pattern/colors			100	.080	L.F.	.24	3.96	4.20	6.05
8400	For welding seams, add			175	.046	"	.82	2.26	3.08	4.22
8450	For integral cove base, add						Gal.	33	33	36
8700	Adhesive cement, 1 gallon per 200 to 300 S.F.							15.10	15.10	16.60
8800	Asphalt primer, 1 gallon per 300 S.F.							19.95	19.95	22
8900	Emulsion, 1 gallon per 140 S.F.									

09 65 19 – Resilient Tile Flooring

09 65 19.19 Vinyl Composition Tile Flooring

0010	VINYL COMPOSITION TILE FLOORING	1 Tilf	500	.016	S.F.	1.23	.79	2.02	2.51
7000	Vinyl composition tile, 12" x 12", 1/16" thick		500	.016		2.72	.79	3.51	4.15
7050	Embossed		500	.016		2.72	.79	3.51	4.15
7100	Marbleized		500	.016		2.72	.79	3.51	4.15
7150	Solid		500	.016		3.51	.79	4.30	5
7200	3/32" thick, embossed		500	.016		1.53	.79	2.32	2.84
7250	Marbleized		500	.016		3.13	.79	3.92	4.60
7300	Solid		500	.016		2.89	.79	3.68	4.34
7350	1/8" thick, marbleized		500	.016		2.47	.79	3.26	3.88

09 65 Resilient Flooring

09 65 19 – Resilient Tile Flooring

09 65 19.19 Vinyl Composition Tile Flooring				Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
	Crew	Output	Hours	S.F.	Material	Labor	Equipment	Total			
7400 Solid	1 Tlf	500	.016	S.F.	1.75	.79		2.54		3.09	
7450 Conductive		500	.016		5.90	.79		6.69		7.60	

09 65 19.23 Vinyl Tile Flooring

0010 VINYL TILE FLOORING				Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
	Crew	Output	Hours	S.F.	Material	Labor	Equipment	Total			
7500 Vinyl tile, 12" x 12", 3/32" thick, standard colors/patterns	1 Tlf	500	.016	S.F.	3.58	.79		4.37		5.10	
7550 1/8" thick, standard colors/patterns		500	.016		5.25	.79		6.04		6.90	
7600 1/8" thick, premium colors/patterns		500	.016		6.90	.79		7.69		8.75	
7650 Solid colors		500	.016		3.09	.79		3.88		4.56	
7700 Marbleized or Travertine pattern		500	.016		6.35	.79		7.14		8.10	
7750 Florentine pattern		500	.016		7.20	.79		7.99		9.05	
7800 Premium colors/patterns		500	.016		7.25	.79		8.04		9.10	

09 65 19.33 Rubber Tile Flooring

0010 RUBBER TILE FLOORING				Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
	Crew	Output	Hours	S.F.	Material	Labor	Equipment	Total			
6050 Rubber tile, marbleized colors, 12" x 12", 1/8" thick	1 Tlf	400	.020	S.F.	6	.99		6.99		8.05	
6100 3/16" thick		400	.020		8.40	.99		9.39		10.70	
6300 Special tile, plain colors, 1/8" thick		400	.020		8.30	.99		9.29		10.55	
6350 3/16" thick		400	.020		11.15	.99		12.14		13.70	
6410 Raised, radial or square, .5 mm block		400	.020		8.05	.99		9.04		10.30	
6430 .5 mm colored		400	.020		7.60	.99		8.59		9.80	
6450 For golf course, skating rink, etc., 1/4" thick		275	.029		11	1.44		12.44		14.20	

09 65 33 – Conductive Resilient Flooring

09 65 33.10 Conductive Rubber and Vinyl Flooring				Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
	Crew	Output	Hours	S.F.	Material	Labor	Equipment	Total			
1700 Conductive flooring, rubber tile, 1/8" thick	1 Tlf	315	.025	S.F.	7.35	1.26		8.61		9.95	
1800 Homogeneous vinyl tile, 1/8" thick	"	315	.025	"	7.35	1.26		8.61		9.95	

09 65 66 – Resilient Athletic Flooring

09 65 66.10 Resilient Athletic Flooring				Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
	Crew	Output	Hours	S.F.	Material	Labor	Equipment	Total			
1000 Recycled rubber rolled goods, for weight rooms, 3/8" thk.	1 Tlf	315	.025	S.F.	2.86	1.26		4.12		4.99	
1050 Interlocking 2' x 2' squares, rubber, 1/4" thk.		310	.026		1.93	1.28		3.21		3.99	
1055 5/16" thk.		310	.026		2.59	1.28		3.87		4.72	
1060 3/8" thk.		300	.027		2.94	1.32		4.26		5.15	
1065 1/2" thk.		310	.026		3.73	1.28		5.01		5.95	
2000 Vinyl sheet flooring, 1/4" thk.		315	.025		4.93	1.26		6.19		7.25	

09 66 Terrazzo Flooring

09 66 13 – Portland Cement Terrazzo Flooring

09 66 13.10 Portland Cement Terrazzo				096613-10	Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
	Crew	Output	Hours		S.F.	Material	Labor	Equipment	Total			
0020 Cove base, 6" high, 16 ga. zinc	1 Mstz	20	.400	L.F.	3.75	19.75			23.50		33	
0100 Curb, 6" high and 6" wide		6	1.333		6.60	66			72.60		104	
0300 Divider strip for floors, 14 ga., 1-1/4" deep, zinc		375	.021		1.43	1.05			2.48		3.12	
0400 Brass		375	.021		2.83	1.05			3.88		4.66	
0600 Heavy top strip 1/4" thick, 1-1/4" deep, zinc		300	.027		2.26	1.32			3.58		4.42	
0900 Galv. bottoms, brass		300	.027		2.78	1.32			4.10		4.99	
1200 For thin set floors, 16 ga., 1/2" x 1/2", zinc		350	.023		1.40	1.13			2.53		3.20	
1300 Brass		350	.023		2.87	1.13			4		4.82	
1500 Floor, bonded to concrete, 1-3/4" thick, gray cement	J-3	75	.213	S.F.	3.84	9.60	3.54		16.98		22	
1600 White cement, mud set		75	.213		4.53	9.60	3.54		17.67		23	

09 66 Terrazzo Flooring

09 66 13 – Portland Cement Terrazzo Flooring

			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl Q&P
			J-3	70	.229	S.F.	Labor	Equipment	Total		
1800	Not bonded, 3" total thickness, gray cement					4.73	10.25	3.80	18.78		24.50
1900	White cement, mud set		↓	70	.229	↓	5.55	10.25	3.80	19.60	25.50
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.	3.45	5.75	2.13	11.33	14.60
3000	Stairs, cast-in-place, pan filled treads			30	.533	L.F.	4.07	24	8.85	36.92	49
3100	Treads and risers			↓	14	1.143	"	6.25	51.50	19	76.75
3300	For stair landings, add to floor prices						50%				
3400	Stair stringers and fascia		J-3	30	.533	S.F.	5.40	24	8.85	38.25	50.50
3600	For abrasive metal nosings on stairs, add			150	.107	L.F.	9.90	4.79	1.77	16.46	19.90
3700	For abrasive surface finish, add			600	.027	S.F.	1.84	1.20	.44	3.48	4.27
3900	For raised abrasive strips, add			150	.107	L.F.	1.39	4.79	1.77	7.95	10.55
4000	Wainscot, bonded, 1-1/2" thick			30	.533	S.F.	4.06	24	8.85	36.91	49
4200	1/4" thick			↓	40	.400	"	6.50	18	6.65	31.15
4300	Stone chips, onyx gemstone, per 50 lb. bag					Bag	19.25				19.25

09 66 16 – Terrazzo Floor Tile

09 66 16.10 Tile or Terrazzo Base

0010	TILE OR TERRAZZO BASE		1 Mstz	150	.053	S.F.	.58	2.63		3.21	4.49
0020	Scratch coat only			60	.107	"					
0500	Scratch and brown coat only			75	.107	"	1.15	5.25		6.40	9

09 66 16.13 Portland Cement Terrazzo Floor Tile

0010	PORLTAND CEMENT TERRAZZO FLOOR TILE										
1200	Floor tiles, non-slip, 1" thick, 12" x 12"		D-1	60	.267	S.F.	25.50	12.50		38	47
1300	1-1/4" thick, 12" x 12"			60	.267		26	12.50		38.50	48
1500	16" x 16"			50	.320		28	15		43	54
1600	1-1/2" thick, 16" x 16"		↓	45	.356		26	16.70		42.70	54
1800	For Venetian terrazzo, add						7.75			7.75	8.55
1900	For white cement, add						.73			.73	.80

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.	7.65	.79		8.44	9.55
0200	12" x 12", 3/16" thick, floor tiles w/glass chips			500	.016		8.25	.79		9.04	10.20
0300	12" x 12", 3/16" thick, floor tiles w/recycled content			500	.016		6.50	.79		7.29	8.30

09 66 16.30 Terrazzo, Precast

0010	TERRAZZO, PRECAST										
0020	Base, 6" high, straight		1 Mstz	70	.114	L.F.	12.65	5.65		18.30	22
0100	Cove			60	.133		16.95	6.60		23.55	28.50
0300	8" high, straight			60	.133		16.45	6.60		23.05	27.50
0400	Cove		↓	50	.160		24.50	7.90		32.40	38.50
0600	For white cement, add						.60			.60	.66
0700	For 16 ga. zinc toe strip, add						2.33			2.33	2.56
0900	Curbs, 4" x 4" high		1 Mstz	40	.200		43.50	9.90		53.40	62.50
1000	8" x 8" high		"	30	.267		47	13.15		60.15	71
2400	Stair treads, 1-1/2" thick, non-slip, three line pattern		2 Mstz	70	.229		54	11.30		65.30	76
2500	Nosing and two lines			70	.229		54	11.30		65.30	76
2700	2" thick treads, straight			60	.267		64.50	13.15		77.65	90.50
2800	Curved			50	.320		84.50	15.80		100.30	116
3000	Stair risers, 1" thick, to 6" high, straight sections			60	.267		15.30	13.15		28.45	36
3100	Cove			50	.320		19.50	15.80		35.30	44.50
3300	Curved, 1" thick, to 6" high, vertical		↓	48	.333	↓	27	16.45		43.45	54

09 66 Terrazzo Flooring

09 66 16 – Terrazzo Floor Tile

09 66 16.30 Terrazzo, Precast		Crew	Daily	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
			Output				Labor	Equipment	Total		
3400	Cove	2 Mstz	38	.421	L.F.	43	21		64	78	
3600	Stair tread and riser, single piece, straight, smooth surface		60	.267		66.50	13.15		79.65	93	
3700	Non skid surface		40	.400		86	19.75		105.75	124	
3900	Curved tread and riser, smooth surface		40	.400		96	19.75		115.75	134	
4000	Non skid surface		32	.500		118	24.50		142.50	165	
4200	Stair stringers, notched, 1" thick		25	.640		38	31.50		69.50	88.50	
4300	2" thick		22	.727		45	36		81	102	
4500	Stair landings, structural, non-slip, 1-1/2" thick		85	.188	S.F.	42.50	9.30		51.80	60.50	
4600	3" thick		75	.213		59	10.55		69.55	80.50	
4800	Wainscot, 12" x 12" x 1" tiles	1 Mstz	12	.667		9.75	33		42.75	59.50	
4900	16" x 16" x 1-1/2" tiles	"	8	1		18.75	49.50		68.25	93	

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.	4.20	2.86	.07	7.13	8.95
3170	Recycled porcelain		480	.100		5	4.37	.11	9.48	12.15
3200	3/8" thick, granite chips		620	.077		5.25	3.39	.09	8.73	10.95
3220	Recycled porcelain		480	.100		7.15	4.37	.11	11.63	14.55

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.	6.60	3.60	1.33	11.53	13.95
1900	Recycled porcelain		150	.107		10.40	4.79	1.77	16.96	20.50
2500	Epoxy terrazzo, 1/4" thick, granite chips		200	.080		6	3.60	1.33	10.93	13.30
2550	Average		175	.091		5.95	4.11	1.52	11.58	14.25
2600	Recycled aggregate		150	.107		5.75	4.79	1.77	12.31	15.35
2650	Epoxy terrazzo, 3/8" thick, marble chips		200	.080		5.75	3.60	1.33	10.68	13.05
2675	Glass or mother of pearl		200	.080		7.20	3.60	1.33	12.13	14.60

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.	5.60	8	2.95	16.55	21

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.	9.50	7.20	2.66	19.36	24
2200	Recycled porcelain		90	.178		11.95	8	2.95	22.90	28

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.	8.65	4.67	.12	13.44	16.65
3330	Recycled porcelain		305	.157		11.10	6.90	.18	18.18	22.50
3350	3/8" thick, granite chips		365	.132		12.20	5.75	.15	18.10	22
3370	Recycled porcelain		255	.188		14.50	8.25	.21	22.96	28.50
3450	Granite, conductive, 1/4" thick, 20% chip		695	.069		10.10	3.02	.08	13.20	15.70
3470	50% chip		420	.114		13	5	.13	18.13	22
3500	3/8" thick, 20% chip		695	.069		14.75	3.02	.08	17.85	21
3520	50% chip		380	.126		17.85	5.55	.14	23.54	28

09 67 Fluid-Applied Flooring

09 67 13 – Elastomeric Liquid Flooring

09 67 13.13 Elastomeric Liquid Flooring		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
0010 ELASTOMERIC LIQUID FLOORING										
0020	Cementitious acrylic, 1/4" thick	C-6	520	.092	S.F.	1.81	4.04	.10	5.95	8.15
0100	3/8" thick	"	450	.107		2.39	4.67	.12	7.18	9.75
0200	Methyl methacrylate, 1/4" thick	C-8A	3000	.016		7.20	.72		7.92	9
0210	1/8" thick	"	3000	.016		6.05	.72		6.77	7.70
0300	Cupric oxychloride, on bond coat, simple configs and patterns	C-6	480	.100		4.10	4.37	.11	8.58	11.20
0400	Complex configurations and patterns		420	.114		6.85	5	.13	11.98	15.15
2400	Mastic, hot laid, 2 coat, 1-1/2" thick, std., simple configs and patterns		690	.070		4.74	3.04	.08	7.86	9.85
2500	Maximum		520	.092		6.10	4.04	.10	10.24	12.85
2700	Acid-proof, minimum		605	.079		6.10	3.47	.09	9.66	12
2800	Maximum		350	.137		8.45	6	.15	14.60	18.40
3000	Neoprene, troweled on, 1/4" thick, minimum		545	.088		4.67	3.85	.10	8.62	11
3100	Maximum		430	.112		6.45	4.88	.13	11.46	14.50
4300	Polyurethane, with suspended vinyl chips, clear		1065	.045		7.80	1.97	.05	9.82	11.55
4500	Pigmented		860	.056		11.45	2.44	.06	13.95	16.30

09 67 23 – Resinous Flooring

09 67 23.23 Resinous Flooring

0010 RESINOUS FLOORING		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
1200	Heavy duty epoxy topping, 1/4" thick,									
1300	500 to 1,000 S.F.	C-6	420	.114	S.F.	6.20	5	.13	11.33	14.45
1500	1,000 to 2,000 S.F.		450	.107		5.25	4.67	.12	10.04	12.95
1600	Over 10,000 S.F.		480	.100		5	4.37	.11	9.48	12.15

09 67 26 – Quartz Flooring

09 67 26.26 Quartz Flooring

0010 QUARTZ FLOORING		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
0600	Epoxy, with colored quartz chips, broadcast, 3/8" thick	C-6	675	.071	S.F.	3.22	3.11	.08	6.41	8.30
0700	1/2" thick		490	.098		4.52	4.28	.11	8.91	11.50
0900	Troweled, minimum		560	.086		3.64	3.75	.10	7.49	9.70
1000	Maximum		480	.100		6.15	4.37	.11	10.63	13.40
3600	Polyester, with colored quartz chips, 1/16" thick, minimum		1065	.045		3.63	1.97	.05	5.65	7
3700	Maximum		560	.086		4.95	3.75	.10	8.80	11.15
3900	1/8" thick, minimum		810	.059		4.20	2.59	.07	6.86	8.55
4000	Maximum		675	.071		5.60	3.11	.08	8.79	10.95
4200	Polyester, heavy duty, compared to epoxy, add		2590	.019		1.69	.81	.02	2.52	3.09

09 67 66 – Fluid-Applied Athletic Flooring

09 67 66.10 Polyurethane

0010 POLYURETHANE		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
4400	Thermoset, prefabricated in place, indoor									
4500	3/8" thick for basketball, gyms, etc.	1 TILE	100	.080	S.F.	5.95	3.96		9.91	12.35
4600	1/2" thick for professional sports		95	.084		8	4.17		12.17	14.90
4700	Outdoor, 1/4" thick, smooth, for tennis		100	.080		6.20	3.96		10.16	12.60
5000	Poured in place, indoor, with finish, 1/4" thick		80	.100		4.41	4.95		9.36	12.10
5050	3/8" thick		65	.123		5.35	6.10		11.45	14.85
5100	1/2" thick		50	.160		6.40	7.90		14.30	18.65

09 68 Carpeting

09 68 05 – Carpet Accessories

09 68 05.11 Flooring Transition Strip		Crew	Daily Output	Labor Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
0010 FLOORING TRANSITION STRIP		1 Tlf	31.25	.256	Eq.	15	12.65		27.65	35
0107 Clamp down brass divider, 12" strip, vinyl to carpet				"		15	12.65		27.65	35
0117 Vinyl to hard surface										

09 68 10 – Carpet Pad

09 68 10.10 Commercial Grade Carpet Pad

0010 COMMERCIAL GRADE CARPET PAD		Crew	1 Tlf	150	.053	S.Y.	4.85	2.64	7.49	9.20
9000 Sponge rubber pad, 20 oz./sq. yd.										
9100 40 to 62 oz./sq. yd.										
9200 Felt pad, 20 oz./sq. yd.										
9300 32 to 56 oz./sq. yd.										
9400 Bonded urethane pad, 2.7 density										
9500 13.0 density										
9600 Prime urethane pad, 2.7 density										
9700 13.0 density										

09 68 13 – Tile Carpeting

09 68 13.10 Carpet Tile

0010 CARPET TILE		Crew	1 Tlf	80	.100	S.Y.	28	4.95	32.95	38.50
0100 Tufted nylon, 18" x 18", hard back, 20 oz.										
0110 26 oz.										
0200 Cushion back, 20 oz.										
0210 26 oz.										
1100 Tufted, 24" x 24", hard back, 24 oz. nylon										
1180 35 oz.										
5060 42 oz.										
6000 Electrostatic dissipative carpet tile, 24" x 24", 24 oz.										
6100 Electrostatic dissipative carpet tile for access floors, 24" x 24", 24 oz.										

09 68 16 – Sheet Carpeting

09 68 16.10 Sheet Carpet

0010 SHEET CARPET		Crew	1 Tlf	75	.107	S.Y.	24.50	5.30	29.80	35
0700 Nylon, level loop, 26 oz., light to medium traffic										
0720 28 oz., light to medium traffic										
0900 32 oz., medium traffic										
1100 40 oz., medium to heavy traffic										
2920 Nylon plush, 30 oz., medium traffic										
3000 36 oz., medium traffic										
3100 42 oz., medium to heavy traffic										
3200 46 oz., medium to heavy traffic										
3300 54 oz., heavy traffic										
3340 60 oz., heavy traffic										
3665 Olefin, 24 oz., light to medium traffic										
3670 26 oz., medium traffic										
3680 28 oz., medium to heavy traffic										
3700 32 oz., medium to heavy traffic										
3730 42 oz., heavy traffic										
4110 Wool, level loop, 40 oz., medium traffic										
4500 50 oz., medium to heavy traffic										
4700 Patterned, 32 oz., medium to heavy traffic										
4900 48 oz., heavy traffic										
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%		

09 68 Carpeting

09 68 16 - Sheet Carpeting

09 68 16.10 Sheet Carpet		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P
		1 Tiff	300	.027	L.F.	1.79	Labor	Equipment	
5600	For bound carpet baseboard, add						1.32		3.11
5610	For stairs, not incl. price of carpet, add	"	30	.267	Riser		13.20		13.20
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 Tiff	275	.029	S.F.	4.47	1.44		5.91	7.05
3800	Nylon action surface, 1/8" thick		275	.029		4.17	1.44		5.61	6.70
3900	1/4" thick		275	.029		6	1.44		7.44	8.70
4000	3/8" thick		275	.029		7.55	1.44		8.99	10.40
4100	Golf tee surface with foam back		235	.034		7.50	1.69		9.19	10.70
4200	Practice putting, knitted nylon surface		235	.034		6.30	1.69		7.99	9.40
4300	Synthetic turf, 1/2" ht.		90	.089		4.67	4.40		9.07	11.60
4350	3/4" ht.		210	.038		4.61	1.89		6.50	7.80
4400	1" ht.		190	.042		5.75	2.08		7.83	9.35
5500	Polyvinyl chloride, sheet goods for gyms, 1/4" thick		80	.100		7.25	4.95		12.20	15.25
5600	3/8" thick		60	.133		9.95	6.60		16.55	20.50

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	4 Corp	750	.043	S.F.	18.45	2.27		20.72	24
0100	Package pricing, conc. fill panels, no fin., 6" ht.		750	.043		18.55	2.27		20.82	24
0105	12" ht.		750	.043						
0110	18" ht.		750	.043		19.20	2.27		21.47	24.50
0115	24" ht.		750	.043		19.05	2.27		21.32	24.50
0120	Package pricing, steel panels, no fin., 6" ht.		750	.043		15.15	2.27		17.42	20
0125	12" ht.		750	.043		20	2.27		22.27	25.50
0130	18" ht.		750	.043		20.50	2.27		22.77	26
0135	24" ht.		750	.043		20.50	2.27		22.77	26
0140	Package pricing, wood core panels, no fin., 6" ht.		750	.043		13.65	2.27		15.92	18.40
0145	12" ht.		750	.043		13.90	2.27		16.17	18.65
0150	18" ht.		750	.043		13.90	2.27		16.17	18.65
0155	24" ht.		750	.043		14.15	2.27		16.42	18.95
0160	Pkg. pricing, conc. fill pnls, no stringers, no fin., 6" ht, 1250 lbs. load		700	.046		11.05	2.43		13.48	15.80
0165	12" ht.		700	.046		10.25	2.43		12.68	14.90
0170	18" ht.		700	.046		11.20	2.43		13.63	15.95
0175	24" ht.		700	.046		12.15	2.43		14.58	17.05
0250	Panels, 2' x 2' conc. fill, no fin.	2 Corp	500	.032		23	1.70		24.70	27.50
0255	With 1/8" high pressure laminate		500	.032		57.50	1.70		59.20	66
0260	Metal panels with 1/8" high pressure laminate		500	.032		68	1.70		69.70	77.50
0265	Wood core panels with 1/8" high pressure laminate		500	.032		44.50	1.70		46.20	51.50
0400	Aluminum panels, no fin.		500	.032		35	1.70		36.70	41
0600	For carpet covering, add					9.25			9.25	10.15
0700	For vinyl floor covering, add					9.90			9.90	10.90
0900	For high pressure laminate covering, add					8.15			8.15	8.95
0910	For snap on stringer system, add	2 Corp	1000	.016		1.60	.85		2.45	3.04

09 69 Access Flooring

09 69 13 – Rigid-Grid Access Flooring

09 69 13.10 Access Floors			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P
			Crew	Ea.		Labor	Equipment		
1000	Machine cutouts after initial installation		1 Corp	.50	.160		20.50	8.50	29
1050	Pedestals, 6" to 12"		2 Corp	.85	.188		9.10	10	19.10
1100	Air conditioning grilles, 4" x 12"		1 Corp	.17	.471		72.50	25	97.50
1150	4" x 18"		"	.14	.571	↓	99	30.50	129.50
1200	Approach ramps, steel		2 Corp	.60	.267	S.F.	28	14.15	42.15
1300	Aluminum		"	.40	.400	"	34.50	21.50	56
1500	Handrail, 2 rail, aluminum		1 Corp	.15	.533	L.F.	126	28.50	154.50

09 72 Wall Coverings

09 72 13 – Cork Wall Coverings

09 72 13.10 Covering, Cork Wall

0010 COVERING, CORK WALL			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P
			Crew	Ea.		Labor	Equipment		
0600	Cork tiles, light or dark, 12" x 12" x 3/16"		1 Paper	240	.033	S.F.	4.26	1.48	5.74
0700	5/16" thick			235	.034		3.40	1.52	4.92
0900	1/4" basket weave			240	.033		3.29	1.48	4.77
1000	1/2" natural, non-directional pattern			240	.033		6.80	1.48	8.28
1100	3/4" natural, non-directional pattern			240	.033		11.85	1.48	13.33
1200	Granular surface, 12" x 36", 1/2" thick			385	.021		1.38	.93	2.31
1300	1" thick			370	.022		1.72	.96	2.68
1500	Polyurethane coated, 12" x 12" x 3/16" thick			240	.033		4.17	1.48	5.65
1600	5/16" thick			235	.034		6	1.52	7.52
1800	Cork wallpaper, paperbacked, natural			480	.017		1.68	.74	2.42
1900	Colors			480	.017		2.89	.74	3.63

09 72 16 – Vinyl-Coated Fabric Wall Coverings

09 72 16.13 Flexible Vinyl Wall Coverings

0010 FLEXIBLE VINYL WALL COVERINGS			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P
			Crew	Ea.		Labor	Equipment		
3000	Vinyl wall covering, fabric-backed, lightweight, type 1 (12-15 oz./S.Y.)		1 Paper	640	.013	S.F.	1.45	.56	2.01
3300	Medium weight, type 2 (20-24 oz./S.Y.)			480	.017		1.06	.74	1.80
3400	Heavy weight, type 3 (28 oz./S.Y.)			435	.018		1.59	.82	2.41
3600	Adhesive, 5 gal. lots (18 S.Y./gal.)					Gal.	12.60		13.85

09 72 16.16 Rigid-Sheet Vinyl Wall Coverings

0010 RIGID-SHEET VINYL WALL COVERINGS

0100 Acrylic, modified, semi-rigid PVC, .028" thick			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P
			Crew	Ea.		Labor	Equipment		
0100	Acrylic, modified, semi-rigid PVC, .028" thick		2 Corp	330	.048	S.F.	1.32	2.58	3.90
0110	.040" thick		"	320	.050	"	2.05	2.66	4.71

09 72 19 – Textile Wall Coverings

09 72 19.10 Textile Wall Covering

0010 TEXTILE WALL COVERING, including sizing; add 10-30% waste @ takeoff			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P
			Crew	Ea.		Labor	Equipment		
0020	Silk		1 Paper	640	.013	S.F.	4.53	.56	5.09
0030	Cotton			640	.013		6.90	.56	7.46
0040	Linen			640	.013		1.88	.56	2.44
0050	Blend			640	.013	↓	3.23	.56	3.79
0060	Linen wall covering, paper backed					S.F.	1.03		1.13
0070	Flame treatment						1.92		1.92
0080	Stain resistance treatment								2.11
0090	Grass cloth, natural fabric	G	1 Paper	400	.020		1.94	.89	2.83
0100	Grass cloths with lining paper	G		400	.020		1.30	.89	2.19
0110	Premium texture/color	G		350	.023		3.29	1.02	4.31

09 72 Wall Coverings

09 72 20 – Natural Fiber Wall Covering

09 72 20.10 Natural Fiber Wall Covering		Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Ind O&P
0010	NATURAL FIBER WALL COVERING, including sizing; add 10-30% waste @ takeoff								
0015	Bamboo	1 Pipe	640	.013	S.F.	2.20	.56	2.76	3.25
0030	Burlap	1 Pipe	640	.013	S.F.	1.90	.56	2.46	2.92
0045	Jute	1 Pipe	640	.013	S.F.	1.31	.56	1.87	2.27
0060	Sisal	1 Pipe	640	.013	S.F.	1.72	.56	2.28	2.72

09 72 23 – Wallpapering

09 72 23.10 Wallpaper

0010 WALLPAPER including sizing; add 10-30% waste @ takeoff		R097223-10	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Ind O&P
0050	Aluminum foil	1 Pipe	275	.029	S.F.	1.05	1.30	2.35	3.09	
0100	Copper sheets, .025" thick, vinyl backing	1 Pipe	240	.033	S.F.	5.60	1.48	7.08	8.35	
0300	Phenolic backing	1 Pipe	240	.033	S.F.	7.25	1.48	8.73	10.15	
2400	Gypsum-based, fabric-backed, fire resistant for masonry walls, 21 oz./S.Y.	1 Pipe	800	.010	S.F.	.85	.45	1.30	1.60	
2700	Small quantities	1 Pipe	640	.013	S.F.	.85	.56	1.41	1.77	
3700	Wallpaper, average workmanship, solid pattern, low cost paper	1 Pipe	640	.013	S.F.	.63	.56	1.19	1.52	
3900	Basic patterns (matching required), avg. cost paper	1 Pipe	535	.015	S.F.	1.28	.67	1.95	2.40	
4000	Paper at \$85 per double roll, quality workmanship	1 Pipe	435	.018	S.F.	2.20	.82	3.02	3.64	

09 74 Flexible Wood Sheets

09 74 16 – Flexible Wood Veneers

09 74 16.10 Veneer, Flexible Wood

0010 VENEER, FLEXIBLE WOOD		Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Ind O&P
0100	Flexible wood veneer, 1/32" thick, plain woods	1 Pipe	100	.080	S.F.	2.50	3.56	6.06	8.05
0110	Exotic woods	1 Pipe	95	.084	S.F.	3.77	3.75	7.52	9.75

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		Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Ind O&P
0020	On walls, adhesive mounted, embossed surface	2 Corp	640	.025	S.F.	1.19	1.33	2.52	3.31
0030	Smooth surface	1 Corp	640	.025	S.F.	1.47	1.33	2.80	3.62
0040	Fire rated, embossed surface	1 Corp	640	.025	S.F.	2.12	1.33	3.45	4.33
0050	Nylon rivet mounted, on drywall, embossed surface	1 Corp	480	.033	S.F.	1.18	1.77	2.95	3.96
0060	Smooth surface	1 Corp	480	.033	S.F.	1.47	1.77	3.24	4.28
0070	Fire rated, embossed surface	1 Corp	480	.033	S.F.	2.12	1.77	3.89	4.99
0080	On masonry, embossed surface	1 Corp	320	.050	S.F.	1.18	2.66	3.84	5.30
0090	Smooth surface	1 Corp	320	.050	S.F.	1.47	2.66	4.13	5.60
0100	Fire rated, embossed surface	1 Corp	320	.050	S.F.	2.12	2.66	4.78	6.30
0110	Nylon rivet and adhesive mounted, on drywall, embossed surface	1 Corp	240	.067	S.F.	1.35	3.54	4.89	6.80
0120	Smooth surface	1 Corp	240	.067	S.F.	1.43	3.54	4.97	6.85
0130	Fire rated, embossed surface	1 Corp	240	.067	S.F.	2.34	3.54	5.88	7.85
0140	On masonry, embossed surface	1 Corp	190	.084	S.F.	1.35	4.48	5.83	8.20
0150	Smooth surface	1 Corp	190	.084	S.F.	1.43	4.48	5.91	8.25
0160	Fire rated, embossed surface	1 Corp	190	.084	S.F.	2.34	4.48	6.82	9.25
0170	For moldings, add	1 Corp	250	.032	L.F.	.29	1.70	1.99	2.88
0180	On ceilings, for lay in grid system, embossed surface	1 Corp	400	.020	S.F.	1.19	1.06	2.25	2.91
0190	Smooth surface	1 Corp	400	.020	S.F.	1.47	1.06	2.53	3.22
0200	Fire rated, embossed surface	1 Corp	400	.020	S.F.	2.12	1.06	3.18	3.93

09 77 Special Wall Surfacing

09 77 43 – Panel Systems

09 77 43.20 Slatwall Panels and Accessories		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
						Labor	Equipment		
0010 SLATWALL PANELS AND ACCESSORIES									
0100	Slatwall panel, 4' x 8' x 3/4" T, MDF, paint grade	1 Corp	500	.016	S.F.	1.58	.85	2.43	3.02
0110	Melamine finish		500	.016		2.13	.85	2.98	3.62
0120	High pressure plastic laminate finish		500	.016		3.38	.85	4.23	5
0125	Wood veneer	↓	500	.016		4.23	.85	5.08	5.95
0130	Aluminum channel inserts, odd				↓	2.66		2.66	2.93
0200	Accessories, corner forms, 8' L				L.F.	5.70		5.70	6.30
0210	T-connector, 8' L					7.45		7.45	8.20
0220	J-mold, 8' L					1.25		1.25	1.38
0230	Edge cap, 8' L					1.74		1.74	1.91
0240	Finish end cap, 8' L				↓	3.39		3.39	3.73
0300	Display hook, metal, 4" L				Ea.	.47		.47	.52
0310	6" L					.52		.52	.57
0320	8" L					.56		.56	.62
0330	10" L					.54		.54	.59
0340	12" L					.51		.51	.56
0350	Acrylic, 4" L					1.27		1.27	1.40
0360	6" L					.97		.97	1.07
0400	Waterfall hanger, metal, 12"-16"					3.92		3.92	4.31
0410	Acrylic					11.35		11.35	12.50
0500	Shelf bracket, metal, 8"					2.06		2.06	2.27
0510	10"					2.04		2.04	2.24
0520	12"					2.26		2.26	2.49
0530	14"					2.49		2.49	2.74
0540	16"					3.07		3.07	3.38
0550	Acrylic, 8"					3.94		3.94	4.33
0560	10"					4.10		4.10	4.51
0570	12"					4.64		4.64	5.10
0580	14"					6		6	6.60
0600	Shelf, acrylic, 12" x 16" x 1/4"					23		23	25
0610	12" x 24" x 1/4"				↓	25		25	27.50

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 Corp	800	.010	S.F.	.91	.53	1.44	1.80
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09 81 16 – Acoustic Blanket Insulation

09 81 16.10 Sound Attenuation Blanket

0010 SOUND ATTENUATION BLANKET

0020	Blanket, 1" thick	1 Corp	925	.009	S.F.	.28	.46	.74	1
0500	1-1/2" thick		920	.009		.33	.46	.79	1.05
1000	2" thick		915	.009		.40	.46	.86	1.14
1500	3" thick	↓	910	.009	↓	.59	.47	1.06	1.35
2000	Wall hung, STC 18-21, 1" thick, 4' x 20'	2 Corp	22	.727	Ea.	550	38.50	588.50	665
2010	10' x 20'	"	19	.842		1,375	45	1,420	1,600
2020	Wall hung, STC 27-28, 3" thick, 4' x 20'	3 Corp	12	2		590	106	696	810
2030	10' x 20'	"	9	2.667		1,475	142	1,617	1,850
3000	Thermal or acoustical batt above ceiling, 2" thick	1 Corp	900	.009	S.F.	.52	.47	.99	1.28
3100	3" thick		900	.009		.80	.47	1.27	1.59

09 81 Acoustic Insulation

09 81 16 – Acoustic Blanket Insulation

09 81 16.10 Sound Attenuation Blanket		Crew	Daily	Labor-	Unit	2020 Bare Costs			Total	Total
			Output	Hours		Material	Labor	Equipment		Incl O&P
3200	4" thick	1 Carp	900	.009	S.F.	1	.47		1.47	1.81
3400	Urethane plastic foam, open cell, on wall, 2" thick	2 Carp	2050	.008		3.29	.41		3.70	4.24
3500	3" thick		1550	.010		4.37	.55		4.92	5.65
3600	4" thick		1050	.015		6.15	.81		6.96	7.95
3700	On ceiling, 2" thick		1700	.009		3.28	.50		3.78	4.36
3800	3" thick		1300	.012		4.37	.65		5.02	5.80
3900	4" thick		900	.018		6.15	.95		7.10	8.15

09 84 Acoustic Room Components

09 84 13 – Fixed Sound-Absorptive Panels

09 84 13.10 Fixed Panels

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.	9.95	4.25		14.20	17.30
0300	Fiberboard sound deadening panels, 1/2" thick	"	600	.013	"	.33	.71		1.04	1.42
0500	Fiberglass panels, 4' x 8' x 1" thick, with									
0600	glass cloth face for walls, cemented	1 Carp	155	.052	S.F.	9.15	2.74		11.89	14.20
0700	1-1/2" thick, dacron covered, inner aluminum frame,									
0710	wall mounted	1 Carp	300	.027	S.F.	8.85	1.42		10.27	11.85
0900	Mineral fiberboard panels, fabric covered, 30" x 108",									
1000	3/4" thick, concealed spline, wall mounted	1 Carp	150	.053	S.F.	6.35	2.83		9.18	11.25

09 84 36 – Sound-Absorbing Ceiling Units

09 84 36.10 Barriers

0010	BARRIERS Plenum									
0600	Aluminum foil, fiberglass reinf., parallel with joists	1 Carp	275	.029	S.F.	1.14	1.55		2.69	3.57
0700	Perpendicular to joists		180	.044		1.14	2.36		3.50	4.80
0900	Aluminum mesh, kraft paperbacked		275	.029		.78	1.55		2.33	3.18
0970	Fiberglass batts, kraft faced, 3-1/2" thick		1400	.006		.37	.30		.67	.87
0980	6" thick		1300	.006		.65	.33		.98	1.21
1000	Sheet lead, 1 lb., 1/64" thick, perpendicular to joists		150	.053		7.90	2.83		10.73	12.95
1100	Vinyl foam reinforced, 1/8" thick, 1.0 lb./S.F.		150	.053		5.95	2.83		8.78	10.80

09 91 Painting

09 91 13 – Exterior Painting

09 91 13.30 Fences

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.	.08	.37		.45	.64
0120	Second coat		1280	.006		.08	.28		.36	.49
0130	Spray, first coat		2275	.004		.08	.16		.24	.32
0140	Second coat		2600	.003		.08	.14		.22	.29
0150	Picket, water base									
0160	Roll & brush, first coat	1 Pord	865	.009	S.F.	.09	.41		.50	.71
0170	Second coat		1050	.008		.09	.34		.43	.60
0180	Spray, first coat		2275	.004		.09	.16		.25	.33
0190	Second coat		2600	.003		.09	.14		.23	.30
0200	Stockade, water base									
0210	Roll & brush, first coat	1 Pord	1040	.008	S.F.	.09	.34		.43	.61
0220	Second coat		1200	.007		.09	.30		.39	.54

09 91 Painting

09 91.13 - Exterior Painting

		Daily Output	Labor Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
		1 Pord	.2275	.004	S.F.	.09	.16	.25	.33
0230	Spray, first coat								
0240	Second coat		2600	.003	↓	.09	.14	.23	.30

09 91 13.30 Fences

		Daily Output	Labor Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
		1 Pord	.2275	.004	S.F.	.09	.16	.25	.33
0230	Spray, first coat								
0240	Second coat		2600	.003	↓	.09	.14	.23	.30

09 91 13.42 Miscellaneous, Exterior

		R099100-20	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
0010	MISCELLANEOUS, EXTERIOR									
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.	.88	3.95	4.83	6.80
0140	Second coat		"	120	.067	"	.88	2.96	3.84	5.35
0150	Rough sawn wood, 42" high, 2" x 2" verticals, 6" OC									
0160	Brushwork, stain, each coat		1 Pord	.90	.089	L.F.	.29	3.95	4.24	6.15
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.	.85	2.73	3.58	5
0200	Finish coat			130	.062	"	1.13	2.73	3.86	5.30
0210	Additional coat			190	.042	↓	1.31	1.87	3.18	4.23
0220	Shutters or blinds, single panel, 2' x 4', paint all sides									
0230	Brushwork, primer		1 Pord	20	.400	Ea.	.72	17.75	18.47	27.50
0240	Finish coat, exterior latex			20	.400	"	.65	17.75	18.40	27
0250	Primer & 1 coat, exterior latex			13	.1615	"	1.21	27.50	28.71	42
0260	Spray, primer			35	.229	"	1.04	10.15	11.19	16.25
0270	Finish coat, exterior latex			35	.229	"	1.38	10.15	11.53	16.60
0280	Primer & 1 coat, exterior latex			20	.400	↓	1.13	17.75	18.88	27.50
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.	.38	1.11	1.49	2.06
0320	Rough sawn wood, 4" x 12"									
0330	Roll & brush, exterior latex, each coat		1 Pord	215	.037	L.F.	.10	1.65	1.75	2.57
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.	.10	.75	.85	1.22
0450	Decking, ext., sealer, alkyd, brushwork, sealer coat			1140	.007	"	.10	.31	.41	.57
0460	1st coat			1140	.007	"	.11	.31	.42	.58
0470	2nd coat			1300	.006	"	.08	.27	.35	.50
0500	Paint, alkyd, brushwork, primer coat			1140	.007	"	.11	.31	.42	.58
0510	1st coat			1140	.007	"	.14	.31	.45	.61
0520	2nd coat			1300	.006	"	.10	.27	.37	.52
0600	Sand paint, alkyd, brushwork, 1 coat			150	.053	"	.14	2.37	2.51	3.68

09 91 13.60 Siding Exterior

		R099100-10	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
		2 Pord	.2015	.008	S.F.	.11	.35	.46	.64	
0450	Steel siding, oil base, paint 1 coat, brushwork									
0500	Spray	R099100-20	4550	.004	"	.17	.16	.33	.41	
0800	Point 2 coats, brushwork									
1000	Spray		1300	.012	↓	.22	.55	.77	1.05	
1200	Stucco, rough, oil base, paint 2 coats, brushwork									
1400	Roller		2750	.006	"	.15	.26	.41	.55	
1600	Spray		1300	.012	"	.22	.55	.77	1.05	
1800	Texture 1-11 or clapboard, oil base, primer coat, brushwork									
2000	Spray		1625	.010	"	.23	.44	.67	.90	
2400	Paint 2 coats, brushwork									
2600	Spray		2925	.005	"	.24	.24	.48	.63	
3400	Stain 2 coats, brushwork									
			1300	.012	"	.14	.55	.69	.96	
			4550	.004	"	.14	.16	.30	.38	
			810	.020	↓	.32	.88	1.20	1.65	
			2600	.006	↓	.36	.27	.63	.80	
			950	.017	↓	.20	.75	.95	1.33	

09 91 Painting

09 91 13 – Exterior Painting

				Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
		Crew					Material	Labor	Equipment		
09 91 13.60 Siding Exterior											
4000	Spray	2 Pord	3050	.005	S.F.		.22	.23		.45	.59
4200	Wood shingles, oil base primer coat, brushwork		1300	.012			.13	.55		.68	.95
4400	Spray		3900	.004			.12	.18		.30	.40
5000	Paint 2 coats, brushwork		810	.020			.27	.88		1.15	1.59
5200	Spray		2275	.007			.25	.31		.56	.74
6500	Stain 2 coats, brushwork		950	.017			.20	.75		.95	1.33
7000	Spray		2660	.006			.27	.27		.54	.70
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.	.07	.31		.38	.53
0120	Finish coat, exterior latex			2275	.007		.06	.31		.37	.53
0130	Primer & 1 coat exterior latex			1300	.012		.14	.55		.69	.96
0140	Primer & 2 coats exterior latex			975	.016		.20	.73		.93	1.30
0150	Mineral fiber shingles										
0160	Brushwork, primer		2 Pord	1495	.011	S.F.	.14	.48		.62	.86
0170	Finish coat, industrial enamel			1495	.011		.20	.48		.68	.93
0180	Primer & 1 coat enamel			810	.020		.34	.88		1.22	1.67
0190	Primer & 2 coats enamel			540	.030		.54	1.32		1.86	2.55
0200	Roll, primer			1625	.010		.16	.44		.60	.82
0210	Finish coat, industrial enamel			1625	.010		.22	.44		.66	.89
0220	Primer & 1 coat enamel			975	.016		.37	.73		1.10	1.49
0230	Primer & 2 coats enamel			650	.025		.59	1.09		1.68	2.27
0240	Spray, primer			3900	.004		.12	.18		.30	.40
0250	Finish coat, industrial enamel			3900	.004		.18	.18		.36	.47
0260	Primer & 1 coat enamel			2275	.007		.30	.31		.61	.79
0270	Primer & 2 coats enamel			1625	.010		.48	.44		.92	1.18
0280	Waterproof sealer, first coat			4485	.004		.12	.16		.28	.38
0290	Second coat			5235	.003		.12	.14		.26	.33
0300	Rough wood incl. shingles, shakes or rough sawn siding										
0310	Brushwork, primer		2 Pord	1280	.013	S.F.	.14	.56		.70	.99
0320	Finish coat, exterior latex			1280	.013		.11	.56		.67	.95
0330	Primer & 1 coat exterior latex			960	.017		.25	.74		.99	1.38
0340	Primer & 2 coats exterior latex			700	.023		.36	1.02		1.38	1.90
0350	Roll, primer			2925	.005		.19	.24		.43	.57
0360	Finish coat, exterior latex			2925	.005		.13	.24		.37	.50
0370	Primer & 1 coat exterior latex			1790	.009		.32	.40		.72	.94
0380	Primer & 2 coats exterior latex			1300	.012		.45	.55		1	1.30
0390	Spray, primer			3900	.004		.16	.18		.34	.45
0400	Finish coat, exterior latex			3900	.004		.10	.18		.28	.38
0410	Primer & 1 coat exterior latex			2600	.006		.26	.27		.53	.70
0420	Primer & 2 coats exterior latex			2080	.008		.36	.34		.70	.91
0430	Waterproof sealer, first coat			4485	.004		.22	.16		.38	.49
0440	Second coat			4485	.004		.12	.16		.28	.38
0450	Smooth wood incl. butt, T&G, beveled, drop or B&B siding										
0460	Brushwork, primer		2 Pord	2325	.007	S.F.	.10	.31		.41	.56
0470	Finish coat, exterior latex			1280	.013		.11	.56		.67	.95
0480	Primer & 1 coat exterior latex			800	.020		.21	.89		1.10	1.55

09 91 Painting

09 91 13 – Exterior Painting

		Daily Output	Labor Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
09 91 13.62	Siding, Misc.	Crew			Labor	Equipment	Total		
0490	Primer & 2 coats exterior latex	2 Pord	.630	.025	S.F.	.32	1.13		1.45
0500	Roll, primer		2275	.007		.12	.31		.43
0510	Finish coat, exterior latex		2275	.007		.11	.31		.42
0520	Primer & 1 coat exterior latex		1300	.012		.23	.55		.78
0530	Primer & 2 coats exterior latex		975	.016		.35	.73		1.08
0540	Spray, primer		4550	.004		.09	.16		.25
0550	Finish coat, exterior latex		4550	.004		.10	.16		.26
0560	Primer & 1 coat exterior latex		2600	.006		.19	.27		.46
0570	Primer & 2 coats exterior latex		1950	.008		.29	.36		.65
0580	Waterproof sealer, first coat		5230	.003		.12	.14		.26
0590	Second coat		5980	.003		.12	.12		.24
0600	For oil base paint, add					10%			.32

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.	.07	.69	.76
0120	Finish coat, exterior latex			512	.016		.08	.69	.77
0130	Primer & 1 coat, exterior latex			300	.027		.15	1.18	1.33
0140	Primer & 2 coats, exterior latex			265	.030		.23	1.34	1.57
0150	Doors, flush, both sides, incl. frame & trim								2.24
0160	Roll & brush, primer		1 Pord	10	.800	Ea.	4.96	35.50	40.46
0170	Finish coat, exterior latex			10	.800		6.20	35.50	41.70
0180	Primer & 1 coat, exterior latex			7	1.143		11.15	50.50	61.65
0190	Primer & 2 coats, exterior latex			5	1.600		17.30	71	88.30
0200	Brushwork, stain, sealer & 2 coats polyurethane			4	2		31	89	120
0210	Doors, French, both sides, 10-15 lite, incl. frame & trim								
0220	Brushwork, primer		1 Pord	6	1.333	Ea.	2.48	59	61.48
0230	Finish coat, exterior latex			6	1.333		3.09	59	62.09
0240	Primer & 1 coat, exterior latex			3	2.667		5.55	118	123.55
0250	Primer & 2 coats, exterior latex			2	4		8.50	178	186.50
0260	Brushwork, stain, sealer & 2 coats polyurethane			2.50	3.200		11.15	142	153.15
0270	Doors, louvered, both sides, incl. frame & trim								223
0280	Brushwork, primer		1 Pord	7	1.143	Ea.	4.96	50.50	55.46
0290	Finish coat, exterior latex			7	1.143		6.20	50.50	56.70
0300	Primer & 1 coat, exterior latex			4	2		11.15	89	100.15
0310	Primer & 2 coats, exterior latex			3	2.667		16.95	118	134.95
0320	Brushwork, stain, sealer & 2 coats polyurethane			4.50	1.778		31	79	110
0330	Doors, panel, both sides, incl. frame & trim								
0340	Roll & brush, primer		1 Pord	6	1.333	Ea.	4.96	59	63.96
0350	Finish coat, exterior latex			6	1.333		6.20	59	65.20
0360	Primer & 1 coat, exterior latex			3	2.667		11.15	118	129.15
0370	Primer & 2 coats, exterior latex			2.50	3.200		16.95	142	158.95
0380	Brushwork, stain, sealer & 2 coats polyurethane			3	2.667		31	118	149
0400	Windows, per ext. side, based on 15 S.F.								210
0410	1 to 6 lite								
0420	Brushwork, primer		1 Pord	13	.615	Ea.	.98	27.50	28.48
0430	Finish coat, exterior latex			13	.615		1.22	27.50	28.72
0440	Primer & 1 coat, exterior latex			8	1		2.20	44.50	46.70
0450	Primer & 2 coats, exterior latex			6	1.333		3.35	59	62.35
0460	Stain, sealer & 1 coat varnish			7	1.143		4.40	50.50	54.90
0470	7 to 10 lite			11	.727	Ea.	.98	32.50	33.48
0480	Brushwork, primer								49

09 91 Painting

09 91 13 - Exterior Painting

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
		1 Pord		Ea.		Labor	Equipment		
0490	Finish coat, exterior latex		.727	Ea.	1.22	32.50		33.72	49.50
0500	Primer & 1 coat, exterior latex		7	1.143		2.20	50.50	52.70	78
0510	Primer & 2 coats, exterior latex		5	1.600		3.35	71	74.35	110
0520	Stain, sealer & 1 coat varnish		6	1.333		4.40	59	63.40	93
0530	12 litre								
0540	Brushwork, primer	1 Pord	10	.800	Ea.	.98	35.50	36.48	54
0550	Finish coat, exterior latex		10	.800		1.22	35.50	36.72	54.50
0560	Primer & 1 coat, exterior latex		6	1.333		2.20	59	61.20	90.50
0570	Primer & 2 coats, exterior latex		5	1.600		3.35	71	74.35	110
0580	Stain, sealer & 1 coat varnish		6	1.333		4.45	59	63.45	93
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. .02 .56 .58 .86
0130	Roll	1280 .006 .03 .28 .31 .44
0140	Spray	2080 .004 .02 .17 .19 .27
0150	1" x 6" to 1" x 10", brushwork	640 .013 .09 .56 .65 .93
0160	Roll	1230 .007 .09 .29 .38 .53
0170	Spray	2100 .004 .07 .17 .24 .33
0180	1" x 12", brushwork	640 .013 .09 .56 .65 .93
0190	Roll	1050 .008 .09 .34 .43 .60
0200	Spray	2200 .004 .07 .16 .23 .32
0210	Gutters & downspouts, metal, zinc chromate paint	
0220	Brushwork, gutters, 5", first coat	1 Pord 640 .013 L.F. .40 .56 .96 1.26
0230	Second coat	960 .008 .38 .37 .75 .96
0240	Third coat	1280 .006 .30 .28 .58 .74
0250	Downspouts, 4", first coat	640 .013 .40 .56 .96 1.26
0260	Second coat	960 .008 .38 .37 .75 .96
0270	Third coat	1280 .006 .30 .28 .58 .74
0280	Gutters & downspouts, wood	
0290	Brushwork, gutters, 5", primer	1 Pord 640 .013 L.F. .07 .56 .63 .90
0300	Finish coat, exterior latex	640 .013 .07 .56 .63 .91
0310	Primer & 1 coat exterior latex	400 .020 .15 .89 1.04 1.48
0320	Primer & 2 coats exterior latex	325 .025 .23 1.09 1.32 1.88
0330	Downspouts, 4", primer	640 .013 .07 .56 .63 .90
0340	Finish coat, exterior latex	640 .013 .07 .56 .63 .91
0350	Primer & 1 coat exterior latex	400 .020 .15 .89 1.04 1.48
0360	Primer & 2 coats exterior latex	325 .025 .11 1.09 1.20 1.76
0370	Molding, exterior, up to 14" wide	
0380	Brushwork, primer	1 Pord 640 .013 L.F. .08 .56 .64 .92
0390	Finish coat, exterior latex	640 .013 .09 .56 .65 .93
0400	Primer & 1 coat exterior latex	400 .020 .18 .89 1.07 1.51
0410	Primer & 2 coats exterior latex	315 .025 .18 1.13 1.31 1.87
0420	Stain & fill	1050 .008 .12 .34 .46 .63
0430	Shellac	1850 .004 .16 .19 .35 .46
0440	Varnish	1275 .006 .12 .28 .40 .54

09 91 Painting

09 91 13 – Exterior Painting

09 91 13.90 Walls, Masonry (CMU), Exterior			Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
		R099100-10					Labor	Equipment		
0010	WALLS, MASONRY (CMU), EXTERIOR									
0360	Concrete masonry units (CMU), smooth surface									
0370	Brushwork, latex, first coat		1 Pord	640	.013	S.F.	.06	.56	.62	.90
0380	Second coat			960	.008		.05	.37	.42	.60
0390	Waterproof sealer, first coat			736	.011		.28	.48	.76	1.03
0400	Second coat			1104	.007		.28	.32	.60	.79
0410	Roll, latex, paint, first coat			1465	.005		.07	.24	.31	.44
0420	Second coat			1790	.004		.06	.20	.26	.36
0430	Waterproof sealer, first coat			1680	.005		.28	.21	.49	.62
0440	Second coat			2060	.004		.28	.17	.45	.57
0450	Spray, latex, paint, first coat			1950	.004		.06	.18	.24	.33
0460	Second coat			2600	.003		.05	.14	.19	.25
0470	Waterproof sealer, first coat			2245	.004		.28	.16	.44	.55
0480	Second coat			2990	.003	↓	.28	.12	.40	.49
0490	Concrete masonry unit (CMU), porous									
0500	Brushwork, latex, first coat		1 Pord	640	.013	S.F.	.12	.56	.68	.96
0510	Second coat			960	.008		.06	.37	.43	.62
0520	Waterproof sealer, first coat			736	.011		.28	.48	.76	1.03
0530	Second coat			1104	.007		.28	.32	.60	.79
0540	Roll latex, first coat			1465	.005		.09	.24	.33	.46
0550	Second coat			1790	.004		.06	.20	.26	.36
0560	Waterproof sealer, first coat			1680	.005		.28	.21	.49	.62
0570	Second coat			2060	.004		.28	.17	.45	.57
0580	Spray latex, first coat			1950	.004		.07	.18	.25	.34
0590	Second coat			2600	.003		.05	.14	.19	.25
0600	Waterproof sealer, first coat			2245	.004		.28	.16	.44	.55
0610	Second coat			2990	.003		.28	.12	.40	.49

09 91 23 – Interior Painting

09 91 23.20 Cabinets and Casing			R099100-10							
		1 Pord								
0010	CABINETS AND CASEWORK									
1000	Primer coat, oil base, brushwork		1 Pord	650	.012	S.F.	.07	.55	.62	.89
2000	Paint, oil base, brushwork, 1 coat		R099100-20	650	.012		.12	.55	.67	.94
3000	Stain, brushwork, wipe off			650	.012		.10	.55	.65	.92
4000	Shellac, 1 coat, brushwork			650	.012		.13	.55	.68	.96
4500	Varnish, 3 coats, brushwork, sand after 1st coat			325	.025		.29	1.09	1.38	1.95
5000	For latex paint, deduct						10%			
6300	Strip, prep and refinish wood furniture									
6310	Remove paint using chemicals, wood furniture		1 Pord	28	.286	S.F.	1.55	12.70	14.25	20.50
6320	Prep for painting, sanding			75	.107		.25	4.74	4.99	7.30
6350	Stain and wipe, brushwork			600	.013		.10	.59	.69	.99
6355	Spray applied			900	.009		.09	.39	.48	.69
6360	Sealer or varnish, brushwork			1080	.007		.10	.33	.43	.60
6365	Spray applied			2100	.004		.10	.17	.27	.36
6370	Paint, primer, brushwork			720	.011		.07	.49	.56	.81
6375	Spray applied			2100	.004		.07	.17	.24	.32
6380	Finish coat, brushwork			810	.010		.12	.44	.56	.78
6385	Spray applied			2100	.004		.11	.17	.28	.38

09 91 23.33 Doors and Windows, Interior Alkyd (Oil Base)

09 91 23.33 Doors and Windows, Interior Alkyd (Oil Base)			R099100-10							
		1 Pord								
0010	DOORS AND WINDOWS, INTERIOR ALKYD (OIL BASE)									
0500	Flush door & frame, 3' x 7', oil, primer, brushwork		1 Pord	10	.800	Ea.	4.21	35.50	39.71	57.50
1000	Paint, 1 coat		R099100-20	10	.800		4.82	35.50	40.32	58.50

09 91 Painting

09 91 23 - Interior Painting

09 91 23.33 Doors and Windows, Interior Alkyd (Oil Base)	Crew	Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
					Material	Labor	Equipment		
1400 Stain, brushwork, wipe off	1 Pord	18	.444	Ea.	2.06	19.75		21.81	32
1600 Shellac, 1 coat, brushwork		25	.320		2.77	14.20		16.97	24
1800 Varnish, 3 coats, brushwork, sand after 1st coat		9	.889		6.05	39.50		45.55	65
2000 Panel door & frame, 3' x 7', oil, primer, brushwork		6	1.333		2.64	59		61.64	91
2200 Paint, 1 coat		6	1.333		4.82	59		63.82	93.50
2600 Stain, brushwork, panel door, 3' x 7', not incl. frame		16	.500		2.06	22		24.06	35.50
2800 Shellac, 1 coat, brushwork		22	.364		2.77	16.15		18.92	27
3000 Varnish, 3 coats, brushwork, sand after 1st coat		7.50	1.067		6.05	47.50		53.55	77
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.	.42	25.50		25.92	38
5800 Paint, 1 coat		14	.571		.76	25.50		26.26	38.50
6200 3' x 5' opening, 6/6 lites, primer coat, brushwork		12	.667		1.04	29.50		30.54	45
6400 Paint, 1 coat		12	.667		1.90	29.50		31.40	46
6800 4' x 8' opening, 6/6 lites, primer coat, brushwork		8	1		2.23	44.50		46.73	68.50
7000 Paint, 1 coat		8	1		4.06	44.50		48.56	70.50
8000 Single lite type, 2' x 3', oil base, primer coat, brushwork		33	.242		.42	10.75		11.17	16.45
8200 Paint, 1 coat		33	.242		.76	10.75		11.51	16.85
8600 3' x 5' opening, primer coat, brushwork		20	.400		1.04	17.75		18.79	27.50
8800 Paint, 1 coat		20	.400		1.90	17.75		19.65	28.50
9200 4' x 8' opening, primer coat, brushwork		14	.571		2.23	25.50		27.73	40
9400 Paint, 1 coat		14	.571		4.06	25.50		29.56	42

09 91 23.35 Doors and Windows, Interior Latex

0010 DOORS & WINDOWS, INTERIOR LATEX	R099100-10								R099100-20	1 Pord	10	.800	Ea.	4.17	35.50	39.67	57.50	
0100 Doors, flush, both sides, incl. frame & trim																		
0110 Roll & brush, primer																		
0120 Finish coat, latex																		
0130 Primer & 1 coat latex																		
0140 Primer & 2 coats latex																		
0160 Spray, both sides, primer																		
0170 Finish coat, latex																		
0180 Primer & 1 coat latex																		
0190 Primer & 2 coats latex																		
0200 Doors, French, both sides, 10-15 lite, incl. frame & trim																		
0210 Roll & brush, primer																		
0220 Finish coat, latex																		
0230 Primer & 1 coat latex																		
0240 Primer & 2 coats latex																		
0260 Doors, louvered, both sides, incl. frame & trim																		
0270 Roll & brush, primer																		
0280 Finish coat, latex																		
0290 Primer & 1 coat, latex																		
0300 Primer & 2 coats, latex																		
0320 Spray, both sides, primer																		
0330 Finish coat, latex																		
0340 Primer & 1 coat, latex																		
0350 Primer & 2 coats, latex																		
0360 Doors, panel, both sides, incl. frame & trim																		
0370 Roll & brush, primer																		
0380 Finish coat, latex																		
0390 Primer & 1 coat, latex																		
0400 Primer & 2 coats, latex																		
0420 Spray, both sides, primer																		

09 91 Painting

09 91 23 - Interior Painting

09 91 23.35 Doors and Windows, Interior Latex		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Ind O&P
		1 Pord	10	.800 Ea.	6.20	35.50		41.70	60
0430	Finish coat, latex		5	1.600	10.70	71		81.70	118
0440	Primer & 1 coat, latex		4	2	17	89		106	151
0450	Primer & 2 coats, latex								
0460	Windows, per interior side, based on 15 S.F.								
0470	1 to 6 lite								
0480	Brushwork, primer	1 Pord	13	.615 Ea.	.82	27.50		28.32	41.50
0490	Finish coat, enamel		13	.615	1.17	27.50		28.67	42
0500	Primer & 1 coat enamel		8	1	1.99	44.50		46.49	68
0510	Primer & 2 coats enamel		6	1.333	3.16	59		62.16	91.50
0530	7 to 10 lite								
0540	Brushwork, primer	1 Pord	11	.727 Ea.	.82	32.50		33.32	49
0550	Finish coat, enamel		11	.727	1.17	32.50		33.67	49.50
0560	Primer & 1 coat enamel		7	1.143	1.99	50.50		52.49	77.50
0570	Primer & 2 coats enamel		5	1.600	3.16	71		74.16	109
0590	12 lite								
0600	Brushwork, primer	1 Pord	10	.800 Ea.	.82	35.50		36.32	54
0610	Finish coat, enamel		10	.800	1.17	35.50		36.67	54.50
0620	Primer & 1 coat enamel		6	1.333	1.99	59		60.99	90
0630	Primer & 2 coats enamel		5	1.600	3.16	71		74.16	109
0650	For oil base paint, add				10%				

09 91 23.39 Doors and Windows, Interior Latex, Zero VOC

DOORS & WINDOWS, INTERIOR LATEX, ZERO VOC		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Ind O&P
		1 Pord	10	.800 Ea.	5.70	35.50		41.20	59.50
0100	Doors flush, both sides, incl. frame & trim								
0110	Roll & brush, primer	G	1 Pord	10	.800 Ea.	5.70	35.50		41.20
0120	Finish coat, latex	G	10	.800	6.60	35.50		42.10	60.50
0130	Primer & 1 coat latex	G	7	1.143	12.25	50.50		62.75	89
0140	Primer & 2 coats latex	G	5	1.600	18.50	71		89.50	127
0160	Spray, both sides, primer	G	20	1.400	6	17.75		23.75	33
0170	Finish coat, latex	G	20	1.400	6.90	17.75		24.65	34
0180	Primer & 1 coat latex	G	11	.727	13	32.50		45.50	62.50
0190	Primer & 2 coats latex	G	8	1	19.55	44.50		64.05	87.50
0200	Doors, French, both sides, 10-15 lite, incl. frame & trim								
0210	Roll & brush, primer	G	1 Pord	6	1.333 Ea.	2.84	59		61.84
0220	Finish coat, latex	G	6	1.333	3.29	59		62.29	91.50
0230	Primer & 1 coat latex	G	3	2.667	6.15	118		124.15	183
0240	Primer & 2 coats latex	G	2	4	9.25	178		187.25	274
0360	Doors, panel, both sides, incl. frame & trim								
0370	Roll & brush, primer	G	1 Pord	6	1.333 Ea.	6	59		65
0380	Finish coat, latex	G	6	1.333	6.60	59		65.60	95.50
0390	Primer & 1 coat, latex	G	3	2.667	12.25	118		130.25	190
0400	Primer & 2 coats, latex	G	2.50	3.200	18.85	142		160.85	232
0420	Spray, both sides, primer	G	10	1.800	6	35.50		41.50	59.50
0430	Finish coat, latex	G	10	1.800	6.90	35.50		42.40	60.50
0440	Primer & 1 coat, latex	G	5	1.600	13	71		84	120
0450	Primer & 2 coats, latex	G	4	2	20	89		109	154
0460	Windows, per interior side, based on 15 S.F.								
0470	1 to 6 lite								
0480	Brushwork, primer	G	1 Pord	13	.615 Ea.	1.12	27.50		28.62
0490	Finish coat, enamel	G	13	.615	1.30	27.50		28.80	42
0500	Primer & 1 coat enamel	G	8	1	2.42	44.50		46.92	68.50
0510	Primer & 2 coats enamel	G	6	1.333	3.72	59		62.72	92

09 91 Painting

09 91 23 - Interior Painting

09 91 23.40 Floors, Interior		Daily Output		Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Ind O&P
0010	FLOORS, INTERIOR	R099100-10									
0100	Concrete paint, latex										
0110	Brushwork										
0120	1st coat		1 Pord	.975	.008	S.F.		.15	.36		.51 .71
0130	2nd coat			1150	.007			.10	.31		.41 .57
0140	3rd coat		↓	1300	.006	↓		.08	.27		.35 .50
0150	Roll										
0160	1st coat		1 Pord	2600	.003	S.F.		.20	.14		.34 .42
0170	2nd coat			3250	.002			.12	.11		.23 .29
0180	3rd coat		↓	3900	.002	↓		.09	.09		.18 .24
0190	Spray										
0200	1st coat		1 Pord	2600	.003	S.F.		.17	.14		.31 .39
0210	2nd coat			3250	.002			.10	.11		.21 .26
0220	3rd coat		↓	3900	.002	↓		.08	.09		.17 .22

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.		.34	.09		.43 .51
1110	For marble			4000	.002			.25	.09		.34 .40
1120	For wood			4000	.002			.23	.09		.32 .38
1130	For baths and showers		▼	500	.016			.39	.71		1.10 1.49
2000	Granular additive for paint or sealer, add to paint cost					▼		.02			.02 .02

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.		.09	.36		.45 .64
2450	Roller			5200	.003			.09	.14		.23 .30
2600	Spray			6000	.003			.09	.12		.21 .28
2650	Paint 1 coat, brushwork			1950	.008			.10	.36		.46 .65
2800	Roller			5200	.003			.10	.14		.24 .31
2850	Spray			6000	.003			.11	.12		.23 .30
3000	Stain, wood floor, brushwork, 1 coat			4550	.004			.10	.16		.26 .34
3200	Roller			5200	.003			.10	.14		.24 .31
3250	Spray			6000	.003			.10	.12		.22 .29
3400	Varnish, wood floor, brushwork			4550	.004			.10	.16		.26 .34
3450	Roller			5200	.003			.10	.14		.24 .31
3600	Spray		▼	6000	.003	▼		.11	.12		.23 .30
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.		.14	.68		.82 1.17
3850	Spray			1140	.007			.15	.31		.46 .62
3920	Paint 2 coats, brushwork			325	.025			.49	1.09		1.58 2.17
3940	Spray		▼	650	.012	▼		.56	.55		1.11 1.43
4600	Miscellaneous surfaces, metallic paint, spray applied										
4610	Water based, non-tintable, warm silver		1 Pord	1140	.007	S.F.		.59	.31		.90 1.11
4620	Rusted iron			1140	.007			1.04	.31		1.35 1.60
4630	Low VOC, tintable		▼	1140	.007	▼		.40	.31		.71 .90
5000	Pipe, 1"-4" diameter, primer or sealer coat, oil base, brushwork		2 Pord	1250	.013	L.F.		.09	.57		.66 .95
5100	Spray			2165	.007			.09	.33		.42 .59
5350	Paint 2 coats, brushwork			775	.021			.23	.92		1.15 1.61
5400	Spray			1240	.013			.25	.57		.82 1.13
6300	13"-16" diameter, primer or sealer coat, brushwork			310	.052			.37	2.29		2.66 3.81
6350	Spray			540	.030			.41	1.32		1.73 2.41
6500	Paint 2 coats, brushwork		▼	195	.082	▼		.91	3.64		4.55 6.40

09 91 Painting

09 91 23 – Interior Painting

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
		Crew		L.F.	Labor	Equipment			
09 91 23.52 Miscellaneous, Interior									
6550	Spray	2 Pord	310	.052	L.F.	1.01	2.29		3.30
7000	Trim, wood, incl. puttying, under 6" wide	1 Pord	650	.012	L.F.	.03	.55		.58
7200	Primer coat, oil base, brushwork								.85
7250	Paint, 1 coat, brushwork		650	.012		.06	.55		.61
7450	3 coats		325	.025		.18	1.09		1.27
7500	Over 6" wide, primer coat, brushwork		650	.012		.07	.55		.62
7550	Paint, 1 coat, brushwork		650	.012		.13	.55		.68
7650	3 coats		325	.025		.37	1.09		1.46
8000	Cornice, simple design, primer coat, oil base, brushwork		650	.012	S.F.	.07	.55		.62
8250	Paint, 1 coat		650	.012		.13	.55		.68
8350	Ornate design, primer coat		350	.023		.07	1.02		1.09
8400	Paint, 1 coat		350	.023		.13	1.02		1.15
8600	Balustrades, primer coat, oil base, brushwork		520	.015		.07	.68		.75
8650	Paint, 1 coat		520	.015		.13	.68		.81
8900	Trusses and wood frames, primer coat, oil base, brushwork		800	.010		.07	.44		.51
8950	Spray		1200	.007		.07	.30		.37
9220	Paint 2 coats, brushwork		500	.016		.25	.71		.96
9240	Spray		600	.013		.27	.59		.86
9260	Stain, brushwork, wipe off		600	.013		.10	.59		.69
9280	Varnish, 3 coats, brushwork		275	.029		.29	1.29		1.58
9350	For latex paint, deduct						10%		2.24

09 91 23.62 Electrostatic Painting

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
		Crew		L.F.	Labor	Equipment			
0010	ELECTROSTATIC PAINTING								
0100	In shop								
0200	Flat surfaces (lockers, casework, elevator doors, etc.)								
0300	One coat	1 Pord	200	.040	S.F.	.65	1.78		2.43
0400	Two coats	"	120	.067	"	.94	2.96		3.90
0500	Irregular surfaces (furniture, door frames, etc.)								
0600	One coat	1 Pord	150	.053	S.F.	.65	2.37		3.02
0700	Two coats	"	100	.080	"	.94	3.55		4.49
0800	On site								
0900	Flat surfaces (lockers, casework, elevator doors, etc.)								
1000	One coat	1 Pord	150	.053	S.F.	.65	2.37		3.02
1100	Two coats	"	100	.080	"	.94	3.55		4.49
1200	Irregular surfaces (furniture, door frames, etc.)								
1300	One coat	1 Pord	115	.070	S.F.	.65	3.09		3.74
1400	Two coats		70	.114		.94	5.05		5.99
2000	Anti-microbial coating, hospital application		150	.053		.06	2.37		2.43

09 91 23.72 Walls and Ceilings, Interior

		R099100-10	R099100-20	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
				Crew		L.F.	Labor	Equipment			
0010	WALLS AND CEILINGS, INTERIOR										
0100	Concrete, drywall or plaster, latex, primer or sealer coat										
0150	Smooth finish, cut-in by brush	1 Pord	1150	.007	L.F.	.02	.31			.33	.48
0200	Brushwork		1150	.007	S.F.	.06	.31			.37	.53
0240	Roller		1350	.006		.06	.26			.32	.46
0280	Spray		2750	.003		.05	.13			.18	.25
0290	Sand finish, cut-in by brush		975	.008	L.F.	.02	.36			.38	.56
0300	Brushwork		975	.008	S.F.	.06	.36			.42	.61
0340	Roller		1150	.007		.06	.31			.37	.53
0380	Spray		2275	.004		.05	.16			.21	.29
0590	Paint 2 coats, smooth finish, cut-in by brush		680	.012	L.F.	.04	.52			.56	.82
0800	Brushwork		680	.012	S.F.	.15	.52			.67	.95
0840	Roller		800	.010		.15	.44			.59	.83

09 91 Painting

09 91 23 – Interior Painting

09 91 23.72 Walls and Ceilings, Interior	Crew	Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
					Labor	Equipment	Total		
0880 Spray	1 Pord	1625	.005	S.F.	.14	.22	.36	.49	
0890 Sand finish, cut-in by brush		605	.013	L.F.	.04	.59	.63	.91	
0900 Brushwork		605	.013	S.F.	.15	.59	.74	1.04	
0940 Roller		1020	.008		.15	.35	.50	.69	
0980 Spray		1700	.005		.14	.21	.35	.47	
1190 Paint 3 coats, smooth finish, cut-in by brush		510	.016	L.F.	.06	.70	.76	1.10	
1200 Brushwork		510	.016	S.F.	.23	.70	.93	1.29	
1240 Roller		650	.012		.23	.55	.78	1.06	
1280 Spray		850	.009		.21	.42	.63	.86	
1600 Glaze coating, 2 coats, spray, clear		1200	.007		.56	.30	.86	1.06	
1640 Multicolor		1200	.007		.87	.30	1.17	1.40	
1660 Painting walls, complete, including surface prep, primer &									
1670 2 coats finish, on drywall or plaster, with roller	1 Pord	325	.025	S.F.	.22	1.09	1.31	1.88	
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.	.04	.36	.40	.58	
2100 Brushwork		1000	.008	S.F.	.17	.36	.53	.72	
2110 Roller		1150	.007		.11	.31	.42	.58	
2180 Spray		2400	.003		.10	.15	.25	.33	
2190 Sand finish, cut-in by brush		850	.009	L.F.	.03	.42	.45	.65	
2200 Brushwork		850	.009	S.F.	.11	.42	.53	.74	
2210 Roller		975	.008		.11	.36	.47	.66	
2280 Spray		2050	.004		.10	.17	.27	.37	
2290 Finish coat, smooth finish, cut-in by brush		1100	.007	L.F.	.02	.32	.34	.50	
2400 Brushwork		1100	.007	S.F.	.08	.32	.40	.57	
2410 Roller		1300	.006		.08	.27	.35	.50	
2480 Spray		2400	.003		.07	.15	.22	.30	
2490 Sand finish, cut-in by brush		950	.008	L.F.	.02	.37	.39	.58	
2500 Brushwork		950	.008	S.F.	.08	.37	.45	.65	
2510 Roller		1090	.007		.08	.33	.41	.57	
2580 Spray		2040	.004		.07	.17	.24	.34	
2590 Primer plus one finish coat, smooth cut-in by brush		525	.015	L.F.	.08	.68	.76	1.09	
2800 Brushwork		525	.015	S.F.	.30	.68	.98	1.34	
2810 Roller		615	.013		.19	.58	.77	1.07	
2880 Spray		1200	.007		.17	.30	.47	.63	
2890 Sand finish, cut-in by brush		450	.018	L.F.	.05	.79	.84	1.22	
2900 Brushwork		450	.018	S.F.	.19	.79	.98	1.38	
2910 Roller		515	.016		.19	.69	.88	1.24	
2980 Spray		1025	.008		.17	.35	.52	.71	
3190 Primer plus 2 finish coats, smooth, cut-in by brush		355	.023	L.F.	.07	1	1.07	1.57	
3200 Brushwork		355	.023	S.F.	.28	1	1.28	1.80	
3210 Roller		415	.019		.28	.86	1.14	1.58	
3280 Spray		800	.010		.24	.44	.68	.93	
3290 Sand finish, cut-in by brush		305	.026	L.F.	.07	1.16	1.23	1.81	
3300 Brushwork		305	.026	S.F.	.28	1.16	1.44	2.04	
3310 Roller		350	.023		.28	1.02	1.30	1.82	
3380 Spray		675	.012		.24	.53	.77	1.05	
3600 Glaze coating, 3 coats, spray, clear		900	.009		.80	.39	1.19	1.47	
3620 Multicolor		900	.009		1.08	.39	1.47	1.78	
4000 Block filler, 1 coat, brushwork		425	.019		.13	.84	.97	1.39	
4100 Silicone, water repellent, 2 coats, spray		2000	.004		.48	.18	.66	.78	
4120 For oil base paint, add					10%				

09 91 Painting

09 91 23 – Interior Painting

09 91 23.72 Walls and Ceilings, Interior		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total
						Labor	Equipment	Total
								Total Ind O&P
8200	For work 8'-15' H, add			S.F.		10%		
8300	For work over 15' H, add					20%		
8400	For light textured surfaces, add					10%		
8410	Heavy textured, add					25%		

09 91 23.74 Walls and Ceilings, Interior, Zero VOC Latex

0010 WALLS AND CEILINGS, INTERIOR, ZERO VOC LATEX		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total
						Labor	Equipment	Total
								Total Ind O&P
0100	Concrete, dry wall or plaster, latex, primer or sealer coat							
0190	Smooth finish, cut-in by brush	1 Pord	1150	.007	L.F.	.02	.31	.33
0200	Brushwork	G	1150	.007	S.F.	.07	.31	.38
0240	Roller	G	1350	.006		.07	.26	.33
0280	Spray	G	2750	.003		.05	.13	.18
0290	Sand finish, cut-in by brush	G	975	.008	L.F.	.02	.36	.38
0300	Brushwork	G	975	.008	S.F.	.07	.36	.43
0340	Roller	G	1150	.007		.08	.31	.39
0380	Spray	G	2275	.004		.06	.16	.22
0790	Paint 2 coats, smooth finish, cut-in by brush		680	.012	L.F.	.04	.52	.56
0800	Brushwork	G	680	.012	S.F.	.04	.52	.56
0840	Roller	G	800	.010		.17	.44	.61
0880	Spray	G	1625	.005		.14	.22	.36
0890	Sand finish, cut-in by brush	G	605	.013	L.F.	.04	.59	.63
0900	Brushwork	G	605	.013	S.F.	.16	.59	.75
0940	Roller	G	1020	.008		.17	.35	.52
0980	Spray	G	1700	.005		.14	.21	.35
1190	Paint 3 coats, smooth finish, cut-in my brush		510	.016	L.F.	.06	.70	.76
1200	Brushwork	G	510	.016	S.F.	.24	.70	.94
1240	Roller	G	650	.012		.25	.55	.80
1280	Spray	G	850	.009		.21	.42	.63
1800	For ceiling installations, add	G					25%	
8200	For work 8' - 15' H, add						10%	
8300	For work over 15' H, add						20%	

09 91 23.75 Dry Fall Painting

0010 DRY FALL PAINTING		R099100-10	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total
									Total Ind O&P
0100	Sprayed on walls, gypsum board or plaster								
0220	One coat	R099100-20	1 Pord	2600	.003	S.F.	.08	.14	.22
0250	Two coats		G	1560	.005		.16	.23	.39
0280	Concrete or textured plaster, one coat		G	1560	.005		.08	.23	.31
0310	Two coats		G	1300	.006		.16	.27	.43
0340	Concrete block, one coat		G	1560	.005		.08	.23	.31
0370	Two coats		G	1300	.006		.16	.27	.43
0400	Wood, one coat		G	877	.009		.08	.40	.48
0430	Two coats		G	650	.012		.16	.55	.71
0440	On ceilings, gypsum board or plaster								
0470	One coat		G	1560	.005	S.F.	.08	.23	.31
0500	Two coats		G	1300	.006		.16	.27	.43
0530	Concrete or textured plaster, one coat		G	1560	.005		.08	.23	.31
0560	Two coats		G	1300	.006		.16	.27	.43
0570	Structural steel, bar joists or metal deck, one coat		G	1560	.005		.08	.23	.31
0580	Two coats		G	1040	.008		.16	.34	.50

09 93 Staining and Transparent Finishing

09 93 23 – Interior Staining and Finishing

		Daily	Labor-	Unit	2020 Bare Costs			Total	Total
		Crew Output	Hours	Unit	Material	Labor	Equipment	Total	Incl O&P
09 93 23.10 Varnish									
0010	VARNISH								
0012	1 coat + sealer, on wood trim, brush, no sanding included	1 Pord	400	.020	S.F.	.07	.89	.96	1.40
0020	1 coat + sealer, on wood trim, brush, no sanding included, no VOC		400	.020		.22	.89	1.11	1.56
0100	Hardwood floors, 2 coats, no sanding included, roller		1890	.004		.15	.19	.34	.45

09 96 High-Performance Coatings

09 96 23 – Graffiti-Resistant Coatings

09 96 23.10 Graffiti-Resistant Treatments

		Daily	Labor-	Unit	2020 Bare Costs			Total	Total	
		Crew Output	Hours	Unit	Material	Labor	Equipment	Total	Incl O&P	
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.	2.05	.18	2.23	2.52	
0200	Concrete		2000	.004		2.33	.18	2.51	2.82	
0300	Concrete block		2000	.004		3.02	.18	3.20	3.58	
0400	Brick		2000	.004		3.42	.18	3.60	4.02	
0500	Stone		2000	.004		3.42	.18	3.60	4.02	
0600	Unpainted wood		2000	.004		3.94	.18	4.12	4.60	
2000	Semi-permanent cross linking polymer primer, on metals		2000	.004		.62	.18	.80	.94	
2100	Concrete		2000	.004		.74	.18	.92	1.07	
2200	Concrete block		2000	.004		.92	.18	1.10	1.28	
2300	Brick		2000	.004		.74	.18	.92	1.07	
2400	Stone		2000	.004		.74	.18	.92	1.07	
2500	Unpainted wood		2000	.004		1.03	.18	1.21	1.39	
3000	Top coat, on metals		2000	.004		.56	.18	.74	.87	
3100	Concrete		2000	.004		.64	.18	.82	.96	
3200	Concrete block		2000	.004		.89	.18	1.07	1.24	
3300	Brick		2000	.004		.74	.18	.92	1.08	
3400	Stone		2000	.004		.74	.18	.92	1.08	
3500	Unpainted wood		2000	.004		.89	.18	1.07	1.24	
5000	Sacrificial, water based, on metal		2000	.004		.34	.18	.52	.63	
5100	Concrete		2000	.004		.34	.18	.52	.63	
5200	Concrete block		2000	.004		.34	.18	.52	.63	
5300	Brick		2000	.004		.34	.18	.52	.63	
5400	Stone		2000	.004		.34	.18	.52	.63	
5500	Unpainted wood		2000	.004		.34	.18	.52	.63	
8000	Cleaner for use after treatment									
8100	Towels or wipes, per package of 30				Ea:		.72	.72	.79	
8200	Aerosol spray, 24 oz. can				"		19	19	21	
8500	Graffiti removal with chemicals									
8510	Brush on, spray rinse off, on brick, masonry or stone	A-1H	200	.040	S.F.	.34	1.68	.38	2.40	3.32
8520	On smooth concrete	"	400	.020		.27	.84	.19	1.30	1.78
8530	Wipe on, wipe off, on plastic or painted metal	1 Clab	1500	.005		.72	.22	.94	1.13	
8540	Brush on, wipe off, on painted wood	"	500	.016		.36	.67	1.03	1.40	

09 96 46 – Intumescence Painting

09 96 46.10 Coatings, Intumescence

		Daily	Labor-	Unit	2020 Bare Costs			Total	Total
		Crew Output	Hours	Unit	Material	Labor	Equipment	Total	Incl O&P
09 96 46.10 Coatings, Intumescence									
0010	COATINGS, INTUMESCENT , spray applied								
0100	On exterior structural steel, 0.25" d.f.t.	1 Pord	475	.017	S.F.	.50	.75	1.25	1.66
0150	0.51" d.f.t.		350	.023		.50	1.02	1.52	2.06
0200	0.98" d.f.t.		280	.029		.50	1.27	1.77	2.44
0300	On interior structural steel, 0.108" d.f.t.		300	.027		.49	1.18	1.67	2.30
0350	0.310" d.f.t.		150	.053		.49	2.37	2.86	4.06
0400	0.670" d.f.t.		100	.080		.49	3.55	4.04	5.85

09 96 High-Performance Coatings

09 96 53 – Elastomeric Coatings

09 96 53.10 Coatings, Elastomeric		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Ind O&P
0010 COATINGS, ELASTOMERIC											
0020 High build, water proof, one coat system											
0100 Concrete, brush		1 Pord	650	.012	S.F.	.29	.55			.84	1.13
0110 Roll			1650	.005		.29	.22			.51	.64
0120 Spray			2600	.003		.29	.14			.43	.52
0200 Concrete block, brush			600	.013		.35	.59			.94	1.26
0210 Roll			1400	.006		.35	.25			.60	.76
0220 Spray			1900	.004		.35	.19			.54	.66
0300 Stucco, brush			400	.020		.48	.89			1.37	1.84
0310 Roll			1000	.008		.48	.36			.84	1.05
0320 Spray			1500	.005		.48	.24			.72	.87

09 96 56 – Epoxy Coatings

09 96 56.20 Wall Coatings

09 96 56.20 Wall Coatings		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Ind O&P
0010 WALL COATINGS											
0100 Acrylic glazed coatings, matte		1 Pord	525	.015	S.F.	.38	.68			1.06	1.43
0200 Gloss			305	.026		.78	1.16			1.94	2.59
0300 Epoxy coatings, solvent based			525	.015		.47	.68			1.15	1.53
0400 Water based			170	.047		.38	2.09			2.47	3.53
0600 Exposed aggregate, troweled on, 1/16" to 1/4", solvent based			235	.034		.76	1.51			2.27	3.09
0700 Water based (epoxy or polyacrylate)			130	.062		1.63	2.73			4.36	5.85
0900 1/2" to 5/8" aggregate, solvent based			130	.062		1.42	2.73			4.15	5.60
1000 Water based			80	.100		2.47	4.44			6.91	9.30
1500 Exposed aggregate, sprayed on, 1/8" aggregate, solvent based			295	.027		.58	1.20			1.78	2.43
1600 Water based			145	.055		1.24	2.45			3.69	5
1800 High build epoxy, 50 mil, solvent based			390	.021		.76	.91			1.67	2.19
1900 Water based			95	.084		1.36	3.74			5.10	7.05
2100 Laminated epoxy with fiberglass, solvent based			295	.027		.86	1.20			2.06	2.74
2200 Water based			145	.055		1.62	2.45			4.07	5.40
2400 Sprayed perlite or vermiculite, 1/16" thick, solvent based			2935	.003		.28	.12			.40	.49
2500 Water based			640	.013		.87	.56			1.43	1.79
2700 Vinyl plastic wall coating, solvent based			735	.011		.41	.48			.89	1.17
2800 Water based			240	.033		1.18	1.48			2.48	3.30
3000 Urethane on smooth surface, 2 coats, solvent based			1135	.007		.35	.31			.66	.86
3100 Water based			665	.012		.62	.53			1.15	1.47
3600 Ceramic-like glazed coating, cementitious, solvent based			440	.018		.49	.81			1.30	1.74
3700 Water based			345	.023		.99	1.03			2.02	2.62
3900 Resin base, solvent based			640	.013		.34	.56			.90	1.20
4000 Water based			330	.024		.64	1.08			1.72	2.30

09 97 Special Coatings

09 97 13 – Steel Coatings

09 97 13.23 Exterior Steel Coatings

09 97 13.23 Exterior Steel Coatings		R050516-30									
0010 EXTERIOR STEEL COATINGS		1 Pst	1100	.007	S.F.	.23	.33			.56	.79
6100 Cold galvanizing, brush in field											
6510 Paints & protective coatings, sprayed in field		2 Pst	3600	.004	S.F.	.09	.20			.29	.43
6520 Alkyds, primer											
6540 Gloss topcoats			3200	.005		.09	.23			.32	.47
6560 Silicone alkyd			3200	.005		.18	.23			.41	.57
6610 Epoxy, primer			3000	.005		.26	.24			.50	.69
6630 Intermediate or topcoat			2800	.006		.29	.26			.55	.75

09 97 Special Coatings

09 97 13 – Steel Coatings

09 97 13.23	Exterior Steel Coatings	Crew	Daily	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total
			Output				Labor	Equipment		Ind O&P
6650	Enamel coat	2 Psst	2800	.006	S.F.	.36	.26		.62	.83
6700	Epoxy ester, primer		2800	.006		.50	.26		.76	.98
6720	Topcoats		2800	.006		.24	.26		.50	.70
6810	Latex primer		3600	.004		.07	.20		.27	.40
6830	Topcoats		3200	.005		.08	.23		.31	.46
6910	Universal primers, one part, phenolic, modified alkyd		2000	.008		.39	.37		.76	1.03
6940	Two part, epoxy spray		2000	.008		.45	.37		.82	1.10
7000	Zinc rich primers, self cure, spray, inorganic		1800	.009		.85	.41		1.26	1.60
7010	Epoxy, spray, organic		1800	.009		.29	.41		.70	.98
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	Pord	1325	.006	S.F.	2.14	.27		2.41	2.75
0020	Dry erase coatings, clear, roller applied									

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	Material	2020 Bare Costs	Total	Total Incl O&P
						Labor	Equipment		
0010	SELECTIVE DEMOLITION, SPECIALTIES								
1100	Boards and panels, wall mounted	2 Clab	15	1.067	Ea.	45		45	67.50
1105	Demolition, mirror, wall mounted	1 Clab	30	.267		11.25		11.25	16.85
1200	Cases, for directory and/or bulletin boards, including doors	2 Clab	24	.667		28		28	42
1850	Shower partitions, cabinet or stall, including base and door	"	8	2		84		84	127
1855	Shower receptor, terrazzo or concrete	1 Clab	14	.571		24		24	36
1900	Curtain track or rod, hospital type, ceiling mounted or suspended	"	220	.036	L.F.	1.53		1.53	2.30
1910	Toilet cubicles, remove	2 Clab	8	2	Ea.	84		84	127
1930	Urinal screen, remove	1 Clab	12	.667	"	28		28	42
2650	Wall guard, misc. wall or corner protection	"	320	.025	L.F.	1.05		1.05	1.58
2750	Access floor, metal panel system, including pedestals, covering	2 Clab	850	.019	S.F.	.79		.79	1.19
3050	Fireplace, prefab, freestanding or wall hung, including hood and screen	1 Clab	2	4	Ea.	168		168	253
3054	Chimney top, simulated brick, 4' high	"	15	.533		22.50		22.50	33.50
3200	Stove, woodburning, cast iron	2 Clab	2	8		335		335	505
3440	Weather vane, residential	1 Clab	12	.667		28		28	42
3500	Flagpole, groundset, to 70' high, excluding base/foundation	K-1	1	16		805	820	1,625	2,100
3555	To 30' high	"	2.50	6.400		320	330	650	840
4300	Letter, signs or plaques, exterior on wall	1 Clab	20	.400		16.85		16.85	25.50
4310	Signs, street, reflective aluminum, including post and bracket	"	60	.133		5.60		5.60	8.45
4320	Door signs interior on door 6" x 6", selective demolition	"	20	.400		16.85		16.85	25.50
4550	Turnstiles, manual or electric	2 Clab	2	8		335		335	505
5050	Lockers	1 Clab	15	.533	Opng.	22.50		22.50	33.50
5250	Cabinets, recessed	Q-12	12	1.333	Ea.	76		76	114
5260	Mail boxes, horiz., key lock, front loading, remove	1 Corp	34	.235	"	12.50		12.50	18.80
5350	Awning, fabric, including frame	2 Clab	100	.160	S.F.	6.75		6.75	10.10
6050	Partition, woven wire	"	1400	.011		.48		.48	.72
6100	Folding gate, security, door or window	"	500	.032		1.35		1.35	2.02
6580	Acoustic air wall	"	650	.025		1.04		1.04	1.56
7550	Telephone enclosure, exterior, post mounted	"	3	5.333	Ea.	225		225	335
8850	Scale, platform, excludes foundation or pit	"	.25	64	"	2,700		2,700	4,050

10 11 Visual Display Units

10 11 13 – Chalkboards

10 11 13.13 Fixed Chalkboards

0010 FIXED CHALKBOARDS Porcelain enamel steel		2 Corp	16	1	Ea.	250	53	303	355
3900	Wall hung								
4000	Aluminum frame and chalktrough								
4200	3' x 4'	2 Corp	16	1	Ea.	250	53	303	355
4300	3' x 5'		15	1.067		315	56.50	371.50	435
4500	4' x 8'		14	1.143		410	60.50	470.50	545
4600	4' x 12'		13	1.231		565	65.50	630.50	720
4700	Wood frame and chalktrough								
4800	3' x 4'	2 Corp	16	1	Ea.	194	53	247	293
5000	3' x 5'		15	1.067		261	56.50	317.50	370
5100	4' x 8'		14	1.143		274	60.50	334.50	390
5300	4' x 8'		13	1.231		375	65.50	440.50	510
5400	Liquid chalk, white porcelain enamel, wall hung								
5420	Deluxe units, aluminum trim and chalktrough								
5450	4' x 4'	2 Corp	16	1	Ea.	315	53	368	425
5500	4' x 8'		14	1.143		530	60.50	590.50	675
5550	4' x 12'		12	1.333		635	71	706	800

10 11 Visual Display Units

10.11.13 – Chalkboards

10.11.13 Fixed Chalkboards		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P									
5700 Wood trim and chalktrough		2 Carp	16	1	Ea.	765	53	818	920										
5900 4' x 4'																			
6000 4' x 6'		15	1.067			850	56.50	906.50	1,025										
6200 4' x 8'																			
6300 Liquid chalk, felt tip markers						2.18			2.18	2.40									
6500 Erasers																			
6600 Board cleaner, 8 oz. bottle						6.55			6.55	7.20									
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.	3,300	106		3,406	3,775									
0520 8' x 8'																			
0540 8' x 12'		7	2.286			4,725	121		4,846	5,350									
0600 Two sliding boards, with back panel																			
0620 8' x 4'		2 Carp	8	2	Ea.	5,275	106		5,381	5,975									
0640 8' x 8'																			
0660 8' x 12'		7	2.286			9,525	121		9,646	10,700									
0700 Horizontal, two track																			
0800 4' x 8', 2 sliding panels		2 Carp	8	2	Ea.	2,075	106		2,181	2,425									
0820 4' x 12', 2 sliding panels																			
0840 4' x 16', 4 sliding panels		7	2.286			4,200	121		4,321	4,775									
0900 Four track, four sliding panels																			
0920 4' x 8'		2 Carp	8	2	Ea.	3,775	106		3,881	4,300									
0940 4' x 12'																			
0960 4' x 16'		7	2.286			6,525	121		6,646	7,350									
1200 Vertical, motor operated																			
1400 One sliding panel with back panel		2 Carp	4	4	Ea.	5,950	213		6,163	6,850									
1450 10' x 4'																			
1500 10' x 10'		3.75	4.267			7,050	227		7,277	8,100									
1550 10' x 16'																			
1700 Two sliding panels with back panel		3.50	4.571			8,225	243		8,468	9,425									
1750 10' x 4'																			
1800 10' x 10'		3.75	4.267			11,500	227		11,727	13,000									
1850 10' x 16'																			
2000 Three sliding panels with back panel		3.50	4.571			12,700	243		12,943	14,400									
2100 10' x 4'																			
2150 10' x 10'		3.75	4.267			16,500	227		16,727	18,400									
2200 10' x 16'																			
2400 For projection screen, glass beaded, add					S.F.	5.35			5.35	5.90									
2500 For remote control, 1 panel control, add																			
2600 2 panel control, add						" 625			625	690									
2800 For units without back panels, deduct																			
2850 For liquid chalk porcelain panels, add						" 5.25			5.25	5.75									
3000 Swing leaf, any comb. of chalkboard & cork, aluminum frame																			
3100 Floor style, 6 panels					Ea.	1,550			1,550	1,700									
3150 30" x 40" panels																			
3200 48" x 40" panels					"	2,675			2,675	2,950									
3300 Wall mounted, 6 panels																			
3400 30" x 40" panels		2 Carp	16	1	Ea.	1,500	53		1,553	1,725									
3450 48" x 40" panels																			
3600 Extra panels for swing leaf units						" 1,825	53		1,878	2,100									

10 11 Visual Display Units

10 11 13 – Chalkboards

10 11 13.23 Modular-Support-Mounted Chalkboards				Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	Total	Total Ind O&P
3700	30" x 40" panels						Ea.	298			298	325
3750	48" x 40" panels						"	380			380	420

10 11 13.43 Portable Chalkboards

0010	PORTABLE CHALKBOARDS											
0100	Freestanding, reversible											
0120	Economy, wood frame, 4' x 6'											
0140	Chalkboard both sides						Ea.	630			630	695
0160	Chalkboard one side, cork other side						"	625			625	685
0200	Standard, lightweight satin finished aluminum, 4' x 6'											
0220	Chalkboard both sides						Ea.	565			565	625
0240	Chalkboard one side, cork other side						"	610			610	675
0300	Deluxe, heavy duty extruded aluminum, 4' x 6'											
0320	Chalkboard both sides						Ea.	1,150			1,150	1,250
0340	Chalkboard one side, cork other side						"	1,175			1,175	1,300

10 11 16 – Markerboards

0010	10 11 16.53 Electronic Markerboards											
0100	ELECTRONIC MARKERBOARDS											
0100	Wall hung or free standing, 3' x 4' to 4' x 6'			2 Carp	8	2	S.F.	86.50	106		192.50	255
0150	5' x 6' to 4' x 8'				8	2	"	62.50	106		168.50	229
0500	Interactive projection module for existing whiteboards				8	2	Ea.	1,300	106		1,406	1,600

10 11 23 – Tackboards

0010	10 11 23.10 Fixed Tackboards											
0020	FIXED TACKBOARDS											
0020	Cork sheets, unbacked, no frame, 1/4" thick			2 Carp	290	.055	S.F.	1.68	2.93		4.61	6.25
0100	1/2" thick				290	.055		4.46	2.93		7.39	9.30
0300	Fabric-face, no frame, on 7/32" cork underlay				290	.055		7.35	2.93		10.28	12.45
0400	On 1/4" cork on 1/4" hardboard				290	.055		9.60	2.93		12.53	14.95
0600	With edges wrapped				290	.055		11.35	2.93		14.28	16.90
0700	On 7/16" fire retardant core				290	.055		6.45	2.93		9.38	11.45
0900	With edges wrapped				290	.055		10.05	2.93		12.98	15.45
1000	Designer fabric only, cut to size							2.92			2.92	3.21
1200	1/4" vinyl cork, on 1/4" hardboard, no frame			2 Carp	290	.055		9.95	2.93		12.88	15.30
1300	On 1/4" coreboard				290	.055		5.25	2.93		8.18	10.20
2000	For map and display rail, economy, add				385	.042	L.F.	3.29	2.21		5.50	6.95
2100	Deluxe, add				350	.046	"	5.80	2.43		8.23	10
2120	Prefabricated, 1/4" cork, 3' x 5' with aluminum frame				16	1	Ea.	146	53		199	241
2140	Wood frame				16	1		168	53		221	264
2160	4' x 4' with aluminum frame				16	1		174	53		227	271
2180	Wood frame				16	1		218	53		271	320
2200	4' x 8' with aluminum frame				14	1.143		310	60.50		370.50	435
2210	Wood frame				14	1.143		340	60.50		400.50	465
2220	4' x 12' with aluminum frame				12	1.333		375	71		446	520
2230	Bulletin board case, single glass door, with lock											
2240	36" x 24", economy			2 Carp	12	1.333	Ea.	360	71		431	505
2250	Deluxe				12	1.333		445	71		516	595
2260	42" x 30", economy				12	1.333		405	71		476	550
2270	Deluxe				12	1.333		700	71		771	875
2300	Glass enclosed cabinets, alum., cork panel, hinged doors											
2400	3' x 3', 1 door			2 Carp	12	1.333	Ea.	645	71		716	815
2500	4' x 4', 2 door				11	1.455		1,075	77.50		1,152.50	1,300
2600	4' x 7', 3 door				10	1.600		2,125	85		2,210	2,450

10 11 Visual Display Units

10 11 23 – Tackboards

10 11 23.10 Fixed Tackboards			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
2800	4' x 10', 4 door		2 Corp	8	2 Ea.	2,550	106			2,656	2,950
2900	For lights, add per door opening		1 Elec	13	.615		180	38		218	254
3100	Horizontal sliding units, 4 doors, 4' x 8', 8' x 4'		2 Corp	9	1.778		2,075	94.50		2,169.50	2,425
3200	4' x 12'			7	2.286		3,100	121		3,221	3,600
3400	8 doors, 4' x 16'			5	3.200		4,175	170		4,345	4,850
3500	4' x 24'			4	4		5,650	213		5,863	6,550

10 11 23.20 Control Boards

0010 CONTROL BOARDS			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
0020	Magnetic, porcelain finish, 18" x 24", framed		2 Corp	8	2 Ea.	199	106			305	380
0100	24" x 36"			7.50	2.133		278	113		391	475
0200	36" x 48"			7	2.286		490	121		611	725
0300	48" x 72"			6	2.667		660	142		802	945
0400	48" x 96"		↓	5	3.200	↓	1,075	170		1,245	1,450
1000	Hospital patient display board, 4-color custom design		2 Corp	7.50	2.133 Ea.		238	113		351	430

10 13 Directories

10 13 10 – Building Directories

10 13 10.10 Directory Boards			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
0050	Plastic, glass covered, 30" x 20"		2 Corp	3	5.333 Ea.	179	283			462	620
0100	36" x 48"		2	8	8	880	425			1,305	1,600
0300	Grooved cork, 30" x 20"		3	5.333	Ea.	420	283			703	885
0400	36" x 48"		2	8		575	425			1,000	1,275
0600	Black felt, 30" x 20"		3	5.333		223	283			506	670
0700	36" x 48"		2	8		460	425			885	1,150
0900	Outdoor, weatherproof, black plastic, 36" x 24"		2	8		700	425			1,125	1,400
1000	36" x 36"		1.50	10.667		815	565			1,380	1,750
1800	Indoor, economy, open face, 18" x 24"			7	2.286		185	121		306	385
1900	24" x 36"			7	2.286		158	121		279	355
2000	36" x 24"			6	2.667		160	142		302	390
2100	36" x 48"			6	2.667		265	142		407	505
2400	Building directory, alum., black felt panels, 1 door, 24" x 18"			4	4		296	213		509	645
2500	36" x 24"			3.50	4.571		390	243		633	795
2600	48" x 32"			3	5.333		555	283		838	1,025
2700	2 door, 36" x 48"			2.50	6.400		680	340		1,020	1,250
2800	36" x 60"			2	8		790	425		1,215	1,500
2900	48" x 60"			1	16		885	850		1,735	2,250
3100	For bronze enamel finish, add							15%			
3200	For bronze anodized finish, add							25%			
3400	For illuminated directory, single door unit, add				↓		147			147	161
3500	For 6" header panel, 6 letters per foot, add				L.F.		20.50			20.50	22.50
6050	Building directory, electronic display, alum. frame, wall mounted		2 Corp	32	.500 Ea.	4,100	26.50			4,126.50	4,550
6100	Free standing			60	.267	"	3,600	14.15		3,614.15	3,975

10 14 Signage

10 14 19 - Dimensional Letter Signage

10 14 19.10 Exterior Signs		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P	
						Labor	Equipment			
0010	EXTERIOR SIGNS									
0020	Letters, 2" high, 3/8" deep, cast bronze	1 Corp	24	.333	Ea.	33	17.70	50.70	63	
0140	1/2" deep, cast aluminum		18	.444		33	23.50	56.50	72	
0160	Cast bronze		32	.250		34.50	13.30	47.80	58	
0300	6" high, 5/8" deep, cast aluminum		24	.333		30	17.70	47.70	59.50	
0400	Cast bronze		24	.333		60.50	17.70	78.20	93	
0600	8" high, 3/4" deep, cast aluminum		14	.571		33	30.50	63.50	82	
0700	Cast bronze		20	.400		100	21.50	121.50	142	
0900	10" high, 1" deep, cast aluminum		18	.444		64.50	23.50	88	107	
1000	Cast bronze		18	.444		102	23.50	125.50	148	
1200	12" high, 1-1/4" deep, cast aluminum		12	.667		59.50	35.50	95	119	
1500	Cast bronze		18	.444		163	23.50	186.50	215	
1600	14" high, 2-5/16" deep, cast aluminum		12	.667		110	35.50	145.50	174	
1800	Fabricated stainless steel, 6" high, 2" deep		20	.400		45.50	21.50	67	82	
1900	12" high, 3" deep		18	.444		85	23.50	108.50	129	
2100	18" high, 3" deep		12	.667		101	35.50	136.50	164	
2200	24" high, 4" deep		10	.800		198	42.50	240.50	282	
2700	Acrylic, on high density foam, 12" high, 2" deep		20	.400		18.65	21.50	40.15	52.50	
2800	18" high, 2" deep		18	.444		38	23.50	61.50	77.50	
3900	Plaques, custom, 20" x 30", for up to 450 letters, cast aluminum	2 Corp	4	.4		1,875	213	2,088	2,375	
4000	Cast bronze		4	.4		1,950	213	2,163	2,475	
4200	30" x 36", up to 900 letters, cast aluminum		3	5.333		2,925	283	3,208	3,650	
4300	Cast bronze		3	5.333		4,200	283	4,483	5,050	
4500	36" x 48", for up to 1300 letters, cast bronze		2	8		4,500	425	4,925	5,600	
4800	Signs, reflective alum. directional signs, dbl. face, 2-way, w/bracket		30	.533		107	28.50	135.50	161	
4900	4-way		30	.533		197	28.50	225.50	260	
5100	Exit signs, 24 ga. alum., 14" x 12" surface mounted	1 Corp	30	.267		52	14.15	66.15	78.50	
5200	10" x 7"		20	.400		32.50	21.50	54	68	
5400	Bracket mounted, double face, 12" x 10"		30	.267		59.50	14.15	73.65	87	
5500	Sticky back, stock decals, 14" x 10"	1 Clb	50	.160		24.50	6.75	31.25	36.50	
6400	Replacement sign faces, 6" or 8"	"	50	.160	↓	66.50	6.75	73.25	83.50	
8000	Internally illuminated, custom									
8100	On pedestal, 84" x 30" x 12"		L-7	.50	56	Ea.	11,500	2,875	14,375	17,000

10 14 23 - Panel Signage

10 14 23.13 Engraved Panel Signage

0010 ENGRAVED PANEL SIGNAGE, interior		1 Clb	32	.250	Ea.	35	10.55	45.55	54
1010	Flexible door sign, adhesive back, w/Braille, 5/8" letters, 4" x 4"								
1050	6" x 6"		32	.250		50	10.55	60.55	71
1100	8" x 2"		32	.250		35.50	10.55	46.05	55
1150	8" x 4"		32	.250		44.50	10.55	55.05	65
1200	8" x 8"		32	.250		74	10.55	84.55	97
1250	12" x 2"		32	.250		36	10.55	46.55	55.50
1300	12" x 6"		32	.250		42.50	10.55	53.05	63
1350	12" x 12"		32	.250		158	10.55	168.55	190
1500	Graphic symbols, 2" x 2"		32	.250		12.05	10.55	22.60	29
1550	6" x 6"		32	.250		31	10.55	41.55	50
1600	8" x 8"		32	.250		39	10.55	49.55	58.50
2010	Corridor, stock acrylic, 2-sided, with mounting bracket, 2" x 8"	1 Corp	24	.333		29.50	17.70	47.20	59
2020	2" x 10"		24	.333		34	17.70	51.70	64
2050	3" x 8"		24	.333		27	17.70	44.70	56
2060	3" x 10"		24	.333		39	17.70	56.70	69.50
2070	3" x 12"		24	.333		46.50	17.70	64.20	77.50

10 14 Signage

10 14 23 – Panel Signage

		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
10 14 23.13 Engraved Panel Signage											
2100	4" x 8"	1 Corp	24	.333	Ea.	23.50	17.70			41.20	52.50
2110	4" x 10"		24	.333		40	17.70			57.70	70.50
2120	4" x 12"		24	.333		49.50	17.70			67.20	81
7000	Wayfinding signage, custom										
7010	Plastic, flexible, 1/8" thick, incl. mounting										
7020	6" x 6"	1 Corp	32	.250	Ea.	16.95	13.30			30.25	38.50
7030	6" x 12"		32	.250		35	13.30			48.30	58.50
7040	6" x 24"		28	.286		66.50	15.20			81.70	96
7050	8" x 8"		32	.250		28.50	13.30			41.80	51.50
7060	8" x 16"		28	.286		60.50	15.20			75.70	89.50
7070	8" x 24"		26	.308		92	16.35			108.35	126
7080	12" x 12"		28	.286		70.50	15.20			85.70	101
7090	12" x 24"		24	.333		136	17.70			153.70	177
7100	12" x 36"		20	.400		205	21.50			226.50	258
7210	Weather resistant, engraved and color filled										
7220	8" x 8"	1 Corp	32	.250	Ea.	38.50	13.30			51.80	62.50
7230	8" x 16"		28	.286		64	15.20			79.20	93.50
7240	8" x 24"		26	.308		93	16.35			109.35	127
7250	12" x 12"		28	.286		67.50	15.20			82.70	97
7260	12" x 24"		24	.333		120	17.70			137.70	159
7270	12" x 36"		20	.400		210	21.50			231.50	263
7280	16" x 32"	2 Corp	60	.267		218	14.15			232.15	262
7290	16" x 48"	"	60	.267		355	14.15			369.15	410
7320	For engraved letters, 1/2" high, add					70				70	.77
7330	1" high, add					.75				.75	.83
7340	2" high, add					1.77				1.77	1.95
7350	3" high, add					2.31				2.31	2.54
7360	For engraved graphic symbols, 3" high, add					14.60				14.60	16.05
7370	7" high, add					17.75				17.75	19.50
7380	10" high, add					24				24	26.50
9990	Replace interior labels	1 Corp	12	.667		26.50	35.50			62	82
9991	Replace interior plaques	"	12	.667		84.50	35.50			120	146

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,	B-1	25	.960	Ea.	905	41			946	1,050
0011	2-sided panel (blank), concrete footings per post		25	.960		950	41			991	1,100
0025	24" W x 18" H		25	.960		2,150	41			2,191	2,400
0050	36" W x 24" H		25	.960		2,225	41			2,266	2,500
0100	57" W x 36" H										
0150	81" W x 46" H										

10 14 43 – Photoluminescent Signage

10 14 43.10 Photoluminescent Signage

0010	PHOTOLUMINESCENT SIGNAGE										
0011	Photoluminescent exit sign, plastic, 7"x10"	1 Corp	32	.250	Ea.	24	13.30			37.30	46.50
0022	Polyester		32	.250		15.20	13.30			28.50	36.50
0033	Aluminum		32	.250		53.50	13.30			66.80	78.50
0044	Plastic, 10"x14"		32	.250		59.50	13.30			72.80	85.50
0055	Polyester		32	.250		35.50	13.30			48.80	59
0066	Aluminum		32	.250		70.50	13.30			83.80	97.50
0111	Directional exit sign, plastic, 10"x14"		32	.250		58.50	13.30			71.80	84
0122	Polyester		32	.250		46	13.30			59.30	70.50
0133	Aluminum		32	.250		68.50	13.30			81.80	95

10 14 Signage

10 14 43 – Photoluminescent Signage

10 14 43.10 Photoluminescent Signage		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
						Labor	Equipment		
0153	Kick plate exit sign, 10"x34"	1 Corp	28	.286	Ea.	278	15.20	293.20	330
0173	Photoluminescent tape, 1"x60'		300	.027	L.F.	.50	1.42	1.92	2.68
0183	2"x60'		290	.028	"	1.01	1.47	2.48	3.31
0211	Photoluminescent directional arrows		42	.190	Ea.	1.30	10.10	11.40	16.65

10 14 53 – Traffic Signage

10 14 53.20 Traffic Signs

0010 TRAFFIC SIGNS		B-80	70	.457	Ea.	93.50	21.50	14.60	129.60	151
0012 Stock, 24" x 24", no posts, .080" alum. reflectorized										
0100 High intensity			70	.457		93.50	21.50	14.60	129.60	151
0300 30" x 30", reflectorized			70	.457		65	21.50	14.60	101.10	120
0400 High intensity			70	.457		172	21.50	14.60	208.10	237
0600 Guide and directional signs, 12" x 18", reflectorized			70	.457		34	21.50	14.60	70.10	85
0700 High intensity			70	.457		65.50	21.50	14.60	101.60	120
0900 18" x 24", stock signs, reflectorized			70	.457		48.50	21.50	14.60	84.60	101
1000 High intensity			70	.457		53.50	21.50	14.60	89.60	107
1200 24" x 24", stock signs, reflectorized			70	.457		59	21.50	14.60	95.10	113
1300 High intensity			70	.457		63.50	21.50	14.60	99.60	118
1500 Add to above for steel posts, galvanized, 10'-0" upright, bolted			200	.160		44	7.45	5.10	56.55	65.50
1600 12'-0" upright, bolted			140	.229		38.50	10.65	7.30	56.45	66.50
1800 Highway road signs, aluminum, over 20 S.F., reflectorized			350	.091	S.F.	16.45	4.26	2.92	23.63	27.50
2000 High intensity			350	.091		16.45	4.26	2.92	23.63	27.50
2200 Highway, suspended over road, 80 S.F. min., reflectorized			165	.194		19.35	9.05	6.20	34.60	42
2300 High intensity			165	.194		19.20	9.05	6.20	34.45	41.50
9000 Replace directional sign			6	5.333	Ea.	172	249	170	591	750

10 17 Telephone Specialties

10 17 16 – Telephone Enclosures

10 17 16.10 Commercial Telephone Enclosures		2 Corp	5	3.200	Ea.	885	170	1,055	1,225
0300 Shelf type, wall hung, recessed			"	5	3.200	"	1,700	170	1,870
0400 Surface mount									2,125

10 21 Compartments and Cubicles

10 21 13 – Toilet Compartments

10 21 13.13 Metal Toilet Compartments		2 Corp	4	4	Unit	575	213	788	955
0110 Cubicles, ceiling hung			"	4	4	↓	1,100	213	1,313
0200 Powder coated steel		2 Corp	4	4	Ea.	575	213	1,313	1,525
0500 Stainless steel			"	5	3.200	"	1,700	170	1,870
0600 For handicap units, add						465		465	510
0900 Floor and ceiling anchored									
1000 Powder coated steel		2 Corp	5	3.200	Ea.	580	170	750	895
1300 Stainless steel			"	5	3.200	"	1,225	170	1,395
1400 For handicap units, add						370		370	405
1610 Floor anchored									
1700 Powder coated steel		2 Corp	7	2.286	Ea.	615	121	736	860
2000 Stainless steel			"	7	2.286	"	1,350	121	1,471
2100 For handicap units, add						360		360	395
2200 For juvenile units, deduct						44.50		44.50	49

10 21 Compartments and Cubicles

10 21 13 – Toilet Compartments

10 21 13.13 Metal Toilet Compartments		Crew	Daily	Labor-	Unit	Material	2020	Bare	Costs	Total	Total Incl O&P	
			Output	Hours			Labor	Equipment	Total			
2450	Floor anchored, headrail braced				Ea.	385	142		527		640	
2500	Powder coated steel	2 Corp	6	2.667	Ea.	385	142		527		640	
2804	Stainless steel	"	6	2.667	Ea.	1,050	142		1,192		1,400	
2900	For handicap units, add					325			325		360	
3000	Wall hung partitions, powder coated steel		2 Corp	7	2.286		675	121		796		930
3300	Stainless steel	"	7	2.286		1,775	121		1,896		2,125	
3400	For handicap units, add					325			325		360	
4000	Screens, entrance, floor mounted, 58" high, 48" wide											
4200	Powder coated steel	2 Corp	15	1.067	Ea.	240	56.50		296.50		350	
4500	Stainless steel	"	15	1.067	"	970	56.50		1,026.50		1,150	
4650	Urinal screen, 18" wide											
4704	Powder coated steel	2 Corp	6.15	2.602	Ea.	226	138		364		455	
5004	Stainless steel	"	6.15	2.602	"	535	138		673		795	
5100	Floor mounted, headrail braced											
5300	Powder coated steel	2 Corp	8	2	Ea.	234	106		340		415	
5600	Stainless steel	"	8	2	"	580	106		686		800	
5750	Pilaster, flush											
5800	Powder coated steel	2 Corp	10	1.600	Ea.	275	85		360		430	
6100	Stainless steel	"	10	1.600	"	610	85		695		805	
6300	Post braced, powder coated steel		10	1.600		167	85		252		310	
6800	Powder coated steel		10	1.600		176	85		261		320	
7800	Wedge type, powder coated steel		10	1.600		138	85		223		280	
8100	Stainless steel		10	1.600		615	85		700		805	

10 21 13.16 Plastic-Laminate-Clad Toilet Compartments

PLASTIC-LAMINATE-CLAD TOILET COMPARTMENTS											
0110	Cubicles, ceiling hung		2 Corp	4	4	Ea.	550	213		763	925
0300	Plastic laminate on particle board		2 Corp	4	4	Ea.	550	213		465	510
0600	For handicap units, add		"	4	4	"	465	213		465	510
0900	Floor and ceiling anchored										
1100	Plastic laminate on particle board		2 Corp	5	3.200	Ea.	800	170		970	1,125
1400	For handicap units, add		"	5	3.200	"	370	170		370	405
1610	Floor mounted		2 Corp	5	3.200	Ea.	800	170		970	1,125
1800	Plastic laminate on particle board		2 Corp	7	2.286	Ea.	540	121		661	780
2450	Floor mounted, headrail braced		2 Corp	6	2.667	Ea.	810	142		952	1,100
2600	Plastic laminate on particle board		2 Corp	6	2.667	Ea.	810	142		952	1,100
3400	For handicap units, add		2 Corp	6	2.667	Ea.	325			325	360
4300	Entrance screen, floor mtd., plas. lam., 58" high, 48" wide		2 Corp	15	1.067		520	56.50		576.50	655
4800	Urinal screen, 18" wide, ceiling braced, plastic laminate		"	8	2		210	106		316	390
5400	Floor mounted, headrail braced		"	8	2		208	106		314	390
5900	Pilaster, flush, plastic laminate		"	10	1.600		430	85		515	605
6400	Post braced, plastic laminate		"	10	1.600		237	85		322	390
6700	Wall hung, bracket supported		2 Corp	10	1.600	Ea.	97	85		182	234
6900	Plastic laminate on particle board		2 Corp	10	1.600	Ea.	97	85		182	234
7450	Flange supported		2 Corp	10	1.600	Ea.	251	85		336	405
7500	Plastic laminate on particle board		2 Corp	10	1.600	Ea.	251	85		336	405

10 21 13.19 Plastic Toilet Compartments

PLASTIC TOILET COMPARTMENTS											
0110	Cubicles, ceiling hung		2 Corp	4	4	Ea.	885	213		1,098	1,300
0250	Phenolic		"	4	4		1,025	213		1,238	1,450
0260	Polymer plastic		"	4	4		465			465	510
0600	For handicap units, add										
0900	Floor and ceiling anchored										

10 21 Compartments and Cubicles

10 21 13 – Toilet Compartments

10 21 13.19 Plastic Toilet Compartments				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
		Crew	Output									
1050	Phenolic	2 Corp	5	3.200	Ea.		940	170			1,110	1,275
1060	Polymer plastic	"	5	3.200			1,200	170			1,370	1,575
1400	For handicap units, add						370				370	405
1610	Floor mounted											
1750	Phenolic	2 Corp	7	2.286	Ea.		880	121			1,001	1,150
1760	Polymer plastic	"	7	2.286			855	121			976	1,125
2100	For handicap units, add						360				360	395
2200	For juvenile units, deduct							44.50			44.50	49
2450	Floor mounted, headrail braced											
2550	Phenolic	2 Corp	6	2.667	Ea.		740	142			882	1,025
3600	Polymer plastic	"	6	2.667			870	142			1,012	1,175
3810	Entrance screen, polymer plastic, flr. mtd., 48"x58"		6	2.667			495	142			637	760
3820	Entrance screen, polymer plastic, flr. to clg pilaster, 48"x58"		6	2.667			590	142			732	865
6110	Urinal screen, polymer plastic, pilaster flush, 18" w		6	2.667			430	142			572	690
7110	Wall hung		6	2.667			167	142			309	395
7710	Flange mounted		6	2.667			920	142			1,062	1,250

10 21 13.40 Stone Toilet Compartments

0010 STONE TOILET COMPARTMENTS												
0100	Cubicles, ceiling hung, marble		2 Marb	2	8	Ea.	1,650	405			2,055	2,450
0600	For handicap units, add						465				465	510
0800	Floor & ceiling anchored, marble		2 Marb	2.50	6.400		1,775	325			2,100	2,450
1400	For handicap units, add						370				370	405
1600	Floor mounted, marble		2 Marb	3	5.333		1,050	271			1,321	1,550
2400	Floor mounted, headrail braced, marble		"	3	5.333		1,225	271			1,496	1,750
2900	For handicap units, add						325				325	360
4100	Entrance screen, floor mounted marble, 58" high, 48" wide		2 Marb	9	1.778		735	90.50			825.50	945
4600	Urinal screen, 18" wide, ceiling braced, marble		D-1	6	2.667		770	125			895	1,025
5100	Floor mounted, headrail braced											
5200	Marble		D-1	6	2.667	Ea.	660	125			785	915
5700	Pilaster, flush, marble			9	1.778		860	83.50			943.50	1,075
6200	Post braced, marble			9	1.778		845	83.50			928.50	1,050

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 Corp	22.20	.721	Ea.	72.50	38.50			111	138
0120	Stainless steel			22.20	.721		132	38.50			170.50	203
0130	Floor braced, powder coated steel, 7" wide x 70" high			23.30	.687		106	36.50			142.50	172
0140	Stainless steel			23.30	.687		227	36.50			263.50	305
0150	Ceiling hung, powder coated steel, 7" wide x 83" high			13.30	1.203		130	64			194	239
0160	Stainless steel			13.30	1.203		320	64			384	445
0170	Wall hung, powder coated steel, 3" wide x 58" high			18.90	.847		142	45			187	224
0180	Stainless steel			18.90	.847		234	45			279	325
0200	Panels											
0210	Powder coated steel, 31" wide x 58" high		2 Corp	18.90	.847	Ea.	139	45			184	221
0220	Stainless steel			18.90	.847		340	45			385	445
0230	Powder coated steel, 53" wide x 58" high			18.90	.847		177	45			222	262
0240	Stainless steel			18.90	.847		405	45			450	515
0250	Powder coated steel, 63" wide x 58" high			18.90	.847		176	45			221	261
0260	Stainless steel			18.90	.847		485	45			530	600
0300	Doors											
0310	Powder coated steel, 24" wide x 58" high		2 Corp	14.10	1.135	Ea.	125	60.50			185.50	228

10 21 Compartments and Cubicles

10 21 14 – Toilet Compartment Components

10 21 14.13 Metal Toilet Compartment Components		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
0320	Stainless steel		2 Corp	14.10	1.135	Ea.	325	60.50	385.50	450
0330	Powder coated steel, 26" wide x 58" high			14.10	1.135		161	60.50	221.50	269
0340	Stainless steel			14.10	1.135		335	60.50	395.50	460
0350	Powder coated steel, 28" wide x 58" high			14.10	1.135		178	60.50	238.50	286
0360	Stainless steel			14.10	1.135		330	60.50	390.50	455
0370	Powder coated steel, 36" wide x 58" high			14.10	1.135		182	60.50	242.50	291
0380	Stainless steel			14.10	1.135		395	60.50	455.50	525
0400	Headrails									
0410	For powder coated steel, 62" long		2 Corp	65	.246	Ea.	20	13.10	33.10	41.50
0420	Stainless steel			65	.246			13.10	33.60	42
0430	For powder coated steel, 84" long			50	.320			30.50	47.50	59
0440	Stainless steel			50	.320			30.50	47.50	59
0450	For powder coated steel, 120" long			30	.533		41	28.50	69.50	87.50
0460	Stainless steel			30	.533		41	28.50	69.50	87.50

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 Corp	22.20	.721	Ea.	102	38.50	140.50	171
0130	Floor anchored, 7" wide x 70" high			23.30	.687		108	36.50	144.50	173
0150	Ceiling hung, 7" wide x 83" high			13.30	1.203		130	64	194	239
0180	Wall hung, 3" wide x 58" high			18.90	.847		98	45	143	176
0200	Panels									
0210	31" wide x 58" high		2 Corp	18.90	.847	Ea.	169	45	214	254
0230	51" wide x 58" high			18.90	.847		208	45	253	297
0250	63" wide x 58" high			18.90	.847		243	45	288	335
0300	Doors									
0310	24" wide x 58" high		2 Corp	14.10	1.135	Ea.	154	60.50	214.50	260
0330	26" wide x 58" high			14.10	1.135		159	60.50	219.50	265
0350	28" wide x 58" high			14.10	1.135		164	60.50	224.50	271
0370	36" wide x 58" high			14.10	1.135		174	60.50	234.50	283
0400	Headrails									
0410	62" long		2 Corp	65	.246	Ea.	26	13.10	39.10	48
0430	84" long			60	.267		31.50	14.15	45.65	56
0450	120" long			30	.533		42	28.50	70.50	89

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 Corp	22.20	.721	Ea.	116	38.50	154.50	186
0120	Phenolic			22.20	.721		140	38.50	178.50	212
0130	Floor braced, polymer plastic, 7" wide x 70" high			23.30	.687		185	36.50	221.50	258
0140	Phenolic			23.30	.687		135	36.50	171.50	203
0150	Ceiling hung, polymer plastic, 7" wide x 83" high			13.30	1.203		179	64	243	293
0160	Phenolic			13.30	1.203		168	64	232	280
0180	Wall hung, phenolic, 3" wide x 58" high			18.90	.847		105	45	150	184
0200	Panels									
0203	Polymer plastic, 18" wide x 55" high		2 Corp	18.90	.847	Ea.	310	45	355	415
0206	Phenolic, 18" wide x 58" high			18.90	.847		256	45	301	350
0210	Polymer plastic, 31" wide x 55" high			18.90	.847		340	45	385	445
0220	Phenolic, 31" wide x 58" high			18.90	.847		274	45	319	370
0223	Polymer plastic, 48" wide x 55" high			18.90	.847		520	45	565	645
0226	Phenolic, 48" wide x 58" high			18.90	.847		460	45	505	580
0230	Polymer plastic, 51" wide x 55" high			18.90	.847		490	45	535	610

10 21 Compartments and Cubicles

10 21 14 – Toilet Compartment Components

10 21 14.19 Plastic Toilet Compartment Components		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
		Crew		Unit		Labor	Equipment	Total	
0240	Phenolic, 51" wide x 58" high	2 Corp	18.90	.847	Ea.	435	45	480	550
0250	Polymer plastic, 63" wide x 55" high		18.90	.847		690	45	735	830
0260	Phenolic, 63" wide x 58" high		18.90	.847		475	45	520	595
0300	Doors								
0310	Polymer plastic, 24" wide x 55" high	2 Corp	14.10	1.135	Ea.	252	60.50	312.50	370
0320	Phenolic, 24" wide x 58" high		14.10	1.135		340	60.50	400.50	460
0330	Polymer plastic, 26" wide x 55" high		14.10	1.135		262	60.50	322.50	380
0340	Phenolic, 26" wide x 58" high		14.10	1.135		360	60.50	420.50	485
0350	Polymer plastic, 28" wide x 55" high		14.10	1.135		284	60.50	344.50	400
0360	Phenolic, 28" wide x 58" high		14.10	1.135		375	60.50	435.50	505
0370	Polymer plastic, 36" wide x 55" high		14.10	1.135		335	60.50	395.50	460
0380	Phenolic, 36" wide x 58" high		14.10	1.135		520	60.50	580.50	660
0400	Headrails								
0410	For polymer plastic, 62" long	2 Corp	65	.246	Ea.	22.50	13.10	35.60	44.50
0420	Phenolic		65	.246		22.50	13.10	35.60	44
0430	For polymer plastic, 84" long		50	.320		31	17	48	59.50
0440	Phenolic		50	.320		39.50	17	56.50	69
0450	For polymer plastic, 120" long		30	.533		44	28.50	72.50	90.50
0460	Phenolic		30	.533		42	28.50	70.50	88.50

10 21 23 – Cubicle Curtains and Track

10 21 23.16 Cubicle Track and Hardware

0010 CUBICLE TRACK AND HARDWARE		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
		Crew		Unit		L.F.			
0020	Curtain track, box channel, ceiling mounted	1 Corp	135	.059	L.F.	6.75	3.15	9.90	12.15
0100	Suspended		100	.080	"	8.35	4.25	12.60	15.60
0300	Curtains, nylon mesh tops, fire resistant, 11 oz. per lineal yard								
0310	Polyester oxford cloth, 9' ceiling height	1 Corp	425	.019	L.F.	17.25	1	18.25	20.50
0500	8' ceiling height		425	.019		15.75	1	16.75	18.85
0550	Polyester, antimicrobial, 9' ceiling height		425	.019		19.40	1	20.40	23
0560	8' ceiling height		425	.019		17.30	1	18.30	20.50
0700	Designer oxford cloth		425	.019		6.90	1	7.90	9.05
0800	I.V. track systems								
0820	I.V. track, oval	1 Corp	135	.059	L.F.	8.30	3.15	11.45	13.90
0830	I.V. trolley		32	.250	Ea.	40.50	13.30	53.80	64.50
0840	I.V. pendant (free, 5 hook)		32	.250	"	176	13.30	189.30	214

10 22 Partitions

10 22 13 – Wire Mesh Partitions

10 22 13.10 Partitions, Woven Wire		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
		Crew		Unit		L.F.			
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 Corp	25	.640	Ea.	142	34	176	208
0400	8' high		23	.696		142	37	179	212
0600	10' high		18	.889		199	47	246	290
0700	For 5' wide panels, add					5%			
0900	Ceiling panels, 10' long, 2' wide	2 Corp	25	.640		140	34	174	205
1000	4' wide		15	1.067		159	56.50	215.50	259
1200	Panel with service window & shelf, 5' wide, 7' high		20	.800		335	42.50	377.50	435
1300	8' high		15	1.067		510	56.50	566.50	645
1500	Sliding doors, full height, 3' wide, 7' high		6	2.667		440	142	582	700
1600	10' high		5	3.200		560	170	730	870

10 22 Partitions

10 22 13 – Wire Mesh Partitions

10 22 13.10 Partitions, Woven Wire		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
		Crew			Labor			Total	Incl O&P
1800	6' wide sliding door, 7' full height	2 Corp	5	3.200	Ea.	605	170	775	925
1900	10' high		4	4		1,125	213	1,338	1,550
2100	Swinging doors, 3' wide, 7' high, no transom		6	2.667		294	142	436	540
2200	7' high, 3' transom		5	3.200		535	170	705	845

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.	235	231	466	620
0350	6-1/2' wide		4	4		240	231	471	625
0400	7-1/2' wide		4	4		223	231	454	605
0600	Double gate, 8' high, 8' wide		2.50	6.400		385	370	755	1,000
0650	10' wide		2.50	6.400		455	370	825	1,075
0700	12' wide		2	8		605	460	1,065	1,400
0750	14' wide		2	8		625	460	1,085	1,400
0900	Door gate, folding steel, 4' wide, 61" high		4	4		144	231	375	520
1000	71" high		4	4		179	231	410	555
1200	81" high		4	4		196	231	427	575
1300	Window gates, 2' to 4' wide, 31" high		4	4		90	231	321	460
1500	55" high		3.75	4.267		125	246	371	525
1600	79" high		3.50	4.571		148	264	412	580

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 Corp	48	.333	L.F.	61	17.70	78.70	93.50
1300	Fabric clad gypsum		44	.364		152	19.35	171.35	196
1500	Steel clad gypsum		40	.400		170	21.50	191.50	219
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 Corp	48	.333	L.F.	102	17.70	119.70	139
2100	7' high		60	.267		91.50	14.15	105.65	123
2200	5' high		80	.200		77.50	10.65	88.15	101
2250	Unitized gypsum system								
2300	Unitized panel, 9' high, 2" to 2-1/2" thick								
2350	Vinyl-clad gypsum	2 Corp	48	.333	L.F.	132	17.70	149.70	172
2400	Fabric clad gypsum		44	.364	"	217	19.35	236.35	267
2500	Unitized mineral fiber system								
2510	Unitized panel, 9' high, 2-1/4" thick, aluminum frame								
2550	Vinyl-clad mineral fiber	2 Corp	48	.333	L.F.	131	17.70	148.70	171
2600	Fabric clad mineral fiber		44	.364	"	195	19.35	214.35	244
2800	Movable steel walls, modular system								
2900	Unitized panels, 9' high, 48" wide								
3100	Baked enamel, pre-finished	2 Corp	60	.267	L.F.	148	14.15	162.15	185
3200	Fabric clad steel		56	.286	"	214	15.20	229.20	259
5310	Trackless wall, cork finish, semi-acoustic, 1-5/8" thick, unsealed		325	.049	S.F.	39.50	2.62	42.12	47.50
5320	Sealed		190	.084		49.50	4.48	53.98	61
5330	Acoustic, 2" thick, unsealed		305	.052		42.50	2.79	45.29	50.50
5340	Sealed		225	.071		59	3.78	62.78	70.50
5500	For acoustical partitions, add, unsealed					2.38		2.38	2.62

10 22 Partitions

10 22 19 – Demountable Partitions

10 22 19.43 Demountable Composite Partitions				Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Ind O&P
5550	Sealed						S.F.	11.10				11.10	12.20
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 Glob	3.80	4.211	Ea.	4,975		177		5,152		5,750	
6300	4 wall		1.90	8.421		7,125		355		7,480		8,375	
6350	16' x 16', 2 wall		3.60	4.444		8,175		187		8,362		9,275	
6400	4 wall		1.80	8.889		11,200		375		11,575		12,900	

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 Corp	100	.160	L.F.	136		8.50		144.50		163	
0200	5'-0" high		90	.178		126		9.45		135.45		153	
0500	6'-0" high		75	.213		127		11.35		188.35		156	
0900	5'-0" long, 4'-0" high		175	.091		61.50		4.86		66.36		75.50	
1000	5'-0" high		150	.107		84.50		5.65		90.15		102	
1500	6'-0" high		125	.128		113		6.80		119.80		134	
1600	6'-0" long, 5'-0" high		162	.099		113		5.25		118.25		132	
3200	Economical panels, fabric face, 4'-0" long, 5'-0" high		132	.121		59.50		6.45		65.95		74.50	
3250	6'-0" high		112	.143		61.50		7.60		69.10		79	
3300	5'-0" long, 5'-0" high		150	.107		34.50		5.65		40.15		46.50	
3350	6'-0" high		125	.128		52.50		6.80		59.30		67.50	
3450	Acoustical panels, 60 to 90 NRC, 3'-0" long, 5'-0" high		90	.178		87		9.45		96.45		110	
3550	6'-0" high		75	.213		88		11.35		99.35		114	
3600	5'-0" long, 5'-0" high		150	.107		61		5.65		66.65		75.50	
3650	6'-0" high		125	.128		59		6.80		65.80		75	
3700	6'-0" long, 5'-0" high		162	.099		53		5.25		58.25		66.50	
3750	6'-0" high		138	.116		83.50		6.15		89.65		101	
3800	Economy acoustical panels, 40 NRC, 4'-0" long, 5'-0" high		132	.121		59.50		6.45		65.95		74.50	
3850	6'-0" high		112	.143		61.50		7.60		69.10		79	
3900	5'-0" long, 6'-0" high		125	.128		52.50		6.80		59.30		67.50	
3950	6'-0" long, 5'-0" high		162	.099		46		5.25		51.25		58.50	
4000	Metal chalkboard, 6'-6" high, chalkboard, 1 side		125	.128		126		6.80		132.80		149	
4100	Metal chalkboard, 2 sides		120	.133		144		7.10		151.10		170	
4300	Tackboard, both sides		123	.130		114		6.90		120.90		135	

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	2 Corp	300	.053	S.F.	22		2.83		24.83		29	
0300	Residential, 1.25 lb./S.F., 8' maximum height		225	.071		25.50		3.78		29.28		33.50	
0400	Commercial, 1.75 lb./S.F., 8' maximum height		150	.107		26		5.65		31.65		37.50	
0600	2 lb./S.F., 17' maximum height		75	.213		39		11.35		50.35		60	
0700	Industrial, 4 lb./S.F., 20' maximum height		100	.160		27.50		8.50		36		43.50	
0900	Acoustical, 3 lb./S.F., 17' maximum height		95	.168		44.50		8.95		53.45		62	
1200	5 lb./S.F., 20' maximum height		90	.178		52		9.45		61.45		71	
1300	5.5 lb./S.F., 17' maximum height		160	.100		52		5.30		57.30		65	
1400	Fire rated, 4.5 psf, 20' maximum height		160	.100		55		5.30		60.30		69	
1500	Vinyl-clad wood or steel, electric operation, 5.0 psf		300	.053		30		2.83		32.83		37	
1900	Wood, non-acoustic, birch or mahogany, to 10' high												

10 22 Partitions

10 22 39 – Folding Panel Partitions

10 22 39.10 Partitions, Folding Panel		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
0010	PARTITIONS, FOLDING PANEL, acoustic, wood								
0100	Vinyl faced, to 18' high, 6 psf, economy trim	2 Corp	60	.267	S.F.	70.50	14.15	84.65	99
0150	Standard trim		45	.356		84	18.90	102.90	121
0200	Premium trim		30	.533		108	28.50	136.50	162
0400	Plastic laminate or hardwood finish, standard trim		60	.267		72.50	14.15	86.65	101
0500	Premium trim		30	.533		77	28.50	105.50	128
0600	Wood, low acoustical type, 4.5 psf, to 14' high		50	.320		52.50	17	69.50	83.50
1100	Steel, acoustical, 9 to 12 lb./S.F., vinyl faced, standard trim		60	.267		75	14.15	89.15	104
1200	Premium trim		30	.533		91.50	28.50	120	144
1700	Aluminum framed, acoustical, to 12' high, 5.5 psf, standard trim		60	.267		50.50	14.15	64.65	77
1800	Premium trim		30	.533		61	28.50	89.50	110
2000	6.5 lb./S.F., standard trim		60	.267		53	14.15	67.15	80
2100	Premium trim		30	.533		65.50	28.50	94	115

10 22 43 – Sliding Partitions

10 22 43.10 Partitions, Sliding		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
0010	PARTITIONS, SLIDING								
0020	Acoustic air wall, 1-5/8" thick, standard trim	2 Corp	375	.043	S.F.	34.50	2.27	36.77	41.50
0100	Premium trim		365	.044		59	2.33	61.33	68
0300	2-1/4" thick, standard trim		360	.044		38.50	2.36	40.86	46
0400	Premium trim		330	.048		67.50	2.58	70.08	78.50
0600	For track type, add to above		"	.053	L.F.	126		126	138
0700	Overhead track type, acoustical, 3" thick, 11 psf, standard trim	2 Corp	350	.046	S.F.	86.50	2.43	88.93	99
0800	Premium trim		300	.053	"	104	2.83	106.83	119

10 26 Wall and Door Protection

10 26 13 – Corner Guards

10 26 13.20 Corner Protection		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
0010	CORNER PROTECTION								
0100	Stainless steel, 16 ga., adhesive mount, 3-1/2" leg	1 Corp	80	.100	L.F.	22	5.30	27.30	32
0200	12 ga. stainless, adhesive mount	"	80	.100		20.50	5.30	25.80	30.50
0300	For screw mount, add						10%		
0500	Vinyl acrylic, adhesive mount, 3" leg	1 Corp	128	.063		11.40	3.32	14.72	17.55
0550	1-1/2" leg		160	.050		5.25	2.66	7.91	9.80
0600	Screw mounted, 3" leg		80	.100		9.65	5.30	14.95	18.60
0650	1-1/2" leg		100	.080		4.64	4.25	8.89	11.50
0700	Clear plastic, screw mounted, 2-1/2"		60	.133		4.73	7.10	11.83	15.85
1000	Vinyl cover, alum. retainer, surface mount, 3" x 3"		48	.167		11.10	8.85	19.95	25.50
1050	2" x 2"		48	.167		9.95	8.85	18.80	24.50
1100	Flush mounted, 3" x 3"		32	.250		21	13.30	34.30	43
1150	2" x 2"		32	.250		16.80	13.30	30.10	38.50

10 26 16 – Bumper Guards

10 26 16.10 Guard, Bumper		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
0010	GUARD, BUMPER								
1200	Bed bumper, vinyl acrylic, alum. retainer, 21" long	1 Corp	10	.800	Ea.	42.50	42.50	85	111
1300	53" long with aligner		9	.889	"	107	47	154	189
1400	Bumper, vinyl cover, alum. retain., cush. mnt., 1-1/2" x 2-3/4"		80	.100	L.F.	14.35	5.30	19.65	24
1500	2" x 4-1/4"		80	.100		21	5.30	26.30	31
1600	Surface mounted, 1-3/4" x 3-5/8"		80	.100		12.05	5.30	17.35	21.50

10 26 Wall and Door Protection

10 26 16 – Bumper Guards

10 26 16.16 Protective Corridor Handrails		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
0010	PROTECTIVE CORRIDOR HANDRAILS									
3000	Hondrail/bumper, vinyl cover, alum. retainer									
3010	Bracket mounted, flat rail, 5-1/2"	1 Corp	80	.100	L.F.	18.45	5.30		23.75	28.50
3100	6-1/2"		80	.100		23	5.30		28.30	33.50
3200	Bronze bracket, 1-3/4" diam. rail		80	.100		16.65	5.30		21.95	26.50

10 26 23 – Protective Wall Covering

10 26 23.10 Wall Covering, Protective

0010 WALL COVERING, PROTECTIVE		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
0400	Rub rail, vinyl, adhesive mounted	1 Corp	185	.043	L.F.	9.65	2.30		11.95	14.10
0500	Neoprene, aluminum backing, 1-1/2" x 2"		110	.073		9.25	3.87		13.12	16
1000	Trolley rail, PVC, clipped to wall, 5" high		185	.043		9	2.30		11.30	13.35
1050	8" high		180	.044		15.50	2.36		17.86	20.50
1700	Bumper rail, stainless steel, flat bar on brackets, 4" x 1/4"	2 Skwk	120	.133	↓	37.50	7.30		44.80	52
1775	Wall end guard, stainless steel, 16 ga., 36" tall, screwed to studs	1 Skwk	30	.267	Ea.	26	14.65		40.65	50.50
2000	Crash rail, vinyl cover, alum. retainer, 1" x 4"	1 Corp	110	.073	L.F.	11.15	3.87		15.02	18.05
2100	1" x 8"		90	.089		19	4.72		23.72	28
2150	Vinyl inserts, aluminum plate, 1" x 2-1/2"		110	.073		15.05	3.87		18.92	22.50
2200	1" x 5"		90	.089		24.50	4.72		29.22	33.50

10 26 23.13 Impact Resistant Wall Protection

0010 IMPACT RESISTANT WALL PROTECTION

0100 Vinyl wall protection, complete instl. incl. panels, trim, adhesive		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
0110	.040" thk., std. colors	2 Corp	320	.050	S.F.	15.60	2.66		18.26	21
0120	.040" thk., element patterns		300	.053		17.35	2.83		20.18	23.50
0130	.060" thk., std. colors		300	.053		17.90	2.83		20.73	24
0140	.060" thk., element patterns	↓	280	.057	↓	18.90	3.04		21.94	25.50
1750	Wallguard stainless steel baseboard, 12" tall, adhesive applied	2 Skwk	260	.062	L.F.	33.50	3.38		36.88	41.50
1775	Wall protection, stainless steel, 16 ga., 48" x 36" tall, screwed to studs	"	500	.032	S.F.	8	1.76		9.76	11.45

10 26 33 – Door and Frame Protection

10 26 33.10 Protection, Door and Frame

0010 PROTECTION, DOOR AND FRAME		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
0100	Door frame guard, vinyl, 3" x 3" x 4"	1 Corp	30	.267	Ea.	88.50	14.15		102.65	119
0110	Door frame guard, vinyl, 3" x 3" x 8"		26	.308		134	16.35		150.35	172
0120	Door frame guard, stainless steel, 3" x 3" x 4"	↓	30	.267		440	14.15		454.15	505
0500	Steel door track/wheel guards, 4'-0" high	E-4	22	1.455	↓	116	84.50	6.70	207.20	268

10 28 Toilet, Bath, and Laundry Accessories

10 28 13 – Toilet Accessories

10 28 13.13 Commercial Toilet Accessories

0010 COMMERCIAL TOILET ACCESSORIES		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
0200	Curtain rod, stainless steel, 5' long, 1" diameter	1 Corp	13	.615	Ea.	26.50	32.50		59	78.50
0300	1-1/4" diameter		13	.615		29	32.50		61.50	81
0350	Chrome, 1" diameter		13	.615	↓	26	32.50		58.50	77.50
0360	For vinyl curtain, add		1950	.004	S.F.	.97	.22		1.19	1.40
0400	Diaper changing station, horizontal, wall mounted, plastic		10	.800	Ea.	246	42.50		288.50	335
0420	Vertical		10	.800		221	42.50		263.50	305
0430	Oval shaped		10	.800		305	42.50		347.50	400
0440	Recessed, with stainless steel flange		6	1.333		515	71		586	670
0500	Dispenser units, combined soap & towel dispensers,	1 Corp	10	.800	Ea.	345	42.50		387.50	445
0510	Mirror and shelf, flush mounted									

10 28 Toilet, Bath, and Laundry Accessories

10 28 13 – Toilet Accessories

10 28 13.13 Commercial Toilet Accessories	Description	Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
							Labor	Equipment	Total		
0600	Towel dispenser and waste receptacle,										
0610	18 gallon capacity	1 Corp	10	.800	Ed.	365	42.50		407.50	470	
0800	Grab bar, straight, 1-1/4" diameter, stainless steel, 18" long		24	.333		30	17.70		47.70	59	
0900	24" long		23	.348		29	18.50		47.50	60	
1000	30" long		22	.364		26.50	19.35		45.85	58	
1100	36" long	♿	20	.400		34.50	21.50		56	70	
1105	42" long		20	.400		40	21.50		61.50	76	
1120	Corner, 36" long		20	.400		95	21.50		116.50	136	
1200	1-1/2" diameter, 24" long		23	.348		33.50	18.50		52	65	
1300	36" long		20	.400		37	21.50		58.50	72.50	
1310	42" long		18	.444		33.50	23.50		57	72.50	
1500	Tub bar, 1-1/4" diameter, 24" x 36"		14	.571		90	30.50		120.50	145	
1600	Plus vertical arm		12	.667		100	35.50		135.50	163	
1900	End tub bar, 1" diameter, 90° angle, 16" x 32"		12	.667		111	35.50		146.50	175	
2010	Tub/shower/toilet, 2-wall, 36" x 24"		12	.667		90.50	35.50		126	153	
2300	Hand dryer, surface mounted, electric, 115 volt, 20 amp		4	2		425	106		531	625	
2400	230 volt, 10 amp		4	2		645	106		751	870	
2450	Hand dryer, touch free, 1400 watt, 81,000 rpm		4	2		1,350	106		1,456	1,625	
2600	Hat and coat strip, stainless steel, 4 hook, 36" long		24	.333		68	17.70		85.70	102	
2700	6 hook, 60" long		20	.400		118	21.50		139.50	162	
3000	Mirror, with stainless steel 3/4" square frame, 18" x 24"		20	.400		51.50	21.50		73	88.50	
3100	36" x 24"		15	.533		104	28.50		132.50	157	
3200	48" x 24"		10	.800		186	42.50		228.50	268	
3300	72" x 24"		6	1.333		305	71		376	440	
3500	With 5" stainless steel shelf, 18" x 24"		20	.400		185	21.50		206.50	235	
3600	36" x 24"		15	.533		236	28.50		264.50	300	
3700	48" x 24"		10	.800		246	42.50		288.50	335	
3800	72" x 24"		6	1.333		277	71		348	410	
4100	Mop holder strip, stainless steel, 5 holders, 48" long		20	.400		76.50	21.50		98	117	
4200	Napkin/tampon dispenser, recessed		15	.533		560	28.50		588.50	660	
4220	Semi-recessed		6.50	1.231		370	65.50		435.50	505	
4250	Napkin receptacle, recessed		6.50	1.231		171	65.50		236.50	287	
4300	Robe hook, single, regular		96	.083		20.50	4.43		24.93	29	
4400	Heavy duty, concealed mounting		56	.143		25.50	7.60		33.10	39.50	
4600	Soap dispenser, chrome, surface mounted, liquid		20	.400		58.50	21.50		80	96	
5000	Recessed stainless steel, liquid		10	.800		163	42.50		205.50	243	
5600	Shelf, stainless steel, 5" wide, 18 ga., 24" long		24	.333		82	17.70		99.70	117	
5700	48" long		16	.500		168	26.50		194.50	225	
5800	8" wide shelf, 18 ga., 24" long		22	.364		63	19.35		82.35	98.50	
5900	48" long		14	.571		145	30.50		175.50	205	
6000	Toilet seat cover dispenser, stainless steel, recessed		20	.400		181	21.50		202.50	231	
6050	Surface mounted		15	.533		32.50	28.50		61	78.50	
6100	Toilet tissue dispenser, surface mounted, SS, single roll		30	.267		16	14.15		30.15	39	
6200	Double roll		24	.333		23	17.70		40.70	51.50	
6240	Plastic, twin/jumbo dbl. roll		24	.333		30.50	17.70		48.20	60	
6400	Towel bar, stainless steel, 18" long		23	.348		40	18.50		58.50	72	
6500	30" long		21	.381		48.50	20.50		69	83.50	
6700	Towel dispenser, stainless steel, surface mounted		16	.500		41.50	26.50		68	86	
6800	Flush mounted, recessed		10	.800		67.50	42.50		110	139	
6900	Plastic, touchless, battery operated		16	.500		107	26.50		133.50	158	
7000	Towel holder, hotel type, 2 guest size		20	.400		58	21.50		79.50	95.50	
7200	Towel shelf, stainless steel, 24" long, 8" wide		20	.400		65	21.50		86.50	104	
7400	Tumbler holder, for tumbler only		30	.267		37	14.15		51.15	62.50	

10 28 Toilet, Bath, and Laundry Accessories

10 28 13 – Toilet Accessories

10 28 13.13 Commercial Toilet Accessories		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
							Labor	Equipment	Total		
7410	Tumbler holder, recessed	1 Corp	20	.400	Ea.	9.40	21.50		30.90	42.50	
7500	Soap, tumbler & toothbrush		30	.267		20	14.15		34.15	43.50	
7510	Tumbler & toothbrush holder		20	.400		13.45	21.50		34.95	47	
8000	Waste receptacles, stainless steel, with top, 13 gallon		10	.800		335	42.50		377.50	430	
8100	36 gallon		8	1		460	53		513	585	
9996	Bathroom access., grab bar, straight, 1-1/2" diam., SS, 42" L install only		18	.444			23.50		23.50	35.50	

10 28 16 – Bath Accessories

10 28 16.20 Medicine Cabinets

MEDICINE CABINETS		Crew	14	.571	Ea.	98.50	30.50		129	154
0020	With mirror, sst frame, 16" x 22", unlighted	1 Corp	14	.571						
0100	Wood frame		14	.571		128	30.50		158.50	187
0300	Sliding mirror doors, 20" x 16" x 4-3/4", unlighted		7	1.143		130	60.50		190.50	235
0400	24" x 19" x 8-1/2", lighted		5	1.600		219	85		304	370
0600	Triple door, 30" x 32", unlighted, plywood body		7	1.143		355	60.50		415.50	480
0700	Steel body		7	1.143		355	60.50		415.50	480
0900	Oak door, wood body, beveled mirror, single door		7	1.143		170	60.50		230.50	278
1000	Double door		6	1.333		370	71		441	510
1200	Hotel cabinets, stainless, with lower shelf, unlighted		10	.800		218	42.50		260.50	305
1300	Lighted		5	1.600		330	85		415	490

10 28 19 – Tub and Shower Enclosures

10 28 19.10 Partitions, Shower

PARTITIONS, SHOWER floor mounted, no plumbing		Crew	5	3,200	Ea.	625	170		795	945
0400	Cabinet, one piece, fiberglass, 32" x 32"	2 Corp	5	3,200						
0420	36" x 36"		5	3,200		550	170		720	860
0440	36" x 48"		5	3,200		1,375	170		1,545	1,775
0460	Acrylic, 32" x 32"		5	3,200		335	170		505	625
0480	36" x 36"		5	3,200		1,050	170		1,220	1,400
0500	36" x 48"		5	3,200		1,300	170		1,470	1,675
0520	Shower door for above, clear plastic, 24" wide	1 Corp	8	1		185	53		238	284
0540	28" wide		8	1		241	53		294	345
0560	Tempered glass, 24" wide		8	1		260	53		313	365
0580	28" wide		8	1		293	53		346	400
2400	Glass stalls, with doors, no receptors, chrome on brass	2 Shee	3	5,333		1,625	330		1,955	2,300
2700	Anodized aluminum	"	4	4		1,300	249		1,549	1,825
2900	Marble shower stall, stock design, with shower door	2 Marb	1.20	13,333		2,275	680		2,955	3,525
3000	With curtain		1.30	12,308		2,000	625		2,625	3,150
3200	Receptors, precast terrazzo, 32" x 32"		14	1.143		300	58		358	420
3300	48" x 34"		9.50	1.684		440	85.50		525.50	610
3500	Plastic, simulated terrazzo receptor, 32" x 32"		14	1.143		172	58		230	277
3600	32" x 48"		12	1.333		315	68		383	450
3800	Precast concrete, colors, 32" x 32"		14	1.143		220	58		278	330
3900	48" x 48"		8	2		310	102		412	495
4100	Shower doors, economy plastic, 24" wide	1 Shee	9	.889		134	55.50		189.50	231
4200	Tempered glass door, economy		8	1		279	62.50		341.50	400
4400	Folding, tempered glass, aluminum frame		6	1.333		430	83		513	600
4500	Sliding, tempered glass, 48" opening		6	1.333		575	83		658	755
4700	Deluxe, tempered glass, chrome on brass frame, 42" to 44"		8	1		485	62.50		547.50	630
4800	39" to 48" wide		1	8		700	500		1,200	1,525
4850	On anodized aluminum frame, obscure glass		2	4		570	249		819	1,000
4900	Clear glass		1	8		690	500		1,190	1,525
5100	Shower enclosure, tempered glass, anodized alum. frame	1 Shee	2	4	Ea.	965	249		1,214	1,425
5120	2 panel & door, corner unit, 32" x 32"									

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		Material	2020 Bare Costs			Total	Total Ind O&P
				Unit	Labor		Labor	Equipment	Total		
5140	Neo-angle corner unit, 16" x 24" x 16"	1 Shee	2	4	Ea.	1,025	249		1,274		1,500
5200	Shower surround, 3 wall, polypropylene, 32" x 32"	1 Corp	4	2		635	106		741		860
5220	PVC, 32" x 32"		4	2		405	106		511		605
5240	Fiberglass		4	2		390	106		496		590
5250	2 wall, polypropylene, 32" x 32"		4	2		310	106		416		500
5270	PVC		4	2		370	106		476		565
5290	Fiberglass		4	2		375	106		481		570
5300	Tub doors, tempered glass & frame, obscure glass	1 Shee	8	1		219	62.50		281.50		335
5400	Clear glass		6	1.333		510	83		593		685
5600	Chrome plated, brass frame, obscure glass		8	1		289	62.50		351.50		415
5700	Clear glass		6	1.333		710	83		793		905
5900	Tub/shower enclosure, temp. glass, alum. frame, obscure glass		2	4		395	249		644		810
6200	Clear glass		1.50	5.333		820	330		1,150		1,400
6500	On chrome-plated brass frame, obscure glass		2	4		540	249		789		975
6600	Clear glass		1.50	5.333		1,150	330		1,480		1,775
6800	Tub surround, 3 wall, polypropylene	1 Corp	4	2		251	106		357		435
6900	PVC		4	2		365	106		471		565
7000	Fiberglass, obscure glass		4	2		385	106		491		585
7100	Clear glass		3	2.667		650	142		792		930

10 28 23 – Laundry Accessories

10 28 23.13 Built-In Ironing Boards

0010	BUILT-IN IRONING BOARDS	1 Corp	2	4	Ea.	245	213		458	590
0020	Including cabinet, board & light, 42"		1.50	5.333	"	580	283		863	1,075
0100	46"									

10 31 Manufactured Fireplaces

10 31 13 – Manufactured Fireplace Chimneys

10 31 13.10 Fireplace Chimneys

0010	FIREPLACE CHIMNEYS	1 Corp	33	.242	V.L.F.	94	12.90		106.90	122
0500	Chimney dbl. wall, all stainless, over 8"-6", 7" diam., add to fireplace		32	.250		103	13.30		116.30	133
0600	10" diameter, add to fireplace		31	.258		181	13.70		194.70	220
0700	12" diameter, add to fireplace		30	.267		216	14.15		230.15	260
0800	14" diameter, add to fireplace		10	.800	Ea.	515	42.50		557.50	630
1000	Simulated brick chimney top, 4' high, 16" x 16"		7	1.143	"	575	60.50		635.50	720
1100	24" x 24"									

10 31 13.20 Chimney Accessories

0010	CHIMNEY ACCESSORIES	1 Bric	8	1	Ea.	56.50	52		108.50	141
0020	Chimney screens, galv., 13" x 13" flue		5	1.600		128	83.50		211.50	266
0050	24" x 24" flue		8	1		101	52		153	191
0200	Stainless steel, 13" x 13" flue		5	1.600		147	83.50		230.50	288
0250	20" x 20" flue		16	.500		56	26		82	102
2400	Squirrel and bird screens, galvanized, 8" x 8" flue		12	.667		66	34.50		100.50	125
2450	13" x 13" flue									

10 31 16 – Manufactured Fireplace Forms

10 31 16.10 Fireplace Forms

0010	FIREPLACE FORMS	1 Bric	3	2.667	Ea.	735	139		874	1,025
1800	Fireplace forms, no accessories, 32" opening		2.50	3.200		940	167		1,107	1,275
1900	36" opening		2	4		1,250	208		1,458	1,700
2000	40" opening		1.50	5.333		1,825	278		2,103	2,425
2100	78" opening									

10 31 Manufactured Fireplaces

10 31 23 – Prefabricated Fireplaces

10 31 23.10 Fireplace, Prefabricated		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
						Labor	Equipment		
0010	FIREPLACE, PREFABRICATED, free standing or wall hung								
0100	With hood & screen, painted	1 Corp	1.30	6.154	Ea.	1,650	325	1,975	2,300
0150	Average		1	8		1,775	425	2,200	2,600
0200	Stainless steel		.90	8.889		3,300	470	3,770	4,325
1500	Simulated logs, gas fired, 40,000 BTU, 2' long, manual safety pilot		7	1.143	Set	560	60.50	620.50	705
1600	Adjustable flame remote pilot		6	1.333		1,325	71	1,396	1,550
1700	Electric, 1,500 BTU, 1'-6" long, incandescent flame		7	1.143		265	60.50	325.50	385
1800	1,500 BTU, LED flame		6	1.333		345	71	416	480
2000	Fireplace, built-in, 36" hearth, radiant		1.30	6.154	Ea.	740	325	1,065	1,300
2100	Recirculating, small fan		1	8		905	425	1,330	1,625
2150	Large fan		.90	8.889		2,250	470	2,720	3,175
2200	42" hearth, radiant		1.20	6.667		1,100	355	1,455	1,725
2300	Recirculating, small fan		.90	8.889		1,300	470	1,770	2,125
2350	Large fan		.80	10		1,475	530	2,005	2,425
2400	48" hearth, radiant		1.10	7.273		2,500	385	2,885	3,325
2500	Recirculating, small fan		.80	10		2,825	530	3,355	3,900
2550	Large fan		.70	11.429		2,675	605	3,280	3,850
3000	See through, including doors		.80	10		2,325	530	2,855	3,375
3200	Corner (2 wall)		1	8		3,750	425	4,175	4,750

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.	123	69.50	192.50	241
0850	Cast iron, 30" opening		6	1.333		124	69.50	193.50	241
0880	36" opening		6	1.333		126	69.50	195.50	243
0900	48" opening		6	1.333		175	69.50	244.50	297
0920	60" opening		6	1.333		355	69.50	424.50	500
0950	72" opening		5	1.600		430	83.50	513.50	600
1000	84" opening, special order		5	1.600		920	83.50	1,003.50	1,150
1050	96" opening, special order		4	2		935	104	1,039	1,175
1200	Steel plate, poker control, 60" opening		8	1		325	52	377	440
1250	84" opening, special order		5	1.600		595	83.50	678.50	780
1400	"Universal" type, chain operated, 32" x 20" opening		8	1		254	52	306	360
1450	48" x 24" opening		5	1.600		380	83.50	463.50	540

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.	57	34.50	91.50	115
0450	12" x 12"		10	.800		90.50	41.50	132	163
0500	18" x 24"		8	1		152	52	204	246
0550	Cast iron frame, steel door, 24" x 30"		5	1.600		325	83.50	408.50	485
1600	Dutch oven door and frame, cast iron, 12" x 15" opening		13	.615		133	32	165	195
1650	Copper plated, 12" x 15" opening		13	.615		260	32	292	335

10 35 Stoves

10 35 13 – Heating Stoves

10 35 13.10 Wood Burning Stoves		Crew	Daily Output	Labor Hours	Unit	Material	2020 Labor	Bare Costs	Equipment	Total	Total Incl O&P
0010 WOOD BURNING STOVES											
0015 Cast iron, less than 1,500 S.F.		2 Corp	1.30	12.308	Ea.	1,500	655			2,155	2,625
0020 1,500 to 2,000 S.F.			1	16		2,550	850			3,400	4,075
0030 greater than 2,000 S.F.			.80	20		2,925	1,075			4,000	4,825
0050 For gas log lighter, add						49.50				49.50	54.50

10 43 Emergency Aid Specialties

10 43 13 – Defibrillator Cabinets

10 43 13.05 Defibrillator Cabinets

0010	DEFIBRILLATOR CABINETS , not equipped, stainless steel	1 Corp	10	.800	Ea.	430	42.50			472.50	535
0050	Defibrillator cabinet, stainless steel with strobe & alarm 12" x 27"	"	30	.267	"	1,400	14.15			1,414.15	1,550
0100	Automatic External Defibrillator										

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.	142	114			256	325
1100	Steel door and frame		8	2		164	114			278	350
2700	Fire blanket & extinguisher cab, inc blanket, rec stl., 14" x 40" x 8"		7	2.286		219	130			349	435
2800	Fire blanket cab, inc blanket, surf mttd, stl., 15"x10"x5", w/pwdr coat fin	↓	8	2	↓	103	114			217	284
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.	565	152			717	850
3200	Steel door and frame		6	2.667		259	152			411	515
3300	Stainless steel door and frame	↓	6	2.667	↓	590	152			742	880
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.	545	152			697	830
4200	Steel door and frame		6	2.667		385	152			537	655
4300	Stainless steel door and frame	↓	6	2.667	↓	760	152			912	1,075
5000	Hose rack assy., 2-1/2" x 1-1/2" valve, 100' hose and extinguisher, 30" x 40" x 8"										
5100	Aluminum door and frame	Q-12	5	3.200	Ea.	725	182			907	1,075
5200	Steel door and frame		5	3.200		299	182			481	605
5300	Stainless steel door and frame	↓	5	3.200	↓	630	182			812	970
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	76			327	390
8200	Steel door and frame		12	1.333		207	76			283	340
8300	Stainless steel door and frame	↓	12	1.333	↓	335	76			411	485

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.	300			300	330
0160	15 lb.						385			385	425
0180	20 lb.					↓	425			425	470
1000	Dry chemical, pressurized										
1040	Standard type, portable, painted, 2-1/2 lb.					Ea.	44			44	48.50
1060	5 lb.						62			62	68
1080	10 lb.					↓	96			96	106

10 44 Fire Protection Specialties

10 44 16 – Fire Extinguishers

10 44 16.13 Portable Fire Extinguishers		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
1100	20 lb.				Ea.	138		138	152
1120	30 lb.					430		430	470
1300	Standard type, wheeled, 150 lb.					1,500		1,500	1,650
2000	ABC all purpose type, portable, 2-1/2 lb.					23.50		23.50	26
2060	5 lb.					28.50		28.50	31.50
2080	9-1/2 lb.					52		52	57
2100	20 lb.					91		91	100
3500	Halotron 1, 2-1/2 lb.					133		133	146
3600	5 lb.					207		207	228
3700	60 lb.					425		425	470
5000	Pressurized water, 2-1/2 gallon, stainless steel					105		105	115
5060	With anti-freeze					118		118	130
9400	Installation of extinguishers, 12 or more, on nailable surface	1 Carp	30	.267			14.15	14.15	21.50
9420	On masonry or concrete	"	15	.533	↓		28.50	28.50	42.50

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.					"	4,250	4,250	4,675
2200	ABC all purpose type								
2300	Wheeled, 45 lb.					Ea.	775	775	850
2360	150 lb.					"	1,975	1,975	2,150

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.	271	25	296	335
0120	18" x 15" x 72"		20	.400		335	25	360	410
0130	12" x 18" x 72"		20	.400		230	25	255	291
0140	18" x 18" x 72"		20	.400		299	25	324	370
0410	2- tier, 12" x 15" x 36"		30	.267		290	16.60	306.60	345
0420	18" x 15" x 36"		30	.267		239	16.60	255.60	288
0430	12" x 18" x 36"		30	.267		320	16.60	336.60	380
0440	18" x 18" x 36"		30	.267		255	16.60	271.60	305
0450	3- tier 12" x 15" x 24"		30	.267		293	16.60	309.60	345
0455	12" x 18" x 24"		30	.267		300	16.60	316.60	355
0480	4- tier 12" x 15" x 18"		30	.267		375	16.60	391.60	435
0485	12" x 18" x 18"		30	.267		390	16.60	406.60	455
0500	Two person, 18" x 15" x 72"		20	.400		325	25	350	400
0510	18" x 18" x 72"		20	.400		305	25	330	375
0520	Duplex, 15" x 15" x 72"		20	.400		345	25	370	420
0530	15" x 21" x 72"		20	.400	↓	385	25	410	465
0600	5 tier box lockers, unassembled		30	.267	Opng.	45.50	16.60	62.10	75
0700	Set up		24	.333		52	21	73	89
0900	6 tier box lockers, unassembled		36	.222		39	13.85	52.85	64
1000	Set up	↓	30	.267	↓	45.50	16.60	62.10	75
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.	350	66.50	416.50	485
1110	18" x 15" x 72"		7.50	1.067	↓	555	66.50	621.50	715

10 51 Lockers

10 51 13 – Metal Lockers

10 51 13.10 Lockers		1 Shee	Daily	Labor-	Material	2020 Bare Costs		Total	Total Incl O&P
			Output	Hours		Unit	Labor	Equipment	
1115	18" x 18" x 72"		7.50	1.067	Ea.	570	66.50	636.50	725
1130	2-tier, 12" x 15" x 36"		7.50	1.067		580	66.50	646.50	740
1135	12" x 18" x 36"		7.50	1.067		620	66.50	686.50	785
1140	18" x 15" x 36"		7.50	1.067		675	66.50	741.50	845
1145	18" x 18" x 36"		7.50	1.067		690	66.50	756.50	855
1160	3-tier, 12" x 18" x 24"		7.50	1.067		795	66.50	861.50	975
1180	4-tier, 12" x 18" x 18"		7.50	1.067		605	66.50	671.50	765
1190	5H box, 12" x 18" x 14.4"		7.50	1.067		620	66.50	686.50	785
1195	18" x 18" x 14.4"		7.50	1.067		795	66.50	861.50	975
1196	6H box, 12" x 15" x 12"		7.50	1.067		535	66.50	601.50	685
1197	12" x 18" x 12"		7.50	1.067		605	66.50	671.50	765
1198	18" x 18" x 12"		7.50	1.067		755	66.50	821.50	930
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.	610	33	643	725
2550	18" deep	"	15	.533	"	590	33	623	700
3000	Wall mounted lockers, 4 person, with coat bar								
3100	48" wide x 18" deep x 12" high	1 Shee	20	.400	Ea.	325	25	350	400
3250	Rack w/24 wire mesh baskets					1.50	5.333	Set	790
3260	30 baskets					1.25	6.400	420	820
3270	36 baskets					.95	8.421	450	975
3280	42 baskets					.80	10	465	1,090
3300	For built-in lock with 2 keys, add						Ea.	12.80	14.10
3600	For hanger rods, add							2.53	2.53
3650	For number plate kit, 100 plates #1 - #100, add	1 Shee	4	2		85.50	125	210.50	283
3700	For locker base, closed front panel					90	.089	5.40	10.95
3710	End panel, bolted					36	.222	8.35	14.35
3800	For sloping top, 12" wide					24	.333	31.50	52.50
3810	15" wide					24	.333	32	53
3820	18" wide					24	.333	33	54
3850	Sloping top end panel, 12" deep					72	.111	15.95	22.85
3860	15" deep					72	.111	17.25	24.15
3870	18" deep					72	.111	19.75	26.65
3900	For finish end panels, steel, 60" high, 15" deep					12	.667	30.50	72
3910	72" high, 12" deep					12	.667	27.50	41.50
3920	18" deep					12	.667	44	85.50
5000	For "ready to assemble" lockers,							75%	
5010	Add to labor								
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.	610	27.50	637.50	710
6110	Double tier					18	.444	560	587.50
6120	Triple tier					18	.444	610	637.50

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.	430	62.50	492.50
0120	12" x 15" x 72"	[G]		8	1		440	62.50	502.50
0130	12" x 18" x 72"	[G]		8	1		520	62.50	582.50
0410	Double tier, 12" x 12" x 72"	[G]		21	.381		460	23.50	483.50
0420	12" x 15" x 72"	[G]		21	.381		515	23.50	538.50
0430	12" x 18" x 72"	[G]		21	.381		525	23.50	548.50

10 51 Lockers

10 51 53 – Locker Room Benches

10 51 53.10 Benches		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
						Labor	Equipment		
0010	BENCHES								
2100	Locker bench, laminated maple, top only	1 Shee	100	.080	L.F.	27	4.98	31.98	37
2200	Pedestals, steel pipe		25	.320	Ea.	48	19.25	67.95	82.50
2250	Plastic, 9.5" top with PVC pedestals		80	.100	L.F.	73	6.25	79.25	90

10 55 Postal Specialties

10 55 23 – Mail Boxes

10 55 23.10 Commercial Mail Boxes		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
						Labor	Equipment		
0010	COMMERCIAL MAIL BOXES								
0020	Horiz., key lock, 5'H x 6"W x 15"D, alum., rear load	1 Corp	34	.235	Ea.	40.50	12.50	53	63.50
0100	Front loading		34	.235		40.50	12.50	53	63.50
0200	Double, 5'H x 12"W x 15"D, rear loading		26	.308		70.50	16.35	86.85	102
0300	Front loading		26	.308		77.50	16.35	93.85	110
0500	Quadruple, 10'H x 12"W x 15"D, rear loading		20	.400		145	21.50	166.50	191
0600	Front loading		20	.400		94.50	21.50	116	136
0800	Vertical, front load, 15'H x 5"W x 6"D, alum., per compartment		34	.235		47	12.50	59.50	70.50
0900	Bronze, duranodic finish		34	.235		51.50	12.50	64	75.50
1000	Steel, enameled		34	.235		46.50	12.50	59	70
1700	Alphabetical directories, 120 names		10	.800		103	42.50	145.50	178
1800	Letter collection box		6	1.333		203	71	274	330
1830	Lobby collection boxes, aluminum	2 Shee	5	3.200		1,750	199	1,949	2,225
1840	Bronze or stainless	"	4.50	3.556		1,975	222	2,197	2,500
1900	Letter slot, residential	1 Corp	20	.400		80	21.50	101.50	120
2000	Post office type		8	1		33.50	53	86.50	117
2250	Key keeper, single key, aluminum		26	.308		42.50	16.35	58.85	71
2300	Steel, enameled		26	.308		78	16.35	94.35	111

10 56 Storage Assemblies

10 56 13 – Metal Storage Shelving

10 56 13.10 Shelving		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
						Labor	Equipment		
0010	SHELVING								
0020	Metal, industrial, cross-braced, 3' W, 12" D	1 Sswk	175	.046	SF Shlf	7.60	2.64	10.24	12.50
0100	24" D		330	.024		5.65	1.40	7.05	8.45
0300	4' W, 12" D		185	.043		7.85	2.49	10.34	12.50
0400	24" D		380	.021		5.65	1.21	6.86	8.10
1200	Enclosed sides, cross-braced back, 3' W, 12" D		175	.046		14.10	2.64	16.74	19.65
1300	24" D		290	.028		8.10	1.59	9.69	11.40
1500	Fully enclosed, sides and back, 3' W, 12" D		150	.053		17.25	3.07	20.32	24
1600	24" D		255	.031		11.35	1.81	13.16	15.35
1800	4' W, 12" D		150	.053		10.30	3.07	13.37	16.15
1900	24" D		290	.028		8.65	1.59	10.24	12
2200	Wide span, 1600 lb. capacity per shelf, 6' W, 24" D		380	.021		7.25	1.21	8.46	9.90
2400	36" D		440	.018		6.55	1.05	7.60	8.90
2600	8' W, 24" D		440	.018		7.10	1.05	8.15	9.50
2800	36" D		520	.015		7.40	.89	8.29	9.55
4000	Pallet racks, steel frame 5,000 lb. capacity, 8' long, 36" D	2 Sswk	450	.036		9.70	2.05	11.75	13.85
4200	42" D		500	.032		8.30	1.84	10.14	12.05
4400	48" D		520	.031		7.50	1.77	9.27	11.05

10 56 Storage Assemblies

10 56 13 – Metal Storage Shelving

10 56 13.20 Parts Bins		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	Equipment	Total	Total Incl O&P
0010	PARTS BINS metal, gray baked enamel finish										
0100	6'-3" high, 3' wide	2 Clab	10	1.600	Ea.	365	67.50			432.50	500
0300	12 bins, 18" wide x 12" high, 12" deep		10	1.600		485	67.50			552.50	630
0400	24" deep										
0600	72 bins, 6" wide x 6" high, 12" deep		8	2		545	84			629	725
0700	18" deep	↓	8	2	↓	875	84			959	1,075
1000	7'-3" high, 3' wide										
1200	14 bins, 18" wide x 12" high, 12" deep	2 Clab	10	1.600	Ea.	420	67.50			487.50	560
1300	24" deep		10	1.600		440	67.50			507.50	585
1500	84 bins, 6" wide x 6" high, 12" deep		8	2		1,100	84			1,184	1,350
1600	24" deep	↓	8	2	↓	1,350	84			1,434	1,600

10 57 Wardrobe and Closet Specialties

10 57 13 – Hat and Coat Racks

10 57 13.10 Coat Racks and Wardrobes		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	Equipment	Total	Total Incl O&P
0010	COAT RACKS AND WARDROBES										
0020	Hat & coat rack, floor model, 6 hangers										
0050	Standing, beech wood, 21" x 21" x 72", chrome				Ea.	267				267	293
0100	18 ga. tubular steel, 21" x 21" x 69", wood walnut				"	370				370	405
0500	16 ga. steel frame, 22 ga. steel shelves										
0650	Single pedestal, 30" x 18" x 63"				Ea.	375				375	410
0800	Single face rack, 29" x 18-1/2" x 62"					345				345	380
0900	51" x 18-1/2" x 70"					445				445	490
0910	Double face rack, 39" x 26" x 70"					450				450	495
0920	63" x 26" x 70"					565				565	620
0940	For 2" ball casters, add				Set	82.50				82.50	90.50
1400	Utility hook strips, 3/8" x 2-1/2" x 18", 6 hooks	1 Corp	48	.167	Ea.	58	8.85			66.85	77.50
1500	34" long, 12 hooks	"	48	.167	"	71	8.85			79.85	91.50
1650	Wall mounted racks, 16 ga. steel frame, 22 ga. steel shelves	1 Corp	32	.250	Ea.	141	13.30			154.30	175
1850	12" x 15" x 26", 6 hangers	"	32	.250	"	164	13.30			177.30	201
2000	12" x 15" x 50", 12 hangers										
2150	Wardrobe cabinet, steel, baked enamel finish										
2300	36" x 21" x 78", incl. top shelf & hanger rod				Ea.	335				335	365
2400	Wardrobe, 24" x 24" x 76", KD, w/door, hospital, baked enamel steel	1 Corp	2	4		770	213			983	1,175
2500	Hardwood	"	2	4		1,250	213			1,463	1,700

10 57 23 – Closet and Utility Shelving

10 57 23.19 Wood Closet and Utility Shelving

0010 WOOD CLOSET AND UTILITY SHELVING		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	Equipment	Total	Total Incl O&P
0020	Pine, clear grade, no edge bond, 1" x 8"	1 Corp	115	.070	L.F.	3.35	3.70			7.05	9.25
0100	1" x 10"		110	.073		4.17	3.87			8.04	10.40
0200	1" x 12"		105	.076		5.05	4.05			9.10	11.65
0600	Plywood, 3/4" thick with lumber edge, 12" wide		75	.107		1.91	5.65			7.56	10.60
0700	24" wide		70	.114	↓	3.40	6.05			9.45	12.90
0900	Bookcase, clear grade pine, shelves 12" OC, 8" deep, per S.F. shelf		70	.114	S.F.	10.90	6.05			16.95	21
1000	12" deep shelves		65	.123	"	16.35	6.55			22.90	28
1200	Adjustable closet rod and shelf, 12" wide, 3' long		20	.400	Ea.	13.80	21.50			35.30	47
1300	8' long		15	.533	"	25.50	28.50			54	70.50
1500	Prefinished shelves with supports, stock, 8" wide		75	.107	L.F.	5.85	5.65			11.50	14.95
1600	10" wide	↑	70	.114	"	5.65	6.05			11.70	15.40

10 71 Exterior Protection

10 71 13 – Exterior Sun Control Devices

10 71 13.19 Rolling Exterior Shutters		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	Equipment	Total	Total Incl O&P
0010 ROLLING EXTERIOR SHUTTERS											
0020	Roll-up, manual operation, aluminum, 3' x 4', incl. frame	2 Corp	8	2	Ea.	555	106			661	770
0030	6' x 7'	"	8	2	"	1,250	106			1,356	1,525

10 73 Protective Covers

10 73 13 – Awnings

10 73 13.10 Awnings, Fabric

0010 AWNINGS, FABRIC

0020	Including acrylic canvas and frame, standard design										
0100	Door and window, slope, 3' high, 4' wide	1 Corp	4.50	1,778	Ea.	755	94.50			849.50	970
0110	6' wide		3.50	2,286		970	121			1,091	1,250
0120	8' wide		3	2,667		1,175	142			1,317	1,525
0200	Quarter round convex, 4' wide		3	2,667		1,175	142			1,317	1,525
0210	6' wide		2.25	3,556		1,525	189			1,714	1,950
0220	8' wide		1.80	4,444		1,875	236			2,111	2,400
0300	Dome, 4' wide		7.50	1,067		455	56.50			511.50	585
0310	6' wide		3.50	2,286		1,025	121			1,146	1,300
0320	8' wide		2	4		1,800	213			2,013	2,325
0350	Elongated dome, 4' wide		1.33	6,015		1,700	320			2,020	2,350
0360	6' wide		1.11	7,207		2,025	385			2,410	2,800
0370	8' wide		1	8		2,375	425			2,800	3,250
1000	Entry or walkway, peak, 12' long, 4' wide	2 Corp	.90	17,778		5,375	945			6,320	7,350
1010	6' wide		.60	26,667		8,300	1,425			9,725	11,300
1020	8' wide		.40	40		11,500	2,125			13,625	15,800
1100	Radius with dome end, 4' wide		1.10	14,545		4,075	775			4,850	5,650
1110	6' wide		.70	22,857		6,575	1,225			7,800	9,050
1120	8' wide		.50	32		9,325	1,700			11,025	12,900
2000	Retractable lateral arm awning, manual										
2010	To 12' wide, 8'-6" projection	2 Corp	1.70	9,412	Ea.	1,225	500			1,725	2,100
2020	To 14' wide, 8'-6" projection		1.10	14,545		1,425	775			2,200	2,725
2030	To 19' wide, 8'-6" projection		.85	18,824		1,925	1,000			2,925	3,625
2040	To 24' wide, 8'-6" projection		.67	23,881		2,425	1,275			3,700	4,575
2050	Motor for above, add	1 Corp	2.67	3		1,050	159			1,209	1,400
3000	Patio/deck canopy with frame										
3010	12' wide, 12' projection	2 Corp	2	8	Ea.	1,725	425			2,150	2,550
3020	16' wide, 14' projection	"	1.20	13,333		2,675	710			3,385	4,025
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

0010 METAL CANOPIES

0020	Wall hung, .032", aluminum, prefinished, 8' x 10'	K-2	1.30	18,462	Ea.	2,500	1,025			630	4,155	5,025
0300	8' x 20'		1.10	21,818		4,200	1,200			745	6,145	7,275
0500	10' x 10'		1.30	18,462		3,075	1,025			630	4,730	5,650
0700	10' x 20'		1.10	21,818		4,725	1,200			745	6,670	7,875
1000	12' x 20'		1	24		5,825	1,325			820	7,970	9,350
1360	12' x 30'		.80	30		8,775	1,650			1,025	11,450	13,400

10 73 Protective Covers

10 73 16 – Canopies

10 73 16.20 Metal Canopies		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
1700	12' x 40'	K-2	.60	40	Ea.	11,700	2,200	1,375	15,275	17,800
1900	For free standing units, add					20%	10%			
2300	Aluminum entrance canopies, flat soffit, .032"									
2500	3'-6" x 4'-0", clear anodized	2 Corp	4	4	Ea.	1,050	213		1,263	1,475
2700	Bronze anodized		4	4		1,850	213		2,063	2,375
3000	Polyurethane painted		4	4		1,500	213		1,713	1,975
3300	4'-6" x 10'-0", clear anodized		2	8		2,900	425		3,325	3,850
3500	Bronze anodized		2	8		3,700	425		4,125	4,725
3700	Polyurethane painted		2	8		3,100	425		3,525	4,075
4000	Wall downspout, 10 L.F., clear anodized	1 Corp	7	1.143		180	60.50		240.50	290
4300	Bronze anodized		7	1.143		315	60.50		375.50	435
4500	Polyurethane painted		7	1.143		270	60.50		330.50	390
7000	Carport, baked vinyl finish, .032", 20' x 10', no foundations, flat panel	K-2	4	6	Car	4,125	330	205	4,660	5,275
7250	Insulated flat panel		2	12	"	4,950	660	410	6,020	6,925
7500	Walkway cover, to 12' wide, stl., vinyl finish, .032", no fndtns., flat		250	.096	S.F.	22	5.25	3.28	30.53	36
7750	Arched		200	.120	"	53.50	6.60	4.10	64.20	73.50

10 74 Manufactured Exterior Specialties

10 74 23 – Cupolas

10 74 23.10 Wood Cupolas

0010 WOOD CUPOLAS		1 Corp	4.10	1.951	Ea.	320	104		424	505
0020	Stock units, pine, painted, 18" sq., 28" high, alum. roof		3.80	2.105		298	112		410	500
0100	Copper roof		3.70	2.162		455	115		570	675
0300	23" square, 33" high, aluminum roof		3.30	2.424		605	129		734	860
0400	Copper roof		3.70	2.162		660	115		775	900
0600	30" square, 37" high, aluminum roof		3.30	2.424		785	129		914	1,050
0700	Copper roof		4	2		995	106		1,101	1,250
0900	Hexagonal, 31" wide, 46" high, copper roof		3.50	2.286		1,750	121		1,871	2,100
1000	36" wide, 50" high, copper roof									
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		F-3	2	20	Ea.	9,925	1,075	236	11,236	12,800
4000	Steeples, translucent fiberglass, 30" square, 15' high		1.80	22.222		11,500	1,200	262	12,962	14,700
4150	25' high		2	20		8,225	1,075	236	9,536	10,900
4350	Opaque fiberglass, 24" square, 14' high		1.80	22.222		6,675	1,200	262	8,137	9,450
4500	28' high									
4600	Aluminum, baked finish, 16" square, 14' high					6,250			6,250	6,850
4620	20' high, 3'-6" base					10,900			10,900	12,000
4640	35' high, 8' base					38,700			38,700	42,600
4660	60' high, 14' base					87,000			87,000	95,500
4680	152' high, custom					660,500			660,500	727,000
4700	Porcelain enamel steeples, custom, 40' high	F-3	.50	80		15,100	4,350	940	20,390	24,200
4800	60' high		"	.30	133	18,600	7,250	1,575	27,425	33,000

10 74 46 – Window Wells

10 74 46.10 Area Window Wells

0010 AREA WINDOW WELLS, Galvanized steel		1 Sswk	29	.276	Ea.	18.70	15.90		34.60	45.50
0020	20 ga., 3'-2" wide, 1' deep		23	.348		30	20		50	64.50
0100	2' deep									

10 74 Manufactured Exterior Specialties

10 74 46 – Window Wells

10 74 46.10 Area Window Wells		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	
							Labor	Equipment	Total
0300	16 ga., 3'-2" wide, 1' deep	1 Swk	29	.276	Ea.	25.50	15.90	41.40	53
0400	3' deep		23	.348		48.50	20	68.50	85
0600	Welded grating for above, 15 lb., painted		45	.178		103	10.25	113.25	129
0700	Galvanized		45	.178		126	10.25	136.25	154
0900	Translucent plastic cap for above		60	.133		21.50	7.70	29.20	35.50

10 75 Flagpoles

10 75 16 – Ground-Set Flagpoles

10 75 16.10 Flagpoles

0010 FLAGPOLES, ground set		K-1	2	8	Ea.	1,175	400	410	1,985	2,325
0050 Not including base or foundation										
0100 Aluminum, tapered, ground set 20' high		K-1	2	8	Ea.	1,175	400	410	1,985	2,325
0200 25' high			1.70	9.412		1,275	470	485	2,230	2,650
0300 30' high			1.50	10.667		1,250	535	545	2,330	2,775
0400 35' high			1.40	11.429		1,800	575	585	2,940	3,475
0500 40' high			1.20	13.333		3,100	670	685	4,455	5,175
0600 50' high			1	16		3,950	805	820	5,575	6,425
0700 60' high			.90	17.778		4,900	890	910	6,700	7,750
0800 70' high			.80	20		7,725	1,000	1,025	9,750	11,100
1100 Counterbalanced, internal halyard, 20' high			1.80	8.889		3,125	445	455	4,025	4,600
1200 30' high			1.50	10.667		2,900	535	545	3,980	4,575
1300 40' high			1.30	12.308		7,350	620	630	8,600	9,725
1400 50' high			1	16		10,200	805	820	11,825	13,400
2820 Aluminum, electronically operated, 30' high			1.40	11.429		4,525	575	585	5,685	6,475
2840 35' high			1.30	12.308		5,450	620	630	6,700	7,600
2860 39' high			1.10	14.545		6,775	730	745	8,250	9,375
2880 45' high			1	16		6,250	805	820	7,875	8,975
2900 50' high			.90	17.778		9,100	890	910	10,900	12,400
3000 Fiberglass, tapered, ground set, 23' high			2	8		785	400	410	1,595	1,925
3100 29'-7" high			1.50	10.667		1,300	535	545	2,380	2,825
3200 36'-1" high			1.40	11.429		1,825	575	585	2,985	3,500
3300 39'-5" high			1.20	13.333		2,050	670	685	3,405	4,000
3400 49'-2" high			1	16		4,825	805	820	6,450	7,400
3500 59' high			.90	17.778		5,075	890	910	6,875	7,950
4300 Steel, direct imbedded installation										
4400 Internal halyard, 20' high		K-1	2.50	6.400	Ea.	1,575	320	330	2,225	2,575
4500 25' high			2.50	6.400		2,150	320	330	2,800	3,200
4600 30' high			2.30	6.957		2,475	350	355	3,180	3,650
4700 40' high			2.10	7.619		3,525	380	390	4,295	4,875
4800 50' high			1.90	8.421		4,500	425	430	5,355	6,050
5000 60' high			1.80	8.889		7,150	445	455	8,050	9,025
5100 70' high			1.60	10		8,500	500	515	9,515	10,700
5200 80' high			1.40	11.429		11,100	575	585	12,260	13,700
5300 90' high			1.20	13.333		17,100	670	685	18,455	20,600
5500 100' high			1	16		18,600	805	820	20,225	22,600
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.	1,875	425	430	2,730	3,150
6800 6" butt, 30' high		"	1.30	12.308	"	3,275	620	630	4,525	5,225
7300 Foundations for flagpoles, including										
7400 excavation and concrete, to 35' high poles		G-1	10	3.200	Ea.	730	161		891	1,050
7600 40' to 50' high			3.50	9.143		1,350	460		1,810	2,175

10 75 Flagpoles

10 75 16 – Ground-Set Flagpoles

10 75 16.10 Flagpoles		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
7700 Over 60' high		G-1	2	16	Ea.	1,675	805		2,480	3,050

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.	1,125	535	545	2,205	2,625	
0200 23' long		1.40	11.429		1,750	575	585	2,910	3,425	
0300 26'-3" long		1.30	12.308		1,625	620	630	2,875	3,400	
0800 19'-8" long outrigger		1.30	12.308		1,500	620	630	2,750	3,275	
1300 Aluminum, vertical wall set, tapered, with base, 20' high		1.20	13.333		1,300	670	685	2,655	3,175	
1400 29'-6" high		1	16		3,350	805	820	4,975	5,775	
2400 Outrigger poles with base, 12' long		1.30	12.308		1,375	620	630	2,625	3,150	
2500 14' long		1	16		1,575	805	820	3,200	3,825	

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 Clb	4000	.008	S.F.	.62	.34		.96	1.19	
0100 1/4" square mesh		4000	.008		.71	.34		1.05	1.29	
0120 1/2" square mesh		4000	.008		.15	.34		.49	.68	
0140 5/8" x 3/4" mesh		4000	.008		.08	.34		.42	.60	
0160 1-1/4" x 1-1/2" mesh		4000	.008		.18	.34		.52	.71	
0200 4" square mesh	↓	4000	.008	↓	.12	.34		.46	.64	
1000 Poly clips				Ea.	.25			.25	.28	

10 86 Security Mirrors and Domes

10 86 10 – Security Mirrors

0010 EXTERIOR TRAFFIC CONTROL MIRRORS										
0100 Convex, stainless steel, 20 ga., 26" diameter	1 Corp	12	.667	Ea.	188	35.50		223.50	260	

10 86 20 – Security Domes

10 86 20.10 Domes

0010 DOMES for security cameras (CCTV)										
0100 Ceiling mounted, 10" diameter	1 Corp	30	.267	Ea.	12.30	14.15		26.45	35	
0110 12" diameter	↓	30	.267	"	8.85	14.15		23	31	

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 Corp	.20	120	Ea.	14,900	6,375		21,275	26,000	
1600 40' x 10' platform		.14	171		29,700	9,100		38,800	46,400	
1640 60' x 10' platform		.13	185		43,700	9,800		53,500	63,000	
1680 70' x 10' platform	↓	.12	200	↓	41,800	10,600		52,400	62,000	

10 88 Scales

10 88 05 – Commercial Scales

10 88 05.10 Scales		Crew	Daily Output	Labor Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
						Material	Labor	Equipment		
2000	For standard automatic printing device, add				Ea.	1,550			1,550	1,700
2100	For remote reading electronic system, add					2,925			2,925	3,225
2300	Concrete foundation pits for above, 8' x 6', 5 C.Y. required	C-1	.50	64		1,125	3,225		4,350	6,100
2400	14' x 6' platform, 10 C.Y. required		.35	91,429		1,675	4,600		6,275	8,750
2600	50' x 10' platform, 30 C.Y. required		.25	128		2,250	6,450		8,700	12,200
2700	70' x 10' platform, 40 C.Y. required		.15	213		4,900	10,700		15,600	21,500
2750	Crane scales, dial, 1 ton capacity					1,175			1,175	1,275
2780	5 ton capacity					1,625			1,625	1,775
2800	Digital, 1 ton capacity					1,925			1,925	2,100
2850	10 ton capacity					4,775			4,775	5,250
2900	Low profile electronic warehouse scale,									
3000	not incl. printer, 4' x 4' platform, 10,000 lb. capacity	2 Corp	.30	53,333	Ea.	1,375	2,825		4,200	5,750
3300	5' x 7' platform, 10,000 lb. capacity		.25	64		5,525	3,400		8,925	11,200
3400	20,000 lb. capacity		.20	80		6,725	4,250		10,975	13,800
3500	For printers, incl. time, date & numbering, add					700			700	770
3800	Portable, beam type, capacity 1000 lb., platform 18" x 24"					875			875	965
3900	Dial type, capacity 2000 lb., platform 24" x 24"					1,625			1,625	1,800
4000	Digital type, capacity 1000 lb., platform 24" x 30"					2,600			2,600	2,875
4100	Portable contractor truck scales, 50 ton cap., 40' x 10' platform					29,700			29,700	32,700
4200	60' x 10' platform					36,300			36,300	39,900
4400	Heavy-Duty Steel Deck Truck Scales 20' x 10'	3 Corp	.20	120		18,200	6,375		24,575	29,700
4500	Heavy-Duty Steel Deck Truck Scales 80' x 10'		.10	240		48,100	12,800		60,900	72,000
4600	Heavy-Duty Steel Deck Truck Scales 160' x 10'		.04	600		105,500	31,900		137,400	164,000
4700	Heavy-Duty Steel Deck Truck Scales 20' x 12'		.18	137		21,300	7,300		28,600	34,500
4800	Heavy-Duty Steel Deck Truck Scales 80' x 12'		.09	267		61,000	14,200		75,200	88,500
4900	Heavy-Duty Steel Deck Truck Scales 160' x 12'		.04	600		123,000	31,900		154,900	183,500
5000	Heavy-Duty Steel Deck Truck Scales 20' x 14'		.16	150		28,300	7,975		36,275	43,200
5100	Heavy-Duty Steel Deck Truck Scales 80' x 14'		.06	400		67,000	21,300		88,300	105,500
5200	Heavy-Duty Steel Deck Truck Scales 160' x 14'		.03	800		131,000	42,500		173,500	208,000

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 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 Common Work Results for Equipment

11 05 05 – Selective Demolition for Equipment

11 05 05.10 Selective Demolition		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Ind O&P
0010 SELECTIVE DEMOLITION										
0130	Central vacuum, motor unit, residential or commercial	1 Clab	2	4	Ea.		168		168	253
0210	Vault door and frame	2 Skwk	2	8			440		440	665
0215	Day gate, for vault	"	3	5.333			293		293	440
0380	Bank equipment, teller window, bullet resistant	1 Clab	1.20	6.667			281		281	420
0381	Counter	2 Clab	1.50	10.667	Station		450		450	675
0382	Drive-up window, including drawer and glass		1.50	10.667	"		450		450	675
0383	Thru-wall boxes and chests, selective demolition		2.50	6.400	Ea.		269		269	405
0384	Bullet resistant partitions		20	.800	L.F.		33.50		33.50	50.50
0385	Pneumatic tube system, 2 lane drive-up	L-3	.45	35.556	Ea.		2,050		2,050	3,075
0386	Safety deposit box	1 Clab	50	.160	Opng.		6.75		6.75	10.10
0387	Surveillance system, video, complete	2 Elec	2	.8	Ea.		490		490	730
0410	Church equipment, misc movable fixtures	2 Clab	1	16			675		675	1,000
0412	Steeple, to 28' high	F-3	3	13.333			725		882	1,275
0414	40' to 60' high	"	.80	50			2,725		590	3,315
0510	Library equipment, bookshelves, wood, to 90" high	1 Clab	20	.400	L.F.		16.85		16.85	25.50
0515	Carrels, hardwood, 36" x 24"	"	9	.889	Ea.		37.50		37.50	56
0630	Stage equipment, light control panel	1 Elec	1	.8	"		490		490	730
0632	Border lights	"	40	.200	L.F.		12.25		12.25	18.25
0634	Spotlights	"	8	.1	Ea.		61.50		61.50	91.50
0636	Telescoping platforms and risers	2 Clab	175	.091	SF Stg.		3.85		3.85	5.80
1020	Barber equipment, hydraulic chair	1 Clab	40	.200	Ea.		8.40		8.40	12.65
1030	Checkout counter, supermarket or warehouse conveyor	2 Clab	18	.889			37.50		37.50	56
1040	Food cases, refrigerated or frozen	Q-5	6	2.667			157		157	235
1190	Laundry equipment, commercial	L-6	3	4			254		254	380
1360	Movie equipment, lamphouse, to 4000 watt, incl. rectifier	1 Elec	4	2			123		123	183
1365	Sound system, incl. amplifier	"	1.25	6.400			395		395	585
1410	Air compressor, to 5 HP	2 Clab	2.50	6.400			269		269	405
1412	Lubrication equipment, automotive, 3 reel type, incl. pump, excl. piping	L-4	1	24	Set		1,200		1,200	1,825
1414	Booth, spray paint, complete, to 26' long	"	.80	30	"		1,500		1,500	2,275
1560	Parking equipment, cashier booth	B-22	2	15	Ea.		740		142	882
1600	Loading dock equipment, dock bumpers, rubber	1 Clab	50	.160	"		6.75		6.75	10.10
1610	Door seal for door perimeter	"	50	.160	L.F.		6.75		6.75	10.10
1611	Loading dock equipment, dock seal for perimeter, selective demolition	2 Clab	13	1.231	"		52		52	78
1620	Platform lifter, fixed, 6' x 8', 5000 lb. capacity	E-16	1.50	10.667	Ea.		625		98	723
1630	Dock leveller	"	2	.8			470		73.50	543.50
1640	Lights, single or double arm	1 Elec	8	.1			61.50		61.50	91.50
1650	Shelter, fabric, truck or train	1 Clab	1.50	5.333			225		225	335
1790	Waste handling equipment, commercial compactor	L-4	2	12			600		600	905
1792	Commercial or municipal incinerator, gas	"	2	12			600		600	905
1795	Crematory, excluding building	Q-3	.25	128			7,850		7,850	11,800
1910	Detection equipment, cell bar front	E-4	4	8			465		36.50	501.50
1912	Cell door and frame	"	8	4			233		18.35	251.35
1914	Prefab cell, 4' to 5' wide, 7' to 8' high, 7' deep	"	8	4			233		18.35	251.35
1916	Cot, bolted, single	"	40	.800			46.50		3.67	50.17
1918	Visitor cubicle	"	4	.8			465		36.50	501.50
2850	Hydraulic gates, canal, flap, knife, slide or sluice, to 18" diameter	L-5A	8	4			234		143	377
2852	19" to 36" diameter	"	6	5.333			310		191	501
2854	37" to 48" diameter	"	2	16			935		570	1,505
2856	49" to 60" diameter	"	1	32			1,875		1,150	3,025
2858	Over 60" diameter	"	.30	107			6,250		3,825	10,075
3100	Sewage pumping system, prefabricated, to 1000 GPM	G-17D	.20	420			23,300		3,725	27,025
3110	Sewage treatment, holding tank for recirc chemical water closet	1 Plum	8	.1			64.50		64.50	96.50

11 05 Common Work Results for Equipment

11 05 05 – Selective Demolition for Equipment

	Description	Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
							Labor	Equipment	Total		
11 05 05.10 Selective Demolition											
3900	Wastewater treatment system, to 1500 gal.	B-21	2	14	Ea.	685	94.50		779.50	1,125	
4050	Food storage equipment, walk-in refrigerator/freezer	2 Clab	64	.250	S.F.	10.55			10.55	15.80	
4052	Shelving, stainless steel, 4 tier or Dunnage rack	1 Clab	12	.667	Ea.	28			28	42	
4100	Food preparation equipment, small countertop		18	.444		18.70			18.70	28	
4150	Food delivery carts, heated cabinets		18	.444		18.70			18.70	28	
4200	Cooking equipment, commercial range	Q-1	12	1.333		77.50			77.50	116	
4250	Hood and ventilation equipment, kitchen exhaust hood, excl. fire prot	1 Clab	3	2.667		112			112	169	
4255	Fire protection system	Q-1	3	5.333		310			310	465	
4300	Food dispensing equipment, countertop items	1 Clab	15	.533		22.50			22.50	33.50	
4310	Serving counter	"	65	.123	L.F.	5.20			5.20	7.80	
4350	Ice machine, ice cube maker, flakers and storage bins, to 2000 lb./day	Q-1	1.60	10	Ea.	580			580	870	
4400	Cleaning and disposal, commercial dishwasher, to 50 racks/hour	L-6	1	12		760			760	1,125	
4405	To 275 racks/hour	L-4	1	24		1,200			1,200	1,825	
4410	Dishwasher hood	2 Clab	5	3.200		135			135	202	
4420	Garbage disposal, commercial, to 5 HP	L-1	8	2		126			126	188	
4540	Water heater, residential, to 80 gal./day	"	5	3.200		201			201	300	
4542	Water softener, automatic	2 Plum	10	1.600		103			103	154	
4544	Disappearing stairway, to 15' floor height	2 Clab	6	2.667		112			112	169	
4710	Darkroom equipment, light	L-7	10	2.800		143			143	215	
4712	Heavy	"	1.50	18.667		955			955	1,425	
4720	Doors	2 Clab	3.50	4.571	Opng.	192			192	289	
4830	Bowling alley, complete, incl. pinsetter, scorer, counters, misc supplies	4 Clab	.40	80	Lane	3,375			3,375	5,050	
4840	Health club equipment, circuit training apparatus	2 Clab	2	8	Set	335			335	505	
4842	Squat racks	"	10	1.600	Ea.	67.50			67.50	101	
4860	School equipment, basketball backstop	L-2	2	8		370			370	565	
4862	Table and benches, folding, in wall, 14' long	L-4	4	6		299			299	455	
4864	Bleachers, telescoping, to 30 tier	F-5	120	.267	Seat	14.30			14.30	21.50	
4865	Stairs to 15 tier	"	160	.200	"	10.75			10.75	16.10	
4866	Boxing ring, elevated	L-4	.20	120	Ea.	5,975			5,975	9,075	
4867	Boxing ring, floor level	"	2	12		600			600	905	
4868	Exercise equipment	1 Clab	6	1.333		56			56	84.50	
4870	Gym divider	L-4	1000	.024	S.F.	1.20			1.20	1.81	
4875	Scoreboard	R-3	2	10	Ea.	610	94.50		704.50	1,025	
4880	Shooting range, incl. bullet traps, targets, excl. structure	L-9	1	36	Point	1,725			1,725	2,625	
5200	Vocational shop equipment	2 Clab	8	2	Ea.	84			84	127	
6200	Fume hood, incl. countertop, excl. HVAC	"	6	2.667	L.F.	112			112	169	
7100	Medical sterilizing, distiller, water, steam heated, 50 gal. capacity	1 Plum	2.80	2.857	Ea.	184			184	276	
7200	Medical equipment, surgery table, minor	1 Clab	1	8		335			335	505	
7210	Surgical lights, doctor's office, single or double arm	2 Elec	3	5.333		325			325	485	
7300	Physical therapy, table	2 Clab	4	4		168			168	253	
7310	Whirlpool bath, fixed, incl. mixing valves	1 Plum	.4	2		129			129	193	
7400	Dental equipment, chair, electric or hydraulic	1 Clab	.75	10.667		450			450	675	
7410	Central suction system	1 Plum	2	4		258			258	385	
7420	Drill console with accessories	1 Clab	3.20	2.500		105			105	158	
7430	X-ray unit	"	4	2		84			84	127	
7440	X-ray developer	1 Plum	10	.800		51.50			51.50	77	

11 05 10 – Equipment Installation

11 05 10.10 Industrial Equipment Installation

0010	INDUSTRIAL EQUIPMENT INSTALLATION									
0020	Industrial equipment, minimum	E-2	12	4.667	Ton	267	141		408	570
0200	Maximum	"	2	.28	"	1,600	850	2,450	3,400	

11 11 Vehicle Service Equipment

11 11 13 – Compressed-Air Vehicle Service Equipment

		Daily Output	Labor Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
11 11 13.10 Compressed Air Equipment						Labor	Equipment		
0010	COMPRESSED AIR EQUIPMENT								
0030	Compressors, electric, 1-1/2 HP, standard controls	L-4	1.50	16	Ea.	505	800	1,305	1,750
0550	Dual controls		1.50	16		1,050	800	1,850	2,350
0600	5 HP, 115/230 volt, standard controls		1	24		1,725	1,200	2,925	3,725
0650	Dual controls	↓	1	24	↓	3,225	1,200	4,425	5,375

11 11 19 – Vehicle Lubrication Equipment

11 11 19.10 Lubrication Equipment

		Daily Output	Labor Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
0010 LUBRICATION EQUIPMENT						Labor	Equipment		
3000	Lube equipment, 3 reel type, with pumps, not including piping	L-4	.50	48	Set	10,400	2,400	12,800	15,100
3100	Hose reel, including hose, oil/lube, 1000 psi	2 Swk	2	8	Ea.	480	460	940	1,250
3200	Grease, 5000 psi		2	8		585	460	1,045	1,375
3300	Air, 50', 160 psi		2	8		605	460	1,065	1,400
3350	25', 160 psi	↓	2	8	↓	365	460	825	1,125

11 11 33 – Vehicle Spray Painting Equipment

11 11 33.10 Spray Painting Equipment

		Daily Output	Labor Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
0010 SPRAY PAINTING EQUIPMENT						Labor	Equipment		
4000	Spray painting booth, 26' long, complete	L-4	.40	60	Ea.	11,600	3,000	14,600	17,200

11 12 Parking Control Equipment

11 12 13 – Parking Key and Card Control Units

11 12 13.10 Parking Control Units

		Daily Output	Labor Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
0010 PARKING CONTROL UNITS						Labor	Equipment		
5100	Card reader	1 Elec	2	4	Ea.	1,475	245	1,720	2,000
5120	Proximity with customer display	2 Elec	1	16		6,025	980	7,005	8,075
6000	Parking control software, basic functionality	1 Elec	.50	16		24,000	980	24,980	27,900
6020	Multi-function	"	.20	40		96,000	2,450	98,450	109,000

11 12 16 – Parking Ticket Dispensers

11 12 16.10 Ticket Dispensers

		Daily Output	Labor Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
0010 TICKET DISPENSERS						Labor	Equipment		
5900	Ticket splitter with time/date stamp, standard	2 Elec	2	8	Ea.	6,625	490	7,115	8,000
5920	Mag stripe encoding	"	2	8	"	18,900	490	19,390	21,500

11 12 26 – Parking Fee Collection Equipment

11 12 26.13 Parking Fee Coin Collection Equipment

		Daily Output	Labor Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P	
0010 PARKING FEE COIN COLLECTION EQUIPMENT						Labor	Equipment			
5200	Cashier booth, average	B-22	1	30	Ea.	10,600	1,475	284	12,359	14,200
5300	Collector station, pay on foot	2 Elec	.20	80		111,500	4,900		116,400	130,500
5320	Credit card only	"	.50	32		20,600	1,975		22,575	25,600

11 12 26.23 Fee Equipment

0010 FEE EQUIPMENT

		Daily Output	Labor Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P	
0010 FEE EQUIPMENT						Labor	Equipment			
5600	Fee computer	1 Elec	1.50	5.333	Ea.	13,000	325		13,325	14,800

11 12 33 – Parking Gates

11 12 33.13 Lift Arm Parking Gates

		Daily Output	Labor Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P	
0010 LIFT ARM PARKING GATES						Labor	Equipment			
5000	Barrier gate with programmable controller	2 Elec	3	5.333	Ea.	3,300	325		3,625	4,100
5020	Industrial		3	5.333		5,225	325		5,550	6,225
5050	Non-programmable, with reader and 12' arm		3	5.333		1,700	325		2,025	2,350
5500	Exit verifier	↓	1	16	↓	19,600	980		20,580	23,100
5700	Full sign, 4" letters	1 Elec	2	4	↓	1,250	245		1,495	1,725

11 12 Parking Control Equipment

11 12 33 – Parking Gates

11 12 33.13 Lift Arm Parking Gates					Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
5800	Inductive loop		2 Elec	4	4	Ea.		209	245		454	595
5950	Vehicle detector, microprocessor based		1 Elec	3	2.667			470	164		634	760
7100	Traffic spike unit, flush mount, spring loaded, 72" L		B-89	4	4			1,275	201	258	1,734	1,975
7200	Surface mount, 72" L		2 Skwk.	10	1.600			2,425	88		2,513	2,775

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 Corp	.30	26.667	M.B.F.	1,425	1,425			2,850	3,700
0050	Bumpers, lam. rubber blocks 4-1/2" thick, 10" high, 14" long			26	.308	Ea.	60.50	16.35			76.85	91
0200	24" long			22	.364		103	19.35			122.35	143
0300	36" long			17	.471		340	25			365	415
0500	12" high, 14" long			25	.320		81	17			98	115
0550	24" long			20	.400		85.50	21.50			107	126
0600	36" long			15	.533		127	28.50			155.50	183
0800	Laminated rubber blocks 6" thick, 10" high, 14" long			22	.364		72.50	19.35			91.85	109
0850	24" long			18	.444		127	23.50			150.50	175
0900	36" long			13	.615		212	32.50			244.50	282
0910	20" high, 11" long			13	.615		136	32.50			168.50	199
0920	Extruded rubber bumpers, T section, 22" x 22" x 3" thick			41	.195		73.50	10.35			83.85	96.50
0940	Molded rubber bumpers, 24" x 12" x 3" thick			20	.400		66.50	21.50			88	105
1000	Welded installation of above bumpers		E-14	8	1		4	59.50	18.40		81.90	118
1100	For drilled anchors, add per anchor		1 Corp	36	.222		24	11.80			35.80	44
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 Corp	26	.308	L.F.	53.50	16.35			69.85	83.50
3700	Loading dock, seal for perimeter, 9' x 8', with 12" vinyl		2 Corp	6	2.667	Ea.	1,450	142			1,592	1,825
3900	Folding gates, see Section 10 22 16.10											
6200	Shelters, fabric, for truck or train, scissor arms, minimum		1 Corp	1	8	Ea.	2,250	425			2,675	3,125
6300	Maximum	"	.50	16	"		2,550	850			3,400	4,075

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.	1,375				1,375	1,525
2700	9,000 lb. capacity						1,325				1,325	1,475
3200	15,000 lb. capacity						1,450				1,450	1,575
4200	Platform lifter, 6' x 6', portable, 3,000 lb. capacity						9,800				9,800	10,800
4250	4,000 lb. capacity						12,100				12,100	13,300
4400	Fixed, 6' x 8', 5,000 lb. capacity		E-16	.70	.22.857		8,725	1,325	210		10,260	11,900
4500	Levelers, hinged for trucks, 10 ton capacity, 6' x 8'			1.08	14.815		4,575	865	136		5,576	6,525
4650	7' x 8'			1.08	14.815		6,975	865	136		7,976	9,175
4670	Air bag power operated, 10 ton cap., 6' x 8'			1.08	14.815		5,050	865	136		6,051	7,050
4680	7' x 8'			1.08	14.815		5,475	865	136		6,476	7,525
4700	Hydraulic, 10 ton capacity, 6' x 8'			1.08	14.815		6,275	865	136		7,276	8,400
4800	7' x 8'			1.08	14.815		6,650	865	136		7,651	8,825
5800	Loading dock safety restraints, manual style			1.08	14.815		3,100	865	136		4,101	4,925
5900	Automatic style		↓	1.08	14.815	↓	5,225	865	136		6,226	7,250

11 13 Loading Dock Equipment

11 13 19 – Stationary Loading Dock Equipment

11 13 19.10 Dock Equipment				Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Ind O&P
									Labor	Equipment			
6000	Dock leveler, 15 ton capacity			E-16	.50	32	Ea.	5,425	1,875	294	7,594	9,225	
6100	I-beam construction, mechanical, 6' x 8'				.50	32		6,375	1,875	294	8,544	10,300	
6150	Hydraulic												
6200	Formed beam deck construction, mechanical, 6' x 8'				.50	32		4,175	1,875	294	6,344	7,850	
6250	Hydraulic							5,725	1,875	294	7,894	9,550	
6300	Edge of dock leveler, mechanical, 15 ton capacity				2	8		1,250	470	73.50	1,793.50	2,200	
6301	Edge of dock leveler, mechanical, 10 ton capacity				2	8		1,250	470	73.50	1,793.50	2,200	
7000	22.5 ton capacity												
7100	Vertical storing dock leveler, hydraulic, 6' x 6'			E-16	.40	40	Ea.	8,300	2,350	370	11,020	13,200	

11 13 26 – Loading Dock Lights

11 13 26.10 Dock Lights

0010 DOCK LIGHTS				1 Elec	3.80	2.105	Ea.	201	129	330	415
5000	Lights for loading docks, single arm, 24" long			"	3.80	2.105	"	229	129	358	445
5700	Double arm, 60" long										

11 14 Pedestrian Control Equipment

11 14 13 – Pedestrian Gates

11 14 13.19 Turnstiles

0010 TURNSTILES				2 Corp	5	3.200	Ea.	2,250	170	2,420	2,725
0020	One way, 4 arm, 46" diameter, economy, manual				1.20	13.333		2,375	710	3,085	3,700
0100	Electric										
0300	High security, galv., 5'-5" diameter, 7' high, manual				1	16		5,725	850	6,575	7,575
0350	Electric				.60	26.667		9,000	1,425	10,425	12,000
0420	Three arm, 24" opening, light duty, manual				2	8		3,100	425	3,525	4,050
0450	Heavy duty				1.50	10.667		4,925	565	5,490	6,250
0460	Manual, with registering & controls, light duty				2	8		4,600	425	5,025	5,700
0470	Heavy duty				1.50	10.667		4,900	565	5,465	6,250
0480	Electric, heavy duty				1.10	14.545		6,300	775	7,075	8,075
0500	For coin or token operating, odd							795		795	875
1200	One way gate with horizontal bars, 5'-5" diameter			2 Corp	.80	20	Ea.	6,950	1,075	8,025	9,250
1300	7' high, recreation or transit type				"			287		287	315
1500	For electronic counter, odd										

11 14 19 – Portable Posts and Railings

11 14 19.13 Portable Posts and Railings

0010 PORTABLE POSTS AND RAILINGS				Ea.	166	166	182
0020	Portable for pedestrian traffic control, standard						
0300	Deluxe posts			"	239	239	263
0600	Ropes for above posts, plastic covered, 1-1/2" diameter			L.F.	20	20	22
0700	Chain core			"	14.65	14.65	16.10
1500	Portable security or safety barrier, black with 7' yellow strap			Ea.	206	206	227
1510	12' yellow strap				251	251	276
1550	Sign holder, standard design				86	86	95

11 21 Retail and Service Equipment

11 21 13 – Cash Registers and Checking Equipment

11 21 13.10 Checkout Counter		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
0010 CHECKOUT COUNTER										
0020 Supermarket conveyor, single belt		2 Club	10	1.600	Ea.	3,775	67.50		3,842.50	4,275
0100 Double belt, power take-away			9	1.778		5,175	75		5,250	5,800
0400 Double belt, power take-away, incl. side scanning			7	2.286		5,975	96		6,071	6,725
0800 Warehouse or bulk type		↓	6	2.667	↓	6,950	112		7,062	7,800
1000 Scanning system, 2 lanes, w/registers, scan gun & memory					System	18,800			18,800	20,700
1100 10 lanes, single processor, full scan, with scales					"	178,500			178,500	196,500
2000 Register, restaurant, minimum					Ea.	800			800	880
2100 Maximum						3,575			3,575	3,925
2150 Store, minimum						800			800	880
2200 Maximum						3,575			3,575	3,925

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.	1,575			1,575	1,725
0050 Wall mounted, 45 bag capacity		L-2	8	2		905	93		998	1,125
0100 Garment checking bag, green mesh fabric, 21" H x 17" W with 4.5" hook						28			28	31

11 21 53 – Barber and Beauty Shop Equipment

11 21 53.10 Barber Equipment

0010 BARBER EQUIPMENT										
0020 Chair, hydraulic, movable, minimum		1 Corp	24	.333	Ea.	640	17.70		657.70	730
0050 Maximum		"	16	.500		4,150	26.50		4,176.50	4,625
0200 Wall hung styling station with mirrors, minimum		L-2	8	2		600	93		693	800
0300 Maximum		"	4	4		2,775	186		2,961	3,325
0500 Sink, hair washing basin, rough plumbing not incl.		1 Plum	8	1		530	64.50		594.50	680
1000 Sterilizer, liquid solution for tools						171			171	189
1100 Total equipment, rule of thumb, per chair, minimum		L-8	1	20		2,225	1,100		3,325	4,125
1150 Maximum		"	1	20		6,175	1,100		7,275	8,450

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.	35,100	5,025		40,125	46,100
2050 25 lb. capacity			.17	94.118		52,000	5,925		57,925	66,000
2100 30 lb. capacity			.15	107		55,000	6,700		61,700	70,500
2150 60 lb. capacity		▼	.09	178	▼	79,000	11,200		90,200	103,500

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.	3,350	258		3,608	4,050
1600 50 lb. capacity		"	1.70	4.706		4,550	305		4,855	5,475
4700 Lint collector, ductwork not included, 8,000 to 10,000 CFM		Q-10	.30	80	▼	9,900	4,650		14,550	18,000

11 21 73.19 Finishing Equipment

0010 FINISHING EQUIPMENT										
3500 Folders, blankets & sheets, minimum		1 Elec	.17	47.059	Ea.	35,600	2,875		38,475	43,400
3700 King size with automatic stacker			.10	80		64,500	4,900		69,400	78,000
3800 For conveyor delivery, add		▼	.45	17.778		16,600	1,100		17,700	19,900
4900 Spreader feeders, 240V, 2 station		L-6	.70	17.143		60,500	1,075		61,575	68,000
4920 4 station		"	.35	34.286	▼	73,000	2,175		75,175	84,000

11 21 Retail and Service Equipment

11 21 73 - Commercial Laundry and Dry Cleaning Equipment

		Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs Equipment	Total	Total Ind O&P
11 21 73.23	Commercial Ironing Equipment	Crew							
0010	COMMERCIAL IRONING EQUIPMENT								
4500	Ironers, institutional, 110", single roll	1 Elec	.20	40	Ea.	34,400	2,450	36,850	41,600
4800	Pressers, low capacity air operated	L-6	1.75	6.857		10,400	435	10,835	12,100
4820	Hand operated		1.75	6.857		9,650	435	10,085	11,300
4840	Ironer 48", 240V		3.50	3.429		119,000	217	119,217	131,500
6600	Hand operated presser		.70	17.143		6,400	1,075	7,475	8,675
6620	Mushroom press 115V		.70	17.143		8,175	1,075	9,250	10,600

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.	6,725	505	7,230	8,150
6100	30 lb. capacity		.80	15		10,300	950	11,250	12,700
6200	50 lb. capacity		.68	17.647		12,900	1,125	14,025	15,900
6300	75 lb. capacity		.30	40		19,200	2,525	21,725	24,900
6350	125 lb. capacity		.16	75		29,900	4,750	34,650	40,000
6380	Washer extractor/dryer, 110 lb., 240V		1	12		19,900	760	20,660	23,000
6400	Washer extractor, 135 lb., 240V		1	12		33,200	760	33,960	37,600
6450	Pass through		1	12		57,500	760	58,260	64,500
6500	200 lb. washer extractor		1	12		75,000	760	75,760	83,500
6550	Pass through		1	12		79,000	760	79,760	88,000
6600	Extractor, low capacity		1.75	6.857		7,700	435	8,135	9,125

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	Plum	3	2.667	Ea.	3,475	172	3,647	4,075
1100	Double stacked	"	2	4		8,275	258	8,533	9,475
4860	Coin dry cleaner 20 lb.	L-6	1.75	6.857		29,900	435	30,335	33,600
5290	Clothes washer								
5300	Commercial, coin operated, average	Plum	3	2.667	Ea.	1,350	172	1,522	1,750

11 21 83 - Photo Processing Equipment

11 21 83.13 Darkroom Equipment

0010	DARKROOM EQUIPMENT								
0020	Developing sink, 5" deep, 24" x 48"	Q-1	2	.8	Ea.	500	465	965	1,250
0050	48" x 52"		1.70	9.412		1,250	545	1,795	2,200
0200	10" deep, 24" x 48"		1.70	9.412		1,625	545	2,170	2,625
0250	24" x 108"		1.50	10.667		3,875	620	4,495	5,175
0500	Dryers, dehumidified filtered air, 36" x 25" x 68" high	L-7	6	4.667		2,175	239	2,414	2,750
3000	Viewing lights, 20" x 24"		6	4.667		276	239	515	665
3100	20" x 24" with color correction		6	4.667		410	239	649	810

11 22 Banking Equipment

11 22 13 - Vault Equipment

11 22 13.16 Safes

0010	SAFES								
0200	Office, 1 hr. rating, 30" x 18" x 18"				Ea.	2,175		2,175	2,400
0250	40" x 18" x 18"					4,975		4,975	5,475
0300	60" x 36" x 18", double door					9,800		9,800	10,800
0600	Data, 1 hr. rating, 27" x 19" x 16"					5,875		5,875	6,450
0700	63" x 34" x 16"					16,600		16,600	18,300
0750	Diskette, 1 hr., 14" x 12" x 11", inside					4,875		4,875	5,350

11 22 Banking Equipment

11 22 13 – Vault Equipment

11 22 13.16 Safes			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P	
			Crew			Ea.	Labor				
0800	Money, "B" label, 9" x 14" x 14"	"				605			605	670	
0900	Tool resistive, 24" x 24" x 20"	"				4,175			4,175	4,600	
1050	Tool and torch resistive, 24" x 24" x 20"	"				9,525			9,525	10,500	
1150	Jewelers, 23" x 20" x 18"	"				9,900			9,900	10,900	
1200	63" x 25" x 18"	"				14,300			14,300	15,700	
1300	For handling into building, add, minimum	A-2	8.50	2.824			124		23	147	212
1400	Maximum	"	.78	30.769	↓		1,350		251	1,601	2,300

11 22 16 – Teller and Service Equipment

11 22 16.13 Teller Equipment Systems

TELLER EQUIPMENT SYSTEMS										
0020	Alarm system, police	2 Elec	1.60	10	Ea.	5,075	615		5,690	6,500
0100	With vault alarm	"	.40	40	Ea.	20,100	2,450		22,550	25,800
0400	Bullet resistant teller window, 44" x 60"	1 Glaz	.60	13.333		4,625	680		5,305	6,100
0500	48" x 60"	"	.60	13.333	↓	6,475	680		7,155	8,150
3000	Counters for banks, frontal only	2 Corp	1	16	Station	1,925	850		2,775	3,375
3100	Complete with steel undercounter	"	.50	32	"	3,700	1,700		5,400	6,625
4600	Door and frame, bullet-resistant, with vision panel, minimum	2 Sswk	1.10	14.545	Ea.	5,600	840		6,440	7,475
4700	Maximum	"	1.10	14.545		7,600	840		8,440	9,675
4800	Drive-up window, drawer & mike, not incl. glass, minimum	"	1	16		8,075	920		8,995	10,400
4900	Maximum	"	.50	32		10,200	1,850		12,050	14,100
5000	Night depository, with chest, minimum	"	1	16		8,400	920		9,320	10,700
5100	Maximum	"	.50	32		12,100	1,850		13,950	16,200
5200	Package receiver, painted	"	3.20	5		1,400	288		1,688	2,000
5300	Stainless steel	"	3.20	5	↓	2,400	288		2,688	3,100
5400	Partitions, bullet-resistant, 1-3/16" glass, 8' high	2 Corp	10	1.600	L.F.	205	85		290	355
5450	Acrylic	"	10	1.600	"	390	85		475	555
5500	Pneumatic tube systems, 2 lane drive-up, complete	L-3	.25	64	Total	26,700	3,675		30,375	34,800
5550	With T.V. viewer	"	.20	80	"	51,500	4,600		56,100	64,000
5570	Safety deposit boxes, minimum	1 Sswk	44	.182	Opng.	59.50	10.50		70	81.50
5580	Maximum, 10" x 15" opening	"	19	.421		126	24.50		150.50	176
5590	Teller locker, average	"	15	.533	↓	1,625	31		1,656	1,825
5600	Pass thru, bullet-res. window, painted steel, 24" x 36"	2 Sswk	1.60	10	Ea.	3,025	575		3,600	4,225
5700	48" x 48"	"	1.20	13.333		2,750	770		3,520	4,225
5800	72" x 40"	"	.80	20	↓	4,500	1,150		5,650	6,750
5900	For stainless steel frames, add	"					20%			
6100	Surveillance system, video camera, complete	2 Elec	1	16	Ea.	10,000	980		10,980	12,500
6110	For each additional camera, add	"				1,025			1,025	1,150
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.	47,500	3,675		51,175	58,000
7000	Vault front, see Section 08 34 59.10									

11 30 Residential Equipment

11 30 13 – Residential Appliances

		Daily Output	Labor-Hours	Unit	Material	Bare Costs	Total	Total Ind O&P
		Crew			Labor	Equipment		
11 30 13.15 Cooking Equipment								
0010	COOKING EQUIPMENT							
0020	Cooking range, 30" free standing, 1 oven, minimum	2 Clab	10	1,600	Ea.	465	67.50	532.50
0050	Maximum	"	4	4		2,200	168	2,368
0150	2 oven, minimum	"	10	1,600		1,050	67.50	1,117.50
0200	Maximum	"	10	1,600		3,425	67.50	3,492.50
0350	Built-in, 30" wide, 1 oven, minimum	1 Elec	6	1,333		870	82	952
0400	Maximum	2 Corp	2	8		2,000	425	2,425
0500	2 oven, conventional, minimum	"	4	4		1,250	213	1,463
0550	1 conventional, 1 microwave, maximum	"	2	8		2,750	425	3,175
0700	Free standing, 1 oven, 21" wide range, minimum	2 Clab	10	1,600		465	67.50	532.50
0750	21" wide, maximum	"	4	4		755	168	923
0900	Countertop cooktops, 4 burner, standard, minimum	1 Elec	6	1,333		340	82	422
0950	Maximum	"	3	2,667		2,025	164	2,189
1050	As above, but with grill and griddle attachment, minimum	"	6	1,333		1,375	82	1,457
1100	Maximum	"	3	2,667		3,875	164	4,039
1200	Induction cooktop, 30" wide	"	3	2,667		1,450	164	1,614
1250	Microwave oven, minimum	"	4	2		98.50	123	221.50
1300	Maximum	"	2	4		470	245	715
								885
11 30 13.16 Refrigeration Equipment								
0010	REFRIGERATION EQUIPMENT							
2000	Deep freeze, 15 to 23 C.F., minimum	2 Clab	10	1,600	Ea.	680	67.50	747.50
2050	Maximum	"	5	3,200		785	135	920
2200	30 C.F., minimum	"	8	2		895	84	979
2250	Maximum	"	3	5,333		905	225	1,130
5200	Icemaker, automatic, 20 lbs./day	1 Plum	7	1,143		1,375	73.50	1,448.50
5350	51 lbs./day	"	2	4		1,400	258	1,658
5500	Refrigerator, no frost, 10 C.F. to 12 C.F., minimum	2 Clab	10	1,600		455	67.50	522.50
5600	Maximum	"	6	2,667		560	112	672
5750	14 C.F. to 16 C.F., minimum	"	9	1,778		605	75	680
5800	Maximum	"	5	3,200		1,050	135	1,185
5950	18 C.F. to 20 C.F., minimum	"	8	2		775	84	859
6000	Maximum	"	4	4		1,925	168	2,093
6150	21 C.F. to 29 C.F., minimum	"	7	2,286		1,100	96	1,196
6200	Maximum	"	3	5,333		2,425	225	2,650
6790	Energy-star qualified, 18 C.F., minimum	G 2 Corp	4	4		510	213	723
6795	Maximum	G	2	8		1,950	425	2,375
6797	21.7 C.F., minimum	G	4	4		1,025	213	1,238
6799	Maximum	G	4	4		1,800	213	2,013
								2,300
11 30 13.17 Kitchen Cleaning Equipment								
0010	KITCHEN CLEANING EQUIPMENT							
2750	Dishwasher, built-in, 2 cycles, minimum	L-1	4	4	Ea.	310	252	562
2800	Maximum	"	2	8		445	505	950
2950	4 or more cycles, minimum	"	4	4		400	252	652
2960	Average	"	4	4		530	252	782
3000	Maximum	"	2	8		1,850	505	2,355
3100	Energy-star qualified, minimum	G	4	4		405	252	657
3110	Maximum	G	2	8		1,975	505	2,480
								2,925
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.	705	85	790
1800	Maximum	"	3	2,667		1,150	142	1,292
3300	Garbage disposal, sink type, minimum	L-1	10	1,600		111	101	212
								272

11 30 Residential Equipment

11 30 13 – Residential Appliances

			Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	Total	Total Incl O&P	
11 30 13.18 Waste Disposal Equipment		Crew	L-1	10	1,600	Ea.	216	101		317	385
3350	Maximum										
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.	107	184		291	395
4200	Maximum			3	5,333		1,000	305		1,305	1,550
4300	42" wide, minimum			5	3,200		151	184		335	440
4330	Custom			5	3,200		1,800	184		1,984	2,250
4350	Maximum			3	5,333		2,175	305		2,480	2,850
4500	For ventless hood, 2 speed, add						19.05			19.05	21
4650	For vented 1 speed, deduct from maximum						74			74	81.50
11 30 13.24 Washers											
0010	WASHERS										
5000	Residential, 4 cycle, average		1 Plum	3	2,667	Ea.	990	172		1,162	1,350
6650	Washing machine, automatic, minimum			3	2,667		560	172		732	870
6700	Maximum			1	8		1,400	515		1,915	2,325
6750	Energy star qualified, front loading, minimum	G		3	2,667		880	172		1,052	1,225
6760	Maximum	G		1	8		1,925	515		2,440	2,875
6764	Top loading, minimum	G		3	2,667		735	172		907	1,075
6766	Maximum	G		3	2,667		1,125	172		1,297	1,500
11 30 13.25 Dryers											
0010	DRYERS										
5050	Gas fired residential, 16 lb. capacity, average		1 Plum	3	2,667	Ea.	720	172		892	1,050
6770	Electric, front loading, energy-star qualified, minimum	G	L-2	3	5,333		480	248		728	900
6780	Maximum	G		2	8		1,500	370		1,870	2,200
7450	Vent kits for dryers		1 Corp	10	.800		48	42.50		90.50	117
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.	141	172		313	410
6450	Solid brass			2	4	"	243	258		501	650
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.	970	201		1,171	1,375
6950	Maximum			3	5,333		1,350	335		1,685	1,975
7100	80 gallon, minimum			2	8		1,950	505		2,455	2,900
7150	Maximum			1	16		2,725	1,000		3,725	4,500
7180	Gas, glass lined, 30 gallon, minimum		2 Plum	5	3,200		1,900	206		2,106	2,375
7220	Maximum			3	5,333		2,625	345		2,970	3,425
7260	50 gallon, minimum			2.50	6,400		1,750	410		2,160	2,550
7300	Maximum			1.50	10,667		2,450	685		3,135	3,725
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.	208	123		331	410
2550	40 pint			3.75	2,133		247	131		378	465
3550	Heater, electric, built-in, 1250 watt, ceiling type, minimum			4	2		125	123		248	320
3600	Maximum			3	2,667		184	164		348	445
3700	Wall type, minimum			4	2		221	123		344	425
3750	Maximum			3	2,667		198	164		362	460
3900	1500 watt wall type, with blower			4	2		186	123		309	385

11 30 Residential Equipment

11 30 15 – Miscellaneous Residential Appliances

11 30 15.43 Air Quality				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
3950	3000 watt			1 Elec	3	2,667	Ea.	515	164		679	810
4850	Humidifier, portable, 8 gallons/day							158			158	174
5000	15 gallons/day							207			207	227

11 30 33 – Retractable Stairs

11 30 33.10 Disappearing Stairway

0010	DISAPPEARING STAIRWAY No trim included			1 Carp	4	2	Ea.	129	106		235	300
0100	Custom grade, pine, 8'-6" ceiling, minimum				3.50	2.286		292	121		413	505
0150	Average							279	142		421	520
0200	Maximum				3	2,667						
0500	Heavy duty, pivoted, from 7'-7" to 12'-10" floor to floor				3	2,667		1,375	142		1,517	1,725
0600	16'-0" ceiling				2	4		1,600	213		1,813	2,075
0800	Economy folding, pine, 8'-6" ceiling				4	2		178	106		284	355
0900	9'-6" ceiling				4	2		232	106		338	415
1100	Automatic electric, aluminum, floor to floor height, 8' to 9'			2 Carp	1	16		9,200	850		10,050	11,400
1400	11' to 12'				.90	17.778		9,725	945		10,670	12,100
1700	14' to 15'				.70	22.857		10,400	1,225		11,625	13,200

11 32 Unit Kitchens

11 32 13 – Metal Unit Kitchens

11 32 13.10 Commercial Unit Kitchens

0010	COMMERCIAL UNIT KITCHENS			L-1	2	8	Ea.	710	505		1,215	1,525
1500	Combination range, refrigerator and sink, 30" wide, minimum				1	16		1,100	1,000		2,100	2,700
1550	Maximum				1.40	11.429		1,225	720		1,945	2,425
1570	60" wide, average				1.20	13.333		2,000	840		2,840	3,450
1590	72" wide, average				2	8		1,425	505		1,930	2,325
1600	Office model, 48" wide				2.40	6.667		2,625	420		3,045	3,525
1620	Refrigerator and sink only											
1640	Combination range, refrigerator, sink, microwave			L-1	.80	20	Ea.	4,900	1,250		6,150	7,250
1660	Oven and ice maker											

11 41 Foodservice Storage Equipment

11 41 13 – Refrigerated Food Storage Cases

11 41 13.10 Refrigerated Food Cases

0010	REFRIGERATED FOOD CASES			Q-5	3	5.333	Ea.	11,500	315		11,815	13,100
0030	Dairy, multi-deck, 12' long							2,050			2,050	2,250
0100	For rear sliding doors, add											
0200	Delicatessen case, service deli, 12' long, single deck			Q-5	3.90	4.103		8,750	242		8,992	9,975
0300	Multi-deck, 18 S.F. shelf display				3	5.333		8,375	315		8,690	9,700
0400	Freezer, self-contained, chest-type, 30 C.F.				3.90	4.103		4,800	242		5,042	5,625
0500	Glass door, upright, 78 C.F.				3.30	4.848		9,375	286		9,661	10,700
0600	Frozen food, chest type, 12' long				3.30	4.848		7,575	286		7,861	8,750
0700	Glass door, reach-in, 5 door				3	5.333		10,400	315		10,715	11,900
0800	Island case, 12' long, single deck				3.30	4.848		7,900	286		8,186	9,100
0900	Multi-deck				3	5.333		10,100	315		10,415	11,600
1000	Meat case, 12' long, single deck				3.30	4.848		7,875	286		8,161	9,075
1050	Multi-deck				3.10	5.161		10,200	305		10,505	11,700
1100	Produce, 12' long, single deck				3.30	4.848		6,475	286		6,761	7,550
1200	Multi-deck				3.10	5.161		8,550	305		8,855	9,850

11 41 Foodservice Storage Equipment

11 41 13 - Refrigerated Food Storage Cases

11 41 13.20 Refrigerated Food Storage Equipment			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
0010	REFRIGERATED FOOD STORAGE EQUIPMENT									
2350	Cooler, reach-in, beverage, 6' long		Q-1	6	2.667	Ea.	3,125	155	3,280	3,650
4300	Freezers, reach-in, 44 C.F.			4	4		4,425	232	4,657	5,225
4500	68 C.F.			3	5.333		5,575	310	5,885	6,600
4600	Freezer, pre-fab, 8' x 8' w/refrigeration		2 Corp	.45	35.556		9,200	1,900	11,100	13,000
4620	8' x 12'			.35	45.714		10,900	2,425	13,325	15,700
4640	8' x 16'			.25	64		13,200	3,400	16,600	19,600
4660	8' x 20'			.17	94.118		20,500	5,000	25,500	30,000
4680	Reach-in, 1 compartment		Q-1	4	4		3,350	232	3,582	4,025
4685	Energy star rated		G	R-18	7.80	3.333	3,575	180	3,755	4,200
4700	2 compartment			Q-1	3	5.333	5,000	310	5,310	5,975
4705	Energy star rated		G	R-18	6.20	4.194	3,750	226	3,976	4,450
4710	3 compartment			Q-1	3	5.333	6,225	310	6,535	7,325
4715	Energy star rated		G	R-18	5.60	4.643	5,250	250	5,500	6,150
8320	Refrigerator, reach-in, 1 compartment				7.80	3.333	3,600	180	3,780	4,225
8325	Energy star rated		G		7.80	3.333	3,575	180	3,755	4,200
8330	2 compartment				6.20	4.194	3,425	226	3,651	4,100
8335	Energy star rated		G		6.20	4.194	3,750	226	3,976	4,450
8340	3 compartment				5.60	4.643	4,825	250	5,075	5,675
8345	Energy star rated		G		5.60	4.643	5,250	250	5,500	6,150
8350	Pre-fab, with refrigeration, 8' x 8'		2 Corp	.45	35.556		6,950	1,900	8,850	10,500
8360	8' x 12'			.35	45.714		8,900	2,425	11,325	13,400
8370	8' x 16'			.25	64		11,500	3,400	14,900	17,800
8380	8' x 20'			.17	94.118		14,600	5,000	19,600	23,600
8390	Pass-thru/roll-in, 1 compartment		R-18	7.80	3.333		4,100	180	4,280	4,800
8400	2 compartment				6.24	4.167	5,375	224	5,599	6,250
8410	3 compartment				5.60	4.643	9,625	250	9,875	11,000
8420	Walk-in, alum, door & floor only, no refrig, 6' x 6' x 7'-6"		2 Corp	1.40	11.429		6,800	605	7,405	8,400
8430	10' x 6' x 7'-6"				.55	29.091	9,475	1,550	11,025	12,700
8440	12' x 14' x 7'-6"				.25	64	13,200	3,400	16,600	19,600
8450	12' x 20' x 7'-6"				.17	94.118	13,100	5,000	18,100	21,900
8451	12' x 20' x 7'-6"				.17	94.118	6,525	5,000	11,525	14,700
8460	Refrigerated cabinets, mobile						6,350		6,350	6,975
8470	Refrigerator/freezer, reach-in, 1 compartment		R-18	5.60	4.643		6,950	250	7,200	8,000
8480	2 compartment			"	4.80	5.417	7,575	292	7,867	8,775

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 Corp	1.50	10.667	Ea.	4,200	565	4,765	5,475
0250	80" W x 72" D for 1300 bottles			1.33	12.030		5,725	640	6,365	7,250
0300	80" W x 94" D for 1900 bottles				1.17	13.675	6,725	725	7,450	8,500
0400	80" W x 124" D for 2500 bottles						7,800	850	8,650	9,875
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.	4,050		4,050	4,450
0660	32" W x 21-1/2" D x 73-1/2" H for 144 bottles						2,875		2,875	3,175
0670	32" W x 29-1/2" D x 73-1/2" H for 288 bottles						4,800		4,800	5,275
0680	39-1/2" W x 29-1/2" D x 86-1/2" H for 440 bottles						4,650		4,650	5,100
0690	52-1/2" W x 29-1/2" D x 73-1/2" H for 468 bottles						5,200		5,200	5,725
0700	52-1/2" W x 29-1/2" D x 86-1/2" H for 572 bottles						5,575		5,575	6,125
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.	1,050		1,050	1,150

11 41 Foodservice Storage Equipment

11 41 33 – Foodservice Shelving

		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
11 41 33.20 Metal Food Storage Shelving										
0010 METAL FOOD STORAGE SHELVING										
8600	Stainless steel shelving, louvered 4-tier, 20" x 3'	1 Club	6	1.333	Ea.	1,500	56		1,556	1,725
8605	20" x 4'		6	1.333		1,650	56		1,706	1,900
8610	20" x 6'		6	1.333		1,750	56		1,806	2,000
8615	24" x 3'		6	1.333		2,050	56		2,106	2,325
8620	24" x 4'		6	1.333		2,525	56		2,581	2,850
8625	24" x 6'		6	1.333		3,450	56		3,506	3,875
8630	Flat 4-tier, 20" x 3'		6	1.333		1,300	56		1,356	1,500
8635	20" x 4'		6	1.333		1,400	56		1,456	1,625
8640	20" x 5'		6	1.333		1,675	56		1,731	1,925
8645	24" x 3'		6	1.333		885	56		941	1,050
8650	24" x 4'		6	1.333		2,300	56		2,356	2,625
8655	24" x 6'		6	1.333		2,825	56		2,881	3,175
8700	Galvanized shelving, louvered 4-tier, 20" x 3'		6	1.333		810	56		866	975
8705	20" x 4'		6	1.333		900	56		956	1,075
8710	20" x 6'		6	1.333		940	56		996	1,100
8715	24" x 3'		6	1.333		790	56		846	955
8720	24" x 4'		6	1.333		945	56		1,001	1,100
8725	24" x 6'		6	1.333		1,350	56		1,406	1,575
8730	Flat 4-tier, 20" x 3'		6	1.333		750	56		806	910
8735	20" x 4'		6	1.333		685	56		741	835
8740	20" x 6'		6	1.333		985	56		1,041	1,150
8745	24" x 3'		6	1.333		770	56		826	930
8750	24" x 4'		6	1.333		570	56		626	710
8755	24" x 6'		6	1.333		955	56		1,011	1,125
8760	Stainless steel dunnage rack, 24" x 3'		8	1		325	42		367	425
8765	24" x 4'		8	1		400	42		442	505
8770	Galvanized dunnage rack, 24" x 3'		8	1		146	42		188	224
8775	24" x 4'		8	1		191	42		233	275

11 42 Food Preparation Equipment

11 42 10 – Commercial Food Preparation Equipment

			R-18	7	3.714	Ea.	3,375	200		3,575	4,000
0010	CHOPPERS, MIXERS AND MISC. EQUIPMENT										
1700	Choppers, 5 pounds			5	5.200		2,550	280		2,830	3,225
1720	16 pounds			4	6.500		3,675	350		4,025	4,575
1740	35 to 40 pounds										
1840	Coffee brewer, 5 burners	1 Plum	3	2.667			960	172		1,132	1,300
1850	Coffee urn, twin 6 gallon urns		2	4			2,525	258		2,783	3,150
1860	Single, 3 gallon		3	2.667			1,825	172		1,997	2,250
3000	Fast food equipment, total package, minimum	6 Skwk	.08	600			220,000	32,900		252,900	292,000
3100	Maximum	"	.07	686			286,500	37,600		324,100	372,000
3800	Food mixers, bench type, 20 quarts	L-7	7	4			3,150	205		3,355	3,750
3850	40 quarts			5.40	5.185		8,325	265		8,590	9,550
3900	60 quarts			5	5.600		11,500	287		11,787	13,100
4040	80 quarts			3.90	7.179		17,300	365		17,665	19,600
4100	Floor type, 20 quarts		15	1.867			3,725	95.50		3,820.50	4,250
4120	60 quarts		14	2			11,000	102		11,102	12,300
4140	80 quarts		12	2.333			19,200	119		19,319	21,400
4160	140 quarts			8.60	3.256		27,100	167		27,267	30,100

11 42 Food Preparation Equipment

11 42 10 – Commercial Food Preparation Equipment

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Ind O&P
		Crew			Labor	Equipment			
11 42 10.10 Choppers, Mixers and Misc. Equipment									
6700	Peelers, small	R-18	8	3.250	Ea.	2,100	175	2,275	2,550
6720	Large	"	6	4.333		3,175	233	3,408	3,850
6800	Pulper/extractor, close coupled, 5 HP	1 Plum	1.90	4.211		2,475	271	2,746	3,125
8580	Slicer with table	R-18	9	2.889		4,325	156	4,481	5,000

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.	4,375	250	4,625	5,175
1655	Pass-thru roll-in	"	5.60	4.643		3,475	250	3,725	4,200
1660	2 compartment, reach-in	"	4.80	5.417		5,975	292	6,267	7,000
1670	Mobile					3,925		3,925	4,325
2000	Hospital food cart, hot and cold service, 20 tray capacity					15,500		15,500	17,000
6850	Mobile rack w/pan slide					1,525		1,525	1,675
9180	Tray and silver dispenser, mobile	1 Club	16	.500		675	21	696	775

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.	5,675	116	5,791	6,425
0300	Two sections	"	7	2.286		9,375	133	9,508	10,500
0600	Three sections	"	6	2.667		12,400	155	12,555	13,800
0900	Electric convection, single deck	L-7	4	7		5,575	360	5,935	6,650
1300	Broiler, without oven, standard	Q-1	8	2		3,650	116	3,766	4,200
1550	Infrared	L-7	4	7		7,500	360	7,860	8,775
4750	Fryer, with twin baskets, modular model	Q-1	7	2.286		1,525	133	1,658	1,875
5000	Floor model, on 6" legs	"	5	3.200		2,550	186	2,736	3,075
5100	Extra single basket, large	"				51		51	56
5170	Energy star rated, 50 lb. capacity	G	R-18	4	6.500	5,025	350	5,375	6,050
5175	85 lb. capacity	G	"	4	6.500	7,725	350	8,075	9,000
5300	Griddle, SS, 24" plate, w/4" legs, elec, 208 V, 3 phase, 3' long	Q-1	7	2.286		2,300	133	2,433	2,750
5550	4' long	"	6	2.667		2,450	155	2,605	2,900
6200	Iced tea brewer	1 Plum	3.44	2.326		705	150	855	1,000
6350	Kettle, w/steam jacket, tilting, w/positive lock, SS, 20 gallons	L-7	7	4		8,650	205	8,855	9,825
6600	60 gallons	"	6	4.667		17,100	239	17,339	19,200
6900	Range, restaurant type, 6 burners and 1 standard oven, 36" wide	Q-1	7	2.286		2,675	133	2,808	3,150
6950	Convection	"	7	2.286		4,800	133	4,983	5,500
7150	2 standard ovens, 24" griddle, 60" wide	"	6	2.667		5,225	155	5,380	5,975
7200	1 standard, 1 convection oven	"	6	2.667		9,750	155	9,905	10,900
7450	Heavy duty, single 34" standard oven, open top	"	5	3.200		5,400	186	5,586	6,225
7500	Convection oven	"	5	3.200		6,300	186	6,486	7,200
7700	Griddle top	"	6	2.667		2,400	155	2,555	2,875
7750	Convection oven	"	6	2.667		3,125	155	3,280	3,650
7760	Induction cooker, electric	L-7	7	4		1,850	205	2,055	2,325
8850	Steamer, electric 27 KW	"	7	4		13,300	205	13,505	14,900
9100	Electric, 10 KW or gas 100,000 BTU	"	5	5.600		7,625	287	7,912	8,800
9150	Toaster, conveyor type, 16-22 slices/minute	"				1,200		1,200	1,325

11 44 Food Cooking Equipment

11 44 13 – Commercial Ranges

11 44 13.10 Cooking Equipment		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	Equipment	Total	Total Incl O&P
9160 Pop-up, 2 slot					Ea.	99				99	109
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.	97	18.60			115.60	135
9450 Maximum			58	.483		158	24.50			182.50	210
9550 Public eating facilities, minimum			77	.364		127	18.60			145.60	168
9600 Maximum			46	.609		207	31			238	275
9750 Hospitals, minimum			58	.483		126	24.50			150.50	175
9800 Maximum		↓	39	.718	↓	231	36.50			267.50	310

11 46 Food Dispensing Equipment

11 46 16 – Service Line Equipment

11 46 16.10 Commercial Food Dispensing Equipment

0010 COMMERCIAL FOOD DISPENSING EQUIPMENT		1 Club	13	.615	Ea.	865	26			891	990
1050 Butter pot dispenser			13	.615		825	26			851	950
1100 Bread dispenser, counter top			4	2		560	84			644	740
1900 Cup and glass dispenser, drop in			16	.500		750	21			771	850
1920 Disposable cup, drop in			11	.727		2,850	30.50			2,880.50	3,200
2650 Dish dispenser, drop in, 12"		↓	10	.800		3,275	33.50			3,308.50	3,650
2660 Mobile						765				765	840
3300 Food warmer, counter, 1.2 KW						2,200				2,200	2,425
3550 1.6 KW		R-30	10	2.600		330	129			459	560
3600 Well, hot food, built-in, rectangular, 12" x 20"			10	2.600		400	129			529	635
3610 Circular, 7 qt.			10	2.600		2,825	129			2,954	3,300
3620 Refrigerated, 2 compartments			9	2.889		3,975	143			4,118	4,600
3630 3 compartments			8	3.250		4,750	161			4,911	5,475
3640 4 compartments		↓	9	2.889		22,700	143			22,843	25,100
4720 Frost cold plate		1 Plum	4	2		1,175	129			1,304	1,500
5700 Hot chocolate dispenser			Q-1	6	2.667	6,075	155			6,230	6,925
5750 Ice dispenser 567 pound		R-18	4.50	5.778		2,125	310			2,435	2,825
6250 Jet spray dispenser		"	4.50	5.778		1,975	310			2,285	2,650
6300 Juice dispenser, concentrate		R-30	8	3.250		2,100	161			2,261	2,575
6690 Milk dispenser, bulk, 2 flavor			"	8	3.250	2,650	161			2,811	3,175
6695 3 flavor			1 Corp	40	.200	L.F.	2,000	10.65		2,010.65	2,225
8800 Serving counter, straight			"	30	.267	"	2,225	14.15		2,239.15	2,475
8820 Curved section											
8825 Solid surface, see Section 12 36 61.16											
8860 Sneeze guard with lights, 60" L		1 Club	16	.500	Ea.	325	21			346	385
8900 Sneeze guard, stainless steel and glass, single sided											
8910 Portable, 48" W						Ea.	395			395	435
8920 Portable, 72" W							445			445	490
8930 Adjustable, 36" W		1 Corp	24	.333		360	17.70			377.70	420
8940 Adjustable, 48" W		"	20	.400		320	21.50			341.50	380
9100 Soft serve ice cream machine, medium		R-18	11	2.364		8,125	127			8,252	9,125
9110 Large		"	9	2.889	↓	22,200	156			22,356	24,600

11 46 Food Dispensing Equipment

11 46 83 - Ice Machines

		Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	Equipment	Total	Total Incl O&P
11 46 83.10 Commercial Ice Equipment										
0010	COMMERCIAL ICE EQUIPMENT									
5800	Ice cube maker, 50 lbs./day	Q-1	6	2.667	Ea.	1,800	155		1,955	2,200
5810	65 lbs./day, energy star rated		6	2.667		1,675	155		1,830	2,050
5900	250 lbs./day		1.20	13.333		2,525	775		3,300	3,925
5950	300 lbs./day, remote condensing		1.20	13.333		2,500	775		3,275	3,900
6050	500 lbs./day		4	4		2,600	232		2,832	3,200
6060	With bin		1.20	13.333		3,950	775		4,725	5,500
6070	Modular, with bin and condenser		1.20	13.333		4,125	775		4,900	5,675
6090	1000 lbs./day, with bin		1	16		5,300	930		6,230	7,225
6100	Ice flakers, 300 lbs./day		1.60	10		3,750	580		4,330	5,000
6120	600 lbs./day		.95	16.842		4,300	975		5,275	6,200
6130	1000 lbs./day		.75	21.333		4,925	1,225		6,150	7,250
6140	2000 lbs./day	↓	.65	24.615		22,200	1,425		23,625	26,500
6160	Ice storage bin, 500 pound capacity	Q-5	1	16		1,025	945		1,970	2,550
6180	1000 pound	"	.56	28.571	↓	3,050	1,675		4,725	5,900

11 48 Foodservice Cleaning and Disposal Equipment

11 48 13 - Commercial Dishwashers

		Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	Equipment	Total	Total Incl O&P
11 48 13.10 Dishwashers										
0010	DISHWASHERS									
2700	Dishwasher, commercial, rack type	Q-1	3.20	5	Ea.	3,450	290		3,740	4,225
2720	10 to 12 racks/hour		1.30	12.308		5,500	715		6,215	7,125
2730	Energy star rated, 35 to 40 racks/hour	G	1.30	12.308		10,600	715		11,315	12,700
2740	50 to 60 racks/hour	G	↓	1.30	12.308					
2800	Automatic, 190 to 230 racks/hour	L-6	.35	34.286		14,600	2,175		16,775	19,300
2820	235 to 275 racks/hour		.25	48		28,000	3,050		31,050	35,400
2840	8,750 to 12,500 dishes/hour	↓	.10	120	↓	47,500	7,600		55,100	64,000
2950	Dishwasher hood, canopy type	L-3A	10	1,200	L.F.	1,250	69		1,319	1,475
2960	Pant leg type	"	2.50	4,800	Ea.	7,825	276		8,101	9,050
5200	Garbage disposal 1.5 HP, 100 GPH	L-1	4.80	3,333		1,875	210		2,085	2,375
5210	3 HP, 120 GPH		4.60	3,478		2,400	219		2,619	2,975
5220	5 HP, 250 GPH	↓	4.50	3,556	↓	2,975	224		3,199	3,600
6750	Pot sink, 3 compartment	1 Plum	7.25	1,103	L.F.	910	71		981	1,100
6760	Pot washer, low temp wash/rinse		1.60	5	Ea.	5,375	320		5,695	6,400
6770	High pressure wash, high temperature rinse	↓	1.20	6,667		37,200	430		37,630	41,500
9170	Trash compactor, small, up to 125 lb. compacted weight	L-4	4	6		21,500	299		21,799	24,200
9175	Large, up to 175 lb. compacted weight	"	3	8	↓	28,500	400		28,900	31,900

11 52 Audio-Visual Equipment

11 52 13 - Projection Screens

		Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	Equipment	Total	Total Incl O&P
11 52 13.10 Projection Screens, Wall or Ceiling Hung										
0010	PROJECTION SCREENS, WALL OR CEILING HUNG , matte white	2 Carp	500	.032	S.F.	6.55	1.70		8.25	9.75
0100	Manually operated, economy		450	.036		7.90	1.89		9.79	11.55
0300	Intermediate		400	.040	↓	10	2.13		12.13	14.20
0400	Deluxe		5	3,200	Ea.	1,125	170		1,295	1,500
0600	Electric operated, matte white, 25 S.F., economy		4	4		1,325	213		1,538	1,775
0700	Deluxe		3	5,333		1,050	283		1,333	1,575
0900	50 S.F., economy		2	8	↓	2,975	425		3,400	3,925
1000	Deluxe									

11 52 Audio-Visual Equipment

11 52 13 – Projection Screens

				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
				Crew	Output	Hours	Unit	Labor	Equipment	Total	
11 52 13.10	Projection Screens, Wall or Ceiling Hung										
1200	Heavy duty, electric operated, 200 S.F.			2 Corp	1.50	10.667	Ea.	4,250	565	4,815	5,525
1300	400 S.F.				1	16		5,175	850	6,025	6,975
1500	Rigid acrylic in wall, for rear projection, 1/4" thick			2 Glaz	30	.533	S.F.	81	27	108	130
1600	1/2" thick (maximum size 10' x 20')			"	25	.640	"	82	32.50	114.50	139

11 52 16 – Projectors

11 52 16.10 Movie Equipment

				Eq.							
0010	MOVIE EQUIPMENT										
0020	Changeover, minimum							520		520	570
0100	Maximum							1,000		1,000	1,100
0400	Film transport, incl. platters and autowind, minimum							5,575		5,575	6,125
0500	Maximum							15,800		15,800	17,400
0800	Lamphouses, incl. rectifiers, xenon, 1,000 watt			1 Elec	2	4		7,350	245	7,595	8,475
0900	1,600 watt				2	4		7,850	245	8,095	9,025
1000	2,000 watt				1.50	5.333		8,675	325	9,000	10,000
1100	4,000 watt				1.50	5.333		11,700	325	12,025	13,400
1400	Lenses, anamorphic, minimum							1,400		1,400	1,550
1500	Maximum							3,175		3,175	3,475
1800	Flat 35 mm, minimum							1,225		1,225	1,350
1900	Maximum							1,900		1,900	2,075
2200	Pedestals, for projectors							1,700		1,700	1,875
2300	Console type							12,200		12,200	13,500
2600	Projector mechanisms, incl. soundhead, 35 mm, minimum							12,600		12,600	13,900
2700	Maximum							17,400		17,400	19,100
3000	Projection screens, rigid, in wall, acrylic, 1/4" thick			2 Glaz	195	.082	S.F.	48.50	4.18	52.68	59.50
3100	1/2" thick			"	130	.123	"	55.50	6.30	61.80	70.50
3300	Electric operated, heavy duty, 400 S.F.			2 Corp	1	16	Ea.	3,225	850	4,075	4,825
3320	Theater projection screens, matte white, including frames			"	200	.080	S.F.	7.70	4.25	11.95	14.85
3400	Also see Section 11 52 13.10										
3700	Sound systems, incl. amplifier, mono, minimum			1 Elec	.90	8.889	Ea.	3,825	545	4,370	5,000
3800	Dolby/Super Sound, maximum			"	.40	20		20,600	1,225	21,825	24,500
4100	Dual system, 2 channel, front surround, minimum				.70	11.429		5,275	700	5,975	6,850
4200	Dolby/Super Sound, 4 channel, maximum				".40	20		19,700	1,225	20,925	23,500
4500	Sound heads, 35 mm							6,125		6,125	6,750
4900	Splicer, tape system, minimum							855		855	940
5000	Tape type, maximum							1,525		1,525	1,675
5300	Speakers, recessed behind screen, minimum			1 Elec	2	4		1,225	245	1,470	1,725
5400	Maximum			"	1	8		3,525	490	4,015	4,600
5700	Seating, painted steel, upholstered, minimum			2 Corp	35	.457		151	24.50	175.50	203
5800	Maximum			"	28	.571		550	30.50	580.50	650
6100	Rewind tables, minimum							3,050		3,050	3,350
6200	Maximum							5,425		5,425	5,975
7000	For automation, varying sophistication, minimum			1 Elec	1	8	System	2,725	490	3,215	3,725
7100	Maximum			2 Elec	.30	.53.333	"	6,350	3,275	9,625	11,900

11 52 16.20 Movie Equipment- Digital

				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
				Crew	Output	Hours	Unit	Labor	Equipment	Total	
0010	MOVIE EQUIPMENT- DIGITAL										
1000	Digital 2K projection system, 98" DMD			1 Elec	2	4	Ea.	53,000	245	53,245	58,500
1100	OEM lens			"	2	4		6,050	245	6,295	7,050
2000	Pedestal with power distribution			"	2	4		2,325	245	2,570	2,950
3000	Software			"	2	4		1,975	245	2,220	2,550

11 53 Laboratory Equipment

11 53 03 – Laboratory Test Equipment

		Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Accum.	Total Incl O&P
11 53 03.13 Test Equipment											
0010 TEST EQUIPMENT											
1700 Thermometer, electric, portable	Ea.				340				340		375
1800 Titration unit, four 2000 ml reservoirs					6,275				6,275		6,900

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 Corp	5.40	2.963	L.F.	580	157			737		875
0620 Complex, including fixtures		2.40	6.667		1,125	355			1,480		1,775
0630 Special, maximum	↓	1.70	9.412	↓	1,325	500			1,825		2,200
0670 Service fixtures, average				Ea.	365				365		405
0680 For sink assembly with hot and cold water, add	1 Plum	1.40	5.714		780	370			1,150		1,400
0750 Glove box, fiberglass, bacteriological					16,700				16,700		18,400
0760 Controlled atmosphere					21,300				21,300		23,400
0770 Radioisotope					16,700				16,700		18,400
0780 Carcinogenic					16,700				16,700		18,400

11 53 16 – Laboratory Incubators

11 53 16.13 Incubators

0010 INCUBATORS											
1000 Incubators, minimum	Ea.				3,225				3,225		3,550
1010 Maximum	"				15,700				15,700		17,200

11 53 19 – Laboratory Sterilizers

11 53 19.13 Sterilizers

0010 STERILIZERS											
0700 Glassware washer, undercounter, minimum	I-1	1.80	8.889	Ea.	6,850	560			7,410		8,350
0710 Maximum		1	16		15,200	1,000			16,200		18,200
1850 Utensil washer-sanitizer	1 Plum	2	4	↓	8,725	258			8,983		9,975

11 53 23 – Laboratory Refrigerators

11 53 23.13 Refrigerators

0010 REFRIGERATORS											
1200 Blood bank, 28.6 C.F. emergency signal	Ea.				14,400				14,400		15,900
1210 Reach-in, 16.9 C.F.	"				9,400				9,400		10,300

11 53 33 – Emergency Safety Appliances

11 53 33.13 Emergency Equipment

0010 EMERGENCY EQUIPMENT											
1400 Safety equipment, eye wash, hand held	Ea.				400				400		440
1450 Deluge shower	"				840				840		920

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.	2,075	320			2,395		2,750
1610 Epoxy resin sink, 25" x 16" x 10"	"	2	4	"	227	258			485		635
1950 Utility table, acid resistant top with drawers	2 Corp	30	.533	L.F.	179	28.50			207.50		240
8000 Alternate pricing method: as percent of lab furniture							% Furn.				
8050 Installation, not incl. plumbing & duct work							22%		22%		
8100 Plumbing, final connections, simple system							10%		10%		
8110 Moderately complex system							15%		15%		
8120 Complex system							20%		20%		
8150 Electrical, simple system							10%		10%		

11 53 Laboratory Equipment

11 53 43 – Service Fittings and Accessories

11 53 43.13 Fittings		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P
					% Furn.				
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	2 Corp	1.50	10.667	Ea.	15,400	565	15,965	17,800
0100	Class II, type B2, 6' L								

11 57 Vocational Shop Equipment

11 57 10 – Shop Equipment

11 57 10.10 Vocational School Shop Equipment

0010 VOCATIONAL SCHOOL SHOP EQUIPMENT		2 Corp	5	3.200	Ea.	755	170	925	1,075
0020	Benches, work, wood, average								
0100	Metal, average		5	3.200		440	170	610	740
0400	Combination belt & disc sander, 6"		4	4		1,700	213	1,913	2,200
0700	Drill press, floor mounted, 12", 1/2 HP	↓	4	4		470	213	683	835
0800	Dust collector, not incl. ductwork, 6" diameter	1 Shee	1.10	7.273		5,925	455	6,380	7,200
0810	Dust collector bag, 20" diameter	"	5	1.600		600	99.50	699.50	815
1000	Grinders, double wheel, 1/2 HP	2 Corp	5	3.200		239	170	409	520
1300	Jointer, 4", 3/4 HP		4	4		1,500	213	1,713	1,975
1600	Kilns, 16 C.F. to 2000°		4	4		1,875	213	2,088	2,400
1900	Lathe, woodworking, 10", 1/2 HP		4	4		580	213	793	955
2200	Planer, 13" x 6"		4	4		1,325	213	1,538	1,800
2500	Potter's wheel, motorized		4	4		1,150	213	1,363	1,600
2800	Saws, band, 14", 3/4 HP		4	4		1,150	213	1,363	1,575
3100	Metal cutting band saw, 14"		4	4		2,275	213	2,488	2,825
3400	Radial arm saw, 10", 2 HP		4	4		1,350	213	1,563	1,825
3700	Scroll saw, 24"		4	4		625	213	838	1,000
4000	Table saw, 10", 3 HP		4	4		3,150	213	3,363	3,800
4300	Welder AC arc, 30 amp capacity		4	4		3,500	213	3,713	4,150

11 61 Broadcast, Theater, and Stage Equipment

11 61 23 – Folding and Portable Stages

11 61 23.10 Portable Stages

0010 PORTABLE STAGES					S.F.	14.55		14.55	16
					Ea.	445		445	490
					SF Stg.	46.50		46.50	51
1500	Flooring, portable oak parquet, 3' x 3' sections								
1600	Cart to carry 225 S.F. of flooring								
5000	Stages, portable with steps, folding legs, stock, 8" high								
5100	16" high					61		61	67
5200	32" high					62		62	68.50
5300	40" high					64.50		64.50	71
6000	Telescoping platforms, extruded alum., straight, minimum	4 Corp	157	.204		38	10.85	48.85	58
6100	Maximum		77	.416		55	22	77	93.50
6500	Pie-shaped, minimum		150	.213		82	11.35	93.35	107
6600	Maximum	↓	70	.457		91.50	24.50	116	138
6800	For 3/4" plywood covered deck, deduct					5.40		5.40	5.95
7000	Band risers, steel frame, plywood deck, minimum	4 Corp	275	.116		33	6.20	39.20	46
7100	Maximum		"	.138	.232	83	12.30	95.30	110
7500	Chairs for above, self-storing, minimum	2 Corp	43	.372	Ea.	122	19.80	141.80	164
7600	Maximum		"	.400	"	215	21.50	236.50	268

11 61 Broadcast, Theater, and Stage Equipment

11 61.33 – Rigging Systems and Controls

11 61.33.10 Controls				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P	
0010	CONTROLS												
0050	Control boards with dimmers and breakers, minimum	1 Elec	1	8	Ea.	19,700	490		20,190		22,400		
0100	Average		.50	16		55,500	980		56,480		62,500		
0150	Maximum		20	40		148,500	2,450		150,950		166,500		
8000	Rule of thumb: total stage equipment, minimum	4 Corp	100	320	SF Stg.	106	17		123		142		
8100	Maximum		"	25	1.280	"	595	68		663		755	

11 61.43 – Stage Curtains

11 61.43.10 Curtains

0010 CURTAINS				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
0500	Curtain track, straight, light duty	2 Corp	20	.800	L.F.	31	42.50		73.50		98.50	
0600	Heavy duty		18	.889		67.50	47		114.50		146	
0700	Curved sections		12	1.333		201	71		272		325	
1000	Curtains, velour, medium weight		600	.027	S.F.	8.75	1.42		10.17		11.80	
1150	Silica based yarn, inherently fire retardant		50	.320	"	16.50	17		33.50		43.50	

11 62 Musical Equipment

11 62.16 – Carillons

11 62.16.10 Bell Tower Equipment

0010 BELL TOWER EQUIPMENT				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
0300	Carillon, 4 octave (48 bells), with keyboard			System	1,204,500			1,204,500		1,325,000		
0320	2 octave (24 bells)				567,000			567,000		623,500		
0340	3 to 4 bell peal, minimum				141,500			141,500		156,000		
0360	Maximum				850,500			850,500		935,500		
0380	Cast bronze bell, average			Ea.	127,500			127,500		140,500		
0400	Electronic, digital, minimum				21,300			21,300		23,400		
0410	With keyboard, maximum				106,500			106,500		117,000		

11 66 Athletic Equipment

11 66.13 – Exercise Equipment

11 66.13.10 Physical Training Equipment

0010 PHYSICAL TRAINING EQUIPMENT				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
0020	Abdominal rack, 2 board capacity			Ea.	525			525		575		
0050	Abdominal board, upholstered				775			775		850		
0200	Bicycle trainer, minimum				610			610		670		
0300	Deluxe, electric				4,850			4,850		5,350		
0400	Barbell set, chrome plated steel, 25 lb.				305			305		335		
0420	100 lb.				620			620		680		
0450	200 lb.				740			740		815		
0500	Weight plates, cast iron, per lb.			Lb.	3.70			3.70		4.07		
0520	Storage rack, 10 station			Ea.	1,225			1,225		1,325		
0600	Circuit training apparatus, 12 machines minimum	2 Clab	1.25	12.800	Set	36,800	540	37,340	540	41,300		
0700	Average		1	16		41,700	675	42,375	675	46,900		
0800	Maximum		.75	21.333		50,000	900	50,900	900	56,500		
0820	Dumbbell set, cast iron, with rack and 5 pair				475			475		520		
0900	Squat racks	2 Clab	5	3.200	Ea.	825	135	960	135	1,100		
1200	Multi-station gym machine, 5 station				4,900			4,900		5,400		
1250	9 station				11,400			11,400		12,600		
1280	Rowing machine, hydraulic				1,675			1,675		1,825		

11 66 Athletic Equipment

11 66 13 – Exercise Equipment

		Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
					Material	Labor	Equipment		
11 66 13.10 Physical Training Equipment									
1300	Treadmill, manual			Ea.	1,075			1,075	1,200
1320	Motorized					4,050		4,050	4,450
1340	Electronic					4,100		4,100	4,500
1360	Cardio-testing					5,300		5,300	5,850
1400	Treatment/massage tables, minimum					625		625	690
1420	Deluxe, with accessories					870		870	955
4150	Exercise equipment, bicycle trainer					1,125		1,125	1,250
4180	Chinning bar, adjustable, wall mounted	1 Corp	5	1.600		237	85	322	390
4200	Exercise ladder, 16' x 1'-7", suspended	L-2	3	5.333		1,375	248	1,623	1,900
4210	High bar, floor plate attached	1 Corp	4	2		2,725	106	2,831	3,125
4240	Parallel bars, adjustable		4	2		1,625	106	1,731	1,950
4270	Uneven parallel bars, adjustable	↓	4	2		3,950	106	4,056	4,500
4280	Wall mounted, adjustable	L-2	1.50	10.667	Set	955	495	1,450	1,800
4300	Rope, ceiling mounted, 18' long	1 Corp	3.66	2.186	Ea.	208	116	324	405
4330	Side horse, vaulting		5	1.600		1,600	85	1,685	1,900
4360	Treadmill, motorized, deluxe, training type	↓	5	1.600		3,975	85	4,060	4,475
4390	Weight lifting multi-station, minimum	2 Clab	1	16		305	675	980	1,325
4450	Maximum	"	.50	32		15,000	1,350	16,350	18,500

11 66 23 – Gymnasium Equipment

11 66 23.13 Basketball Equipment

BASKETBALL EQUIPMENT										
1000	Backstops, wall mtd., 6' extended, fixed, minimum	L-2	1	16	Ea.	1,750	745		2,495	3,050
1100	Maximum		1	16		2,075	745		2,820	3,400
1200	Swing up, minimum		1	16		1,750	745		2,495	3,050
1250	Maximum		1	16		3,300	745		4,045	4,750
1300	Portable, manual, heavy duty, spring operated		1.90	8.421		13,200	390		13,590	15,200
1400	Ceiling suspended, stationary, minimum		.78	20.513		4,350	955		5,305	6,250
1450	Fold up, with accessories, maximum	↓	.40	40		6,325	1,850		8,175	9,775
1600	For electrically operated, add	1 Elec	1	8		2,600	490		3,090	3,575
5800	Wall pads, 1-1/2" thick, standard (not fire rated)	2 Corp	640	.025	S.F.	6.85	1.33		8.18	9.55

11 66 23.19 Boxing Ring

BOXING RING										
4100	Elevated, 22' x 22'	L-4	.10	240	Ea.	6,150	12,000		18,150	24,900
4110	For cellular plastic foam padding, add		.10	240		1,250	12,000		13,250	19,500
4120	Floor level, including posts and ropes only, 20' x 20'		.80	30		4,825	1,500		6,325	7,575
4130	Canvas, 30' x 30'	↓	5	4.800	↓	1,500	239		1,739	2,025

11 66 23.47 Gym Mats

GYM MATS										
5500	2" thick, naugahyde covered				S.F.		5.35		5.35	5.90
5600	Vinyl/nylon covered						8.55		8.55	9.45
6000	Wrestling mats, 1" thick, heavy duty						5.05		5.05	5.55

11 66 43 – Interior Scoreboards

11 66 43.10 Scoreboards

SCOREBOARDS										
7000	Baseball, minimum	R-3	1.30	15.385	Ea.	4,125	940	145	5,210	6,100
7200	Maximum		.05	400		19,800	24,400	3,775	47,975	62,500
7300	Football, minimum		.86	23.256		5,225	1,425	220	6,870	8,125
7400	Maximum		.20	100		20,200	6,100	945	27,245	32,400
7500	Basketball (one side), minimum		2.07	9.662		2,475	590	91.50	3,156.50	3,700
7600	Maximum		.30	66.667		8,900	4,075	630	13,605	16,600
7700	Hockey-basketball (four sides), minimum	↓	.25	80	↓	10,100	4,900	755	15,755	19,200

11 66 Athletic Equipment

11 66 43 – Interior Scoreboards

11 66 43.10 Scoreboards		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
7800	Maximum	R-3	.15	133	Ea.	16,300	8,150	1,250	25,700	31,400

11 66 53 – Gymnasium Dividers

11 66 53.10 Divider Curtains

4500	Gym divider curtain, mesh top, vinyl bottom, manual	1-4	500	.048	S.F.	9.90	2.39		12.29	14.55
4700	Electric roll up	L-7	400	.070	"	13.30	3.58		16.88	20

11 67 Recreational Equipment

11 67 13 – Bowling Alley Equipment

11 67 13.10 Bowling Alleys

0010	BOWLING ALLEYS Including alley, pinsetter, scorer,	4 Corp	.20	160	Lane	46,900	8,500		55,400	64,500
0020	Counters and misc. supplies, minimum									
0150	Average		.19	168		52,000	8,950		60,950	70,500
0300	Maximum		.18	178		59,500	9,450		68,950	79,500
0400	Combo table ball rack, add					1,400			1,400	1,550
0600	For automatic scorer, add, minimum					6,275			6,275	6,900
0700	Maximum					10,500			10,500	11,500

11 67 23 – Shooting Range Equipment

11 67 23.10 Shooting Range

0010	SHOOTING RANGE Incl. bullet traps, target provisions, controls,	L-9	.64	56.250	Point	36,500	2,700		39,200	44,200
0100	Separators, ceiling system, etc. Not incl. structural shell									
0200	Commercial	L-9	.64	56.250	Point	36,500	2,700		39,200	44,200
0300	Law enforcement		.28	129		47,600	6,150		53,750	62,000
0400	National Guard armories		.71	50.704		26,800	2,425		29,225	33,200
0500	Reserve training centers		.71	50.704		19,200	2,425		21,625	24,800
0600	Schools and colleges		.32	113		47,800	5,375		53,175	60,500
0700	Major academies		.19	189		63,500	9,050		72,550	84,000
0800	For acoustical treatment, add						10%	10%		
0900	For lighting, add						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%		

11 68 Play Field Equipment and Structures

11 68 13 – Playground Equipment

11 68 13.10 Free-Standing Playground Equipment

0010	FREE-STANDING PLAYGROUND EQUIPMENT See also individual items	G	B-1	12	2	Ea.	540	85.50		625.50	725
0200	Bike rack, 10' long, permanent			2.60	9.231		3,475	395		3,870	4,400
0392	Upper body warm-up station			2.60	9.231		1,750	395		2,145	2,525
0394	Bench stepper station			2.60	9.231		1,200	395		1,595	1,925
0396	Standing push up station			2.60	9.231		2,450	395		2,845	3,300
0398	Upper body stretch station			2.60	9.231						
0400	Horizontal monkey ladder, 14' long, 6' high			4	6		1,200	257		1,457	1,700
0590	Parallel bars, 10' long			4	6		635	257		892	1,075
0600	Posts, tether ball set, 2-3/8" OD			12	2		430	85.50		515.50	605
0800	Poles, multiple purpose, 10'-6" long			12	2	Pr.	259	85.50		344.50	415
1000	Ground socket for movable posts, 2-3/8" post			10	2,400		114	103		217	280

11 68 Play Field Equipment and Structures

11 68 13 – Playground Equipment

11 68 13.10 Free-Standing Playground Equipment		Crew	Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
						Material	Labor	Equipment		
1100	3-1/2" post	B-1	10	2,400	Pr.	225	103		328	400
1300	See-saw, spring, steel, 2 units			6	Ea.	730	171		901	1,050
1400	4 units			4		1,275	257		1,532	1,775
1500	6 units			3		2,000	340		2,340	2,725
1700	Shelter, fiberglass golf tee, 3 person		4.60	5,217		4,375	223		4,598	5,150
1900	Slides, stainless steel bed, 12' long, 6' high			3		4,400	340		4,740	5,375
2000	20' long, 10' high			2		8,250	515		8,765	9,850
2200	Swings, plain seats, 8' high, 4 seats			2		1,675	515		2,190	2,625
2300	8 seats			1.30	18,462	2,925	790		3,715	4,375
2500	12' high, 4 seats			2		2,150	515		2,665	3,125
2600	8 seats		1.30	18,462		4,825	790		5,615	6,500
2800	Whirlers, 8' diameter			3		3,175	340		3,515	4,000
2900	10' diameter			3		6,625	340		6,965	7,825

11 68 13.20 Modular Playground

0010	MODULAR PLAYGROUND Basic components	B-1	1	24	Ea.	695	1,025		1,720	2,325
0100	Deck, square, steel, 48" x 48"		1	24		690	1,025		1,715	2,300
0110	Recycled polyurethane		1	24		815	1,025		1,840	2,450
0120	Triangular, steel, 48" side		1	24						
0130	Post, steel, 5" square		18	1,333	L.F.	51.50	57		108.50	142
0140	Aluminum, 2-3/8" square		20	1,200		59.50	51.50		111	142
0150	5" square		18	1,333		50.50	57		107.50	141
0160	Roof, square poly, 54" side		18	1,333	Ea.	1,975	57		2,032	2,250
0170	Wheelchair transfer module, for 3' high deck		3	8	"	3,425	340		3,765	4,300
0180	Guardrail, pipe, 36" high		60	.400	L.F.	294	17.10		311.10	350
0190	Steps, deck-to-deck, three 8" steps		8	3	Ea.	1,375	128		1,503	1,700
0200	Activity panel, crawl through panel		2	12		580	515		1,095	1,400
0210	Alphabet/spelling panel		2	12		660	515		1,175	1,500
0360	With guardrails		3	8		2,000	340		2,340	2,725
0370	Crawl tunnel, straight, 56" long		4	6		1,375	257		1,632	1,900
0380	90°, 4' long		4	6		1,575	257		1,832	2,125
1200	Slide, tunnel, for 56" high deck		8	3		2,300	128		2,428	2,750
1210	Straight, poly		8	3		520	128		648	765
1220	Stainless steel, 54" high deck		6	4		995	171		1,166	1,350
1230	Curved, poly, 40" high deck		6	4		940	171		1,111	1,275
1240	Spiral slide, 56"-72" high		5	4,800		4,900	205		5,105	5,700
1300	Ladder, vertical, for 24"-72" high deck		5	4,800		545	205		750	910
1310	Horizontal, 8' long		5	4,800		1,050	205		1,255	1,475
1320	Corkscrew climber, 6' high		3	8		1,200	340		1,540	1,850
1330	Fire pole for 72" high deck		6	4		360	171		531	650
1340	Bridge, ring climber, 8' long		4	6		2,775	257		3,032	3,425
1350	Suspension		4	6	L.F.	375	257		632	795

11 68 16 – Play Structures

11 68 16.10 Handball/Squash Court

0010	HANDBALL/SQUASH COURT outdoor	2 Corp	.50	32	Ea.	5,075	1,700		6,775	8,150
0900	Handball or squash court, outdoor, wood									
1000	Masonry handball/squash court	D-1	.30	53,333	"	26,500	2,500		29,000	33,000

11 68 16.30 Platform/Paddle Tennis Court

0010	PLATFORM/PADDLE TENNIS COURT Complete with lighting, etc.	B-1	.08	300	Court	68,500	12,800		81,300	95,000
0100	Aluminum slat deck with aluminum frame									
0500	Aluminum slat deck with wood frame	G-1	.12	267		80,500	13,400		93,900	108,500
0800	Aluminum deck heater, add	B-1	1.18	20,339		2,925	870		3,795	4,525
0900	Douglas fir planking with wood frame 2" x 6" x 30'	G-1	.12	267		75,500	13,400		88,900	103,000

11 68 Play Field Equipment and Structures

11 68 16 – Play Structures

11 68 16.30 Platform/Paddle Tennis Court				Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total
									Labor	Equipment	
1000	Plywood deck with steel frame			C-1	.12	267	Court	75,500	13,400		88,900
1100	Steel slat deck with wood frame				.12	267		45,600	13,400		59,000

11 68 33 – Athletic Field Equipment

11 68 33.13 Football Field Equipment

11 71 Medical Sterilizing Equipment

11 71 10 - Medical Sterilizers & Distillers

11 71 10.10 Sterilizers and Distillers

STERILIZERS AND DISTILLERS											
0700	Distiller, water, steam heated, 50 gal. capacity		1	Plum.	1.40	5.714	Ea.	25,500	370	25,870	28,700
3010	Portable, top loading, 105-135 degree C, 3 to 30 psi, 50 L chamber							9,775		9,775	10,800
3020	Sterilizers, stainless steel basket, 10.7" diam. x 11.8" H							214		214	236
3025	Sterilizers, stainless steel pail, 10.7" diam. x 10.7" H							320		320	350
3050	85 L chamber							17,800		17,800	19,600
3060	Sterilizers, stainless steel basket, 15.3" diam. x 11.5" H							455		455	505
3065	Sterilizers, stainless steel pail, 15.3" diam. x 11" H							675		675	745
5600	Sterilizers, floor loading, 26" x 62" x 42", single door, steam							155,000		155,000	170,500
5650	Sterilizers, double door, steam							239,000		239,000	262,500
5800	General purpose, 20" x 20" x 38", single door							12,500		12,500	13,700
6000	Portable, counter top, steam, minimum							2,900		2,900	3,175
6020	Maximum							5,075		5,075	5,575
6050	Portable, counter top, gas, 17" x 15" x 32-1/2"							45,400		45,400	49,900
6150	Manual washer/sterilizer, 16" x 16" x 26"	1	Plum.	2	3	4	↓	62,000	258	62,258	69,000
6200	Steam generators, electric 10 kW to 180 kW, freestanding										
6250	Minimum	1	Elec.	3	2.667		Ea.	12,200	164	12,364	13,600
6300	Maximum	"	.70	11.429				22,700	700	23,400	26,100
8200	Bed pan washer-sanitizer	1	Plum.	2	4		↓	9,775	258	10,033	11,100

11 72 Examination and Treatment Equipment

11 72 13 – Examination Equipment

11 72 13.13 Examination Equipment

0010	EXAMINATION EQUIPMENT					
0300	Blood pressure unit, mercurial, wall	Ea.	158		158	174
0400	Diagnostic set, wall		675		675	740
4400	Scale, physician's, with height rod		465		465	510

11 72 53 - Treatment Equipment

11 72 53.13 Medical Treatment Equipment

0010 MEDICAL TREATMENT EQUIPMENT

6300	Exam light, portable, 14" flexible arm						181			181	199
6500	Surgery table, minor minimum		1 Swk	.70	11,429		14,900	660		15,560	17,400
6520	Maximum		"	.50	16		21,400	920		22,320	25,000
6700	Surgical lights, doctor's office, single arm		2 Elec	2	8		3,350	490		3,840	4,400
6750	Dual arm		"	1	16		6,325	980		7,305	8,400

11 73 Patient Care Equipment

11 73 10 – Patient Treatment Equipment

11 73 10.10 Treatment Equipment		Daily Crew	Output	Labor-Hrs	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
0010 TREATMENT EQUIPMENT										
0750	Exam room furnishings, average per room				Ea.	5,900			5,900	6,500
1800	Heat therapy unit, humidified, 26" x 78" x 28"				"	4,250			4,250	4,675
2100	Hubbard tank with accessories, stainless steel,									
2110	125 GPM at 45 psi water pressure				Ea.	15,100			15,100	16,600
2150	For electric overhead hoist, add					3,275			3,275	3,600
2900	K-Module for heat therapy, 20 oz. capacity, 75°F to 110°F					600			600	660
3600	Paraffin bath, 126°F, auto controlled					280			280	305
3900	Parallel bars for walking training, 12'-0"					2,050			2,050	2,275
4600	Station, dietary, medium, with ice					22,200			22,200	24,400
4700	Medicine					10,000			10,000	11,000
7000	Tables, physical therapy, walk off, electric	2 Carp	3	5.333		2,350	283		2,633	3,025
7150	Standard, vinyl top with base cabinets, minimum		3	5.333		1,125	283		1,408	1,650
7200	Maximum		2	8		5,650	425		6,075	6,850
7250	Table, hospital, adjustable height					1,650			1,650	1,800
8400	Whirlpool bath, mobile, sst, 18" x 24" x 60"					6,550			6,550	7,200
8450	Fixed, incl. mixing valves	1 Plum	2	4		4,825	258		5,083	5,700

11 73 10.20 Bariatric Equipment

0010 BARIATRIC EQUIPMENT		Daily Crew	Output	Labor-Hrs	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
5000 Patient lift, electric operated, arm style					Ea.					
5110	400 lb. capacity					1,225			1,225	1,325
5120	450 lb. capacity					2,550			2,550	2,825
5130	600 lb. capacity					3,125			3,125	3,450
5140	700 lb. capacity					4,800			4,800	5,275
5150	1,000 lb. capacity					7,925			7,925	8,725
5200	Overhead, 4-post, 1,000 lb. capacity					10,200			10,200	11,200
5300	Overhead, track type, 450 lb. capacity, not including track					3,275			3,275	3,600
5500	For fabric sling, add					340			340	375
5550	For digital scale, add					815			815	895

11 74 Dental Equipment

11 74 10 – Dental Office Equipment

11 74 10.10 Diagnostic and Treatment Equipment

0010 DIAGNOSTIC AND TREATMENT EQUIPMENT		Daily Crew	Output	Labor-Hrs	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
0020 Central suction system, minimum		1 Plum	1.20	6.667	Ea.	1,175	430		1,605	1,925
0100	Maximum		.90	8.889		6,425	575		7,000	7,925
0300	Air compressor, minimum	1 Skwk.	.80	10		2,850	550		3,400	3,950
0400	Maximum		.50	16		9,075	880		9,955	11,300
0600	Chair, electric or hydraulic, minimum		.50	16		2,625	880		3,505	4,200
0700	Maximum		1.25	32		3,975	1,750		5,725	7,025
0800	Doctor's/assistant's stool, minimum					273			273	300
0850	Maximum					760			760	835
1000	Drill console with accessories, minimum	1 Skwk.	1.60	5		3,175	274		3,449	3,925
1100	Maximum		1.60	5		4,800	274		5,074	5,700
2000	Light, ceiling mounted, minimum		8	1		875	55		930	1,050
2100	Maximum		8	1		2,050	55		2,105	2,325
2200	Unit light, minimum	2 Skwk.	5.33	3.002		775	165		940	1,100
2210	Maximum		5.33	3.002		1,475	165		1,640	1,850
2220	Track light, minimum		3.20	5		1,725	274		1,999	2,325
2230	Maximum		3.20	5		2,300	274		2,574	2,950
2300	Sterilizers, steam portable, minimum					1,875			1,875	2,050

11 74 Dental Equipment

11 74 10 – Dental Office Equipment

11 74 10.10 Diagnostic and Treatment Equipment	Crew	Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Ind O&P
					Material	Labor	Equipment		
2350 Maximum				Ea.	6,350			6,350	7,000
2600 Steam, institutional						2,650		2,650	2,900
2650 Dry heat, electric, portable, 3 trays						1,375		1,375	1,500
2700 Ultra-sonic cleaner, portable, minimum						435		435	475
2750 Maximum (institutional)						1,325		1,325	1,450
3000 X-ray unit, wall, minimum	1 Skwk	4	2		2,925	110		3,035	3,400
3010 Maximum		4	2		5,300	110		5,410	6,000
3100 Panoramic unit		.60	13.333		16,900	730		17,630	19,700
3105 Deluxe, minimum	2 Skwk	1.60	10		11,700	550		12,250	13,600
3110 Maximum		1.60	10		35,500	550		36,050	39,800
3500 Developers, X-ray, average	1 Plum	5.33	1.501		5,375	96.50		5,471.50	6,075
3600 Maximum	"	5.33	1.501		11,000	96.50		11,096.50	12,200

11 76 Operating Room Equipment

11 76 10 – Equipment for Operating Rooms

11 76 10.10 Surgical Equipment

0010 SURGICAL EQUIPMENT	1 Plum	3	2.667	Ea.	5,875	172		6,047	6,725
5000 Scrub, surgical, stainless steel, single station, minimum					9,000			9,000	9,900
5100 Maximum									
6550 Major surgery table, minimum	1 Sswk	.50	16		25,900	920		26,820	30,000
6570 Maximum		.50	16		39,300	920		40,220	44,800
6600 Hydraulic, hand-held control, general surgery		.60	13.333		41,100	770		41,870	46,400
6650 Stationary, universal		.50	16		53,500	920		54,420	60,000
6800 Surgical lights, major operating room, dual head, minimum	2 Elec	1	16		5,975	980		6,955	8,025
6850 Maximum		1	16		40,100	980		41,080	45,600
6900 Ceiling mount articulation, single arm		1	16		4,875	980		5,855	6,800

11 77 Radiology Equipment

11 77 10 – Equipment for Radiology

11 77 10.10 X-Ray Equipment

0010 X-RAY EQUIPMENT	Ea.	17,400		17,400		19,100
8700 X-ray, mobile, minimum						
8750 Maximum		97,000		97,000		106,500
8900 Stationary, minimum		37,200		37,200		40,900
8950 Maximum		280,500		280,500		308,500
9150 Developing processors, minimum		5,175		5,175		5,700
9200 Maximum		13,900		13,900		15,300

11 78 Mortuary Equipment

11 78 13 – Mortuary Refrigerators

11 78 13.10 Mortuary and Autopsy Equipment		Daily Crew	Labor-Output	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
0010	MORTUARY AND AUTOPSY EQUIPMENT								
0015	Autopsy table, standard		1 Plum	1	8 Ea.	10,000	515	10,515	11,800
0020	Deluxe		"	.60	13.333	16,400	860	17,260	19,300
3200	Mortuary refrigerator, end operated, 2 capacity					9,625		9,625	10,600
3300	6 capacity					16,300		16,300	17,900

11 78 16 – Crematorium Equipment

11 78 16.10 Crematory

0010 CREMATORY		Q-3	.20	160	Ea.	80,500	9,825	90,325	103,000
1500	Crematory, not including building, 1 place								
1750	2 place		"	.10	320	"	115,000	19,600	134,600

11 81 Facility Maintenance Equipment

11 81 19 – Vacuum Cleaning Systems

11 81 19.10 Vacuum Cleaning

0010 VACUUM CLEANING		1 Skwk	.90	8.889	Total	1,325	490	1,815	2,200
0020	Central, 3 inlet, residential								
0200	Commercial			.70	11.429	1,350	625	1,975	2,450
0400	5 inlet system, residential			.50	16	2,025	880	2,905	3,550
0600	7 inlet system, commercial			.40	20	2,600	1,100	3,700	4,500
0800	9 inlet system, residential			.30	26.667	4,225	1,475	5,700	6,850

11 82 Facility Solid Waste Handling Equipment

11 82 19 – Packaged Incinerators

11 82 19.10 Packaged Gas Fired Incinerators

0010 PACKAGED GAS FIRED INCINERATORS		Q-3	.80	40	Ea.	42,000	2,450	44,450	49,900
4400	Incinerator, gas, not incl. chimney, elec. or pipe, 50 lbs./hr., minimum								
4420	Maximum			.70	45.714	43,500	2,800	46,300	52,000
4440	200 lbs./hr., minimum (batch type)			.60	53.333	72,000	3,275	75,275	84,000
4460	Maximum (with feeder)			.50	64	84,500	3,925	88,425	99,000
4480	400 lbs./hr., minimum (batch type)			.30	107	88,000	6,550	94,550	106,500
4500	Maximum (with feeder)			.25	128	95,500	7,850	103,350	117,000
4520	800 lbs./hr., with feeder, minimum			.20	160	122,000	9,825	131,825	149,000
4540	Maximum			.17	188	211,000	11,500	222,500	249,500
4560	1,200 lbs./hr., with feeder, minimum			.15	213	161,500	13,100	174,600	197,000
4580	Maximum			.11	291	204,500	17,800	222,300	251,000
4600	2,000 lbs./hr., with feeder, minimum			.10	320	417,500	19,600	437,100	488,500
4620	Maximum			.05	640	653,500	39,300	692,800	777,500
4700	For heat recovery system, add, minimum			.25	128	101,500	7,850	109,350	124,000
4710	Add, maximum			.11	291	266,500	17,800	284,300	319,500
4720	For automatic ash conveyer, add			.50	64	41,900	3,925	45,825	52,000
4750	Large municipal incinerators, incl. stock, minimum			.25	128 Ton/day	21,700	7,850	29,550	35,700
4850	Maximum			.10	320	58,000	19,600	77,600	93,000

11 82 26 – Facility Waste Compactors

11 82 26.10 Compactors

0010 COMPACTORS		L4	1	24	Ea.	12,600	1,200	13,800	15,600
0020	Compactors, 115 volt, 250 lbs./hr., chute fed								
0100	Hand fed			2.40	10	17,200	500	17,700	19,700
0300	Multi-bag, 230 volt, 600 lbs./hr., chute fed			1	24	16,800	1,200	18,000	20,300

11 82 Facility Solid Waste Handling Equipment

11 82 26 – Facility Waste Compactors

11 82 26.10 Compactors		Daily	Labor-	Unit	Material	2020 Bare Costs		Total	Total Ind O&P
		Crew	Output			Labor	Equipment		
0400	Hand fed		L-4	1	24	Ea.	17,200	1,200	18,400
0500	Containerized, hand fed, 2 to 6 C.Y. containers, 250 lbs./hr.			1	24		16,700	1,200	17,900
0550	For chute fed, add per floor			1	24		1,500	1,200	2,700
1000	Heavy duty industrial compactor, 0.5 C.Y. capacity			1	24		11,200	1,200	12,400
1050	1.0 C.Y. capacity			1	24		17,100	1,200	18,300
1100	3.0 C.Y. capacity		.50	48			29,200	2,400	31,600
1150	5.0 C.Y. capacity		.50	48			36,900	2,400	39,300
1200	Combination shredder/compactor (5,000 lbs./hr.)		.50	48			71,500	2,400	73,900
1400	For handling hazardous waste materials, 55 gallon drum packer, std.						21,700		21,700
1410	55 gallon drum packer w/HEPA filter						26,400		26,400
1420	55 gallon drum packer w/charcoal & HEPA filter						35,200		35,200
1430	All of the above made explosion proof, add						1,725		1,725
5500	Shredder, municipal use, 35 tons/hour						378,500		378,500
5600	60 tons/hour						806,500		806,500
5750	Shredder & baler, 50 tons/day						756,500		756,500
5800	Shredder, industrial, minimum						29,900		29,900
5850	Maximum						160,000		160,000
5900	Baler, industrial, minimum						12,000		12,000
5950	Maximum						697,500		697,500
6000	Transfer station compactor, with power unit								
6050	and pedestal, not including pit, 50 tons/hour				Ea.	239,000			239,000
									263,000

11 82 39 – Medical Waste Disposal Systems

11 82 39.10 Off-Site Disposal

0010	OFF-SITE DISPOSAL		Week	208			208	228
			Month	745				
			Ea.	66				
0100	Medical waste disposal, Red Bag system, pick up & treat, 200 lbs./week							
0110	Per month						745	820
0150	Red bags, 7-10 gal., 1.2 mil, pkg of 500						66	72.50
0200	15 gal., package of 250						64	70
0250	33 gal., package of 250						73	80
0300	45 gal., package of 100						59.50	65.50

11 82 39.20 Disposal Carts

0010	DISPOSAL CARTS		Ea.	289			289	320
2010	Medical waste disposal cart, HDPE, w/lid, 28 gal. capacity							
2020	96 gal. capacity						335	335
2030	150 gal. capacity, low profile						500	500
2040	200 gal. capacity						1,000	1,100

11 82 39.30 Medical Waste Sanitizers

0010	MEDICAL WASTE SANITIZERS		Ea.	84,000			84,000	92,500
2010	Small, hand loaded, 1.5 C.Y., 225 lb. capacity							
2020	Medium, cart loaded, 6.25 C.Y., 938 lb. capacity						112,000	123,500
2030	Large, cart loaded, 15 C.Y., 2250 lb. capacity						134,500	148,000
3010	Cart, aluminum, 75 lb. capacity						2,225	2,450
3020	95 lb. capacity						2,425	2,675
4010	Stainless steel, 173 lb. capacity						3,175	3,500
4020	232 lb. capacity						3,550	3,900
4030	Cart lift, hydraulic scissor type						6,300	6,925
4040	Portable aluminum ramp						1,775	1,950
4050	Fold-down steel tracks						1,450	1,600
4060	Pull-out drawer, small						6,775	7,475
4070	Medium						9,800	10,800
4080	Large						13,800	15,200
5000	Medical waste treatment, sanitize, on-site							

11 82 Facility Solid Waste Handling Equipment

11 82 39 - Medical Waste Disposal Systems

11 82 39.30 Medical Waste Sanitizers		Daily Crew Output	Labor-Hours Unit	Material Lb.	2020 Labor	Bare Equipment	Total	Total Incl O&P
5010	Less than 15,000 lbs./month			.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.	6,300	1,100	7,400
0200	Maximum	"	.70	28.571		10,500	1,575	12,075
0250	Add for filter, heater and lights					1,850		1,850
								2,025

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.	2,725	305	3,030	3,450
0050	Deluxe	"	.20	40		13,100	2,125	15,225	17,600
0070	Granite or marble, average	2 Marb	.50	.32		13,200	1,625	14,825	17,100
0090	Deluxe	"	.20	80		36,000	4,075	40,075	45,800
0100	Arks, prefabricated, plain	2 Carp	.80	20		9,250	1,075	10,325	11,800
0130	Deluxe, maximum	"	.20	80		132,000	4,250	136,250	151,500
0500	Reconciliation room, wood, prefabricated, single, plain	1 Carp	.60	13.333		3,450	710	4,160	4,875
0550	Deluxe	"	.40	20		8,600	1,075	9,675	11,100
0650	Double, plain	"	.40	20		6,300	1,075	7,375	8,525
0700	Deluxe	"	.20	40		18,600	2,125	20,725	23,700
1000	Lecterns, wood, plain	5	1.600			745	85	830	950
1100	Deluxe	2	4			6,125	213	6,338	7,075
2000	Pulpits, hardwood, prefabricated, plain	2	4			1,500	213	1,713	1,975
2100	Deluxe	"	1.60	5		13,700	266	13,966	15,500
2500	Railing, hardwood, average	"	25	.320	L.F.	208	17	225	255
3000	Seating, individual, oak, contour, laminated	"	21	.381	Person	241	20.50	261.50	296
3100	Cushion seat	"	21	.381		219	20.50	239.50	272
3200	Fully upholstered	"	21	.381		197	20.50	217.50	248
3300	Combination, self-rising	"	21	.381		365	20.50	385.50	430
3500	For cherry, add					30%			
5000	Wall cross, aluminum, extruded, 2" x 2" section	1 Carp	34	.235	L.F.	246	12.50	258.50	290
5150	4" x 4" section	"	29	.276		355	14.65	369.65	410
5300	Bronze, extruded, 1" x 2" section	"	31	.258		485	13.70	498.70	555
5350	2-1/2" x 2-1/2" section	"	34	.235		735	12.50	747.50	830
5450	Solid bar stock, 1/2" x 3" section	"	29	.276		965	14.65	979.65	1,100
5600	Fiberglass, stock	"	34	.235		220	12.50	232.50	261
5700	Stainless steel, 4" deep, channel section	"	29	.276		780	14.65	794.65	875
5800	4" deep box section	"	29	.276		1,125	14.65	1,139.65	1,275

11 92 Agricultural Equipment

11 92 16 – Stock Feeders

			Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Ind O&P	
11 92 16.16 Barns											
0010	BARNs										
0015	Swine barn, farrowing pens and equipment	B-1	1000	.024	S.F.	13.90	1.03		14.93	16.85	
0020	Gestation pens and equipment		800	.030		12.20	1.28		13.48	15.40	
0030	Nursery pens and equipment		1150	.021		10.70	.89		11.59	13.10	
0040	Finishing pens and equipment		1400	.017		8.15	.73		8.88	10.05	
0120	Poultry barn, cages and equipment		700	.034		17.90	1.47		19.37	22	
0220	Animal barn stall, feed and water equipment		1000	.024		15.90	1.03		16.93	19.05	
0230	Manure floor scraper system		1500	.016		2.98	.68		3.66	4.31	
0240	Below slab manure gutter and shuttle stoker		400	.060		10.20	2.57		12.77	15.05	
0250	Exhaust system		1400	.017		1.23	.73		1.96	2.45	
0260	Milking barn, milking equipment		220	.109		89.50	4.67		94.17	106	
0270	Milk storage equipment		450	.053		27	2.28		29.28	33	
0280	Sheep barn, equipment, sheep shear street gates		1000	.024		1,025	1.03		1,026.03	1,125	
0290	Gate in frame		1000	.024		105	1.03		106.03	118	
0295	Maternity fence with drinking trough		1000	.024		61.50	1.03		62.53	69.50	
0300	Tobacco barn, fruit & tobacco auto. dryer machine/heat pump dryer	Q-20	2.90	6.897	Ea.	6,550	395		6,945	7,825	
0310	Tobacco curing generator			4.90	4.082		4,600	233		4,833	5,425
0320	Automatic system controller			6.90	2.899		1,675	166		1,841	2,100
0330	Humidity & temp. transmitters for humidity measurement			6.90	2.899		930	166		1,096	1,275
0340	Handling system for leaf tobacco			5.90	3.390		580	194		774	930

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.	2,725	219		2,944	3,325
0110	Including speakers		"	1.50	5.333	"	3,050	293		3,343	3,825

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.	3,550	930	73.50	4,553.50	5,425

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	740		4,290	5,000

Division Notes

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	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
0010 SELECTIVE DEMOLITION, INTERIORS										
1100	Casework, wood base cabinets	2 Clab	24	.667	L.F.		28		28	42
1200	Countertop		96	.167			7		7	10.55
3100	Casework, metal base cabinets		20	.800			33.50		33.50	50.50
3110	Cabinet base trim		400	.040			1.68		1.68	2.53
3120	Countertop, stainless steel or acid proof		80	.200			8.40		8.40	12.65
3122	custom	1 Corp	48	.167	S.F.		8.85		8.85	13.30
3125	Ceramic tile	1 Clab	120	.067	"		2.81		2.81	4.22
3127	Trim	1 Tlif	72	.111	L.F.		5.50		5.50	8.05
3130	Wall cabinets, wood, 84" high	2 Clab	30	.533			22.50		22.50	33.50
3500	Laboratory casework, tall storage cabinets, 84" high		40	.400			16.85		16.85	25.50
3510	Wall cabinets, metal		40	.400			16.85		16.85	25.50
4830	Floor mats, recessed or link mats	1 Clab	300	.027	S.F.		1.12		1.12	1.69
4832	Skate lock tile		200	.040			1.68		1.68	2.53
4834	Duckboard		300	.027			1.12		1.12	1.69
4920	Blinds, interior, horizontal or vertical		150	.053	L.F.		2.25		2.25	3.37
4922	Wood folding panels		35	.229	Pt.		9.60		9.60	14.45
4924	Shades, interior		700	.011	S.F.		.48		.48	.72
4930	Drapery hardware, traverse rods		35	.229	Ea.		9.60		9.60	14.45
4950	Blast curtains, including hardware		25	.320			13.45		13.45	20
5200	Fixed seating, per seat	2 Corp	44	.364			19.35		19.35	29
6400	Booth, restaurant	2 Clab	80	.200	L.F.		8.40		8.40	12.65
7400	Office systems, furniture, cubicle	"	3000	.005	S.F.		.22		.22	.34

12 21 Window Blinds

12 21 13 – Horizontal Louver Blinds

12 21 13.13 Metal Horizontal Louver Blinds

0010 METAL HORIZONTAL LOUVER BLINDS		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
0020	Horizontal, 1" aluminum slats, solid color, stock	1 Corp	590	.014	S.F.	5.80	.72		6.52	7.50
0250	2" aluminum slats, solid color, stock	"	590	.014	"	5.05	.72		5.77	6.65

12 21 13.33 Vinyl Horizontal Louver Blinds

0010 VINYL HORIZONTAL LOUVER BLINDS		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
0100	2" composite, 48" wide, 48" high	1 Corp	30	.267	Ea.	93	14.15		107.15	124
0120	72" high		29	.276		125	14.65		139.65	160
0140	96" high		28	.286		171	15.20		186.20	211
0200	60" wide, 60" high		27	.296		135	15.75		150.75	173
0220	72" high		25	.320		156	17		173	197
0240	96" high		24	.333		233	17.70		250.70	283
0300	72" wide, 72" high		25	.320		206	17		223	252
0320	96" high		23	.348		284	18.50		302.50	340
0400	96" wide, 96" high		20	.400		505	21.50		526.50	585
1000	2" faux wood, 48" wide, 48" high		30	.267		101	14.15		115.15	133
1020	72" high		29	.276		131	14.65		145.65	166
1040	96" high		28	.286		156	15.20		171.20	194
1300	72" wide, 72" high		25	.320		129	17		146	168
1320	96" high		23	.348		194	18.50		212.50	242
1400	96" wide, 96" high	↓	20	.400	↓	265	21.50		286.50	325

12 21 Window Blinds

12 21 16 – Vertical Louver Blinds

			Daily Crew	Output	Labor Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
12 21 16.13 Metal Vertical Louver Blinds											
0010	METAL VERTICAL LOUVER BLINDS										
1500	Vertical, 3" PVC strips, minimum		1 Corp	460	.017	S.F.	9.40	.92		10.32	11.75
1600	Maximum			400	.020		21	1.06		22.06	24.50
1800	4" aluminum slats, minimum			460	.017		9.70	.92		10.62	12.05
1900	Maximum			↓	400	.020	↓	18.80	1.06	19.86	22

12 22 Curtains and Drapes

12 22 16 – Drapery Track and Accessories

12 22 16.10 Drapery Hardware

			Daily Crew	Output	Labor Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
0010	DRAPERY HARDWARE										
0030	Standard traverse, per foot, minimum		1 Corp	59	.136	L.F.	6.85	7.20		14.05	18.35
0100	Maximum			51	.157	"	15.10	8.35		23.45	29
4000	Traverse rods, adjustable, 28" to 48"			22	.364	Ed.	37	19.35		56.35	70
4020	48" to 84"			20	.400		47.50	21.50		69	84
4040	66" to 120"			18	.444		57.50	23.50		81	98.50
4060	84" to 156"			16	.500		65	26.50		91.50	112
4080	100" to 180"			14	.571		76	30.50		106.50	129
4090	156" to 228"			13	.615		91	32.50		123.50	149
4100	228" to 312"			13	.615		105	32.50		137.50	165
4200	Double rods, adjustable, 30" to 48"			9	.889		56.50	47		103.50	134
4220	48" to 86"			9	.889		79	47		126	158
4240	86" to 150"			8	1		87.50	53		140.50	176
4260	100" to 180"			7	1.143		92	60.50		152.50	193
4300	Curtain rod & brackets, adjustable, 30" to 48"			9	.889		32.50	47		79.50	107
4320	48" to 86"			9	.889		46.50	47		93.50	122
4340	86" to 150"			8	1		57	53		110	143
4360	100" to 180"			7	1.143		70.50	60.50		131	169
4600	Valance, pinch pleated fabric, 12" deep, up to 54" long, minimum						43			43	47.50
4610	Maximum						107			107	118
4620	Up to 77" long, minimum						87.50			87.50	96
4630	Maximum						173			173	190
5000	Stationary rods, first 2'					↓	8.30			8.30	9.15
5020	Each additional foot, add					L.F.	4.54			4.54	4.99

12 22 16.20 Blast Curtains

			Daily Crew	Output	Labor Hours	Unit	Material	2020 Labor	Bare 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 Corp	10.25	.780	L.F.	279	41.50		320.50	370
0120	Average			10.25	.780		269	41.50		310.50	360
0140	Maximum			10.25	.780		288	41.50		329.50	380

12 23 Interior Shutters

12 23 13 – Wood Interior Shutters

		Crew	Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
Category	Item Description					Material	Labor	Equipment		
12 23 13.10 Wood Interior Shutters										
0010	WOOD INTERIOR SHUTTERS, louvered									
0200	Two panel, 27" wide, 36" high	1 Corp	5	1.600	Set	173	85		258	320
0300	33" wide, 36" high		5	1.600		223	85		308	375
0500	47" wide, 36" high		5	1.600		299	85		384	460
1000	Four panel, 27" wide, 36" high		5	1.600		161	85		246	305
1100	33" wide, 36" high		5	1.600		206	85		291	355
1300	47" wide, 36" high		5	1.600		275	85		360	435
1400	Plantation shutters, 16" x 48"		5	1.600	Ea.	146	85		231	289
1450	16" x 96"		4	2		240	106		346	425
1460	36" x 96"		3	2.667		530	142		672	795

12 23 13.13 Wood Panels

		Crew	Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
Category	Item Description					Material	Labor	Equipment		
0010	WOOD PANELS									
3000	Wood folding panels with movable louvers, 7" x 20" each	1 Corp	17	.471	Pc.	95.50	25		120.50	143
3300	8" x 28" each		17	.471		95.50	25		120.50	143
3450	9" x 36" each		17	.471		110	25		135	159
3600	10" x 40" each		17	.471		120	25		145	170
4000	Fixed louver type, stock units, 8" x 20" each		17	.471		107	25		132	156
4150	10" x 28" each		17	.471		90.50	25		115.50	137
4300	12" x 36" each		17	.471		107	25		132	156
4450	18" x 40" each		17	.471		153	25		178	206
5000	Insert panel type, stock, 7" x 20" each		17	.471		28	25		53	68
5150	8" x 28" each		17	.471		51	25		76	93.50
5300	9" x 36" each		17	.471		64.50	25		89.50	109
5450	10" x 40" each		17	.471		69.50	25		94.50	114
5600	Raised panel type, stock, 10" x 24" each		17	.471		118	25		143	168
5650	12" x 26" each		17	.471		118	25		143	168
5700	14" x 30" each		17	.471		131	25		156	182
5750	16" x 36" each		17	.471		144	25		169	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

		Crew	Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
Category	Item Description					Material	Labor	Equipment		
12 24 13.10 Shades										
0010	SHADES									
0020	Basswood, roll-up, stain finish, 3/8" slats	1 Corp	300	.027	S.F.	23	1.42		24.42	27
0200	7/8" slats		300	.027		21	1.42		22.42	25
0300	Vertical side slide, stain finish, 3/8" slats		300	.027		24.50	1.42		25.92	29
0400	7/8" slats		300	.027		26.50	1.42		27.92	31
0500	For fire retardant finishes, add					16%				
0600	For "B" rated finishes, add					20%				
0900	Mylar, single layer, non-heat reflective	1 Corp	685	.012		3.14	.62		3.76	4.38
0910	Mylar, single layer, heat reflective		685	.012		2.83	.62		3.45	4.04
1000	Double layered, heat reflective		685	.012		6.65	.62		7.27	8.25
1100	Triple layered, heat reflective		685	.012		8.35	.62		8.97	10.10
1200	For metal roller instead of wood, add per				Shade	6.90			6.90	7.60
1300	Vinyl coated cotton, standard	1 Corp	685	.012	S.F.	4.55	.62		5.17	5.95
1400	Lightproof decorator shades		685	.012		7	.62		7.62	8.65
1500	Vinyl, lightweight, 4 ga.		685	.012		.92	.62		1.54	1.94
1600	Heavyweight, 6 ga.		685	.012		2.88	.62		3.50	4.10
1700	Vinyl laminated fiberglass, 6 ga., translucent		685	.012		5.55	.62		6.17	7.10

12 24 Window Shades

12 24 13 – Roller Window Shades

12 24 13.10 Shades			Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
			1 Carp	685	.012	S.F.	6.15	.62		
1800	Lightproof								6.77	7.70
2000	Polyester, room darkening, with continuous cord, GEI									
2010	36" x 72"									
2020	48" x 72"									
2030	60" x 72"									
2040	72" x 72"									
6011	Solar screening, fiberglass		G	85	.094	S.F.	8.25	5		
									13.25	16.60

12 32 Manufactured Wood Casing

12 32 23 – Hardwood Casing

12 32 23.10 Manufactured Wood Casing, Stock Units

0010 MANUFACTURED WOOD CASEWORK, STOCK UNITS			2 Carp	53	.302	L.F.	140	16.05		156.05	178
0300 Built-in drawer units, pine, 18" deep, 32" high, unfinished											
0400 Minimum											
0500 Maximum											
0700 Kitchen base cabinets, hardwood, not incl. counter tops,											
0710	24" deep, 35" high, prefinished										
0800	One top drawer, one door below, 12" wide										
0840	18" wide										
0880	24" wide										
1000	Four drawers, 12" wide										
1040	18" wide										
1060	24" wide										
1200	Two top drawers, two doors below, 27" wide										
1260	36" wide										
1300	48" wide										
1500	Range or sink base, two doors below, 30" wide										
1540	36" wide										
1580	48" wide										
1800	For sink front units, deduct										
2000	Corner base cabinets, 36" wide, standard		2 Carp	18	.889		790	47		837	940
2100	Lazy Susan with revolving door			16.50	.970		1,025	51.50		1,076.50	1,200
4000	Kitchen wall cabinets, hardwood, 12" deep with two doors										
4050	12" high, 30" wide										
4400	15" high, 30" wide										
4440	36" wide										
4700	24" high, 30" wide										
4720	36" wide										
5000	30" high, one door, 12" wide										
5040	18" wide										
5060	24" wide										
5300	Two doors, 27" wide										
5340	36" wide										
5380	48" wide										
6000	Corner wall, 30" high, 24" wide										
6050	30" wide										
6100	36" wide										
6500	Revolving Lazy Susan										
7000	Broom cabinet, 84" high, 24" deep, 18" wide										
7500	Oven cabinets, 84" high, 24" deep, 27" wide										
7750	Valance board trim			396	.040	L.F.	20.50	2.15		22.65	26

12 32 Manufactured Wood Casework

12 32 23 – Hardwood Casework

12 32 23.10 Manufactured Wood Casework, Stock Units			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Ind O&P
7780	Toe kick trim		1 Carp	256	.031 L.F.	3.61	1.66		5.27	6.45
7790	Base cabinet corner filler			16	.500 Ea.	50	26.50		76.50	95
7800	Cabinet filler, 3" x 24"			20	.400		19.95	21.50	41.45	54
7810	3" x 30"			20	.400		25	21.50	46.50	59.50
7820	3" x 42"			18	.444		35	23.50	58.50	74
7830	3" x 80"			16	.500		66.50	26.50	93	113
7850	Cabinet panel		↓	50	.160 S.F.	11.20	8.50		19.70	25
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.	215	28.50		243.50	279
9600	Maximum			25	.640 "	460	34		494	555
9610	For metal cabinets, see Section 12 35 70.13					25%	10%			

12 32 23.30 Manufactured Wood Casework Vanities

0010 MANUFACTURED WOOD CASEWORK VANITIES			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Ind O&P
8000	Vanity bases, 2 doors, 30" high, 21" deep, 24" wide		2 Corp	20	.800 Ea.	420	42.50		462.50	525
8050	30" wide			16		460	53		513	585
8100	36" wide			13.33	1.200	400	64		464	535
8150	48" wide		↓	11.43	1.400	610	74.50		684.50	780
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			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Ind O&P
1000	Catches, minimum		1 Carp	235	.034 Ea.	1.56	1.81		3.37	4.44
1040	Maximum			80	.100 "	9.25	5.30		14.55	18.20
2000	Door/drawer pulls, handles									
2200	Handles and pulls, projecting, metal, minimum		1 Carp	48	.167 Ea.	5.75	8.85		14.60	19.60
2240	Maximum			36	.222	11.45	11.80		23.25	30.50
2300	Wood, minimum			48	.167	5.85	8.85		14.70	19.75
2340	Maximum			36	.222	10.80	11.80		22.60	29.50
2400	Drawer pulls, antimicrobial copper alloy finish			50	.160	20.50	8.50		29	35.50
2600	Flush, metal, minimum			48	.167	5.85	8.85		14.70	19.75
2640	Maximum			36	.222	10.95	11.80		22.75	30
2900	Drawer knobs, antimicrobial copper alloy finish			50	.160	13.45	8.50		21.95	27.50
3000	Drawer tracks/glides, minimum			48	.167 Pr.	9.60	8.85		18.45	24
3040	Maximum			24	.333	28	17.70		45.70	57
4000	Cabinet hinges, minimum			160	.050	3.40	2.66		6.06	7.75
4040	Maximum			68	.118	14.20	6.25		20.45	25
7000	Appliance pulls, antimicrobial copper alloy finish		↓	50	.160 L.F.	73.50	8.50		82	94

12 35 Specialty Casing

12 35 39 – Commercial Kitchen Casing

12 35 39.13 Metal Kitchen Casing

0010 METAL KITCHEN CASEWORK			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Ind O&P
3500	Base cabinets, metal, minimum		2 Corp	30	.533 L.F.	106	28.50		134.50	159
3600	Maximum			25	.640	269	34		303	345
3700	Wall cabinets, metal, minimum			30	.533	106	28.50		134.50	159
3800	Maximum		↓	25	.640	243	34		277	320

12 35 Specialty Casework

12 35 50 – Educational/Library Casework

12 35 50.13 Educational Casework				Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	Equipment	Total	Total Incl O&P
0010	EDUCATIONAL CASEWORK											
5000	School, 24" deep, metal, 84" high units	2 Carp	15	1.067	L.F.		610	56.50		666.50	760	
5150	Counter height units		20	.800			460	42.50		502.50	570	
5450	Wood, custom fabricated, 32" high counter		20	.800			263	42.50		305.50	355	
5600	Add for counter top		56	.286			28	15.20		43.20	54	
5800	84" high wall units		15	1.067			670	56.50		726.50	820	
6000	Laminated plastic finish is same price as wood											

12 35 53 – Laboratory Casework

12 35 53.13 Metal Laboratory Casework

12 35 53.13 Metal Laboratory Casework				Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	Equipment	Total	Total Incl O&P
0010	METAL LABORATORY CASEWORK											
0020	Cabinets, base, door units, metal	2 Carp	18	.889	L.F.		270	47		317	370	
0300	Drawer units		18	.889			595	47		642	725	
0700	Tall storage cabinets, open, 7' high		20	.800			575	42.50		617.50	695	
0900	With glazed doors		20	.800			1,025	42.50		1,067.50	1,200	
1300	Wall cabinets, metal, 12-1/2" deep, open		20	.800			227	42.50		269.50	315	
1500	With doors		20	.800			445	42.50		487.50	555	

12 35 59 – Display Casing

12 35 59.10 Display Cases

12 35 59.10 Display Cases				Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	Equipment	Total	Total Incl O&P
0010	DISPLAY CASES Free standing, all glass											
0020	Aluminum frame, 42" high x 36" wide x 12" deep	2 Carp	8	2	Ea.		1,375	106		1,481	1,675	
0100	70" high x 48" wide x 18" deep	"	6	2.667			4,425	142		4,567	5,100	
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.		2,475	170		2,645	2,975	
2100	5' x 4' x 1'-4"		5	3.200			2,975	170		3,145	3,525	
2200	6' x 4' x 1'-4"		4	4			3,475	213		3,688	4,150	
2500	Two sections, 8' x 4' x 1'-4"		2	8			2,775	425		3,200	3,700	
2600	10' x 4' x 1'-4"		2	8			5,300	425		5,725	6,475	
3000	Three sections, 16' x 4' x 1'-4"		1.50	10.667			5,125	565		5,690	6,475	
3500	For fluorescent lights, add						460			460	505	
4000	Table exhibit cases, 2' wide, 3' high, 4' long, flat top	2 Carp	5	3.200	Ea.		1,225	170		1,395	1,600	
4100	3' wide, 3' high, 4' long, sloping top	"	3	5.333	"		835	283		1,118	1,350	

12 35 70 – Healthcare Casing

12 35 70.13 Hospital Casing

12 35 70.13 Hospital Casing				Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	Equipment	Total	Total Incl O&P
0010	HOSPITAL CASEWORK											
0500	Base cabinets, laminated plastic	2 Carp	10	1.600	L.F.		390	85		475	560	
1000	Stainless steel	"	10	1.600			720	85		805	925	
1200	For all drawers, add						41			41	45	
1300	Cabinet base trim, 4" high, enameled steel	2 Carp	200	.080			66	4.25		70.25	79	
1400	Stainless steel		200	.080			132	4.25		136.25	151	
1450	Countertop, laminated plastic, no backsplash		40	.400			55.50	21.50		77	93	
1650	With backsplash		40	.400			69	21.50		90.50	108	
1800	For sink cutout, add			12.20	1.311	Ea.		69.50		69.50	105	
1900	Stainless steel counter top		40	.400	L.F.		179	21.50		200.50	229	
2000	For drop-in stainless 43" x 21" sink, add					Ea.	1,450			1,450	1,575	
2050	Laminate with antimicrobial finish #4	2 Carp	40	.400	L.F.		36.50	21.50		58	72	
2500	Wall cabinets, laminated plastic		15	1.067			294	56.50		350.50	410	
2600	Enamelled steel		15	1.067			360	56.50		416.50	480	

12 35 Specialty Casework

12 35 70 – Healthcare Casework

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P
		Crew		Unit	Labor	Equipment		
12 35 70.13 Hospital Casework								
2700	Sterile steel	2 Corp	15	1.067 L.F.	720	56.50	776.50	875
3000	Hospital cabinets, stainless steel with glass door(s), lockable	2 Corp	18	.889 Ea.	3,175	37.50	3,212.50	3,550
3010	One door, 24" W x 18" D x 60" H	2 Corp	15	1.067	4,325	45	4,370	4,825
3020	Two doors, 36" W x 18" D x 60" H	2 Corp	15	1.067	5,800	45	5,845	6,450
3030	36" W x 24" D x 67" H	2 Corp	15	1.067	4,925	56	4,981	5,475
3040	48" W x 24" D x 66" H	2 Corp	12	1.333	6,125	56	6,181	6,825
3050	48" W x 24" D x 72" H	2 Corp	12	1.333	7,075	75	7,150	7,875
3060	60" W x 24" D x 72" H	2 Corp	9	1.778	7,075	75	7,150	7,875

12 35 70.16 Nurse Station Casework

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P
		Crew		Unit	Labor	Equipment		
0010 NURSE STATION CASEWORK								
2100	Door type, laminated plastic	2 Corp	10	1.600 L.F.	455	85	540	630
2200	Enamored steel	2 Corp	10	1.600	435	85	520	610
2300	Sterile steel	2 Corp	10	1.600	870	85	955	1,075
2400	For drawer type, add	2 Corp	10	1.600	370	370	370	405

12 36 Countertops

12 36 16 – Metal Countertops

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P
		Crew		Unit	Labor	Equipment		
0010 STAINLESS STEEL COUNTERTOPS								
3200	Sterile steel, custom	1 Corp	24	.333 S.F.	184	17.70	201.70	230
3210	Sterile steel	1 Corp	12	.667 L.F.	370	35.50	405.50	460

12 36 19 – Wood Countertops

12 36 19.10 Maple Countertops

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P
		Crew		Unit	Labor	Equipment		
0010 MAPLE COUNTERTOPS								
2900	Solid, laminated, 1-1/2" thick, no splash	1 Corp	28	.286 L.F.	92	15.20	107.20	124
3000	With square splash	1 Corp	28	.286 "	109	15.20	124.20	143
3400	Recessed cutting block with trim, 16" x 20" x 1"	1 Corp	8	1 Ea.	113	53	166	204

12 36 23 – Plastic Countertops

12 36 23.13 Plastic-Laminate-Clad Countertops

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P	
		Crew		Unit	Labor	Equipment			
0010 PLASTIC-LAMINATE-CLAD COUNTERTOPS									
0020	Stock, 24" wide w/backsplash, minimum	1 Corp	30	.267 L.F.	17.75	14.15	31.90	41	
0100	Maximum	1 Corp	25	.320	42.50	17	59.50	72	
0300	Custom plastic, 7/8" thick, aluminum molding, no splash	1 Corp	30	.267	35.50	14.15	49.65	60.50	
0400	Cove splash	1 Corp	30	.267	47	14.15	61.15	73	
0600	1-1/4" thick, no splash	1 Corp	28	.286	39.50	15.20	54.70	66.50	
0700	Square splash	1 Corp	28	.286	44	15.20	59.20	71.50	
0900	Square edge, plastic face, 7/8" thick, no splash	1 Corp	30	.267	34.50	14.15	48.65	59.50	
1000	With splash	1 Corp	30	.267	45.50	14.15	59.65	72	
1200	For stainless channel edge, 7/8" thick, odd	1 Corp	30	.267	3.82		3.82	4.20	
1300	1-1/4" thick, add	1 Corp	32	.250	4.46		4.46	4.91	
1500	For solid color sued finish, add	1 Corp	30	.267	5.95		5.95	6.55	
1700	For end splash, add	1 Corp	32	.250	Ea.	22	22	24	
1900	For cut outs, standard, add, minimum	1 Corp	32	.250	Ea.	17.85	13.30	31.15	39.50
2000	Maximum	1 Corp	8	1	Ea.	7.30	53	60.30	88
2100	Postformed, including backsplash and front edge	1 Corp	30	.267 L.F.	12.55	14.15	26.70	35.50	
2110	Mitered, add	1 Corp	12	.667 Ea.		35.50	35.50	53	
2200	Built-in place, 25" wide, plastic laminate	1 Corp	25	.320 L.F.	68.50	17	85.50	101	

12 36 Countertops

12 36 33 – Tile Countertops

		Daily Crew	Output	Labor Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Ind O&P
12 36 33.10 Ceramic Tile Countertops										
0010 CERAMIC TILE COUNTERTOPS	Ceramic tile mosaic	1 Corp	25	.320	L.F.	41	17		58	70.50

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.	52.50	24.50		77	95
2700 3/4" thick, maximum			13	.615		129	32		161	191
2800 Granite, average, 1-1/4" thick, 24" wide, no splash			13.01	.615		171	32		203	237

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 Corp	82	.195	S.F.	50.50	10.35		60.85	71
0030 Maximum			70	.229		48	12.15		60.15	71.50
0040 Stainless steel			82	.195		218	10.35		228.35	256

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 Corp	28	.571	L.F.	52	30.50		82.50	103
0200 Patterned colors			28	.571		66	30.50		96.50	119
0300 Premium patterned colors			28	.571		88	30.50		118.50	143
0400 With silicone attached 4" backsplash, solid colors			27	.593		61	31.50		92.50	115
0500 Patterned colors			27	.593		77	31.50		108.50	133
0600 Premium patterned colors			27	.593		96	31.50		127.50	154
0700 With hard seam attached 4" backsplash, solid colors			23	.696		61	37		98	123
0800 Patterned colors			23	.696		77	37		114	141
0900 Premium patterned colors			23	.696		96	37		133	162
1000 Pricing for order of 51-99 L.F.										
1100 25" wide, solid colors		2 Corp	24	.667	L.F.	60	35.50		95.50	119
1200 Patterned colors			24	.667		76	35.50		111.50	137
1300 Premium patterned colors			24	.667		101	35.50		136.50	164
1400 With silicone attached 4" backsplash, solid colors			23	.696		70	37		107	133
1500 Patterned colors			23	.696		89	37		126	153
1600 Premium patterned colors			23	.696		111	37		148	178
1700 With hard seam attached 4" backsplash, solid colors			20	.800		70	42.50		112.50	141
1800 Patterned colors			20	.800		89	42.50		131.50	162
1900 Premium patterned colors			20	.800		111	42.50		153.50	186
2000 Pricing for order of 1-50 L.F.										
2100 25" wide, solid colors		2 Corp	20	.800	L.F.	70	42.50		112.50	142
2200 Patterned colors			20	.800		89.50	42.50		132	163
2300 Premium patterned colors			20	.800		119	42.50		161.50	195
2400 With silicone attached 4" backsplash, solid colors			19	.842		82.50	45		127.50	158
2500 Patterned colors			19	.842		104	45		149	182
2600 Premium patterned colors			19	.842		130	45		175	210
2700 With hard seam attached 4" backsplash, solid colors			15	1.067		82.50	56.50		139	176
2800 Patterned colors			15	1.067		104	56.50		160.50	200
2900 Premium patterned colors			15	1.067		130	56.50		186.50	228
3000 Sinks, pricing for order of 100 or greater units										
3100 Single bowl, hard seamed, solid colors, 13" x 17"		1 Corp	3	2.667	Ea.	375	142		517	630
3200 10" x 15"			7	1.143		174	60.50		234.50	283

12 36 Countertops

12 36 61 – Simulated Stone Countertops

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Ind O&P
		Crew		Unit		Labor	Equipment	Total	
12 36 61.16 Solid Surface Countertops									
3300	Cutouts for sinks	1 Carp	8	Ea.		53		53	80
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.	430	167	597	725
3600	10" x 15"		6	1.333		200	71	271	325
3700	Cutouts for sinks		7	1.143			60.50	60.50	91.50
3800	Sinks, pricing for order of 1-50 units								
3900	Single bowl, hard seamed, solid colors, 13" x 17"	1 Carp	2	4	Ea.	505	213	718	875
4000	10" x 15"		4.55	1.758		234	93.50	327.50	400
4100	Cutouts for sinks		5.25	1.524			81	81	122
4200	Cooktop cutouts, pricing for 100 or greater units		4	2		25.50	106	131.50	188
4300	51-99 units		3.40	2.353		29.50	125	154.50	220
4400	1-50 units		3	2.667		34.50	142	176.50	251

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.	171	35.50	206.50	241
0020	19" x 25"		12	.667		216	35.50	251.50	290
0030	19" x 31"		12	.667		243	35.50	278.50	320
0040	19" x 37"		12	.667		283	35.50	318.50	365
0050	22" x 25"		10	.800		335	42.50	377.50	435
0060	22" x 31"		10	.800		395	42.50	437.50	500
0070	22" x 37"		10	.800		460	42.50	502.50	570
0080	22" x 43"		10	.800		525	42.50	567.50	645
0090	22" x 49"		10	.800		575	42.50	617.50	695
0110	22" x 55"		8	1		425	53	478	545
0120	22" x 61"		8	1		480	53	533	610
0220	Double bowl, 22" x 61"		8	1		535	53	588	670
0230	Double bowl, 22" x 73"		8	1		1,075	53	1,128	1,275
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.	68	56.50	124.50	160
0110	Maximum		15	1.067		95	56.50	151.50	190
0120	Color group B, minimum		15	1.067		77	56.50	133.50	170
0130	Maximum		15	1.067		108	56.50	164.50	204
0140	Color group C, minimum		15	1.067		82	56.50	138.50	175
0150	Maximum		15	1.067		125	56.50	181.50	223
0160	Color group D, minimum		15	1.067		89	56.50	145.50	183
0170	Maximum		15	1.067		124	56.50	180.50	221

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.	204	5.60	209.60	233
1060	10" diameter, 26" high	"	60	.133	"	163	5.60	168.60	188
2000	Combination ash/trash urn, metal								
2020	8" diameter, 20" high	1 Clab	60	.133	Ea.	300	5.60	305.60	340
2050	10" diameter, 26" high	"	60	.133	"	241	5.60	246.60	274

12 46 Furnishing Accessories

12 46 19 – Clocks

12 46 19.50 Wall Clocks		Daily Crew Output	Labor Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
0010	WALL CLOCKS								
0080	12" diameter, single face	1 Elec	8	1 Ea.	109	61.50		170.50	212
0100	Double face	"	6.20	1.290 "	161	79		240	295

12 46 33 – Waste Receptacles

12 46 33.13 Trash Receptacles

0010 TRASH RECEPTACLES		Daily Crew Output	Labor Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
4000	Trash receptacle, metal								
4020	8" diameter, 15" high	1 Club	60	.133 Ea.	79	5.60		84.60	95.50
4040	10" diameter, 18" high		60	.133	148	5.60		153.60	171
5040	16" x 8" x 14" high	▼	60	.133	↓	46.50	5.60	52.10	59.50
5500	Plastic, with lid								
5520	35 gal.	1 Club	60	.133 Ea.	216	5.60		221.60	246
5540	45 gal.		60	.133	350	5.60		355.60	395
5550	Plastic recycling barrel, w/lid & wheels, 32 gal.	G	60	.133	108	5.60		113.60	127
5560	65 gal.	G	60	.133	695	5.60		700.60	770
5570	95 gal.	G	60	.133	↓ 1,300	5.60		1,305.60	1,425

12 48 Rugs and Mats

12 48 13 – Entrance Floor Mats and Frames

12 48 13.13 Entrance Floor Mats

0010 ENTRANCE FLOOR MATS		Daily Crew Output	Labor Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
0020	Recessed, black rubber, 3/8" thick, solid	1 Club	155	.052 S.F.	27.50	2.17		29.67	34
0050	Perforated		155	.052	23.50	2.17		25.67	29.50
0100	1/2" thick, solid		155	.052	28	2.17		30.17	34.50
0150	Perforated		155	.052	30	2.17		32.17	36.50
0200	In colors, 3/8" thick, solid		155	.052	33.50	2.17		35.67	40.50
0250	Perforated		155	.052	30.50	2.17		32.67	37
0300	1/2" thick, solid		155	.052	39	2.17		41.17	46.50
0350	Perforated	▼	155	.052	40	2.17		42.17	47.50
1225	Recessed, alum. rail, hinged mat, 7/16" thick								
1250	Carpet insert	1 Club	360	.022	S.F.	70	.94	70.94	78.50
1275	Vinyl insert		360	.022		70	.94	70.94	78.50
1300	Abrasive insert	▼	360	.022	▼	70	.94	70.94	78.50
1325	Recessed, vinyl rail, hinged mat, 7/16" thick								
1350	Carpet insert	1 Club	360	.022	S.F.	77.50	.94	78.44	87
1375	Vinyl insert		360	.022		77.50	.94	78.44	87
1400	Abrasive insert		360	.022		77.50	.94	78.44	87
2000	Recycled rubber tire tile, 12" x 12" x 3/8" thick	G	125	.064		11.50	2.69	14.19	16.70
2510	Natural cocoa fiber, 1/2" thick	G	125	.064		8	2.69	10.69	12.85
2520	3/4" thick	G	125	.064	▼	7.15	2.69	9.84	11.90
2530	1" thick	G	125	.064	▼	13.40	2.69	16.09	18.80
3000	Hospital tacky mats, package of 30 with frame			Ea.	60			60	66
3010	4 packages of 30			"	89			89	98

12 51 Office Furniture

12 51 16 - Case Goods

12 51 16.13 Metal Case Goods		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	Equipment	Total	Total Ind O&P
0010	METAL CASE GOODS				Ea.						
0020	Desks, 29" high, double pedestal, 30" x 60", metal, minimum					590				590	645
0030	Maximum					915				915	1,000
0600	Desks, single pedestal, 30" x 60", metal, minimum					515				515	570
0620	Maximum					870				870	955
0720	Desks, secretarial, 30" x 60", metal, minimum					495				495	545
0730	Maximum					855				855	940
0740	Return, 20" x 42", minimum					510				510	560
0750	Maximum					870				870	955
0940	59" x 12" x 23" high, steel, minimum					405				405	445
0960	Maximum					505				505	555

12 51 16.16 Wood Case Goods

0010 WOOD CASE GOODS						Ea.					
0150	Desk, 29" high, double pedestal, 30" x 60"										
0160	Wood, minimum					Ea.	750			750	825
0180	Maximum					"	1,050			1,050	1,175
0630	Single pedestal, 30" x 60"										
0640	Wood, minimum					Ea.	670			670	735
0650	Maximum						995			995	1,100
0670	Executive return, 24" x 42", with box, file, wood, minimum						440			440	485
0680	Maximum						990			990	1,100
0790	Desk, 29" high, secretarial, 30" x 60"					Ea.	465			465	510
0800	Wood, minimum					"	1,100			1,100	1,200
0810	Maximum										
0820	Return, 20" x 42", minimum						430			430	470
0830	Maximum						715			715	785
0900	Desktop organizer, 72" x 14" x 36" high, wood, minimum						190			190	209
0920	Maximum						465			465	510
1110	Furniture, credenza, 29" high, 18" to 22" x 60" to 72"					Ea.					
1120	Wood, minimum						885			885	975
1140	Maximum					"	2,825			2,825	3,125

12 51 23 - Office Tables

12 51 23.33 Conference Tables											
0010	CONFERENCE TABLES										
6050	Boat, 96" x 42", minimum					Ea.	940			940	1,025
6150	Maximum						3,650			3,650	4,025
6720	Rectangle, 96" x 42", minimum						1,475			1,475	1,625
6740	Maximum						3,450			3,450	3,800

12 52 Seating

12 52 23 - Office Seating

12 52 23.13 Office Chairs											
0010	OFFICE CHAIRS										
2000	Standard office chair, executive, minimum					Ea.	340			340	370
2150	Maximum						1,950			1,950	2,150
2200	Management, minimum						241			241	265
2250	Maximum						1,925			1,925	2,125
2280	Task, minimum						228			228	251
2290	Maximum						640			640	700
2300	Arm kit, minimum						86			86	94.50

12 52 Seating

12 52 23 – Office Seating

12 52 23.13 Office Chairs		Crew	Daily Output	Labor Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
					Ea.	137			137	150
2320	Maximum									

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	2,650		2,650
0200	Maximum						"	8,625		8,625

12 54 16 – Restaurant Furniture

12 54 16.10 Tables, Folding

0010	TABLES, FOLDING	Laminated plastic tops								
1000	Tubular steel legs with glides						Ea.	325		325
1020	18" x 60", minimum									360
1040	Maximum							1,400		1,400
1840	36" x 96", minimum							340		340
1860	Maximum							2,350		2,350
2000	Round, wood stained, plywood top, 60" diameter, minimum							228		228
2020	Maximum							350		350

12 54 16.20 Furniture, Restaurant

0010	FURNITURE, RESTAURANT									
0020	Bars, built-in, front bar				1 Carp	5	1.600	L.F.	315	400
0200	Back bar				"	5	1.600	"	230	315
0300	Booth seating, see Section 12 54 16.70							85		
2000	Chair, bentwood side chair, metal, minimum					Ea.	106			106
2020	Maximum							124		124
2600	Upholstered seat & back, arms, minimum							170		170
2620	Maximum							520		520

12 54 16.70 Booths

0010	BOOTHS									
1000	Banquet, upholstered seat and back, custom									
1500	Straight, minimum				2 Carp	40	.400	L.F.	209	230.50
1520	Maximum				"	36	.444	"	405	428.50
1600	"L" or "U" shape, minimum					35	.457	"	213	24.50
1620	Maximum					30	.533	"	375	28.50
1800	Upholstered outside finished backs for									
1810	single booths and custom banquets									
1820	Minimum				2 Carp	44	.364	L.F.	29	19.35
1840	Maximum				"	40	.400	"	78.50	21.50
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.	835	51
3120	Maximum				"	26	1.231	"	1,200	58.50
3200	Four seat, 24" x 48" table, minimum					28	1.143	"	830	54.50
3220	Maximum					24	1.333	"	1,425	63.50
5000	Mount in floor, wood fiber core with									
5010	plastic laminate face, single booth									
5050	24" wide				F-7	30	1.067	Ea.	320	51
5100	48" wide				"	28	1.143	"	410	54.50

12 55 Detention Furniture

12 55 13 – Detention Bunks

12 55 13.13 Cots	Crew	Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
					Material	Labor	Equipment		
0010 COTS									
2500 Bolted, single, painted steel	E-4	20	1,600	Ea.	350	93	7.35	450.35	540
2700 Stainless steel	"	20	1,600	"	1,025	93	7.35	1,125.35	1,275

12 56 Institutional Furniture

12 56 33 – Classroom Furniture

12 56 33.10 Furniture, School

0010 FURNITURE, SCHOOL	Chair, molded plastic	Ea.	92	2020 Bare Costs			Total	Total Incl O&P
				Labor	Equipment	Total		
1000 Chair, molded plastic								
1100 Integral tablet arm, minimum							92	101
1150 Maximum							224	246
2000 Desk, single pedestal, top book compartment, minimum							110	121
2020 Maximum							202	222
2200 ~ Flip top, minimum							234	257
2220 Maximum							270	297

12 56 43 – Dormitory Furniture

12 56 43.10 Dormitory Furnishings

0010 DORMITORY FURNISHINGS	Bunkable bed, twin, minimum	Eq.	390	2020 Bare Costs			Total	Total Incl O&P
				Labor	Equipment	Total		
0300 Bunkable bed, twin, minimum							390	430
0320 Maximum							600	660
1000 Chest, four drawer, minimum							390	430
1020 Maximum							775	850
1050 Built-in, minimum	2 Carp	13	1,231	L.F.	140	65.50	205.50	253
1150 Maximum		10	1,600		259	85	344	415
1200 Desk top, built-in, laminated plastic, 24" deep, minimum		50	.320		49.50	17	66.50	79.50
1300 Maximum		40	.400		148	21.50	169.50	195
1450 30" deep, minimum		50	.320		63	17	80	95
1550 Maximum		40	.400		276	21.50	297.50	335
1750 Dressing unit, built-in, minimum		12	1,333		210	71	281	335
1850 Maximum		8	2		630	106	736	855

12 56 51 – Library Furniture

12 56 51.10 Library Furnishings

0010 LIBRARY FURNISHINGS	Attendant desk, 36" x 62" x 29" high	1 Corp	16	.500	Eq.	2,225	2020 Bare Costs			Total	Total Incl O&P
							Labor	Equipment	Total		
0100 Book display, "A" frame display, both sides, 42" x 42" x 60" high			16	.500		1,250	26.50		1,276.50	1,425	
0220 Table with bulletin board, 42" x 24" x 49" high			16	.500		735	26.50		761.50	845	
0800 Card catalog, 30 tray unit			16	.500		3,600	26.50		3,626.50	4,025	
0840 60 tray unit			16	.500		7,500	26.50		7,526.50	8,325	
0880 72 tray unit	2 Carp	16	1			8,475	53		8,528	9,400	
1000 Carrels, single face, initial unit	1 Corp	16	.500			990	26.50		1,016.50	1,150	
1500 Double face, initial unit	2 Corp	16	1			1,450	53		1,503	1,675	
1710 Carrels, hardwood, 36" x 24", minimum	1 Corp	5	1,600			580	85		665	770	
1720 Maximum		"	4	2		1,825	106		1,931	2,150	
2700 Card catalog file, 60 trays, complete						10,200			10,200	11,200	
2720 Alternate method: each tray						169			169	186	
3800 Charging desk, built-in, with counter, plastic laminated top	1 Corp	7	1,143	L.F.	500	60.50			560.50	635	
4000 Dictionary stand, stationary			16	.500	Ea.	725	26.50		751.50	835	
4020 Revolving			16	.500		255	26.50		281.50	320	
4200 Exhibit case, table style, 60" x 28" x 36"			11	.727		2,950	38.50		2,988.50	3,300	
6010 Bookshelf, metal, 90" high, 10" shelf, double face			11.50	.696	L.F.	206	37		243	282	

12 56 Institutional Furniture

12 56 51 – Library Furniture

12 56 51.10 Library Furnishings		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
							Labor	Equipment	Total		
6020	Single face	1 Corp	12	.667	L.F.	117	35.50		152.50		181
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.	2,225			2,225		2,450
6150	For electrical operation, add						25%				
6200	Magazine shelving, 82" high, 12" deep, single face	1 Corp	11.50	.696	L.F.	169	37		206		242
6210	Double face	"	11.50	.696	"	290	37		327		375
7200	Reading table, laminated top, 60" x 36"				Ea.	450			450		495

12 56 70 – Healthcare Furniture

12 56 70.10 Furniture, Hospital

0010 FURNITURE, HOSPITAL											
0020	Beds, manual, minimum				Ea.	800			800		880
0100	Maximum					2,950			2,950		3,250
0600	All electric hospital beds, minimum					1,975			1,975		2,175
0700	Maximum					3,675			3,675		4,050
0900	Manual, nursing home beds, minimum					690			690		760
1000	Maximum					1,925			1,925		2,125
1020	Overbed table, laminated top, minimum					365			365		400
1040	Maximum					770			770		850
1100	Patient wall systems, not incl. plumbing, minimum				Room	1,375			1,375		1,500
1200	Maximum				"	2,275			2,275		2,500
2000	Geriatric chairs, minimum				Ea.	475			475		525
2020	Maximum				"	770			770		850

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 Corp	22	.727	Ea.	300	38.50		338.50		395
2200	Veneer back, padded seat	2 Corp	22	.727	Ea.	305	38.50		343.50		395
2350	Fully upholstered, spring seat	2 Corp	22	.727	Ea.	255	38.50		293.50		340
2450	For tablet arms, add					85			85		93.50
2500	For fire retardancy, CATB-133, add					30.50			30.50		33.50

12 61 13.23 Lecture Hall Seating

0010 LECTURE HALL SEATING											
1000	Pedestal type, minimum	2 Corp	22	.727	Ea.	272	38.50		310.50		360
1200	Maximum	"	14.50	1.103	"	550	58.50		608.50		695

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	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
0010	BLEACHERS											
3000	Telescoping, manual to 15 tier, minimum		F-5	65	.492	Seat	114	26.50			140.50	166
3100	Maximum			60	.533		172	28.50			200.50	232
3300	16 to 20 tier, minimum			60	.533		250	28.50			278.50	320
3400	Maximum			55	.582		340	31			371	420
3600	21 to 30 tier, minimum			50	.640		272	34.50			306.50	350
3700	Maximum			40	.800		435	43			478	545
3900	For integral power operation, add, minimum		2 Elec	300	.053		55.50	3.27			58.77	66.50
4000	Maximum		"	250	.064		91	3.93			94.93	106
5000	Benches, folding, in wall, 14' table, 2 benches		I-4	2	12	Set	880	600			1,480	1,875

12 67 Pews and Benches

12 67 13 – Pews

12 67 13.13 Sanctuary Pews

12 67 13.13 Sanctuary Pews			Crew	Daily Output	L.F.	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
0010	SANCTUARY PEWS											
1500	Bench type, hardwood, minimum		1 Carp	20	.400	L.F.	111	21.50			132.50	154
1550	Maximum		"	15	.533		172	28.50			200.50	232
1570	For kneeler, add						22				22	24.50

12 92 Interior Planters and Artificial Plants

12 92 33 – Interior Planters

12 92 33.10 Planters

12 92 33.10 Planters			Ea.	109	109	120
1100	Fiberglass, hanging, 12" diameter, 7" high					
1500	Rectangular, 48" long, 16" high, 15" wide			615	615	675
1650	60" long, 30" high, 28" wide			1,025	1,025	1,150
2000	Round, 12" diameter, 13" high			203	203	223
2050	25" high			241	241	265
5000	Square, 10" side, 20" high			206	206	227
5100	14" side, 15" high			238	238	262
6000	Metal bowl, 32" diameter, 8" high, minimum			580	580	640
6050	Maximum			860	860	945
8750	Wood, fiberglass liner, square					
8780	14" square, 15" high, minimum		Ea.	430	430	470
8800	Maximum					
9400	Plastic cylinder, molded, 10" diameter, 10" high			525	525	580
9500	11" diameter, 11" high			47.50	47.50	52.50
				90.50	90.50	99.50

12 93 Interior Public Space Furnishings

12 93 13 – Bicycle Racks

12 93 13.10 Bicycle Racks		Crew	Daily Output	Labor Hours	Unit	Material	2020 Labor	Bare 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.	282	67.50		349.50	410
0025 Powder coat finish			10	1.600		288	67.50		355.50	415
0030 Single side, grid, 1-5/8" OD stl. pipe, w/1/2" bars, galv, 9 bike cap			8	2		400	84		484	565
0035 Powder coat finish			8	2		430	84		514	595
0040 Single side, grid, 1-5/8" OD stl. pipe, w/1/2" bars, galv, 18 bike cap			4	4		520	168		688	830
0045 Powder coat finish			4	4		535	168		703	845
0050 S curve, 1-7/8" OD stl. pipe, 11 ga., galv, 5 bike cap			10	1.600		160	67.50		227.50	277
0055 Powder coat finish			10	1.600		160	67.50		227.50	277
0060 S curve, 1-7/8" OD stl. pipe, 11 ga., galv, 7 bike cap			9	1.778		203	75		278	335
0065 Powder coat finish			9	1.778		219	75		294	355
0070 S curve, 1-7/8" OD stl. pipe, 11 ga., galv, 9 bike cap			8	2		320	84		404	475
0075 Powder coat finish			8	2		310	84		394	465
0080 S curve, 1-7/8" OD stl. pipe, 11 ga., galv, 11 bike cap			6	2.667		425	112		537	635
0085 Powder coat finish			6	2.667		395	112		507	605

12 93 23 – Trash and Litter Receptacles

12 93 23.10 Trash Receptacles

0010 TRASH RECEPTACLES		Crew	Daily Output	Labor Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
0020 Fiberglass, 2' square, 18" high		2 Clab	30	.533	Ea.	610	22.50		632.50	710
0100 2' square, 2'-6" high			30	.533		975	22.50		997.50	1,100
0300 Circular, 2' diameter, 18" high			30	.533		575	22.50		597.50	670
0400 2' diameter, 2'-6" high			30	.533		615	22.50		637.50	710
0500 Recycled plastic, var colors, round, 32 gal., 28" x 38" high		G	5	3.200		710	135		845	980
0510 32 gal., 31" x 32" high		G	5	3.200		770	135		905	1,050
9110 Plastic, with dome lid, 32 gal. capacity			35	.457		61	19.25		80.25	96
9120 Recycled plastic slats, plastic dome lid, 32 gal. capacity			35	.457		297	19.25		316.25	355

12 93 23.20 Trash Closure

0010 TRASH CLOSURE		Crew	Daily Output	Labor Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
0020 Steel with pullover cover, 2'-3" wide, 4'-7" high, 6'-2" long		2 Clab	5	3.200	Ea.	2,050	135		2,185	2,450
0100 10'-1" long			4	4		2,600	168		2,768	3,100
0300 Wood, 10' wide, 6' high, 10' long			1.20	13.333		2,325	560		2,885	3,400

Division Notes

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 Common Work Results for Special Construction

13 05 05 – Selective Demolition for Special Construction

		Daily Crew	Labor- Output	Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
		R024119-10	B-2	9000	.004	S.F.	Labor	Equipment		
13 05 05.10 Selective Demolition, Air Supported Structures										
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.			.19	.19 .28
0100	Warehouse structures									
0120	Poly/vinyl fabric, 28 oz., incl. tension cables & inflation system		4 Clab	9000	.004	SF Flr.			.15	.15 .23
0150	Reinforced vinyl, 12 oz., 3,000 S.F.		"	5000	.006				.27	.27 .40
0200	12,000 to 24,000 S.F.		8 Clab	20000	.003				.13	.13 .20
0250	Tedlar vinyl fabric, 28 oz. w/liner, to 3,000 S.F.		4 Clab	5000	.006				.27	.27 .40
0300	12,000 to 24,000 S.F.		8 Clab	20000	.003				.13	.13 .20
0350	Greenhouse/shelter, woven polyethylene with liner									
0400	3,000 S.F.		4 Clab	5000	.006	SF Flr.			.27	.27 .40
0450	12,000 to 24,000 S.F.		8 Clab	20000	.003				.13	.13 .20
0500	Tennis/gymnasium, poly/vinyl fabric, 28 oz., incl. thermal liner		4 Clab	9000	.004				.15	.15 .23
0600	Stadium/convention center, teflon coated fiberglass, incl. thermal liner		9 Clab	40000	.002				.08	.08 .11
0700	Doors, air lock, 15' long, 10' x 10'		2 Corp	1.50	10.667	Ea.			565	565 850
0720	15' x 15'								1,075	1,075 1,600
0750	Revolving personnel door, 6' diam. x 6'-6" high								565	565 850
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.			1.68	1.68 2.53
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.			535	535 805
0060	34' diameter			2.30	13.913				745	745 1,125
0070	39' diameter			2	16				860	860 1,300
0080	45' diameter		F-3	2.20	18.182				990	990 1,204
0090	55' diameter			2	20				1,075	1,075 1,875
0100	60' diameter			2	20				1,075	1,075 1,875
0110	65' diameter			1.60	25				1,350	1,350 2,375
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.			4.21	4.21 6.35
0030	9' long x 11' wide			170	.094				3.96	3.96 5.95
0040	9' long x 14' wide			220	.073				3.06	3.06 4.60
0050	9' long x 17' wide			320	.050				2.11	2.11 3.16
0060	Lean-to type, 4' wide			64	.250				10.55	10.55 15.80
0070	7' wide			120	.133				5.60	5.60 8.45
0080	Geodesic hemisphere, 1/8" plexiglass glazing, 8' diam.			4	4	Ea.			168	168 253
0090	24' diam.			80	20				840	840 1,275
0100	48' diam.			40	40				1,675	1,675 2,525
13 05 05.35 Selective Demolition, Hangars										
0010	SELECTIVE DEMOLITION, HANGARS									
0020	T type hangars, prefabricated, steel, galv roof & walls, incl doors, excl fndtn		E-2	2550	.022	SF Flr.			1.25	.67 1.92
0030	Circular type, prefabricated, steel frame, plastic skin, incl foundation, 80' diam		"	.50	112	Total			6,400	3,400 9,800 13,600
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.			21	21 31.50
0030	1/2" diam. x 12", over 75' H			16	.500				21	21 31.50
0050	Aluminum, 1/2" diam. x 12", to 75' H			16	.500				21	21 31.50
0060	5/8" diam. x 12", over 75' H			16	.500				21	21 31.50
0070	Cable, copper, 220 lb. per thousand feet, to 75' H			640	.013	L.F.			.53	.53 .79

13 05 Common Work Results for Special Construction

13 05 05 – Selective Demolition for Special Construction

13 05 05.45 Selective Demolition, Lightning Protection				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
		Crew						Labor			
0080	375 lb. per thousand feet, over 75' H	1 Clab	460	.017	L.F.			.73		.73	1.10
0090	Aluminum, 101 lb. per thousand feet, to 75' H		560	.014				.60		.60	.90
0100	199 lb. per thousand feet, over 75' H		480	.017				.70		.70	1.05
0110	Arrester, 175 V AC, to ground		16	.500	Ea.			21		21	31.50
0120	650 V AC, to ground		13	.615	"			26		26	39

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 Flk.		1.41	.47	1.88	2.70
0600	7,501 to 12,500 S.F.			1500	.016			.94	.31	1.25	1.80
0650	12,501 S.F. or greater			1650	.015			.86	.29	1.15	1.63
0700	Pre-engd. steel building components										
0710	Entrance canopy, including frame 4' x 4'		E-24	8	4	Ea.		230	72.50	302.50	435
0720	4' x 8'		"	7	4.571			263	83	346	495
0730	HM doors, self framing, single leaf		2 Skwk	8	2			110		110	166
0740	Double leaf			5	3.200			176		176	265
0760	Gutter, eave type			600	.027	L.F.		1.46		1.46	2.21
0770	Sash, single slide, double slide or fixed			24	.667	Ea.		36.50		36.50	55.50
0780	Skylight, fiberglass, to 30 S.F.			16	1			55		55	83
0785	Roof vents, circular, 12" to 24" diameter			12	1.333			73		73	111
0790	Continuous, 10' long			8	2			110		110	166
0900	Shelters, aluminum frame										
0910	Acrylic glazing, 3' x 9' x 8' high		2 Skwk	2	8	Ea.		440		440	665
0920	9' x 12' x 8' high		"	1.50	10.667	"		585		585	885

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.		10,200	3,225	13,425	19,400
0030	16' diam., 45' H			.12	267			15,300	4,850	20,150	29,000
0040	25' diam., 75' H			.08	400			23,000	7,250	30,250	43,600
0050	Steel, factory fabricated, 30,000 gal. cap, painted or epoxy lined		L-5	2	28			1,625	290	1,915	2,850

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 Corp	144	.167	SF Surf		8.85		8.85	13.30
0130	10.5 lb./S.F.			128	.188			9.95		9.95	14.95
0140	Reverb chamber, parallel walls, 4" thick			120	.200			10.65		10.65	15.95
0150	Skewed walls, parallel roof, 4" thick			110	.218			11.60		11.60	17.40
0160	Skewed walls/roof, 4" layer/air space			96	.250			13.30		13.30	19.95
0170	Sound-absorbing panels, painted metal, 2'-6" x 8', under 1,000 S.F.			430	.056			2.97		2.97	4.46
0180	Over 1,000 S.F.			480	.050			2.66		2.66	3.99
0190	Flexible transparent curtain, clear		3 Shee	430	.056			3.48		3.48	5.25
0192	50% clear, 50% foam			430	.056			3.48		3.48	5.25
0194	25% clear, 75% foam			430	.056			3.48		3.48	5.25
0196	100% foam			430	.056			3.48		3.48	5.25
0200	Audio-masking sys., incl. speakers, amplfr., signal grnr.										
0205	Ceiling mounted, 5,000 S.F.		2 Elec	4800	.003	S.F.		.20		.20	.30
0210	10,000 S.F.			5600	.003			.18		.18	.26
0220	Plenum mounted, 5,000 S.F.			7600	.002			.13		.13	.19
0230	10,000 S.F.			8800	.002			.11		.11	.17

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 Corp	200	.160	SF Surf		8.50		8.50	12.80
0110	Over 500 S.F. surface		"	240	.133	"		7.10		7.10	10.65

13 05 Common Work Results for Special Construction

13 05 05 – Selective Demolition for Special Construction

13 05 05.70 Selective Demolition, Special Purpose Rooms			Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
								Labor	Equipment			
0200	Clean rooms, 12' x 12' soft wall, class 100		1 Corp	.30	26.667	Ea.		1,425		1,425	2,125	
0210	Class 1,000			.30	26.667			1,425		1,425	2,125	
0220	Class 10,000			.35	22.857			1,225		1,225	1,825	
0230	Class 100,000			.35	22.857			1,225		1,225	1,825	
0300	Darkrooms, shell complete, 8' high		2 Corp	220	.073	SF Flr.		3.87		3.87	5.80	
0310	12' high			110	.145	"		7.75		7.75	11.60	
0350	Darkrooms doors, mini-cylindrical, revolving			4	4	Ea.		213		213	320	
0400	Music room, practice modular			140	.114	SF Surf		6.05		6.05	9.15	
0500	Refrigeration structures and finishes											
0510	Wall finish, 2 coat Portland cement plaster, 1/2" thick		1 Clad	200	.040	S.F.		1.68		1.68	2.53	
0520	Fiberglass panels, 1/8" thick			400	.020			.84		.84	1.27	
0530	Ceiling finish, polystyrene plastic, 1" to 2" thick			500	.016			.67		.67	1.01	
0540	4" thick			450	.018			.75		.75	1.12	
0550	Refrigerator, prefab aluminum walk-in, 7'-6" high, 6' x 6' OD		2 Corp	100	.160	SF Flr.		8.50		8.50	12.80	
0560	10' x 10' OD			160	.100			5.30		5.30	8	
0570	Over 150 S.F.			200	.080			4.25		4.25	6.40	
0600	Sauna, prefabricated, including heater & controls, 7' high, to 30 S.F.			120	.133			7.10		7.10	10.65	
0610	To 40 S.F.			140	.114			6.05		6.05	9.15	
0620	To 60 S.F.			175	.091			4.86		4.86	7.30	
0630	To 100 S.F.			220	.073			3.87		3.87	5.80	
0640	To 130 S.F.			250	.064			3.40		3.40	5.10	
0650	Steam bath, heater, timer, head, single, to 140 C.F.		1 Plum.	2.20	3.636	Ea.		234		234	350	
0660	To 300 C.F.			2.20	3.636			234		234	350	
0670	Steam bath, comm. size, w/ blow-down assembly, to 800 C.F.			1.80	4.444			286		286	430	
0680	To 2,500 C.F.			1.60	5			320		320	480	
0690	Steam bath, comm. size, multiple, for motels, apts, 500 C.F., 2 baths			2	4			258		258	385	
0700	1,000 C.F., 4 baths			1.40	5.714			370		370	550	

13 05 05.75 Selective Demolition, Storage Tanks

SELECTIVE DEMOLITION, STORAGE TANKS											
0500	Steel tank, single wall, above ground, not incl. fdn., pumps or piping	R024119-10	Q-1	3	5.333	Ea.		310		310	465
0510	Single wall, 275 gallon		B-34P	2	12			680		515	1,195
0520	550 thru 2,000 gallon		B-34Q	2	12			690		570	1,260
0530	5,000 thru 10,000 gallon		B-34S	2	16			955		1,550	2,505
0540	15,000 thru 30,000 gallon		B-34P	2	12	Ea.		680		515	1,195
0600	Steel tank, double wall, above ground not incl. fdn., pumps & piping										
0620	500 thru 2,000 gallon										

13 05 05.85 Selective Demolition, Swimming Pool Equip

SELECTIVE DEMOLITION, SWIMMING POOL EQUIP											
0020	Diving stand, stainless steel, 3 meter		2 Clad	3	5.333	Ea.		225		225	335
0030	1 meter			5	3.200			135		135	202
0040	Diving board, 16' long, aluminum			5.40	2.963			125		125	187
0050	Fiberglass			5.40	2.963			125		125	187
0070	Ladders, heavy duty, stainless steel, 2 tread			14	1.143			48		48	72.50
0080	4 tread			12	1.333			56		56	84.50
0090	Lifeguard chair, stainless steel, fixed			5	3.200			135		135	202
0100	Slide, tubular, fiberglass, aluminum handrails & ladder, 5', straight			4	4			168		168	253
0110	8', curved			6	2.667			112		112	169
0120	10', curved			3	5.333			225		225	335
0130	12' straight, with platform			2.50	6.400			269		269	405
0140	Removable access ramp, stainless steel			4	4			168		168	253
0150	Removable stairs, stainless steel, collapsible			4	4			168		168	253

13 05 Common Work Results for Special Construction

13 05 05 – Selective Demolition for Special Construction

13 05 05.90 Selective Demolition, Tension Structures				Daily Crew	Labor-Output	Hours	Unit	Material	2020 Bare Labor	Costs 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.			.96	.15	1.11	1.61	
0030	12,000 S.F.		2200	.020				.87	.14	1.01	1.46	
0040	80' clear span, 20,800 S.F.		2440	.018				.79	.12	.91	1.32	
0050	100' clear span, 10,000 S.F.	L-5	4350	.013				.75	.13	.88	1.32	
0060	26,000 S.F.		4600	.012				.71	.13	.84	1.24	
0070	36,000 S.F.		5000	.011				.65	.12	.77	1.14	

13 05 05.95 Selective Demo, X-Ray/Radio Freq Protection

13 05 05.95 Selective Demo, X-Ray/Radio Freq Protection				Daily Crew	Labor-Output	Hours	Unit	Material	2020 Bare Labor	Costs 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.		70		70	105	
0030	Lead sheets, 1/16" thick	R024119-10	2 Clab	270	.059	S.F.		2.49		2.49	3.75	
0040	1/8" thick			240	.067			2.81		2.81	4.22	
0050	Lead shielding, 1/4" thick			270	.059			2.49		2.49	3.75	
0060	1/2" thick		↓	240	.067	↓		2.81		2.81	4.22	
0070	Lead glass, 1/4" thick, 2.0 mm LE, 12" x 16"		2 Glaz	16	1	Ea.		51		51	76.50	
0080	24" x 36"			8	2			102		102	153	
0090	36" x 60"			4	4			204		204	305	
0100	Lead glass window frame, with 1/16" lead & voice passage, 36" x 60"			4	4			204		204	305	
0110	Lead glass window frame, 24" x 36"			8	2			102		102	153	
0120	Lead gypsum board, 5/8" thick with 1/16" lead		2 Clab	320	.050	S.F.		2.11		2.11	3.16	
0130	1/8" lead			280	.057			2.41		2.41	3.61	
0140	1/32" lead			400	.040	↓		1.68		1.68	2.53	
0150	Butt joints, 1/8" lead or thicker, 2" x 7' long batten strip			480	.033	Ea.		1.40		1.40	2.11	
0160	X-ray protection, average radiography room, up to 300 S.F., 1/16" lead, min			.50	32	Total		1,350		1,350	2,025	
0170	Maximum			.30	53.333			2,250		2,250	3,375	
0180	Deep therapy X-ray room, 250 kV cap, up to 300 S.F., 1/4" lead, min			.20	80			3,375		3,375	5,050	
0190	Maximum			.12	133	↓		5,625		5,625	8,425	
0880	Radio frequency shielding, prefab or screen-type copper or steel, minimum			360	.044	SF Surf		1.87		1.87	2.81	
0890	Average			310	.052	↓		2.17		2.17	3.26	
0895	Maximum		↓	290	.055	↓		2.32		2.32	3.49	

13 11 Swimming Pools

13 11 13 – Below-Grade Swimming Pools

13 11 13.50 Swimming Pools				Daily Crew	Labor-Output	Hours	Unit	Material	2020 Bare Labor	Costs 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		28.50	9.10	1.95	39.55	47
0100	Metal or polystyrene sides	R131113-20	B-14	410	.117			24	5.20	.52	29.72	35
0200	Add for vermiculite bottom							1.82			1.82	2
0500	Gunite bottom and sides, white plaster finish											
0600	12' x 30' pool		B-52	145	.386	SF Surf		53	18.80	4.03	75.83	91
0720	16' x 32' pool			155	.361	↓		48	17.60	3.77	69.37	83
0750	20' x 40' pool		↓	250	.224	↓		42.50	10.90	2.34	55.74	66
0810	Concrete bottom and sides, tile finish											
0820	12' x 30' pool		B-52	80	.700	SF Surf		53.50	34	7.30	94.80	118
0830	16' x 32' pool			95	.589	↓		44.50	28.50	6.15	79.15	99
0840	20' x 40' pool		↓	130	.431	↓		35.50	21	4.50	61	75.50
1100	Motel, gunite with plaster finish, incl. medium											
1150	capacity filtration & chlorination		B-52	115	.487	SF Surf		65.50	23.50	5.10	94.10	113
1200	Municipal, gunite with plaster finish, incl. high											
1250	capacity filtration & chlorination		B-52	100	.560	SF Surf		84.50	27.50	5.85	117.85	140

13 11 Swimming Pools

13 11 13 - Below-Grade Swimming Pools

13 11 13.50 Swimming Pools		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P	
1350	Add for formed gutters				L.F.	124			124	137	
1360	Add for stainless steel gutters				"	370			370	405	
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	2,150		3,600	4,800	
3100	Rubber base paint, 18 gallons	"	.33	48.485		1,250	2,150		3,400	4,575	
3500	42' x 82' pool, 75 gallons, epoxy paint	3 Pord	.14	171		6,150	7,600		13,750	18,100	
3600	Rubber base paint	"	.14	171		5,150	7,600		12,750	17,000	

13 11 23 - On-Grade Swimming Pools

13 11 23.50 Swimming Pools

0010 SWIMMING POOLS Residential above ground, steel construction		B-80A	3	8	Eq.	895	335	273	1,503	1,800
0100	Round, 15' diam.			2.50	9.600		1,025	405	330	1,760
0120	18' diam.			2	12		1,175	505	410	2,090
0140	21' diam.			1.80	13.333		1,350	560	455	2,365
0160	24' diam.			1.50	16		1,550	675	545	2,770
0180	27' diam.			1	24		1,575	1,000	820	3,395
0200	30' diam.			2.30	10.435		1,700	440	355	2,495
0220	Oval, 12' x 24'			1.80	13.333		1,925	560	455	2,940
0240	15' x 30'			1	24		2,150	1,000	820	3,970
0260	18' x 33'									4,775

13 11 46 - Swimming Pool Accessories

13 11 46.50 Swimming Pool Equipment

0010 SWIMMING POOL EQUIPMENT		2 Corp	.40	40	Eq.	18,000	2,125	1,125	20,125	23,000
0020	Diving stand, stainless steel, 3 meter			2.70	5.926		10,900	315		11,215
0300	1 meter			2.70	5.926		4,275	315		4,590
0600	Diving boards, 16' long, aluminum			2.70	5.926		3,475	315		3,790
0700	Fiberglass			2.70	5.926		3,925	315		4,240
0800	14' long, aluminum			2.70	5.926		3,675	315		3,990
0850	Fiberglass			2.70	5.926		3,050	315		3,425
1100	Bulkhead, movable, PVC, 8'-2" wide	2 Clab	8	2		3,075	84		3,159	3,525
1120	7'-9" wide			8	2		2,975	84		3,059
1140	7'-3" wide			8	2		2,300	84		2,384
1160	6'-9" wide			8	2		2,300	84		2,384
1200	Ladders, heavy duty, stainless steel, 2 tread	2 Corp	7	2.286		960	121		1,081	1,225
1500	4 tread			6	2.667		910	142		1,052
1800	Lifeguard chair, stainless steel, fixed			2.70	5.926		3,150	315		3,465
1900	Portable						3,050			3,050
2100	Lights, underwater, 12 volt, with transformer, 300 watt	1 Elec	1	8		365	490		855	1,125
2200	110 volt, 500 watt, standard			1	8		291	490		781
2400	Low water cutoff type			1	8		310	490		800
2800	Heaters, see Section 23 52 28.10									1,075
3000	Pool covers, reinforced vinyl	3 Clab	1800	.013	S.F.	1.28	.56		1.84	2.25
3050	Automatic, electric								9.15	10.10
3100	Vinyl, for winter, 400 S.F. max pool surface	3 Clab	3200	.008		.23	.32		.55	.72
3200	With water tubes, 400 S.F. max pool surface			"	3000	.008	.34	.34	.68	.88
3250	Sealed air bubble polyethylene solar blanket, 16 mils					.35			.35	.39
3300	Slides, tubular, fiberglass, aluminum handrails & ladder, 5'-0", straight	2 Corp	1.60	10	Eq.	3,850	530		4,380	5,025
3320	8'-0", curved			3	5.333		8,000	283		8,283
3400	10'-0", curved			1	16		23,800	850		24,650
3420	12'-0", straight with platform			1.20	13.333		16,600	710		17,310
										19,300

13 11 Swimming Pools

13 11 46 – Swimming Pool Accessories

13 11 46.50 Swimming Pool Equipment				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
		Crew						Labor			
4500	Hydraulic lift, movable pool bottom, single ram										
4520	Under 1,000 S.F. area	L-9	72	.500	S.F.		195	24		219	251
4600	Four ram lift, over 1,000 S.F.	"	109	.330	"		162	15.80		177.80	202
5000	Removable access ramp, stainless steel	2 Clab	2	8	Ea.		6,375	335		6,710	7,525

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.		435	335		770	985
0200	Commercial, concrete or cast stone, 40-60" H, simple		2	8			955	335		1,290	1,550
0220	Average		2	8			1,850	335		2,185	2,525
0240	Ornate		2	8			4,200	335		4,535	5,125
0260	Metal, 72" high		2	8			1,500	335		1,835	2,150
0280	90" high		2	8			2,250	335		2,585	2,975
0300	120" high		2	8			5,275	335		5,610	6,300
0320	Resin or fiberglass, 40-60" H, wall type		2	8			675	335		1,010	1,250
0340	Waterfall type		2	8			1,150	335		1,485	1,750

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.		425	335		760	970
0120	Tiered type		2	8			490	335		825	1,050
0140	Waterfall type		2	8			315	335		650	850

13 17 Tubs and Pools

13 17 33 – Whirlpool Tubs

13 17 33.10 Whirlpool Bath

0010 WHIRLPOOL BATH												
6000	Whirlpool, bath with vented overflow, molded fiberglass		Q-1	1	16	Ea.		910	930		1,840	2,400
6100	66" x 36" x 24"											

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	591,000		591,000
0700	90° system, 12 mos., 135 ton						"		683,000		751,500
1200	Subsoil heating system (recycled from compressor), 85' x 200'		Q-7	.27	119	Ea.		41,400	7,400		48,800
1300	Subsoil insulation, 2 lb. polystyrene with vapor barrier, 85' x 200'		2 Carp	.14	114	"		30,900	6,075		36,975
											43,100

13 18 Ice Rinks

13 18 16 – Ice Rink Dasher Boards

13 18 16.50 Ice Rink Dasher Boards		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
0010 ICE RINK DASHER BOARDS										
1000	Dasher boards, 1/2" H.D. polyethylene faced steel frame, 3' acrylic	F-5	.06	533	Ea.	144,500	28,600		173,100	202,000
1020	screen at sides, 5' acrylic ends, 85' x 200'	"	.06	533	"	162,000	28,600		190,600	221,000
1100	Fiberglass & aluminum construction, same sides and ends									

13 21 Controlled Environment Rooms

13 21 13 – Clean Rooms

13 21 13.50 Clean Room Components

0010 CLEAN ROOM COMPONENTS		1 Corp	.18	44,444	Ea.	16,500	2,350		18,850	21,700
1100 Clean room, soft wall, 12' x 12', Class 100										
1110 Class 1,000										
1120 Class 10,000										
1130 Class 100,000										
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.					
4000	Ceiling panel seal, silicone sealant, 150 L.F./gal.	1 Corp	150	.053	L.F.	.30	2.83		3.13	4.59
4100	Two sided adhesive tape	"	240	.033	"	.13	1.77		1.90	2.80
4200	Clips, one per panel				Ea.	1			1	1.10
6000	HEPA filter, 2' x 4', 99.97% eff., 3" dp beveled frame (silicone seal)					360			360	395
6040	6" deep skirted frame (channel seal)					500			500	550
6100	99.99% efficient, 3" deep beveled frame (silicone seal)					440			440	485
6140	6" deep skirted frame (channel seal)					485			485	530
6200	99.999% efficient, 3" deep beveled frame (silicone seal)					525			525	580
6240	6" deep skirted frame (channel seal)					565			565	620
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 strut, to 12' high								16.35	16.35

13 21 26 – Cold Storage Rooms

13 21 26.50 Refrigeration

0010 REFRIGERATION		2 Corp	58	.276	L.F.	3.30	14.65		17.95	25.50
0020 Curbs, 12" high, 4" thick, concrete										
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	8.10		8.90	13
2500 For galvanized reinforcing mesh, add		1 Lath	335	.024		.61	1.24		1.85	2.49
2700 3/16" thick latex cement		1 Plas	88	.091		1.50	4.42		5.92	8.25
2900 For glass cloth reinforced ceilings, add		"	450	.018		.64	.86		1.50	1.99
3100 Fiberglass panels, 1/8" thick		1 Carp	149.45	.054		2.08	2.85		4.93	6.55
3200 Polystyrene, plastic finish ceiling, 1" thick						2.84	1.55		4.39	5.45
3400 2" thick						3.19	1.55		4.74	5.85
3500 4" thick						4.05	1.94		5.99	7.40
3800 Floors, concrete, 4" thick		1 Cefi	93	.086		1.67	4.30		5.97	8.15
3900 6" thick		"	85	.094		2.62	4.70		7.32	9.80
4000 Insulation, 1" to 6" thick, cork					B.F.	1.50			1.50	1.65
4100 Urethane						.62			.62	.68
4300 Polystyrene, regular						.62			.62	.68
4400 Bead board						.29			.29	.32
4600 Installation of above, add per layer		2 Corp	657.60	.024	S.F.	.44	1.29		1.73	2.42
4700 Wall and ceiling juncture						298.90	.054	L.F.	1.41	2.85

13 21 Controlled Environment Rooms

13 21 26 – Cold Storage Rooms

		Daily	Labor-	Unit	Material	2020	Bare Costs	Total	Total
		Crew	Output	Hours	S.F.	Labor	Equipment		Incl O&P
13 21 26.50 Refrigeration									
4900	Partitions, galvanized sandwich panels, 4" thick, stock	2 Corp	219.20	.073	"	10.10	3.88	13.98	16.95
5000	Aluminum or fiberglass	↓	219.20	.073	"	6.45	3.86	10.33	12.95
5200	Prefab walk-in, 7'-6" high, aluminum, incl. refrigeration, door & floor	2 Corp	54.80	.292	SF Flr.	105	15.50	120.50	140
5210	not incl. partitions, 6' x 6'	↓	82.20	.195	"	85	10.35	95.35	109
5500	10' x 10'	↓	109.60	.146	"	76	7.75	83.75	95
5700	12' x 14'	↓	109.60	.146	"	115	7.75	122.75	139
5800	12' x 20'	↓	109.60	.146	"	5%			
6100	For 8'-6" high, add	2 Corp	146	.110	"	166	5.80	171.80	192
6300	Rule of thumb for complete units, w/o doors & refrigeration, cooler	2 Corp	109.60	.146	↓	113	7.75	120.75	136
6400	Freezer	↓	360	.044	SF Hor.	8.35	2.36	10.71	12.70
6600	Shelving, plated or galvanized, steel wire type	↓	375	.043	"	17.65	2.27	19.92	23
6700	Slat shelf type	↓	300%						
6900	For stainless steel shelving, add	2 Corp	1644	.010	S.F.	.19	.52	.71	.99
7000	Vapor barrier, on wood walls	↓	1315	.012	"	.33	.65	.98	1.33
7200	On masonry walls	↓							
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.	1,875		1,875	2,050
0700	100 S.F.					1,400		1,400	1,550
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 Corp	98	.327	SF Surf	60	17.35	77.35	92
0100	Over 500 S.F. surface	↓	120	.267	"	58	14.15	72.15	85

13 21 53 – Darkrooms

13 21 53.50 Darkrooms

0010	DARKROOMS								
0020	Shell, complete except for door, 64 S.F., 8' high	2 Corp	128	.125	SF Flr.	54	6.65	60.65	69.50
0100	12' high	↓	64	.250	"	70	13.30	83.30	97
0500	120 S.F. floor, 8' high	↓	120	.133	"	39	7.10	46.10	53.50
0600	12' high	↓	60	.267	"	53	14.15	67.15	80
0800	240 S.F. floor, 8' high	↓	120	.133	"	27.50	7.10	34.60	40.50
0900	12' high	↓	60	.267	↓	39	14.15	53.15	64.50
1200	Mini-cylindrical, revolving, unlined, 4' diameter	↓	3.50	4.571	Ea.	3,125	243	3,368	3,825
1400	5'-6" diameter	↓	2.50	6.400	"	5,050	340	5,390	6,050
1600	Add for lead lining, inner cylinder, 1/32" thick	↓				1,650		1,650	1,825
1700	1/16" thick	↓				4,425		4,425	4,850
1800	Add for lead lining, inner and outer cylinder, 1/32" thick	↓				3,050		3,050	3,350
1900	1/16" thick	↓				6,800		6,800	7,475
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 Corp	70	.229	SF Surf	38	12.15	50.15	60
0100	Over 500 S.F.	↓	80	.200	"	32	10.65	42.65	51

13 24 Special Activity Rooms

13 24 16 – Saunas

13 24 16.50 Saunas and Heaters		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Ind O&P
0010	SAUNAS AND HEATERS									
0020	Prefabricated, incl. heater & controls, 7' high, 6' x 4', C/C	L-7	2.20	12.727	Ea.	5,250	650		5,900	6,750
0050	6' x 4', C/P		2	14		4,325	715		5,040	5,850
0400	6' x 5', C/C		2	14		5,300	715		6,015	6,900
0450	6' x 5', C/P		2	14		5,225	715		5,940	6,825
0600	6' x 6', C/C		1.80	15.556		6,950	795		7,745	8,850
0650	6' x 6', C/P		1.80	15.556		5,525	795		6,320	7,275
0800	6' x 9', C/C		1.60	17.500		7,325	895		8,220	9,400
0850	6' x 9', C/P		1.60	17.500		6,500	895		7,395	8,500
1000	8' x 12', C/C		1.10	25.455		11,500	1,300		12,800	14,700
1050	8' x 12', C/P		1.10	25.455		8,575	1,300		9,875	11,400
1200	8' x 8', C/C		1.40	20		9,600	1,025		10,625	12,100
1250	8' x 8', C/P		1.40	20		7,200	1,025		8,225	9,450
1400	8' x 10', C/C		1.20	23.333		8,925	1,200		10,125	11,600
1450	8' x 10', C/P		1.20	23.333		8,375	1,200		9,575	11,000
1600	10' x 12', C/C		1	28		13,500	1,425		14,925	17,000
1650	10' x 12', C/P		1	28		13,500	1,425		14,925	17,100
1700	Door only, cedar, 2' x 6', w/ 1' x 4' tempered insulated glass window	2 Corp	3.40	4.706		610	250		860	1,050
1800	Prehung, incl. jambs, pulls & hardware	"	12	1.333		620	71		691	790
2500	Heaters only (incl. above), wall mounted, to 200 C.F.					1,025			1,025	1,125
2750	To 300 C.F.					1,150			1,150	1,250
3000	Floor standing, to 720 C.F., 10,000 watts, w/controls	1 Elec	3	2.667		2,575	164		2,739	3,100
3250	To 1,000 C.F., 16,000 watts	"	3	2.667		3,725	164		3,889	4,350

13 24 26 – Steam Baths

13 24 26.50 Steam Baths and Components

13 24 26.50 Steam Baths and Components		1 Plum	1.20	6.667	Ea.	2,350	430		2,780	3,250
0010	STEAM BATHS AND COMPONENTS									
0020	Heater, timer & head, single, to 140 C.F.									
0500	To 300 C.F.									
1000	Commercial size, with blow-down assembly, to 800 C.F.		.90	8.889		5,800	575		6,375	7,250
1500	To 2,500 C.F.		.80	10		8,200	645		8,845	10,000
2000	Multiple, motels, apts., 2 baths, w/blow-down assm., 500 C.F.	Q-1	1.30	12.308		6,650	715		7,365	8,400
2500	4 baths	"	.70	22.857		10,500	1,325		11,825	13,500
2700	Conversion unit for residential tub, including door					4,050			4,050	4,450

13 28 Athletic and Recreational Special Construction

13 28 33 – Athletic and Recreational Court Walls

13 28 33.50 Sport Court

13 28 33.50 Sport Court		SF Flr.	Court							
0010	SPORT COURT									
0020	Sport court floors, no. 2 & better maple, 25/32" thick, see 09 64-66.10									
0300	Squash, regulation court in existing building, minimum									
0400	Maximum		"	46,600					46,600	51,500
0450	Rule of thumb for components:									
0470	Walls	3 Corp	.15	160	Court	12,700	8,500		21,200	26,800
0500	Floor	"	.25	96		10,000	5,100		15,100	18,700
0550	Lighting	2 Elec	.60	26.667		2,400	1,625		4,025	5,050
0600	Handball, racquetball court in existing building, minimum	G-1	.20	160		45,800	8,050		53,850	62,500
0800	Maximum	"	.10	320		49,000	16,100		65,100	78,000
0900	Rule of thumb for components: walls	3 Corp	.12	200		14,300	10,600		24,900	31,800
1000	Floor	"	.25	96		10,000	5,100		15,100	18,700
1100	Ceiling	▼	.33	72.727		4,775	3,875		8,650	11,100

13 28 Athletic and Recreational Special Construction

13 28 33 – Athletic and Recreational Court Walls

13 28 33.50 Sport Court		Daily Crew	Labor-Output	Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
1200	Lighting	2 Elec	.60	26.667	Court	2,550	1,625		4,175	5,225

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.	12.70	.38		13.08	14.55
0300	100' diameter		5000	.008		11.55	.34		11.89	13.20
0400	150' diameter		5000	.008		9.15	.34		9.49	10.55
0500	Rectangular, 20' x 20'		4500	.009		24.50	.38		24.88	27.50
0600	30' x 40'		4500	.009		24.50	.38		24.88	27.50
0700	50' x 60'		4500	.009		24.50	.38		24.88	27.50
0800	For single wall construction, deduct, minimum					.86			.86	.95
0900	Maximum					2.48			2.48	2.73
1000	For maximum resistance to atmosphere or cold, add					1.24			1.24	1.36
1100	For average shipping charges, add				Total	2,125			2,125	2,350

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.	1.25	.76	.40	2.41	2.96
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,									
0070	airlock, personnel doors and liner									
0100	5,000 S.F.	4 Clab	5000	.006	SF Flr.	29.50	.27		29.77	33
0250	12,000 S.F.	"	6000	.005		20	.22		20.22	22.50
0400	24,000 S.F.	8 Clab	12000	.005		15	.22		15.22	16.85
0500	50,000 S.F.	"	12500	.005		13.20	.22		13.42	14.80
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.	13.75	.45		14.20	15.80
0800	12,000 S.F.	"	6000	.005		11.70	.22		11.92	13.25
0850	24,000 S.F.	8 Clab	12000	.005		9.90	.22		10.12	11.25
0950	Deduct for single layer					1.12			1.12	1.23
1000	Add for welded seams					1.56			1.56	1.72
1050	Add for double layer, welded seams included				Total	3.13			3.13	3.44
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.	26	.45		26.45	29
1450	12,000 S.F.	"	6000	.005		17.50	.22		17.72	19.60
1550	24,000 S.F.	8 Clab	12000	.005		14.05	.22		14.27	15.80
1700	Deduct for single layer					2.08			2.08	2.29
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.	16.80	.45		17.25	19.15
2350	12,000 S.F.	"	6000	.005		14.70	.22		14.92	16.50
2450	24,000 S.F.	8 Clab	12000	.005		12.60	.22		12.82	14.20
2550	Deduct for single layer					1.03			1.03	1.13
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.	24	.22		24.22	26.50

13 31 Fabric Structures

13 31 13 – Air-Supported Fabric Structures

		Daily Output	Labor Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
		Crew			Labor	Equipment			
13 31 13.13 Single-Walled Air-Supported Structures									
2750	13,000 S.F.	4 Clab	6500	.005	SF Flr.	19	.21	19.21	21.50
2850	Over 24,000 S.F.	8 Clab	12000	.005		17.35	.22	17.57	19.45
2860	For low temperature conditions, add					1.23		1.23	1.35
2870	For average shipping charges, add				Total	5,825		5,825	6,425
2900	Thermal liner, translucent reinforced vinyl				SF Flr.	1.23		1.23	1.35
2950	Metalized mylar fabric and mesh, double liner				"	2.47		2.47	2.72
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.	60.50	.12	60.62	66.50
3110	Maximum	"	19000	.004	"	74.50	.16	74.66	82
3400	Doors, air lock, 15' long, 10' x 10'	2 Corp	.80	.20	Ea.	21,600	1,075	22,675	25,400
3600	15' x 15'	"	.50	.32		33,200	1,700	34,900	39,100
3700	For each added 5' length, add					5,925		5,925	6,525
3900	Revolving personnel door, 6' diameter, 6'-6" high	2 Corp	.80	.20		16,600	1,075	17,675	19,800

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.	17.10	1.92	.30	19.32
0300	12,000 S.F.	"	1100	.040		19.35	1.75	.27	21.37
0400	80' to 99' clear span, 20,800 S.F.	"	1220	.036		18.60	1.57	.25	20.42
0410	100' to 119' clear span, 10,000 S.F.	L-5	2175	.026		16.80	1.50	.27	18.57
0430	26,000 S.F.	"	2300	.024		17.20	1.42	.25	18.87
0450	36,000 S.F.	"	2500	.022		17.25	1.30	.23	18.78
0460	120' to 149' clear span, 24,000 S.F.	"	3000	.019		17.05	1.09	.19	18.33
0470	150' to 199' clear span, 30,000 S.F.	"	6000	.009		19.75	.54	.10	20.39
0480	200' clear span, 40,000 S.F.	E-6	8000	.016		25	.92	.27	26.19
0500	For roll-up door, 12' x 14', odd	L-2	1	.16	Ea.	6,925	745		7,670
									8,750

13 33 Geodesic Structures

13 33 13 – Geodesic Domes

13 33 13.35 Geodesic Domes		R133423-30							
0400	30' diameter	F-5	1.60	20	Ea.	27,000	1,075	28,075	31,300
0500	33' diameter	"	1.14	28.070		26,700	1,500	28,200	31,700
0600	40' diameter	"	1	32		30,500	1,725	32,225	36,100
0700	45' diameter	F-3	1.13	35.556		32,100	1,925	420	34,445
0750	56' diameter	"	1	40		58,500	2,175	470	61,145
0800	60' diameter	"	1	40		61,000	2,175	470	63,645
0850	67' diameter	"	80	50		94,000	2,725	590	97,315
1100	Aluminum panel, with 6" insulation								
1200	100' diameter				SF Flr.	25		25	27.50
1300	500' diameter				"	24.50		24.50	27
1600	Aluminum framed, plexiglass closure panels								
1700	40' diameter				SF Flr.	61.50		61.50	67.50
1800	200' diameter				"	58		58	63.50
2100	Aluminum framed, aluminum closure panels								
2200	40' diameter				SF Flr.	20		20	22
2300	100' diameter				"	24		24	26.50
2400	200' diameter				"	20.50		20.50	22.50

13 33 Geodesic Structures

13 33 13 – Geodesic Domes

13 33 13.35 Geodesic Domes				Daily Crew	Labor-Output	Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
2700	Aluminum framed, fiberglass sandwich panel closure											
2800	6' diameter	2 Corp	150	.107	SF Flr.			27	5.65		32.65	38.50
2900	28' diameter	"	350	.046	"			25	2.43		27.43	30.50

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 Corp	59	.271	SF Flr.			24	14.40		38.40	47.50
0400	10'-6" wide	"	85	.188				42.50	10		52.50	62
0600	13'-6" wide	"	108	.148				45	7.85		52.85	61.50
0700	17'-0" wide	"	160	.100				43.50	5.30		48.80	55.50
0900	Lean-to type, 3'-10" wide	"	34	.471				43.50	25		68.50	85
1000	6'-10" wide	"	58	.276				28	14.65		42.65	53
1500	Commercial, custom, truss frame, incl. equip., plumbing, elec., benches and controls, under 2,000 S.F.											
1550	benches and controls, under 2,000 S.F.							SF Flr.	13.50		13.50	14.85
1700	Over 5,000 S.F.							"	11.95		11.95	13.15
2000	Institutional, custom, rigid frame, including compartments and multi-controls, under 500 S.F.							SF Flr.	29.50		29.50	32.50
2150	Over 2,000 S.F.							"	10.50		10.50	11.55
3700	For 1/4" tempered glass, add							SF Surf	1.75		1.75	1.93
3900	Cooling, 1,200 CFM exhaust fan, add							Ea.	325		325	355
4000	7,850 CFM								1,025		1,025	1,150
4200	For heaters, 10 MBH, add								246		246	270
4300	60 MBH, add								845		845	925
4500	For benches, 2' x 8', add								188		188	207
4600	4' x 10', add								227		227	249
4800	For ventilation & humidity control w/4 integrated outlets, add							Total	273		273	300
4900	For environmental controls and automation, 8 outputs, 9 stages, add							"	1,200		1,200	1,325
5100	For humidification equipment, add							Ea.	325		325	355
5200	For vinyl shading, add							S.F.	.44		.44	.48
6000	Geodesic hemisphere, 1/8" plexiglass glazing											
6050	8' diameter	2 Corp	200	.080	Ea.	5,950		425			6,375	7,200
6150	24' diameter	"	70	.229				16,000	2,425		18,425	21,300
6250	48' diameter	"	.35	45.714				34,700	4,250		38,950	44,600

13 34 13.19 Swimming Pool Enclosures

0010	SWIMMING POOL ENCLOSURES Translucent, free standing											
0020	not including foundations, heat or light											
0200	Economy	2 Corp	200	.080	SF Hor.			46.50	4.25		50.75	57.50
0600	Deluxe	"	70	.229				103	12.15		115.15	131
0700	For motorized roof, 40% opening, solid roof, add							23			23	25.50
0800	Skylight type roof, add							12.95			12.95	14.25

13 34 16 – Grandstands and Bleachers

13 34 16.13 Grandstands

0010	GRANDSTANDS Permanent, municipal, including foundation											
0300	Steel, economy							Seat	27		27	30
0400	Steel, deluxe	2 Corp	200	.080	SF Hor.				30.50		30.50	34
0900	Composite, steel, wood and plastic, stock design, economy							38			38	42
1000	Deluxe	"	70	.229				91.50			91.50	101

13 34 Fabricated Engineered Structures

13 34 16 – Grandstands and Bleachers

13 34 16.53 Bleachers		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
0010	BLEACHERS										
0020	Bleachers, outdoor, portable, 5 tiers, 42 seats	2 Sswk	120	.133	Seat	71.50	7.70			79.20	90.50
0100	5 tiers, 54 seats		80	.200		70	11.55			81.55	95
0200	10 tiers, 104 seats		120	.133		87.50	7.70			95.20	108
0300	10 tiers, 144 seats		80	.200		64.50	11.55			76.05	89
0500	Permanent bleachers, aluminum seat, steel frame, 24" row	2 Sswk	60	.267	Seat	74	15.35			89.35	105
0600	8 tiers, 80 seats		48	.333		66.50	19.20			85.70	104
0700	8 tiers, 160 seats		60	.267		74	15.35			89.35	105
0925	15 tiers, 154 to 165 seats		60	.267		66	15.35			81.35	96.50
0975	15 tiers, 214 to 225 seats		60	.267		68.50	15.35			83.85	99
1050	15 tiers, 274 to 285 seats		160	.100		25	5.75			30.75	36.50
1200	Seat backs only, 30" row, fiberglass		160	.100		29	5.75			34.75	41
1300	Steel and wood										
1400	NOTE: average seating is 1.5' in width										

13 34 19 – Metal Building Systems

13 34 19.50 Pre-Engineered Steel Buildings

13 34 19.50 Pre-Engineered Steel Buildings		R133419-10									
0100	Clear span rigid frame, 26 ga. colored roofing and siding	E2	425	.132	SF Flr.	9.50	7.55	3.99		21.04	26.50
0150	20' to 29' wide, 10' eave height		350	.160		10.25	9.15	4.85		24.25	31
0160	14' eave height		320	.175		10.85	10	5.30		26.15	33.50
0170	16' eave height		275	.204		11.95	11.65	6.15		29.75	38
0180	20' eave height		240	.233		13.30	13.35	7.05		33.70	43
0190	24' eave height		535	.105		7	6	3.17		16.17	20.50
0200	30' to 49' wide, 10' eave height		450	.124		7.55	7.10	3.77		18.42	23.50
0300	14' eave height		415	.135		8.05	7.70	4.09		19.84	25.50
0400	16' eave height		360	.156		8.70	8.90	4.71		22.31	28.50
0500	20' eave height		320	.175		9.60	10	5.30		24.90	32
0600	24' eave height		770	.073		5.95	4.16	2.20		12.31	15.35
0700	50' to 100' wide, 10' eave height		600	.093		6.85	5.35	2.83		15.03	18.85
0900	16' eave height		490	.114		7.40	6.55	3.46		17.41	22
1100	24' eave height		435	.129		8.15	7.35	3.90		19.40	24.50
1200	Clear span tapered beam frame, 26 ga. colored roofing/siding	E2	535	.105	SF Flr.	7.90	6	3.17		17.07	21.50
1300	30' to 39' wide, 10' eave height		450	.124		8.75	7.10	3.77		19.62	25
1400	14' eave height		415	.135		9.15	7.70	4.09		20.94	26.50
1500	16' eave height		360	.156		10.15	8.90	4.71		23.76	30
1600	20' eave height		600	.093		7.05	5.35	2.83		15.23	19.10
1700	40' wide, 10' eave height		510	.110		7.80	6.25	3.33		17.38	22
1800	14' eave height		475	.118		8.15	6.75	3.57		18.47	23.50
1900	16' eave height		415	.135		8.95	7.70	4.09		20.74	26.50
2000	20' eave height		675	.083		6.55	4.16	2.20		12.91	16.10
2100	50' to 79' wide, 10' eave height		635	.088		7.10	4.74	2.51		14.35	17.95
2200	14' eave height		490	.114		7.40	5.05	2.67		15.12	18.90
2300	16' eave height		935	.060		8.70	6.55	3.46		18.71	23.50
2400	20' eave height		750	.075		5.85	3.42	1.81		11.08	13.70
2410	80' to 100' wide, 10' eave height		685	.082		6.40	4.27	2.26		12.93	16.15
2420	14' eave height		560	.100		6.70	4.67	2.48		13.85	17.35
2430	16' eave height		950	.059		5.35	3.37	1.79		10.51	13.05
2440	20' eave height		770	.073		5.95	4.16	2.20		12.31	15.40
2460	101' to 120' wide, 10' eave height		675	.083		6.30	4.74	2.51		13.55	17.05
2470	14' eave height										
2480	16' eave height										

13 34 Fabricated Engineered Structures

13 34 19 – Metal Building Systems

13 34 19.50 Pre-Engineered Steel Buildings		Daily Output	Labor-Hours	Unit	2020 Bare Costs				Total	Total Incl O&P
					Material	Labor	Equipment	Total		
2490	20' eave height	E2	.560	.100	SF Flr.	6.75	5.70	3.03	15.48	19.65
2500	Single post 2-span frame, 26 ga. colored roofing and siding	E2	.740	.076	SF Flr.	5.90	4.32	2.29	12.51	15.70
2600	80' wide, 14' eave height	E2	.695	.081		6.30	4.60	2.44	13.34	16.80
2700	16' eave height									
2800	20' eave height									
2900	24' eave height									
3000	100' wide, 14' eave height									
3100	16' eave height									
3200	20' eave height									
3300	24' eave height									
3400	120' wide, 14' eave height									
3500	16' eave height									
3600	20' eave height									
3700	24' eave height									
3800	Double post 3-span frame, 26 ga. colored roofing and siding	E2	.925	.061	SF Flr.	4.71	3.46	1.83	10	12.55
3900	150' wide, 14' eave height	E2	.890	.063		4.90	3.60	1.91	10.41	13.05
4000	16' eave height									
4100	20' eave height									
4200	24' eave height									
4300	Triple post 4-span frame, 26 ga. colored roofing and siding	E2	.970	.058	SF Flr.	4.58	3.30	1.75	9.63	12.05
4400	160' wide, 14' eave height	E2	.930	.060		4.81	3.44	1.82	10.07	12.65
4500	16' eave height									
4600	20' eave height									
4700	24' eave height									
4800	200' wide, 14' eave height									
4900	16' eave height									
5000	20' eave height									
5100	24' eave height									
5200	Accessory items: add to the basic building cost above									
5250	Eave overhang, 2' wide, 26 ga., with soffit	E2	.360	.156	L.F.	36	8.90	4.71	49.61	59
5300	4' wide, without soffit		.300	.187		32	10.65	5.65	48.30	58
5350	With soffit									
5400	6' wide, without soffit									
5450	With soffit									
5500	Entrance canopy, incl. frame, 4' x 4'									
5550	25 2.240 Ea. 550 128 68 746 880									
5550	4' x 8'									
5600	End wall roof overhang, 4' wide, without soffit									
5650	850 .066 L.F. 18.25 3.76 2 24.01 28									
5650	With soffit									
5700	Doors, HM self-framing, incl. butts, lockset and trim									
5750	Single leaf, 3070 (3' x 7'), economy	2 Sswk	5	3.200	Opng.	730	184		914	1,100
5800	Deluxe		4	4		735	231		966	1,175
5825	Glazed		4	4		815	231		1,046	1,250
5850	3670 (3'-6" x 7')		4	4		910	231		1,141	1,350
5900	4070 (4' x 7')		3	5.333		1,175	305		1,480	1,775
5950	Double leaf, 6070 (6' x 7')		2	8		1,375	460		1,835	2,250
6000	Glazed		2	8		1,550	460		2,010	2,450
6050	Framing only, for openings, 3' x 7'		4	4		200	231		431	580
6100	10' x 10'		3	5.333		660	305		965	1,200
6150	For windows below, 2020 (2' x 2')		6	2.667		212	154		366	475
6200	4030 (4' x 3')		5	3.200		259	184		443	575
6250	Flashings, 26 ga., corner or eave, painted		240	.067	L.F.	4.72	3.84		8.56	11.25
6300	Galvanized		240	.067		4.59	3.84		8.43	11.10
6350	Rake flashing, painted		240	.067		5.10	3.84		8.94	11.70

13 34 Fabricated Engineered Structures

13 34 19 – Metal Building Systems

			Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Ind O&P
						Material	Labor	Equipment		
13 34 19.50 Pre-Engineered Steel Buildings										
6400	Galvanized		2 Sswk	240	.067 L.F.	4.91	3.84		8.75	11.45
6450	Ridge flashing, 18" wide, painted			240	.067	6.80	3.84		10.64	13.55
6500	Galvanized			240	.067	7.65	3.84		11.49	14.50
6550	Gutter, eave type, 26 ga., painted			320	.050	8.05	2.88		10.93	13.35
6650	Valley type, between buildings, painted			120	.133	14.95	7.70		22.65	28.50
6710	Insulation, rated .6 lb. density, unfaced 4" thick, R13		2 Corp	2300	.007 S.F.	.49	.37		.86	1.10
6720	6" thick, R19			2300	.007	.64	.37		1.01	1.26
6730	10" thick, R30			2300	.007	1.22	.37		1.59	1.90
6750	Insulation, rated .6 lb. density, poly/scrim/foil (PSF) faced									
6760	4" thick, R13		2 Corp	2300	.007 S.F.	.70	.37		1.07	1.33
6770	6" thick, R19			2300	.007	.93	.37		1.30	1.58
6780	9-1/2" thick, R30			2300	.007	1.03	.37		1.40	1.69
6800	Insulation, rated .6 lb. density, vinyl faced 1-1/2" thick, R5			2300	.007	.41	.37		.78	1.01
6850	3" thick, R10			2300	.007	.40	.37		.77	1
6900	4" thick, R13			2300	.007	.43	.37		.80	1.03
6920	6" thick, R19			2300	.007	.60	.37		.97	1.22
6930	10" thick, R30			2300	.007	1.80	.37		2.17	2.54
6950	Foil/scrim/kraft (FSK) faced, 1-1/2" thick, R5			2300	.007	.44	.37		.81	1.04
7000	2" thick, R6			2300	.007	.56	.37		.93	1.18
7050	3" thick, R10			2300	.007	.54	.37		.91	1.15
7100	4" thick, R13			2300	.007	.49	.37		.86	1.10
7110	6" thick, R19			2300	.007	.67	.37		1.04	1.30
7120	10" thick, R30			2300	.007	.93	.37		1.30	1.58
7150	Metalized polyester/scrim/kraft (PSK) facing, 1-1/2" thk, R5			2300	.007	.68	.37		1.05	1.31
7200	2" thick, R6			2300	.007	.81	.37		1.18	1.45
7250	3" thick, R11			2300	.007	1.02	.37		1.39	1.68
7300	4" thick, R13			2300	.007	1.03	.37		1.40	1.69
7310	6" thick, R19			2300	.007	1.28	.37		1.65	1.97
7320	10" thick, R30			2300	.007	1.45	.37		1.82	2.16
7350	Vinyl/scrim/foil (VSF), 1-1/2" thick, R5			2300	.007	.59	.37		.96	1.21
7400	2" thick, R6			2300	.007	.78	.37		1.15	1.42
7450	3" thick, R10			2300	.007	.80	.37		1.17	1.44
7500	4" thick, R13			2300	.007	1.03	.37		1.40	1.69
7510	Vinyl/scrim/vinyl (VSV), 4" thick, R13			2300	.007	.57	.37		.94	1.19
7520	6" thick, R19			2300	.007	.71	.37		1.08	1.34
7530	9-1/2" thick, R30			2300	.007	.95	.37		1.32	1.61
7540	Polyprop/scrim/polyester (PSP), 4" thick, R13			2300	.007	.66	.37		1.03	1.29
7550	6" thick, R19			2300	.007	.88	.37		1.25	1.53
7555	10" thick, R30			2300	.007	1.52	.37		1.89	2.23
7560	Polyprop/scrim/kraft/polyester (PSKP), 4" thick, R13			2300	.007	.75	.37		1.12	1.39
7570	6" thick, R19			2300	.007	.96	.37		1.33	1.62
7580	10" thick, R19			2300	.007	1.75	.37		2.12	2.49
7585	Vinyl/scrim/polyester (VSP), 4" thick, R13			2300	.007	.63	.37		1	1.25
7590	6" thick, R19			2300	.007	.84	.37		1.21	1.48
7600	10" thick, R30			2300	.007	1.31	.37		1.68	2
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.	163	62	6.70	231.70	282
7700	3030 (3' x 3')		14	1.714		365	97	10.50	472.50	565
7750	4030 (4' x 3')		13	1.846		490	105	11.30	606.30	710
7800	6040 (6' x 4')		12	2		975	113	12.25	1,100.25	1,275
7850	Double slide sash, 3030 (3' x 3')		14	1.714		237	97	10.50	344.50	425
7900	6040 (6' x 4')		12	2		635	113	12.25	760.25	885

13 34 Fabricated Engineered Structures

13 34 19 – Metal Building Systems

13 34 19.50 Pre-Engineered Steel Buildings		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
							Labor	Equipment	Total		
7950	Fixed glass, no screens, 3030 (3' x 3')	E-1	14	1,714	Opng.	221	97	10.50	328.50	405	
8000	6040 (6' x 4')		12	2		590	113	12.25	715.25	840	
8050	Prefinished storm sash, 3030 (3' x 3')		70	.343		86.50	19.40	2.10	108	127	
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.	140	136	14.70	290.70	380	
8250	Larger sizes, add for excess over 30 S.F.	"	300	.080	S.F.	4.68	4.53	.49	9.70	12.70	
8300	Roof vents, turbine ventilator, wind driven										
8350	No damper, includes base, galvanized										
8400	12" diameter	Q-9	10	1,600	Ea.	73	89.50		162.50	216	
8450	20" diameter		8	2		209	112		321	400	
8500	24" diameter		8	2		320	112		432	525	
8600	Continuous, 26 ga., 10' long, 9" wide	2 Swk	4	4		38	231		269	400	
8650	12" wide	"	4	4		38	231		269	400	

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										
0350	7 unit										
0400	Permanent, including concrete slab, 2 unit	B-12J	50	.320		251	16.20	16.95	284.15	320	
0500	6 unit	"	43	.372		201	18.85	19.70	239.55	271	
0600	Alternate pricing method, mobile, 2 fixture				Fixture	6,675			6,675	7,350	
0650	7 fixture					11,600			11,600	12,800	
0700	Permanent, 2 unit	B-12J	70	22.857		20,700	1,150	1,200	23,050	25,900	
0750	6 unit	"	50	.32		17,800	1,625	1,700	21,125	23,900	

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.	34	5.80	3.08	42.88	49.50	
1700	400' diameter		720	.078		27.50	4.44	2.36	34.30	40	
1800	Wood framing, wood decking, to 400' diameter	F-4	400	.120		35	6.45	2.45	43.90	51	
1900	Radial framed wood (2" x 6"), 1/2" thick										
2000	plywood, asphalt shingles, 50' diameter	F-3	2000	.020	SF Flr.	69.50	1.09	.24	70.83	78.50	
2100	60' diameter		1900	.021		59.50	1.14	.25	60.89	67.50	
2200	72' diameter		1800	.022		49.50	1.21	.26	50.97	56.50	
2300	116' diameter		1730	.023		33.50	1.26	.27	35.03	39	
2400	150' diameter		1500	.027		36	1.45	.31	37.76	42.50	

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.	54,500	1,400	470	56,370	62,500	
0120	8' x 8', Level IV		1	24	"	72,000	1,400	470	73,870	81,500	

13 34 23.25 Garage Costs

0010	GARAGE COSTS										
0020	Public parking, average										
0300	Residential, wood, 12' x 20', one car prefabricated shell, stock, economy	2 Corp	1	16	Total	6,350	850		7,200	8,275	
0350	Custom		.67	23.881		7,125	1,275		8,400	9,725	
0400	Two car, 24' x 20', economy		.67	[23.881]		12,900	1,275		14,175	16,100	
0450	Custom		.50	32		14,100	1,700		15,800	18,100	

13 34 Fabricated Engineered Structures

13 34 23 – Fabricated Structures

		Daily Crew	Labor-Output	Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
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.	52.50	4.25		56.75	64.50
0300	8' x 12'	"	48	.333	"	30	17.70		47.70	59.50

13 34 23.45 Kiosks

0010	KIOSKS									
0020	Round, advertising type, 5' diameter, 7' high, aluminum wall, illuminated					Ea.	23,500		23,500	25,900
0100	Aluminum wall, non-illuminated						22,500		22,500	24,800
0500	Rectangular, 5' x 9', 7'-6" high, aluminum wall, illuminated						25,500		25,500	28,100
0600	Aluminum wall, non-illuminated						23,800		23,800	26,200

13 34 23.60 Portable Booths

0010	PORTABLE BOOTHS	Prefab. aluminum with doors, windows, ext. roof lights wiring & insulation, 15 S.F. building, OD, painted				S.F.	282		282	310
0100		30 S.F. building					259		259	285
0400		50 S.F. building					189		189	208
0600		80 S.F. building					161		161	177
0700		100 S.F. building					147		147	162
0900		Acoustical booth, 27 Db @ 1,000 Hz, 15 S.F. floor				Ea.	4,250		4,250	4,700
1000		7' x 7'-6", including light & ventilation					8,775		8,775	9,650
1200		Ticket booth, galv. steel, not incl. foundations., 4' x 4'					5,275		5,275	5,800
1300		4' x 6'					8,200		8,200	9,025

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.	3,450	810	4,260	5,075
0100	9' x 12' x 8' high			.73	21.918		7,575	1,275	8,850	10,300
1000	Gable end shelter, 16' x 32', 8' eave ht, excl. footings, slab, anchors			.68	23.529		13,300	1,350	14,650	16,700
1050	Gable end shelter, 30' x 64', 8' eave ht, excl. footings, slab, anchors			.34	47.059		41,300	2,725	44,025	49,700

13 34 43 – Aircraft Hangars

0010	HANGARS	Prefabricated steel T hangars, galv. steel roof & walls, incl. electric bi-folding doors								
0110		not including floors or foundations, 4 unit				E-2	1275	.044	SF Flr.	14.85
0130		8 unit					1063	.053		13.05
0900		With bottom rolling doors, 4 unit					1386	.040		13.75
1000		8 unit					966	.058		11.50
1200	Alternate pricing method:									
1300		Galv. roof and walls, electric bi-folding doors, 4 plane				E-2	1.06	52.830	Plane	19,600
1500		8 plane					.91	61.538		13,900
1600		With bottom rolling doors, 4 plane					1.25	44.800		19,200
1800		8 plane					.97	57.732		14,300
2000		Circular type, prefab., steel frame, plastic skin, electric door, including foundations, 80' diameter								
2010										

13 34 53 – Agricultural Structures

0010	SILOS									
0500	Steel, factory fab., 30,000 gallon cap., painted, economy		L-5	1	56	Ea.	26,300	3,250	580	30,130
0700	Deluxe			.50	112		41,800	6,525	1,150	49,475
0800	Epoxy lined, economy						43,000	3,250	580	46,830
1000	Deluxe						54,500	6,525	1,150	62,175

13 34 Fabricated Engineered Structures

13 34 56 – Observatories

13 34 56.15 Domes		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Ind O&P
0010 DOMES										
0020 Domes, rev. alum., elec. drive, for astronomy obsv. shell only, stock units										
0600 10'-6" diameter		2 Corp	.25	64	Ea.	47,000	3,400		50,400	56,500
0900 18'-6" diameter			.17	94.118		78,000	5,000		83,000	93,500
1200 24'-6" diameter						134,000	10,600		144,600	163,500

13 34 63 – Natural Fiber Construction

13 34 63.50 Straw Bale Construction

0010 STRAW BALE CONSTRUCTION		G	2 Corp	320	.050	S.F.	6.85	2.66	9.51	11.55
2020 Straw bales in walls w/modified post and beam frame										

13 36 Towers

13 36 13 – Metal Towers

13 36 13.50 Control Towers

0010 CONTROL TOWERS		Ea.	810,500	"	1,250,500	Ea.	810,500	"	1,250,500	891,500
0020 Modular 12' x 10', incl. instruments										
0500 With standard 40' tower										
1000 Temporary portable control towers, 8' x 12',										

13 42 Building Modules

13 42 63 – Detention Cell Modules

13 42 63.16 Steel Detention Cell Modules

0010 STEEL DETENTION CELL MODULES		E4	1.50	21.333	Ea.	9,650	1,250	98	10,998	12,700
2000 Cells, prefab., 5' to 6' wide, 7' to 8' high, 7' to 8' deep,										
2010 bar front, cot, not incl. plumbing										

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		R-15	18.50	2.595	Ea.	38.50	156	15.05	209.55	291
1000 Anodes, magnesium type, 9 #										
1010 17 #			13	3.692		81.50	222	21.50	325	445
1020 32 #			10	4.800		123	288	28	439	595
1030 48 #						160	400	38.50	598.50	815
1100 Graphite type w/epoxy cap, 3" x 60" (32 #)		R-22	8.40	4.438		148	249		397	535
1110 4" x 80" (68 #)			6	6.213		246	350		596	790
1120 6" x 72" (80 #)			5.20	7.169		1,525	405		1,930	2,275
1130 6" x 36" (45 #)						770	218		988	1,175
2000 Rectifiers, silicon type, air cooled, 28 V/10 A		R-19	3.50	5.714		2,325	350		2,675	3,075
2010 20 V/20 A						3,225	350		2,675	3,100
2100 Oil immersed, 28 V/10 A			3	6.667		2,875	410		3,285	3,775
2110 20 V/20 A						410			3,660	4,175
3000 Anode backfill, coke breeze		R-22	3850	.010	Lb.	.30	.54		.84	1.14
4000 Cable, HMWPE, No. 8			2.40	15.533	M.L.F.	605	870		1,475	1,975
4010 No. 6			2.40	15.533		820	870		1,690	2,200
4020 No. 4			2.40	15.533		1,225	870		2,095	2,650
4030 No. 2			2.40	15.533		1,900	870		2,770	3,400

13 47 Facility Protection

13 47 13 – Cathodic Protection

				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
		Crew						Labor	Equipment			
13 47 13.16	Cathodic Prot. for Underground Storage Tanks	R-22	2.20	16.945	M.L.F.		2,575	950		3,525	4,275	
4040	No. 1											
4050	No. 1/0		2.20	16.945			3,350	950		4,300	5,100	
4060	No. 2/0			2.20	[16.945]		5,250	950		6,200	7,200	
4070	No. 4/0		2	18.640			7,225	1,050		8,275	9,500	
5000	Test station, 7 terminal box, flush curb type w/lockable cover	R-19	12	1.667	Ea.		79.50	102		181.50	241	
5010	Reference cell, 2" diam. PVC conduit, cplg., plug, set flush	"	4.80	4.167	"		158	256		414	555	

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	3 Corp	72	.333	SF Surf		31.50	17.70		49.20	61
0020	8 lb./S.F., up to 12' span										
0300	Better quality panels, 10.5 #/S.F.		64	.375			36	19.95		55.95	69.50
0400	Reverb-chamber, 4" thick, parallel walls		60	.400			44.50	21.50		66	81
0600	Skewed wall, parallel roof, 4" thick panels		55	.436			51	23		74	91
0700	Skewed walls, skewed roof, 4" layers, 4" air space		48	.500			57.50	26.50		84	103
0900	Sound-absorbing panels, pntd. mtl., 2'-6" x 8', under 1,000 S.F.		215	.112			11.90	5.95		17.85	22
1100	Over 1,000 S.F.		240	.100			11.45	5.30		16.75	20.50
1200	Fabric faced		240	.100			9.25	5.30		14.55	18.20
1500	Flexible transparent curtain, clear	3 Shee	215	.112			7.15	6.95		14.10	18.45
1600	50% foam		215	.112			10	6.95		16.95	21.50
1700	75% foam		215	.112			10	6.95		16.95	21.50
1800	100% foam		215	.112			10	6.95		16.95	21.50
3100	Audio masking system, including speakers, amplification and signal generator										
3110											
3200	Ceiling mounted, 5,000 S.F.	2 Elec	2400	.007	S.F.		1.19	.41		1.60	1.92
3300	10,000 S.F.		2800	.006			.97	.35		1.32	1.59
3400	Plenum mounted, 5,000 S.F.		3800	.004			1.04	.26		1.30	1.52
3500	10,000 S.F.		4400	.004			.70	.22		.92	1.10

13 49 Radiation Protection

13 49 13 – Integrated X-Ray Shielding Assemblies

13 49 13.50 Lead Sheets

0010	LEAD SHEETS	2 Lath	135	.119	S.F.		11.40	6.15		17.55	21.50
0300	Lead sheets, 1/16" thick		120	.133			24	6.95		30.95	36.50
0400	1/8" thick		135	.119			40	6.15		46.15	53
0500	Lead shielding, 1/4" thick		120	.133			91.50	6.95		98.45	111
0550	1/2" thick		135	.119							
0950	Lead headed nails (average 1 lb. per sheet)				Lb.		8.75			8.75	9.65
1000	Butt joints in 1/8" lead or thicker, 2" batten strip x 7' long	2 Lath	240	.067	Ea.		32	3.47		35.47	40.50
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	12,100	3,325			15,425	18,300
1500	7'-0" walls, deluxe	"	.15	107	"	14,600	5,550			20,150	24,200
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	33,900	10,400			44,300	52,500
1900	7'-0" walls, deluxe	"	.06	267	"	41,800	13,900			55,700	66,500

13 49 Radiation Protection

13 49 19 – Lead-Lined Materials

13 49 19.50 Shielding Lead		Daily Crew Output	Labor Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
0010	SHIELDING LEAD								
0100	Laminated lead in wood doors, 1/16" thick, no hardware			S.F.	56.50			56.50	62.50
0200	Lead lined door frame, not incl. hardware,								
0210	1/16" thick lead, butt prepared for hardware	1 Lath	2.40	3.333	Ea.	925	174	1,099	1,275
0850	Window frame with 1/16" lead and voice passage, 36" x 60"	2 Glaz	2	8		4,675	410	5,085	5,750
0870	24" x 36" frame		4	4		2,550	204	2,754	3,100
0900	Lead gypsum board, 5/8" thick with 1/16" lead		160	.100	S.F.	16.40	5.10	21.50	25.50
0910	1/8" lead		140	.114		28	5.85	33.85	40
0930	1/32" lead	2 Lath	200	.080		10.10	4.16	14.26	17.20

13 49 21 – Lead Glazing

13 49 21.50 Lead Glazing		Daily Crew Output	Labor Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
0010	LEAD GLAZING								
0600	Lead glass, 1/4" thick, 2.0 mm LE, 12" x 16"	2 Glaz	13	1.231	Ea.	435	63	498	575
0700	24" x 36"		8	2		1,500	102	1,602	1,800
0800	36" x 60"		2	8		4,000	410	4,410	4,975
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.	277	5.25	282.25	315
2020	12 mm thick, 0.5 mm LE, 3.9 lb./S.F.		82	.195		385	8.85	393.85	440
2030	18 mm thick, 0.8 mm LE, 5.9 lb./S.F.		54	.296		470	13.50	483.50	535
2040	22 mm thick, 1.0 mm LE, 7.2 lb./S.F.		44	.364		665	16.55	681.55	755
2050	35 mm thick, 1.5 mm LE, 11.5 lb./S.F.		28	.571		1,000	26	1,026	1,150
2060	46 mm thick, 2.0 mm LE, 15.0 lb./S.F.		21	.762		1,300	34.50	1,334.50	1,475

13 49 23 – Integrated RFI/EMI Shielding Assemblies

13 49 23.50 Modular Shielding Partitions		Daily Crew Output	Labor Hours	Unit	Material	2020 Labor	Bare 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 panel 48"H, lower portion is opaque leaded								
4008	steel panels 36"H, structural supports not incl.								
4010	T-section barrier, 36"W x 84"H overall								
4020	0.5 mm LE panels	H-3	6.40	2.500	Ea.	9,025	114	9,139	10,100
4030	0.8 mm LE panels		6.40	2.500		9,725	114	9,839	10,900
4040	1.0 mm LE panels			5.33	3.002	13,500	137	13,637	15,100
4050	1.5 mm LE panels			5.33	3.002	15,800	137	15,937	17,600
4060	2-section barrier, 72"W x 84"H overall								
4070	0.5 mm LE panels	H-3	4	4	Ea.	14,400	182	14,582	16,100
4080	0.8 mm LE panels		4	4		14,800	182	14,982	16,600
4090	1.0 mm LE panels			3.56	4.494	16,300	204	16,504	18,200
5000	1.5 mm LE panels			3.20	5	27,400	227	27,627	30,500
5010	3-section barrier, 108"W x 84"H overall								
5020	0.5 mm LE panels	H-3	3.20	5	Ea.	21,500	227	21,727	24,000
5030	0.8 mm LE panels		3.20	5		22,200	227	22,427	24,700
5040	1.0 mm LE panels			2.67	5.993	24,400	273	24,673	27,300
5050	1.5 mm LE panels			2.46	6.504	41,500	296	41,796	46,000
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 Corp	16	.500	Ea.	3,975	26.50	4,001.50	4,425
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 Corp	16	.500	Ea.	7,075	26.50	7,101.50	7,850
7050	36"H upper w/1.0 mm LE, 36"H lower w/1.5 mm LE	"	16	.500	"	8,400	26.50	8,426.50	9,275

13 49 Radiation Protection

13 49 23 – Integrated RFI/EMI Shielding Assemblies

13 49 23.50 Modular Shielding Partitions	72"W x 75"H overall, incl. framework 36"H upper w/0.5 mm LE, 36"H lower w/0.8 mm LE 36"H upper w/1.0 mm LE, 36"H lower w/1.5 mm LE	Daily	Labor-	Unit	2020 Bare Costs			Total
		Crew	Output	Hours	Material	Labor	Equipment	Total
7060	72"W x 75"H overall, incl. framework	1 Carp	16	.500	Ea.	8,400	26.50	8,426.50
7070	36"H upper w/0.5 mm LE, 36"H lower w/0.8 mm LE	"	16	.500	"	10,500	26.50	10,526.50
7080	36"H upper w/1.0 mm LE, 36"H lower w/1.5 mm LE							11,600

13 49 33 – Radio Frequency Shielding

13 49 33.50 Shielding, Radio Frequency

0010	SHIELDING, RADIO FREQUENCY	2 Carp	375	.043	SF Surf	5.65	2.27	7.92	9.65
0020	Prefabricated, galvanized steel	480	.033			4.72	1.77	6.49	7.85
0040	5 oz., copper floor panel								
0050	5 oz., copper wall/ceiling panel		155	.103		4.72	5.50	10.22	13.45
0100	12 oz., copper floor panel		470	.034		9.65	1.81	11.46	13.30
0110	12 oz., copper wall/ceiling panel		140	.114		9.65	6.05	15.70	19.75
0150	Door, copper/wood laminate, 4' x 7'	↓	1.50	10.667	Ea.	8,825	565	9,390	10,600

13 53 Meteorological Instrumentation

13 53 09 – Weather Instrumentation

13 53 09.50 Weather Station

0010	WEATHER STATION	Ea.	850	850	935
0020	Remote recording, solar powered, with rain gauge & display, 400' range				
0100	1 mile range	"	1,950	1,950	2,150

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	Material	2020 Bare Costs	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.	3,450	1,825			5,275	6,500
0100 76 lb. capacity and up			.50	32	"	7,075	2,750			9,825	11,900
0300 For each additional stop, add				.75	21.333	Stop	1,125	1,825		2,950	3,950

14 12 Electric Dumbwaiters

14 12 10 – Dumbwaiters

14 12 10.10 Electric Dumbwaiters

0010 ELECTRIC DUMBWAITERS		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
0020 2 stop, up to 75 lb. capacity		2 Elev	.13	123	Ea.	8,950	10,500			19,450	25,500
0100 76 lb. capacity and up			.11	145	"	23,600	12,400			36,000	44,400
0600 For each additional stop, add			.54	29.630	Stop	3,575	2,525			6,100	7,700

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		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
0425 Electric freight, base unit, 4000 lb., 200 fpm, 4 stop, std. fin.		R142000-20	2 Elev	.05	320	Ea.	124,500	27,400		151,900	177,000
0450 For 5000 lb. capacity, add		R142000-30					6,350			6,350	6,975
0500 For 6000 lb. capacity, add		R142000-40					14,900			14,900	16,400
0525 For 7000 lb. capacity, add							20,400			20,400	22,400
0550 For 8000 lb. capacity, add							23,800			23,800	26,200
0575 For 10000 lb. capacity, add							33,200			33,200	36,500
0600 For 12000 lb. capacity, add							40,100			40,100	44,100
0625 For 16000 lb. capacity, add							48,900			48,900	53,500
0650 For 20000 lb. capacity, add							55,500			55,500	61,000
0675 For increased speed, 250 fpm, add							14,800			14,800	16,300
0700 300 fpm, geared electric, add							18,500			18,500	20,300
0725 350 fpm, geared electric, add							22,600			22,600	24,800
0750 400 fpm, geared electric, add							26,600			26,600	29,300
0775 500 fpm, gearless electric, add							36,900			36,900	40,500
0800 600 fpm, gearless electric, add							40,900			40,900	45,000
0825 700 fpm, gearless electric, add							48,400			48,400	53,500
0850 800 fpm, gearless electric, add							54,000			54,000	59,000
0875 For class "B" loading, add							3,000			3,000	3,300
0900 For class "C-1" loading, add							7,375			7,375	8,125
0925 For class "C-2" loading, add							8,675			8,675	9,550
0950 For class "C-3" loading, add							12,100			12,100	13,400
0975 For travel over 40 V.L.F., add		2 Elev	7.25	2.207	V.L.F.	620	189			809	960
1000 For number of stops over 4, add			.27	59.259	Stop	4,675	5,075			9,750	12,700

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		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
1625 Electric pass., base unit, 2,000 lb., 200 fpm, 4 stop, std. fin.		R142000-20	2 Elev	.05	320	Ea.	104,500	27,400		131,900	155,500
1650 For 2,500 lb. capacity, add		R142000-30					4,475			4,475	4,925
1675 For 3,000 lb. capacity, add		R142000-40					4,900			4,900	5,400
1700 For 3,500 lb. capacity, add							6,225			6,225	6,850
1725 For 4,000 lb. capacity, add							7,325			7,325	8,050
1750 For 4,500 lb. capacity, add							10,100			10,100	11,100

14 21 Electric Traction Elevators

14 21 23 – Electric Traction Passenger Elevators

14 21 23.10 Electric Traction Passenger Elevators and Options			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
						Labor	Equipment		
1775	For 5000 lb. capacity, add				Ea.	13,000		13,000	14,300
1800	For increased speed, 250 fpm, geared electric, add					3,550		3,550	3,900
1825	300 fpm, geared electric, add					6,850		6,850	7,525
1850	350 fpm, geared electric, add					8,800		8,800	9,675
1875	400 fpm, geared electric, add					12,800		12,800	14,100
1900	500 fpm, gearless electric, add					30,900		30,900	34,000
1925	600 fpm, gearless electric, add					50,000		50,000	55,000
1950	700 fpm, gearless electric, add					56,500		56,500	62,000
1975	800 fpm, gearless electric, add					62,500		62,500	69,000
2000	For travel over 40 V.L.F., add	2 Elev	7.25	2,207	V.L.F.	740	189	929	1,100
2025	For number of stops over 4, add	"	.27	59,259	Stop	3,225	5,075	8,300	11,100
2400	Electric hospital, base unit, 4,000 lb., 200 fpm, 4 stop, std fin.		.05	320	Ea.	97,000	27,400	124,400	147,000
2425	For 4,500 lb. capacity, add					6,200		6,200	6,825
2450	For 5,000 lb. capacity, add					8,125		8,125	8,925
2475	For increased speed, 250 fpm, geared electric, add					3,950		3,950	4,350
2500	300 fpm, geared electric, add					7,575		7,575	8,325
2525	350 fpm, geared electric, add					9,125		9,125	10,000
2550	400 fpm, geared electric, add					13,200		13,200	14,600
2575	500 fpm, gearless electric, add					36,300		36,300	40,000
2600	600 fpm, gearless electric, add					54,500		54,500	60,000
2625	700 fpm, gearless electric, add					60,500		60,500	66,500
2650	800 fpm, gearless electric, add					68,000		68,000	75,000
2675	For travel over 40 V.L.F., add	2 Elev	7.25	2,207	V.L.F.	196	189	385	495
2700	For number of stops over 4, add	"	.27	59,259	Stop	4,775	5,075	9,850	12,800

14 21 33 – Electric Traction Residential Elevators

14 21 33.20 Residential Elevators

0010 RESIDENTIAL ELEVATORS			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P	
						Labor	Equipment			
7000	Residential, cab type, 1 floor, 2 stop, economy model		2 Elev	.20	80	Ea.	10,700	6,850	17,550	22,000
7100	Custom model			.10	160		18,100	13,700	31,800	40,200
7200	2 floor, 3 stop, economy model			.12	133		15,900	11,400	27,300	34,400
7300	Custom model			"	.06	267		22,800	48,800	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	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
			R142000-20	2 Elev	.10	160	Ea.			
1025	Hydraulic freight, base unit, 2,000 lb., 50 fpm, 2 stop, std. fin.	R142000-20	2 Elev	.10	160	Ea.	83,500	13,700	97,200	112,500
1050	For 2,500 lb. capacity, add	R142000-30					4,225		4,225	4,625
1075	For 3,000 lb. capacity, add	R142000-40					5,575		5,575	6,125
1100	For 3,500 lb. capacity, add						9,100		9,100	10,000
1125	For 4,000 lb. capacity, add						10,400		10,400	11,500
1150	For 4,500 lb. capacity, add						12,100		12,100	13,300
1175	For 5,000 lb. capacity, add						16,400		16,400	18,000
1200	For 6,000 lb. capacity, add						16,700		16,700	18,400
1225	For 7,000 lb. capacity, add						25,700		25,700	28,200
1250	For 8,000 lb. capacity, add						31,100		31,100	34,200
1275	For 10,000 lb. capacity, add						32,900		32,900	36,200
1300	For 12,000 lb. capacity, add						40,000		40,000	44,000
1325	For 16,000 lb. capacity, add						53,500		53,500	59,000
1350	For 20,000 lb. capacity, add						59,500		59,500	65,500

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	Material	2020 Bare Costs	Total	Total Incl O&P
							Labor	Equipment	
1375	For increased speed, 100 fpm, add				Ea.	1,200			1,200 1,325
1400	125 fpm, add					3,150			3,150 3,450
1425	150 fpm, add					4,950			4,950 5,450
1450	175 fpm, add					7,100			7,100 7,800
1475	For class "B" loading, add					2,825			2,825 3,100
1500	For class "C-1" loading, add					7,125			7,125 7,825
1525	For class "C-2" loading, add					8,550			8,550 9,400
1550	For class "C-3" loading, add					11,700			11,700 12,900
1575	For travel over 20 V.L.F., add	2 Elev	7.25	2.207	V.L.F.	895	189		1,084 1,250
1600	For number of stops over 2, add	"	.27	59.259	Stop	2,250	5,075		7,325 10,000

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.	40,800	13,700	54,500 65,000
2075	For 2,000 lb. capacity, add	R142000-30					845		845 930
2100	For 2,500 lb. capacity, add	R142000-40					3,175		3,175 3,500
2125	For 3,000 lb. capacity, add						4,550		4,550 5,025
2150	For 3,500 lb. capacity, add						7,625		7,625 8,375
2175	For 4,000 lb. capacity, add						9,175		9,175 10,100
2200	For 4,500 lb. capacity, add						12,100		12,100 13,300
2225	For 5,000 lb. capacity, add						17,000		17,000 18,700
2250	For increased speed, 125 fpm, add						1,225		1,225 1,350
2275	150 fpm, add						2,750		2,750 3,025
2300	175 fpm, add						5,350		5,350 5,875
2325	200 fpm, add						10,300		10,300 11,400
2350	For travel over 12 V.L.F., add	2 Elev	7.25	2.207	V.L.F.	730	189		919 1,075
2375	For number of stops over 2, add		.27	59.259	Stop	1,000	5,075		6,075 8,650
2725	Hydraulic hospital, base unit, 4,000 lb., 100 fpm, 2 stop, std. fin.		.10	160	Ea.	67,000	13,700		80,700 94,000
2775	For 4,500 lb. capacity, add						7,525		7,525 8,275
2800	For 5,000 lb. capacity, add						10,900		10,900 12,000
2825	For increased speed, 125 fpm, add						2,250		2,250 2,475
2850	150 fpm, add						3,750		3,750 4,125
2875	175 fpm, add						6,325		6,325 6,950
2900	200 fpm, add						9,300		9,300 10,200
2925	For travel over 12 V.L.F., add	2 Elev	7.25	2.207	V.L.F.	410	189		599 730
2950	For number of stops over 2, add	"	.27	59.259	Stop	4,675	5,075		9,750 12,700

14 27 Custom Elevator Cabs and Doors

14 27 13 - Custom Elevator Cab Finishes

14 27 13.10 Cab Finishes		CAB FINISHES							
3325	Passenger elevator cab finishes (based on 3,500 lb. cab size)								
3350	Acrylic panel ceiling				Ea.	795			795 875
3375	Aluminum eggcrate ceiling					715			715 790
3400	Stainless steel doors					4,150			4,150 4,550
3425	Carpet flooring					635			635 695
3450	Epoxy flooring					480			480 525
3475	Quarry tile flooring					920			920 1,025
3500	Slate flooring					1,650			1,650 1,825
3525	Textured rubber flooring					665			665 735

14 27 Custom Elevator Cabs and Doors

14 27 13 – Custom Elevator Cab Finishes

14 27 13.10 Cab Finishes		Daily	Labor-	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
		Crew	Output			Labor	Equipment	Total		
3550	Stainless steel walls			Ea.	4,150			4,150	4,575	
3575	Stainless steel returns at door				1,200			1,200	1,300	
4450	Hospital elevator cab finishes (based on 3,500 lb. cab size)									
4475	Aluminum eggcrate ceiling			Ea.	725			725	795	
4500	Stainless steel doors				4,125			4,125	4,550	
4525	Epoxy flooring				475			475	525	
4550	Quarry tile flooring				920			920	1,025	
4575	Textured rubber flooring				660			660	730	
4600	Stainless steel walls				4,700			4,700	5,175	
4625	Stainless steel returns at door				930			930	1,025	

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		2 Elev	.66	24.242	Ea.	3,625	2,075	5,700	7,050
2975	Passenger elevator options								
3000	2 car group automatic controls	2 Elev	.66	24.242	Ea.	3,625	2,075	5,700	7,050
3025	3 car group automatic controls		.44	36.364		5,525	3,100	8,625	10,700
3050	4 car group automatic controls		.33	48.485		9,650	4,150	13,800	16,800
3075	5 car group automatic controls		.26	61.538		14,500	5,275	19,775	23,800
3100	6 car group automatic controls		.22	72.727		22,100	6,225	28,325	33,500
3125	Intercom service		3	5.333		580	455	1,035	1,325
3150	Duplex car selective collective		.66	24.242		4,175	2,075	6,250	7,675
3175	Center opening 1 speed doors		2	8		2,075	685	2,760	3,325
3200	Center opening 2 speed doors		2	8		2,925	685	3,610	4,250
3225	Rear opening doors (opposite front)		2	8		4,475	685	5,160	5,950
3250	Side opening 2 speed doors		2	8		7,650	685	8,335	9,450
3275	Automatic emergency power switching		.66	24.242		1,275	2,075	3,350	4,475
3300	Manual emergency power switching		8	2		540	171	711	850
3625	Hall finishes, stainless steel doors					1,475		1,475	1,625
3650	Stainless steel frames					1,550		1,550	1,700
3675	12 month maintenance contract							4,425	4,425
3700	Signal devices, hall lanterns	2 Elev	8	2		545	171	716	855
3725	Position indicators, up to 3		9.40	1.702		350	146	496	600
3750	Position indicators, per each over 3		32	.500		94.50	43	137.50	168
3775	High speed heavy duty door opener					2,775		2,775	3,050
3800	Variable voltage, O.H. gearless machine, min.	2 Elev	.16	100		34,600	8,550	43,150	50,500
3815	Maximum		.07	229		77,500	19,600	97,100	114,500
3825	Basement installed geared machine		.33	48.485		13,600	4,150	17,750	21,200
3850	Freight elevator options								
3875	Doors, bi-parting	2 Elev	.66	24.242	Ea.	6,250	2,075	8,325	9,950
3900	Power operated door and gate		.66	24.242		25,100	2,075	27,175	30,700
3925	Finishes, steel plate floor					1,125		1,125	1,250
3950	14 ga. 1/4" x 4' steel plate walls					2,075		2,075	2,275
3975	12 month maintenance contract							3,400	3,400
4000	Signal devices, hall lanterns	2 Elev	8	2		530	171	701	840
4025	Position indicators, up to 3		9.40	1.702		375	146	521	630
4050	Position indicators, per each over 3		32	.500		103	43	146	177
4075	Variable voltage basement installed geared machine		.66	24.242		21,000	2,075	23,075	26,200
4100	Hospital elevator options								
4125	2 car group automatic controls	2 Elev	.66	24.242	Ea.	3,625	2,075	5,700	7,050

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	2020 Bare Costs			Total	Total Incl O&P
						Material	Labor	Equipment		
4150	3 car group automatic controls	2 Elev	.44	36,364	Ea.	5,500	3,100		8,600	10,700
4175	4 car group automatic controls		.33	48,485		13,100	4,150		17,250	20,600
4200	5 car group automatic controls		.26	61,538		13,100	5,275		18,375	22,200
4225	6 car group automatic controls		.22	72,727		20,000	6,225		26,225	31,200
4250	Intercom service		3	5,333		550	455		1,005	1,275
4275	Duplex car selective collective		.66	24,242		4,075	2,075		6,150	7,575
4300	Center opening 1 speed doors		2	8		2,075	685		2,760	3,300
4325	Center opening 2 speed doors		2	8		2,750	685		3,435	4,025
4350	Rear opening doors (opposite front)		2	8		4,475	685		5,160	5,950
4375	Side opening 2 speed doors		2	8		6,650	685		7,335	8,325
4400	Automatic emergency power switching		.66	24,242		1,250	2,075		3,325	4,450
4425	Manual emergency power switching		8	2		525	171		696	830
4675	Hull finishes, stainless steel doors						1,550		1,550	1,700
4700	Stainless steel frames						1,550		1,550	1,725
4725	12 month maintenance contract								6,125	6,125
4750	Signal devices, hall lanterns	2 Elev	8	2		520	171		691	825
4775	Position indicators, up to 3		9.40	1,702		355	146		501	605
4800	Position indicators, per each over 3		32	.500		95	43		138	169
4825	High speed heavy duty door opener						2,800		2,800	3,075
4850	Variable voltage, O.H. gearless machine, min.	2 Elev	.16	100		36,400	8,550		44,950	52,500
4865	Maximum		.07	229		79,000	19,600		98,600	116,000
4875	Basement installed geared machine		.33	48,485		18,200	4,150		22,350	26,300
5000	Drilling for piston, casing included, 18" diameter	B-48	80	.700	V.L.F.	65.50	33.50	13.10	112.10	136

14 31 Escalators

14 31 10 – Glass and Steel Escalators

14 31 10.10 Escalators

0010	ESCALATORS	M-1	.07	457	Ea.	90,500	37,200	715	128,415	155,500
1000	Glass, 32" wide x 10' floor to floor height		.07	457		97,500	37,200	715	135,415	163,000
1010	48" wide x 10' floor to floor height		.07	457		95,500	43,300	830	139,630	170,500
1020	32" wide x 15' floor to floor height		.06	533		101,000	43,300	830	145,130	177,000
1030	48" wide x 15' floor to floor height		.06	533		101,500	53,000	1,025	155,525	191,500
1040	32" wide x 20' floor to floor height		.05	653		110,000	53,000	1,025	164,025	201,000
1050	48" wide x 20' floor to floor height		.05	653		112,500	65,000	1,250	178,750	221,500
1060	32" wide x 25' floor to floor height		.04	800		130,000	65,000	1,250	196,250	241,000
1070	48" wide x 25' floor to floor height		.04	800		98,000	37,200	715	135,915	164,000
1080	Enamelled steel, 32" wide x 10' floor to floor height		.07	457		107,000	37,200	715	144,915	174,000
1090	48" wide x 10' floor to floor height		.07	457		105,000	43,300	830	149,130	181,000
1110	32" wide x 15' floor to floor height		.06	533		109,000	43,300	830	153,130	185,500
1120	48" wide x 15' floor to floor height		.06	533		111,000	53,000	1,025	165,025	202,500
1130	32" wide x 20' floor to floor height		.05	653		120,500	53,000	1,025	174,525	212,500
1140	48" wide x 20' floor to floor height		.05	653		123,000	65,000	1,250	189,250	233,000
1150	32" wide x 25' floor to floor height		.04	800		140,000	65,000	1,250	206,250	252,000
1160	48" wide x 25' floor to floor height		.04	800		104,500	37,200	715	142,415	171,000
1170	Stainless steel, 32" wide x 10' floor to floor height		.07	457		112,500	37,200	715	150,415	180,000
1180	48" wide x 10' floor to floor height		.07	457		111,500	43,300	830	155,630	188,000
1500	32" wide x 15' floor to floor height		.06	533		116,000	43,300	830	160,130	193,500
1700	48" wide x 15' floor to floor height		.06	533		140,500	50,000	960	191,460	229,500
1750	32" wide x 18' floor to floor height		.05	615		152,500	50,000	960	203,460	242,500
1775	48" wide x 18' floor to floor height		.05	615		139,500	65,000	1,250	205,750	251,500
2300	32" wide x 25' floor to floor height		.04	800						

14 31 Escalators

14 31 10 – Glass and Steel Escalators

14 31 10.10 Escalators		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment		Total	Total Incl O&P
2500	48" wide x 25' floor to floor height	M-1	.04	800	Ea.	147,500	65,000	1,250		213,750	260,500

14 32 Moving Walks

14 32 10 – Moving Walkways

14 32 10.10 Moving Walks

R143210-20											
0010	MOVING WALKS										
0020	Walk, 27" tread width, minimum										
0100	300' to 500', maximum										
0300	48" tread width walk, minimum										
0400	100' to 350', maximum										
0600	Ramp, 12° incline, 36" tread width, minimum										
0700	70' to 90' maximum										
0900	48" tread width, minimum										
1000	40' to 70', maximum										
		M-1	6.50	4,923	L.F.	945	400	7.70	1,352.70		1,625
			4.43	7,223		1,300	585	11.25	1,896.25		2,300
			4.43	7,223		2,150	585	11.25	2,746.25		3,250
			3.82	8,377		2,475	680	13.05	3,168.05		3,750
			5.27	6,072		1,725	495	9.45	2,229.45		2,650
			3.82	8,377		2,700	680	13.05	3,393.05		4,000
			3.57	8,964		2,575	730	14	3,319		3,925
			2.91	10,997		3,175	895	17.15	4,087.15		4,850

14 42 Wheelchair Lifts

14 42 13 – Inclined Wheelchair Lifts

14 42 13.10 Inclined Wheelchair Lifts and Stairclimbers

R144213-20											
0010	INCLINED WHEELCHAIR LIFTS AND STAIRCLIMBERS										
7700	Stair climber (chair lift), single seat, minimum										
7800	Maximum										
8700	Stair lift, minimum										
8900	Maximum										
		2 Elev	1	16	Ea.	4,975	1,375		6,350		7,500
			.20	80		6,825	6,850		13,675		17,700
			1	16		13,500	1,375		14,875		16,900
			.20	80		21,400	6,850		28,250		33,700

14 42 16 – Vertical Wheelchair Lifts

14 42 16.10 Wheelchair Lifts

R144216-20											
0010	WHEELCHAIR LIFTS										
8000	Wheelchair lift, minimum										
8500	Maximum										
		2 Elev	1	16	Ea.	6,825	1,375		8,200		9,525
			.50	32		16,100	2,750		18,850		21,900

14 45 Vehicle Lifts

14 45 10 – Hydraulic Vehicle Lifts

14 45 10.10 Hydraulic Lifts

R144510-20											
0010	HYDRAULIC LIFTS										
2200	Single post, 8,000 lb. capacity										
2810	Double post, 6,000 lb. capacity										
2815	9,000 lb. capacity										
2820	15,000 lb. capacity										
2822	Four post, 26,000 lb. capacity										
2825	30,000 lb. capacity										
2830	Ramp style, 4 post, 25,000 lb. capacity										
2835	35,000 lb. capacity										
2840	50,000 lb. capacity										
2845	75,000 lb. capacity										
2850	For drive thru trucks, add, minimum										
2855	Maximum										
2860	Ramp extensions, 3' (set of 2)										
2865	Rolling jack platform										
		1-4	.40	60	Ea.	7,100	3,000		10,100		12,400
		2.67	8.989			9,775	450		10,225		11,500
		2.29	10.480			23,200	525		23,725		26,300
		2	12			26,200	600		26,800		29,800
		1.80	13.333			15,100	665		15,765		17,600
		1.60	15			58,000	750		58,750		65,000
		2	12			22,700	600		23,300		25,900
		1	24			106,000	1,200		107,200		118,500
		1	24			121,000	1,200		122,200		135,500
		1	24			141,000	1,200		142,200		157,000
						1,150			1,150		1,275
						1,975			1,975		2,175
						1,200			1,200		1,325
						4,175			4,175		4,575

14 45 Vehicle Lifts

14 45 10 – Hydraulic Vehicle Lifts

14 45 10.10 Hydraulic Lifts				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
2870	Electric/hydraulic jacking beam					Ea.	11,400				11,400	12,600
2880	Scissor lift, portable, 6,000 lb. capacity						10,900				10,900	12,000

14 91 Facility Chutes

14 91 33 – Laundry and Linen Chutes

14 91 33.10 Chutes

0011	CHUTES, linen, trash or refuse			2 Shee	3.50	4.571	Floor	1,800	285		2,085	2,425
0050	Aluminized steel, 16 ga., 18" diameter			3.20	5			2,000	310		2,310	2,675
0100	24" diameter			3	5.333			2,375	330		2,705	3,100
0200	30" diameter			2.80	5.714			2,725	355		3,080	3,550
0300	36" diameter			3.50	4.571			1,075	285		1,360	1,625
0400	Galvanized steel, 16 ga., 18" diameter			3.20	5			1,225	310		1,535	1,825
0500	24" diameter			3	5.333			1,375	330		1,705	2,000
0600	30" diameter			2.80	5.714			1,625	355		1,980	2,325
0700	36" diameter			3.50	4.571			3,375	285		3,660	4,150
0800	Stainless steel, 18" diameter			3.20	5			3,250	310		3,560	4,050
0900	24" diameter			3	5.333			3,975	330		4,305	4,875
1000	30" diameter			2.80	5.714			4,200	355		4,555	5,175
1005	36" diameter			4	4	Ea.		1,525	249		1,774	2,050
1200	Linen chute bottom collector, aluminized steel			4	4			1,950	249		2,199	2,525
1300	Stainless steel			3	5.333			1,150	330		1,480	1,750
1500	Refuse, bottom hopper, aluminized steel, 18" diameter			3	5.333			1,350	330		1,680	1,975
1600	24" diameter			3	5.333			2,600	330		2,930	3,375
1800	36" diameter			3	5.333							

14 91 82 – Trash Chutes

14 91 82.10 Trash Chutes and Accessories

0010	TRASH CHUTES AND ACCESSORIES			2 Shee	4.50	3.556	Floor	2,575	222		2,797	3,175
2900	Package chutes, spiral type, minimum			1.50	10.667	"		6,750	665		7,415	8,425
3000	Maximum											

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			2 Stpi	.12	133	Total	3,675	8,750		12,425	17,200
0020	100' long, single tube, 2 stations, stock											
0100	3" diameter			2 Stpi	.12	133	Total	3,675	8,750		12,425	17,200
0300	4" diameter			"	.09	178	"	4,600	11,700		16,300	22,500
0400	Twin tube, two stations or more, conventional system											
0600	2 1/2" round			2 Stpi	62.50	.256	L.F.	43	16.80		59.80	72
0700	3" round				46	.348		40	23		63	78
0900	4" round				49.60	.323		50.50	21		71.50	87
1000	4" x 7" oval				37.60	.426		99.50	28		127.50	151
1050	Add for blower				2	8	System	5,200	525		5,725	6,500
1110	Plus for each round station, add				7.50	2.133	Ea.	1,375	140		1,515	1,700
1150	Plus for each oval station, add				7.50	2.133	"	1,375	140		1,515	1,700
1200	Alternate pricing method: base cost, economy model				.75	21.333	Total	5,850	1,400		7,250	8,525
1300	Custom model				.25	64	"	11,700	4,200		15,900	19,100
1500	Plus total system length, add, for economy model				93.40	.171	L.F.	8.25	11.25		19.50	26
1600	For custom model				37.60	.426	"	25	28		53	69

14 92 Pneumatic Tube Systems

14 92 10 – Conventional, Automatic and Computer Controlled Pneumatic Tube Systems

14 92 10.10 Pneumatic Tube Systems		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
1800	Completely automatic system, 4" round, 15 to 50 stations	2 Stpi	.29	55.172	Station	22,600	3,625	26,225	30,200
2200	51 to 144 stations		.32	50		15,600	3,275	18,875	22,100
2400	6" round or 4" x 7" oval, 15 to 50 stations		.24	66.667		27,600	4,375	31,975	37,000
2800	51 to 144 stations		.23	69.565		21,100	4,550	25,650	30,000

Division Notes

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	Material	2020 Labor	Bare Costs	Equipment	Total	Total Indl 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.	420	305			725	915
6800	Check, wafer, butterfly type, C.I. body, bronze fittings	Q-12	4	4	Ea.	1,375	228			1,603	1,850
6820	4" size										

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	Q-12	5	3.200	Ea.	273	182			455	575
3800	2-1/2" x 2-1/2"	"	5	3.200	"	495	182			677	820
3840	2-1/2" x 3"	Q-12	5	3.200	Ea.	775	182			957	1,125
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.	1,300	198			1,498	1,725
4040	2-1/2" x 2-1/2" x 6"	"	4.60	3.478	"	595	198			793	945
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.	290	182			472	595
4450	2-1/2" x 2-1/2" x 6"	"	4.60	3.478	"	775	182			957	1,125
4460	Valve control, dbl. flush/projecting hydrant, cap &										
4470	chain, extension rod & cpig., escutcheon, polished brass	Q-12	8	2	Ea.	268	114			382	465

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.	186	182			368	480
7180	2-1/2" x 3"	"	5	3.200	"	191	182			373	485
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.	775	182			957	1,125
7330	2-1/2" x 2-1/2" x 6"	"	4.60	3.478	"	855	198			1,053	1,225
7400	For polished chrome, add						15%				
7440	For sill cock combination, add							101		101	112
7900	Three way, flush, polished brass										
7920	2-1/2" (3) x 4"	Q-12	4.80	3.333	Ea.	2,000	190			2,190	2,475
7930	2-1/2" (3) x 6"	"	4.60	3.478	"	2,150	198			2,348	2,675
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.	910	190			1,100	1,275

21 12 Fire-Suppression Standpipes

21 12 13 – Fire-Suppression Hoses and Nozzles

		Crew	Daily Output	Labor Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
21 12 13.50 Fire Hoses and Nozzles										
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.	56.50		56.50	62
0320	2" x 2"						42.50		42.50	46.50
0380	2-1/2" x 2-1/2"						19.55		19.55	21.50
2200	Hose, less couplings									
2260	Synthetic jacket, lined, 300 lb. test, 1-1/2" diameter	Q-12	2600	.006	L.F.	3.31	.35		3.66	4.16
2270	2" diameter		2200	.007		2.59	.41		3	3.47
2280	2-1/2" diameter		2200	.007		5.90	.41		6.31	7.10
2290	3" diameter		2200	.007		3.27	.41		3.68	4.22
2360	High strength, 500 lb. test, 1-1/2" diameter		2600	.006		2.59	.35		2.94	3.37
2380	2-1/2" diameter		2200	.007		6.05	.41		6.46	7.25
5600	Nozzles, brass									
5620	Adjustable fog, 3/4" booster line					Ea.	150		150	165
5630	1" booster line						145		145	159
5640	1-1/2" leader line						117		117	128
5660	2-1/2" direct connection						199		199	219
5680	2-1/2" playpipe nozzle						238		238	262
5780	For chrome plated, add						8%			
5850	Electrical fire, adjustable fog, no shock									
5900	1-1/2"					Ea.	455		455	500
5920	2-1/2"						900		900	990
5980	For polished chrome, add						6%			
6200	Heavy duty, comb. adj. fog and str. stream, with handle					Ea.	208		208	229
6210	1" booster line									

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	Enameling steel, 50' and 75' lengths of hose	Q-12	20	.800	Ea.	72	45.50		117.50	148
2640	100' and 125' lengths of hose	"	20	.800	"	89	45.50		134.50	166

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.	105	42		147	179
0090	2-1/2"	7	1.143	"		198	72.50		270.50	325
0100	For polished brass, add						35%			
0110	For polished chrome, add						50%			

21 13 Fire-Suppression Sprinkler Systems

21 13 13 – Wet-Pipe Sprinkler Systems

21 13 13.50 Wet-Pipe Sprinkler System Components		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	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.	16.80	31.50			48.30	66
3740	1/2" NPT, K5.6	"	16	.500	"	11.20	31.50			42.70	60
3920	For 360°F, same cost										
3930	For 400°F	1 Spri	16	.500	Ea.	110	31.50			141.50	169
3940	For 500°F	"	16	.500	"	110	31.50			141.50	169
4500	Sidewall, horizontal, brass, 135°F to 286°F										
4520	1/2" NPT, 1/2" orifice	1 Spri	16	.500	Ea.	29.50	31.50			61	80
4540	For 360°F, same cost										
4800	Recessed pendent, brass, 135°F to 286°F										
4820	1/2" NPT, K5.6	1 Spri	10	.800	Ea.	49.50	50.50			100	131
4830	1/2" NPT, 7/16" orifice	"	10	.800	"	22	50.50			72.50	100
4840	1/2" NPT, K5.6	"	10	.800	"	17.10	50.50			67.60	95

21 13 16 – Dry-Pipe Sprinkler Systems

21 13 16.50 Dry-Pipe Sprinkler System Components

21 13 16.50 Dry-Pipe Sprinkler System Components		1 Spri	8	1	Ea.	900	63.50			963.50	1,075
0010	DRY-PIPE SPRINKLER SYSTEM COMPONENTS										
0600	Accelerator	1 Spri	8	1	Ea.	900	63.50			963.50	1,075
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.	170	36			206	241
2710	18-1/4" to 21" length	"	13	.615	"	177	39			216	253
2720	21-1/4" to 24" length	"	13	.615	"	183	39			222	260
2730	24-1/4" to 27" length	"	13	.615	"	189	39			228	267

21 13 19 – Preaction Sprinkler Systems

21 13 19.50 Preaction Sprinkler System Components

21 13 19.50 Preaction Sprinkler System Components		Q-12	3	5.333	Ea.	49,600	305			49,905	55,000
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.	49,600	305			49,905	55,000
3120	2"	"	3	5.333	"	49,600	305			49,905	55,000
3130	2-1/2"	"	3	5.333	"	49,600	305			49,905	55,000
3140	3"	"	3	5.333	"	49,700	305			50,005	55,000
3150	4"	"	2	8	"	51,500	455			51,955	57,000
3160	6"	Q-13	4	8	"	54,000	480			54,480	60,000
3200	Double interlock, pneum. release, panel, 1/2 HP comp. regul. air trim										
3210	1-1/2"	Q-12	3	5.333	Ea.	48,200	305			48,505	53,500
3220	2"	"	3	5.333	"	48,200	305			48,505	53,500
3230	2-1/2"	"	3	5.333	"	48,200	305			48,505	53,500
3240	3"	"	3	5.333	"	48,300	305			48,605	53,500
3250	4"	"	2	8	"	50,500	455			50,955	56,500
3260	6"	Q-13	4	8	"	53,000	480			53,480	58,500

21 13 26 – Deluge Fire-Suppression Sprinkler Systems

21 13 26.50 Deluge Fire-Suppression Sprinkler Sys. Comp.

21 13 26.50 Deluge Fire-Suppression Sprinkler Sys. Comp.		1 Spri	18	.444	Ea.	7,475	28			7,503	8,275
0010	DELUGE FIRE-SUPPRESSION SPRINKLER SYSTEM COMPONENTS										
1400	Deluge system, monitoring panel w/deluge valve & trim										
6200	Valves and components										
7000	Deluge, assembly, incl. trim, pressure operated relief, emergency release, gauges										
7020	2" size	Q-12	2	8	Ea.	4,400	455			4,855	5,500
7040											

21 13 Fire-Suppression Sprinkler Systems

21 13 26 – Deluge Fire-Suppression Sprinkler Systems

21 13 26.50 Deluge Fire-Suppression Sprinkler Sys. Comp.	Daily	Labor-	Unit	2020 Bare Costs			Total	Total Incl O&P
	Output	Hours		Material	Labor	Equipment		
7060 3" size	Q-12	1.50	10.667 Ea.	4,925	605		5,530	6,325

21 13 39 – Foam-Water Systems

21 13 39.50 Foam-Water System Components

0010 FOAM-WATER SYSTEM COMPONENTS	1 Spri	12	.667 Ea.	237	42	279	325
2600 Sprinkler heads, not including supply piping							
3600 Foam-water, pendent or upright, 1/2" NPT							

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	1 Elec	1	8	Ea.	1,050	490	1,540	1,875
0042 For detectors and control stations, see Section 28 31 23.50								
0100 Control panel, single zone with batteries (2 zones det., 1 suppr.)	"	.50	16		3,075	980	4,055	4,825
0150 Multizone (4) with batteries (8 zones det., 4 suppr.)	"							
1000 Dispersion nozzle, CO ₂ , 3" x 5"	1 Plum	18	.444		166	28.50	194.50	225
2000 Extinguisher, CO ₂ system, high pressure, 75 lb. cylinder	Q-1	6	2.667		1,475	155	1,630	1,850
2100 100 lb. cylinder	"	5	3.200		1,950	186	2,136	2,425
3000 Electro/mechanical release	L-1	4	4		1,050	252	1,302	1,525
3400 Manual pull station	1 Plum	6	1.333		92.50	86	178.50	231
4000 Pneumatic damper release	"	8	1		182	64.50	246.50	297

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	1 Plum	14	.571	Ea.	236	37	273	315
0020 FM200 fire extinguishing system								
1100 Dispersion nozzle FM200, 1-1/2"								
2400 Extinguisher, FM200 system, filled, with mounting bracket	Q-1	8	2	Ea.	2,075	116	2,191	2,450
2460 26 lb. container		7	2.286		2,825	133	2,958	3,300
2480 44 lb. container		6	2.667		3,675	155	3,830	4,250
2500 63 lb. container		5	3.200		5,375	186	5,561	6,175
2520 101 lb. container		4	4		7,000	232	7,232	8,050
2540 196 lb. container				C.F.	1.90		1.90	2.09
6000 FM200 system, simple nozzle layout, with broad dispersion								
6010 Extinguisher, FM200 system, filled, with mounting bracket				C.F.	1.90		1.90	2.09
6020 Complex nozzle layout and/or including underfloor dispersion						C.F.	3.78	4.16
6100 20,000 C.F. 2 exits, 8' dng						2.08	2.08	2.29
6200 100,000 C.F. 4 exits, 8' dng						1.88	1.88	2.07
6300 250,000 C.F. 6 exits, 8' dng						1.59	1.59	1.75
7010 HFC-227ea fire extinguishing system								
7100 Cylinders with clean-agent								
7110 Does not include pallet jack/fork lift rental fees	Q-12	14	1.143	Ea.	2,500	65	2,565	2,850
7120 70 lb. cyl, w/35 lb. agent, no solenoid		10	1.600		3,275	91	3,366	3,725
7130 70 lb. cyl w/70 lb. agent, no solenoid		14	1.143		3,475	65	3,540	3,925
7140 70 lb. cyl w/35 lb. agent, w/solenoid		10	1.600		4,325	91	4,416	4,900
7150 70 lb. cyl w/70 lb. agent, w/solenoid		8	2		5,750	114	5,864	6,500
7220 250 lb. cyl, w/125 lb. agent, no solenoid		5	3.200		5,750	182	5,932	6,600
7230 250 lb. cyl, w/250 lb. agent, no solenoid		8	2		7,425	114	7,539	8,350
7240 250 lb. cyl, w/125 lb. agent, w/solenoid								

21 22 Clean-Agent Fire-Extinguishing Systems

21 22 16 – Clean-Agent Fire-Extinguishing Equipment

21 22 16.50 Clean-Agent Extinguishing Systems				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
		Crew	Output				Labor	Equipment	Total	
7250	250 lb. cyl, w/250 lb. agent, w/solenoid	Q-12	5	3.200	Ea.	10,700	182	10,882	12,000	
7320	560 lb. cyl, w/300 lb. agent, no solenoid		4	4		10,800	228	11,028	12,200	
7330	560 lb. cyl, w/560 lb. agent, no solenoid		2.50	6.400		16,400	365	16,765	18,500	
7340	560 lb. cyl, w/300 lb. agent, w/solenoid		4	4		13,700	228	13,928	15,400	
7350	560 lb. cyl, w/560 lb. agent, w/solenoid		2.50	6.400		20,700	365	21,065	23,200	
7420	1,200 lb. cyl, w/600 lb. agent, no solenoid	Q-13	4	8		20,500	480	20,980	23,200	
7430	1,200 lb. cyl, w/1,200 lb. agent, no solenoid		3	10.667		33,600	640	34,240	38,000	
7440	1,200 lb. cyl, w/600 lb. agent, w/solenoid		4	8		48,300	480	48,780	53,500	
7450	1,200 lb. cyl, w/1,200 lb. agent, w/solenoid		3	10.667		75,000	640	75,640	83,500	
7500	Accessories									
7510	Dispersion nozzle	1 Spri	16	.500	Ea.	98.50	31.50	130	156	
7520	Agent release panel	1 Elec	4	2		61	123	184	250	
7530	Maintenance switch	"	6	1.333		39	82	121	165	
7540	Solenoid valve, 12v dc	1 Spri	8	1		233	63.50	296.50	350	
7550	12v ac		8	1		500	63.50	563.50	645	
7560	12v dc, explosion proof		8	1		395	63.50	458.50	530	

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.	15,500	2,750	18,250	21,100
3200	500 GPM, 50 psi, 27 HP, 1770 RPM, 4" pump		.68	47.059		15,400	2,825	18,225	21,200
3350	750 GPM, 50 psi, 44 HP, 1770 RPM, 5" pump		.64	50		19,000	3,000	22,000	25,400
3400	750 GPM, 100 psi, 66 HP, 3550 RPM, 4" pump		.58	55.172		18,500	3,325	21,825	25,400
5000	For jockey pump 1", 3 HP, with control, add	Q-12	2	8		3,025	455	3,480	4,025

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.	43,600	3,000	46,600	52,500
0200	750 GPM, 50 psi, 44 HP, 5" pump		.60	53.333		45,000	3,200	48,200	54,500
0400	1000 GPM, 100 psi, 89 HP, 4" pump		.56	57.143		50,000	3,450	53,450	60,000
0700	2000 GPM, 100 psi, 167 HP, 6" pump		.34	94.118		65,000	5,675	70,675	80,000
0950	3500 GPM, 100 psi, 300 HP, 10" pump		.24	133		89,000	8,025	97,025	110,000

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 Operation and Maintenance of Plumbing

22 01 02 – Labor Adjustments

22 01 02.10 Boilers, General		Daily Crew Output	Labor-Hours Unit	Material	2020 Bare Costs Labor	Equipment	Total	Total Incl O&P
0010	BOILERS, GENERAL, Prices do not include flue piping, elec. wiring, gas or oil piping, boiler base, pad, or tankless unless noted							
0020								
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 each project must be evaluated for its own peculiarities, and the adjustments be increased or decreased depending on the 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 each project should be evaluated for its own peculiarities.							
9010								
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							

22 05 Common Work Results for Plumbing

22 05 05 – Selective Demolition for Plumbing

22 05 05.10 Plumbing Demolition		R220105-10	Daily Crew	Labor-Output	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P	
0010	PLUMBING DEMOLITION										
1020	Fixtures, including 10' piping										
1100	Bathtubs, cast iron		1 Plum	4	2	Ea.	129		129	193	
1120	Fiberglass			6	1.333		86		86	129	
1140	Steel			5	1.600		103		103	154	
1200	Lavatory, wall hung			10	.800		51.50		51.50	77	
1220	Counter top			8	1		64.50		64.50	96.50	
1300	Sink, single compartment			8	1		64.50		64.50	96.50	
1320	Double compartment			7	1.143		73.50		73.50	110	
1400	Water closet, floor mounted			8	1		64.50		64.50	96.50	
1420	Wall mounted			7	1.143		73.50		73.50	110	
1500	Urinal, floor mounted			4	2		129		129	193	
1520	Wall mounted			7	1.143		73.50		73.50	110	
1600	Water fountains, free standing			8	1		64.50		64.50	96.50	
1620	Wall or deck mounted			6	1.333		86		86	129	
2000	Piping, metal, up thru 1-1/2" diameter			200	.040	L.F.	2.58		2.58	3.86	
2050	2" thru 3-1/2" diameter			150	.053		3.44		3.44	5.15	
2100	4" thru 6" diameter		2 Plum	100	.160		10.30		10.30	15.45	
2150	8" thru 14" diameter			"	.267		17.20		17.20	25.50	
2153	16" thru 20" diameter			Q-18	.70	.343	21	1.52	22.52	33	
2155	24" thru 26" diameter				55	.436		26.50	1.93	28.43	42
2156	30" thru 36" diameter				40	.600		36.50	2.66	39.16	58
2160	Plastic pipe with fittings, up thru 1-1/2" diameter		1 Plum	250	.032		2.06		2.06	3.09	
2162	2" thru 3" diameter			"	200	.040	2.58		2.58	3.86	
2164	4" thru 6" diameter			Q-1	200	.080	4.64		4.64	6.95	
2166	8" thru 14" diameter				150	.107	6.20		6.20	9.25	
2168	16" diameter				100	.160	9.30		9.30	13.90	
2212	Deduct for salvage, aluminum scrap					Ton			635	695	
2214	Brass scrap								2,700	2,975	
2216	Copper scrap								4,475	4,925	
2218	Lead scrap								850	935	
2220	Steel scrap								204	224	
2250	Water heater, 40 gal.		1 Plum	6	1.333	Ea.	86		86	129	
9470	Water softener		Q-1	2	8	"	465		465	695	

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.	13.40	21.50	34.90	47
0540	3/4"			22	.364		18.10	23.50	41.60	55
0550	1"			19	.421		34	27	61	78
0560	1-1/4"			15	.533		57	34.50	91.50	114

22 05 23.20 Valves, Bronze

22 05 23.20 Valves, Bronze										
0010	VALVES, BRONZE									
1020	Angle, 150 lb., rising stem, threaded									
1030	1/8"		1 Plum	24	.333	Ea.	142	21.50	163.50	188
1040	1/4"			24	.333		162	21.50	183.50	210
1050	3/8"			24	.333		165	21.50	186.50	213
1060	1/2"			22	.364		169	23.50	192.50	221
1070	3/4"			20	.400		230	26	256	291
1080	1"			19	.421		315	27	342	385
1100	1-1/2"			13	.615		525	39.50	564.50	635

22 05 Common Work Results for Plumbing

22 05 23 – General-Duty Valves for Plumbing Piping

22 05 23.20	Valves, Bronze		Daily	Labor-	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
			Crew	Output			Labor	Equipment	Total		
1102	Soldered same price as threaded										
1110	2"		1 Plum	11	.727	Ea.	845	47	892	1,000	
1300	Ball										
1398	Threaded, 150 psi										
1400	1/4"		1 Plum	24	.333	Ea.	19.55	21.50	41.05	53.50	
1430	3/8"			24	.333		18.25	21.50	39.75	52	
1450	1/2"			22	.364		18	23.50	41.50	55	
1460	3/4"			20	.400		35.50	26	61.50	77.50	
1470	1"			19	.421		32	27	59	75.50	
1480	1-1/4"			15	.533		50	34.50	84.50	107	
1490	1-1/2"			13	.615		75.50	39.50	115	143	
1500	2"		1	11	.727	Ea.	83.50	47	130.50	162	
1522	Solder the same price as threaded										
1750	Check, swing, class 150, regrinding disc, threaded										
1800	1/8"		1 Plum	24	.333	Ea.	82.50	21.50	104	123	
1830	1/4"			24	.333		76.50	21.50	98	117	
1840	3/8"			24	.333		71	21.50	92.50	111	
1850	1/2"			24	.333		77	21.50	98.50	117	
1860	3/4"			20	.400		94	26	120	142	
1870	1"			19	.421		178	27	205	237	
1880	1-1/4"			15	.533		210	34.50	244.50	283	
1890	1-1/2"			13	.615		300	39.50	339.50	390	
1900	2"		1	11	.727	Ea.	380	47	427	490	
1910	2-1/2"		Q-1	15	1.067	Ea.	925	62	987	1,125	
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.	75.50	21.50	97	115	
2920	1/2"			24	.333		60.50	21.50	82	98.50	
2940	3/4"			20	.400		74	26	100	120	
2950	1"			19	.421		78.50	27	105.50	127	
2960	1-1/4"			15	.533		152	34.50	186.50	219	
2970	1-1/2"			13	.615		184	39.50	223.50	263	
2980	2"		1	11	.727	Ea.	213	47	260	305	
2990	2-1/2"		Q-1	15	1.067	Ea.	515	62	577	660	
3000	3"		"	13	1.231	Ea.	570	71.50	641.50	735	
3850	Rising stem, soldered, 300 psi										
3950	1"		1 Plum	19	.421	Ea.	229	27	256	293	
3980	2"		"	11	.727	Ea.	615	47	662	750	
4000	3"		Q-1	13	1.231	Ea.	2,025	71.50	2,096.50	2,350	
4250	Threaded, class 150										
4310	1/4"		1 Plum	24	.333	Ea.	90	21.50	111.50	131	
4320	3/8"			24	.333		90	21.50	111.50	131	
4330	1/2"			24	.333		69.50	21.50	91	109	
4340	3/4"			20	.400		81.50	26	107.50	128	
4350	1"			19	.421		125	27	152	179	
4360	1-1/4"			15	.533		132	34.50	166.50	197	
4370	1-1/2"			13	.615		167	39.50	206.50	243	
4380	2"		1	11	.727	Ea.	224	47	271	315	
4390	2-1/2"		Q-1	15	1.067	Ea.	670	62	732	835	
4400	3"		"	13	1.231	Ea.	935	71.50	1,006.50	1,125	
4500	For 300 psi, threaded, add						100%	15%			
4540	For chain operated type, add						15%				

22 05 Common Work Results for Plumbing

22 05 23 – General-Duty Valves for Plumbing Piping

22 05 23.20	Valves, Bronze		Daily	Labor-	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
			Crew	Output			Labor	Equipment	Total		
4850	Globe, class 150, rising stem, threaded										
4920	1/4"		1 Plum.	24	.333	Ea.	123	21.50	144.50	168	
4940	3/8"						121	21.50	142.50	166	
4950	1/2"						106	21.50	127.50	149	
4960	3/4"						172	26	198	228	
4970	1"						239	27	266	305	
4980	1-1/4"						292	34.50	326.50	370	
4990	1-1/2"						460	39.50	499.50	565	
5000	2"						690	47	737	830	
5010	2-1/2"		0.1	15	1.067	Ea.	1,475	62	1,537	1,725	
5020	3"		"	13	1.231	↓	2,125	71.50	2,196.50	2,425	
5120	For 300 lb. threaded, add						50%	15%			
5600	Relief, pressure & temperature, self-closing, ASME, threaded										
5640	3/4"		1 Plum.	28	.286	Ea.	257	18.40	275.40	310	
5650	1"			24	.333	Ea.	425	21.50	446.50	495	
5660	1-1/4"			20	.400	Ea.	805	26	831	925	
5670	1-1/2"			18	.444	Ea.	1,550	28.50	1,578.50	1,750	
5680	2"		"	16	.500	↓	1,675	32	1,707	1,900	
5950	Pressure, poppet type, threaded										
6000	1/2"		1 Plum.	30	.267	Ea.	90	17.20	107.20	125	
6040	3/4"		"	28	.286	"	104	18.40	122.40	143	
6400	Pressure, water, ASME, threaded										
6440	3/4"		1 Plum.	28	.286	Ea.	119	18.40	137.40	159	
6450	1"			24	.333	Ea.	340	21.50	361.50	405	
6460	1-1/4"			20	.400	Ea.	485	26	511	575	
6470	1-1/2"			18	.444	Ea.	750	28.50	778.50	865	
6480	2"			16	.500	Ea.	1,075	32	1,107	1,250	
6490	2-1/2"			15	.533	↓	4,400	34.50	4,434.50	4,900	
6900	Reducing, water pressure										
6920	300 psi to 25-75 psi, threaded or sweat										
6940	1/2"		1 Plum.	24	.333	Ea.	470	21.50	491.50	550	
6950	3/4"			20	.400	Ea.	550	26	576	645	
6960	1"			19	.421	Ea.	850	27	877	975	
6970	1-1/4"			15	.533	Ea.	1,475	34.50	1,509.50	1,675	
6980	1-1/2"		"	13	.615	↓	2,225	39.50	2,264.50	2,500	
8350	Tempering, water, sweat connections										
8400	1/2"		1 Plum.	24	.333	Ea.	118	21.50	139.50	162	
8440	3/4"		"	20	.400	"	167	26	193	222	
8650	Threaded connections										
8700	1/2"		1 Plum.	24	.333	Ea.	162	21.50	183.50	210	
8740	3/4"			20	.400	Ea.	1,050	26	1,076	1,225	
8750	1"			19	.421	Ea.	1,200	27	1,227	1,350	
8760	1-1/4"			15	.533	Ea.	1,975	34.50	2,009.50	2,225	
8770	1-1/2"			13	.615	Ea.	2,025	39.50	2,064.50	2,275	
8780	2"			11	.727	↓	3,000	47	3,047	3,375	
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	32	228	264	
8818	Water heater dam			32	.250	Ea.	32.50	16.10	48.60	59.50	
8822	Gas control wiring harness		"	32	.250	↓	24.50	16.10	40.60	51	
8830	Whole house flood safety shut off										
8834	Connections										
8838	3/4" NPT		1 Plum.	12	.667	Ea.	1,025	43	1,068	1,200	

22 05 Common Work Results for Plumbing

22 05 23 – General-Duty Valves for Plumbing Piping

22 05 23.20 Valves, Bronze		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
							Labor	Equipment		
8842	1" NPT		1 Plum	11	.727	Ea.	1,100	47	1,147	1,275
8846	1-1/4" NPT		↓	10	.800		1,100	51.50	1,151.50	1,275
22 05 23.60 Valves, Plastic										
0010 VALVES, PLASTIC										
1100	Angle, PVC, threaded									
1110	1/4"		1 Plum	26	.308	Ea.	60	19.85	79.85	95.50
1120	1/2"		↓	26	.308		81.50	19.85	101.35	119
1130	3/4"			25	.320		96.50	20.50	117	137
1140	1"		↓	23	.348		117	22.50	139.50	163
1150	Ball, PVC, socket or threaded, true union									
1230	1/2"		1 Plum	26	.308	Ea.	39	19.85	58.85	72.50
1240	3/4"		↓	25	.320		50	20.50	70.50	86
1250	1"			23	.348		55.50	22.50	78	94.50
1260	1-1/4"			21	.381		94	24.50	118.50	140
1270	1-1/2"			20	.400		86	26	112	134
1280	2"		↓	17	.471		136	30.50	166.50	195
1360	For PVC, flanged, add					▼	100%	15%		
1650	CPVC, socket or threaded, single union									
1700	1/2"		1 Plum	26	.308	Ea.	61.50	19.85	81.35	97
1720	3/4"		↓	25	.320		81	20.50	101.50	120
1730	1"			23	.348		92.50	22.50	115	136
1750	1-1/4"			21	.381		144	24.50	168.50	196
1760	1-1/2"		↓	20	.400		146	26	172	200
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.	44	19.85	63.85	78
2120	3/8"		↓	26	.308		45.50	19.85	65.35	79.50
2130	1/2"			26	.308		39.50	19.85	59.35	73
2140	3/4"			25	.320		49	20.50	69.50	85
2150	1"			23	.348		55.50	22.50	78	94.50
2160	1-1/4"			21	.381		74	24.50	98.50	118
2170	1-1/2"			20	.400		91.50	26	117.50	140
2180	2"		↓	17	.471	▼	123	30.50	153.50	182
4850	Foot valve, PVC, socket or threaded									
4900	1/2"		1 Plum	34	.235	Ea.	62	15.15	77.15	91
4930	3/4"		↓	32	.250		70	16.10	86.10	101
4940	1"			28	.286		91.50	18.40	109.90	128
4950	1-1/4"			27	.296		173	19.10	192.10	219
4960	1-1/2"		↓	26	.308	▼	175	19.85	194.85	223
6350	Y sediment strainer, PVC, socket or threaded									
6400	1/2"		1 Plum	26	.308	Ea.	56.50	19.85	76.35	91.50
6440	3/4"		↓	24	.333		65.50	21.50	87	105
6450	1"			23	.348		67.50	22.50	90	108
6460	1-1/4"			21	.381		113	24.50	137.50	162
6470	1-1/2"		↓	20	.400		133	26	159	185

22 05 Common Work Results for Plumbing

22 05 48 – Vibration and Seismic Controls for Plumbing Piping and Equipment

22 05 48.10 Seismic Bracing Supports		Daily Crew Output	Labor Hours	Unit	Material	2020 Labor	Bare Costs	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.	3.38	2.74		6.12	7.85
0050	1/2" threaded rod		160	.050		4.76	2.74		7.50	9.40
0060	5/8" threaded rod		160	.050		5.30	2.74		8.04	9.95
0070	3/4" threaded rod	↓	160	.050	↓	6.85	2.74		9.59	11.65
0100 Brackets										
0110 Beam side or wall malleable iron										
0120	3/8" threaded rod	1 Skwk	48	.167	Ea.	5.10	9.15		14.25	19.45
0130	1/2" threaded rod		48	.167		4	9.15		13.15	18.25
0140	5/8" threaded rod		48	.167		11.70	9.15		20.85	27
0150	3/4" threaded rod		48	.167		21.50	9.15		30.65	37.50
0160	7/8" threaded rod	↓	48	.167	↓	13.95	9.15		23.10	29
0170	For concrete installation, add							30%		
0180	Wall, welded steel									
0190	0 size 12" wide 18" deep	1 Skwk	34	.235	Ea.	183	12.90		195.90	222
0200	1 size 18" wide 24" deep		34	.235		218	12.90		230.90	260
0210	2 size 24" wide 30" deep	↓	34	.235	↓	289	12.90		301.90	335
0300	Rod, carbon steel									
0310	Continuous thread									
0320	1/4" thread	1 Skwk	144	.056	L.F.	2.43	3.05		5.48	7.30
0330	3/8" thread		144	.056		2.59	3.05		5.64	7.45
0340	1/2" thread		144	.056		4.07	3.05		7.12	9.10
0350	5/8" thread		144	.056		5.75	3.05		8.80	10.95
0360	3/4" thread		144	.056		10.60	3.05		13.65	16.30
0370	7/8" thread		144	.056		13.35	3.05		16.40	19.25
0380	For galvanized, add							30%		
0400	Channel, steel									
0410	3/4" x 1-1/2"	1 Skwk	80	.100	L.F.	2.98	5.50		8.48	11.60
0420	1-1/2" x 1-1/2"		70	.114		3.68	6.25		9.93	13.55
0430	1-7/8" x 1-1/2"		60	.133		21	7.30		28.30	34.50
0440	3" x 1-1/2"	↓	50	.160	↓	19.85	8.80		28.65	35.50
0450	Spring nuts									
0460	3/8"	1 Skwk	100	.080	Ea.	1.70	4.39		6.09	8.50
0470	1/2"		80	.100	"	1.81	5.50		7.31	10.30
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.	.27	3.05		3.32	4.91
0540	2" weld		72	.111		.54	6.10		6.64	9.80
0550	3" weld		54	.148		.81	8.15		8.96	13.20
0560	4" weld		36	.222		1.08	12.20		13.28	19.65
0570	5" weld		30	.267		1.35	14.65		16	23.50
0580	6" weld	↓	24	.333	↓	1.62	18.30		19.92	29.50
0600	Vibration absorbers									
0610	Hangers, neoprene flex									
0620	10-120 lb. capacity	1 Skwk	8	1	Ea.	24	55		79	110
0630	75-550 lb. capacity		8	1	"	42	55		97	129
0640	250-1,100 lb. capacity		6	1.333	"	78	73		151	197
0650	1,000-4,000 lb. capacity	↓	6	1.333	↓	144	73		217	269
0660	Spring flex									

22 05 Common Work Results for Plumbing

22 05 48 – Vibration and Seismic Controls for Plumbing Piping and Equipment

22 05 48.10 Seismic Bracing Supports		Daily	Labor-	Unit	2020 Bare Costs			Total	Total Incl O&P
		Crew	Output		Material	Labor	Equipment		
0670	60-450 lb. capacity	1 Skwk	8	1 Ea.	79	55		134	170
0680	85-450 lb. capacity		8	1	115	55		170	210
0690	600-900 lb. capacity		8	1	152	55		207	250
0700	1,100-1,300 lb. capacity	▼	6	1.333	168	73		241	295
0710	Mounts, neoprene								
0720	135-380 lb. capacity	1 Skwk	7	1.143 Ea.	17.35	62.50		79.85	114
0730	250-1,100 lb. capacity		7	1.143	63	62.50		125.50	164
0740	1,000-4,000 lb. capacity	►	5	1.600	116	88		204	260

22 05 76 – Facility Drainage Piping Cleanouts

22 05 76.10 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.	183	51.50		234.50
0120	3" pipe size		8	1		264	64.50		328.50
0140	4" pipe size	▼	6	1.333	▼	284	86		370
0980	Round top, recessed for terrazzo								
1000	2" pipe size	1 Plum	9	.889	Ea.	545	57.50		602.50
1080	3" pipe size		6	1.333		620	86		706
1100	4" pipe size	▼	4	2		710	129		839
1120	5" pipe size	Q-1	6	2.667	▼	1,175	155		1,330

22 05 76.20 Cleanout Tees

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.	143	129		272
0220	3" pipe size		3.60	2.222		181	143		324
0240	4" pipe size	▼	3.30	2.424	▼	275	156		431
0280	6" pipe size	Q-1	5	3.200	▼	790	186		976
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.	14.15	34.50		48.65
4030	2" pipe size	Q-1	27	.593		12.65	34.50		47.15
4040	3" pipe size		21	.762		25.50	44		69.50
4050	4" pipe size	▼	16	1		64.50	58		122.50
4100	Cleanout plug, 1-1/2" pipe size	1 Plum	32	.250		2.72	16.10		18.82
4110	2" pipe size	Q-1	56	.286		3.28	16.55		19.83
4120	3" pipe size		36	.444		5.35	26		31.35
4130	4" pipe size	▼	30	.533		9.15	31		40.15
4180	Cleanout adapter fitting, 1-1/2" pipe size	1 Plum	32	.250		4.18	16.10		20.28
4190	2" pipe size	Q-1	56	.286		6.10	16.55		22.65
4200	3" pipe size		36	.444		15.60	26		41.60
4210	4" pipe size	▼	30	.533	▼	29	31		60
5000	PVC, DWV								
5010	Cleanout tee, 1-1/2" pipe size	1 Plum	15	.533	Ea.	11.90	34.50		46.40
5020	2" pipe size	Q-1	27	.593		9.15	34.50		43.65
5030	3" pipe size		21	.762		27	44		71
5040	4" pipe size	▼	16	1		36.50	58		94.50
5090	Cleanout plug, 1-1/2" pipe size	1 Plum	32	.250		1.87	16.10		17.97
5100	2" pipe size	Q-1	56	.286		2.09	16.55		18.64
5110	3" pipe size		36	.444		3.73	26		29.73
5120	4" pipe size	▼	30	.533	▼	5.50	31		36.50

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	Material	2020 Bare Costs		Total	Total Incl O&P
						Labor	Equipment	Total		
5130	6" pipe size	Q-1	24	.667	Ea.	17.75	38.50	56.25		77.50
5170	Cleanout adapter fitting, 1-1/2" pipe size	1 Plum	32	.250		2.51	16.10	18.61		27
5180	2" pipe size	Q-1	56	.286		3.08	16.55	19.63		28.50
5190	3" pipe size		36	.444		8.45	26	34.45		48
5200	4" pipe size		30	.533		13.90	31	44.90		62
5210	6" pipe size		24	.667		40	38.50	78.50		102

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.	.92	3.52	4.44	6.40
6870	1" iron pipe size	G		220	.073		1.08	3.84	4.92	7.10
6900	2" iron pipe size	G		200	.080		1.78	4.22	6	8.45
6920	3" iron pipe size	G		180	.089		1.94	4.69	6.63	9.35
6940	4" iron pipe size	G		150	.107		2.58	5.65	8.23	11.50
7320	2" wall, 1/2" iron pipe size	G		220	.073		3.20	3.84	7.04	9.40
7440	6" iron pipe size	G		100	.160		6.90	8.45	15.35	20.50
7460	8" iron pipe size	G		80	.200		7.80	10.55	18.35	25
7480	10" iron pipe size	G		70	.229		9.30	12.05	21.35	29
7490	12" iron pipe size	G	↓	65	.246	▼	10.45	13	23.45	31.50

For fiberglass with standard canvas jacket, deduct

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.	1.03	4.22	5.25	7.65
7813	For .010" stainless steel, add	G		160	.100	"	3.26	5.30	8.56	11.70

7879 Rubber tubing, flexible closed cell foam

7880	3/8" wall, 1/4" iron pipe size	G	1 Asbe	120	.067	L.F.	.33	3.91	4.24	6.35
7910	1/2" iron pipe size	G		115	.070		.50	4.08	4.58	6.80
7920	3/4" iron pipe size	G		115	.070		.57	4.08	4.65	6.90
7930	1" iron pipe size	G		110	.073		.60	4.27	4.87	7.20
7950	1-1/2" iron pipe size	G		110	.073		.79	4.27	5.06	7.40
8100	1/2" wall, 1/4" iron pipe size	G		90	.089		.99	5.20	6.19	9.10
8130	1/2" iron pipe size	G		89	.090		1.06	5.25	6.31	9.25
8140	3/4" iron pipe size	G		89	.090		1.22	5.25	6.47	9.45
8150	1" iron pipe size	G		88	.091		.86	5.35	6.21	9.15
8170	1-1/2" iron pipe size	G		87	.092		1.89	5.40	7.29	10.40
8180	2" iron pipe size	G		86	.093		2.38	5.45	7.83	11
8200	3" iron pipe size	G		85	.094		2.78	5.50	8.28	11.55
8300	3/4" wall, 1/4" iron pipe size	G		90	.089		.94	5.20	6.14	9.05
8330	1/2" iron pipe size	G		89	.090		1.13	5.25	6.38	9.35
8340	3/4" iron pipe size	G		89	.090		2.13	5.25	7.38	10.45
8350	1" iron pipe size	G		88	.091		2.10	5.35	7.45	10.50
8370	1-1/2" iron pipe size	G		87	.092		3.07	5.40	8.47	11.70
8380	2" iron pipe size	G		86	.093		4.27	5.45	9.72	13.10
8400	3" iron pipe size	G		85	.094		5.50	5.50	11	14.55
8444	1" wall, 1/2" iron pipe size	G		86	.093		3.18	5.45	8.63	11.90

22 07 Plumbing Insulation

22 07 19 – Plumbing Piping Insulation

22 07 19.10 Piping Insulation		Crew	Daily	Labor-	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
			Output	Hours			Labor	Equipment	Total		
8445	3/4" iron pipe size	G	1 Asbe	.84	.095	L.F.	3.90	5.60	9.50	12.90	
8446	1" iron pipe size	G		.84	.095		3.49	5.60	9.09	12.45	
8447	1-1/4" iron pipe size	G		.82	.098		3.83	5.70	9.53	13	
8448	1-1/2" iron pipe size	G		.82	.098		6.15	5.70	11.85	15.55	
8449	2" iron pipe size	G		.80	.100		7.55	5.85	13.40	17.30	
8450	2-1/2" iron pipe size	G		.80	.100		8.45	5.85	14.30	18.30	
8456	Rubber insulation tape, 1/8" x 2" x 30'	G			Ea.		23		23	25	

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.	8.30	10.75		19.05	25
1140 3/4" diameter			46	.174		10.95	11.20		22.15	29
1160 1" diameter			43	.186		7.15	12		19.15	26
1180 1-1/4" diameter		Q-1	72	.222		23.50	12.90		36.40	45.50
1200 1-1/2" diameter			65	.246		28	14.30		42.30	52
1220 2" diameter			53	.302		18.85	17.50		36.35	47

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.	4.25	6.15		10.40	13.85
1200 1" diameter			66	.121		12.80	7.80		20.60	26
1260 2" diameter			40	.200		27	12.90		39.90	49.50
2000 Type L tubing, couplings & clevis hanger assemblies 10' OC										
2100 1/4" diameter		1 Plum	88	.091	L.F.	2.67	5.85		8.52	11.70
2120 3/8" diameter			84	.095		3.34	6.15		9.49	12.85
2140 1/2" diameter			81	.099		3.68	6.35		10.03	13.60
2160 5/8" diameter			79	.101		5.75	6.55		12.30	16.05
2180 3/4" diameter			76	.105		4.71	6.80		11.51	15.35
2200 1" diameter			68	.118		7.60	7.60		15.20	19.70
2220 1-1/4" diameter			58	.138		12	8.90		20.90	26.50
2240 1-1/2" diameter			52	.154		11.60	9.90		21.50	27.50
2260 2" diameter			42	.190		18.85	12.30		31.15	39.50
2280 2-1/2" diameter		Q-1	62	.258		30	14.95		44.95	55.50
2300 3" diameter			56	.286		46.50	16.55		63.05	76
2320 3-1/2" diameter			43	.372		60	21.50		81.50	98.50
2340 4" diameter			39	.410		65.50	24		89.50	108
2360 5" diameter			34	.471		148	27.50		175.50	203
2380 6" diameter		Q-2	40	.600		151	36		187	220
2400 8" diameter			36	.667		250	40		290	335
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.	12.45	8.60		21.05	26.50
4120 1-1/2" diameter			54	.148		12.60	9.55		22.15	28
4140 2" diameter			44	.182		18.30	11.70		30	37.50
4160 3" diameter		Q-1	58	.276		29	16		45	56
4180 4" diameter			40	.400		60.50	23		83.50	101

22 11 Facility Water Distribution

22 11 13 – Facility Water Distribution Piping

22 11 13.23 Pipe/Tube, Copper		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	Equipment	Total	Total Incl O&P
4200 5" diameter		Q-1	36	.444	L.F.	110	26			136	160
4220 6" diameter		Q-2	42	.571	↓	161	34.50			195.50	229
22 11 13.44 Pipe, Steel											
0010 PIPE, STEEL											
0012 The steel pipe in this section does not include fittings such as ell's, 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.	6.15	7.80			13.95	18.50
0550	3/8" diameter	65	.123			6.85	7.95			14.80	19.40
0560	1/2" diameter	63	.127			4.03	8.20			12.23	16.70
0570	3/4" diameter	61	.131			4.40	8.45			12.85	17.50
0580	1" diameter	53	.151			7.80	9.75			17.55	23
0590	1-1/4" diameter	Q-1	89	.180		8.20	10.45			18.65	24.50
0600	1-1/2" diameter		80	.200		8.75	11.60			20.35	27
0610	2" diameter		64	.250		6.90	14.50			21.40	29
0620	2-1/2" diameter		50	.320		11.40	18.55			29.95	40.50
0630	3" diameter		43	.372		14.35	21.50			35.85	48.50
0640	3-1/2" diameter		40	.400		21	23			44	58
0650	4" diameter		36	.444	↓	23	26			49	64
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.	8.10	7.80			15.90	20.50
1300	3/8" diameter	65	.123			8.35	7.95			16.30	21
1310	1/2" diameter	63	.127			4.10	8.20			12.30	16.75
1320	3/4" diameter	61	.131			5	8.45			13.45	18.15
1330	1" diameter	53	.151			7.90	9.75			17.65	23.50
1340	1-1/4" diameter	Q-1	89	.180		8.85	10.45			19.30	25.50
1350	1-1/2" diameter		80	.200		9.45	11.60			21.05	28
1360	2" diameter		64	.250		7.90	14.50			22.40	30
1370	2-1/2" diameter		50	.320		13.15	18.55			31.70	42.50
1380	3" diameter		43	.372		16	21.50			37.50	50
1390	3-1/2" diameter		40	.400		23	23			46	59.50
1400	4" diameter		36	.444	↓	25.50	26			51.50	66.50
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.	7.15	10	1.14		18.29	24
2070	2" diameter		61	.262		6.60	15.20	1.74		23.54	32
2090	3" diameter		43	.372		16.65	21.50	2.47		40.62	53.50
2110	4" diameter		37	.432		24	25	2.88		51.88	67
2120	5" diameter		32	.500		37	29	3.33		69.33	87.50
2130	6" diameter	Q-16	36	.667		45	40	2.95		87.95	113
2140	8" diameter		29	.828		71.50	50	3.67		125.17	157
2150	10" diameter		24	1		90	60	4.43		154.43	194
2160	12" diameter		19	1.263	↓	107	76	5.60		188.60	237

22 11 Facility Water Distribution

22 11 13 – Facility Water Distribution Piping

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P		
						Labor	Equipment				
22 11 13.48 Pipe, Fittings and Valves, Steel, Grooved-Joint											
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.	6.55	7.25	13.80	18.05
1050	1" diameter				63	.127		6.45	8.20	14.65	19.35
1060	1-1/4" diameter				58	.138		7.70	8.90	16.60	22
1070	1-1/2" diameter				51	.157		8.40	10.10	18.50	24.50
1080	2" diameter				40	.200		9.70	12.90	22.60	30
1090	2-1/2" diameter			Q-1	57	.281		16.50	16.30	32.80	42.50
1100	3" diameter				50	.320		22	18.55	40.55	52
1110	4" diameter				45	.356		26	20.50	46.50	59.50
1120	5" diameter				37	.432		41	25	66	82.50
1130	6" diameter			Q-2	42	.571	↓	52.50	34.50	87	109
1800 Galvanized											
1840	3/4" diameter			1 Plum	71	.113	L.F.	7.15	7.25	14.40	18.70
1850	1" diameter				63	.127		7.10	8.20	15.30	20
1860	1-1/4" diameter				58	.138		8.50	8.90	17.40	22.50
1870	1-1/2" diameter				51	.157		9.25	10.10	19.35	25.50
1880	2" diameter				40	.200		10.80	12.90	23.70	31
1890	2-1/2" diameter			Q-1	57	.281		16.70	16.30	33	43
1900	3" diameter				50	.320		19.65	18.55	38.20	49.50
1910	4" diameter				45	.356		23	20.50	43.50	56.50
1920	5" diameter				37	.432		30.50	25	55.50	71
1930	6" diameter			Q-2	42	.571	↓	39.50	34.50	74	95
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.	82.50	10.30	92.80	106
4040	1" diameter				50	.160		44.50	10.30	54.80	64.50
4050	1-1/4" diameter				40	.200		44.50	12.90	57.40	68.50
4060	1-1/2" diameter				33	.242		44.50	15.60	60.10	72.50
4070	2" diameter				25	.320		44.50	20.50	65	80
4080	2-1/2" diameter			Q-1	40	.400		44.50	23	67.50	83.50
4090	3" diameter				33	.485		78	28	106	128
4100	4" diameter				25	.640		84.50	37	121.50	149
4110	5" diameter				20	.800		201	46.50	247.50	291
4120	6" diameter			Q-2	25	.960		236	57.50	293.50	345
4250	For galvanized elbows, add									26%	
4690	Tee, pointed										
4700	3/4" diameter			1 Plum	38	.211	Ea.	88.50	13.55	102.05	118
4740	1" diameter				33	.242		68.50	15.60	84.10	98.50
4750	1-1/4" diameter				27	.296		68.50	19.10	87.60	104
4760	1-1/2" diameter				22	.364		68.50	23.50	92	110
4770	2" diameter				17	.471		68.50	30.50	99	121
4780	2-1/2" diameter			Q-1	27	.593		68.50	34.50	103	127
4790	3" diameter				22	.727		93.50	42	135.50	166
4800	4" diameter				17	.941		142	54.50	196.50	238
4810	5" diameter				13	1.231		330	71.50	401.50	470
4820	6" diameter			Q-2	17	1.412		380	85	465	545
4900	For galvanized tees, add									24%	
4906	Couplings, rigid style, painted										

22 11 Facility Water Distribution

22 11 13 – Facility Water Distribution Piping

22 11 13.48	Pipe, Fittings and Valves, Steel, Grooved-Joint	Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
							Labor	Equipment	Total		
4908	1" diameter	1 Plum	100	.080	Ea.	34.50	5.15		39.65	45.50	
4909	1-1/4" diameter		100	.080		32	5.15		37.15	42.50	
4910	1-1/2" diameter		67	.119		34.50	7.70		42.20	49.50	
4912	2" diameter		50	.160		43.50	10.30		53.80	63.50	
4914	2-1/2" diameter	Q-1	80	.200		49.50	11.60		61.10	72	
4916	3" diameter		67	.239		57.50	13.85		71.35	83.50	
4918	4" diameter		50	.320		79.50	18.55		98.05	116	
4920	5" diameter		40	.400		102	23		125	148	
4922	6" diameter	Q-2	50	.480		135	29		164	192	
4940	Flexible, standard, painted										
4950	3/4" diameter	1 Plum	100	.080	Ea.	25	5.15		30.15	35	
4960	1" diameter		100	.080		25	5.15		30.15	35	
4970	1-1/4" diameter		80	.100		32.50	6.45		38.95	45	
4980	1-1/2" diameter		67	.119		35	7.70		42.70	50	
4990	2" diameter		50	.160		38	10.30		48.30	57	
5000	2-1/2" diameter	Q-1	80	.200		44	11.60		55.60	66	
5010	3" diameter		67	.239		48.50	13.85		62.35	74	
5020	3-1/2" diameter		57	.281		69.50	16.30		85.80	101	
5030	4" diameter		50	.320		70	18.55		88.55	105	
5040	5" diameter		40	.400		105	23		128	151	
5050	6" diameter	Q-2	50	.480		125	29		154	180	
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.	10.20	9.55		19.75	25.50
3550	3/8" diameter		53	.151		11.15	9.75		20.90	27
3560	1/2" diameter		52	.154		12.40	9.90		22.30	28.50
3580	1" diameter		45	.178		24.50	11.45		35.95	44
3610	2" diameter	Q-1	57	.281		52	16.30		68.30	82
3640	4" diameter	Q-2	51	.471		131	28.50		159.50	187
3740	For small quantities, add					10%				

4250 Schedule 40, type 316

4290	1/4" diameter	1 Plum	54	.148	L.F.	23.50	9.55		33.05	40
4300	3/8" diameter		53	.151		25.50	9.75		35.25	42.50
4310	1/2" diameter		52	.154		28.50	9.90		38.40	46.50
4320	3/4" diameter		51	.157		32.50	10.10		42.60	50.50
4330	1" diameter		45	.178		45	11.45		56.45	66.50
4360	2" diameter	Q-1	57	.281		90.50	16.30		106.80	124
4390	4" diameter	Q-2	51	.471		187	28.50		215.50	249
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.	4.90	9.55		14.45	19.70
1870	3/4" diameter		51	.157		5.40	10.10		15.50	21
1880	1" diameter		46	.174		9.45	11.20		20.65	27
1890	1-1/4" diameter		42	.190		9.95	12.30		22.25	29.50

22 11 Facility Water Distribution

22 11 13 – Facility Water Distribution Piping

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
		Crew		Unit	Labor	Equipment		
22 11 13.74 Pipe, Plastic								
1900	1-1/2" diameter	1 Plum	36	.222	L.F.	10.25	14.30	24.55
1910	2" diameter	Q-1	59	.271		12.15	15.75	27.90
1920	2-1/2" diameter		56	.286		20	16.55	36.55
1930	3" diameter		53	.302		22	17.50	39.50
1940	4" diameter		48	.333		14.80	19.35	34.15
1950	5" diameter		43	.372		23.50	21.50	45
1960	6" diameter	↓	39	.410	↓	30.50	24	54.50
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 block							
4214	1-1/2" diameter	1 Plum	39	.205	L.F.	8.60	13.20	21.80
4216	2" diameter	Q-1	62	.258		9.25	14.95	24.20
4218	3" diameter		56	.286		17.60	16.55	34.15
4220	4" diameter		51	.314		9.80	18.20	28
4222	6" diameter	↓	42	.381	↓	21.50	22	43.50
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.	9.10	12.30	21.40
4420	1-1/2" diameter		36	.222		8.25	14.30	22.55
4460	2" diameter	Q-1	59	.271		9.15	15.75	24.90
4470	3" diameter		53	.302		17.45	17.50	34.95
4480	4" diameter		48	.333		19.20	19.35	38.55
4490	6" diameter	↓	39	.410	↓	18.60	24	42.60
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.	5.80	9.55	15.35
5305	3/4" diameter		51	.157		6.95	10.10	17.05
5306	1" diameter		46	.174		11.35	11.20	22.55
5307	1-1/4" diameter		42	.190		12.85	12.30	25.15
5308	1-1/2" diameter	↓	36	.222		12.45	14.30	26.75
5309	2" diameter	Q-1	59	.271		15.70	15.75	31.45
5310	2-1/2" diameter		56	.286		28	16.55	44.55
5311	3" diameter		53	.302	↓	32	17.50	49.50
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.	6.65	9.55	16.20
5470	3/4" diameter		51	.157		8.45	10.10	18.55
5480	1" diameter		46	.174		12.90	11.20	24.10
5490	1-1/4" diameter		42	.190		14.05	12.30	26.35
5500	1-1/2" diameter	↓	36	.222		13.45	14.30	27.75
5510	2" diameter	Q-1	59	.271		16.90	15.75	32.65
5520	2-1/2" diameter		56	.286		29.50	16.55	46.05
5530	3" diameter	↓	53	.302	↓	33.50	17.50	51
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.	.56		.56
7350	3/8" diameter x 100'					.55		.55
7360	1/2" diameter x 100'					.76		.76
7370	1/2" diameter x 500'					.74		.74
7380	1/2" diameter x 1000'					.72		.72

22 11 Facility Water Distribution

22 11 13 – Facility Water Distribution Piping

22 11 13.74 Pipe, Plastic		Daily	Labor-	Unit	2020 Bare Costs			Total	Total Incl O&P
		Crew	Hours		Material	Labor	Equipment		
7400	3/4" diameter x 100'			L.F.	1.04			1.04	1.14
7410	3/4" diameter x 500'				1.17			1.17	1.29
7420	3/4" diameter x 1000'				1.17			1.17	1.29
7460	1" diameter x 100'				2.02			2.02	2.22
7470	1" diameter x 300'				2.02			2.02	2.22
7480	1" diameter x 500'				2.03			2.03	2.23
7500	1-1/4" diameter x 100'				3.44			3.44	3.78
7510	1-1/4" diameter x 300'				3.44			3.44	3.78
7540	1-1/2" diameter x 100'				4.71			4.71	5.20
7550	1-1/2" diameter x 300'				4.72			4.72	5.20
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.	.68			.68	.75
7750	3/4" diameter x 20'				1.20			1.20	1.32
7760	1" diameter x 20'				2.04			2.04	2.24
7770	1-1/4" diameter x 20'				3.65			3.65	4.02
7780	1-1/2" diameter x 20'				4.73			4.73	5.20
7790	2" diameter				9.30			9.30	10.25
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.	6.80	14.30	21.10	29
0220	18" long		36	.222		8.55	14.30	22.85	31
0240	24" long		34	.235		10	15.15	25.15	33.50
0280	36" long		32	.250		11.90	16.10	28	37
0340	60" long		30	.267	↓	17.95	17.20	35.15	45.50
2000	Water, copper tubing, dielectric separators								
2100	12" long	1 Plum	36	.222	Ea.	8.20	14.30	22.50	30.50
2260	24" long	"	34	.235	"	12.20	15.15	27.35	36

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 Spi	26	.308	Ea.	28.50	20	48.50	61
0160	3/4" diameter x 12"		20	.400		39.50	26	65.50	82.50
0180	1" diameter x 18"		19	.421		51	27.50	78.50	97.50
0200	1-1/2" diameter x 18"		13	.615		57	40.50	97.50	123
0220	2" diameter x 18"		11	.727	↓	93.50	47.50	141	175

22 11 19.26 Pressure Regulators

0010	PRESSURE REGULATORS								
3000	Steam, high capacity, bronze body, stainless steel trim								
3020	Threaded, 1/2" diameter	1 Spi	24	.333	Ea.	3,000	22	3,022	3,325
3030	3/4" diameter		24	.333		3,050	22	3,072	3,400
3040	1" diameter		19	.421		3,425	27.50	3,452.50	3,800
3060	1-1/4" diameter		15	.533		3,475	35	3,510	3,875
3080	1-1/2" diameter		13	.615		4,325	40.50	4,365.50	4,800
3100	2" diameter		11	.727		5,275	47.50	5,322.50	5,900
3120	2-1/2" diameter	Q-5	12	1.333		6,575	78.50	6,653.50	7,350
3140	3" diameter	"	11	1.455		7,450	86	7,536	8,325
3500	Flanged connection, iron body, 125 lb. W.S.P.								
3520	3" diameter	Q-5	11	1.455	Ea.	8,275	86	8,361	9,225

22 11 Facility Water Distribution

22 11 19 – Domestic Water Piping Specialties

22 11 19.26 Pressure Regulators		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
		Q-5	5	3,200	Ea.	10,400	Labor	Equipment	Total	Incl O&P
3540	4" diameter								10,589	11,800
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.	54	32		86	108
2080	3/4" diameter, to 30 GPM	"	14	.571	"	98.50	37		135.50	163
2100	1" diameter, to 50 GPM	"	12	.667	"	149	43		192	229
2300	Threaded/flanged									
2340	1-1/2" diameter, to 100 GPM	1 Plum	8	1	Ea.	365	64.50		429.50	495
2360	2" diameter, to 160 GPM	"	6	1.333	"	495	86		581	675
2600	Flanged, compound									
2640	3" diameter, 320 GPM	Q-1	3	5.333	Ea.	2,650	310		2,960	3,400
2660	4" diameter, to 500 GPM	"	1.50	10.667	"	4,250	620		4,870	5,600
2680	6" diameter, to 1,000 GPM	"	1	16	"	6,850	930		7,780	8,950
2700	8" diameter, to 1,800 GPM	"	.80	20	"	10,700	1,150		11,850	13,500
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.	530	32		562	635
4140	1" pipe size	"	14	.571	"	560	37		597	670
4150	1-1/4" pipe size	"	12	.667	"	1,125	43		1,168	1,300
4160	1-1/2" pipe size	"	10	.800	"	1,150	51.50		1,201.50	1,350
4180	2" pipe size	"	7	1.143	"	1,325	73.50		1,398.50	1,575
5000	Flanged, bronze, valves are OS&Y									
5060	2-1/2" pipe size	Q-1	5	3,200	Ea.	5,475	186		5,661	6,300
5080	3" pipe size	"	4.50	3,556	"	6,600	206		6,806	7,550
5100	4" pipe size	"	3	5.333	"	7,725	310		8,035	8,975
5120	6" pipe size	Q-2	3	8	"	12,000	480		12,480	13,900
5600	Flanged, iron, valves are OS&Y									
5660	2-1/2" pipe size	Q-1	5	3,200	Ea.	3,300	186		3,486	3,900
5680	3" pipe size	"	4.50	3,556	"	3,275	206		3,481	3,900
5700	4" pipe size	"	3	5.333	"	4,725	310		5,035	5,675
5720	6" pipe size	Q-2	3	8	"	5,825	480		6,305	7,150
5740	8" pipe size	"	2	12	"	10,300	720		11,020	12,400
5760	10" pipe size	"	1	24	"	19,800	1,450		21,250	24,000
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 Stpl	24	.333	Ea.	192	22		214	244
1040	3/4" size	"	20	.400	"	192	26		218	250
1050	1" size	"	19	.421	"	197	27.50		224.50	258
1060	1-1/4" size	"	15	.533	"	390	35		425	485
1070	1-1/2" size	"	13	.615	"	475	40.50		515.50	585
1080	2" size	"	11	.727	"	490	47.50		537.50	610
1200	Max. 125 psi with atmospheric vent									
1210	Brass, in-line construction									

22 11 Facility Water Distribution

22 11.19 – Domestic Water Piping Specialties

22 11.19.50 Vacuum Breakers		Crew	Daily Output	Labor Hours	Unit	Material	2020 Labor	Bare Costs	Equipment	Total	Total Incl Q&P
1220	1/4" size	1 Stpi	24	.333	Ea.	143	22			165	190
1230	3/8" size	"	24	.333		143	22			165	190
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.	88.50	22			110.50	130
2040	3/8" size	"	24	.333		88.50	22			110.50	130
2050	1/2" size	"	24	.333		99	22			121	142
2060	3/4" size	"	20	.400		119	26			145	169
2070	1" size	"	19	.421		183	27.50			210.50	244
2080	1-1/4" size	"	15	.533		320	35			355	410
2090	1-1/2" size	"	13	.615		350	40.50			390.50	445
2100	2" size	"	11	.727		585	47.50			632.50	715
2110	2-1/2" size	"	8	1		1,675	65.50			1,740.50	1,950
2120	3" size					2,225	87.50			2,312.50	2,575
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.	31	43			74	98.50
0600	1" male IPS for 12 to 32 fixtures	"	8	1		51.50	64.50			116	153
0700	1-1/4" male IPS for 33 to 60 fixtures	"	8	1		50.50	64.50			115	153
0800	1-1/2" male IPS for 61 to 113 fixtures	"	8	1		73	64.50			137.50	177
0900	2" male IPS for 114 to 154 fixtures	"	8	1		108	64.50			172.50	215
1000	2-1/2" male IPS for 155 to 330 fixtures		4	2		330	129			459	560

22 11.19.64 Hydrants

0010 HYDRANTS											
0050	Wall type, moderate climate, bronze, encased										
0200	3/4" IPS connection	1 Plum	16	.500	Ea.	1,025	32			1,057	1,175
0300	1" IPS connection	"	14	.571		1,125	37			1,162	1,300
0500	Anti-siphon type, 3/4" connection		16	.500		815	32			847	945
1000	Non-freeze, bronze, exposed										
1100	3/4" IPS connection, 4" to 9" thick wall	1 Plum	14	.571	Ea.	470	37			507	570
1120	10" to 14" thick wall	"	12	.667		445	43			488	555
1140	15" to 19" thick wall	"	12	.667		550	43			593	670
1160	20" to 24" thick wall	"	10	.800		830	51.50			881.50	985
1200	For 1" IPS connection, add						15%	10%			
1240	For 3/4" adapter type vacuum breaker, add						83			83	91.50
1280	For anti-siphon type, add						"	176		176	194
2000	Non-freeze bronze, encased, anti-siphon type										
2100	3/4" IPS connection, 5" to 9" thick wall	1 Plum	14	.571	Ea.	1,275	37			1,312	1,450
2120	10" to 14" thick wall	"	12	.667		1,625	43			1,668	1,875
2140	15" to 19" thick wall	"	12	.667		1,725	43			1,768	1,975
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.	1,325	64.50			1,389.50	1,550
3140	4' depth of bury	"	8	1		1,525	64.50			1,589.50	1,775
3180	6' depth of bury	"	7	1.143		1,700	73.50			1,773.50	1,950
3220	8' depth of bury		5	1.600		1,775	103			1,878	2,100
3400	For 1" IPS connection, add						15%	10%			
3550	For 2" IPS connection, add						445%	24%			

22 11 Facility Water Distribution

22 11 19 - Domestic Water Piping Specialties

22 11 19.64 Hydrants		Daily Crew	Output	Labor-Hrs	Unit	Material	2020 Bare	Costs	Total	Total Incl Q&P	
					Ea.	107	Labor	Equipment		107	118
3600	For tapped drain port in box, add										
5000	Moderate climate, all bronze, polished face										
5020	and scoriaed cover, set flush										
5100	3/4" IPS connection	1 Plum	16	.500	Ea.	830	\$2		862	965	
5120	1" IPS connection	"	14	.571		2,000	37		2,037	2,275	
5200	For tapped drain port in box, add										

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.	16,500	7,000		23,500	28,600
3220	100 HP, to 3,000 GPM		.26	123		20,300	7,550		27,850	33,600
3240	150 HP, to 4,000 GPM	↓	.24	133	↓	23,600	8,175		31,775	38,200

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.	17.10	14.75		31.85	41
2140	3" diameter		60	.267		26.50	15.45		41.95	52
2160	4" diameter	↓	55	.291		24.50	16.85		41.35	52.50
2180	5" diameter	Q-2	76	.316		31	19		50	62.50
2200	6" diameter	"	73	.329		42.50	19.80		62.30	76
2220	8" diameter	Q-3	59	.542		64.50	33.50		98	121
2240	10" diameter		54	.593		102	36.50		138.50	168
2260	12" diameter	↓	48	.667		145	41		186	221
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.	1.01	5.80		6.81	9.80
2420	Oakum for caulking (1/8#/diam. in.)	"	40	.400	"	4.37	23		27.37	39.50
4000	No hub, couplings 10' OC									
4100	1-1/2" diameter	Q-1	71	.225	L.F.	16.85	13.05		29.90	38
4120	2" diameter		67	.239		20	13.85		33.85	42.50
4140	3" diameter		64	.250		27	14.50		41.50	51
4160	4" diameter	↓	58	.276	↓	25	16		41	51.50

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.	360	116		476	570
2820	4" pipe size	"	7	2.286		415	133		548	655
2840	For galvanized body, add						239		239	263

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.	167	58		225	271
1140	3"	↓	14	1.143	↓	167	66.50		233.50	283

22 13 Facility Sanitary Sewerage

22 13 16 – Sanitary Waste and Vent Piping

22 13 16.60 Traps		Daily Output	Labor-Hours		Material	2020 Bare Costs			Total	Total Incl Q&P
			Crew	Unit		Labor	Equipment	Total		
1150	4"	Q-1	13	1.231	Ea.	167	71.50	238.50	291	
1160	6"	Q-2	17	1.412	"	770	85	855	975	
1180	Running trap, single hub, with vent									
2080	3" pipe size, 3" vent	Q-1	14	1.143	Ea.	133	66.50	199.50	245	
2120	4" pipe size, 4" vent	"	13	1.231	"	187	71.50	258.50	315	
2300	For double hub, vent, add					10%	20%			
3000	P trap, B&S, 2" pipe size	Q-1	16	1	"	41.50	58	99.50	133	
3040	3" pipe size	"	14	1.143	"	61.50	66.50	128	167	
3350	Deep seal trap, B&S									
3400	1-1/4" pipe size	Q-1	14	1.143	Ea.	69	66.50	135.50	175	
3410	1-1/2" pipe size		14	1.143	"	69	66.50	135.50	175	
3420	2" pipe size		14	1.143	"	59.50	66.50	126	164	
3440	3" pipe size		12	1.333	"	76	77.50	153.50	200	
4700	Copper, drainage, drum trap									
4800	3" x 5" solid, 1-1/2" pipe size	1 Plum	16	.500	Ea.	156	32	188	220	
4840	3" x 6" swivel, 1-1/2" pipe size	"	16	.500	"	315	32	347	395	
5100	P trap, standard pattern									
5200	1-1/4" pipe size	1 Plum	18	.444	Ea.	102	28.50	130.50	156	
5240	1-1/2" pipe size		17	.471	"	111	30.50	141.50	169	
5260	2" pipe size		15	.533	"	184	34.50	218.50	254	
5280	3" pipe size		11	.727	"	525	47	572	650	
5340	With cleanout, swivel joint and slip joint									
5360	1-1/4" pipe size	1 Plum	18	.444	Ea.	124	28.50	152.50	179	
5400	1-1/2" pipe size	"	17	.471	"	199	30.50	229.50	265	

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.	52	24.50	76.50	94	
0190	4" to 4-1/8" pipe	"	19	.421	"	75	27	102	124	
0900	Vent flashing									
1000	Aluminum with lead ring									
1020	1-1/4" pipe	1 Plum	20	.400	Ea.	5.95	26	31.95	45	
1030	1-1/2" pipe		20	.400	"	5.75	26	31.75	45	
1040	2" pipe		18	.444	"	5.65	28.50	34.15	49	
1050	3" pipe		17	.471	"	6.25	30.50	36.75	52.50	
1060	4" pipe		16	.500	"	7.55	32	39.55	56.50	
1350	Copper with neoprene ring									
1400	1-1/4" pipe	1 Plum	20	.400	Ea.	74	26	100	120	
1430	1-1/2" pipe		20	.400	"	74	26	100	120	
1440	2" pipe		18	.444	"	74	28.50	102.50	125	
1450	3" pipe		17	.471	"	89.50	30.50	120	144	
1460	4" pipe		16	.500	"	89.50	32	121.50	147	

22 13 19 – Sanitary Waste Piping Specialties

22 13 19.13 Sanitary Drains										
0010 SANITARY DRAINS										
0400	Deck, auto park, Cl, 13" top									
0440	3", 4", 5", and 6" pipe size	Q-1	8	2	Ea.	1,875	116	1,991	2,225	
0480	For galvanized body, add					"	1,125		1,125	1,250
2000	Floor, medium duty, Cl, deep flange, 7" diam. top									
2040	2" and 3" pipe size	Q-1	12	1.333	Ea.	227	77.50	304.50	365	
2080	For galvanized body, add					"	140		140	154

22 13 Facility Sanitary Sewerage

22 13 19 – Sanitary Waste Piping Specialties

22 13 19.13 Sanitary Drains				Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P
				Ea.				Labor	Equipment		
2120	With polished bronze top							375		375	410
2400	Heavy duty, with sediment bucket, Cl, 12" diam. loose grate										
2420	2", 3", 4", 5", and 6" pipe size				Q-1	9	1.778	Ea.	935	103	1,038
2460	With polished bronze top							"	1,150		1,150
2500	Heavy duty, cleanout & trap w/bucket, Cl, 15" top										1,250
2540	2", 3", and 4" pipe size				Q-1	6	2.667	Ea.	8,125	155	8,280
2560	For galvanized body, add								2,425		2,425
2580	With polished bronze top								9,700		9,700
											10,700

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.	1,575	129	1,704	1,925
0200	7 GPM, 14 lb. fat capacity				4	2		2,050	129	2,179	2,475
1000	10 GPM, 20 lb. fat capacity				4	2		2,575	129	2,704	3,025
1040	15 GPM, 30 lb. fat capacity				4	2		3,575	129	3,704	4,150
1060	20 GPM, 40 lb. fat capacity				3	2.667		4,650	172	4,822	5,375
1120	50 GPM, 100 lb. fat capacity			Q-1	2	8		8,075	465	8,540	9,575
1160	100 GPM, 200 lb. fat capacity			"	2	8		20,100	465	20,565	22,900
1580	For seepage pan, add							7%			
3000	Hair, cast iron, 1-1/4" and 1-1/2" pipe connection			1 Plum	8	1	Ea.	560	64.50	624.50	710
3100	For chrome-plated cast iron, add							375		375	410
4000	Oil, fabricated steel, 10 GPM, 2" pipe size			1 Plum	4	2		3,300	129	3,429	3,850
4100	15 GPM, 2" or 3" pipe size				4	2		4,525	129	4,654	5,200
4120	20 GPM, 2" or 3" pipe size				3	2.667		6,150	172	6,322	7,000
4220	100 GPM, 3" pipe size			Q-1	2	8		18,300	465	18,765	20,800
6000	Solids, precious metals recovery, Cl, 1-1/4" to 2" pipe			1 Plum	4	2		755	129	884	1,025
6100	Dental lab., large, Cl, 1-1/2" to 2" pipe			"	3	2.667		2,650	172	2,822	3,150

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.	3,525		3,525
0300	Unit with manway, 26" ID, 18" high								4,150		4,150
0340	26" ID, 36" high								4,075		4,075
0380	43" ID, 4' high								4,250		4,675
3000	Indoor residential type installation							Ea.	3,625		3,625
3020	Simplex, 9 GPM at 60 PSIG, 91 gal. HDPE tank										3,975

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.	505	290	795	990
0510	3" discharge				3.10	5.161		550	299	849	1,050
0530	87 GPM, .7 HP, 2" discharge				3.20	5		770	290	1,060	1,275
0540	3" discharge				3.10	5.161		835	299	1,134	1,375
0600	45 gal. coated stl. tank, 12 GPM, 1/2 HP, 2" discharge				3	5.333		900	310	1,210	1,450
0610	3" discharge				2.90	5.517		935	320	1,255	1,500
0630	87 GPM, .7 HP, 2" discharge				3	5.333		1,150	310	1,460	1,750
0640	3" discharge				2.90	5.517		1,225	320	1,545	1,825
0660	134 GPM, 1 HP, 2" discharge				2.80	5.714		1,250	330	1,580	1,875
0680	3" discharge				2.70	5.926		1,325	345	1,670	1,975
0700	70 gal. PE tank, 12 GPM, 1/2 HP, 2" discharge				2.60	6.154		970	355	1,325	1,600

22 13 Facility Sanitary Sewerage

22 13 29 – Sanitary Sewerage Pumps

22 13 29.14 Sewage Ejector Pumps			Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
							Labor	Equipment			
0710	3" discharge		Q-1	2.40	6.667	Ea.	1,050	385		1,435	1,725
0730	87 GPM, 7 HP, 2" discharge			2.50	6.400	"	1,275	370		1,645	1,975
0740	3" discharge			2.30	6.957	"	1,325	405		1,730	2,075
0760	134 GPM, 1 HP, 2" discharge			2.20	7.273	"	1,375	420		1,795	2,125
0770	3" discharge			2	8	"	1,450	465		1,915	2,300

22 14 Facility Storm Drainage

22 14 23 – Storm Drainage Piping Specialties

22 14 23.33 Backwater Valves

0010	BACKWATER VALVES, Cl Body										
6980	Bronze gate and automatic flapper valves										
7000	3" and 4" pipe size	Q-1	13	1.231	Ea.	2,525	71.50		2,596.50	2,875	
7100	5" and 6" pipe size		13	1.231	"	3,850	71.50		3,921.50	4,350	
7240	Bronze flapper valve, bolted cover										
7260	2" pipe size	Q-1	16	1	Ea.	735	58		793	895	
7300	4" pipe size	"	13	1.231	"	1,300	71.50		1,371.50	1,525	
7340	6" pipe size	Q-2	17	1.412	"	2,275	85		2,360	2,625	

22 14 26 – Facility Storm Drains

22 14 26.13 Roof Drains

0010	ROOF DRAINS										
0140	Cornice, Cl, 45° or 90° outlet										
0200	3" and 4" pipe size	Q-1	12	1.333	Ea.	385	77.50		462.50	540	
0260	For galvanized body, add					111			111	122	
0280	For polished bronze dome, add					114			114	126	
3860	Roof, flat metal deck, Cl body, 12" Cl dome										
3890	3" pipe size	Q-1	14	1.143	Ea.	410	66.50		476.50	555	
3920	6" pipe size	"	10	1.600	"	865	93		958	1,100	
4620	Main, all aluminum, 12" low profile dome										
4640	2", 3" and 4" pipe size	Q-1	14	1.143	Ea.	590	66.50		656.50	745	

22 14 26.16 Facility Area Drains

0010	FACILITY AREA DRAINS										
4980	Scupper floor, oblique strainer, Cl										
5000	6" x 7" top, 2", 3" and 4" pipe size	Q-1	16	1	Ea.	405	58		463	530	
5100	8" x 12" top, 5" and 6" pipe size	"	14	1.143	"	790	66.50		856.50	965	
5160	For galvanized body, add					40%					
5200	For polished bronze strainer, add					85%					

22 14 26.19 Facility Trench Drains

0010	FACILITY TRENCH DRAINS										
5980	Trench, floor, heavy duty, modular, Cl, 12" x 12" top										
6000	2", 3", 4", 5" & 6" pipe size	Q-1	8	2	Ea.	1,100	116		1,216	1,400	
6100	For unit with polished bronze top	"	8	2	"	1,625	116		1,741	1,975	
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.	68.50	7.75		76.25	86.50	
6670	Medium duty steel grate		115	.139	"	129	8.05		137.05	154	
6680	Heavy duty iron grate		"	.145	"	122	8.45		130.45	147	
6700	12" internal width, with grate										
6770	Heavy duty galvanized grate	Q-1	80	.200	L.F.	171	11.60		182.60	205	

22 14 Facility Storm Drainage

22 14 26 – Facility Storm Drains

22 14 26.19 Facility Trench Drains		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Labor	Costs 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	8.05		130.05
6830	Heavy duty iron grate		"	110	.145	"	201	8.45		209.45
										234

22 14 29 – Sump Pumps

22 14 29.13 Wet-Pit-Mounted, Vertical Sump Pumps

0010 WET-PIT-MOUNTED, VERTICAL SUMP PUMPS		1 Plum	5	1.600	Ea.	141	103		244	310
0400	Molded PVC base, 21 GPM at 15' head, 1/3 HP									
0800	Iron base, 21 GPM at 15' head, 1/3 HP					155	103		258	325
1200	Solid brass, 21 GPM at 15' head, 1/3 HP		5	1.600		243	103		346	420
2000	Sump pump, single stage									
2010	25 GPM, 1 HP, 1-1/2" discharge	Q-1	1.80	8.889	Ea.	3,825	515		4,340	5,000
2020	75 GPM, 1-1/2 HP, 2" discharge		1.50	10.667		4,050	620		4,670	5,375
2030	100 GPM, 2 HP, 2-1/2" discharge		1.30	12.308		4,125	715		4,840	5,625
2040	150 GPM, 3 HP, 3" discharge		1.10	14.545		4,125	845		4,970	5,825
2050	200 GPM, 3 HP, 3" discharge		1	16		4,375	930		5,305	6,225
2060	300 GPM, 10 HP, 4" discharge	Q-2	1.20	20		4,725	1,200		5,925	7,000
2070	500 GPM, 15 HP, 5" discharge			1.10	21.818	5,375	1,300		6,675	7,875
2080	800 GPM, 20 HP, 6" discharge			1	24	6,350	1,450		7,800	9,125
2090	1,000 GPM, 30 HP, 6" discharge			.85	28.235	6,975	1,700		8,675	10,200
2100	1,600 GPM, 50 HP, 8" discharge			.72	33.333	10,900	2,000		12,900	15,000
2110	2,000 GPM, 60 HP, 8" discharge	Q-3	.85	37.647		11,100	2,300		13,400	15,700
2202	For general purpose float switch, copper coated float, add	Q-1	5	3.200		107	186		293	395

22 14 29.16 Submersible Sump Pumps

0010 SUBMERSIBLE SUMP PUMPS		1 Plum	6.40	1.250	Ea.	168	80.50		248.50	305
7000	Sump pump, automatic									
7100	Plastic, 1-1/4" discharge, 1/4 HP		6	1.333		224	86		310	375
7140	1/3 HP									
7160	1/2 HP		5.40	1.481		245	95.50		340.50	415
7180	1-1/2" discharge, 1/2 HP		5.20	1.538		325	99		424	505
7500	Cast iron, 1-1/4" discharge, 1/4 HP		6	1.333		225	86		311	375
7540	1/3 HP			6	1.333		264	86		350
7560	1/2 HP			5	1.600	320	103		423	505

22 31 Domestic Water Softeners

22 31 13 – Residential Domestic Water Softeners

22 31 13.10 Residential Water Softeners

0010 RESIDENTIAL WATER SOFTENERS		2 Plum	5	3.200	Ea.	395	206		601	745
7350	Water softener, automatic, to 30 grains per gallon									
7400	To 100 grains per gallon		"	4	4	940	258		1,198	1,400

22 31 16 – Commercial Domestic Water Softeners

22 31 16.10 Water Softeners

0010 WATER SOFTENERS		Q-1	1.20	13.333	Ea.	4,925	775		5,700	6,575
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.	4,925	775		5,700	6,575
6200	300,000 grains, 81 GPM cont., 113 GPM peak		1	16		8,525	930		9,455	10,800
6300	750,000 grains, 160 GPM cont., 230 GPM peak		.80	20		12,600	1,150		13,750	15,600
6400	900,000 grains, 185 GPM cont., 270 GPM peak		.70	22.857		20,300	1,325		21,625	24,300

22 33 Electric Domestic Water Heaters

22 33 13 – Instantaneous Electric Domestic Water Heaters

22 33 13.10 Hot Water Dispensers		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
001C	HOT WATER DISPENSERS	Crew		Unit		Labor	Equipment	Total	
0160	Commercial, 100 cup, 11.3 amp	1 Plum	14	.571	Ea.	460	37	497	560
3180	Household, 60 cup	"	14	.571	"	244	37	281	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		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
1000	Residential, electric, glass lined tank, 5 yr., 10 gal., single element	1 Plum	2.30	3.478	Ea.	470	224	694	850
1040	20 gallon, single element		2.20	3.636		675	234	909	1,100
1060	30 gallon, double element		2.20	3.636		1,075	234	1,309	1,525
1080	40 gallon, double element		2	4		1,250	258	1,508	1,750
1100	52 gallon, double element		2	4		1,425	258	1,683	1,950
1180	120 gallon, double element		1.40	5.714		3,000	370	3,370	3,850

22 33 33 – Light-Commercial Electric Domestic Water Heaters

22 33 33.10 Commercial Electric Water Heaters

0010 COMMERCIAL ELECTRIC WATER HEATERS		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
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.	4,600	258	4,858	5,425
4120	10 gal., 6 kW, 25 GPH, 208 volt		2	4		5,025	258	5,283	5,925
4130	30 gal., 24 kW, 98 GPH, 208 volt		1.92	4.167		8,100	269	8,369	9,300
4136	40 gal., 36 kW, 148 GPH, 208 volt		1.88	4.255		11,300	274	11,574	12,800
4140	50 gal., 9 kW, 37 GPH, 208 volt		1.80	4.444		6,900	286	7,186	8,025
4160	50 gal., 36 kW, 148 GPH, 208 volt		1.80	4.444		11,100	286	11,386	12,600
4300	200 gal., 15 kW, 61 GPH, 480 volt	Q-1	1.70	9.412		36,700	545	37,245	41,200
4320	200 gal., 120 kW, 490 GPH, 480 volt		1.70	9.412		48,400	545	48,945	54,000
4460	400 gal., 30 kW, 123 GPH, 480 volt		1	16		50,500	930	51,430	57,000
5400	Modulating step control for under 90 kW, 2-5 steps	1 Elec	5.30	1.509		880	92.50	972.50	1,100
5440	For above 90 kW, 1 through 5 steps beyond standard, odd		3.20	2.500		272	153	425	525
5460	For above 90 kW, 6 through 10 steps beyond standard, odd		2.70	2.963		550	182	732	875
5480	For above 90 kW, 11 through 18 steps beyond standard, odd		1.60	5		820	305	1,125	1,350

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		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
9410	Natural gas/propane, 3.2 GPM	G 1 Plum	2	4	Ea.	575	258	833	1,025
9420	6.4 GPM	G	1.90	4.211		780	271	1,051	1,275
9430	8.4 GPM	G	1.80	4.444		880	286	1,166	1,400
9440	9.5 GPM	G	1.60	5		1,050	320	1,370	1,625

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		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
2000	Gas fired, foam lined tank, 10 yr., vent not incl.	1 Plum	2	4	Ea.	2,100	258	2,358	2,700
2040	30 gallon		1.50	5.333		2,650	345	2,995	3,450
2100	75 gallon		1.30	6.154		3,150	395	3,545	4,075
2120	100 gallon		20	.400		21.50	26	47.50	62
2900	Water heater, safety-drain pan, 26" round								
3000	Tank leak safety, water & gas shut off see 22 05 23.20 8800								

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.				Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Total		Total
	Crew						Labor	Equipment		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.		3,725	370	–	4,095	4,650
6060	98 MBH input, 95 GPH		1.40	5.714			8,800	370		9,170	10,200
6080	120 MBH input, 110 GPH		1.20	6.667			9,000	430		9,430	10,500
6180	200 MBH input, 192 GPH		.60	13.333			12,100	860		12,960	14,700
6200	250 MBH input, 245 GPH		.50	16			12,700	1,025		13,725	15,600
6900	For low water cutoff, add		8	1			385	64.50		449.50	520
6960	For bronze body hot water circulator, add		4	2			2,250	129		2,379	2,675

22 34 46 – Oil-Fired Domestic Water Heaters

22 34 46.10 Residential Oil-Fired Water Heaters

22 34 46.10 Residential Oil-Fired Water Heaters				Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Total		Total
	Crew						Labor	Equipment		Incl O&P	
0010 RESIDENTIAL OIL-FIRED WATER HEATERS											
3000	Oil fired, glass lined tank, 5 yr., vent not included, 30 gallon	1 Plum	2	4	Ea.		1,400	258		1,658	1,925
3040	50 gallon		1.80	4.444			1,375	286		1,661	1,950
3060	70 gallon		1.50	5.333			2,375	345		2,720	3,150

22 34 46.20 Commercial Oil-Fired Water Heaters

22 34 46.20 Commercial Oil-Fired Water Heaters				Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Total		Total
	Crew						Labor	Equipment		Incl O&P	
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.		25,200	435		25,635	28,400
8080	140 gal., 199 MBH input, 191 GPH		2	8			26,100	465		26,565	29,400
8100	140 gal., 255 MBH input, 247 GPH		1.60	10			26,800	580		27,380	30,400
8160	140 gal., 540 MBH input, 519 GPH		.96	16.667			35,600	965		36,565	40,600
8180	140 gal., 720 MBH input, 691 GPH		.92	17.391			36,200	1,000		37,200	41,300
8280	201 gal., 1,250 MBH input, 1,200 GPH	Q-2	1.22	19.672			56,000	1,175		57,175	63,500
8300	201 gal., 1,500 MBH input, 1,441 GPH	"	1.16	20.690			60,500	1,250		61,750	68,500
8900	For low water cutoff, add	1 Plum	8	1			405	64.50		469.50	545
8960	For bronze body hot water circulator, add	"	4	2			1,050	129		1,179	1,350

22 35 Domestic Water Heat Exchangers

22 35 30 – Water Heating by Steam

22 35 30.10 Water Heating Transfer Package

22 35 30.10 Water Heating Transfer Package				Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Total		Total
	Crew						Labor	Equipment		Incl O&P	
0010 WATER HEATING TRANSFER PACKAGE , Complete controls, expansion tank, converter, air separator											
1000	Hot water, 180°F enter, 200°F leaving, 15# steam										
1010	One pump system, 28 GPM	Q-6	.75	32	Ea.		21,800	1,950		23,750	26,900
1020	35 GPM		.70	34.286			24,700	2,100		26,800	30,400
1040	55 GPM		.65	36.923			28,000	2,250		30,250	34,200
1060	130 GPM		.55	43.636			35,500	2,675		38,175	43,100
1080	255 GPM		.40	60			46,600	3,675		50,275	56,500
1100	550 GPM		.30	80			67,000	4,900		71,900	81,500

22 41 Residential Plumbing Fixtures

22 41 06 - Plumbing Fixtures General

22 41 06.10 Plumbing Fixture Notes		Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	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.	420	175	595	720
0960 For rough-in, supply, waste, vent and carrier		"	2.73	5.861	"	1,275	340	1,615	1,900
0999 Floor mounted									
1100 Two piece, close coupled		Q-1	5.30	3.019	Ea.	219	175	394	505
1102 Economy			5.30	3.019		121	175	296	395
1110 Two piece, close coupled, dual flush			5.30	3.019		280	175	455	570
1140 Two piece, close coupled, 1.28 gpf, ADA		G	5.30	3.019		320	175	495	610
1960 For color, add						30%			
1980 For rough-in, supply, waste and vent		Q-1	3.05	5.246	Ea.	340	305	645	830
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.	305	145	450	555
0640 33" x 19" oval			6.40	2.500		520	145	665	790
0720 19" round		↓	6.40	2.500	↓	455	145	600	715
0860 For color, add						25%			
1000 Cultured marble, 19" x 17", single bowl		Q-1	6.40	2.500	Ea.	124	145	269	355
1040 25" x 19", single bowl		"	6.40	2.500	"	150	145	295	380
1580 For color, same price									
1900 Stainless steel, self-rimming, 25" x 22", single bowl, ledge		Q-1	6.40	2.500	Ea.	315	145	460	565
1960 17" x 22", single bowl			6.40	2.500		305	145	450	550
2600 Steel, enameled, 20" x 17", single bowl			5.80	2.759		126	160	286	380
2660 19" round			5.80	2.759		162	160	322	415
2900 Vitreous china, 20" x 16", single bowl			5.40	2.963		211	172	383	490
2960 20" x 17", single bowl			5.40	2.963		121	172	293	390
3020 19" round, single bowl			5.40	2.963		117	172	289	385
3200 22" x 13", single bowl			5.40	2.963	↓	216	172	388	495
3560 For color, add						50%			
3580 Rough-in, supply, waste and vent for all above lavatories		Q-1	2.30	6.957	Ea.	278	405	683	910
4000 Wall hung									
4040 Porcelain enamel on cast iron, 16" x 14", single bowl		Q-1	8	2	Ea.	435	116	551	650
4180 20" x 18", single bowl			8	2		246	116	362	445
4240 22" x 19", single bowl		↓	8	2	↓	690	116	806	935
4580 For color, add						30%			
6000 Vitreous china, 18" x 15", single bowl with backsplash		Q-1	7	2.286	Ea.	170	133	303	385
6500 For color, add						30%			
6960 Rough-in, supply, waste and vent for above lavatories		Q-1	1.66	9.639	Ea.	475	560	1,035	1,350
7000 Pedestal type									
7600 Vitreous china, 27" x 21", white		Q-1	6.60	2.424	Ea.	685	141	826	965
7610 27" x 21", colored			6.60	2.424		875	141	1,016	1,175
7620 27" x 21", premium color		↓	6.60	2.424	↓	995	141	1,136	1,300

22 41 Residential Plumbing Fixtures

22 41 16 – Residential Lavatories and Sinks

22 41 16.13 Lavatories		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
						Labor	Equipment			
7660	26" x 20", white		Q-1	6.60	2,424	Ea.	665	141	806	940
7670	26" x 20", colored			6.60	2,424		855	141	996	1,150
7680	26" x 20", premium color			6.60	2,424		1,025	141	1,166	1,325
7700	24" x 20", white			6.60	2,424		465	141	606	720
7710	24" x 20", colored			6.60	2,424		580	141	721	845
7720	24" x 20", premium color			6.60	2,424		640	141	781	915
7760	21" x 18", white			6.60	2,424		258	141	399	495
7770	21" x 18", colored			6.60	2,424		289	141	430	525
7990	Rough-in, supply, waste and vent for pedestal lavatories			1.66	9,639		475	560	1,035	1,350

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.	310	166	476	590
2100	31" x 22" single bowl			5.60	2,857		860	166	1,026	1,200
2200	32" x 21" double bowl			4.80	3,333		390	193	583	720
3000	Stainless steel, self rimming, 19" x 18" single bowl			5.60	2,857		625	166	791	935
3100	25" x 22" single bowl			5.60	2,857		690	166	856	1,000
4000	Steel, enameled, with ledge, 24" x 21" single bowl			5.60	2,857		535	166	701	840
4100	32" x 21" double bowl			4.80	3,333		520	193	713	860
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		320	435	755	1,000
5000	Kitchen, raised deck, PE on CI									
5100	32" x 21", dual level, double bowl		Q-1	2.60	6,154	Ea.	485	355	840	1,075
5700	For color, add							20%		
5790	For rough-in, supply, waste & vent, sinks		Q-1	1.85	8,649		320	500	820	1,100

22 41 19 – Residential Bathtubs

0010	BATHS									
0100	Tubs, recessed porcelain enamel on cast iron, with trim									
0180	48" x 42"		Q-1	4	4	Ea.	3,150	232	3,382	3,800
0220	72" x 36"			3	5,333		2,975	310	3,285	3,750
2000	Enamelled formed steel, 4'-6" long			5.80	2,759		515	160	675	805
4000	Soaking, acrylic, w/pop-up drain 66" x 36" x 20" deep			5.50	2,909		1,725	169	1,894	2,150
4100	60" x 42" x 20" deep			5	3,200		1,325	186	1,511	1,725
9600	Rough-in, supply, waste and vent, for all above tubs, add			2.07	7,729		445	450	895	1,150

22 41 23 – Residential 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.	355	169	524	645
3100	36" x 36" square			5.50	2,909		465	169	634	765
3250	64" x 65-3/4" x 81-1/2" fold. seat, ADA			3.80	4,211		1,475	244	1,719	2,000
4000	Polypropylene, stall only, w/molded-stone floor, 30" x 30"			2	8		720	465	1,185	1,500
4200	Rough-in, supply, waste and vent for above showers			2.05	7,805		410	455	865	1,125

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.	390	129	519	625
4520	Fiberglass receptor only, 32" x 32"			8	1		107	64.50	171.50	215
4530	34" x 34"			7.80	1,026		128	66	194	240
4540	36" x 36"			7.60	1,053		125	68	193	240
4600	Rectangular									

22 41 Residential Plumbing Fixtures

22 41 23 – Residential Showers

22 41 23.40 Shower System Components		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Ind O&P
4620	32" x 48"	[1 Plum]	7.40	1.081	Ea.	154	69.50		223.50	273
4630	34" x 54"		7.20	1.111		176	71.50		247.50	300
4640	34" x 60"		7	1.143		187	73.50		260.50	315
5000	Built-in, head, arm, 2.5 GPM valve		4	2		104	129		233	305
5200	Head, arm, by-pass, integral stops, handles		3.60	2.222		296	143		439	540

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.	615	155		770	905
0100	26" x 21", single compartment	"	6	2.667	"	630	155		785	925
2000	Molded stone, on wall hanger or legs									
2020	22" x 23", single compartment	Q-1	6	2.667	Ea.	176	155		331	425
2100	45" x 21", double compartment	"	5	3.200	"	360	186		546	675
3000	Plastic, on wall hanger or legs									
3020	18" x 29", single compartment	Q-1	6.50	2.462	Ea.	145	143		288	375
3300	40" x 24", double compartment		5.50	2.909		287	169		456	570
5000	Stainless steel, counter top, 22" x 17" single compartment		6	2.667		77.50	155		232.50	315
5200	33" x 22", double compartment		5	3.200		93	186		279	380
9600	Rough-in, supply, waste and vent, for all laundry sinks	↓	2.14	7.477		320	435		755	1,000

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.	87	64.50		151.50	192
0200	For integral stops, IPS unions, add					111			111	123
0420	Bath, press-bal mix valve w/diverter, spout, shower head, arm/flange	[1 Plum]	8	1		185	64.50		249.50	300
0810	Bidet									
0812	Fitting, over the rim, swivel spray/pop-up drain	[1 Plum]	8	1	Ea.	279	64.50		343.50	400
1000	Kitchen sink faucets, top mount, cast spout		10	.800		84	51.50		135.50	170
1100	For spray, add	↓	24	.333		17.25	21.50		38.75	51
1300	Single control lever handle									
1310	With pull out spray									
1320	Polished chrome		10	.800	Ea.	196	51.50		247.50	293
2000	Laundry faucets, shelf type, IPS or copper unions		12	.667		62	43		105	133
2100	Lavatory faucet, centerset, without drain	↓	10	.800		67.50	51.50		119	152
2210	Porcelain cross handles and pop-up drain									
2220	Polished chrome	[1 Plum]	6.66	1.201	Ea.	222	77.50		299.50	360
2230	Polished brass	"	6.66	1.201	"	293	77.50		370.50	440
2260	Single lever handle and pop-up drain									
2280	Satin nickel	[1 Plum]	6.66	1.201	Ea.	280	77.50		357.50	425
2290	Polished chrome		6.66	1.201		200	77.50		277.50	335
2810	Automatic sensor and operator, with faucet head	G	6.15	1.301		495	84		579	665
4000	Shower by-pass valve with union		18	.444		57.50	28.50		86	107
4200	Shower thermostatic mixing valve, concealed, with shower head trim kit	↓	8	1		385	64.50		449.50	515
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.	415	84		499	580
4250	Satin nickel		6.14	1.303		560	84		644	740
4260	Polished graphite		6.14	1.303		545	84		629	725
5000	Sillcock, compact, brass, IPS or copper to hose	↓	24	.333		12.05	21.50		33.55	45.50

22 42 Commercial Plumbing Fixtures

22 42 13 – Commercial Water Closets, Urinals, and Bidets

22 42 13.13 Water Closets			Daily Crew	Output	Labor-Hours	Unit	Material	2020 Bare Labor	Costs 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.	1,100	160		1,260	1,450
3200	For rough-in, supply, waste and vent, single WC			2.56	6.250		1,300	365		1,665	2,000
3300	Floor mounted			5.80	2.759		360	160		520	635
3350	With wall outlet			5.80	2.759		570	160		730	865
3360	With floor outlet, 1.28 gpf	G		5.80	2.759		550	160		710	845
3362	With floor outlet, 1.28 gpf, ADA	G		5.80	2.759		570	160		730	870
3370	For rough-in, supply, waste and vent, single WC			2.84	5.634		385	325		710	910
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.	660	150		810	950
3396	With automatic flush sensor, 1.28 gpf			6.20	2.581		610	150		760	895
3400	For rough-in, supply, waste and vent, single WC			2.84	5.634		385	325		710	910

22 42 13.16 Urinals

22 42 13.16 Urinals			Daily Crew	Output	Labor-Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
0010	URINALS										
3000	Wall hung, vitreous china, with self-closing valve										
3100	Siphon jet type		Q-1	3	5.333	Ea.	315	310		625	810
3120	Blowout type			3	5.333		480	310		790	995
3140	Water saving .5 gpf	G		3	5.333		595	310		905	1,125
3300	Rough-in, supply, waste & vent			2.83	5.654		755	330		1,085	1,325
5000	Stall type, vitreous china, includes valve			2.50	6.400		830	370		1,200	1,475
6980	Rough-in, supply, waste and vent			1.99	8.040		510	465		975	1,275
8000	Waterless (no flush) urinal										
8010	Wall hung										
8014	Fiberglass reinforced polyester										
8020	Standard unit	G	Q-1	21.30	.751	Ea.	450	43.50		493.50	560
8030	ADA compliant unit	G	"	21.30	.751		420	43.50		463.50	525
8070	For solid color, add	G					64			64	70
8080	For 2" brass flange (new const.), add	G	Q-1	96	.167		20.50	9.65		30.15	37
8200	Vitreous china										
8220	ADA compliant unit, 14"	G	Q-1	21.30	.751	Ea.	211	43.50		254.50	297
8250	ADA compliant unit, 15.5"		"	21.30	.751		272	43.50		315.50	365
8270	For solid color, add	G					64			64	70
8290	Rough-in, supply, waste & vent	G	Q-1	2.92	5.479		720	320		1,040	1,275
8400	Trap liquid										
8410	1 quart	G				Ea.		19.20		19.20	21
8420	1 gallon	G				"	63			63	69.50

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

22 42 16.40 Service Sinks			Daily Crew	Output	Labor-Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
0010	SERVICE SINKS										
6650	Service, floor, corner, PE on CI, 28" x 28"		Q-1	4.40	3.636	Ea.	1,125	211		1,336	1,575
6790	For rough-in, supply, waste & vent, floor service sinks			1.64	9.756		1,075	565		1,640	2,025
7000	Service, wall, PE on CI, roll rim, 22" x 18"			4	4		930	232		1,162	1,375
7100	24" x 20"			4	4		950	232		1,182	1,400
8600	Vitreous china, 22" x 20"			4	4		875	232		1,107	1,300
8960	For stainless steel rim guard, front or one side, odd						65.50			65.50	72
8980	For rough-in, supply, waste & vent, wall service sinks		Q-1	1.30	12.308		1,425	715		2,140	2,650

22 42 Commercial Plumbing Fixtures

22 42 23 - Commercial Showers

22 42 23.30 Group Showers		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Total	Total Ind 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.	9,675	310	9,985	11,100
6900	With stainless steel partitions		1	16		12,600	930	13,530	15,300
7600	5 heads, no receptors, less partitions		3	5.333		6,650	310	6,960	7,775
7620	4 heads (1 ADA compliant) no receptors, less partitions	♿	3	5.333		6,050	310	6,360	7,125
7700	With stainless steel partitions		1	16		6,600	930	7,530	8,675
8000	Wall, 2 heads, no receptors, less partitions		4	4		2,825	232	3,057	3,450
8100	With stainless steel partitions		2	8		6,200	465	6,665	7,500

22 42 33 - Wash Fountains

22 42 33.20 Commercial Wash Fountains

0010 COMMERCIAL WASH FOUNTAINS		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P
1900	Group, foot control								
2000	Precast terrazzo, circular, 36" diam., 5 or 6 persons	Q-2	3	8	Ea.	7,675	480	8,155	9,150
2100	54" diam. for 8 or 10 persons		2.50	9.600		10,600	575	11,175	12,500
2400	Semi-circular, 36" diam. for 3 persons		3	8		6,250	480	6,730	7,600
2500	54" diam. for 4 or 5 persons		2.50	9.600		9,700	575	10,275	11,600
2700	Quarter circle (corner), 54" diam. for 3 persons		3.50	6.857		7,675	410	8,085	9,075
3000	Stainless steel, circular, 36" diameter		3.50	6.857		6,775	410	7,185	8,075
3100	54" diameter		2.80	8.571		8,575	515	9,090	10,200
3400	Semi-circular, 36" diameter		3.50	6.857		5,625	410	6,035	6,825
3500	54" diameter	♿	2.80	8.571		7,150	515	7,665	8,650
5610	Group, infrared control, barrier free								
5614	Precast terrazzo								
5620	Semi-circular 36" diam. for 3 persons	Q-2	3	8	Ea.	8,475	480	8,955	10,000
5630	46" diam. for 4 persons		2.80	8.571		9,100	515	9,615	10,800
5640	Circular, 54" diam. for 8 persons, button control		2.50	9.600		11,200	575	11,775	13,200
5700	Rough-in, supply, waste and vent for above wash fountains	Q-1	1.82	8.791		505	510	1,015	1,325
6200	Duo for small washrooms, stainless steel		2	8		3,300	465	3,765	4,325
6500	Rough-in, supply, waste & vent for duo fountains		2.02	7.921		268	460	728	985

22 42 39 - Commercial Faucets, Supplies, and Trim

22 42 39.10 Faucets and Fittings

0010 FAUCETS AND FITTINGS		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P
0840	Flush valves, with vacuum breaker								
0850	Water closet								
0860	Exposed, rear spud		1 Plum	8	1	Ea.	146	64.50	210.50
0870	Top spud			8	1		197	64.50	261.50
0880	Concealed, rear spud			8	1		213	64.50	277.50
0890	Top spud			8	1		173	64.50	237.50
0900	Wall hung			8	1		199	64.50	263.50
0920	Urinal								
0930	Exposed, stall		1 Plum	8	1	Ea.	197	64.50	261.50
0940	Wall (washout)			8	1		156	64.50	220.50
0950	Pedestal, top spud			8	1		137	64.50	201.50
0960	Concealed, stall			8	1		170	64.50	234.50
0970	Wall (washout)	♿		8	1		183	64.50	247.50
0971	Automatic flush sensor and operator for urinals or water closets, standard	G	1 Plum	8	1	Ea.	485	64.50	549.50
0980	High efficiency water saving								
0984	Water closets, 1.28 gpf	G	1 Plum	8	1	Ea.	425	64.50	489.50
0988	Urinals, .5 gpf	G	"	8	1	"	425	64.50	489.50

22 42 Commercial Plumbing Fixtures

22 42 39 – Commercial Faucets, Supplies, and Trim

			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P
22 42 39.10 Faucets and Fittings		Crew				Labor	Equipment		
2790	Faucets for lavatories								
2800	Self-closing, center set	1 Plum	10	.800	Ea.	151	51.50	202.50	243
2810	Automatic sensor and operator, with faucet head		6.15	1.301		495	84	579	665
3000	Service sink faucet, cast spout, pail hook, hose end	↓	14	.571	↓	76.50	37	113.50	139
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.	61.50	73.50	135	178
0700	Top front and back plate		7	1.143		153	73.50	226.50	278
0800	Top & bottom, front & back plates, w/bearing jacks	↓	7	1.143	↓	181	73.50	254.50	310
3000	Lavatory, concealed arm								
3050	Floor mounted, single								
3100	High back fixture	1 Plum	6	1.333	Ea.	655	86	741	850
3200	Flat slab fixture		6	1.333		575	86	661	765
3220	ADA compliant		6	1.333		665	86	751	865
3250	Floor mounted, back to back	♿							
3300	High back fixtures	1 Plum	5	1.600	Ea.	1,075	103	1,178	1,325
3400	Flat slab fixtures		5	1.600		1,325	103	1,428	1,600
3430	ADA compliant	♿	5	1.600	↓	810	103	913	1,050
3500	Wall mounted, in stud or masonry	♿							
3600	High back fixture	1 Plum	6	1.333	Ea.	345	86	431	510
3700	Flat slab fixture		6	1.333		275	86	361	435
4600	Sink, floor mounted								
4650	Exposed arm system								
4700	Single heavy fixture	1 Plum	5	1.600	Ea.	645	103	748	865
4750	Single heavy sink with slab		5	1.600		1,600	103	1,703	1,900
4800	Back to back, standard fixtures		5	1.600		845	103	948	1,075
4850	Back to back, heavy fixtures		5	1.600		1,300	103	1,403	1,575
4900	Back to back, heavy sink with slab	↓	5	1.600	↓	1,825	103	1,928	2,175
4950	Exposed offset arm system								
5000	Single heavy deep fixture	1 Plum	5	1.600	Ea.	1,200	103	1,303	1,475
5100	Plate type system								
5200	With bearing jacks, single fixture	1 Plum	5	1.600	Ea.	1,600	103	1,703	1,900
5300	With exposed arms, single heavy fixture		5	1.600		1,250	103	1,353	1,550
5400	Wall mounted, exposed arms, single heavy fixture		5	1.600		450	103	553	650
6000	Urinal, floor mounted, 2" or 3" coupling, blowout type		6	1.333		805	86	891	1,025
6100	With fixture or hanger bolts, blowout or washout		6	1.333		575	86	661	760
6200	With bearing plate		6	1.333		640	86	726	835
6300	Wall mounted, plate type system	↓	6	1.333	↓	430	86	516	600
6980	Water closet, siphon jet								
7000	Horizontal, adjustable, caulk								
7040	Single, 4" pipe size	1 Plum	5.33	1.501	Ea.	1,125	96.50	1,221.50	1,375
7050	4" pipe size, ADA compliant	♿	5.33	1.501		825	96.50	921.50	1,050
7060	5" pipe size	♿	5.33	1.501		1,125	96.50	1,221.50	1,375
7100	Double, 4" pipe size		5	1.600		1,625	103	1,728	1,925
7110	4" pipe size, ADA compliant	♿	5	1.600		1,625	103	1,728	1,950
7120	5" pipe size	♿	5	1.600	↓	1,925	103	2,028	2,275
7160	Horizontal, adjustable, extended, caulk								
7180	Single, 4" pipe size	1 Plum	5.33	1.501	Ea.	1,500	96.50	1,596.50	1,800
7200	5" pipe size		5.33	1.501		1,875	96.50	1,971.50	2,225
7240	Double, 4" pipe size		5	1.600		2,150	103	2,253	2,500
7260	5" pipe size	↓	5	1.600	↓	2,850	103	2,953	3,275

22 42 Commercial Plumbing Fixtures

22 42 39 - Commercial Faucets, Supplies, and Trim

22 42 39.30 Carriers and Supports		Daily	Labor-	Unit	2020 Bare Costs			Total	Total Incl O&P
		Crew	Output		Hours	Material	Labor		
7400	Vertical, adjustable, caulk or thread								
7440	Single, 4" pipe size	1 Plum	5.33	1.501	Ea.	1,250	96.50	1,346.50	1,525
7460	5" pipe size		5.33	1.501		1,575	96.50	1,671.50	1,875
7480	6" pipe size		5	1.600		1,625	103	1,728	1,950
7520	Double, 4" pipe size		5	1.600		2,300	103	2,403	2,675
7540	5" pipe size		5	1.600		2,325	103	2,428	2,700
7560	6" pipe size		4	2		2,575	129	2,704	3,025
7600	Vertical, adjustable, extended, caulk								
7620	Single, 4" pipe size	1 Plum	5.33	1.501	Ea.	1,125	96.50	1,221.50	1,400
7640	5" pipe size		5.33	1.501		890	96.50	986.50	1,125
7680	6" pipe size		5	1.600		1,725	103	1,828	2,050
7720	Double, 4" pipe size		5	1.600		2,300	103	2,403	2,700
7740	5" pipe size		5	1.600		1,250	103	1,353	1,525
7760	6" pipe size		4	2		1,350	129	1,479	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.	1,225	96.50	1,321.50	1,500
7840	Double, 4" pipe size	"	5	1.600	"	2,075	103	2,178	2,450
7880	Vertical offset, extended, caulk								
7900	Single, 4" pipe size	1 Plum	5.33	1.501	Ea.	1,525	96.50	1,621.50	1,825
7920	Double, 4" pipe size	"	5	1.600	"	2,400	103	2,503	2,775
7960	Vertical, for floor mounted back-outlet								
7980	Single, 4" thread, 2" vent	1 Plum	5.33	1.501	Ea.	790	96.50	886.50	1,025
8000	Double, 4" thread, 2" vent	"	6	1.333	"	2,325	86	2,411	2,675
8040	Vertical, for floor mounted back-outlet, extended								
8060	Single, 4" caulk, 2" vent	1 Plum	6	1.333	Ea.	790	86	876	1,000
8080	Double, 4" caulk, 2" vent	"	6	1.333	"	2,325	86	2,411	2,675
8200	Water closet, residential								
8220	Vertical centerline, floor mount								
8240	Single, 3" caulk, 2" or 3" vent	1 Plum	6	1.333	Ea.	875	86	961	1,100
8260	4" caulk, 2" or 4" vent		6	1.333		1,125	86	1,211	1,375
8280	3" copper sweat, 3" vent		6	1.333		785	86	871	995
8300	4" copper sweat, 4" vent		6	1.333		950	86	1,036	1,175
8400	Vertical offset, floor mount								
8420	Single, 3" or 4" caulk, vent	1 Plum	4	2	Ea.	1,100	129	1,229	1,400
8440	3" or 4" copper sweat, vent		5	1.600		1,100	103	1,203	1,350
8460	Double, 3" or 4" caulk, vent		4	2		1,875	129	2,004	2,250
8480	3" or 4" copper sweat, vent		5	1.600		1,875	103	1,978	2,200
9000	Water cooler (electric), floor mounted								
9100	Plate type with bearing plate, single	1 Plum	6	1.333	Ea.	480	86	566	660

22 45 Emergency Plumbing Fixtures

22 45 13 – Emergency Showers

22 45 13.10 Emergency Showers		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Labor	Costs 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.	390	232		622	775
5200	Horizontal or vertical supply		4	4		615	232		847	1,025
6000	Multi-nozzle, eye/face wash combination		4	4		760	232		992	1,175
6400	Multi-nozzle, 12 spray, shower only		4	4		2,100	232		2,332	2,675
6600	For freeze-proof, add		6	2.667		505	155		660	785

22 45 16 – Eyewash Equipment

22 45 16.10 Eyewash Safety Equipment

0010 EYEWASH SAFETY EQUIPMENT, Rough-in not included		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
1000	Eye wash fountain	Q-1	4	4	Ea.	335	232		567	710
1400	Plastic bowl, pedestal mounted		4	4		259	232		491	630
1600	Unmounted		4	4		490	232		722	885
1800	Wall mounted		4	4		360	232		592	740
2000	Stainless steel, pedestal mounted		4	4		298	232		530	675
2200	Unmounted		4	4		325	232		557	700
2400	Wall mounted		4	4						

22 45 19 – Self-Contained Eyewash Equipment

22 45 19.10 Self-Contained Eyewash Safety Equipment

0010 SELF-CONTAINED EYEWASH SAFETY EQUIPMENT						Ea.	1,950		1,950	2,150
3000	Eye wash, portable, self-contained									

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		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
4000	Eye and face wash, combination fountain	Q-1	4	4	Ea.	1,150	232		1,382	1,600
4200	Stainless steel, pedestal mounted		4	4		297	232		529	670
4400	Unmounted		4	4		284	232		516	660
4600	Wall mounted		4	4						

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		1 Plum.	4	2	Ea.	1,125	129		1,254	1,425
1000	Wall mounted, non-recessed									
1400	Bronze, with no back	1 Plum.	4	2	Ea.	1,125	129		1,254	1,425
1800	Cast aluminum, enameled, for correctional institutions		4	2		1,400	129		1,529	1,750
2000	Fiberglass, 12" back, single bubbler unit		4	2		2,000	129		2,129	2,425
2040	Dual bubbler		3.20	2.500		2,575	161		2,736	3,075
2400	Precast stone, no back		4	2		1,050	129		1,179	1,350
2700	Stainless steel, single bubbler, no back		4	2		915	129		1,044	1,200
2740	With back		4	2		1,100	129		1,229	1,400
2780	Dual handle, ADA compliant		4	2		760	129		889	1,025
2820	Dual level, ADA compliant	1 Plum.	3.20	2.500		1,600	161		1,761	2,000
3300	Vitreous china									
3340	7" back	1 Plum.	4	2	Ea.	575	129		704	830
3940	For vandal-resistant bottom plate, add					75			75	82.50
3960	For freeze-proof valve system, add	1 Plum.	2	4		770	258		1,028	1,225
3980	For rough-in, supply and waste, add	"	2.21	3.620		229	233		462	600
4000	Wall mounted, semi-recessed	1 Plum.	4	2	Ea.	960	129		1,089	1,250
4200	Poly-marble, single bubbler									

22 47 Drinking Fountains and Water Coolers

22 47 13 – Drinking Fountains

			Daily Output	Labor-Hrs	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
			Crew			Labor	Equipment		
22 47 13.10 Drinking Water Fountains									
4600	Stainless steel, satin finish, single bubbler		1 Plum	4	2	Ea.	1,400	129	1,529
4900	Vitreous china, single bubbler			4	2		935	129	1,064
5980	For rough-in, supply and waste, add			↓	1.83	4.372	↓	229	282
6000	Wall mounted, fully recessed							511	670
6400	Poly-marble, single bubbler		1 Plum	4	2	Ea.	1,775	129	1,904
6800	Stainless steel, single bubbler			4	2		1,750	129	1,879
7560	For freeze-proof valve system, add			2	4		985	258	1,243
7580	For rough-in, supply and waste, add			1.83	4.372		229	282	511
7600	Floor mounted, pedestal type								
7700	Aluminum, architectural style, CI base		1 Plum	2	4	Ea.	2,650	258	2,908
7780	ADA compliant unit			2	4		1,675	258	1,933
8400	Stainless steel, architectural style			2	4		2,150	258	2,408
8600	Enameling iron, heavy duty service, 2 bubblers			2	4		3,675	258	3,933
8660	4 bubblers			2	4		4,650	258	4,908
8880	For freeze-proof valve system, add			2	4		700	258	958
8900	For rough-in, supply and waste, add			1.83	4.372	↓	229	282	511
9100	Deck mounted								
9500	Stainless steel, circular receptor		1 Plum	4	2	Ea.	455	129	584
9760	White enameled steel, 14" x 9" receptor			4	2		400	129	529
9860	White enameled cast iron, 24" x 16" receptor			3	2.667		525	172	697
9980	For rough-in, supply and waste, add			↓	1.83	4.372	↓	229	282
								511	670

22 47 16 – Pressure Water Coolers

22 47 16.10 Electric Water Coolers

			Q-1	4	4	Ea.	700	232	932	1,125
0010 ELECTRIC WATER COOLERS										
0100 Wall mounted, non-recessed										
0140 4 GPH										
0160 8 GPH, barrier free, sensor operated			Q-1	4	4		1,125	232	1,357	1,600
0180 8.2 GPH				4	4		1,025	232	1,257	1,475
0600 8 GPH hot and cold water			↓	4	4		1,050	232	1,282	1,500
0640 For stainless steel cabinet, add							93		93	102
1000 Dual height, 8.2 GPH			Q-1	3.80	4.211		2,025	244	2,269	2,600
1040 14.3 GPH			"	3.80	4.211		1,750	244	1,994	2,300
1240 For stainless steel cabinet, add							213		213	235
2600 ADA compliant, 8 GPH			Q-1	4	4		1,100	232	1,332	1,550
3300 Semi-recessed, 8.1 GPH				4	4		915	232	1,147	1,350
3320 12 GPH			↓	4	4	↓	1,025	232	1,257	1,475
4600 Floor mounted, flush-to-wall										
4640 4 GPH			1 Plum	3	2.667	Ea.	840	172	1,012	1,175
4680 8.2 GPH				3	2.667		935	172	1,107	1,275
4720 14.3 GPH				3	2.667		1,075	172	1,247	1,425
4960 14 GPH hot and cold water			↓	3	2.667		1,200	172	1,372	1,575
4980 For stainless steel cabinet, add							141		141	155
5000 Dual height, 8.2 GPH			1 Plum	2	4		1,225	258	1,483	1,725
5040 14.3 GPH			"	2	4		1,275	258	1,533	1,775
5120 For stainless steel cabinet, add							209		209	229
9800 For supply, waste & vent, all coolers			1 Plum	2.21	3.620	↓	229	233	462	600

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	Material	2020 Bare Costs	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	2,375	575	2,950	3,475
1020	Add for chlorination system, 800 S.F. pool		3	5.333	Ea.	235	345	580	775
1040	5,000 S.F. pool		3	5.333	"	1,950	345	2,295	2,650

22 52 Fountain Plumbing Systems

22 52 16 – Fountain Pumps

22 52 16.10 Fountain Water Pumps

22 52 16.10 Fountain Water Pumps		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
0010	FOUNTAIN WATER PUMPS								
0100	Pump w/controls								
0200	Single phase, 100' cord, 1/2 HP pump	2 Skwk	4.40	3.636	Ea.	1,325	199	1,524	1,750
0300	3/4 HP pump		4.30	3.721		1,375	204	1,579	1,825
0400	1 HP pump		4.20	3.810		1,925	209	2,134	2,450
0500	1-1/2 HP pump		4.10	3.902		2,575	214	2,789	3,175
0600	2 HP pump		4	4		4,350	219	4,569	5,100
0700	Three phase, 200' cord, 5 HP pump		3.90	4.103		6,250	225	6,475	7,225
0800	7-1/2 HP pump		3.80	4.211		12,600	231	12,831	14,200
0900	10 HP pump		3.70	4.324		15,200	237	15,437	17,200
1000	15 HP pump		3.60	4.444		21,500	244	21,744	24,000

2000 DESIGN NOTE: Use two horsepower per surface acre.

22 52 33 – Fountain Ancillary

22 52 33.10 Fountain Miscellaneous

22 52 33.10 Fountain Miscellaneous		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
0010	FOUNTAIN MISCELLANEOUS								
1300	Lights w/mounting kits, 200 watt	2 Skwk	18	.889	Ea.	1,200	49	1,249	1,400
1400	300 watt		18	.889		1,350	49	1,399	1,575
1500	500 watt		18	.889		1,525	49	1,574	1,750
1600	Color blender		12	1.333		600	73	673	770

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

22 66 53.30 Glass Pipe		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
0010	GLASS PIPE, Borosilicate, couplings & clevis hanger assemblies, 10' OC								
0020	Drainage								
1100	1-1/2" diameter	Q-1	52	.308	L.F.	15.30	17.85	33.15	43.50
1120	2" diameter		44	.364		19.50	21	40.50	53
1140	3" diameter		39	.410		26	24	50	64
1160	4" diameter		30	.533		42.50	31	73.50	93.50
1180	6" diameter		26	.615		75	35.50	110.50	136

22 66 53.60 Corrosion Resistant Pipe

22 66 53.60 Corrosion Resistant Pipe		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
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.	84.50	13.25	97.75	113
1100	2" diameter		66	.242		87	14.05	101.05	117
1120	3" diameter		60	.267		95	15.45	110.45	128
1140	4" diameter		52	.308		117	17.85	134.85	156
2980	Plastic, epoxy, fiberglass filament wound, B&S joint								
3000	2" diameter	Q-1	62	.258	L.F.	12.35	14.95	27.30	36
3100	3" diameter		51	.314		14.40	18.20	32.60	43

22 66 Chemical-Waste Systems for Lab. and Healthcare Facilities

22 66 53 – Laboratory Chemical-Waste and Vent Piping

22 66 53.60 Corrosion Resistant Pipe		Daily	Labor-	Unit	2020 Bare Costs			Total	Total
		Crew	Output		Hours	Labor	Equipment		Ind O&P
3120	4" diameter	Q1	45	.356	L.F.	20.50	20.50	41	53.50
3140	6" diameter		32	.500		29	29	58	75
3980	Polyester, fiberglass filament wound, B&S joint								
4000	2" diameter	Q1	62	.258	L.F.	13.40	14.95	28.35	37.50
4100	3" diameter		51	.314		17.55	18.20	35.75	46.50
4120	4" diameter		45	.356		25.50	20.50	46	59.50
4140	6" diameter		32	.500		37	29	66	84.50
4980	Polypropylene, acid resistant, fire retardant, Schedule 40								
5000	1-1/2" diameter	Q1	68	.235	L.F.	9.05	13.65	22.70	30.50
5100	2" diameter		62	.258		14.55	14.95	29.50	38.50
5120	3" diameter		51	.314		25	18.20	43.20	54.50
5140	4" diameter		45	.356		32	20.50	52.50	66
5980	Proxylene, fire retardant, Schedule 40								
6000	1-1/2" diameter	Q1	68	.235	L.F.	14	13.65	27.65	36
6100	2" diameter		62	.258		19.20	14.95	34.15	43.50
6120	3" diameter		51	.314		34.50	18.20	52.70	65
6140	4" diameter		45	.356		49	20.50	69.50	85

Division Notes

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

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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 Common Work Results for HVAC

23 05 02 – HVAC General

23 05 02.10 Air Conditioning, General		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	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 10 HVAC Demolition

0010	HVAC DEMOLITION										
0100	Air conditioner, split unit, 3 ton	Q-5	2	8	Ea.		470			470	705
0150	Package unit, 3 ton	Q-6	3	8	"		490			490	735
0298	Boilers										
0300	Electric, up thru 148 kW	Q-19	2	12	Ea.		715			715	1,075
0310	150 thru 518 kW	"	1	24			1,425			1,425	2,150
0320	550 thru 2,000 kW	Q-21	.40	80			4,900			4,900	7,325
0330	2,070 kW and up	"	.30	107			6,525			6,525	9,750
0340	Gas and/or oil, up thru 150 MBH	Q-7	2.20	14.545			910			910	1,350
0350	160 thru 2,000 MBH	"	.80	40			2,500			2,500	3,725
0360	2,100 thru 4,500 MBH	"	.50	64			4,000			4,000	5,975
0370	4,600 thru 7,000 MBH	"	.30	107			6,650			6,650	9,950
0380	7,100 thru 12,000 MBH	"	.16	200			12,500			12,500	18,700
0390	12,200 thru 25,000 MBH	"	.12	267			16,600			16,600	24,900
1000	Ductwork, 4" high, 8" wide	1 Clad	200	.040	L.F.		1.68			1.68	2.53
1100	6" high, 8" wide	"	165	.048			2.04			2.04	3.07
1200	10" high, 12" wide	"	125	.064			2.69			2.69	4.05
1300	12"-14" high, 16"-18" wide	"	85	.094			3.96			3.96	5.95
1400	18" high, 24" wide	"	67	.119			5.05			5.05	7.55
1500	30" high, 36" wide	"	56	.143			6			6	9.05
1540	72" wide	"	50	.160			6.75			6.75	10.10
3000	Mechanical equipment, light items. Unit is weight, not cooling.	Q-5	.90	17,778	Ton		1,050			1,050	1,575
3600	Heavy items	"	1.10	14,545	"		860			860	1,275
5090	Remove refrigerant from system	1 Stpi	40	.200	lb.		13.10			13.10	19.60

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.	1 Plum	14	.571	Ea.	118	37			155	185
1030	2"	Q-1	9	1,778		125	103			228	291
1040	2-1/2"	"	8	2		124	116			240	310
1050	3"	"	5	3,200		139	186			325	430
1060	4"	Q-2	5	4,800		157	289			446	600
1070	5"	"	5	4,800		177	289			466	625
1080	6"										
1650	Gate, 125 lb., N.R.S.										
2150	Flanged	1 Plum	5	1,600	Ea.	610	103			713	830
2200	2"	Q-1	5	3,200		630	186			816	970
2240	2-1/2"	"	4.50	3,556		710	206			916	1,100
2260	3"	"	3	5,333		1,000	310			1,310	1,575
2280	4"	Q-2	3	8		1,725	480			2,205	2,625
2300	6"	"									
3550	OS&Y, 125 lb., flanged	1 Plum	5	1,600	Ea.	400	103			503	595
3600	2"	Q-1	4.50	3,556		460	206			666	820
3660	3"	"	3	5,333		685	310			995	1,225
3680	4"	Q-2	3	8		1,075	480			1,555	1,925
3700	6"	"									
3900	For 175 lb., flanged, add					200%	10%				
5450	Swing check, 125 lb., threaded										

23 05 Common Work Results for HVAC

23 05 23 – General-Duty Valves for HVAC Piping

23 05 23.30 Valves, Iron Body		2"	Daily	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl Q&P
			Crew	Output			Labor	Equipment	Total		
5500		2"	1 Plum	11	.727	Ea.	575	47	622	700	
5540		2-1/2"	Q-1	15	1.067		710	62	772	875	
5550		3"		13	1.231		770	71.50	841.50	955	
5560		4"		10	1.600		1,225	93	1,318	1,500	
5950	Flanged										
6000		2"	1 Plum	5	1.600	Ea.	510	103	613	720	
6040		2-1/2"	Q-1	5	3.200		365	186	551	680	
6050		3"		4.50	3.556		490	206	696	850	
6060		4"		3	5.333		785	310	1,095	1,325	
6070		6"	Q-2	3	8		1,325	480	1,805	2,175	

23 05 23.80 Valves, Steel

0010	VALVES, STEEL		1 Plum	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl Q&P
	Check valve, swing type, 150 lb., flanged							Labor	Equipment	Total		
0800	Cast											
1350	Check valve, swing type, 150 lb., flanged		1 Plum	10	.800	Ea.	360	51.50		411.50	475	
1370	1"		"	8	1		765	64.50		829.50	935	
1400	2"		Q-1	5	3.200		885	186		1,071	1,250	
1440	2-1/2"			4.50	3.556		900	206		1,106	1,300	
1450	3"			3	5.333		1,100	310		1,410	1,700	
1460	4"											
1540	For 300 lb., flanged, add							50%	15%			
1548	For 600 lb., flanged, add							110%	20%			
1950	Gate valve, 150 lb., flanged		1 Plum	8	1	Ea.	645	64.50		709.50	800	
2000	2"		Q-1	5	3.200		1,075	186		1,261	1,450	
2040	2-1/2"			4.50	3.556		910	206		1,116	1,300	
2050	3"			3	5.333		1,150	310		1,460	1,725	
2060	4"		Q-2	3	8		1,825	480		2,305	2,725	
3650	Globe valve, 150 lb., flanged		1 Plum	8	1	Ea.	950	64.50		1,014.50	1,150	
3700	2"		Q-1	5	3.200		1,200	186		1,386	1,600	
3740	2-1/2"			4.50	3.556		1,200	206		1,406	1,625	
3750	3"			3	5.333		1,750	310		2,060	2,400	
3760	4"		Q-2	3	8		2,750	480		3,230	3,750	
5150	Forged											
5650	Check valve, class 800, horizontal											
5698	Threaded		1 Plum	24	.333	Ea.	86	21.50		107.50	127	
5700	1/4"			24	.333		86	21.50		107.50	127	
5720	3/8"			24	.333		86	21.50		107.50	127	
5730	1/2"			24	.333		86	21.50		107.50	127	
5740	3/4"			20	.400		92	26		118	140	
5750	1"			19	.421		108	27		135	160	
5760	1-1/4"			15	.533		212	34.50		246.50	285	

23 07 HVAC Insulation

23 07 13 – Duct Insulation

				Daily Crew	Labor-Output	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P	
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.	4.49	10.05	14.54	20.50	
3090	Fire rated for plenums											
3100	1/2" x 24" x 25'			Q-14	1.94	8.247	Roll	177	435	612	865	
3110	1/2" x 24" x 25'				98	.163	S.F.	3.54	8.60	12.14	17.15	
3120	1/2" x 48" x 25'				1.04	15.385	Roll	350	810	1,160	1,625	
3126	1/2" x 48" x 25'				104	.154	S.F.	3.49	8.10	11.59	16.30	
3140	FSK vapor barrier wrap, .75 lb. density											
3160	1" thick			G	Q-14	350	.046	S.F.	.22	2.41	2.63	3.94
3170	1-1/2" thick			G		320	.050		.27	2.64	2.91	4.35
3180	2" thick			G		300	.053		.33	2.81	3.14	4.68
3190	3" thick			G		260	.062		.51	3.25	3.76	5.55
3200	4" thick			G		242	.066		.69	3.49	4.18	6.10
3210	Vinyl jacket, same as FSK											
3280	Unfaced, 1 lb. density											
3310	1" thick			G	Q-14	360	.044	S.F.	.28	2.35	2.63	3.91
3320	1-1/2" thick			G		330	.048		.38	2.56	2.94	4.35
3330	2" thick			G		310	.052		.50	2.72	3.22	4.73
3400	FSK facing, 1 lb. density											
3420	1-1/2" thick			G	Q-14	310	.052	S.F.	.38	2.72	3.10	4.60
3430	2" thick			G	"	300	.053	"	.51	2.81	3.32	4.88
3450	FSK facing, 1.5 lb. density											
3470	1-1/2" thick			G	Q-14	300	.053	S.F.	.54	2.81	3.35	4.91
3480	2" thick			G	"	290	.055	"	.66	2.91	3.57	5.20
3795	Finishes											
3800	Stainless steel woven mesh				Q-14	100	.160	S.F.	.99	8.45	9.44	14.05
3810	For .010" stainless steel, add					160	.100		3.26	5.30	8.56	11.70
3820	18 oz. fiberglass cloth, pasted on					170	.094		1.02	4.97	5.99	8.75
3900	8 oz. canvas, pasted on					180	.089		.30	4.69	4.99	7.55
3940	For .016" aluminum jacket, add					200	.080		1.03	4.22	5.25	7.65
7878	Contact cement, quart can							Ea.	13.20		13.20	14.55

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.	4.47	7.70	12.17	16.70
1020	Plus 2" fiberglass			G	"	80	.200	"	6.05	10.55	16.60	23
2000	Breeching, 2" calcium silicate											
2020	Rectangular			G	Q-14	42	.381	S.F.	8.65	20	28.65	40.50
2040	Round			G	"	38.70	.413	"	9	22	31	43.50

23 09 Instrumentation and Control for HVAC

23 09 43 – Pneumatic Control System for HVAC

23 09 43.10 Pneumatic Control Systems		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bore Equipment	Total	Total Ind O&P
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.	4,600	2,100	6,700	8,225
0240	For 10 to 20 tons	[G]	"	.63	37.915		4,950	2,275	7,225	8,825
0260	For over 20 tons	[G]	↓	.58	41.096	↓	5,375	2,450	7,825	9,575
0300	Heating coil, hot water, 3 way valve,									
0320	Freeze stat, limit control on discharge, readout		Q-5	.69	23.088	Ea.	3,425	1,350	4,775	5,800
0500	Cooling coil, chilled water, room									
0520	Thermostat, 3 way valve		Q-5	2	8	Ea.	1,475	470	1,945	2,325
0600	Cooling tower, fan cycle, damper control									
0620	Control system including water readout in/out of panel		Q-19	.67	35.821	Ea.	6,050	2,150	8,200	9,875
1000	Unit ventilator, day/night operation,									
1100	freeze stat, ASHRAE, cycle 2		Q-19	.91	26.374	Ea.	3,250	1,575	4,825	5,925
2000	Compensated hot water from boiler, valve control,									
2100	readout and reset at panel, up to 60 GPM		Q-19	.55	43.956	Ea.	6,300	2,625	8,925	10,900
2120	For 120 GPM		"	.51	47.059		6,475	2,825	9,300	11,300
2140	For 240 GPM		"	.49	49.180		7,050	2,950	10,000	12,200
3000	Boiler room combustion air, damper to 5 S.F., controls			1.37	17.582		3,025	1,050	4,075	4,900
3500	Fan coil, heating and cooling valves, 4 pipe control system			3	8		1,375	480	1,855	2,225
3600	Heat exchanger system controls		↓	.86	27.907		2,850	1,675	4,525	5,625
4000	Pneumatic thermostat, including controlling room radiator valve		Q-5	2.43	6.593		880	390	1,270	1,550
4060	Pump control system		Q-19	3	8	↓	1,350	480	1,830	2,200
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.	11,300	2,100	13,400	15,600
4660	1-1/2 HP		"	.58	41.739		13,300	2,500	15,800	18,300
4690	5 HP		↓	.42	57.143	↓	32,800	3,425	36,225	41,200

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		Q-5	2.70	5.926	Ea.	1,875	350	2,225	2,600	
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.	1,875	350	2,225	2,600
5520	1,000 gallon capacity, 7 ga. shell		"	2.50	6.400		2,925	380	3,305	3,800
5530	2,000 gallon capacity, 1/4" thick shell		Q-7	4.60	6.957		3,725	435	4,160	4,750
5535	2,500 gallon capacity, 7 ga. shell		Q-5	3	5.333		5,675	315	5,990	6,700
5540	5,000 gallon capacity, 1/4" thick shell		Q-7	3.20	10		13,400	625	14,025	15,600
5580	15,000 gallon capacity, 5/16" thick shell			1.70	18.824		11,200	1,175	12,375	14,100
5600	20,000 gallon capacity, 5/16" thick shell			1.50	21.333		22,600	1,325	23,925	26,900
5610	25,000 gallon capacity, 3/8" thick shell			1.30	24.615		29,600	1,525	31,125	34,900
5620	30,000 gallon capacity, 3/8" thick shell			1.10	29.091		35,000	1,825	36,825	41,200
5630	40,000 gallon capacity, 3/8" thick shell			.90	35.556		44,500	2,225	46,725	52,500
5640	50,000 gallon capacity, 3/8" thick shell		↓	.80	40	↓	49,800	2,500	52,300	58,000

23 13 Facility Fuel-Storage Tanks

23 13 13 – Facility Underground Fuel-Oil, Storage Tanks

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Incl O&P
23 13 13.23 Glass-Fiber-Reinfcd-Plastic, Fuel-Oil, Storage		Crew			Labor	Equipment			
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.	8,275	435	8,710	9,750
0245	3,000 gallon capacity		3.90	8,205		8,400	510	8,910	10,000
0250	4,000 gallon capacity		3.55	9,014		11,100	560	11,660	13,000
0255	5,000 gallon capacity		3.20	10		10,400	625	11,025	12,300
0260	6,000 gallon capacity		2.67	11,985		11,800	750	12,550	14,100
0280	10,000 gallon capacity		2	16		15,600	1,000	16,600	18,700
0284	15,000 gallon capacity		1.68	19,048		27,900	1,200	29,100	32,500
0290	20,000 gallon capacity		1.45	22,069		33,200	1,375	34,575	38,600
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.	9,100	390	9,490	10,600
1050	1,000 gallon capacity	"	2.25	7,111		12,400	420	12,820	14,300
1060	2,500 gallon capacity	Q-7	4.16	7,692		17,300	480	17,780	19,700
1070	3,000 gallon capacity		3.90	8,205		19,400	510	19,910	22,100
1080	4,000 gallon capacity		3.64	8,791		19,600	550	20,150	22,300
1090	6,000 gallon capacity		2.42	13,223		26,000	825	26,825	29,800
1100	8,000 gallon capacity		2.08	15,385		33,000	960	33,960	37,700
1110	10,000 gallon capacity		1.82	17,582		38,800	1,100	39,900	44,300
1120	12,000 gallon capacity		1.70	18,824		48,300	1,175	49,475	55,000
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.	8,775	560	9,335	10,500
2250	4,000 gallon capacity		2.90	11,034		11,600	690	12,290	13,800
2260	6,000 gallon capacity		2	16		12,800	1,000	13,800	15,600
2280	10,000 gallon capacity		1.60	20		16,600	1,250	17,850	20,200
2284	15,000 gallon capacity		1.39	23,022		28,900	1,425	30,325	34,000
2290	20,000 gallon capacity		1.14	28,070		34,700	1,750	36,450	40,800
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.	9,600	510	10,110	11,400
3050	1,000 gallon capacity	"	1.70	9,412		12,900	555	13,455	15,000
3060	2,500 gallon capacity	Q-7	3.29	9,726		17,800	605	18,405	20,500
3070	3,000 gallon capacity		3.13	10,224		19,900	640	20,540	22,800
3080	4,000 gallon capacity		2.93	10,922		20,100	680	20,780	23,100
3090	6,000 gallon capacity		1.86	17,204		27,000	1,075	28,075	31,300
3100	8,000 gallon capacity		1.65	19,394		34,000	1,200	35,200	39,200
3110	10,000 gallon capacity		1.48	21,622		39,800	1,350	41,150	45,800
3120	12,000 gallon capacity		1.40	22,857		49,300	1,425	50,725	56,000

23 13 23 – Facility Aboveground Fuel-Oil, Storage Tanks

23 13 23.16 Horizontal, Stl, Abvgrd Fuel-Oil, Storage Tanks

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.	510	189	699	845
3060	550 gallon	"	2.70	5,926		4,400	350	4,750	5,375
3080	1,000 gallon	Q-7	5	6,400		7,175	400	7,575	8,475
3100	1,500 gallon		4.75	6,737		10,100	420	10,520	11,700
3120	2,000 gallon		4.60	6,957		13,500	435	13,935	15,600

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	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
3140	5,000 gallon	Q-7	3.20	10	Ea.	21,400	625		22,025		24,500	
3150	10,000 gallon		2	16		40,800	1,000		41,800		46,400	
3160	15,000 gallon		1.70	18.824		57,000	1,175		58,175		65,000	
3170	20,000 gallon		1.45	22.069		74,000	1,375		75,375		83,500	
3180	25,000 gallon		1.30	24.615		84,500	1,525		86,025		95,500	
3190	30,000 gallon	↓	1.10	29.091		104,000	1,825		105,825		117,000	
3320	Double wall, 500 gallon capacity	Q-5	2.40	6.667		2,000	395		2,395		2,800	
3330	2,000 gallon capacity	Q-7	4.15	7.711		6,650	480		7,130		8,050	
3340	4,000 gallon capacity		3.60	8.889		14,500	555		15,055		16,700	
3350	6,000 gallon capacity		2.40	13.333		16,400	830		17,230		19,400	
3360	8,000 gallon capacity		2	16		19,500	1,000		20,500		23,000	
3370	10,000 gallon capacity		1.80	17.778		30,500	1,100		31,600		35,200	
3380	15,000 gallon capacity		1.50	21.333		41,100	1,325		42,425		47,200	
3390	20,000 gallon capacity		1.30	24.615		48,400	1,525		49,925		55,500	
3400	25,000 gallon capacity		1.15	27.826		60,000	1,725		61,725		68,500	
3410	30,000 gallon capacity	↓	1	32	↓	67,000	2,000		69,000		76,500	

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	F3	2	20	Ea.	10,500	1,075	236	11,811		13,400
0100	500 gallon	"	2	20		14,700	1,075	236	16,011		18,000
0200	1,000 gallon	F4	2	24		18,900	1,300	490	20,690		23,300
0300	2,000 gallon		2	24		24,100	1,300	490	25,890		29,000
0400	4,000 gallon		2	24	↓	37,700	1,300	490	39,490		44,000
0500	8,000 gallon	↓	2	24	↓	50,500	1,300	490	52,290		58,000
0600	12,000 gallon		2	24	↓						

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	Q-5	6	2.667	Ea.	1,575	157		1,732		1,950
0040	2" diameter	"	5	3.200		1,750	189		1,939		2,200
0080	2-1/2" diameter		2	24							
0100	3" diameter		4	4		2,700	236		2,936		3,325
0120	4" diameter	↓	3	5.333		3,900	315		4,215		4,750
0130	5" diameter	Q-6	3.60	6.667		4,950	410		5,360		6,050
0140	6" diameter	"	3.40	7.059	↓	5,950	430		6,380		7,200

23 21 20.18 Automatic Air Vent

0010	AUTOMATIC AIR VENT										
0020	Cast iron body, stainless steel internals, float type	1 Stpi	12	.667	Ea.	180	43.50		223.50		264
0060	1/2" NPT inlet, 300 psi	"	10	.800		375	52.50		427.50		495
0220	3/4" NPT inlet, 250 psi	Q-5	12	1.333	↓	1,175	78.50		1,253.50		1,400
0340	1-1/2" NPT inlet, 250 psi										

23 21 20.42 Expansion Joints

0010	EXPANSION JOINTS										
0100	Bellows type, neoprene cover, flanged spool	1 Stpi	11	1.727	Ea.	264	47.50		311.50		360
0140	6" face to face, 1-1/4" diameter	"	10.60	.755		264	49.50		313.50		365
0160	1-1/2" diameter	Q-5	13.30	1.203		267	71		338		400
0180	2" diameter	"	12.40	1.290	↓	276	76		352		420
0190	2-1/2" diameter										

23 21 Hydronic Piping and Pumps

23 21 20 - Hydronic HVAC Piping Specialties

23 21 20.42 Expansion Joints		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
		Q-5	11.40	1.404	Ea.	310	83		393	465	
0200	3" diameter					385	72.50		457.50	535	
0480	10" face to face, 2" diameter		13	1.231							
0500	2-1/2" diameter			12	1.333	405	78.50		483.50	565	
0520	3" diameter			11	1.455	410	86		496	585	
0540	4" diameter			8	2	470	118		588	690	
0560	5" diameter			7	2.286	560	135		695	815	
0580	6" diameter		↓	6	2.667	580	157		737	870	

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.	855	55.50		910.50	1,025	
2020	24 gallon capacity			14	1.143	760	67.50		827.50	935	
2040	30 gallon capacity			12	1.333	985	78.50		1,063.50	1,200	
2060	40 gallon capacity			10	1.600	1,150	94.50		1,244.50	1,425	
2080	60 gallon capacity			8	2	1,375	118		1,493	1,700	
2100	80 gallon capacity			7	2.286	1,475	135		1,610	1,825	
2120	100 gallon capacity			6	2.667	2,000	157		2,157	2,425	
3000	Steel ASME expansion, rubber diaphragm, 19 gal. cap. accept.		12	1.333		3,200	78.50		3,278.50	3,650	
3020	31 gallon capacity			8	2	3,575	118		3,693	4,125	
3040	61 gallon capacity			6	2.667	5,225	157		5,382	5,975	
3080	119 gallon capacity			4	4	5,425	236		5,661	6,300	
3100	158 gallon capacity			3.80	4.211	7,525	248		7,773	8,650	
3140	317 gallon capacity			2.80	5.714	11,400	335		11,735	13,000	
3180	528 gallon capacity		↓	2.40	6.667	18,500	395		18,895	20,900	

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.	78.50	22		100.50	119	
0120	3/4" diameter		20	.400		74.50	26		100.50	121	
0140	1" diameter			19	.421	88	27.50		115.50	139	
0160	1-1/4" diameter		↓	15	.533	108	35		143	172	
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	43.50		213.50	253	
0070	3/4" pipe size		10	.800		280	52.50		332.50	390	
0100	1" pipe size		9	.889		430	58.50		488.50	560	
0120	1-1/4" pipe size		↓	8	1	650	65.50		715.50	815	
1000	Float & thermostatic, 15 psi										
1010	3/4" pipe size	1 Stpi	16	.500	Ea.	168	33		201	233	
1020	1" pipe size		15	.533		193	35		228	265	
1040	1-1/2" pipe size		9	.889		360	58.50		418.50	480	
1060	2" pipe size		6	1.333		1,000	87.50		1,087.50	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.	44	22		66	81	
0070	3/8" pipe size		24	.333		45.50	22		67.50	83	
0100	1/2" pipe size		20	.400		45.50	26		71.50	89	
0140	1" pipe size		↓	17	.471	66.50	31		97.50	120	

23 21 Hydronic Piping and Pumps

23 21 20 – Hydronic HVAC Piping Specialties

23 21 20.76 Strainers, Y Type, Bronze Body		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Ind O&P
0160	1-1/2" pipe size	1 Stpi	14	.571	Ea.	144	37.50		181.50	214
0180	2" pipe size	"	13	.615		190	40.50		230.50	270
0182	3" pipe size	↓	12	.667		1,200	43.50		1,243.50	1,400
0200	300 lb., 2-1/2" pipe size	Q-5	17	.941		865	55.50		920.50	1,025
0220	3" pipe size	"	16	1		1,325	59		1,384	1,575
0240	4" pipe size	↓	15	1.067		2,425	63		2,488	2,775
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.	545	47.50		592.50	670
1020	2" pipe size	"	8	1		630	65.50		695.50	790
1030	2-1/2" pipe size	Q-5	5	3.200		1,125	189		1,314	1,525
1040	3" pipe size	"	4.50	3.556		1,375	210		1,585	1,850
1060	4" pipe size	↓	3	5.333		2,125	315		2,440	2,825
1100	6" pipe size	Q-6	3	8		4,100	490		4,590	5,250
1106	8" pipe size	"	2.60	9.231		4,450	565		5,015	5,750
1500	For 300 lb. rating, add					40%				

23 21 20.78 Strainers, Y Type, Iron Body

0010 STRAINERS, Y TYPE, IRON BODY		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Ind O&P
0050	Screwed, 250 lb., 1/4" pipe size	1 Stpi	20	.400	Ea.	20	26		46	61
0070	3/8" pipe size	"	20	.400		20	26		46	61
0100	1/2" pipe size	"	20	.400		20	26		46	61
0140	1" pipe size	"	16	.500		27.50	33		60.50	79
0160	1-1/2" pipe size	"	12	.667		55.50	43.50		99	127
0180	2" pipe size	↓	8	1		83	65.50		148.50	189
0220	3" pipe size	Q-5	11	1.455		310	86		396	475
0240	4" pipe size	"	5	3.200		530	189		719	865
0500	For galvanized body, add					50%				
1000	Flanged, 125 lb., 1-1/2" pipe size	1 Stpi	11	.727	Ea.	167	47.50		214.50	256
1020	2" pipe size	"	8	1		177	65.50		242.50	293
1040	3" pipe size	Q-5	4.50	3.556		188	210		398	520
1060	4" pipe size	"	3	5.333		375	315		690	885
1080	5" pipe size	Q-6	3.40	7.059		405	430		835	1,100
1100	6" pipe size	"	3	8	↓	675	490		1,165	1,475
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		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Ind O&P
0050	1/2" diameter	1 Stpi	24	.333	Ea.	310	22		332	375
0120	1" diameter	"	19	.421		305	27.50		332.50	375
0140	1-1/4" diameter	"	15	.533		380	35		415	470
0160	1-1/2" diameter	"	13	.615		380	40.50		420.50	475
0180	2" diameter	↓	11	.727		405	47.50		452.50	515
0220	3" diameter	Q-5	14	1.143		570	67.50		637.50	730
0240	4" diameter	"	11	1.455		855	86		941	1,075
0280	6" diameter	Q-6	3.50	6.857		1,250	420		1,670	2,000
0500	For meter, add					2,425			2,425	2,650

23 21 23 – Hydronic Pumps

23 21 23.13 In-Line Centrifugal Hydronic Pumps

0010 IN-LINE CENTRIFUGAL HYDRONIC PUMPS		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Ind O&P
0600	Bronze, sweat connections, 1/40 HP, in line	Q-1	16	1	Ea.	275	58		333	385
0640	3/4" size	"								
1000	Flange connection, 3/4" to 1-1/2" size									

23 21 Hydronic Piping and Pumps

23 21 23 - Hydronic Pumps

23 21 23.13 In-Line Centrifugal Hydronic Pumps			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Ind O&P
1040	1/12 HP		Q-1	6	2.667 Ea.	710	155		865	1,025
1060	1/8 HP			6	2.667	1,250	155		1,405	1,600
1100	1/3 HP			6	2.667	1,400	155		1,555	1,750
1140	2" size, 1/6 HP			5	3.200	1,750	186		1,936	2,200
1180	2-1/2" size, 1/4 HP		▼	5	3.200	2,200	186		2,386	2,700
2000	Cast iron, flange connection		Q-1	6	2.667 Ea.	470	155		625	750
2040	3/4" to 1-1/2" size, in line, 1/12 HP			6	2.667	870	155		1,025	1,175
2100	1/3 HP			6	2.667	1,025	155		1,180	1,350
2101	Pumps, circulating, 3/4" to 1-1/2" size, 1/3 HP			5	3.200	955	186		1,141	1,325
2140	2" size, 1/6 HP			5	3.200	1,150	186		1,336	1,525
2180	2-1/2" size, 1/4 HP			4	4	1,150	232		1,382	1,625
2220	3" size, 1/4 HP									
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.	188	43.50	231.50	272
0140	1/18 HP, 270 GPH		G		10	.800	186	52.50	238.50	284
0160	1/5 HP, 450 GPH		G	▼	8	1	425	65.50	490.50	570
0200	230 V									
0240	1/18 HP, 270 GPH		G	1 Stpi	10	.800 Ea.	208	52.50	260.50	310
0260	1/5 HP, 450 GPH		G	"	8	1	495	65.50	560.50	645

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.	4,300	37.50		4,337.50	4,775
0140	1500 lb. per hour		"	7	1.143 "	4,825	75		4,900	5,425

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		Q-1	1.80	8.889 Ea.	7,175	515		7,690	8,650
2020	3/4 HP, 15 GPM									
2100	Duplex									
2110	With 2 pumps and motors, CI receiver, float switch, alternator		Q-1	1.40	11.429 Ea.	7,825	665		8,490	9,600
2120	3/4 HP, 15 GPM, 15 gal. CI receiver			1.20	13.333	9,400	775		10,175	11,500
2130	1 HP, 25 GPM									
2140	1-1/2 HP, 45 GPM			1	16	11,100	930		12,030	13,600
2150	1-1/2 HP, 60 GPM		▼	1	16	12,200	930		13,130	14,900

23 31 HVAC Ducts and Casings

23 31 13 – Metal Ducts

23 31 13.13 Rectangular Metal Ducts		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P
Line	Description						Labor	Equipment	
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.	3.20	18.60	21.80	31.50
0110	100 to 500 lb.		80	.300		1.89	17.45	19.34	28.50
0120	500 to 1,000 lb.		95	.253		1.91	14.70	16.61	24.50
0140	1,000 to 2,000 lb.		120	.200		1.86	11.65	13.51	19.70
0150	2,000 to 5,000 lb.		130	.185		1.80	10.75	12.55	18.30
0160	Over 5,000 lb.		145	.166		1.86	9.65	11.51	16.65
0500	Galvanized steel, under 200 lb.		235	.102		.60	5.95	6.55	9.65
0520	200 to 500 lb.		245	.098		.57	5.70	6.27	9.30
0540	500 to 1,000 lb.		255	.094		.54	5.45	5.99	8.90
0560	1,000 to 2,000 lb.		265	.091		.55	5.25	5.80	8.60
0570	2,000 to 5,000 lb.		275	.087		.56	5.05	5.61	8.30
0580	Over 5,000 lb.		285	.084		.55	4.90	5.45	8.05
1000	Stainless steel, type 304, under 100 lb.		165	.145		4.78	8.45	13.23	18.10
1020	100 to 500 lb.		175	.137		3.88	7.95	11.83	16.35
1030	500 to 1,000 lb.		190	.126		2.77	7.35	10.12	14.20
1040	1,000 to 2,000 lb.		200	.120		2.46	7	9.46	13.30
1050	2,000 to 5,000 lb.		225	.107		2.17	6.20	8.37	11.80
1060	Over 5,000 lb.		235	.102		2.67	5.95	8.62	11.95
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%
1240	For 80% fittings, add								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		1 Shee	100	.080	L.F.	3.89	4.98	8.87	11.85
2000	Fabrics for flexible connections, with metal edge								
2100	Without metal edge	"	160	.050	"	3.53	3.12	6.65	8.60

23 31 HVAC Ducts and Casings

23 31 16 – Nonmetal Ducts

23 31 16.13 Fibrous-Glass Ducts		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
							Labor	Equipment			
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	.89	3.99			4.88	7.05

23 31 16.22 Duct Board

0010 DUCT BOARD

3800	Rigid, resin bonded fibrous glass, FSK	Q-14	150	.107	S.F.	1.68	5.65			7.33	10.50
3810	Temperature, bacteria and fungi resistant										
3820	1" thick										
3830	1-1/2" thick										
3840	2" thick										

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	Ed.	32	21			53	66.50
5994	8" x 8"		22	.364		34	22.50			56.50	72
5996	10" x 10"		21	.381		33.50	23.50			57	73
6000	12" x 12"		21	.381		46	23.50			69.50	86.50
6020	12" x 18"		18	.444		61.50	27.50			89	110
6030	14" x 10"		20	.400		45	25			70	87.50
6031	14" x 14"		17	.471		44.50	29.50			74	93.50
6033	16" x 12"		17	.471		44.50	29.50			74	93.50
6035	16" x 16"		16	.500		55.50	31			86.50	109
6037	18" x 16"		15	.533		75	33			108	133
6038	18" x 18"		15	.533		80	33			113	139
6070	20" x 16"		14	.571		80	35.50			115.50	142
6072	20" x 20"		13	.615		79	38.50			117.50	145
6074	22" x 18"		14	.571		83	35.50			118.50	146
6076	24" x 16"		11	.727		94.50	45.50			140	173
6078	24" x 20"		8	1		114	62.50			176.50	221
6080	24" x 24"		8	1		121	62.50			183.50	228
6110	26" x 26"		6	1.333		143	83			226	283
6133	30" x 30"	Q-9	6.60	2.424		216	136			352	445
6135	32" x 32"		6.40	2.500		236	140			376	470
6180	48" x 36"		5.60	2.857		400	160			560	685
8000	Multi-blade dampers, parallel blade										
8100	8" x 8"	1 Shee	24	.333	Ed.	119	21			140	163
8140	16" x 10"		20	.400		152	25			177	206
8200	24" x 16"		11	.727		194	45.50			239.50	283
8260	30" x 18"		7	1.143		270	71			341	405

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	Ed.	35	21			56	70
3020	8" x 6"		22	.364		35	22.50			57.50	73
3240	16" x 14"		18	.444		59	27.50			86.50	107
3400	24" x 20"		8	1		66	62.50			128.50	167

23 33 Air Duct Accessories

23 33 13 – Dampers

23 33 13.28 Splitter Damper Assembly		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
0010	SPLITTER DAMPER ASSEMBLY									
7000	Self locking, 1' rod	1 Shee	24	.333	Eq.	29.50	21		50.50	64
7020	3' rod		22	.364		40.50	22.50		63	79
7040	4' rod		20	.400		45	25		70	87.50
7060	6' rod		18	.444		54.50	27.50		82	102

23 33 19 – Duct Silencers

23 33 19.10 Duct Silencers

0010	DUCT SILENCERS	MCFM	87	87	96
9000	Silencers, noise control for air flow, duct				

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	Eq.	22.50	35.50		58	79
1020	10" x 10"		11	.727		23.50	45.50		69	94
1040	12" x 12"		10	.800		28	50		78	106
1050	12" x 18"		9	.889		48	55.50		103.50	137
1070	18" x 18"		8	1		40	62.50		102.50	139
1074	24" x 18"		8	1		69	62.50		131.50	171

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.	1.36	2.24		3.60	4.90
1540	5" diameter		320	.050		1.57	2.80		4.37	6
1560	6" diameter		280	.057		1.85	3.20		5.05	6.90
1580	7" diameter		240	.067		2.05	3.74		5.79	7.90
1600	8" diameter		200	.080		2.32	4.49		6.81	9.35
1640	10" diameter		160	.100		2.97	5.60		8.57	11.75
1660	12" diameter		120	.133		3.50	7.50		11	15.20
1900	Insulated, 1" thick, PE jacket, 3" diameter	G	380	.042		2.68	2.36		5.04	6.55
1910	4" diameter	G	340	.047		3.26	2.64		5.90	7.60
1920	5" diameter	G	300	.053		3.42	2.99		6.41	8.30
1940	6" diameter	G	260	.062		3.61	3.45		7.06	9.20
1960	7" diameter	G	220	.073		4.16	4.08		8.24	10.80
1980	8" diameter	G	180	.089		4.04	4.99		9.03	12
2020	10" diameter	G	140	.114		5.15	6.40		11.55	15.40
2040	12" diameter	G	100	.160		6.05	8.95		15	20.50

23 33 Air Duct Accessories

23 33 53 – Duct Liners

23 33 53.10 Duct Liner Board		Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Ind O&P	
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.	1.06	5.65	6.71	9.80
3345	1-1/2" thick	[G]		130	.123		1.16	6.50	7.66	11.25
3346	2" thick	[G]		120	.133		1.34	7.05	8.39	12.25
3348	3" thick	[G]		110	.145		1.75	7.70	9.45	13.75
3350	4" thick	[G]		100	.160		2.13	8.45	10.58	15.30
3356	3 lb. density, 1" thick	[G]		150	.107		1.34	5.65	6.99	10.10
3358	1-1/2" thick	[G]		130	.123		1.49	6.50	7.99	11.60
3360	2" thick	[G]		120	.133		2.07	7.05	9.12	13.10
3362	2-1/2" thick	[G]		110	.145		2.44	7.70	10.14	14.50
3364	3" thick	[G]		100	.160		2.80	8.45	11.25	16.05
3366	4" thick	[G]		90	.178		3.50	9.40	12.90	18.25
3370	6 lb. density, 1" thick	[G]		140	.114		1.90	6.05	7.95	11.35
3374	1-1/2" thick	[G]		120	.133		2.54	7.05	9.59	13.60
3378	2" thick	[G]		100	.160		3.20	8.45	11.65	16.45
3490	Board type, fiberglass liner, 3 lb. density									
3680	No finish									
3700	1" thick	[G]	Q-14	170	.094	S.F.	.73	4.97	5.70	8.45
3710	1-1/2" thick	[G]		140	.114		1.10	6.05	7.15	10.45
3720	2" thick	[G]		130	.123		1.49	6.50	7.99	11.60
3940	Board type, non-fibrous foam									
3950	Temperature, bacteria and fungi resistant									
3960	1" thick	[G]	Q-14	150	.107	S.F.	2.76	5.65	8.41	11.70
3970	1-1/2" thick	[G]		130	.123		4.89	6.50	11.39	15.35
3980	2" thick	[G]		120	.133		4.13	7.05	11.18	15.35

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.	2,400	315	2,715	3,100
1520	4,000 CFM, 1 HP		3.20	6.250		2,500	355	2,855	3,300
1540	8,000 CFM, 2 HP		2.80	7.143		3,550	410	3,960	4,525

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.	Q-20	20	1	Ea.	305	57	362	420
2520	95 CFM		19	1.053		360	60	420	485
2540	210 CFM								
2560	385 CFM		18	1.111		455	63.50	518.50	600
2580	885 CFM		16	1.250		900	71.50	971.50	1,100
2600	1,650 CFM		13	1.538		1,250	88	1,338	1,500
2620	2,960 CFM		11	1.818		1,675	104	1,779	1,975
2640	For wall or roof cap, add	1 Shee	16	.500		305	31	336	385
2660	For straight thru fan, add						10%		
2680	For speed control switch, add	1 Elec	16	.500		166	30.50	196.50	229
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.	975	179	1,154	1,350

23 34 HVAC Fans

23 34 14 – Blower HVAC Fans

23 34 14.10 Blower Type HVAC Fans			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
			Crew				Labor	Equipment			
7540	485 CFM, 1/6 HP		Q-20	5.80	3,448	Ea.	1,100	197		1,297	1,500
7560	1,950 CFM, 1/2 HP			4.80	4,167		1,425	238		1,663	1,925
7580	2,410 CFM, 3/4 HP			4.40	4,545		2,650	260		2,910	3,325
7600	3,328 CFM, 1-1/2 HP			3	6.667		2,625	380		3,005	3,475
7680	V-belt drive, drive cover, 3 phase										
7700	800 CFM, 1/4 HP		Q-20	6	3.333	Ea.	1,050	190		1,240	1,475
7720	1,300 CFM, 1/3 HP			5	4		1,125	229		1,354	1,575
7740	2,000 CFM, 1 HP			4.60	4,348		1,825	248		1,573	1,825
7760	2,900 CFM, 3/4 HP			4.20	4,762		1,775	272		2,047	2,350

23 34 16 – Centrifugal HVAC Fans

23 34 16.10 Centrifugal Type HVAC Fans

0010 CENTRIFUGAL TYPE HVAC FANS			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
			Crew				Labor	Equipment			
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	380		2,005	2,350
0260	1,380 CFM, 12" diameter connection			2	10		1,750	570		2,320	2,800
0280	1,520 CFM, 16" diameter connection			2	10		1,700	570		2,270	2,750
0300	2,560 CFM, 18" diameter connection			1	20		1,850	1,150		3,000	3,775
0320	3,480 CFM, 20" diameter connection			.80	25		2,175	1,425		3,600	4,550
0326	5,080 CFM, 20" diameter connection			.75	26.667		2,375	1,525		3,900	4,900
3500	Centrifugal, airfoil, motor and drive, complete										
3520	1,000 CFM, 1/2 HP		Q-20	2.50	8	Ea.	2,100	455		2,555	3,000
3540	2,000 CFM, 1 HP			2	10		2,250	570		2,820	3,375
3560	4,000 CFM, 3 HP			1.80	11.111		3,000	635		3,635	4,250
3580	8,000 CFM, 7-1/2 HP			1.40	14.286		4,525	815		5,340	6,200
3600	12,000 CFM, 10 HP			1	20		5,875	1,150		7,025	8,175
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.	1,925	190		2,115	2,425
5040	1,520 CFM, 1/3 HP			5	4		2,575	229		2,804	3,175
5060	1,850 CFM, 1/2 HP			4	5		2,550	286		2,836	3,250
5080	2,180 CFM, 3/4 HP			3	6.667		2,950	380		3,330	3,825
5100	1/2" S.P., 3,600 CFM, 1 HP			2	10		3,100	570		3,670	4,275
5120	4,250 CFM, 1-1/2 HP			1.60	12.500		3,800	715		4,515	5,250
5140	4,800 CFM, 2 HP			1.40	14.286		4,625	815		5,440	6,325
7000	Roof exhaust, 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.	785	163		948	1,100
7120	600 CFM, 11" sq. damper			6	3.333		880	190		1,070	1,250
7140	815 CFM, 13" sq. damper			5	4		1,050	229		1,279	1,525
7160	1,450 CFM, 13" sq. damper			4.20	4,762		1,750	272		2,022	2,325
7180	2,050 CFM, 16" sq. damper			4	5		1,900	286		2,186	2,500
7200	V-belt drive, 1,650 CFM, 12" sq. damper			6	3.333		1,425	190		1,615	1,875
7220	2,750 CFM, 21" sq. damper			5	4		1,800	229		2,029	2,350
7230	3,500 CFM, 21" sq. damper			4.50	4,444		2,025	254		2,279	2,625
7240	4,910 CFM, 23" sq. damper			4	5		2,500	286		2,786	3,175
7260	8,525 CFM, 28" sq. damper			3	6.667		3,250	380		3,630	4,150
7280	13,760 CFM, 35" sq. damper			2	10		4,500	570		5,070	5,825
7300	20,558 CFM, 43" sq. damper			1	20		8,950	1,150		10,100	11,600
7320	For 2 speed winding, add						15%				
7340	For explosion proof motor, add						745			745	820
7360	For belt driven, top discharge, add						15%				
8500	Wall exhausters, centrifugal, auto damper, 1/8" S.P.										

23 34 HVAC Fans

23 34 16 - Centrifugal HVAC Fans

23 34 16.10 Centrifugal Type HVAC Fans		Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
					Labor	Equipment	Total		
8520	Direct drive, 610 CFM, 1/20 HP	Q-20	14	1.429	Ea.	425	81.50	506.50	595
8540	796 CFM, 1/12 HP		13	1.538	"	1,075	88	1,163	1,300
8560	822 CFM, 1/6 HP		12	1.667	"	1,075	95	1,170	1,325
8580	1,320 CFM, 1/4 HP		12	1.667	↓	1,375	95	1,470	1,650
9500	V-belt drive, 3 phase								
9520	2,800 CFM, 1/4 HP	Q-20	9	2.222	Ea.	1,925	127	2,052	2,325
9540	3,740 CFM, 1/2 HP	"	8	2.500	"	2,000	143	2,143	2,425

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.	105	205
3040	52", 6,500 CFM high, 4,000 CFM low	[G]	1	Elec	2.20	3.636	"	144	223
3100	For antique white motor, same cost								
3200	For brass plated motor, same cost								
3300	For light adaptor kit, add	[G]	1	Elec			Ea.	40	40
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.	236	114	350	435
6120	1,033 CFM, 1/20 HP		9	2.222	"	325	127	452	545
6140	1,323 CFM, 1/15 HP		8	2.500	↓	390	143	533	645
6300	V-belt drive, 3 phase								
6320	6,175 CFM, 3/4 HP	Q-20	5	4	Ea.	1,200	229	1,429	1,650
6340	7,500 CFM, 3/4 HP		5	4	"	1,275	229	1,504	1,750
6360	10,100 CFM, 1 HP		4.50	4.444	"	1,500	254	1,754	2,050
6380	14,300 CFM, 1-1/2 HP		4	5	↓	1,775	286	2,061	2,375
6650	Residential, bath exhaust, grille, back draft damper								
6660	50 CFM	Q-20	24	.833	Ea.	61	47.50	108.50	139
6670	110 CFM		22	.909	"	116	52	168	207
6680	Light combination, squirrel cage, 100 watt, 70 CFM	↓	24	.833	↓	123	47.50	170.50	207
6700	Light/heater combination, ceiling mounted								
6710	70 CFM, 1,450 watt	Q-20	24	.833	Ea.	139	47.50	186.50	225
6800	Heater combination, recessed, 70 CFM		24	.833	"	83.50	47.50	131	164
6820	With 2 infrared bulbs								
6900	Kitchen exhaust, grille, complete, 160 CFM		23	.870	"	100	49.50	149.50	185
6910	180 CFM		22	.909	"	104	52	156	194
6920	270 CFM		20	1	"	97	57	154	194
6930	350 CFM		18	1.111	"	214	63.50	277.50	330
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.	26.50	45.50	72	97.50
6948	6" diam. round duct		11	.727	"	76	45.50	121.50	153
6958	Roof jack with bird screen and back draft damper								
6960	3" & 4" diam. round duct	1 Shee	11	.727	Ea.	18.85	45.50	64.35	89.50
6962	3-1/4" x 10" rectangular duct		10	.800	"	35	50	85	114
6980	Transition								
6982	3-1/4" x 10" to 6" diam. round	1 Shee	20	.400	Ea.	36	25	61	77.50

23 34 HVAC Fans

23 34 33 – Air Curtains

23 34 33.10 Air Barrier Curtains	Daily	Labor-	Unit	Material	2020 Bare Costs		Total
	Crew	Output			Labor	Equipment	
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.	345	199	544
3100 Environmental separation							680
3110 Door heights up to 8', low profile, super quiet							
3120 Unheated, variable speed							
3130 36" wide	2 Shee	4	4	Ea.	765	249	1,014
3134 42" wide		3.80	4.211		780	262	1,042
3138 48" wide		3.60	4.444		810	277	1,087
3142 60" wide		3.40	4.706		865	293	1,158
3146 72" wide	Q:3	4.60	6.957		1,050	425	1,475
3150 96" wide		4.40	7.273		1,625	445	2,070
3154 120" wide		4.20	7.619		1,600	465	2,065
3158 144" wide		4	8		2,000	490	2,490
3200 Door heights up to 10'							2,925
3210 Unheated							
3230 36" wide	2 Shee	3.80	4.211	Ea.	735	262	997
3234 42" wide		3.60	4.444		795	277	1,072
3238 48" wide		3.40	4.706		780	293	1,073
3242 60" wide		3.20	5		1,100	310	1,410
3246 72" wide	Q:3	4.40	7.273		1,325	445	1,770
3250 96" wide		4.20	7.619		1,575	465	2,040
3254 120" wide		4	8		2,250	490	2,740
3258 144" wide		3.80	8.421		2,275	515	2,790
3300 Door heights up to 12'							3,275
3310 Unheated							
3334 42" wide	2 Shee	3.40	4.706	Ea.	1,125	293	1,418
3338 48" wide		3.20	5		1,125	310	1,435
3342 60" wide		3	5.333		1,150	330	1,480
3346 72" wide	Q:3	4.20	7.619		1,925	465	2,390
3350 96" wide		4	8		2,225	490	2,715
3354 120" wide		3.80	8.421		2,525	515	3,040
3358 144" wide		3.60	8.889		3,650	545	4,195
3400 Door heights up to 16'							4,825
3410 Unheated							
3438 48" wide	2 Shee	3	5.333	Ea.	1,475	330	1,805
3442 60" wide	"	2.80	5.714		1,550	355	1,905
3446 72" wide	Q:3	3.80	8.421		2,700	515	3,215
3450 96" wide		3.60	8.889		3,175	545	3,720
3454 120" wide		3.40	9.412		3,625	575	4,200
3458 144" wide		3.20	10		3,625	615	4,240
3470 Heated, electric							
3474 48" wide	2 Shee	2.90	5.517	Ea.	2,500	345	2,845
3478 60" wide	"	2.70	5.926		2,550	370	2,920
3482 72" wide	Q:3	3.70	8.649		4,275	530	4,805
3486 96" wide		3.50	9.143		4,150	560	4,710
3490 120" wide		3.30	9.697		4,725	595	5,320
3494 144" wide		3.10	10.323		5,550	635	6,185
							7,050

23 34 HVAC Fans

23 34 39 – Ceiling Fans

23 34 39.10 Powerfoil

		R-1A	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
					Ea.		Labor	Equipment	
0010	POWERFOIL								
2301	Ceiling fan, Powerfoil, 8' diameter					8,650	370		9,020 10,100
2302	10'		2.40	6.667	Ea.	8,750	370		9,120 10,200
2303	12'		2.40	6.667		8,850	370		9,220 10,300
2304	14'		2.40	6.667		8,950	370		9,320 10,400
2305	16'		2	8		9,050	440		9,490 10,600
2306	18'		2	8		9,150	440		9,590 10,800
2307	20'		2	8		9,250	440		9,690 10,900
2308	24'		2	8		9,450	440		9,890 11,100
2400	Powerfoil with Hybrid Airfoil								
2401	12'	R-1A	2	8	Ea.	9,350	440		9,790 11,000
2402	14'		2	8		9,450	440		9,890 11,100
2403	16'		1.75	9.143		9,550	505		10,055 11,300
2404	18'		1.75	9.143		9,650	505		10,155 11,400
2405	20'		1.75	9.143		9,750	505		10,255 11,500
2406	24'		1.75	9.143		9,975	505		10,480 11,800

23 37 Air Outlets and Inlets

23 37 13 – Diffusers, Registers, and Grilles

23 37 13.10 Diffusers

	1 Shee	16	.500	Ea.	166	31	197	230
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"							
0520	8" x 8"		15	.533	181	33	214	250
0530	9" x 9"		14	.571	177	35.50	212.50	248
0540	10" x 10"		14	.571	177	35.50	212.50	249
0560	12" x 12"		12	.667	184	41.50	225.50	266
0590	16" x 16"		11	.727	207	45.50	252.50	297
0600	18" x 18"		10	.800	222	50	272	320
0610	20" x 20"		10	.800	239	50	289	340
0620	24" x 24"		9	.889	284	55.50	339.50	395
1000	Rectangular, 1 to 4 way blow, 6" x 6"		16	.500	43.50	31	74.50	95.50
1010	8" x 8"		15	.533	63	33	96	120
1014	9" x 9"		15	.533	53.50	33	86.50	110
1016	10" x 10"		15	.533	83.50	33	116.50	143
1020	12" x 6"		15	.533	78	33	111	137
1040	12" x 9"		14	.571	84.50	35.50	120	147
1060	12" x 12"		12	.667	76	41.50	117.50	147
1070	14" x 6"		13	.615	85	38.50	123.50	152
1074	14" x 14"		12	.667	133	41.50	174.50	210
1150	18" x 18"		9	.889	129	55.50	184.50	225
1160	21" x 21"		8	1	232	62.50	294.50	350
1170	24" x 12"		10	.800	177	50	227	270
1500	Round, butterfly damper, steel, diffuser size, 6" diameter		18	.444	13.80	27.50	41.30	57
1520	8" diameter		16	.500	14.70	31	45.70	63.50
1540	10" diameter		14	.571	18.55	35.50	54.05	74.50
1560	12" diameter		12	.667	25	41.50	66.50	90.50
1580	14" diameter		10	.800	31.50	50	81.50	111
2000	T-bar mounting, 24" x 24" lay-in frame, 6" x 6"		16	.500	73.50	31	104.50	129
2020	8" x 8"		14	.571	73.50	35.50	109	135

23 37 Air Outlets and Inlets

23 37 13 – Diffusers, Registers, and Grilles

		Daily Crew Output	Labor- Hours Unit	Material	2020 Bare Labor Costs	Equipment	Total	Total Incl O&P
23 37 13.10 Diffusers								
2040	12" x 12"	1 Shee	12 .667 Ea.	90	41.50		131.50	162
2060	16" x 16"		11 .727	125	45.50		170.50	206
2080	18" x 18"		10 .800	123	50		173	211
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.	23.50	19.15		42.65	55
1020	10" x 6"		24 .333	23.50	21		44.50	57.50
1080	16" x 8"		22 .364	35	22.50		57.50	73
1100	12" x 12"		22 .364	33.50	22.50		56	71
1120	24" x 12"		18 .444	43.50	27.50		71	90
1220	24" x 18"		16 .500	54.50	31		85.50	108
1280	36" x 24"		14 .571	93	35.50		128.50	157
3000	Filter grille with filter, 12" x 12"		24 .333	65	21		86	103
3020	18" x 12"		20 .400	83	25		108	130
3040	24" x 18"		18 .444	105	27.50		132.50	157
3060	24" x 24"		16 .500	126	31		157	187
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	1 Shee	26 .308 Ea.	30.50	19.15		49.65	62.50
1020	8" x 4"		18 .444	37	27.50		64.50	82.50
1120	12" x 12"		18 .444	30.50	27.50		58	75.50
1240	20" x 6"		13 .615	61.50	38.50		100	126
1340	24" x 8"		12 .667	113	41.50		154.50	187
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.	14.65	15.60		30.25	39.50
4100	8" x 10"		22 .364	17.90	22.50		40.40	54
4140	10" x 10"		20 .400	21.50	25		46.50	61.50
4220	14" x 14"		16 .500	56.50	31		87.50	110
4240	14" x 20"		15 .533	53	33		86	109
4980	Air return							
5000	Ceiling or wall, fixed 45° face blades							
5010	Adjustable O.B. damper, anodized aluminum	1 Shee	26 .308 Ea.	19.95	19.15		39.10	51
5020	4" x 8"		19 .421	24.50	26		50.50	67
5060	6" x 10"		11 .727	113	45.50		158.50	193
5280	24" x 24"		8 .1	179	62.50		241.50	292
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.	37	21		58	72.50
1200	Modular, 4" deep, 7-3/4" wide, 5" high		24 .333	38.50	21		59.50	74
1300	Speed brick, 4" deep, 11-5/8" wide, 3-7/8" high		24 .333	38.50	21		59.50	74

23 37 Air Outlets and Inlets

23 37 15 – Air Outlets and Inlets, HVAC Louvers

23 37 15.40 HVAC Louvers		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
1400	Fuel oil brick, 4" deep, 8" wide, 5" high	1 Shee	24	.333	Ea.	66.50	21			87.50	105
2000	Cooling tower and mechanical equip., screens, light weight		40	.200	S.F.	16.65	12.45			29.10	37.50
2020	Standard weight			.35	.229		44	14.25		58.25	70
2500	Dual combination, automatic, intake or exhaust			20	.400		60.50	25		85.50	105
2520	Manual operation			20	.400		45	25		70	87.50
2540	Electric or pneumatic operation			20	.400		45	25		70	87.50
2560	Motor, for electric or pneumatic					14	.571	Ea.	520	35.50	555.50
3000	Fixed blade, continuous line					1 Shee	28	.286	S.F.	45	17.80
3100	Mullion type, stormproof						28	.286		45	17.80
3200	Stormproof									62.80	76.50
3300	Vertical line									71.30	85.50
3500	For damper to use with above, add									50%	30%
3520	Motor, for damper, electric or pneumatic					1 Shee	14	.571	Ea.	520	35.50
4000	Operating, 45°, manual, electric or pneumatic						24	.333	S.F.	60	21
4100	Motor, for electric or pneumatic									520	35.50
4200	Penthouse, roof									26.50	8.90
4300	Walls						40	.200		62.50	12.45
5000	Thinline, under 4" thick, fixed blade									26	12.45
5010	Finishes, applied by mfr. at additional cost, available in colors										
5020	Prime coat only, add								S.F.	3.57	3.93
5040	Baked enamel finish coating, add									6.60	7.25
5060	Anodized finish, add									7.15	7.85
5080	Duranodic finish, add									12.95	14.25
5100	Fluoropolymer finish coating, add									20.50	20.50
9980	For small orders (under 10 pieces), add									25%	22.50

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.	52	45		97	125
1340	6" neck diameter			16	1		52.50	56		108.50	143
1400	12" neck diameter				10	1.600		73	89.50		162.50
1500	24" neck diameter				8	2		320	112		432
1540	36" neck diameter				6	2.667		605	150		755
2000	Stationary, gravity, syphon, galvanized										
2160	6" neck diameter, 66 CFM		Q-9	16	1	Ea.	37	56		93	126
2240	12" neck diameter, 160 CFM			10	1.600		85.50	89.50		175	230
2340	24" neck diameter, 900 CFM			8	2		290	112		402	490
2380	36" neck diameter, 2,000 CFM			6	2.667		405	150		555	670
4200	Stationary mushroom, aluminum, 16" orifice diameter				10	1.600		720	89.50		809.50
4220	26" orifice diameter				6.15	2.602		1,050	146		1,196
4230	30" orifice diameter				5.71	2.802		1,550	157		1,707
4240	38" orifice diameter				5	3.200		2,225	179		2,404
4250	42" orifice diameter					4.70	3.404	2,950	191		3,141
4260	50" orifice diameter					4.44	3.604	3,500	202		3,702
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.	790	104		894	1,025
5600	600 CFM, 12" x 16"			8	2		880	112		992	1,150
5640	1,000 CFM, 12" x 24"				6.60	2.424		985	136		1,121
5680	3,000 CFM, 20" x 42"				4	4		1,725	224		1,949
											2,250

23 37 Air Outlets and Inlets

23 37 23 – HVAC Gravity Ventilators

23 37 23.10 HVAC Gravity Air Ventilators		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
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		1 Corp	1.80	4.444	Ea.	4,075	236	4,311	4,825
2970 Exhaust hood, sst, gutter on all sides, 4' x 4' x 2'	"								
2980 4' x 4' x 7'	"	1.60	5	"		6,750	266	7,016	7,825

23 41 Particulate Air Filtration

23 41 13 – Panel Air Filters

23 41 13.10 Panel Type Air Filters

0010 PANEL TYPE AIR FILTERS		MCFM	41	41	45
2950 Mechanical media filtration units	"				
3000 High efficiency type, with frame, non-supported	G				
3100 Supported type	G		52.50	52.50	58
5500 Throwaway glass or paper media type, 12" x 36" x 1"	Ea.	2.48		2.48	2.73

23 41 16 – Renewable-Media Air Filters

23 41 16.10 Disposable Media Air Filters

0010 DISPOSABLE MEDIA AIR FILTERS		C.S.F.	5.25	5.25	5.75
5000 Renewable disposable roll	"				

23 41 19 – Washable Air Filters

23 41 19.10 Permanent Air Filters

0010 PERMANENT AIR FILTERS		MCFM	25	25	27.50
4500 Permanent washable	G				

23 41 23 – Extended Surface Filters

23 41 23.10 Expanded Surface Filters

0010 EXPANDED SURFACE FILTERS		MCFM	6.65	6.65	7.35
4000 Medium efficiency, extended surface	G				

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		MCFM	650	650	715
0050 Activated charcoal type, full flow	"				
0060 Full flow, impregnated media 12" deep		225		225	248
0070 HEPA filter & frame for field erection		410		410	450
0080 HEPA filter-diffuser, ceiling install.		340		340	375

23 43 Electronic Air Cleaners

23 43 13 – Washable Electronic Air Cleaners

23 43 13.10 Electronic Air Cleaners			Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	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.	425	125			550	660
2200	1,200 CFM		3.80	2.105		570	131			701	825
2250	1,400 CFM	↓	3.60	2.222	↓	600	138			738	870

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.	2,150	224			2,374	2,700
1900	12" diam. inlet, 3/4 HP, 3 phase, 2,960 CFM		3	5.333		2,925	299			3,224	3,675
1980	24" diam. inlet, 7-1/2 HP, 3 phase, 17,760 CFM	↓	.80	20		9,625	1,125			10,750	12,300
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.	7.60	12.45			20.05	27.50
0100	4" diameter		68	.235		9.35	13.20			22.55	30.50
0120	5" diameter		64	.250		10.60	14			24.60	33
0140	6" diameter		60	.267		12.65	14.95			27.60	36.50
0160	7" diameter		56	.286		24.50	16			40.50	51.50
0180	8" diameter		52	.308		26	17.25			43.25	54.50
0200	10" diameter		48	.333		49.50	18.70			68.20	83
0220	12" diameter		44	.364		58.50	20.50			79	95.50
0260	16" diameter		40	.400		140	22.50			162.50	188
0300	20" diameter	Q-10	36	.667		205	39			244	285

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.	64.50	14.95			79.45	93.50
7804	8" diameter		52	.308		77	17.25			94.25	111
7806	10" diameter		48	.333		87.50	18.70			106.20	125
7808	12" diameter		44	.364		101	20.50			121.50	142
7810	14" diameter		42	.381	↓	113	21.50			134.50	157
7880	For 316 stainless steel liner, add				L.F.	30%					

23 52 Heating Boilers

23 52 13 – Electric Boilers

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
Category	Description	Crew			Labor	Equipment			
23 52 13.10 Electric Boilers, ASME									
0010	ELECTRIC BOILERS, ASME , Standard controls and trim								
1000	Steam, 6 KW, 20.5 MBH	Q-19	1.20	20	Ea.	4,450	1,200	5,650	6,650
1160	60 KW, 205 MBH		1	24		7,250	1,425	8,675	10,200
1220	112 KW, 382 MBH		.75	32		9,725	1,925	11,650	13,600
1280	222 KW, 758 MBH	↓	.55	43.636		24,000	2,600	26,600	30,300
1380	518 KW, 1,768 MBH	Q-21	.36	88.889		32,900	5,450	38,350	44,300
1480	814 KW, 2,778 MBH		.25	128		40,100	7,825	47,925	56,000
1600	2,340 KW, 7,984 MBH	↓	.16	200		88,000	12,200	100,200	115,000
2000	Hot water, 7.5 KW, 25.6 MBH	Q-19	1.30	18.462		5,425	1,100	6,525	7,600
2100	90 KW, 307 MBH		1.10	21.818		6,125	1,300	7,425	8,700
2220	296 KW, 1,010 MBH	↓	.55	43.636		15,300	2,600	17,900	20,800
2500	1,036 KW, 3,536 MBH	Q-21	.34	94.118		34,700	5,775	40,475	46,800
2680	2,400 KW, 8,191 MBH		.25	128		69,500	7,825	77,325	88,000
2820	3,600 KW, 12,283 MBH	↓	.16	200		96,500	12,200	108,700	124,500

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.	2,750	1,425	4,175	5,150
2080	203 MBH		.90	35.556		3,950	2,225	6,175	7,675
2180	400 MBH		.56	56.838		5,825	3,550	9,375	11,700
2240	765 MBH		.43	74.419		11,300	4,650	15,950	19,400
2320	1,875 MBH		.30	107		25,200	6,650	31,850	37,800
2440	4,720 MBH		.15	208		63,500	13,000	76,500	89,500
2480	6,100 MBH		.13	246		86,500	15,400	101,900	118,000
2540	6,970 MBH		.10	320		97,000	20,000	117,000	136,500
3000	Hot water, gross output, 80 MBH		1.46	21.918		1,975	1,375	3,350	4,225
3140	320 MBH		.80	40		4,275	2,500	6,775	8,425
3260	1,088 MBH		.40	80		13,900	5,000	18,900	22,800
3360	2,856 MBH		.20	160		30,100	9,975	40,075	48,000
3380	3,264 MBH		.18	180		31,900	11,200	43,100	52,000
3480	6,100 MBH		.13	250		139,500	15,600	155,100	177,000
3540	6,970 MBH	↓	.09	360		128,000	22,400	150,400	174,500
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.	15,200	4,625	19,825	23,600
2080	1,600 MBH		.30	107		20,700	6,675	27,375	32,800
2140	2,700 MBH		.19	166		26,800	10,300	37,100	45,000
2280	5,520 MBH		.14	235		93,500	14,700	108,200	124,500
2340	6,390 MBH		.11	296		100,000	18,500	118,500	137,500
2380	6,970 MBH	↓	.09	372		106,000	23,200	129,200	151,000
2900	Hot water, gross output								
2910	200 MBH	Q-6	.62	39.024	Ea.	11,400	2,400	13,800	16,100
2920	300 MBH		.49	49.080		11,400	3,000	14,400	17,000
2930	400 MBH		.41	57.971		13,300	3,550	16,850	20,000
2940	500 MBH	↓	.36	67.039		14,300	4,100	18,400	22,000
3000	584 MBH	Q-7	.44	72.072		14,100	4,500	18,600	22,300
3060	1,460 MBH		.28	113		33,200	7,050	40,250	47,100
3160	4,088 MBH		.16	195		66,500	12,200	78,700	91,500
3300	13,500 MBH, 403.3 BHP	↓	.04	727		206,000	45,400	251,400	294,500

23 52 Heating Boilers

23 52 23 – Cast-Iron Boilers

23 52 23.40 Oil-Fired Boilers		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare 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.	2,375	1,675		4,050	5,100
2060	207 MBH		.90	35.556		3,225	2,225		5,450	6,850
2180	1,084 MBH		.38	85.106		10,800	5,300		16,100	19,900
2280	3,000 MBH		.19	170		23,400	10,600		34,000	41,600
2380	5,520 MBH		.14	235		80,000	14,700		94,700	110,000
2460	6,970 MBH		.09	364		102,500	22,700		125,200	147,000
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.	2,000	920		2,920	3,575
7120	420 MBH		.70	34.483		5,925	2,100		8,025	9,675
7320	3,150 MBH		.13	185		45,400	11,300		56,700	67,000
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	980		2,830	3,500
0200	199 MBH		.1	24		1,975	1,475		3,450	4,375
0280	500 MBH		.40	60		8,500	3,675		12,175	14,900
0400	1,800 MBH		.14	171		21,000	10,500		31,500	38,800
2000	Electric, 12 KW, 4,800 gallon pool	Q-19	3	8		2,200	480		2,680	3,150
2020	15 KW, 7,200 gallon pool		2.80	8.571		2,225	510		2,735	3,225
2040	24 KW, 9,600 gallon pool		2.40	10		2,575	600		3,175	3,750
2100	57 KW, 24,000 gallon pool		1.20	20		3,875	1,200		5,075	6,025

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.	350	260		610	775
1080	17.1 MBH		4.60	4.348		430	248		678	845
1100	34.1 MBH		4.40	4.545		535	260		795	980

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.	700	224		924	1,100
3040	60 MBH input		3.80	4.211		730	236		966	1,175
3060	75 MBH input		3.60	4.444		835	249		1,084	1,300
3100	100 MBH input		3.20	5		825	280		1,105	1,325

23 54 Furnaces

23 54 16 – Fuel-Fired Furnaces

23 54 16.16 Oil-Fired Furnaces		Daily Crew Output	Labor-Hours Unit	Material	2020 Bare Costs 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.	3,275	249	3,524	3,975
6030	84 MBH output		3.50	4.571	3,400	256	3,656	4,150
6040	95 MBH output		3.40	4.706	3,400	264	3,664	4,125
6060	134 MBH output		3.20	5	3,325	280	3,605	4,100
6080	151 MBH output	↓	3	5.333	3,700	299	3,999	4,525

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		Daily Crew Output	Labor-Hours Unit	Material	2020 Bare Costs Labor	Equipment	Total	Total Incl O&P
0020	heat exchanger. Gas fired, electric ignition							
0030	Indoor installation							
0100	120 MBH output	Q-5	4	4 Ea.	3,275	236	3,511	3,950
0130	200 MBH output		2.70	5.926	4,225	350	4,575	5,150
0140	240 MBH output		2.30	6.957	5,250	410	5,660	6,400
0180	320 MBH output	↓	1.60	10	5,225	590	5,815	6,625
0300	For powered venter and adapter, add			↓	535		535	585
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.	3,550	236	3,786	4,250
1060	120 MBH output		4	4	4,075	236	4,311	4,850
1100	187 MBH output		3	5.333	5,500	315	5,815	6,525
1140	300 MBH output		1.80	8.889	6,375	525	6,900	7,775
1180	450 MBH output	↓	1.40	11.429	8,300	675	8,975	10,100

23 55 23 – Gas-Fired Radiant Heaters

23 55 23.10 Infrared Type Heating Units

0010 INFRARED TYPE HEATING UNITS		Daily Crew Output	Labor-Hours Unit	Material	2020 Bare Costs Labor	Equipment	Total	Total Incl O&P
0020	Gas fired, unvented, electric ignition, 100% shutoff.							
0030	Piping and wiring not included							
0120	45 MBH	Q-5	5	3.200 Ea.	995	189	1,184	1,375
0160	60 MBH		4	4	1,025	236	1,261	1,475
0240	120 MBH	↓	2	8	1,625	470	2,095	2,500
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.	1,550	325	1,875	2,200
1040	80 MBH		3.90	6.154	1,550	375	1,925	2,275
1050	100 MBH		3.40	7.059	1,550	430	1,980	2,350
1060	125 MBH		2.90	8.276	1,525	505	2,030	2,425
1070	150 MBH		2.70	8.889	1,525	545	2,070	2,500
1080	170 MBH		2.50	9.600	1,525	585	2,110	2,550
1090	200 MBH	↓	2.20	10.909	1,725	665	2,390	2,900
1100	Note: Final pricing may vary due to tube length and configuration package selected							
1130	Two stage, input, 60 MBH high, 45 MBH low	Q-6	4.50	5.333 Ea.	1,900	325	2,225	2,575
1140	80 MBH high, 60 MBH low		3.90	6.154	1,900	375	2,275	2,650
1150	100 MBH high, 65 MBH low		3.40	7.059	1,900	430	2,330	2,725
1160	125 MBH high, 95 MBH low		2.90	8.276	1,925	505	2,430	2,850
1170	150 MBH high, 100 MBH low		2.70	8.889	1,925	545	2,470	2,925

23 55 Fuel-Fired Heaters

23 55 23 – Gas-Fired Radiant Heaters

23 55 23.10 Infrared Type Heating Units		Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Ind O&P
		Crew		Unit	Material	Labor	Equipment	Total	
1180	170 MBH high, 125 MBH low	Q-6	2.50	9,600	Ea.	2,125	585	2,710	3,225
1190	200 MBH high, 150 MBH low	↓	2.20	10,909	↓	2,125	665	2,790	3,350
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	Q-5	4	4	Ea.	4,875	236	5,111	5,700
6000	Oil fired, suspension mounted, 94 MBH output	↓	3	5.333		5,200	315	5,515	6,200
6040	140 MBH output		3	5.333		5,600	315	5,915	6,625

23 55 33.16 Gas-Fired Unit Heaters

0010	GAS-FIRED UNIT HEATERS, Cabinet, grilles, fan, ctrls., burner, no piping	Q-5	10	1,600	Ea.	765	94.50	859.50	985
0022	thermostat, no piping. For flue see Section 23 51 23.10		8	2		845	118	963	1,100
1000	Gas fired, floor mounted		6	2.667		1,200	157	1,357	1,550
1100	60 MBH output	Q-5	10	1,600	Ea.	765	94.50	859.50	985
1140	100 MBH output		8	2		845	118	963	1,100
1180	180 MBH output		6	2.667		1,200	157	1,357	1,550
2000	Suspension mounted, propeller fan, 20 MBH output		8.50	1.882		1,725	111	1,836	2,075
2040	60 MBH output		7	2.286		1,850	135	1,985	2,225
2060	80 MBH output		6	2.667		2,000	157	2,157	2,425
2100	130 MBH output		5	3.200		2,375	189	2,564	2,875
2240	320 MBH output		2	8		4,400	470	4,870	5,550
2500	For powered venturi and adapter, add					400		400	440
5000	Wall furnace, 17.5 MBH output	Q-5	6	2.667		710	157	867	1,025
5020	24 MBH output	↓	5	3.200		805	189	994	1,175
5040	35 MBH output	↓	4	4	↓	1,150	236	1,386	1,600

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.	4,400	1,850	6,250	7,600
0580	2 collectors, circulator, fittings, 120 gal. tank	G		.40	40		5,750	2,325	8,075	9,800
0620	3 collectors, circulator, fittings, 120 gal. tank	G	↓	.34	47.059	↓	7,850	2,725	10,575	12,700
0700	Medium temperature package									
0720	1 collector, circulator, fittings, 80 gal. tank	G	Q-1	.50	32	Ea.	5,450	1,850	7,300	8,750
0740	2 collectors, circulator, fittings, 120 gal. tank	G		.40	40		7,400	2,325	9,725	11,600
0780	3 collectors, circulator, fittings, 120 gal. tank	G		.30	53.333		8,250	3,100	11,350	13,700
0980	For each additional 120 gal. tank, add	G					1,775		1,775	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.	116	50	166	204
2870	1/12 HP, 30 GPM	G	Q-1	10	1,600	"	360	93	453	535
3000	Collector panels, air with aluminum absorber plate									

23 56 Solar Energy Heating Equipment

23 56 19 - Solar Heating Components

		Daily Crew	Output	Labor- Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
23 56 19.50 Solar Heating Ancillary										
3010	Wall or roof mount									
3040	Flat black, plastic glazing	G	Q-9	6	2.667	Ea.	685	150	835	980
3080	4' x 8'	G	"	96	1.167	L.F.	165	9.35	174.35	195
3200	Flush roof mount, 10' to 16' x 22" wide	G	"							
3300	Collector panels, liquid with copper absorber plate	G	Q-1	9.50	1.684	Ea.	1,075	97.50	1,172.50	1,325
3330	Alum. frame, 4' x 8', 5/32" single glazing	G		6	2.667		1,225	155	1,380	1,575
3390	Alum. frame, 4' x 10', 5/32" single glazing	G		9	1.778		815	103	918	1,050
3450	Flat black, alum. frame, 3.5' x 7.5'	G		5.50	2.909		1,025	169	1,194	1,375
3500	4' x 8'	G		10	1.600		1,225	93	1,318	1,500
3520	4' x 10'	G		5	3.200		1,300	186	1,486	1,700
3540	4' x 12.5'	G		5	3.200		335	186	521	650
3600	Liquid, full wetted, plastic, alum. frame, 4' x 10'	G		7	2.286		253	133	386	475
3650	Collector panel mounting, flat roof or ground rack	G		70	.229	Set	3.27	13.25	16.52	23.50
3670	Roof clamps	G	1 Plum	205	.039	L.F.	25	2.51	27.51	31.50
3700	Roof strap, teflon	G								
3900	Differential controller with two sensors	G	1 Plum	8	1	Ea.	112	64.50	176.50	220
3930	Thermostat, hard wired	G	"	3	2.667	"	271	172	443	555
4100	Five station with digital read-out	G								
4300	Heat exchanger									
4580	Fluid to fluid package includes two circulating pumps									
4590	expansion tank, check valve, relief valve	G	Q-1	2.50	6.400	Ea.	810	370	1,180	1,450
4600	controller, high temperature cutoff and sensors	G								
4650	Heat transfer fluid									
4700	Propylene glycol, inhibited anti-freeze	G	1 Plum	28	.286	Gal.	23	18.40	41.40	53
8250	Water storage tank with heat exchanger and electric element	G	1 Plum	1.60	5	Ea.	1,950	320	2,270	2,625
8300	80 gal. with 2" x 2 lb. density insulation	G								
8380	120 gal. with 2" x 2 lb. density insulation	G		1.40	5.714		1,900	370	2,270	2,650
8400	120 gal. with 2" x 2 lb. density insul., 40 S.F. heat coil	G		1.40	5.714		2,825	370	3,195	3,675

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.	2,750	157	2,907	3,250
0140	10 GPM		5	3.200		4,125	189	4,314	4,825
0160	40 GPM		4	4		6,400	236	6,636	7,375
0180	64 GPM		2	8		9,350	470	9,820	11,000
0200	96 GPM		1	16		12,500	945	13,445	15,200
0220	120 GPM	Q-6	1.50	16		16,000	980	16,980	19,100

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.	45,700	1,825	47,525	53,500
3120	800 GPM	"	.50	48		79,000	2,925	81,925	91,000
3140	1,200 GPM	Q-7	.34	94.118		117,000	5,875	122,875	138,000
3160	1,800 GPM	"	.24	133		155,500	8,325	163,825	183,500

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		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Ind O&P
0010	SHELL-TYPE, LIQUID-TO-LIQUID HEAT EXCHANGERS	Crew			Labor	Equipment			
1000	Hot water 40°F to 140°F, by water at 200°F								
1020	7 GPM	Q-5	6	2.667	Ea.	3,225	157	3,382	3,750
1040	16 GPM		5	3.200		4,550	189	4,739	5,275
1060	34 GPM		4	4		6,875	236	7,111	7,925
1100	74 GPM	↓	1.50	10.667	↓	12,500	630	13,130	14,600

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		Q-5	2.50	6.400	Ea.	1,025	380	1,405	1,700
0020	Condensing unit								
0030	Air-cooled, compressor, standard controls								
0050	1.5 ton	Q-5	.60	26.667		2,025	1,575	3,600	4,575
0500	5 ton	↓	.50	32		3,525	1,900	5,425	6,700
0600	10 ton	Q-6	.40	60	↓	9,350	3,675	13,025	15,800
0700	20 ton								

23 63 Refrigerant Condensers

23 63 13 – Air-Cooled Refrigerant Condensers

23 63 13.10 Air-Cooled Refrig. Condensers

0010 AIR-COOLED REFRIG. CONDENSERS		Q-6	.69	34.985	Ea.	11,200	2,150	13,350	15,600
0080	Air cooled, belt drive, propeller fan								
0240	50 ton	Q-6	.69	34.985	Ea.	11,200	2,150	13,350	15,600
0280	59 ton		.58	41.308		13,400	2,525	15,925	18,500
0320	73 ton		.47	51.173		17,500	3,125	20,625	23,900
0360	86 ton		.40	60.302		19,900	3,700	23,600	27,400
0380	88 ton	↓	.39	61.697	↓	21,400	3,775	25,175	29,200
1550	Air cooled, direct drive, propeller fan								
1590	1 ton	Q-5	3.80	4.211	Ea.	1,825	248	2,073	2,375
1600	1-1/2 ton		3.60	4.444		2,225	262	2,487	2,850
1620	2 ton		3.20	5		2,400	295	2,695	3,075
1640	5 ton		2	8		5,100	470	5,570	6,300
1660	10 ton		1.40	11.429		7,475	675	8,150	9,225
1690	16 ton		1.10	14.545		10,800	860	11,660	13,200
1720	26 ton	↓	.84	19.002		13,700	1,125	14,825	16,800
1760	41 ton	Q-6	.77	31.008		18,800	1,900	20,700	23,600
1800	63 ton		.55	44.037	↓	29,600	2,700	32,300	36,600

23 64 Packaged Water Chillers

23 64 13 – Absorption Water Chillers

23 64 13.16 Indirect-Fired Absorption Water Chillers		Daily	Labor	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
0010	INDIRECT-FIRED ABSORPTION WATER CHILLERS	Crew	Output	Hours	Unit	Labor	Equipment	Total	
0020	Steam or hot water, water cooled								
0050	100 ton	Q-7	.13	240	Ea.	132,500	15,000	147,500	168,500
0400	420 ton	"	.10	323	"	414,500	20,200	434,700	486,000

23 64 16 – Centrifugal Water Chillers

23 64 16.10 Centrifugal Type Water Chillers

0010	CENTRIFUGAL TYPE WATER CHILLERS, With standard controls	Q-7	.07	478	Ea.	808,500	29,800	838,300	934,000
0020	Centrifugal liquid chiller, water cooled								
0030	not including water tower								
0100	2,000 ton (twin 1,000 ton units)								

23 64 19 – Reciprocating Water Chillers

23 64 19.10 Reciprocating Type Water Chillers

0010	RECIPROCATING TYPE WATER CHILLERS, With standard controls	Q-7	.29	111	Ea.	27,200	6,925	34,125	40,300
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.	27,200	6,925	34,125	40,300
1160	100 ton cooling	"	.18	180	"	49,800	11,200	61,000	72,000
1180	125 ton cooling	"	.16	196	"	54,000	12,300	66,300	78,000
1200	145 ton cooling	"	.16	203	"	61,500	12,600	74,100	86,500

23 64 23 – Scroll Water Chillers

23 64 23.10 Scroll Water Chillers

0010	SCROLL WATER CHILLERS, With standard controls	Q-7	.34	94.118	Ea.	15,200	5,875	21,075	25,500
0480	Packaged w/ integral air cooled condenser								
0482	10 ton cooling	Q-7	.34	94.118	Ea.	15,200	5,875	21,075	25,500
0490	15 ton cooling	"	.37	86.486	"	18,300	5,400	23,700	28,300
0500	20 ton cooling	"	.34	94.118	"	23,300	5,875	29,175	34,500
0520	40 ton cooling	"	.30	108	"	34,800	6,750	41,550	48,400
0540	70 ton cooling	"	.27	119	"	55,000	7,400	62,400	71,500
0590	100 ton cooling	"	.25	128	"	72,500	7,975	80,475	92,000
0600	110 ton cooling	"	.24	133	"	74,500	8,325	82,825	94,500
0630	130 ton cooling	"	.24	133	"	88,500	8,325	96,825	110,000
0670	170 ton cooling	"	.23	139	"	111,000	8,675	119,675	135,000
0671	210 ton cooling	"	.22	145	"	123,500	9,075	132,575	149,500
0675	250 ton cooling	"	.21	152	"	143,500	9,500	153,000	171,500
0676	275 ton cooling	"	.21	152	"	154,500	9,500	164,000	184,000
0677	300 ton cooling	"	.20	160	"	167,500	9,975	177,475	199,500
0678	330 ton cooling	"	.20	160	"	197,500	9,975	207,475	232,500
0679	390 ton cooling	"	.19	168	"	229,500	10,500	240,000	268,000
0680	Scroll water cooled, single compressor, hermetic, tower not incl.								
0700	2 ton cooling	Q-5	.57	28.070	Ea.	3,475	1,650	5,125	6,300
0710	5 ton cooling	"	.57	28.070	"	4,150	1,650	5,800	7,050
0740	8 ton cooling	"	.31	52.117	"	5,725	3,075	8,800	10,900
0760	10 ton cooling	Q-6	.36	67.039	"	6,575	4,100	10,675	13,400
0800	20 ton cooling	Q-7	.38	83.990	"	11,800	5,250	17,050	20,800
0820	30 ton cooling	"	.33	96.096	"	13,200	6,000	19,200	23,500
0900	Scroll water cooled, multiple compressor, hermetic, tower not incl.								
0930	30 ton cooling	Q-7	.36	88.889	Ea.	26,700	5,550	32,250	37,600
0935	35 ton cooling	"	.31	103	"	32,700	6,450	39,150	45,700
0940	40 ton cooling	"	.30	107	"	29,000	6,650	35,650	41,900
0950	50 ton cooling	"	.28	114	"	31,300	7,125	38,425	45,100
0960	60 ton cooling	"	.25	128	"	32,900	7,975	40,875	48,200

23 64 Packaged Water Chillers

23 64 23 – Scroll Water Chillers

23 64 23.10 Scroll Water Chillers		Crew	Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
						Material	Labor	Equipment		
0962	75 ton cooling		Q-7	.23	139	Ea.	62,000	8,675	70,675	81,000
0964	85 ton cooling			.23	139		63,500	8,675	72,175	82,500
0970	100 ton cooling			.18	178		69,500	11,100	80,600	92,500
0980	115 ton cooling			.17	188		61,000	11,700	72,700	84,500
0990	125 ton cooling			.16	200		64,000	12,500	76,500	88,500
0995	145 ton cooling			.16	200		73,500	12,500	86,000	99,500

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.	98,500	14,300	112,800	130,000
0124	160 ton			.13	246		125,000	15,400	140,400	160,500
0128	180 ton			.13	250		140,500	15,600	156,100	178,000
0132	210 ton			.12	258		147,000	16,100	163,100	185,500
0136	270 ton			.12	267		177,000	16,600	193,600	219,500
0140	320 ton		▼	.12	276	▼	221,500	17,200	238,700	269,500
0200	Packaged unit, water cooled, not incl. tower									
0210	80 ton		Q-7	.14	224	Ea.	48,500	14,000	62,500	74,500
0240	200 ton			.13	252		83,500	15,700	99,200	115,500
0270	350 ton		▼	.12	276	▼	153,000	17,200	170,200	194,500
1450	Water cooled, tower not included									
1580	150 ton cooling, screw compressors		Q-7	.13	241	Ea.	68,500	15,000	83,500	98,000
1620	200 ton cooling, screw compressors			.13	250		94,500	15,600	110,100	127,500
1660	291 ton cooling, screw compressors		▼	.12	260	▼	98,500	16,200	114,700	133,000

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	203	16.30	219.30	248
0150	100 ton			100	.240		195	14.70	209.70	237
0200	115 ton			109	.220		170	13.45	183.45	207
0250	131 ton			120	.200		204	12.25	216.25	242
0260	162 ton		▼	132	.182	▼	165	11.10	176.10	198
1000	For higher capacities, use multiples									
1500	Induced air, double flow									
1900	Vertical, gear drive, 167 ton		Q-6	126	.190	TonAC	160	11.65	171.65	193
2000	297 ton			129	.186		98.50	11.40	109.90	126
2100	582 ton			132	.182		55	11.10	66.10	77
2150	849 ton			142	.169		74	10.35	84.35	96.50
2200	1,016 ton		▼	150	.160	▼	74.50	9.80	84.30	96.50
3000	For higher capacities, use multiples									
3500	For pumps and piping, add		Q-6	38	.632	TonAC	101	38.50	139.50	169
4000	For absorption systems, add						"	75%	75%	
4100	Cooling water chemical feeder		Q-5	3	5.333	Ea.	425	315	740	940
5000	Fiberglass tower on galvanized steel support structure									
5010	Draw thru									
5100	100 ton		Q-6	1.40	17.143	Ea.	14,000	1,050	15,050	17,000

23 65 Cooling Towers

23 65 13 – Forced-Draft Cooling Towers

		Daily Output	Labor Hours	Unit	Material	2020 Bare Costs		Total
		Q-6	1.20	20	Ea.	Labor	Equipment	Incl O&P
5120	120 ton				16,700	1,225	17,925	20,200
5140	140 ton			1	24	18,100	1,475	19,575
5160	160 ton			.80	30	22,900	1,825	24,725
5180	180 ton			.65	36.923	26,400	2,250	28,650
5251	600 ton			.16	150	77,500	9,175	86,675
5252	1,000 ton			.10	250	129,000	15,300	144,300
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.	29,900	980	30,880
6120	91 ton		.99	24.242		36,700	1,475	38,175
6140	111 ton		.43	55.814		49,600	3,425	53,025
6160	126 ton		.22	109		54,000	6,675	60,675
								69,500

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.	5,575	785	6,360	7,300
0920	5,000 CFM	Q-6	1.40	17.143		15,600	1,050	16,650	18,700
0940	11,500 CFM		1	24		32,400	1,475	33,875	37,800
0970	22,000 CFM		.60	40		64,500	2,450	66,950	74,000
1000	40,000 CFM		.30	80		100,000	4,900	104,900	117,500

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.	5,225	410	5,635	6,325
0160	150 MBH input		3	8		6,325	490	6,815	7,675
0220	225 MBH input		2.40	10		7,075	610	7,685	8,725
0300	400 MBH input		1.60	15		16,500	920	17,420	19,600
0600	For discharge louver assembly, add					5%			
0700	For filters, add					10%			
0800	For air shut-off damper section, add					30%			

23 74 Packaged Outdoor HVAC Equipment

23 74 33 – Dedicated Outdoor-Air Units

23 74 33.10 Rooftop Air Conditioners			Daily Crew Output	Labor Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
0010	ROOFTOP AIR CONDITIONERS, Standard controls, curb, economizer						Labor	Equipment	
1000	Single zone, electric cool, gas heat	R236000-20	Q-5	.70	22,857	Ea.	2,900	1,350	4,250
1100	3 ton cooling, 60 MBH heating			.61	26,403		3,750	1,550	5,300
1120	4 ton cooling, 95 MBH heating			.56	28,521		4,475	1,675	6,450
1140	5 ton cooling, 112 MBH heating			.52	30,769		5,125	1,825	6,150
1145	6 ton cooling, 140 MBH heating			.50	32,258		5,725	1,900	6,950
1150	7.5 ton cooling, 170 MBH heating			.46	34,783		7,200	2,050	9,150
1156	8.5 ton cooling, 170 MBH heating								9,250
1160	10 ton cooling, 200 MBH heating		Q-6	.67	35,982		9,675	2,200	11,875
1170	12.5 ton cooling, 230 MBH heating			.63	37,975		10,600	2,325	12,925
1190	17.5 ton cooling, 330 MBH heating			.52	45,889		14,000	2,800	16,800
1200	20 ton cooling, 360 MBH heating		Q-7	.67	47,976		23,400	3,000	26,400
1210	25 ton cooling, 450 MBH heating			.56	57,554		34,800	3,600	38,400
1220	30 ton cooling, 540 MBH heating			.47	68,376		36,300	4,275	40,575
1240	40 ton cooling, 675 MBH heating			.35	91,168		44,400	5,700	50,100
2000	Multizone, electric cool, gas heat, economizer								57,500
2100	15 ton cooling, 360 MBH heating		Q-7	.61	52,545	Ea.	66,500	3,275	69,775
2120	20 ton cooling, 360 MBH heating			.53	60,038		72,000	3,750	75,750
2200	40 ton cooling, 540 MBH heating			.28	114		126,500	7,100	133,600
2210	50 ton cooling, 540 MBH heating			.23	142		161,000	8,875	169,875
2220	70 ton cooling, 1,500 MBH heating			.16	199		171,500	12,400	183,900
2240	80 ton cooling, 1,500 MBH heating			.14	229		195,500	14,300	209,800
2260	90 ton cooling, 1,500 MBH heating			.13	256		200,500	16,000	216,500
2280	105 ton cooling, 1,500 MBH heating			.11	291		223,000	18,200	241,200
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 BTU cooling, 8,800 BTU heat		Q-5	6	2,667	Ea.	725	157	882
0220	9,000 BTU cooling, 13,900 BTU heat			5	3,200		975	189	1,164
0240	12,000 BTU cooling, 13,900 BTU heat			4	4		1,550	236	1,786
0260	15,000 BTU cooling, 13,900 BTU heat			3	5,333		1,525	315	2,050
0500	For hot water coil, increase heat by 10%, add							5%	1,840
1000	For steam, increase heat output by 30%, add							8%	2,175

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.	4,050	945	4,995
0220	5 ton cooling		Q-6	1.20	20		4,525	1,225	5,750
0240	10 ton cooling		Q-7	1	32		8,350	2,000	10,350
0260	20 ton cooling			.90	35,556		13,800	2,225	12,200
0280	30 ton cooling			.80	40		26,400	2,500	16,025
0340	60 ton cooling		Q-8	.40	80		61,000	5,000	28,900
								266	32,800
									66,266
									75,000

23 81 Decentralized Unitary HVAC Equipment

23 81 19 – Self-Contained Air-Conditioners

		Daily Output	Labor Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
Line No.	Description	Crew			Ea.	Labor	Equipment	Total	
0490	For duct mounting, no price change								
0500	For steam heating coils, add								
1000	Water cooled for free blow or duct, not including tower								
1010	Constant volume								
1100	3 ton cooling	Q-6	1	24	Ea.	3,750	1,475	5,225	6,325
1120	5 ton cooling	"	1	24		4,875	1,475	6,350	7,575
1140	10 ton cooling	Q-7	.90	35.556		8,725	2,225	10,950	12,900
1160	20 ton cooling		.80	40		27,700	2,500	30,200	34,100
1180	30 ton cooling		.70	45.714		36,600	2,850	39,450	44,600

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 interconnecting tubing or refrigerant								
1080	3 ton	Q-5	.50	32	Ea.	27,600	1,900	29,500	33,200
1120	5 ton		.45	35.556		29,500	2,100	31,600	35,600
1160	6 ton		.30	53.333		55,000	3,150	58,150	65,000
1200	8 ton		.27	59.259		55,000	3,500	58,500	65,500
1240	10 ton		.25	64		57,500	3,775	61,275	69,000
1280	15 ton		.22	72.727		63,500	4,300	67,800	76,000
1290	18 ton		.20	80		71,500	4,725	76,225	85,500
1300	20 ton	Q-6	.26	92.308		76,000	5,650	81,650	92,000
1320	22 ton		.24	100		77,000	6,125	83,125	93,500
1360	30 ton		.21	114		94,500	7,000	101,500	114,500
2200	Chilled water, for connection to existing chiller system of adequate capacity								
2220	5 ton	Q-5	.74	21.622	Ea.	20,000	1,275	21,275	23,900

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.	1,775	470	2,245	2,650
1060	5 ton cooling, 27 MBH heat @ 0°F		.50	32		2,700	1,900	4,600	5,800
1080	7.5 ton cooling, 33 MBH heat @ 0°F		.45	35.556		3,975	2,100	6,075	7,525
1100	10 ton cooling, 50 MBH heat @ 0°F	Q-6	.64	37.500		6,575	2,300	8,875	10,700
1120	15 ton cooling, 64 MBH heat @ 0°F		.50	48		10,400	2,925	13,325	15,800
1130	20 ton cooling, 85 MBH heat @ 0°F		.35	68.571		18,600	4,200	22,800	26,800
1140	25 ton cooling, 119 MBH heat @ 0°F		.25	96		21,800	5,875	27,675	32,800
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.	3,325	630	3,955	4,625
1580	4 ton cooling, 13 MBH heat @ 0°F		.96	16.667		4,425	985	5,410	6,350
1640	7.5 ton cooling, 35 MBH heat @ 0°F		.40	40		7,900	2,350	10,250	12,200

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	470	2,595	3,050
2140	2 ton cooling, 19 MBH heat @ 75°F		1.70	9.412		2,475	555	3,030	3,550
2220	5 ton cooling, 29 MBH heat @ 75°F		.90	17.778		3,400	1,050	4,450	5,300
3960	For supplementary heat coil, add						10%		

23 81 Decentralized Unitary HVAC Equipment

23 81 46 – Water-Source Unitary Heat Pumps

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
		Crew			Labor	Equipment			
23 81 46.10 Water Source Heat Pumps									
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.	4,650	295		4,945	5,550
1000 Direct expansion cooling, 6 rows, 24" x 48"		2.80	5.714		5,175	335		5,510	6,200
1500 Hot water heating, 1 row, 24" x 48"		4	4		1,850	236		2,086	2,400
2000 Steam heating, 1 row, 24" x 48"		↓	3.06	5.229	↓	2,625	310	2,935	3,325

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.	825	71.50		896.50	1,025
0120 12" high, 8.0 kW		15	1.333		1,375	76		1,451	1,625
0140 18" high, 12.0 kW		14	1.429		1,925	81.50		2,006.50	2,225
0160 24" high, 16.0 kW		13	1.538		2,475	88		2,563	2,850
0180 30" high, 20.0 kW		12	1.667		3,025	95		3,120	3,475
0300 12" wide x 6" high, 6.7 kW		15	1.333		875	76		951	1,075
0360 24" high, 26.7 kW		12	1.667		2,550	95		2,645	2,950
0700 24" wide x 6" high, 17.8 kW		13	1.538		1,075	88		1,163	1,300
0760 24" high, 71.1 kW		10	2	↓	3,175	114		3,289	3,675
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.	575	118		693	810
0120 1 ton cooling		6	2.667		820	157		977	1,125
0140 1-1/2 ton cooling		5.50	2.909		865	172		1,037	1,200
0150 2 ton cooling		5.25	3.048		1,175	180		1,355	1,550
0180 3 ton cooling	↓	4	4	↓	1,975	236		2,211	2,525
0262 For hot water coil, add					40%	10%			
0320 1 ton cooling	Q-5	6	2.667	Ea.	1,750	157		1,907	2,150
0940 Direct expansion, for use w/ air cooled condensing unit, 1-1/2 ton cooling		5	3.200		685	189		874	1,050
1000 5 ton cooling		3	5.333		1,250	315		1,565	1,850
1040 10 ton cooling	Q-6	2.60	9.231		2,250	565		2,815	3,350
1060 20 ton cooling	"	.70	34.286		4,325	2,100		6,425	7,900
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.	4,750	735		5,485	6,350
0120 1,250 CFM, 3 tons cooling		1.40	17.143		5,725	1,050		6,775	7,875
0140 1,500 CFM, 4 tons cooling	↓	.80	30		6,125	1,825		7,950	9,500
0500 For electric heat, add					35%				
1000 For no cooling, deduct					25%	10%			

23 82 Convection Heating and Cooling Units

23 82 29 - Radiators

23 82 29.10 Hydronic Heating		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Bare Labor	Costs 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.	49	20.50		69.50	84.50
3000	Radiators, cast iron									
3100	Free standing or wall hung, 6 tube, 25" high	Q-5	96	.167	Section	61	9.85		70.85	81.50
3200	4 tube, 19" high	"	96	.167	"	42	9.85		51.85	60.50
3250	Adj. brackets, 2 per wall radiator up to 30 sections	1 Stp	32	.250	Ea.	66	16.40		82.40	97
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 - Convector

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.	110	94.50		204.50	262
2214	17" H x 36" L		8.60	1.860		165	110		275	345
2218	17" H x 48" L		7.40	2.162		220	128		348	435
2222	21" H x 24" L		9	1.778		124	105		229	293
2226	21" H x 36" L		8.20	1.951		185	115		300	375
2228	21" H x 48" L	↓	6.80	2.353		247	139		386	480
2240	For knob operated damper, add						140%			
2241	For metal trim strips, add	Q-5	64	.250	Ea.	14.25	14.75		29	37.50
2243	For snap-on inlet grille, add						10%			
2245	For hinged access door, add	Q-5	64	.250	Ea.	40.50	14.75		55.25	66.50
2246	For air chamber, auto-venting, add	"	58	.276	"	8.75	16.30		25.05	34

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.	52.50	25		77.50	95
1250	1-1/4" steel tube, 4-1/4" steel fin	"	36	.444	"	43	26		69	86.50
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.	415	78.50		493.50	580
4060	43.9 MBH		8	2		625	118		743	860
4140	96.8 MBH		6	2.667		880	157		1,037	1,200
4180	157.6 MBH		4	4		1,225	236		1,461	1,700
4240	286.9 MBH		2	8		1,825	470		2,295	2,700
4260	364 MBH		1.80	8.889		2,325	525		2,850	3,325
4270	404 MBH	↓	1.60	10		2,375	590		2,965	3,500
4300	Vertical diffuser same price									
4310	Vertical flow, 40 MBH	Q-5	11	1.455	Ea.	640	86		726	835
4314	58.5 MBH		8	2		635	118		753	875
4326	131 MBH		4	4		955	236		1,191	1,400
4346	297 MBH	↓	1.80	8.889		1,900	525		2,425	2,875
4354	420 MBH (460 V)	Q-6	1.80	13.333		2,525	815		3,340	4,000
4358	500 MBH (460 V)		1.71	14.035		3,125	860		3,985	4,725
4362	570 MBH (460 V)		1.40	17.143		4,075	1,050		5,125	6,050

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	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
4366	620 MBH (460 V)	Q-6	1.30	18.462	Ea.	4,725	1,125			5,850	6,900
4370	960 MBH (460 V)	↓	1.10	21.818	↓	8,200	1,325			9,525	11,000

23 83 Radiant Heating Units

23 83 16 – Radiant-Heating Hydronic Piping

23 83 16.10 Radiant Floor Heating

0010 RADIANT FLOOR HEATING		Q-5	800	.020	L.F.	1.05	1.18			2.23	2.93
0100	Tubing, PEX (cross-linked polyethylene)										
0110	Oxygen barrier type for systems with ferrous materials										
0120	1/2"	Q-5	800	.020	L.F.	1.05	1.18			2.23	2.93
0130	3/4"		535	.030		1.55	1.76			3.31	4.35
0140	1"	↓	400	.040	↓	2.32	2.36			4.68	6.10
0200	Non barrier type for ferrous free systems										
0210	1/2"	Q-5	800	.020	L.F.	.57	1.18			1.75	2.40
0220	3/4"		535	.030		1	1.76			2.76	3.74
0230	1"	↓	400	.040	↓	1.79	2.36			4.15	5.50
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	67.50			422.50	495
1140	1", 3 circuit		13.50	1.185		405	70			475	550
1150	1", 4 circuit		13	1.231		435	72.50			507.50	590
1154	1", 5 circuit		12.50	1.280		525	75.50			600.50	690
1158	1", 6 circuit		12	1.333		590	78.50			668.50	765
1162	1", 7 circuit		11.50	1.391		640	82			722	825
1166	1", 8 circuit		11	1.455		685	86			771	885
1172	1", 9 circuit		10.50	1.524		760	90			850	970
1174	1", 10 circuit		10	1.600		795	94.50			889.50	1,025
1178	1", 11 circuit		9.50	1.684		820	99.50			919.50	1,050
1182	1", 12 circuit	↓	9	1.778	↓	930	105			1,035	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.	117	283			400	555
1630	1-1/4" header, 12 circuit 1/2" sweat outlets		3.20	5		136	295			431	590
1640	1-1/4" header, 12 circuit 3/4" sweat outlets		3	5.333		143	315			458	625
1650	1-1/2" header, 12 circuit 3/4" sweat outlets		3.10	5.161		173	305			478	645
1660	2" header, 12 circuit 3/4" sweat outlets	↓	2.90	5.517	↓	257	325			582	770
3000	Valves										
3110	Thermostatic zone valve actuator with end switch	Q-5	40	.400	Ea.	51.50	23.50			75	92
3114	Thermostatic zone valve actuator	"	36	.444	"	98	26			124	147
3120	Motorized straight zone valve with operator complete										
3130	3/4"	Q-5	35	.457	Ea.	160	27			187	217
3140	1"		32	.500		174	29.50			203.50	235
3150	1-1/4"	↓	29.60	.541	↓	219	32			251	289
3500	4 way mixing valve, manual, brass										
3530	1"	Q-5	13.30	1.203	Ea.	230	71			301	360
3540	1-1/4"		11.40	1.404		249	83			332	395
3550	1-1/2"		11	1.455		315	86			401	475
3560	2"		10.60	1.509		455	89			544	635
3800	Mixing valve motor, 4 way for valves, 1" and 1-1/4"		34	.471		390	28			418	465
3810	Mixing valve motor, 4 way for valves, 1-1/2" and 2"	↓	30	.533	↓	435	31.50			466.50	525

23 83 Radiant Heating Units

23 83 16 – Radiant-Heating Hydronic Piping

23 83 16.10 Radiant Floor Heating		Crew	Daily	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
			Output	Unit			Labor	Equipment	Total		
5000	Radiant floor heating, zone control panel										
5120	4 zone actuator valve control, expandable	Q-5	20	.800	Ea.	163	47		210	251	
5130	6 zone actuator valve control, expandable		18	.889		271	52.50		323.50	375	
6070	Thermal track, straight panel for long continuous runs, 5,333 S.F.		40	.400		36	23.50		59.50	75.50	
6080	Thermal track, utility panel, for direction reverse at run end, 5,333 S.F.		40	.400		36	23.50		59.50	75.50	
6090	Combination panel, for direction reverse plus straight run, 5,333 S.F.		40	.400		36	23.50		59.50	75.50	
7000	PEX tubing fittings										
7100	Compression type										
7116	Coupling										
7120	1/2" x 1/2"	1 Stpi	27	.296	Ea.	6.95	19.40		26.35	36.50	
7124	3/4" x 3/4"	"	23	.348	"	16.35	23		39.35	52	
7130	Adapter										
7132	1/2" x female sweat 1/2"	1 Stpi	27	.296	Ea.	4.51	19.40		23.91	34	
7134	1/2" x female sweat 3/4"		26	.308		5.05	20		25.05	35.50	
7136	5/8" x female sweat 3/4"		24	.333		7.25	22		29.25	40.50	
7140	Elbow										
7142	1/2" x female sweat 1/2"	1 Stpi	27	.296	Ea.	7.30	19.40		26.70	37	
7144	1/2" x female sweat 3/4"		26	.308		8.55	20		28.55	39.50	
7146	5/8" x female sweat 3/4"		24	.333		9.60	22		31.60	43	
7200	Insert type										
7206	PEX x male NPT										
7210	1/2" x 1/2"	1 Stpi	29	.276	Ea.	2.94	18.10		21.04	30	
7220	3/4" x 3/4"		27	.296		4.35	19.40		23.75	34	
7230	1" x 1"		26	.308		7.30	20		27.30	38	
7300	PEX coupling										
7310	1/2" x 1/2"	1 Stpi	30	.267	Ea.	.64	17.50		18.14	26.50	
7320	3/4" x 3/4"		29	.276		.81	18.10		18.91	28	
7330	1" x 1"		28	.286		1.40	18.75		20.15	29.50	
7400	PEX stainless crimp ring										
7410	1/2" x 1/2"	1 Stpi	86	.093	Ea.	.56	6.10		6.66	9.75	
7420	3/4" x 3/4"		84	.095		.77	6.25		7.02	10.20	
7430	1" x 1"		82	.098		1.11	6.40		7.51	10.75	

23 83 33 – Electric Radiant Heaters

23 83 33.10 Electric Heating

0010	ELECTRIC HEATING, not incl. conduit or feed wiring	1 Elec	4.40	1.818	kW	116	112		228	294
1100	Rule of thumb: Baseboard units, including control									
1300	Baseboard heaters, 2' long, 350 watt		8	1	Ea.	29	61.50		90.50	123
1400	3' long, 750 watt		8	1		35	61.50		96.50	130
1600	4' long, 1,000 watt		6.70	1.194		40.50	73.50		114	154
1800	5' long, 935 watt		5.70	1.404		44	86		130	177
2000	6' long, 1,500 watt		5	1.600		57	98		155	209
2400	8' long, 2,000 watt		4	2		70	123		193	260
2950	Wall heaters with fan, 120 to 277 volt									
3170	1,000 watt	1 Elec	6	1.333	Ea.	94.50	82		176.50	226
3180	1,250 watt		5	1.600		107	98		205	264
3190	1,500 watt		4	2		107	123		230	300
3600	Thermostats, integral		16	.500		29	30.50		59.50	77.50
3800	Line voltage, 1 pole		8	1		16.30	61.50		77.80	109

23 84 Humidity Control Equipment

23 84 13 – Humidifiers

23 84 13.10 Humidifier Units	Description	Crew	Daily	Labor-	Unit	Material	2020	Bare	Costs	Total	Total Incl O&P
			Output	Hours			Labor	Equipment	Total		
0010 HUMIDIFIER UNITS											
0520	Steam, room or duct, filter, regulators, auto. controls, 220 V										
0540	11 lb./hr.	Q-5	6	2.667	Ea.	2,775	157		2,932		3,275
0560	22 lb./hr.		5	3.200		3,050	189		3,239		3,650
0580	33 lb./hr.		4	4		3,150	236		3,386		3,800
0600	50 lb./hr.		4	4		3,850	236		4,086		4,575
0620	100 lb./hr.		3	5.333		5,175	315		5,490		6,175

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 highlighters 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 Operation and Maintenance of Electrical Systems

26 01 02 – Labor Adjustment

26 01 02.20 Labor Adjustment Factors		R260519-90	Daily Crew	Labor-Output Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
						Labor	Equipment		
0010	LABOR ADJUSTMENT FACTORS (For Div. 26, 27 and 28)								
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%		

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	Material	2020 Bare Costs	Equipment	Total	Total Ind 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.		2.03		2.03		3.02
0120	1-1/4" to 2"	"	200	.040			2.45		2.45		3.65
0140	2-1/2" to 3-1/2"	2 Elec	302	.053			3.25		3.25		4.84
0160	4" to 6"	"	160	.100			6.15		6.15		9.15
0200	Electric metallic tubing (EMT), 1/2" to 1"	1 Elec	394	.020			1.25		1.25		1.85
0220	1-1/4" to 1-1/2"		326	.025			1.51		1.51		2.24
0240	2" to 3"		236	.034			2.08		2.08		3.10
0260	3-1/2" to 4"	2 Elec	310	.052			3.17		3.17		4.71
0270	Armored cable (BX) avg. 50' runs										
0280	#14, 2 wire	1 Elec	690	.012	L.F.		.71		.71		1.06
0290	#14, 3 wire		571	.014			.86		.86		1.28
0300	#12, 2 wire		605	.013			.81		.81		1.21
0310	#12, 3 wire		514	.016			.95		.95		1.42
0320	#10, 2 wire		514	.016			.95		.95		1.42
0330	#10, 3 wire		425	.019			1.15		1.15		1.72
0340	#8, 3 wire		342	.023			1.44		1.44		2.14
0350	Non metallic sheathed cable (Romex)										
0360	#14, 2 wire	1 Elec	720	.011	L.F.		.68		.68		1.01
0370	#14, 3 wire		657	.012			.75		.75		1.11
0380	#12, 2 wire		629	.013			.78		.78		1.16
0390	#10, 3 wire		450	.018			1.09		1.09		1.62
0400	Wiremold raceway, including fittings & hangers										
0420	No. 3000	1 Elec	250	.032	L.F.		1.96		1.96		2.92
0440	No. 4000		217	.037			2.26		2.26		3.37
0460	No. 6000		166	.048			2.96		2.96		4.40
0462	Plugmold with receptacle		114	.070			4.31		4.31		6.40
0465	Telephone/power pole		12	.667	Ea.		41		41		61
0470	Non-metallic, straight section		480	.017	L.F.		1.02		1.02		1.52
0500	Channels, steel, including fittings & hangers										
0520	3/4" x 1-1/2"	1 Elec	308	.026	L.F.		1.59		1.59		2.37
0540	1-1/2" x 1-1/2"		269	.030			1.82		1.82		2.72
0560	1-1/2" x 1-7/8"		229	.035			2.14		2.14		3.19
0600	Copper bus duct, indoor, 3 phase										
0610	Including hangers & supports										
0620	225 amp	2 Elec	135	.119	L.F.		7.25		7.25		10.85
0640	400 amp		106	.151			9.25		9.25		13.80
0660	600 amp		86	.186			11.40		11.40		17
0680	1,000 amp		60	.267			16.35		16.35		24.50
0700	1,600 amp		40	.400			24.50		24.50		36.50
0720	3,000 amp		10	1.600			98		98		146
1300	Transformer, dry type, 1 phase, incl. removal of supports, wire & conduit terminations										
1320	1 kVA	1 Elec	7.70	1.039	Ea.		63.50		63.50		95
1420	75 kVA	2 Elec	2.50	6.400	"		395		395		585

26 05 Common Work Results for Electrical

26 05 05 – Selective Demolition for Electrical

26 05 05.10 Electrical Demolition		Crew	Daily	Labor-	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
			Output	Hours			Labor	Equipment	Total		
1440	3 phase to 600 V, primary										
1460	3 kVA	1 Elec	3.87	2.067	Ea.		127		127	189	
1520	75 kVA	2 Elec	2.69	5.948			365		365	545	
1550	300 kVA	R-3	1.80	11.111			680	105	785	1,125	
1570	750 kVA	"	1.10	18.182			1,100	172	1,272	1,850	
1800	Wire, THW-TWN-THHN, removed from										
1810	in place conduit, to 10' high										
1830	#14	1 Elec	65	.123	C.L.F.		7.55		7.55	11.25	
1840	#12		55	.145			8.90		8.90	13.30	
1850	#10		45.50	.176			10.80		10.80	16.05	
1860	#8		40.40	.198			12.15		12.15	18.10	
1870	#6		32.60	.245			15.05		15.05	22.50	
1880	#4	2 Elec	53	.302			18.50		18.50	27.50	
1890	#3		50	.320			19.65		19.65	29	
1900	#2		44.60	.359			22		22	33	
1910	1/0		33.20	.482			29.50		29.50	44	
1920	2/0		29.20	.548			33.50		33.50	50	
1930	3/0		25	.640			39.50		39.50	58.50	
1940	4/0		22	.727			44.50		44.50	66.50	
1950	250 kcmil		20	.800			49		49	73	
1960	300 kcmil		19	.842			51.50		51.50	77	
1970	350 kcmil		18	.889			54.50		54.50	81	
1980	400 kcmil		17	.941			57.50		57.50	86	
1990	500 kcmil		16.20	.988			60.50		60.50	90	
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.		28		28	42	
2110	2' x 2', 4 lamp		30	.533			32.50		32.50	48.50	
2120	2' x 4', 2 lamp		33	.485			30		30	44.50	
2140	2' x 4', 4 lamp		30	.533			32.50		32.50	48.50	
2160	4' x 4', 4 lamp		20	.800			49		49	73	
2180	Surface mount, acrylic lens & hinged frame										
2200	1' x 4', 2 lamp	2 Elec	44	.364	Ea.		22.50		22.50	33	
2210	6" x 4", 2 lamp		44	.364			22.50		22.50	33	
2220	2' x 2', 2 lamp		44	.364			22.50		22.50	33	
2260	2' x 4', 4 lamp		33	.485			30		30	44.50	
2280	4' x 4', 4 lamp		23	.696			42.50		42.50	63.50	
2281	4' x 4', 6 lamp		23	.696			42.50		42.50	63.50	
2300	Strip fixtures, surface mount										
2320	4' long, 1 lamp	2 Elec	53	.302	Ea.		18.50		18.50	27.50	
2340	4' long, 2 lamp		50	.320			19.65		19.65	29	
2360	8' long, 1 lamp		42	.381			23.50		23.50	35	
2380	8' long, 2 lamp		40	.400			24.50		24.50	36.50	
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.		28		28	42	
2421	4' long, 4 lamp		35	.457			28		28	42	
2440	8' long, 2 lamp		27	.593			36.50		36.50	54	

26 05 Common Work Results for Electrical

26 05 13 – Medium-Voltage Cables

		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
26 05 13.16 Medium-Voltage, Single Cable										
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.	171	223		394	520
0050	#4		4.40	3.636		222	223		445	575
0100	#2		4	4		254	245		499	645
0200	#1		4	4		340	245		585	740
0400	1/0		3.80	4.211		335	258		593	750
0600	2/0		3.60	4.444		410	273		683	855
0800	4/0		3.20	5		545	305		850	1,050
1000	250 kcmil	3 Elec	4.50	5.333		655	325		980	1,200
1200	350 kcmil		3.90	6.154		850	380		1,230	1,500
1400	500 kcmil		3.60	6.667		1,100	410		1,510	1,800
1600	15 kV, ungrounded neutral, #1	2 Elec	4	4		365	245		610	770
1800	1/0		3.80	4.211		440	258		698	865
2000	2/0		3.60	4.444		500	273		773	955
2200	4/0		3.20	5		660	305		965	1,175
2400	250 kcmil	3 Elec	4.50	5.333		735	325		1,060	1,300
2600	350 kcmil		3.90	6.154		925	380		1,305	1,575
2800	500 kcmil		3.60	6.667		1,050	410		1,460	1,750

26 05 19 – Low-Voltage Electrical Power Conductors and Cables

26 05 19.20 Armored Cable

		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
0010 ARMORED CABLE										
0050	600 volt, copper (BX), #14, 2 conductor, solid	1 Elec	2.40	3.333	C.L.F.	39	205		244	350
0100	3 conductor, solid		2.20	3.636		65.50	223		288.50	400
0150	#12, 2 conductor, solid		2.30	3.478		41	213		254	365
0200	3 conductor, solid		2	4		69	245		314	440
0250	#10, 2 conductor, solid		2	4		81.50	245		326.50	455
0300	3 conductor, solid		1.60	5		109	305		414	575
0340	#8, 2 conductor, stranded		1.50	5.333		257	325		582	770
0350	3 conductor, stranded		1.30	6.154		257	380		637	845
0400	3 conductor with PVC jacket, in cable tray, #6		3.10	2.581		530	158		688	820
0450	#4	2 Elec	5.40	2.963		650	182		832	985
0500	#2		4.60	3.478		810	213		1,023	1,200
0550	#1		4	4		1,025	245		1,270	1,500
0600	1/0		3.60	4.444		1,100	273		1,373	1,600
0650	2/0		3.40	4.706		1,125	289		1,414	1,675
0700	3/0		3.20	5		1,750	305		2,055	2,375
0750	4/0		3	5.333		2,100	325		2,425	2,800
0800	250 kcmil	3 Elec	3.60	6.667		2,625	410		3,035	3,500
0850	350 kcmil		3.30	7.273		3,300	445		3,745	4,300
0900	500 kcmil		3	8		4,550	490		5,040	5,725
1050	5 kV, copper, 3 conductor with PVC jacket, non-shielded, in cable tray, #4	2 Elec	380	.042	L.F.	7.35	2.58		9.93	11.95
1100	#2		360	.044		9.55	2.73		12.28	14.55
1200	#1		300	.053		12.15	3.27		15.42	18.25
1400	1/0		290	.055		14.05	3.38		17.43	20.50
1600	2/0		260	.062		16.20	3.78		19.98	23.50
2000	4/0		240	.067		21.50	4.09		25.59	30
2100	250 kcmil	3 Elec	330	.073		29.50	4.46		33.96	39
2150	350 kcmil		315	.076		36.50	4.67		41.17	47
2200	500 kcmil		270	.089		54	5.45		59.45	67
2400	15 kV, copper, 3 conductor with PVC jacket galv., steel armored grounded neutral, in cable tray, #2	2 Elec	300	.053	L.F.	16	3.27		19.27	22.50
2500										

26 05 Common Work Results for Electrical

26 05 19 – Low-Voltage Electrical Power Conductors and Cables

26 05 19.20 Armored Cable		Crew	Daily	Labor-	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
			Output	Hours			Labor	Equipment	Total		
2600	#1	2 Elec	280	.057	L.F.	16.45	3.51		19.96	23.50	
2800	1/0		260	.062		19.35	3.78		23.13	27	
2900	2/0		220	.073		25	4.46		29.46	34	
3000	4/0		190	.084		28.50	5.15		33.65	38.50	
3100	250 kcmil	3 Elec	270	.089		31.50	5.45		36.95	42.50	
3150	350 kcmil		240	.100		37	6.15		43.15	50	
3200	500 kcmil		210	.114		50	7		57	65.50	
3400	15 kV, copper, 3 conductor with PVC jacket, ungrounded neutral, in cable tray, #2		2 Elec	260	.062	L.F.	16.65	3.78		20.43	24
3450	#1		230	.070		18.40	4.27		22.67	27	
3600	1/0		200	.080		21	4.91		25.91	30.50	
3700	2/0		190	.084		26	5.15		31.15	36	
3800	4/0		160	.100		31	6.15		37.15	43.50	
4000	250 kcmil	3 Elec	210	.114		36.50	7		43.50	50.50	
4050	350 kcmil		195	.123		48	7.55		55.55	64	
4100	500 kcmil		180	.133		58.50	8.20		66.70	76	
9010	600 volt, copper (MC) steel clad, #14, 2 wire	R-1A	8.16	1.961	C.L.F.	41.50	108		149.50	207	
9020	3 wire		7.21	2.219		77	123		200	267	
9030	4 wire		6.69	2.392		200	132		332	415	
9040	#12, 2 wire		7.21	2.219		57	123		180	245	
9050	3 wire		6.69	2.392		67.50	132		199.50	272	
9070	#10, 2 wire		6.04	2.649		103	146		249	330	
9080	3 wire		5.65	2.832		132	156		288	380	
9100	#8, 2 wire, stranded		3.94	4.061		161	224		385	510	
9110	3 wire, stranded		3.40	4.706		185	260		445	590	
9200	600 volt, copper (MC) aluminum clad, #14, 2 wire		8.16	1.961		41	108		149	206	
9210	3 wire		7.21	2.219		74.50	123		197.50	264	
9220	4 wire		6.69	2.392		92.50	132		224.50	299	
9230	#12, 2 wire		7.21	2.219		42	123		165	228	
9240	3 wire		6.69	2.392		72	132		204	276	
9250	4 wire		6.04	2.649		148	146		294	380	
9260	#10, 2 wire		6.04	2.649		89	146		235	315	
9270	3 wire		5.65	2.832		114	156		270	360	
9280	4 wire		5.23	3.059		217	169		386	490	

26 05 19.35 Cable Terminations

0010 CABLE TERMINATIONS										
		1 Elec	260	.031	Ea.	.06	1.89		1.95	2.88
0015	Wire connectors, screw type, #22 to #14		240	.033		.07	2.04		2.11	3.12
0020	#18 to #12		230	.035		.26	2.13		2.39	3.47
0035	#16 to #10		210	.038		.33	2.34		2.67	3.84
0040	#14 to #8		180	.044		.47	2.73		3.20	4.58
0045	#12 to #6		50	.160		.37	9.80		10.17	15
0050	Terminal lugs, solderless, #16 to #10		30	.267		.74	16.35		17.09	25.50
0100	#8 to #4		22	.364		.79	22.50		23.29	34
0150	#2 to #1		16	.500		1.58	30.50		32.08	47
0200	1/0 to 2/0		12	.667		4.66	41		45.66	66
0250	3/0		11	.727		4.19	44.50		48.69	71
0300	4/0		9	.889		3.13	54.50		57.63	84.50
0350	250 kcmil		7	1.143		4.26	70		74.26	109
0400	350 kcmil		6	1.333		7.85	82		89.85	131
0450	500 kcmil									
1600	Crimp 1 hole lugs, copper or aluminum, 600 volt	1 Elec	60	.133	Ea.	.59	8.20		8.79	12.85
1620	#14									

26 05 Common Work Results for Electrical

26 05 19 – Low-Voltage Electrical Power Conductors and Cables

26 05 19.35	Cable Terminations		Daily	Labor-	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
			Crew Output	Hours			Labor	Equipment	Total		
1630	#12		1 Elec	50	.160	Ea.	1	9.80	10.80	15.70	
1640	#10			45	.178		1	10.90	11.90	17.35	
1780	#8			36	.222		1.51	13.65	15.16	22	
1800	#6			30	.267		1.75	16.35	18.10	26.50	
2000	#4			27	.296		4.02	18.20	22.22	31.50	
2200	#2			24	.333		2.78	20.50	23.28	33.50	
2400	#1			20	.400		4.99	24.50	29.49	42	
2500	1/0			17.50	.457		6.05	28	34.05	48.50	
2600	2/0			15	.533		8.10	32.50	40.60	57.50	
2800	3/0			12	.667		7.95	41	48.95	69.50	
3000	4/0			11	.727		6.40	44.50	50.90	73.50	
3200	250 kcmil			9	.889		7.20	54.50	61.70	89	
3400	300 kcmil			8	1		11.10	61.50	72.60	104	
3500	350 kcmil			7	1.143		11.70	70	81.70	117	
3600	400 kcmil			6.50	1.231		15.40	75.50	90.90	129	
3800	500 kcmil			6	1.333		20.50	82	102.50	145	

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.	355	305	660	845	
0200	#10			1.60	5		535	305	840	1,050	
0400	#8			1.50	5.333		675	325	1,000	1,225	
0500	#6			1.40	5.714		710	350	1,060	1,300	
0600	#4		2 Elec	2.40	6.667		1,050	410	1,460	1,775	
0800	#2			2.20	7.273		1,450	445	1,895	2,250	
0900	#1			2.10	7.619		1,650	465	2,115	2,525	
1000	1/0			2	8		1,925	490	2,415	2,850	
1100	2/0			1.90	8.421		2,425	515	2,940	3,450	
1200	3/0			1.80	8.889		2,950	545	3,495	4,025	
1400	4/0			1.60	10		3,400	615	4,015	4,650	
1410	250 kcmil		3 Elec	2.40	10		3,825	615	4,440	5,125	
1420	350 kcmil			1.95	12.308		4,400	755	5,155	5,950	
1430	500 kcmil			1.95	12.308		5,550	755	6,305	7,225	

26 05 19.55 Non-Metallic Sheathed Cable

0010	NON-METALLIC SHEATHED CABLE 600 volt										
0100	Copper with ground wire (Romex)		1 Elec	2.70	2.963	C.L.F.	18.40	182	200.40	291	
0150	#14, 2 conductor			2.40	3.333		26.50	205	231.50	335	
0200	3 conductor			2.20	3.636		42	223	265	375	
0220	4 conductor			2.50	3.200		26.50	196	222.50	320	
0250	#12, 2 conductor			2.20	3.636		41	223	264	375	
0300	3 conductor			2	4		65	245	310	435	
0320	4 conductor			2.20	3.636		45	223	268	380	
0350	#10, 2 conductor			1.80	4.444		66.50	273	339.50	480	
0400	3 conductor			1.60	5		87.50	305	392.50	550	
0430	#8, 2 conductor			1.50	5.333		117	325	442	615	
0450	3 conductor			1.40	5.714		179	350	529	715	
0500	#6, 3 conductor			1.40	5.714						
0550	SE type SER aluminum cable, 3 RHW and		1 Elec	1.60	5	C.L.F.	63	305	368	525	
0600	1 bare neutral, 3 #8 & 1 #6			1.40	5.714		70.50	350	420.50	600	
0650	3 #6 & 1 #6		2 Elec	2.40	6.667		78.50	410	488.50	695	
0700	3 #4 & 1 #6			2.20	7.273		143	445	588	825	
0750	3 #2 & 1 #4			2	8		167	490	657	915	
0800	3 #1/0 & 1 #2										

26 05 Common Work Results for Electrical

26 05 19 – Low-Voltage Electrical Power Conductors and Cables

			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
26 05 19.55 Non-Metallic Sheathed Cable			Crew			Labor	Equipment		
0850	3 #2/0 & 1 #1		2 Elec	1.80	8.889	C.L.F.	199	545	744
0900	3 #4/0 & 1 #2/0		↓	1.60	10	↓	292	615	907
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.	6.25	38	44.25
0030	#12			11	.727		9.85	44.50	54.35
0040	#10			10	.800		15.95	49	64.95
0050	Stranded, #14	R260533-22		13	.615		7.60	38	45.60
0100	#12			11	.727		13.75	44.50	58.25
0120	#10			10	.800		22	49	71
0140	#8			8	1		34.50	61.50	96
0160	#6		▼	6.50	1.231		57.50	75.50	133
0180	#4		2 Elec	10.60	1.509		87.50	92.50	180
0200	#3			10	1.600		118	98	216
0220	#2			9	1.778		136	109	245
0240	#1			8	2		174	123	297
0260	1/0			6.60	2.424		226	149	375
0280	2/0			5.80	2.759		390	169	559
0300	3/0			5	3.200		278	196	474
0350	4/0		▼	4.40	3.636		450	223	673
0400	250 kcmil		3 Elec	6	4		490	245	735
0420	300 kcmil				5.70	4.211	685	258	943
0450	350 kcmil				5.40	4.444	670	273	943
0480	400 kcmil		↓	5.10	4.706		1,200	289	1,489
0490	500 kcmil		↓	4.80	5		965	305	1,270
0540	600 volt, aluminum type THHN, stranded, #6		1 Elec	8	1		20.50	61.50	82
0560	#4		2 Elec	13	1.231		25	75.50	100.50
0580	#2			10.60	1.509		48	92.50	140.50
0600	#1			9	1.778		57	109	166
0620	1/0			8	2		80	123	203
0640	2/0			7.20	2.222		82	136	218
0680	3/0			6.60	2.424		103	149	252
0700	4/0		▼	6.20	2.581		131	158	289
0720	250 kcmil		3 Elec	8.70	2.759		137	169	306
0740	300 kcmil			8.10	2.963		190	182	372
0760	350 kcmil			7.50	3.200		192	196	388
0780	400 kcmil			6.90	3.478		219	213	432
0800	500 kcmil			6	4		246	245	491
0850	600 kcmil			5.70	4.211		315	258	573
0880	700 kcmil			5.10	4.706		385	289	674
0900	750 kcmil			4.80	5		375	305	680
0910	1,000 kcmil		▼	3.78	6.349		665	390	1,055
0920	600 volt, copper type THWN-THHN, solid, #14		1 Elec	13	.615		6.65	38	44.65
0940	#12			11	.727		10.05	44.50	54.55
0960	#10			10	.800		15.60	49	64.60
1000	Stranded, #14			13	.615		7.70	38	45.70
1200	#12			11	.727		10.60	44.50	55.10
1250	#10			10	.800		20.50	49	69.50
1300	#8			8	1		27	61.50	88.50
1350	#6		▼	6.50	1.231		44	75.50	119.50
1400	#4		2 Elec	10.60	1.509	↓	70	92.50	162.50

26 05 Common Work Results for Electrical

26 05 23 – Control-Voltage Electrical Power Cables

26 05 23.10 Control Cable

		Daily Crew Output	Labor Hours	Unit	Material	2020 Labor	Bare 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.	44.50	54.50		99	130
0030	3 wires		8 1		52.50	61.50		114	149
0100	4 wires		7 1.143		54	70		124	164
0150	5 wires		6.50 1.231		74.50	75.50		150	194
0200	6 wires		6 1.333		99.50	82		181.50	232
0300	8 wires		5.30 1.509		140	92.50		232.50	291
0400	10 wires		4.80 1.667		166	102		268	335
0500	12 wires		4.30 1.860		213	114		327	405
0600	14 wires		3.80 2.105		226	129		355	440
0700	16 wires		3.50 2.286		258	140		398	495
0800	18 wires		3.30 2.424		299	149		448	550
0810	19 wires		3.10 2.581		279	158		437	540
0900	20 wires		3 2.667		295	164		459	570
1000	22 wires		2.80 2.857		355	175		530	650

26 05 26 – Grounding and Bonding for Electrical Systems

26 05 26.80 Grounding

		Daily Crew Output	Labor Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
0010	GROUNDING								
0030	Rod, copper clad, 8' long, 1/2" diameter	1 Elec	5.50 1.455	Ea.	22.50	89		111.50	158
0050	3/4" diameter		5.30 1.509		36	92.50		128.50	178
0080	10' long, 1/2" diameter		4.80 1.667		24.50	102		126.50	179
0100	3/4" diameter		4.40 1.818		53	112		165	225
0130	15' long, 3/4" diameter		4 2		55	123		178	244
0390	Bare copper wire, stranded, #8		11 .727	C.L.F.	40	44.50		84.50	111
0400	#6		10 .800		42	49		91	120
0600	#2	2 Elec	10 1.600		89	98		187	244
0800	3/0		6.60 2.424		305	149		454	555
1000	4/0		5.70 2.807		420	172		592	720
1200	250 kcmil	3 Elec	7.20 3.333		440	205		645	785
1800	Water pipe ground clamps, heavy duty								
2000	Bronze, 1/2" to 1" diameter	1 Elec	8 1	Ea.	29	61.50		90.50	123
2100	1-1/4" to 2" diameter		8 1		31	61.50		92.50	126
2200	2-1/2" to 3" diameter		6 1.333		60.50	82		142.50	189
2800	Brazed connections, #6 wire		12 .667		16.15	41		57.15	79
3000	#2 wire		10 .800		21.50	49		70.50	97
3100	3/0 wire		8 1		32	61.50		93.50	127
3200	4/0 wire		7 1.143		36.50	70		106.50	145
3400	250 kcmil wire		5 1.600		43	98		141	193
3600	500 kcmil wire		4 2		52.50	123		175.50	241

26 05 33 – Raceway and Boxes for Electrical Systems

26 05 33.13 Conduit

		Daily Crew Output	Labor Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
0010	CONDUIT To 10' high, includes 2 terminations, 2 elbows, 11 beam clamps, and 11 couplings per 100 LF.	R260533-22							
0020	Aluminum, 1/2" diameter	1 Elec	100 .080	LF	1.82	4.91		6.73	9.30
0300	3/4" diameter		90 .089		2.69	5.45		8.14	11.05
0500	1" diameter		80 .100		3.57	6.15		9.72	13.10
0700	1-1/4" diameter		70 .114		4.36	7		11.36	15.25
1030	1-1/2" diameter		65 .123		5.30	7.55		12.85	17.10
1050	2" diameter		60 .133		7.25	8.20		15.45	20
1070	2-1/2" diameter		50 .160		9.15	9.80		18.95	24.50
1100	3" diameter	2 Elec	90 .178		12.85	10.90		23.75	30.50

26 05 Common Work Results for Electrical

26 05 33 – Raceway and Boxes for Electrical Systems

			Daily	Labor-	2020 Bare Costs			Total	Total
			Crew Output	Hours	Unit	Material	Labor		
26 05 33.13 Conduit									
1130	3-1/2" diameter		2 Elec	.80	.200	L.F.	16.15	12.25	28.40
1140	4" diameter			70	.229		19.30	14	33.30
1750	Rigid galvanized steel, 1/2" diameter		1 Elec	90	.089		2.77	5.45	8.22
1770	3/4" diameter			80	.100		5.15	6.15	11.30
1800	1" diameter			65	.123		7.70	7.55	15.25
1830	1-1/4" diameter			60	.133		5.35	8.20	13.55
1850	1-1/2" diameter			55	.145		9.35	8.90	18.25
1870	2" diameter			45	.178		9.80	10.90	20.70
1900	2-1/2" diameter			35	.229		14.25	14	28.25
1930	3" diameter		2 Elec	50	.320		15.85	19.65	35.50
1950	3-1/2" diameter			44	.364		20	22.50	42.50
1970	4" diameter			40	.400		24.50	24.50	49
2500	Steel, intermediate conduit (IMC), 1/2" diameter		1 Elec	100	.080		1.91	4.91	6.82
2530	3/4" diameter			90	.089		2.64	5.45	8.09
2550	1" diameter			70	.114		3.57	7	10.57
2570	1-1/4" diameter			65	.123		3.95	7.55	11.50
2600	1-1/2" diameter			60	.133		5.75	8.20	13.95
2630	2" diameter			50	.160		6.85	9.80	16.65
2650	2-1/2" diameter			40	.200		9.05	12.25	21.30
2670	3" diameter		2 Elec	60	.267		13.55	16.35	29.90
2700	3-1/2" diameter			54	.296		18.85	18.20	37.05
2730	4" diameter			50	.320		12.05	19.65	31.70
5000	Electric metallic tubing (EMT), 1/2" diameter		1 Elec	170	.047		.76	2.89	3.65
5020	3/4" diameter			130	.062		1.07	3.78	4.85
5040	1" diameter			115	.070		1.80	4.27	6.07
5060	1-1/4" diameter			100	.080		2.94	4.91	7.85
5080	1-1/2" diameter			90	.089		3.46	5.45	8.91
5100	2" diameter			80	.100		4.37	6.15	10.52
5120	2-1/2" diameter			60	.133		4.85	8.20	13.05
5140	3" diameter		2 Elec	100	.160		6.15	9.80	15.95
5160	3-1/2" diameter			90	.178		7.70	10.90	18.60
5180	4" diameter			80	.200		13.55	12.25	25.80
9900	Add to labor for higher elevated installation								33
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	Ed.	2.96	24.50	27.46	40
0060	Covers, blank			64	.125		.87	7.65	8.52	12.35
0100	Extension rings			40	.200		4.59	12.25	16.84	23.50
0150	Square, 4"			20	.400		6.85	24.50	31.35	44
0200	Extension rings			40	.200		4.85	12.25	17.10	23.50
0250	Covers, blank			64	.125		.77	7.65	8.42	12.25
0300	Plaster rings			64	.125		1.66	7.65	9.31	13.25
0650	Switchbox			27	.296		5.60	18.20	23.80	33
1100	Concrete, floor, 1 gang			5.30	1.509		112	92.50	204.50	261
2000	Poke-thru fitting, fire rated, for 3-3/4" floor			6.80	1.176		169	72	241	293

26 05 Common Work Results for Electrical

26 05 33 – Raceway and Boxes for Electrical Systems

26 05 33.16 Boxes for Electrical Systems		Daily	Labor-	Unit	2020 Bare Costs			Total	Total Incl O&P
		Crew	Output		Material	Labor	Equipment		
2040	For 7" floor	1 Elec	6.80	1.176	Ea.	167	72	239	291
2100	Pedestal, 15 amp, duplex receptacle & blank plate		5.25	1.524		152	93.50	245.50	305
2120	Duplex receptacle and telephone plate		5.25	1.524		152	93.50	245.50	305
2140	Pedestal, 20 amp, duplex recept. & phone plate		5	1.600		153	98	251	315
2200	Abandonment plate	↓	32	2.250	↓	44.50	15.35	59.85	72
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.	9.85	61.50	71.35	102
0200	8" W x 8" H x 4" D		8	1		12.90	61.50	74.40	106
0300	10" W x 12" H x 6" D		5.30	1.509		30.50	92.50	123	172
0400	16" W x 20" H x 8" D		4	2		82.50	123	205.50	274
0500	20" W x 24" H x 8" D		3.20	2.500		110	153	263	350
0600	24" W x 36" H x 8" D		2.70	2.963		153	182	335	440
0650	Pull box, hinged, NEMA 1, 6" W x 6" H x 4" D		8	1		16.95	61.50	78.45	110
0800	12" W x 16" H x 6" D		4.70	1.702		49.50	104	153.50	210
1000	20" W x 20" H x 6" D		3.60	2.222		107	136	243	320
1200	20" W x 20" H x 8" D		3.20	2.500		163	153	316	405
1400	24" W x 36" H x 8" D		2.70	2.963		257	182	439	555
1600	24" W x 42" H x 8" D	↓	2	4	↓	380	245	625	780
2100	Pull box, NEMA 3R, type SC, raintight & weatherproof								
2150	6" L x 6" W x 6" D	1 Elec	10	.800	Ea.	17.25	49	66.25	92
2200	8" L x 6" W x 6" D		8	1		25	61.50	86.50	119
2250	10" L x 6" W x 6" D		7	1.143		32	70	102	139
2300	12" L x 12" W x 6" D		5	1.600		47.50	98	165.50	220
2350	16" L x 16" W x 6" D		4.50	1.778		92	109	201	263
2400	20" L x 20" W x 6" D		4	2		86	123	209	278
2450	24" L x 18" W x 8" D		3	12.667		153	164	317	415
2500	24" L x 24" W x 10" D		2.50	3.200		288	196	484	605
2550	30" L x 24" W x 12" D		2	4		400	245	645	800
2600	36" L x 36" W x 12" D	↓	1.50	5.333	↓	695	325	1,020	1,250
2800	Cast iron, pull boxes for surface mounting								
3000	NEMA 4, watertight & dust tight	1 Elec	4	2	Ea.	276	123	399	490
3050	6" L x 6" W x 6" D								
3100	8" L x 6" W x 6" D	1 Elec	3.20	2.500		420	153	573	690
3150	10" L x 6" W x 6" D		2.50	3.200		440	196	636	775
3200	12" L x 12" W x 6" D		2.30	3.478		745	213	958	1,150
3250	16" L x 16" W x 6" D		1.30	6.154		840	380	1,220	1,475
3300	20" L x 20" W x 6" D		.80	10		965	615	1,580	1,975
3350	24" L x 18" W x 8" D		.70	11.429		2,600	700	3,300	3,900
3400	24" L x 24" W x 10" D		.50	16		4,725	980	5,705	6,650
3450	30" L x 24" W x 12" D		.40	20		6,725	1,225	7,950	9,225
3500	36" L x 36" W x 12" D	↓	.20	40		8,275	2,450	10,725	12,800
6000	J.I.C. wiring boxes, NEMA 12, dust tight & drip tight	1 Elec	10	.800	Ea.	77.50	49	126.50	158
6100	6" L x 8" W x 4" D		8	1		129	61.50	190.50	234
6150	8" L x 10" W x 4" D		5.30	1.509		97.50	92.50	190	245
6200	12" L x 14" W x 6" D		4.70	1.702		127	104	231	294
6250	14" L x 16" W x 6" D		4.40	1.818		330	112	442	530
6300	16" L x 20" W x 6" D		3.20	2.500		420	153	573	690
6350	24" L x 30" W x 6" D		2.90	2.759		490	169	659	785
6400	24" L x 36" W x 8" D		2.70	2.963		400	182	582	710
6450	24" L x 42" W x 8" D	↓	2.30	3.478	↓	540	213	753	915

26 05 Common Work Results for Electrical

26 05 33 – Raceway and Boxes for Electrical Systems

26 05 33.18 Pull Boxes		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
		1 Elec	2	4	Ea.	595	Labor	Equipment	
6500	24" L x 48" W x 8" D					245		840	1,025

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.	12.45	10.90	23.35	30
0200	4" x 4"	"	40	.200		13.40	12.25	25.65	33
0400	6" x 6"	2 Elec	60	.267		23.50	16.35	39.85	50.50
0600	8" x 8"	"	40	.400		28	24.50	52.50	67.50
4475	NEMA 3R, screw cover w/fittings and supports, 4" x 4"	1 Elec	36	.222		16.65	13.65	30.30	39
4480	6" x 6"	2 Elec	55	.291		18.50	17.85	36.35	47
4485	8" x 8"	"	36	.444		32.50	27.50	60	76.50
4490	12" x 12"		18	.889		60.50	54.50	115	148

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.	14.90	10	24.90	31.50
0200	12" wide	"	86	.186		17.95	11.40	29.35	37
0400	18" wide	"	82	.195		21	11.95	32.95	41
0600	24" wide	"	78	.205		24	12.60	36.60	45.50
3200	Aluminum tray, 4" deep, 6" rung spacing, 6" wide	"	134	.119		15.75	7.35	23.10	28.50
3220	12" wide	"	124	.129		17.65	7.90	25.55	31
3230	18" wide	"	114	.140		19.70	8.60	28.30	34.50
3240	24" wide	"	106	.151		23	9.25	32.25	39

26 05 39 – Underfloor Raceways for Electrical Systems

26 05 39.30 Conduit In Concrete Slab

0010	CONDUIT IN CONCRETE SLAB Including terminations,								
0020	fitting and supports								
3230	PVC, schedule 40, 1/2" diameter	1 Elec	270	.030	L.F.	.55	1.82	2.37	3.31
3250	3/4" diameter	"	230	.035		.59	2.13	2.72	3.83
3270	1" diameter	"	200	.040		.78	2.45	3.23	4.50
3300	1-1/4" diameter	"	170	.047		1.05	2.89	3.94	5.45
3330	1-1/2" diameter	"	140	.057		1.27	3.51	4.78	6.60
3350	2" diameter	"	120	.067		1.59	4.09	5.68	7.85
4350	Rigid galvanized steel, 1/2" diameter	"	200	.040		2.34	2.45	4.79	6.20
4400	3/4" diameter	"	170	.047		4.45	2.89	7.34	9.20
4450	1" diameter	"	130	.062		6.90	3.78	10.68	13.20
4500	1-1/4" diameter	"	110	.073		4.53	4.46	8.99	11.65
4600	1-1/2" diameter	"	100	.080		8.40	4.91	13.31	16.55
4800	2" diameter	"	90	.089		8.20	5.45	13.65	17.15

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.	7.80	3.27	11.07	13.45
0400	2-1/2" diameter	"	100	.080		13	4.91	17.91	21.50
0600	3" diameter	2 Elec	160	.100		14.55	6.15	20.70	25
0800	3-1/2" diameter	"	140	.114		19.20	7	26.20	31.50
1000	4" diameter	"	100	.160		23.50	9.80	33.30	40
1200	5" diameter	"	80	.200		37.50	12.25	49.75	59.50
1400	6" diameter	"	60	.267		57.50	16.35	73.85	88

26 05 Common Work Results for Electrical

26 05 43 – Underground Ducts and Raceways for Electrical Systems

26 05 43.10 Trench Duct

		Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	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.	289	24.50			313.50	355
0200	12" wide		32 .500		365	30.50			395.50	445
0400	18" wide		26 .615		395	38			433	490
0600	24" wide		22 .727		415	44.50			459.50	520
0800	30" wide		20 .800		228	49			277	325
1000	36" wide		16 1		261	61.50			322.50	380
1200	Horizontal elbow, 9" wide		5.40 2.963	Ea.	455	182			637	770
1400	12" wide		4.60 3.478		440	213			653	805
1600	18" wide		4 4		625	245			870	1,050
1800	24" wide		3.20 5		895	305			1,200	1,450
2000	30" wide		2.60 6.154		1,175	380			1,555	1,850
2200	36" wide		2.40 6.667		1,575	410			1,985	2,325
2400	Vertical elbow, 9" wide		5.40 2.963		179	182			361	470
2600	12" wide		4.60 3.478		172	213			385	510
2800	18" wide		4 4		197	245			442	580
3000	24" wide		3.20 5		245	305			550	725
3200	30" wide		2.60 6.154		271	380			651	860
3400	36" wide		2.40 6.667		297	410			707	935
3600	Cross, 9" wide		4 4		745	245			990	1,175
3800	12" wide		3.20 5		785	305			1,090	1,325
4000	18" wide		2.60 6.154		940	380			1,320	1,575
4200	24" wide		2.20 7.273		1,175	445			1,620	1,950
4400	30" wide		2 8		1,450	490			1,940	2,325
4600	36" wide		1.80 8.889		1,825	545			2,370	2,800
4800	End closure, 9" wide		14.40 1.111		44	68			112	150
5000	12" wide		12 1.333		50	82			132	177
5200	18" wide		10 1.600		77	98			175	231
5400	24" wide		8 2		101	123			224	294
5600	30" wide		6.60 2.424		156	149			305	395
5800	36" wide		5.80 2.759		151	169			320	420
6000	Tees, 9" wide		4 4		425	245			670	835
6200	12" wide		3.60 4.444		495	273			768	950
6400	18" wide		3.20 5		635	305			940	1,150
6600	24" wide		3 5.333		910	325			1,235	1,475
6800	30" wide		2.60 6.154		1,175	380			1,555	1,850
7000	36" wide		2 8		1,550	490			2,040	2,425
7200	Riser, and cabinet connector, 9" wide		5.40 2.963		186	182			368	475
7400	12" wide		4.60 3.478		217	213			430	560
7600	18" wide		4 4		228	245			473	615
7800	24" wide		3.20 5		325	305			630	810
8000	30" wide		2.60 6.154		370	380			750	970
8200	36" wide		2 8		430	490			920	1,200
8400	Insert assembly, cell to conduit adapter, 1-1/4"	1 Elec	16 .500	↓	74	30.50			104.50	127

26 05 43.20 Underfloor Duct

	UNDERFLOOR DUCT	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	Equipment	Total	Total Incl O&P
0100	Duct, 1-3/8" x 3-1/8" blank, standard	2 Elec	160 .100	L.F.	12.85	6.15			19	23.50
0200	1-3/8" x 7-1/4" blank, super duct		120 .133		30	8.20			38.20	45
0400	7/8" or 1-3/8" insert type, 24" OC, 1-3/8" x 3-1/8", std.		140 .114		20	7			27	32.50
0600	1-3/8" x 7-1/4", super duct	↓	100 .160	↓	35	9.80			44.80	53
0800	Junction box, single duct, 1 level, 3-1/8"	1 Elec	4 2	Ea.	445	123			568	675

26 05 Common Work Results for Electrical

26 05 43 – Underground Ducts and Raceways for Electrical Systems

26 05 43.20 Underfloor Duct		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Total	
					Ea.	Labor	Equipment	Total	Ind O&P
1000	Junction box, single duct, 1 level, 7-1/4"	1 Elec	2.70	2.963	Ea.	520	182	702	840
1200	1 level, 2 duct, 3-1/8"		3.20	2.500		590	153	743	880
1400	Junction box, 1 level, 2 duct, 7-1/4"		2.30	3.478		1,475	213	1,688	1,950
1580	Junction box, 1 level, one 3-1/8" + one 7-1/4" x same		2.30	3.478		1,000	213	1,213	1,425
1600	Triple duct, 3-1/8"		2.30	3.478		1,000	213	1,213	1,425
1800	Insert to conduit adapter, 3/4" & 1"		32	.250		36.50	15.35	51.85	63.50
2000	Support, single cell		27	.296		54.50	18.20	72.70	87
2200	Super duct		16	.500		55	30.50	85.50	106
2400	Double cell		16	.500		55	30.50	85.50	107
2600	Triple cell		11	.727		64	44.50	108.50	137
2800	Vertical elbow, standard duct		10	.800		98.50	49	147.50	181
3000	Super duct		8	1		98.50	61.50	160	200
3200	Cabinet connector, standard duct		32	.250		78.50	15.35	93.85	110
3400	Super duct		27	.296		76.50	18.20	94.70	112
3600	Conduit adapter, 1" to 1-1/4"		32	.250		73.50	15.35	88.85	104
3800	2" to 1-1/4"		27	.296		88.50	18.20	106.70	124
4000	Outlet, low tension (tele, computer, etc.)		8	1		104	61.50	165.50	206
4200	High tension, receptacle (120 volt)		8	1		106	61.50	167.50	209

26 05 83 – Wiring Connections

26 05 83.10 Motor Connections

0010 MOTOR CONNECTIONS		1 Elec	8	1	Ea.	5.90	61.50	67.40	98
0020	Flexible conduit and fittings, 115 volt, 1 phase, up to 1 HP motor		6.78	1.180		7.15	72.50	79.65	116
0110	230 volt, 3 phase, 3 HP motor		5.47	1.463		6.05	89.50	95.55	141
0112	5 HP motor		4.61	1.735		9.35	106	115.35	169
0114	7-1/2 HP motor		4.20	1.905		17.40	117	134.40	193
0200	10 HP motor		2.70	2.963		29.50	182	211.50	305
0400	25 HP motor		2.20	3.636		54.50	223	277.50	390
0600	50 HP motor		1.50	5.333		121	325	446	620

26 05 90 – Residential Applications

26 05 90.10 Residential Wiring

0010 RESIDENTIAL WIRING		1 Elec	1.19	6.723	Ea.	335	410	745	980
0020	20' avg. runs and #14/2 wiring incl. unless otherwise noted								
1000	Service & panel, includes 24' SEAL 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.	335	410	745	980
1110	With PVC conduit and wire		.92	8.696		370	535	905	1,200
1120	With RGS conduit and wire		.73	10.959		570	670	1,240	1,625
1150	150 amp, with 14 branch breakers		1.03	7.767		805	475	1,280	1,600
1170	With PVC conduit and wire		.82	9.756		875	600	1,475	1,850
1180	With RGS conduit and wire		.67	11.940		1,200	735	1,935	2,425
1200	200 amp, with 18 branch breakers	2 Elec	1.80	8.889		1,025	545	1,570	1,925
1220	With PVC conduit and wire		1.46	10.959		1,100	670	1,770	2,200
1230	With RGS conduit and wire		1.24	12.903		1,500	790	2,290	2,825
1800	Lightning surge suppressor	1 Elec	32	.250		85	15.35	100.35	117
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.	15.55	28.50	44.05	59.50
2120	Type MC cable		14.30	.559		26	34.50	60.50	80
2130	EMT & wire		5.71	1.401		36	86	122	168
2150	3-way, #14/3, type NM cable		14.55	.550		10.10	33.50	43.60	61

26 05 Common Work Results for Electrical

26 05 90 – Residential Applications

26 05 90.10 Residential Wiring		Crew	Daily	Labor-	Unit	2020 Bare Costs			Total	Total Incl O&P
			Output	Hours		Material	Labor	Equipment		
2170	Type MC cable	1 Elec	12.31	.650	Ea.	24.50	40		64.50	86.50
2180	EMT & wire		5	1.600		30.50	98		128.50	180
2200	4-way, #14/3, type NM cable		14.55	.550		18.20	33.50		51.70	70
2220	Type MC cable		12.31	.650		32.50	40		72.50	95.50
2230	EMT & wire		5	1.600		38.50	98		136.50	189
2250	S.P., 20 amp, #12/2, type NM cable		13.33	.600		12.30	37		49.30	68.50
2270	Type MC cable		11.43	.700		22	43		65	88
2280	EMT & wire		4.85	1.649		35	101		136	190
2290	S.P. rotary dimmer, 600 W, no wiring			17	.471	32	29		61	78
2300	S.P. rotary dimmer, 600 W, type NM cable			14.55	.550	35.50	33.50		69	89
2320	Type MC cable		12.31	.650		46	40		86	111
2330	EMT & wire		5	1.600		57.50	98		155.50	209
2350	3-way rotary dimmer, type NM cable		13.33	.600		24	37		61	81.50
2370	Type MC cable		11.43	.700		34.50	43		77.50	102
2380	EMT & wire		4.85	1.649		46	101		147	202
2400	Interval timer wall switch, 20 amp, 1-30 min., #12/2									
2410	Type NM cable	1 Elec	14.55	.550	Ea.	59	33.50		92.50	115
2420	Type MC cable		12.31	.650		64.50	40		104.50	131
2430	EMT & wire		5	1.600		81.50	98		179.50	236
2500	Decorator style									
2510	S.P., 15 amp, type NM cable	1 Elec	17.10	.468	Ea.	21	28.50		49.50	65.50
2520	Type MC cable		14.30	.559		32	34.50		66.50	86
2530	EMT & wire		5.71	1.401		41.50	86		127.50	174
2550	3-way, #14/3, type NM cable		14.55	.550		15.65	33.50		49.15	67.50
2570	Type MC cable		12.31	.650		30	40		70	92.50
2580	EMT & wire		5	1.600		36	98		134	186
2600	4-way, #14/3, type NM cable		14.55	.550		24	33.50		57.50	76
2620	Type MC cable		12.31	.650		38	40		78	102
2630	EMT & wire		5	1.600		44	98		142	195
2650	S.P., 20 amp, #12/2, type NM cable		13.33	.600		17.85	37		54.85	74.50
2670	Type MC cable		11.43	.700		27.50	43		70.50	94
2680	EMT & wire		4.85	1.649		40.50	101		141.50	196
2700	S.P., slide dimmer, type NM cable		17.10	.468		37.50	28.50		66	84
2720	Type MC cable		14.30	.559		48	34.50		82.50	104
2730	EMT & wire		5.71	1.401		59.50	86		145.50	194
2750	S.P., touch dimmer, type NM cable		17.10	.468		53	28.50		81.50	101
2770	Type MC cable		14.30	.559		64	34.50		98.50	121
2780	EMT & wire		5.71	1.401		75	86		161	211
2800	3-way touch dimmer, type NM cable		13.33	.600		49.50	37		86.50	110
2820	Type MC cable		11.43	.700		60.50	43		103.50	131
2830	EMT & wire		4.85	1.649		71.50	101		172.50	230
3000	Combination devices									
3100	S.P. switch/15 amp recept., ivory, 1-gang box, plate	1 Elec	11.43	.700	Ea.	22	43		65	88
3110	Type NM cable		10	.800		32.50	49		81.50	109
3120	Type MC cable		4.40	1.818		44	112		156	214
3130	EMT & wire		11.43	.700		23.50	43		66.50	89.50
3150	S.P. switch/pilot light, type NM cable		10	.800		34	49		83	111
3170	Type MC cable		4.43	1.806		45	111		156	215
3180	EMT & wire		14	.571		13	35		48	66.50
3190	2-S.P. switches, 2#14/2, no wiring		10	.800		24	49		73	99.50
3200	2-S.P. switches, 2#14/2, type NM cables		8.89	.900		38.50	55		93.50	125
3220	Type MC cable		4.10	1.951		46	120		166	229
3230	EMT & wire									

26 05 Common Work Results for Electrical

26 05 90 – Residential Applications

26 05 90.10	Residential Wiring		Daily	Labor-	Unit	2020 Bare Costs			Total	Total Incl O&P
			Crew	Output		Material	Labor	Equipment		
3250	3-way switch/15 amp recept., #14/3, type NM cable		1 Elec	10	.800	Ea.	30	49	79	106
3270	Type MC cable			8.89	.900		44	55	99	131
3280	EMT & wire			4.10	1.951		50	120	170	233
3300	2-3 way switches, 2-#14/3, type NM cables			8.89	.900		38	55	93	124
3320	Type MC cable			8	1		60	61.50	121.50	158
3330	EMT & wire			4	2		56.50	123	179.50	246
3350	S.P. switch/20 amp recept., #12/2, type NM cable			10	.800		40	49	89	117
3370	Type MC cable			8.89	.900		45.50	55	100.50	132
3380	EMT & wire			4.10	1.951		62.50	120	182.50	247
3400	Decorator style									
3410	S.P. switch/15 amp recept., type NM cable		1 Elec	11.43	.700	Ea.	27.50	43	70.50	94
3420	Type MC cable			10	.800		38	49	87	115
3430	EMT & wire			4.40	1.818		49.50	112	161.50	221
3450	S.P. switch/pilot light, type NM cable			11.43	.700		29	43	72	95.50
3470	Type MC cable			10	.800		39.50	49	88.50	117
3480	EMT & wire			4.40	1.818		50.50	112	162.50	222
3500	2-S.P. switches, 2-#14/2, type NM cables			10	.800		29.50	49	78.50	106
3520	Type MC cable			8.89	.900		44.50	55	99.50	131
3530	EMT & wire			4.10	1.951		51.50	120	171.50	235
3550	3-way/15 amp recept., #14/3, type NM cable			10	.800		35.50	49	84.50	112
3570	Type MC cable			8.89	.900		49.50	55	104.50	137
3580	EMT & wire			4.10	1.951		55.50	120	175.50	239
3650	2-3 way switches, 2-#14/3, type NM cables			8.89	.900		43.50	55	98.50	130
3670	Type MC cable			8	1		65.50	61.50	127	164
3680	EMT & wire			4	2		62	123	185	252
3700	S.P. switch/20 amp recept., #12/2, type NM cable			10	.800		45.50	49	94.50	123
3720	Type MC cable			8.89	.900		51	55	106	138
3730	EMT & wire			4.10	1.951		68	120	188	253
4000	Receptacle devices									
4010	Duplex outlet, 15 amp recept., ivory, 1-gang box, plate									
4015	Type NM cable		1 Elec	14.55	.550	Ea.	8.90	33.50	42.40	60
4020	Type MC cable			12.31	.650		19.55	40	59.55	81
4030	EMT & wire			5.33	1.501		29.50	92	121.50	170
4050	With #12/2, type NM cable			12.31	.650		10.50	40	50.50	71
4070	Type MC cable			10.67	.750		19.95	46	65.95	90.50
4080	EMT & wire			4.71	1.699		33	104	137	191
4100	20 amp recept., #12/2, type NM cable			12.31	.650		19.50	40	59.50	81
4120	Type MC cable			10.67	.750		29	46	75	101
4130	EMT & wire			4.71	1.699		42	104	146	201
4140	For GFI see Section 26 05 90.10 line 4300 below									
4150	Decorator style, 15 amp recept., type NM cable		1 Elec	14.55	.550	Ea.	14.45	33.50	47.95	66
4170	Type MC cable			12.31	.650		25	40	65	87
4180	EMT & wire			5.33	1.501		35	92	127	176
4200	With #12/2, type NM cable			12.31	.650		16.05	40	56.05	77
4220	Type MC cable			10.67	.750		25.50	46	71.50	96.50
4230	EMT & wire			4.71	1.699		38.50	104	142.50	198
4250	20 amp recept., #12/2, type NM cable			12.31	.650		25	40	65	87
4270	Type MC cable			10.67	.750		34.50	46	80.50	107
4280	EMT & wire			4.71	1.699		47.50	104	151.50	208
4300	GFI, 15 amp recept., type NM cable			12.31	.650		21	40	61	82.50
4320	Type MC cable			10.67	.750		31.50	46	77.50	103
4330	EMT & wire			4.71	1.699		41.50	104	145.50	201
4350	GFI with #12/2, type NM cable			10.67	.750		22.50	46	68.50	93

26 05 Common Work Results for Electrical

26 05 90 – Residential Applications

26 05 90.10 Residential Wiring		Crew	Daily	Labor-	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
			Output	Hours			Labor	Equipment			
4370	Type MC cable	1 Elec	9.20	.870	Ea.	32	53.50			85.50	115
4380	EMT & wire			4.21	1.900		45	117		162	224
4400	20 amp recept., #12/2, type NM cable			10.67	.750		54	46		100	128
4420	Type MC cable			9.20	.870		63.50	53.50		117	150
4430	EMT & wire			4.21	1.900		76.50	117		193.50	258
4500	Weather-proof cover for above receptacles, add		↓	32	.250	↓	2.02	15.35		17.37	25
4550	Air conditioner outlet, 20 amp-240 volt recept.										
4560	30' of #12/2, 2 pole circuit breaker										
4570	Type NM cable	1 Elec	10	.800	Ea.	61	49			110	140
4580	Type MC cable			9	.889		72	54.50		126.50	160
4590	EMT & wire			4	2		84	123		207	275
4600	Decorator style, type NM cable			10	.800		66	49		115	146
4620	Type MC cable			9	.889		77	54.50		131.50	166
4630	EMT & wire		↓	4	2	↓	88.50	123		211.50	281
4650	Dryer outlet, 30 amp-240 volt recept., 20' of #10/3										
4660	2 pole circuit breaker										
4670	Type NM cable	1 Elec	6.41	1.248	Ea.	54.50	76.50			131	174
4680	Type MC cable			5.71	1.401		62.50	86		148.50	197
4690	EMT & wire			3.48	2.299		73	141		214	291
4700	Range outlet, 50 amp-240 volt recept., 30' of #8/3										
4710	Type NM cable	1 Elec	4.21	1.900	Ea.	82.50	117			199.50	265
4720	Type MC cable			4	2		133	123		256	330
4730	EMT & wire			2.96	2.703		105	166		271	360
4750	Central vacuum outlet, type NM cable			6.40	1.250		58	76.50		134.50	178
4770	Type MC cable			5.71	1.401		70.50	86		156.50	206
4780	EMT & wire		↓	3.48	2.299	↓	88	141		229	305
4800	30 amp-110 volt locking recept., #10/2 circ. bkr.										
4810	Type NM cable	1 Elec	6.20	1.290	Ea.	67	79			146	192
4820	Type MC cable			5.40	1.481		83	91		174	227
4830	EMT & wire		↓	3.20	2.500	↓	98	153		251	335
4900	Low voltage outlets										
4910	Telephone recept., 20' of 4/C phone wire	1 Elec	26	.308	Ea.	8.80	18.90			27.70	37.50
4920	TV recept., 20' of RG59U coax wire, F type connector	"	16	.500	"	17.60	30.50			48.10	65
4950	Door bell chime, transformer, 2 buttons, 60' of bellwire										
4970	Economy model	1 Elec	11.50	.696	Ea.	57.50	42.50			100	127
4980	Custom model			11.50	.696		111	42.50		153.50	186
4990	Luxury model, 3 buttons		↓	9.50	.842	↓	188	51.50		239.50	284
6000	Lighting outlets										
6050	Wire only (for fixture), type NM cable	1 Elec	32	.250	Ea.	5.95	15.35			21.30	29.50
6070	Type MC cable			24	.333		11.30	20.50		31.80	43
6080	EMT & wire			10	.800		20.50	49		69.50	95.50
6100	Box (4"), and wire (for fixture), type NM cable			25	.320		15.05	19.65		34.70	45.50
6120	Type MC cable			20	.400		20.50	24.50		45	59
6130	EMT & wire		↓	11	.727	↓	29.50	44.50		74	99
6200	Fixtures (use with line 6050 or 6100 above)										
6210	Canopy style, economy grade	1 Elec	40	.200	Ea.	22	12.25			34.25	43
6220	Custom grade			40	.200		53	12.25		65.25	76.50
6250	Dining room chandelier, economy grade			19	.421		82	26		108	129
6260	Custom grade			19	.421		320	26		346	395
6270	Luxury grade			15	.533		1,300	32.50		1,332.50	1,475
6310	Kitchen fixture (fluorescent), economy grade			30	.267		72.50	16.35		88.85	104
6320	Custom grade			25	.320		147	19.65		166.65	191
6350	Outdoor, wall mounted, economy grade		↓	30	.267	↓	30.50	16.35		46.85	58

26 05 Common Work Results for Electrical

26 05 90 – Residential Applications

26 05 90.10 Residential Wiring		Crew	Daily	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P	
			Output			Material	Labor	Equipment			
6360	Custom grade	1 Elec	30	.267	Ea.	119	16.35		135.35	155	
6370	Luxury grade		25	.320		247	19.65		266.65	300	
6410	Outdoor PAR floodlights, 1 lamp, 150 watt		20	.400		28	24.50		52.50	67	
6420	2 lamp, 150 watt each		20	.400		45	24.50		69.50	86	
6425	Motion sensing, 2 lamp, 150 watt each		20	.400		109	24.50		133.50	157	
6430	For infrared security sensor, add		32	.250		95	15.35		110.35	127	
6450	Outdoor, quartz-halogen, 300 watt flood		20	.400		40	24.50		64.50	81	
6600	Recessed downlight, round, pre-wired, 50 or 75 watt trim		30	.267		68	16.35		84.35	99.50	
6610	With shower light trim		30	.267		93.50	16.35		109.85	128	
6620	With wall washer trim		28	.286		94	17.55		111.55	129	
6630	With eye-ball trim		28	.286		85	17.55		102.55	120	
6700	Porcelain lamp holder		40	.200		2.76	12.25		15.01	21.50	
6710	With pull switch		40	.200		10.70	12.25		22.95	30	
6750	Fluorescent strip, 2-20 watt tube, wrap around diffuser, 24"		24	.333		45.50	20.50		66	80.50	
6760	1-34 watt tube, 48"		24	.333		122	20.50		142.50	165	
6770	2-34 watt tubes, 48"		20	.400		160	24.50		184.50	213	
6800	Bathroom heat lamp, 1-250 watt		28	.286		33.50	17.55		51.05	63	
6810	2-250 watt lamps	▼	28	.286	▼	64.50	17.55		82.05	96.50	
6820	For timer switch, see Section 26 05 90.10 line 2400										
6900	Outdoor post lamp, incl. post, fixture, 35' of #14/2		1 Elec	3.50	2.286	Ea.	325	140		465	565
6910	Type NM cable			27	.296		27	18.20		45.20	57
6920	Photo-eye, add			11.43	.700		72.50	43		115.50	144
6950	Clock dial time switch, 24 hr., w/enclosure, type NM cable			11	.727		83	44.50		127.50	158
6970	Type MC cable		★	4.85	1.649	▼	93	101		194	253
6980	EMT & wire										
7000	Alarm systems		1 Elec	14.55	.550	Ea.	33.50	33.50		67	87
7050	Smoke detectors, box, #14/3, type NM cable			12.31	.650		44	40		84	108
7070	Type MC cable										
7080	EMT & wire	▼	5	1.600		50	98		148	201	
7090	For relay output to security system, add					▼	10.25			10.25	11.25
8000	Residential equipment										
8050	Disposal hook-up, incl. switch, outlet box, 3' of flex		1 Elec	10	.800	Ea.	29	49		78	105
8060	20 amp-1 pole circ. bkr., and 25' of #12/2			8	1		39	61.50		100.50	135
8070	Type NM cable			5	1.600	▼	55	98		153	206
8080	Type MC cable										
8090	EMT & wire										
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		1 Elec	10	.800	Ea.	16.05	49		65.05	90.50
8120	Type NM cable			8	1		28	61.50		89.50	123
8130	Type MC cable	▼	5	1.600	▼	41.50	98				
8140	EMT & wire									139.50	192
8150	Hot water sink dispenser hook-up, use line 8100										
8200	Vent/exhaust fan hook-up, type NM cable		1 Elec	32	.250	Ea.	5.95	15.35		21.30	29.50
8220	Type MC cable			24	.333		11.30	20.50		31.80	43
8230	EMT & wire			10	.800	▼	20.50	49		69.50	95.50
8250	Bathroom vent fan, 50 CFM (use with above hook-up)										
8260	Economy model	1 Elec	15	.533	Ea.	18.80	32.50		51.30	69	
8270	Low noise model		15	.533		47.50	32.50		80	101	
8280	Custom model	▼	12	.667	▼	117	41		158	190	
8300	Bathroom or kitchen vent fan, 110 CFM										
8310	Economy model	1 Elec	15	.533	Ea.	66.50	32.50		99	122	
8320	Low noise model	"	15	.533	"	96.50	32.50		129	155	
8350	Paddle fan, variable speed (w/o lights)										

26 05 Common Work Results for Electrical

26 05 90 – Residential Applications

26 05 90.10 Residential Wiring	Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
						Labor	Equipment	Total		
8360 Economy model (AC motor)	1 Elec	10	.800	Ea.	136	49	185	185	222	
8362 With light kit		10	.800		176	49	225	225	266	
8370 Custom model (AC motor)		10	.800		345	49	394	394	455	
8372 With light kit		10	.800		385	49	434	434	500	
8380 Luxury model (DC motor)		8	1		315	61.50	376.50	376.50	435	
8382 With light kit		8	1		355	61.50	416.50	416.50	480	
8390 Remote speed switch for above, add		12	.667		40.50	41	81.50	81.50	106	
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.	1,375	123	1,498	1,498	1,700	
8530 Type MC cable		3.50	2.286		1,400	140	1,540	1,540	1,750	
8540 EMT & wire		3	2.667		1,425	164	1,589	1,589	1,800	
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.	129	98	227	227	288	
8630 Type MC cable		4.20	1.905		136	117	253	253	325	
8640 EMT & wire		3.40	2.353		149	144	293	293	380	
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.	29	98	127	127	178	
8670 Type MC cable		4.20	1.905		42	117	159	159	220	
8680 EMT & wire		3.40	2.353		48	144	192	192	268	
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.	57	123	180	180	246	
9070 Type MC cable		3.50	2.286		72	140	212	212	288	
9080 EMT & wire		1.50	5.333		93.50	325	418.50	418.50	590	
9100 Air conditioner hook-up, incl. local 60 amp disc. switch										
9110 3' sealite, 40 amp, 2 pole circuit breaker										
9130 40' of #8/2, type NM cable	1 Elec	3.50	2.286	Ea.	144	140	284	284	365	
9140 Type MC cable		3	2.667		212	164	376	376	475	
9150 EMT & wire		1.30	6.154		185	380	565	565	765	
9200 Heat pump hook-up, 1-40 & 1-100 amp 2 pole circ. bkr.										
9210 Local disconnect switch, 3' sealite										
9220 40' of #8/2 & 30' of #3/2										
9230 Type NM cable	1 Elec	1.30	6.154	Ea.	520	380	900	900	1,125	
9240 Type MC cable		1.08	7.407		550	455	1,005	1,005	1,275	
9250 EMT & wire		.94	8.511		535	520	1,055	1,055	1,350	
9500 Thermostat hook-up; using low voltage wire										
9520 Heating only, 25' of #18-3	1 Elec	24	.333	Ea.	6.75	20.50	27.25	27.25	38	
9530 Heating/cooling, 25' of #18-4	"	20	.400	"	8.60	24.50	33.10	33.10	46	

26 09 Instrumentation and Control for Electrical Systems

26 09 13 – Electrical Power Monitoring

26 09 13.10 Switchboard Instruments

		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P
0010	SWITCHBOARD INSTRUMENTS 3 phase, 4 wire								
0100	AC indicating, ammeter & switch	1 Elec	8	1	Ea.	2,925	61.50	2,986.50	3,325
0200	Voltmeter & switch		8	1		3,300	61.50	3,361.50	3,725
0300	Wattmeter		8	1		4,150	61.50	4,211.50	4,650
0400	AC recording, ammeter		4	2		7,375	123	7,498	8,300
0500	Voltmeter		4	2		7,375	123	7,498	8,300
0600	Ground fault protection, zero sequence		2.70	2.963		6,525	182	6,707	7,450
0700	Ground return path		2.70	2.963		6,525	182	6,707	7,450
0800	3 current transformers, 5 to 800 amp		2	4		3,025	245	3,270	3,725
0900	1,000 to 1,500 amp		1.30	6.154		4,375	380	4,755	5,350
1200	2,000 to 4,000 amp		1	8		5,150	490	5,640	6,400
1300	Fused potential transformer, maximum 600 volt		8	1		1,150	61.50	1,211.50	1,350

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.	380	56	436	505
0120	200 amp	G		8.78	.911		385	56	441	510
0200	277 volt, 100 amp	G		8.78	.911		410	56	466	535
0220	200 amp	G		8.78	.911		420	56	476	545
1100	Three phase, 120/208 volt, 100 amp	G		4.69	1.706		675	105	780	895
1120	200 amp	G		4.69	1.706		945	105	1,050	1,200
1130	400 amp	G		4.69	1.706		875	105	980	1,125
1140	800 amp	G		4.69	1.706		775	105	880	1,000
1150	1,600 amp	G		4.69	1.706		790	105	895	1,025
1200	277/480 volt, 100 amp	G		4.69	1.706		1,000	105	1,105	1,250
1220	200 amp	G		4.69	1.706		865	105	970	1,100
1230	400 amp	G		4.69	1.706		880	105	985	1,125
1240	800 amp	G		4.69	1.706		810	105	915	1,050
1250	1,600 amp	G		4.69	1.706		845	105	950	1,075
2000	Data recorder, 8 meters	G		10.97	.729		1,600	44.50	1,644.50	1,825
2100	16 meters	G		8.53	.938		3,625	57.50	3,682.50	4,075
3000	Software package, per meter, basic	G					261		261	287
3100	Premium	G					690		690	755

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.	75	70	145	187
0110	Ultrasonic ceiling mounted	G		7	1.143		105	70	175	220
0120	Dual technology ceiling mounted	G		6.50	1.231		135	75.50	210.50	261
0150	Automatic wall switches	G		24	.333		68.50	20.50	89	106
0160	Daylighting sensor, manual control, ceiling mounted	G		7	1.143		169	70	239	290
0170	Remote and dimming control with remote controller	G		6.50	1.231		202	75.50	277.50	335
0200	Passive infrared ceiling mounted	G		6.50	1.231		35	75.50	110.50	151
0400	Remote power pack	G		10	.800		35	49	84	112
0450	Photoelectric control, S.P.S.T. 120 V	G		8	1		24.50	61.50	86	119
0500	S.P.S.T. 208 V/277 V	G		8	1		28.50	61.50	90	123
0550	D.P.S.T. 120 V	G		6	1.333		207	82	289	350
0600	D.P.S.T. 208 V/277 V	G		6	1.333		234	82	316	380
0650	S.P.D.T. 208 V/277 V	G		6	1.333		219	82	301	360
0660	Daylight level sensor, wall mounted, on/off or dimming	G		8	1		168	61.50	229.50	277

26 12 Medium-Voltage Transformers

26 12 19 – Pad-Mounted, Liquid-Filled, Medium-Voltage Transformers

26 12 19.10 Transformer, Oil-Filled			Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	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.	9,875	1,875	291	12,041	14,000	
0200	300 kVA		.45	44.444		14,800	2,725	420	17,945	20,700	
0300	500 kVA		.40	50		21,900	3,050	475	25,425	29,200	
0400	750 kVA		.38	52.632		26,600	3,225	495	30,320	34,500	
0500	1,000 kVA		.26	76.923		31,500	4,700	725	36,925	42,400	
0600	1,500 kVA		.23	86.957		37,400	5,325	820	43,545	49,900	
0700	2,000 kVA		.20	100		47,200	6,100	945	54,245	62,000	
0800	3,750 kVA		.16	125		91,000	7,650	1,175	99,825	113,000	

26 22 Low-Voltage Transformers

26 22 13 – Low-Voltage Distribution Transformers

26 22 13.10 Transformer, Dry-Type

0010 TRANSFORMER, DRY-TYPE			1 Elec	2	4	Ea.	390	245	635	790
0050	Single phase, 240/480 volt primary, 120/240 volt secondary									
0100	1 kVA									
0300	2 kVA			1.60	5		700	305	1,005	1,225
0500	3 kVA					1.40	5,714		845	1,195
0700	5 kVA					1.20	6,667		1,300	410
0900	7.5 kVA		2 Elec	2.20	7,273				1,250	445
1100	10 kVA			1.60	10				1,625	615
1300	15 kVA					1.20	13,333		2,075	820
1500	25 kVA					1	16		2,475	980
1700	37.5 kVA					80	20		3,825	1,225
1900	50 kVA					70	22,857		3,125	1,400
2100	75 kVA					.65	24,615		5,225	1,500
2190	480 V primary, 120/240 V secondary, nonvent., 15 kVA					1.20	13,333		1,625	820
2200	25 kVA					.90	17,778		2,950	1,100
2210	37 kVA					.75	21,333		3,375	1,300
2220	50 kVA					.65	24,615		3,975	1,500
2300	3 phase, 480 volt primary, 120/208 volt secondary									
2310	Ventilated, 3 kVA		1 Elec	1	8	Ea.	1,225	490	1,715	2,075
2700	6 kVA			.80	10		1,225	615	1,840	2,275
2900	9 kVA					1.70	11,429		1,450	700
3100	15 kVA		2 Elec	1.10	14,545				1,900	890
3300	30 kVA					.90	17,778		1,800	1,100
3500	45 kVA					.80	20		1,850	1,225
3700	75 kVA					.70	22,857		2,500	1,400
3900	112.5 kVA	R-3	.90	22,222		4,075	1,350	210	5,635	6,725
4100	150 kVA			.85	23,529		5,000	1,450	222	6,672
4300	225 kVA			.65	30,769		8,975	1,875	291	11,141
4500	300 kVA			.55	36,364		9,325	2,225	345	11,895
4700	500 kVA			.45	44,444		18,200	2,725	420	21,345
4800	750 kVA			.35	57,143		22,100	3,500	540	26,140

26 24 Switchboards and Panelboards

26 24 13 – Switchboards

26 24 13.10 Incoming Switchboards

		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	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.	4,625	980		5,605	6,525
0400	800 amp		.88	18.182		4,625	1,125		5,750	6,725
0500	1,000 amp		.80	20		5,550	1,225		6,775	7,925
0600	1,200 amp		.72	22.222		5,550	1,375		6,925	8,125
0700	1,600 amp		.66	24.242		5,550	1,475		7,025	8,325
0800	2,000 amp		.62	25.806		6,000	1,575		7,575	8,950
1000	3,000 amp		.56	28.571		7,900	1,750		9,650	11,300
2000	Fused switch & CT compartment									
2100	120/208 volt, 4 wire, 400 amp	2 Elec	1.12	14.286	Ea.	2,700	875		3,575	4,275
2200	600 amp		.94	17.021		3,200	1,050		4,250	5,075
2300	800 amp		.84	19.048		12,500	1,175		13,675	15,600
2400	1,200 amp		.68	23.529		16,300	1,450		17,750	20,100
2900	Pressure switch & CT compartment									
3000	120/208 volt, 4 wire, 800 amp	2 Elec	.80	20	Ea.	11,200	1,225		12,425	14,200
3100	1,200 amp		.66	24.242		21,800	1,475		23,275	26,100
3200	1,600 amp		.62	25.806		23,100	1,575		24,675	27,800
3300	2,000 amp		.56	28.571		24,600	1,750		26,350	29,600
4400	Circuit breaker, molded case & CT compartment									
4600	3 pole, 4 wire, 600 amp	2 Elec	.94	17.021	Ea.	9,675	1,050		10,725	12,200
4800	800 amp		.84	19.048		11,600	1,175		12,775	14,500
5000	1,200 amp		.68	23.529		15,800	1,450		17,250	19,600
5100	Copper bus bars, not incl. CT's or PT's, add, minimum						15%			

26 24 13.30 Distribution Switchboards Section

		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	Total	Total Incl O&P
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.	1,425	890		2,315	2,900
0200	600 amp		1	16		1,700	980		2,680	3,325
0300	800 amp		.88	18.182		2,175	1,125		3,300	4,050
0400	1,000 amp		.80	20		2,500	1,225		3,725	4,575
0500	1,200 amp		.72	22.222		2,950	1,375		4,325	5,275
0600	1,600 amp		.66	24.242		4,400	1,475		5,875	7,075
0700	2,000 amp		.62	25.806		5,500	1,575		7,075	8,400
0800	2,500 amp		.60	26.667		5,950	1,625		7,575	8,975
0900	3,000 amp		.56	28.571		7,850	1,750		9,600	11,300
0950	4,000 amp		.52	30.769		7,875	1,900		9,775	11,500

26 24 13.40 Switchboards Feeder Section

		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	Total	Total Incl O&P
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.	130	61.50		191.50	235
0280	FA frame, 70 to 100 amp, 240 volt, 1 pole		7	1.143		229	70		299	355
0420	KA frame, 70 to 225 amp		3.20	2.500		1,525	153		1,678	1,900
0430	LA frame, 125 to 400 amp		2.30	3.478		3,900	213		4,113	4,625
0460	MA frame, 450 to 600 amp		1.60	5		6,200	305		6,505	7,275
0470	700 to 800 amp		1.30	6.154		8,075	380		8,455	9,425
0480	MAL frame, 1,000 amp		1	8		8,375	490		8,865	9,950
0490	PA frame, 1,200 amp		.80	10		17,000	615		17,615	19,600
0500	Branch circuit, fusible switch, 600 volt, double 30/30 amp		4	2		855	123		978	1,125
0550	60/60 amp		3.20	2.500		875	153		1,028	1,200
0600	100/100 amp		2.70	2.963		1,100	182		1,282	1,500

26 24 Switchboards and Panelboards

26 24 13 – Switchboards

26 24 13.40 Switchboards Feeder Section

			Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Ind O&P
0650	Single, 30 amp		1 Elec	5.30	1.509	Ea.	790	92.50	882.50	1,000
0700	60 amp			4.70	1.702		815	104	919	1,050
0750	100 amp			4	2		1,300	123	1,423	1,625
0800	200 amp			2.70	2.963		1,350	182	1,532	1,750
0850	400 amp			2.30	3.478		2,475	213	2,688	3,050
0900	600 amp			1.80	4.444		3,025	273	3,298	3,725
0950	800 amp			1.30	6.154		5,075	380	5,455	6,125
1000	1,200 amp		↓	.80	10	↓	5,800	615	6,415	7,325

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	1 Elec	10	.800	Ea.	18.60	49		67.60	93.50
0100	15-50 amp		8	1		20.50	61.50		82	114
0200	60 amp		↓	8	1	↓	28	61.50	89.50	122
0300	70 amp									
0350	240 volt, 2 pole	1 Elec	8	1	Ea.	56.50	61.50		118	154
0400	15-50 amp		7.50	1.067		37.50	65.50		103	139
0500	60 amp		5	1.600		111	98		209	268
0600	80-100 amp		6.20	1.290		135	79		214	267
0700	3 pole, 15-60 amp		5	1.600		172	98		270	335
0800	70 amp		3.60	2.222		205	136		341	430
0900	80-100 amp		2.70	2.963		555	182		737	880
1000	22,000 amp I.C., 240 volt, 2 pole, 70-225 amp		2.30	3.478		345	213		558	695
1100	3 pole, 70-225 amp		8	1		37	61.50		98.50	133
1200	14,000 amp I.C., 277 volts, 1 pole, 15-30 amp		2.70	2.963		525	182		707	845
1300	22,000 amp I.C., 480 volts, 2 pole, 70-225 amp		2.30	3.478		1,050	213		1,263	1,475
1400	3 pole, 70-225 amp									

26 24 16.30 Panelboards Commercial Applications

0010 PANELBOARDS COMMERCIAL APPLICATIONS

0050	NQOD, w/20 amp 1 pole bolt-on circuit breakers	1 Elec	1	8	Ea.	935	490		1,425	1,750
0100	3 wire, 120/240 volts, 100 amp main lugs		.88	9.091		1,050	560		1,610	1,975
0150	10 circuits		.75	10.667		1,150	655		1,805	2,225
0200	14 circuits		↓	.65	12.308		1,275	755	2,030	2,550
0250	18 circuits	2 Elec	1.20	13.333		1,450	820		2,270	2,825
0300	20 circuits									
0350	225 amp main lugs, 24 circuits		.90	17.778		1,675	1,100		2,775	3,475
0400	30 circuits		.80	20		1,925	1,225		3,150	3,925
0450	36 circuits		.72	22.222		2,075	1,375		3,450	4,325
0500	38 circuits		↓	.66	24.242		2,150	1,475	3,625	4,575
0550	42 circuits									
0600	4 wire, 120/208 volts, 100 amp main lugs, 12 circuits	1 Elec	1	8		1,025	490		1,515	1,850
0650	16 circuits		.75	10.667		1,175	655		1,830	2,250
0700	20 circuits		↓	.65	12.308		1,350	755	2,105	2,600
0750	24 circuits			.60	13.333		1,275	820	2,095	2,625
0800	30 circuits		↓	.53	15.094		1,675	925	2,600	3,225
0850	225 amp main lugs, 32 circuits	2 Elec	.90	17.778		1,875	1,100		2,975	3,700
0900	34 circuits		.84	19.048		1,925	1,175		3,100	3,850
0950	36 circuits		↓	.80	20		1,975	1,225	3,200	3,975
1000	42 circuits			.68	23.529		2,200	1,450	3,650	4,575
1010	400 amp main lugs, 42 circs	↓	.68	23.529	↓	2,200	1,450		3,650	4,575
1200	NEHB, w/20 amp, 1 pole bolt-on circuit breakers	1 Elec	.88	9.091	Ea.	1,475	560		2,035	2,450
1250	4 wire, 277/480 volts, 100 amp main lugs, 12 circuits									

26 24 Switchboards and Panelboards

26 24 16 – Panelboards

26 24 16.30 Panelboards Commercial Applications				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P	
				Crew			Labor	Equipment	Total	Incl O&P	
1300	20 circuits			1 Elec	.60	13.333	Ea.	2,200	820	3,020	3,650
1350	225 amp main lugs, 24 circuits			2 Elec	.90	17.778		2,500	1,100	3,600	4,375
1400	30 circuits				.80	20		2,975	1,225	4,200	5,100
1448	32 circuits				4.90	3.265		3,475	200	3,675	4,100
1450	36 circuits							3,475	1,375	4,850	5,825
1600	NQOD 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.	1,275	615	1,890	2,325
1750	20 circuits			"	.60	13.333		1,625	820	2,445	3,000
1800	225 amp main, 30 circuits			2 Elec	.68	23.529		3,050	1,450	4,500	5,500
1801	225 amp main, 32 circuits				.5	3.200		3,050	196	3,246	3,650
1850	42 circuits				.52	30.769		3,525	1,900	5,425	6,675
1900	400 amp main, 30 circuits				.54	29.630		4,225	1,825	6,050	7,350
1950	42 circuits				.50	32		4,725	1,975	6,700	8,125
2000	4 wire, 120/208 volts with main circuit breaker										
2050	100 amp main, 24 circuits			1 Elec	.47	17.021	Ea.	1,825	1,050	2,875	3,575
2100	30 circuits			"	.40	20		2,125	1,225	3,350	4,175
2200	225 amp main, 32 circuits			2 Elec	.72	22.222		3,550	1,375	4,925	5,950
2250	42 circuits				.56	28.571		4,125	1,750	5,875	7,125
2300	400 amp main, 42 circuits				.48	33.333		5,225	2,050	7,275	8,800
2350	600 amp main, 42 circuits				.40	40		7,725	2,450	10,175	12,200
2400	NEHB, with 20 amp, 1 pole circuit breaker										
2450	4 wire, 277/480 volts with main circuit breaker			1 Elec	.42	19.048	Ea.	2,875	1,175	4,050	4,900
2500	100 amp main, 24 circuits			"	.38	21.053		3,350	1,300	4,650	5,625
2550	30 circuits			2 Elec	.72	22.222		4,200	1,375	5,575	6,650
2600	225 amp main, 30 circuits			"	.56	28.571		5,175	1,750	6,925	8,300

26 24 19 – Motor-Control Centers

26 24 19.40 Motor Starters and Controls

0010 MOTOR STARTERS AND CONTROLS				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P	
				Crew			Labor	Equipment	Total	Incl O&P	
0050	Magnetic, FVNR, with enclosure and heaters, 480 volt			1 Elec	3.50	2.286	Ea.	196	140	336	425
0080	2 HP, size 00			"	2.30	3.478		345	213	558	700
0100	5 HP, size 0				1.60	5		262	305	567	745
0200	10 HP, size 1			2 Elec	2.20	7.273		490	445	935	1,200
0300	25 HP, size 2				1.80	8.889		800	545	1,345	1,700
0400	50 HP, size 3				1.20	13.333		1,775	820	2,595	3,175
0500	100 HP, size 4										
0600	200 HP, size 5				.90	17.778		4,150	1,100	5,250	6,200
0700	Combination, with motor circuit protectors, 5 HP, size 0			1 Elec	1.80	4.444		985	273	1,258	1,475
0800	10 HP, size 1			"	1.30	6.154		1,025	380	1,405	1,675
0900	25 HP, size 2			2 Elec	2	8		1,425	490	1,915	2,300
1000	50 HP, size 3				1.32	12.121		2,075	745	2,820	3,375
1200	100 HP, size 4				.80	20		4,450	1,225	5,675	6,725
1400	Combination, with fused switch, 5 HP, size 0			1 Elec	1.80	4.444		590	273	863	1,050
1600	10 HP, size 1			"	1.30	6.154		630	380	1,010	1,250
1800	25 HP, size 2			2 Elec	2	8		1,025	490	1,515	1,850
2000	50 HP, size 3				1.32	12.121		1,725	745	2,470	3,000
2200	100 HP, size 4				.80	20		3,025	1,225	4,250	5,150

26 25 Low-Voltage Enclosed Bus Assemblies

26 25 13 – Low-Voltage Busways

26 25 13.40 Copper Bus Duct	Description	Crew	Daily	Labor-	Unit	2020 Bare Costs			Total	Total
			Output	Hours		Material	Labor	Equipment		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.	222	24.50		246.50	282
1000 400 amp			32	.500		385	30.50		415.50	470
1500 600 amp			26	.615		455	38		493	555
2400 800 amp			20	.800		620	49		669	755
2450 1,000 amp			18	.889		305	54.50		359.50	415
2500 1,350 amp			16	1		415	61.50		476.50	550
2510 1,600 amp			12	1.333		470	82		552	640
2520 2,000 amp			10	1.600		595	98		693	800
2550 Feeder, 600 amp			28	.571		204	35		239	276
2600 800 amp			22	.727		755	44.50		799.50	895
2700 1,000 amp			20	.800		905	49		954	1,075
2800 1,350 amp			18	.889		390	54.50		444.50	505
2900 1,600 amp			14	1.143		1,450	70		1,520	1,700
3000 2,000 amp			12	1.333		1,800	82		1,882	2,100
3100 Elbows, 225 amp			4	4	Ea.	1,575	245		1,820	2,125
3200 400 amp			3.60	4.444		1,575	273		1,848	2,150
3300 600 amp			3.20	5		1,575	305		1,880	2,200
3400 800 amp			2.80	5.714		1,725	350		2,075	2,425
3500 1,000 amp			2.60	6.154		1,925	380		2,305	2,650
3600 1,350 amp			2.40	6.667		1,900	410		2,310	2,675
3700 1,600 amp			2.20	7.273		2,075	445		2,520	2,950
3800 2,000 amp			1.80	8.889		2,550	545		3,095	3,600
4000 End box, 225 amp			34	.471		171	29		200	231
4100 400 amp			32	.500		189	30.50		219.50	254
4200 600 amp			28	.571		189	35		224	260
4300 800 amp			26	.615		189	38		227	264
4400 1,000 amp			24	.667		181	41		222	260
4500 1,350 amp			22	.727		180	44.50		224.50	265
4600 1,600 amp			20	.800		180	49		229	271
4700 2,000 amp			18	.889		221	54.50		275.50	325
4800 Cable tap box end, 225 amp			3.20	5		1,225	305		1,530	1,800
5000 400 amp			2.60	6.154		1,225	380		1,605	1,875
5100 600 amp			2.20	7.273		1,625	445		2,070	2,450
5200 800 amp			2	8		1,775	490		2,265	2,675
5300 1,000 amp			1.60	10		1,725	615		2,340	2,825
5400 1,350 amp			1.40	11.429		2,200	700		2,900	3,475
5500 1,600 amp			1.20	13.333		2,475	820		3,295	3,950
5600 2,000 amp			1	16		2,775	980		3,755	4,500
5700 Switchboard stub, 225 amp			5.40	2.963		1,225	182		1,407	1,625
5800 400 amp			4.60	3.478		1,300	213		1,513	1,750
5900 600 amp			4	4		1,375	245		1,620	1,900
6000 800 amp			3.20	5		1,675	305		1,980	2,275
6100 1,000 amp			3	5.333		1,950	325		2,275	2,600
6200 1,350 amp			2.60	6.154		2,400	380		2,780	3,200
6300 1,600 amp			2.40	6.667		2,700	410		3,110	3,575
6400 2,000 amp			2	8		3,275	490		3,765	4,325
6490 Tee fittings, 225 amp			2.40	6.667		2,275	410		2,685	3,100
6500 400 amp			2	8		2,275	490		2,765	3,225
6600 600 amp			1.80	8.889		2,275	545		2,820	3,300
6700 800 amp			1.60	10		2,350	615		2,965	3,500
6800 1,350 amp			1.20	13.333		3,075	820		3,895	4,600
7000 1,600 amp			1	16		3,475	980		4,455	5,275

26 25 Low-Voltage Enclosed Bus Assemblies

26 25 13 – Low-Voltage Busways

26 25 13.40 Copper Bus Duct		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
		Crew		Unit		Labor	Equipment		
7100	2,000 amp	2 Elec	.80	20	Ea.	4,125	1,225		5,350 6,375
7200	Plugin fusible switches w/3 fuses, 600 volt, 3 pole, 30 amp	1 Elec	4	2		885	123		1,008 1,150
7300	60 amp		3.60	2.222		990	136		1,126 1,300
7400	100 amp		2.70	2.963		1,425	182		1,607 1,825
7500	200 amp	2 Elec	3.20	5		2,500	305		2,805 3,200
7600	400 amp		1.40	11.429		7,075	700		7,775 8,825
7700	600 amp		.90	17.778		8,400	1,100		9,500 10,900
7800	800 amp		.66	24.242		12,800	1,475		14,275 16,300
7900	1,200 amp		.50	32		24,100	1,975		26,075 29,400
8000	Plugin circuit breakers, molded case, 15 to 50 amp	1 Elec	4.40	1.818		835	112		947 1,075
8100	70 to 100 amp	"	3.10	2.581		930	158		1,088 1,250
8200	150 to 225 amp	2 Elec	3.40	4.706		2,525	289		2,814 3,200
8300	250 to 400 amp		1.40	11.429		4,425	700		5,125 5,900
8400	500 to 600 amp		1	16		5,950	980		6,930 8,000
8500	700 to 800 amp		.64	25		7,350	1,525		8,875 10,400
8600	900 to 1,000 amp		.56	28.571		10,500	1,750		12,250 14,200
8700	1,200 amp		.44	36.364		12,600	2,225		14,825 17,200

26 27 Low-Voltage Distribution Equipment

26 27 16 – Electrical Cabinets and Enclosures

26 27 16.10 Cabinets

0010 CABINETS		1 Elec	1.60	5	Ea.	172	305		477 645
7000	Cabinets, current transformer		1.30	6.154		165	380		545 740
7050	Single door, 24" H x 24" W x 10" D		1.10	7.273		410	445		855 1,125
7100	30" H x 24" W x 10" D		1	8		226	490		716 980
7150	36" H x 24" W x 10" D		.90	8.889		299	545		844 1,150
7200	30" H x 30" W x 10" D		.80	10		310	615		925 1,250
7250	36" H x 30" W x 10" D		.60	13.333		575	820		1,395 1,850
7300	36" H x 36" W x 10" D		1	8		190	490		680 940

26 27 23 – Indoor Service Poles

26 27 23.40 Surface Raceway

0010 SURFACE RACEWAY		1 Elec	100	.080	L.F.	1.30	4.91		6.21 8.75
0090	Metal, straight section		100	.080		1.41	4.91		6.32 8.85
0100	No. 500		90	.089		2.44	5.45		7.89 10.80
0110	No. 700		90	.089		2.60	5.45		8.05 10.95
0400	No. 1500, small pancake		75	.107		4.85	6.55		11.40 15.10
0600	No. 2000, base & cover, blank		65	.123		7.90	7.55		15.45 19.95
0800	No. 3000, base & cover, blank		50	.160		13.85	9.80		23.65 30
1000	No. 4000, base & cover, blank		40	.200	Ea.	2.34	12.25		14.59 21
1200	No. 6000, base & cover, blank		40	.200		4.23	12.25		16.48 23
2400	Fittings, elbows, No. 500		42	.190		4.19	11.70		15.89 22
2800	Elbow cover, No. 2000		27	.296		13.65	18.20		31.85 42
2880	Tee, No. 500		16	.500		14.85	30.50		45.35 62
2900	No. 2000		16	.500		17.55	30.50		48.05 65
3000	Switch box, No. 500		16	.500		11.55	30.50		42.05 58
3400	Telephone outlet, No. 1500		16	.500					
3600	Junction box, No. 1500		16	.500					
3800	Plugmold wired sections, No. 2000		16	.500					

26 27 Low-Voltage Distribution Equipment

26 27 23 – Indoor Service Poles

26 27 23.40 Surface Raceway		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare	Costs Equipment	Total	Total Incl O&P
4000	1 circuit, 6 outlets, 3' long	1 Elec	8	1	Ea.	45	61.50		106.50	141
4100	2 circuits, 8 outlets, 6' long	"	5.30	1.509	"	65.50	92.50		158	210

26 27 26 – Wiring Devices

26 27 26.10 Low Voltage Switching

0010 LOW VOLTAGE SWITCHING		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare	Costs Equipment	Total	Total Incl O&P
3600	Relays, 120 V or 277 V standard	1 Elec	12	.667	Ea.	44	41		85	110
3800	Flush switch, standard		40	1.200		13.45	12.25		25.70	33
4000	Interchangeable		40	.200		17.55	12.25		29.80	37.50
4100	Surface switch, standard		40	.200		8.35	12.25		20.60	27.50
4200	Transformer 115 V to 25 V		12	.667		128	41		169	202
4400	Master control, 12 circuit, manual		4	2		139	123		262	335
4500	25 circuit, motorized		4	2		161	123		284	360
4600	Rectifier, silicon		12	.667		50.50	41		91.50	117
4800	Switchplates, 1 gang, 1, 2 or 3 switch, plastic		80	.100		5.25	6.15		11.40	14.95
5000	Stainless steel		80	.100		11.35	6.15		17.50	21.50
5400	2 gang, 3 switch, stainless steel		53	.151		23.50	9.25		32.75	40
5500	4 switch, plastic		53	.151		10.35	9.25		19.60	25
5800	3 gang, 9 switch, stainless steel		32	.250		67.50	15.35		82.85	97

26 27 26.20 Wiring Devices Elements

0010 WIRING DEVICES ELEMENTS		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare	Costs Equipment	Total	Total Incl O&P
0200	Toggle switch, quiet type, single pole, 15 amp	1 Elec	40	.200	Ea.	.52	12.25		12.77	18.80
0600	3 way, 15 amp		23	.348		1.83	21.50		23.33	34
0900	4 way, 15 amp		15	.533		10.60	32.50		43.10	60
1650	Dimmer switch, 120 volt, incandescent, 600 watt, 1 pole	G	16	.500		22.50	30.50		53	70.50
2460	Receptacle, duplex, 120 volt, grounded, 15 amp		40	.200		1.62	12.25		13.87	20
2470	20 amp		27	.296		10.65	18.20		28.85	39
2490	Dryer, 30 amp		15	.533		4.55	32.50		37.05	53.50
2500	Range, 50 amp		11	.727		11.20	44.50		55.70	79
2600	Wall plates, stainless steel, 1 gang		80	.100		2.57	6.15		8.72	12
2800	2 gang		53	.151		4.38	9.25		13.63	18.60
3200	Lampholder, keyless		26	.308		19.35	18.90		38.25	49.50
3400	Pullchain with receptacle		22	.364		23	22.50		45.50	58

26 27 73 – Door Chimes

26 27 73.10 Doorbell System

0010 DOORBELL SYSTEM, incl. transformer, button & signal		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare	Costs Equipment	Total	Total Incl O&P
0100	6" bell	1 Elec	4	2	Ea.	158	123		281	355
0200	Buzzer	"	4	2	"	127	123		250	320

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)		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare	Costs Equipment	Total	Total Incl O&P
0100	Enclosed (NEMA 1), 600 volt, 3 pole, 30 amp	1 Elec	3.20	2.500	Ea.	530	153		683	810
0200	60 amp		2.80	2.857		645	175		820	965
0400	100 amp		2.30	3.478		735	213		948	1,125
0500	200 amp		1.50	5.333		1,875	325		2,200	2,550
0600	225 amp		1.50	5.333		1,700	325		2,025	2,350
0700	400 amp	2 Elec	1.60	10		2,900	615		3,515	4,125
0800	600 amp		1.20	13.333		4,200	820		5,020	5,850
1000	800 amp		.94	17.021		5,475	1,050		6,525	7,575

26 28 Low-Voltage Circuit Protective Devices

26 28 16 – Enclosed Switches and Circuit Breakers

26 28 16.20 Safety Switches			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P
		Crew				Labor	Equipment		
0010	SAFETY SWITCHES								
0100	General duty 240 volt, 3 pole NEMA 1, fusible, 30 amp		1 Elec	3.20	2,500	Ea.	59.50	153	212.50
0200	60 amp			2.30	3,478		102	213	315
0300	100 amp			1.90	4,211		175	258	433
0400	200 amp		↓	1.30	6,154		375	380	755
0500	400 amp		2 Elec	1.80	8,889		985	545	1,530
0600	600 amp		"	1.20	13,333	▼	1,925	820	2,745
2900	Heavy duty, 240 volt, 3 pole NEMA 1 fusible								3,325
2910	30 amp		1 Elec	3.20	2,500	Ea.	102	153	255
3000	60 amp			2.30	3,478		170	213	383
3300	100 amp			1.90	4,211		263	258	521
3500	200 amp		↓	1.30	6,154		455	380	835
3700	400 amp		2 Elec	1.80	8,889		1,225	545	1,770
3900	600 amp		"	1.20	13,333	▼	1,900	820	2,720

26 29 Low-Voltage Controllers

26 29 13 – Enclosed Controllers

26 29 13.20 Control Stations

26 29 13.20 Control Stations			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P
		Crew				Labor	Equipment		
0010	CONTROL STATIONS								
0050	NEMA 1, heavy duty, stop/start		1 Elec	.8	1	Ea.	153	61.50	214.50
0100	Stop/start, pilot light			6.20	1,290		208	79	287
0200	Hand/off/automatic			6.20	1,290		113	79	192
0400	Stop/start/reverse		↓	5.30	1,509	▼	206	92.50	298.50

26 32 Packaged Generator Assemblies

26 32 13 – Engine Generators

26 32 13.13 Diesel-Engine-Driven Generator Sets

26 32 13.13 Diesel-Engine-Driven Generator Sets			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P
		Crew				Labor	Equipment		
0010	DIESEL-ENGINE-DRIVEN GENERATOR SETS								
2000	Diesel engine, including battery, charger,								
2010	muffler, & day tank, 30 kW	R-3	.55	36,364	Ea.	11,200	2,225	345	13,770
2100	50 kW		.42	47,619		21,800	2,900	450	25,150
2200	75 kW		.35	57,143		25,300	3,500	540	29,340
2300	100 kW		.31	64,516		27,600	3,950	610	32,160
2400	125 kW		.29	68,966		29,000	4,225	650	33,875
2500	150 kW		.26	76,923		45,800	4,700	725	51,225
2501	Generator set, dsl eng in alum encd, incl btry, chgr, muf & day tank, 150 kW		.26	76,923		41,500	4,700	725	46,925
2600	175 kW		.25	80		48,900	4,900	755	54,555
2700	200 kW		.24	83,333		49,900	5,100	790	55,790
2800	250 kW		.23	86,957		52,500	5,325	820	58,645
2900	300 kW		.22	90,909		58,000	5,550	860	64,410
3000	350 kW		.20	100		67,000	6,100	945	74,045
3100	400 kW		.19	105		78,000	6,425	995	85,420
3200	500 kW		↓	.18	111	↓	106,500	6,800	114,350

26 32 Packaged Generator Assemblies

26 32 13 – Engine Generators

		Daily Output	Labor Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
26 32 13.16 Gas-Engine-Driven Generator Sets									
0010	GAS-ENGINE-DRIVEN GENERATOR SETS								
0020	Gas or gasoline operated, includes battery, charger, & muffler								
0200	7.5 kW	R-3	.83	24.096	Ea.	8,750	1,475	228	10,453
0300	11.5 kW		.71	28.169		12,400	1,725	266	14,391
0400	20 kW		.63	31.746		14,600	1,950	300	16,850
0500	35 kW		.55	36.364		17,400	2,225	345	19,970
0600	80 kW	R-13	.40	105		28,500	6,225	590	35,315
0700	100 kW		.33	127		31,200	7,550	715	39,465
0800	125 kW		.28	150		64,000	8,900	845	73,745
0900	185 kW		.25	168		84,500	9,950	945	95,395
									109,000

26 33 Battery Equipment

26 33 43 – Battery Chargers

26 33 43.55 Electric Vehicle Charging

		G	R-1A	15.36	1.042	Ea.	1,975	57.50	2,032.50	2,250
0010	ELECTRIC VEHICLE CHARGING									
0020	Level 2, wall mounted									
2200	Heavy duty	G	R-1A	15.36	1.042	Ea.	1,975	57.50	2,032.50	2,250
2210	with RFID						3,875	72	3,947	4,375
2300	Free standing, single connector	G	R-1A	12.29	1.302		2,000	86.50	2,086.50	2,325
2310	with RFID						4,600	101	4,701	5,200
2320	Double connector	G	R-1A	10.24	1.563		3,700	115	3,815	4,225
2330	with RFID	G	R-1A	8.78	1.822		7,825	129	7,954	8,800

26 35 Power Filters and Conditioners

26 35 13 – Capacitors

26 35 13.10 Capacitors Indoor

		1 Elec	2.70	2.963	Ea.	600	182	782	930
0010	CAPACITORS INDOOR								
0020	240 volts, single & 3 phase, 0.5 kVAR								
0100	1.0 kVAR			2.70	2.963		725	182	907
0150	2.5 kVAR			2	4		815	245	1,060
0200	5.0 kVAR			1.80	4.444		795	273	1,068
0250	7.5 kVAR			1.60	5		1,625	305	1,930
0300	10 kVAR			1.50	5.333		1,750	325	2,075
0350	15 kVAR			1.30	6.154		2,075	380	2,455
0400	20 kVAR			1.10	7.273		2,850	445	3,295
0450	25 kVAR			1	8		3,350	490	3,840
1000	480 volts, single & 3 phase, 1 kVAR			2.70	2.963		545	182	727
1050	2 kVAR			2.70	2.963		630	182	812
1100	5 kVAR			2	4		795	245	1,040
1150	7.5 kVAR			2	4		855	245	1,100
1200	10 kVAR			2	4		1,200	245	1,445
1250	15 kVAR			2	4		1,525	245	1,770
1300	20 kVAR			1.60	5		1,600	305	1,905
1350	30 kVAR			1.50	5.333		1,575	325	1,900
1400	40 kVAR			1.20	6.667		2,275	410	2,685
1450	50 kVAR			1.10	7.273		2,875	445	3,320
									3,850

26 51 Interior Lighting

26 51 13 – Interior Lighting Fixtures, Lamps, and Ballasts

26 51 13.50 Interior Lighting Fixtures		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
						Labor	Equipment		
0010	INTERIOR LIGHTING FIXTURES Including lamps, mounting hardware and connections								
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.	53.50	86	139.50	187
0210	1' W x 4' L, three 40 watt		5.40	1.481		60.50	91	151.50	202
0300	2' W x 2' L, two U40 watt		5.70	1.404		57.50	86	143.50	191
0400	2' W x 4' L, two 40 watt		5.30	1.509		56	92.50	148.50	200
0500	2' W x 4' L, three 40 watt		5	1.600		62	98	160	214
0600	2' W x 4' L, four 40 watt	1 Elec	4.70	1.702		64.50	104	168.50	226
0700	4' W x 4' L, four 40 watt	2 Elec	6.40	2.500		294	153	447	555
0800	4' W x 4' L, six 40 watt		6.20	2.581		310	158	468	575
0900	4' W x 4' L, eight 40 watt		5.80	2.759		350	169	519	635
0910	Acrylic lens, 1' W x 4' L, two 32 watt T8	G	1 Elec	5.70	1.404	76	86	162	212
0930	2' W x 2' L, two U32 watt T8	G		5.70	1.404	115	86	201	255
0940	2' W x 4' L, two 32 watt T8	G		5.30	1.509	87	92.50	179.50	234
0950	2' W x 4' L, three 32 watt T8	G		5	1.600	80.50	98	178.50	235
0960	2' W x 4' L, four 32 watt T8	G		4.70	1.702	75	104	179	238
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.	68.50	70	138.50	180
1110	1' W x 4' L, three 40 watt		6.70	1.194		71	73.50	144.50	187
1200	2' W x 2' L, two U40 watt		7	1.143		73.50	70	143.50	185
1300	2' W x 4' L, two 40 watt		6.20	1.290		83.50	79	162.50	210
1400	2' W x 4' L, three 40 watt		5.70	1.404		85	86	171	222
1500	2' W x 4' L, four 40 watt		5.30	1.509		87	92.50	179.50	234
1501	2' W x 4' L, six 40 watt T8		5.20	1.538		87	94.50	181.50	237
1600	4' W x 4' L, four 40 watt	2 Elec	7.20	2.222		430	136	566	680
1700	4' W x 4' L, six 40 watt		6.60	2.424		465	149	614	735
1800	4' W x 4' L, eight 40 watt		6.20	2.581		485	158	643	770
1900	2' W x 8' L, four 40 watt		6.40	2.500		171	153	324	415
2000	2' W x 8' L, eight 40 watt		6.20	2.581		184	158	342	440
2100	Strip fixture								
2130	Surface mounted								
2200	4' long, one 40 watt, RS	1 Elec	8.50	.941	Ea.	31.50	57.50	89	121
2300	4' long, two 40 watt, RS		8	1		49	61.50	110.50	146
2400	4' long, one 40 watt, SL		8	1		54	61.50	115.50	151
2500	4' long, two 40 watt, SL		7	1.143		73	70	143	185
2600	8' long, one 75 watt, SL	2 Elec	13.40	1.194		57.50	73.50	131	172
2700	8' long, two 75 watt, SL		"	12.40	1.290	71	79	150	196
2800	4' long, two 60 watt, HO	1 Elec	6.70	1.194		112	73.50	185.50	232
2900	8' long, two 110 watt, HO	2 Elec	10.60	1.509		110	92.50	202.50	259
2950	High bay pendant mounted, 16" W x 4' L, four 54 watt, T5HO	G		8.90	1.798	298	110	408	495
2952	2' W x 4' L, six 54 watt, T5HO	G		8.50	1.882	305	115	420	505
2954	2' W x 4' L, six 32 watt, T8	G		8.50	1.882	178	115	293	370
3000	Strip, pendent mounted, industrial, white porcelain enamel								
3100	4' long, two 40 watt, RS	1 Elec	5.70	1.404	Ea.	53	86	139	186
3200	4' long, two 60 watt, HO		"	5	1.600	82.50	98	180.50	237
3300	8' long, two 75 watt, SL	2 Elec	8.80	1.818		101	112	213	277
3400	8' long, two 110 watt, HO		8	2		130	123	253	325
3470	Troffer, air handling, 2' W x 4' L with four 32 watt T8	G	1 Elec	4	2	119	123	242	315
3480	2' W x 2' L with two U32 watt T8	G		5.50	1.455	110	89	199	254
3490	Air connector insulated, 5" diameter			20	1.400	69.50	24.50	94	113

26 51 Interior Lighting

26 51 13 - Interior Lighting Fixtures, Lamps, and Ballasts

26 51 13.50 Interior Lighting Fixtures

		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P	
							Labor	Equipment		
3500	6" diameter		1 Elec	.20	.400	Ea.	68.50	24.50	93	112
3510	Troffer parabolic lay-in, 1' W x 4' L with one 32 W T8	G		5.70	1.404		119	86	205	259
3520	1' W x 4' L with two 32 W T8	G		5.30	1.509		141	92.50	233.50	293
3525	2' W x 2' L with two U32 W T8	G		5.70	1.404		124	86	210	264
3530	2' W x 4' L with three 32 W T8	G		5	1.600		132	98	230	291
3531	Intr fxit, fluor, troffer prismatic lay-in, 2' W x 4' L w/three 32 W T8			5	1.600		152	98	250	315
4450	Incandescent, high hat can, round alzak reflector, prewired									
4470	100 watt		1 Elec	8	1	Ea.	68	61.50	129.50	166
4480	150 watt			8	1		104	61.50	165.50	206
4500	300 watt			6.70	1.194		241	73.50	314.50	375
4600	Square glass lens with metal trim, prewired									
4630	100 watt		1 Elec	6.70	1.194	Ea.	55.50	73.50	129	170
4680	150 watt			6.70	1.194		97.50	73.50	171	216
4700	200 watt			6.70	1.194		97.50	73.50	171	216
4800	300 watt			5.70	1.404		146	86	232	288
4900	Ceiling/wall, surface mounted, metal cylinder, 75 watt			10	.800		51.50	49	100.50	130
4920	150 watt			10	.800		89	49	138	171
5200	Ceiling, surface mounted, opal glass drum									
5300	8", one 60 watt lamp		1 Elec	10	.800	Ea.	67	49	116	147
5400	10", two 60 watt lamps			8	1		74.50	61.50	136	174
5500	12", four 60 watt lamps			6.70	1.194		104	73.50	177.50	223
6010	Vapor tight, incandescent, ceiling mounted, 200 watt			6.20	1.290		78.50	79	157.50	205
6100	Fluorescent, surface mounted, 2 lamps, 4' L, RS, 40 watt			3.20	2.500		119	153	272	360
6850	Vandalproof, surface mounted, fluorescent, two 32 watt T8	G		3.20	2.500		278	153	431	535
6860	Incandescent, one 150 watt			8	1		94.50	61.50	156	196
7500	Ballast replacement, by weight of ballast, to 15' high									
7520	Indoor fluorescent, less than 2 lb.		1 Elec	10	.800	Ea.	25	49	74	101
7540	Two 40W, watt reducer, 2 to 5 lb.			9.40	.851		71.50	52	123.50	156
7560	Two F96 slimline, over 5 lb.			8	1		111	61.50	172.50	214
7580	Vaporite ballast, less than 2 lb.			9.40	.851		25	52	77	105
7600	2 lb. to 5 lb.			8.90	.899		71.50	55	126.50	161
7620	Over 5 lb.			7.60	1.053		111	64.50	175.50	218
7630	Electronic ballast for two tubes			8	1		41.50	61.50	103	137
7640	Dimmable ballast one-lamp	G		8	1		105	61.50	166.50	208
7650	Dimmable ballast two-lamp	G		7.60	1.053		108	64.50	172.50	215

26 51 13.55 Interior LED Fixtures

	INTERIOR LED FIXTURES Incl. lamps and mounting hardware	G	1 Elec	8	1	Ea.	340	61.50	401.50	465
0100	Downlight, recess mounted, 7.5" diameter, 25 watt	G								
0120	10" diameter, 36 watt	G		8	1		360	61.50	421.50	485
0160	cylinder, 10 watts	G		8	1		104	61.50	165.50	206
0180	20 watts	G		8	1		135	61.50	196.50	241
1000	Troffer, recess mounted, 2' x 4', 3,200 lumens	G		5.30	1.509		138	92.50	230.50	290
1010	4,800 lumens	G		5	1.600		150	98	248	310
1020	6,400 lumens	G		4.70	1.702		189	104	293	365
1100	Troffer retrofit lamp, 38 watt	G		21	.381		63.50	23.50	87	105
1110	60 watt	G		20	.400		156	24.50	180.50	208
1120	100 watt	G		18	.444		140	27.50	167.50	195
1200	Troffer, volumetric recess mounted, 2' x 2'	G		5.70	1.404		345	86	431	510
2000	Strip, surface mounted, one light bar 4' long, 3,500 K	G		8.50	.941		305	57.50	362.50	425
2010	5,000 K	G		8	1		265	61.50	326.50	385
2020	Two light bar 4' long, 5,000 K	G		7	1.143		415	70	485	565
3000	Linear, suspended mounted, one light bar 4' long, 37 watt	G		6.70	1.194		171	73.50	244.50	297

26 51 Interior Lighting

26 51 13 – Interior Lighting Fixtures, Lamps, and Ballasts

26 51 13.55 Interior LED Fixtures

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Incl O&P
		Crew			Labor	Equipment			
3010	One light bar 8' long, 74 watt	G	2 Elec	12.20	1.311	Ed.	310	80.50	390.50
3020	Two light bar 4' long, 74 watt	G	1 Elec	5.70	1.404		335	86	421
3030	Two light bar 8' long, 148 watt	G	2 Elec	8.80	1.818		360	112	472
4000	High bay, surface mounted, round, 150 watts	G		5.41	2.959		465	182	647
4010	2 bars, 164 watts	G		5.41	2.959		385	182	567
4020	3 bars, 246 watts	G		5.01	3.197		515	196	711
4030	4 bars, 328 watts	G		4.60	3.478		735	213	948
4040	5 bars, 410 watts	G	3 Elec	4.20	5.716		830	350	1,180
4050	6 bars, 492 watts	G		3.80	6.324		930	390	1,320
4060	7 bars, 574 watts	G		3.39	7.075		1,000	435	1,435
4070	8 bars, 656 watts	G		2.99	8.029		1,050	495	1,545
5000	Track, lighthead, 6 watt	G	1 Elec	32	.250		55.50	15.35	70.85
5010	9 watt	G	"	32	.250		62.50	15.35	77.85
6000	Garage, surface mounted, 103 watts	G	2 Elec	6.50	2.462		985	151	1,136
6100	Pendant mounted, 80 watts	G		6.50	2.462		690	151	841
6200	95 watts	G		6.50	2.462		815	151	966
6300	125 watts	G		6.50	2.462		850	151	1,001
									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	Ed.	140	123	263
0700	Nickel cadmium battery operated			4	2		330	123	453
0900	Self-contained fluorescent lamp pack			10	.800	↓	181	49	230
									272

26 52 13.16 Exit Signs

0010	EXIT SIGNS								
0080	Exit light ceiling or wall mount, incandescent, single face		1 Elec	8	1	Ed.	73	61.50	134.50
0100	Double face			6.70	1.194		50.50	73.50	124
0200	LED standard, single face	G		8	1		49.50	61.50	111
0220	Double face	G		6.70	1.194		52	73.50	125.50
0230	LED vandal-resistant, single face	G		7.27	1.100		218	67.50	285.50
0240	LED w/battery unit, single face	G		4.40	1.818		192	112	304
0260	Double face	G		4	2		223	123	346
0262	LED w/battery unit, vandal-resistant, single face	G		4.40	1.818		258	112	370
0270	Combination emergency light units and exit sign	G		4	2	↓	179	123	302
									380

26 54 Classified Location Lighting

26 54 13 – Incandescent Classified Location Lighting

26 54 13.20 Explosion Proof	Description	Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
							Labor	Equipment	Total		
0010	EXPLOSION PROOF, incl. lamps, mounting hardware and connections										
6510	Incandescent, ceiling mounted, 200 watt	1	Elec	4	2	Ea.	1,650	123	1,773	1,975	
6600	Fluorescent, RS, 4' long, ceiling mounted, two 40 watt	"		2.70	2.963	"	4,975	182	5,157	5,750	

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.	107	140	247	325	
0120	24V, 20 watt halogen	"		3.50	2.286	"	254	140	394	490	
0200	Steady beacon										
0210	120V, 40 watt halogen	1	Elec	3.50	2.286	Ea.	109	140	249	330	
0220	24V, 20 watt	"		3.50	2.286	"	113	140	253	335	
0230	12V DC, incandescent	↓		3.50	2.286	↓	114	140	254	335	
0300	Flashing beacon										
0310	120V, 40 watt halogen	1	Elec	3.50	2.286	Ea.	106	140	246	325	
0320	24V, 20 watt halogen	"		3.50	2.286	"	107	140	247	325	
0410	12V DC with two 6V lantern batteries	↓		7	1.143	↓	108	70	178	223	

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.	187	24.50	211.50	243	
2500	Spotlight, follow spot, with transformer, 2,100 watt	"		4	2	Ea.	3,575	123	3,698	4,100	
2600	For no transformer, deduct						990		990	1,100	
3000	Stationary spot, fresnel quartz, 6" lens	1	Elec	4	2		233	123	356	440	
3100	8" lens	"		4	2		251	123	374	460	
3500	Ellipsoidal quartz, 1,000 watt, 6" lens			4	2		375	123	498	595	
3600	12" lens	4		2			665	123	788	920	
4000	Strobe light, 1 to 15 flashes per second, quartz	3		2.667			875	164	1,039	1,200	
4500	Color wheel, portable, five hole, motorized	4		2			226	123	349	430	

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.	810	123	933	1,075	
3000	20' high	R-3		2.90	6.897		1,100	420	65	1,585	1,900
3200	30' high	"		2.60	7.692		2,075	470	72.50	2,617.50	3,050
3400	35' high	"		2.30	8.696		2,275	530	82	2,887	3,375
3600	40' high	↓		2	10		2,750	610	94.50	3,454.50	4,050
3800	Bracket arms, 1 arm	1	Elec	8	1		141	61.50	202.50	247	
4000	2 arms	"		8	1		280	61.50	341.50	400	
4200	3 arms	"		5.30	1.509		425	92.50	517.50	605	
4400	4 arms	"		4.80	1.667		565	102	667	775	

26 56 Exterior Lighting

26 56 13 – Lighting Poles and Standards

				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
				1 Elec	3.80	2.105	Ea.	Labor	Equipment	Total		
4500	Steel pole, galvanized, 8' high			1 Elec	3.80	2.105	Ea.	675	129	804	930	
4600	20' high			R-3	2.60	7.692		1,275	470	72.50	1,817.50	
4800	30' high				2.30	8.696		1,275	530	82	1,887	
5000	35' high				2.20	9.091		1,550	555	86	2,191	
5200	40' high				1.70	11.765		1,725	720	111	2,556	
5400	Bracket arms, 1 arm			1 Elec	8	1		214	61.50		275.50	
5600	2 arms				8	1		310	61.50		371.50	
5800	3 arms				5.30	1.509		215	92.50		307.50	
6000	4 arms				5.30	1.509		350	92.50		442.50	
6462	20' high			R-3	2.90	6.897		1,275	420	65	1,760	
6463	30' high				2.30	8.696		1,275	530	82	1,887	
6464	35' high				2.40	8.333		1,550	510	79	2,139	
6465	25' high				2.70	7.407		1,275	455	70	1,800	
6470	Light pole conc base, max 6' buried, 2' exposed, 18" diam., average cost			C-6	6	8		190	350	8.95	548.95	
											745	

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.	585	182		767	910
0110	108 LEDs, 120 V AC or 12 V DC, equal to 90 watt	[G]		2.70	2.963		750	182		932	1,100
0120	144 LEDs, 120 V AC or 12 V DC, equal to 120 watt	[G]		2.70	2.963		920	182		1,102	1,300
0130	252 LEDs, 120 V AC or 12 V DC, equal to 210 watt	[G]	2 Elec	4.40	3.636		1,275	223		1,498	1,725
0140	Replaces high pressure sodium fixture, 75 watt	[G]	1 Elec	2.70	2.963		405	182		587	715
0150	125 watt	[G]		2.70	2.963		460	182		642	780
0160	150 watt	[G]		2.70	2.963		540	182		722	865
0170	175 watt	[G]		2.70	2.963		795	182		977	1,150
0180	200 watt	[G]		2.70	2.963		760	182		942	1,100
0190	250 watt	[G]	2 Elec	4.40	3.636		870	223		1,093	1,275
0200	320 watt	[G]	"	4.40	3.636		950	223		1,173	1,375

26 56 19.60 Parking LED Lighting

0010 PARKING LED LIGHTING

0100	Round pole mounting, 88 lamp watts	[G]	1 Elec	2	4	Ea.	1,200	245		1,445	1,700
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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.	835	245		1,080	1,275
2700	180 watt	"	2	4		995	245		1,240	1,475
2750	Metal halide, 400 watt	2 Elec	4.40	3.636		690	223		913	1,100
2760	1,000 watt		4	4		775	245		1,020	1,225
2780	High pressure sodium, 400 watt		4.40	3.636		825	223		1,048	1,250
2790	1,000 watt		4	4		940	245		1,185	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.	51.50	61.50		113	148
0400	Quartz, 500 watt		5.30	1.509		62	92.50		154.50	207
1100	Wall pack, low pressure sodium, 35 watt		4	2		205	123		328	410
1150	55 watt		4	2		241	123		364	450

26 56 Exterior Lighting

26 56 23 – Area Lighting

26 56 23.55 Exterior LED Fixtures

		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
0010	EXTERIOR LED FIXTURES								
0100	Wall mounted, indoor/outdoor, 12 watt	[G]	1 Elec	10 .800	Ea.	199	49	248	292
0110	32 watt	[G]		10 .800		455	49	504	575
0120	66 watt	[G]		10 .800		480	49	529	600
0200	outdoor, 110 watt	[G]		10 .800		1,150	49	1,199	1,350
0210	220 watt	[G]		10 .800		1,775	49	1,824	2,025
0300	modular, type IV, 120 V, 50 lamp watts	[G]	9	.889		1,325	54.50	1,379.50	1,550
0310	101 lamp watts	[G]	9	.889		1,325	54.50	1,379.50	1,525
0320	126 lamp watts	[G]	9	.889		1,650	54.50	1,704.50	1,875
0330	202 lamp watts	[G]	9	.889		1,900	54.50	1,954.50	2,175
0340	240 V, 50 lamp watts	[G]	8	1		1,225	61.50	1,286.50	1,450
0350	101 lamp watts	[G]	8	1		1,375	61.50	1,436.50	1,600
0360	126 lamp watts	[G]	8	1		1,275	61.50	1,336.50	1,500
0370	202 lamp watts	[G]	8	1		1,925	61.50	1,986.50	2,200
0400	wall pack, glass, 13 lamp watts	[G]	4	2		450	123	573	680
0410	poly w/photocell, 26 lamp watts	[G]	4	2		330	123	453	550
0420	50 lamp watts	[G]	4	2		705	123	828	960
0430	replacement, 40 watts	[G]	4	2		385	123	508	610
0440	60 watts	[G]	4	2		435	123	558	665

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.	213	182	395
2000	400 watt		2 Elec	4.40	3.636		219	223	442
2200	1,000 watt		"	4	4		900	245	1,145
2340	High pressure sodium, 70 watt		1 Elec	2.70	2.963		254	182	436
2400	400 watt		2 Elec	4.40	3.636		320	223	543
2600	1,000 watt		"	4	4		635	245	880

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.	440	123	563
0110	46 watt	[G]		4	2		1,500	123	1,623
0120	90 watt	[G]		4	2		2,175	123	2,298
0130	288 watt	[G]		4	2		2,000	123	2,123

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	330	490	820
0100	4' long, 40 watt			.90	8.889		276	545	821
0200	Slimline, 4' long, 40 watt			.90	8.889		1,050	545	1,595
0210	4' long, 30 watt energy saver	[G]		.90	8.889		1,050	545	1,595
0400	High output, 4' long, 60 watt			.90	8.889		610	545	1,155
0410	8' long, 95 watt energy saver	[G]		.80	10		605	615	1,220
0500	8' long, 110 watt			.80	10		605	615	1,220
0512	2' long, T5, 14 watt energy saver	[G]		1	8		178	490	668
0514	3' long, T5, 21 watt energy saver	[G]		.90	8.889		173	545	718

26 61 Lighting Systems and Accessories

26 61 23 – Lamps Applications

26 61 23.10 Lamps			Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
			G	1 Elec	.90	8.889	C	545	718	1,000
0516	4' long, T5, 28 watt energy saver		G		.90	8.889		510	545	1,055
0517	4' long, T5, 54 watt energy saver		G		.90	8.889				1,375
0560	Twin tube compact lamp		G		.90	8.889		435	545	980
0570	Double twin tube compact lamp		G		.80	10		950	615	1,565
0600	Mercury vapor, mogul base, deluxe white, 100 watt				.30	26.667		5,150	1,625	6,775
0700	250 watt				.30	26.667		5,000	1,625	6,625
0800	400 watt				.30	26.667		4,575	1,625	6,200
0900	1,000 watt				.20	40		12,700	2,450	15,150
1000	Metal halide, mogul base, 175 watt				.30	26.667		1,050	1,625	2,675
1200	400 watt				.30	26.667		2,000	1,625	3,625
1300	1,000 watt				.20	40		3,925	2,450	6,375
1350	High pressure sodium, 70 watt				.30	26.667		1,700	1,625	3,325
1380	250 watt				.30	26.667		1,950	1,625	3,575
1400	400 watt				.30	26.667		1,650	1,625	3,275
1450	1,000 watt				.20	40		4,500	2,450	6,950
3000	Guards, fluorescent lamp, 4' long				100	.080	Ea.	14	4.91	18.91
3200	8' long				90	.089		28	5.45	33.45
										39

26 61 23.55 LED Lamps

0010 LED LAMPS			G	1 Elec	160	.050	Ea.	18.60	3.07	21.67	25
0100	LED lamp, interior, shape A60, equal to 60 W		G		160	.050		33	3.07	36.07	41
0110	7 W LED decorative c, co, f, g shape				160	.050					
0120	12V mini lamp LED				160	.050		5.30	3.07	8.37	10.35
0200	Globe frosted A60, equal to 60 W		G		160	.050		11.10	3.07	14.17	16.75
0205	LED lamp, interior, globe				160	.050		15.55	3.07	18.62	21.50
0210	2.2 W LED LMP				160	.050		63.50	3.07	66.57	74.50
0220	2.2 W LED replacement decorative lamp				160	.050		8.75	3.07	11.82	14.20
0230	3.5 W LED replacement decorative lamp				160	.050		10.20	3.07	13.27	15.75
0240	4.5 W 120V LED replacement decorative lamp				160	.050		12.25	3.07	15.32	18
0250	4.5 W 120V LED, 2700k replacement decorative lamp				160	.050		10.80	3.07	13.87	16.40
0260	4.9 W 120V LED, 2700k replacement decorative lamp candelabra base				160	.050		9.65	3.07	12.72	15.20
0270	4.9 W 120V LED, 3000k replacement decorative lamp candelabra base				160	.050		9.05	3.07	12.12	14.50
0280	5 W LED PAR 20 parabolic reflector lamp FL				140	.057		58	3.51	61.51	68.50
0300	Globe earth, equal to 100 W		G		140	.057		27	3.51	30.51	34.50
0305	7 W LED reflector lamp 3000k DIM				140	.057		56	3.51	59.51	66.50
0310	10 W omni LED warm white light bulb E26 medium base 120 volt card				140	.057		16.75	3.51	20.26	23.50
0315	7 W LED reflector lamp WFL 2700k DIM				140	.057		56	3.51	59.51	66.50
0320	9 W omni LED warm white light bulb E26 medium base 120 volt card				140	.057		8.95	3.51	12.46	15.05
0500	8 W LED, A19 lamp, equal to 40 W				140	.057		5.70	3.51	9.21	11.45
0505	9 W LED, A19 lamp, 5000K dimmable, equal to 60 W				140	.057		7.10	3.51	10.61	13
0510	10.5 W LED, A19 lamp, dimmable, equal to 60 W				140	.057		8.05	3.51	11.56	14.10
0515	10 W LED, A19 lamp, frosted, dimmable, equal to 60 W				140	.057		12.95	3.51	16.46	19.40
0520	10 W LED, A19 lamp, omni-directional, dimmable, equal to 60 W				140	.057		7.55	3.51	11.06	13.50
0525	12 W LED, A19 lamp, dimmable, equal to 75 W				140	.057		10.95	3.51	14.46	17.25
1100	MRT16, 3 W, replacement of halogen lamp 25 W		G		130	.062		18.65	3.78	22.43	26
1200	6 W replacement of halogen lamp 45 W		G		130	.062		19.60	3.78	23.38	27
2100	10 W, PAR20, equal to 60 W		G		130	.062		26	3.78	29.78	34
2200	15 W, PAR30, equal to 100 W		G		130	.062		49	3.78	52.78	59.50
2210	50 W LED lamp				130	.062		550	3.78	553.78	610
2220	11 Watt reflector dimmable warm white LED light bulb with medium base				130	.062		40	3.78	43.78	49.50
2221	12 W A-Line LED lamp DIM				130	.062		75.50	3.78	79.28	88.50
2225	13 Watt reflector LED warm white e26 with medium base 120 volt box				130	.062		37.50	3.78	41.28	47
2226	13 W br30 LED lamp				130	.062		65.50	3.78	69.28	77.50

26 61 Lighting Systems and Accessories

26 61 23 – Lamps Applications

26 61 23.55 LED Lamps	Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
						Labor	Equipment	Total		
2227 15 W 120V br30 inc LED lamp, 2700k	1 Elec	130	.062	Ea.	61	3.78		64.78	72.50	
2228 15 W 120V br30 inc LED lamp, 4000k	1 Elec	130	.062	Ea.	58	3.78		61.78	69	
2230 3 Watt dimmable warm white decorative LED lamp with medium base		160	.050		11.80	3.07		14.87	17.55	
2240 .43 W night light LED daylight bulb E12 candelabra base 120 volt 2 pack		160	.050		4.55	3.07		7.62	9.55	
2250 15 W omni-directional LED warm white e26 medium base 120 volt box		160	.050		38.50	3.07		41.57	47	
2251 11 W omni-directional LED warm white e26 medium base 120 volt box		160	.050		27.50	3.07		30.57	35	
2252 10 W omni-directional LED warm white e26 medium base 120 volt box		160	.050		27	3.07		30.07	34	
2253 7 W omni A19 LED warm white e26 medium base 120 volt box		160	.050		20	3.07		23.07	27	
2255 8 PAR 20 parabolic reflector 2700 LED lamp		160	.050		18.15	3.07		21.22	24.50	
2256 8 PAR 20 parabolic reflector 3000 LED lamp		160	.050		18	3.07		21.07	24.50	
2260 12 W PAR 38 120V LED 15 degree directional lamp		160	.050		195	3.07		198.07	220	
2270 12 W PAR 38 120V LED 25 degree directional lamp		160	.050		30	3.07		33.07	37.50	
2280 12 W PAR 38 120V LED 40 degree directional lamp		160	.050		195	3.07		198.07	220	
2285 16 W PAR 38 120V 2700K LED parabolic reflector lamp		160	.050		29.50	3.07		32.57	37	
2290 16 W PAR 38 3000K LED parabolic reflector lamp		160	.050		22	3.07		25.07	29	
3000 15 W PAR 30 LED daylight E26 medium base 120V box		160	.050		58	3.07		61.07	68	
3100 17 W LED 3000K PAR 38 100 W replacement		160	.050		45	3.07		48.07	54	
3110 17 W LED PAR 38 100 W replacement		160	.050		34	3.07		37.07	41.50	
3120 17 W LED PAR 38 100 W replacement parabolic reflector		160	.050		35.50	3.07		38.57	43.50	
3130 24 W LED T8 PW straight fluorescent lamp		8.89	.900		278	55		333	385	
3135 Linear fluorescent LED lamp 120V		8.89	.900		128	55		183	223	
3200 30 W LED 2700K recessed 8055E PAR 38 high power		160	.050		128	3.07		131.07	146	
3210 30 W LED 4200K 120 degree 8055E PAR 38 high power		160	.050		129	3.07		132.07	147	
3220 30 W LED 5700K 8055E PAR 38 high power		160	.050		130	3.07		133.07	148	
3230 50 W LED 2700K 8045M PAR 38 277V high power		160	.050		330	3.07		333.07	365	
3240 50 W LED 4200K 8045M PAR 38 277V high power retro fit		160	.050		174	3.07		177.07	196	
3250 50 W LED 5700K 8045M PAR 38 277V high power retro fit		160	.050		330	3.07		333.07	365	
8000 10 W LED PAR 30 /fl 10 pk		160	.050		92.50	3.07		95.57	107	
8010 Gen 3 PAR 30 15 W short neck power LED 120 VAC E26 80 +cri 300k dimm		160	.050		12.45	3.07		15.52	18.25	
8020 12 PAR 30 2700K parabolic reflector LED lamp		160	.050		40.50	3.07		43.57	49	
8030 12 PAR 30 3000K parabolic reflector LED lamp		160	.050		31	3.07		34.07	38.50	
8040 3500K LED advantage T8 9 W 800LM 2ft linear 2 BD frosted		69	.116		10.10	7.10		17.20	21.50	
8050 3500K LED litespan T8 9 W 900LM 2ft linear frosted		69	.116		12.70	7.10		19.80	24.50	
8060 4000K LED advantage T8 9 W 800LM 2ft linear 2BD frosted		69	.116		12.10	7.10		19.20	24	
8070 4000K LED litespan T8 9 W 900LM 2ft linear frosted		69	.116		13.30	7.10		20.40	25.50	
8080 5000K LED advantage T8 9 W 800LM 2ft linear 2BD frosted		69	.116		10.85	7.10		17.95	22.50	
8090 5000K LED litespan T8 9 W 900LM 2ft linear frosted		69	.116		10.60	7.10		17.70	22.50	
8100 3500K LED advantage T8 18 W 1600LM 4ft linear 2 BD frosted		69	.116		10	7.10		17.10	21.50	
8105 18 W LED 4ft T8 4000K frost 1600L linear lamp		69	.116		17.80	7.10		24.90	30	
8108 18 W LED 48 inch T8 4100K 1890LM linear lamp		69	.116		55	7.10		62.10	71	
8110 3500K LED advantage T8 18 W 1800LM 4ft linear 2 BD frosted		69	.116		28.50	7.10		35.60	42	
8120 4000K LED advantage T8 18 W 1600LM 4ft linear 2 BD frosted		69	.116		19.45	7.10		26.55	32	
8130 4000K LED litespan T8 18 W 1800LM 4ft linear frosted		69	.116		20.50	7.10		27.60	33	
8140 5000K LED advantage T8 18 W 1600LM 4ft linear 2BD frosted		69	.116		12.70	7.10		19.80	24.50	
8150 5000K LED litespan T8 18 W 1800LM 4ft linear 2BD frosted		69	.116		20.50	7.10		27.60	33	
8200 16.5 T8 3000 IF-6U U-shape fluorescent LED lamp		65	.123		20.50	7.55		28.05	34.50	
8210 16.5 T8 3500 IF-6U U-shape fluorescent LED lamp		65	.123		21	7.55		28.55	35	
8220 16.5 T8 4000 IF-6U U-shape fluorescent LED lamp		65	.123		22	7.55		29.55	35.50	
8230 16.5 T8 5000 IF-6U U-shape fluorescent LED lamp		65	.123		20.50	7.55		28.05	34	
8240 18 W 6 inch T8 4100K U-shape frosted fluorescent LED lamp		60	.133		11.55	8.20		19.75	25	
8250 18 W 6 inch T8 5000K U-shape frosted fluorescent LED lamp		60	.133		11.55	8.20		19.75	25	
8260 Circular 12 W linear fluorescent LED 2700K MOD lamp		62.40	.128		291	7.85		298.85	330	
8270 Circular 12 W linear fluorescent LED 3000K MOD lamp		62.40	.128		291	7.85		298.85	330	

26 61 Lighting Systems and Accessories

26 61 23 – Lamps Applications

26 61 23.55 LED Lamps		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
8280 Circular 12 W linear fluorescent LED 3500K MOD lamp		1 Elec	62.40	.128	Ea.	263	7.85		270.85	300
8290 Circular 18 W linear fluorescent LED 3000K MOD lamp			62.40	.128		360	7.85		367.85	405
8300 Circular 18 W linear fluorescent LED 3500K MOD lamp			62.40	.128		395	7.85		402.85	445
8310 Circular 18 W linear fluorescent LED 5000K MOD lamp			62.40	.128		360	7.85		367.85	405
8320 Circular 18 W linear fluorescent LED 4100K MOD lamp			62.40	.128		380	7.85		387.85	430

26 71 Electrical Machines

26 71 13 – Motors Applications

26 71 13.20 Motors

0010	MOTORS 230/460 V, 60 Hz									
0050	Driproof, premium efficiency, 1.15 service factor									
0060	1,800 RPM, 1/4 HP	1 Elec	5.33	1.501	Ea.	280	92		372	445
0070	1/3 HP		5.33	1.501		247	92		339	410
0080	1/2 HP		5.33	1.501		207	92		299	365
0090	3/4 HP		5.33	1.501		320	92		412	485
0100	1 HP		4.50	1.778		345	109		454	540
0250	5 HP		4.50	1.778		595	109		704	815
0350	10 HP		4	2		1,175	123		1,298	1,475
0450	20 HP	2 Elec	5.20	3.077		2,125	189		2,314	2,600

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.	565	98		663	770
0030	1/3 HP		5	1.600		450	98		548	640
0040	1/2 HP		5	1.600		610	98		708	815
0050	3/4 HP		5.33	1.501		700	92		790	905
0060	1 HP		4.20	1.905		660	117		777	905
0090	5 HP		4.20	1.905		875	117		992	1,125
0110	10 HP		3.70	2.162		1,275	133		1,408	1,600
0130	20 HP	2 Elec	5	3.200		1,975	196		2,171	2,475
2000	3,600 RPM, 1/4 HP	1 Elec	5	1.600		425	98		523	615
2010	1/3 HP		5	1.600		445	98		543	635
2020	1/2 HP		5	1.600		565	98		663	765
2030	3/4 HP		5	1.600		600	98		698	805
2040	1 HP		4.20	1.905		650	117		767	890
2070	5 HP		4.20	1.905		1,200	117		1,317	1,475
2090	10 HP		3.70	2.162		1,550	133		1,683	1,900
2110	20 HP	2 Elec	5	3.200		2,600	196		2,796	3,175

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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Note: Trade Service, in part, has been used as a reference source for some of the material prices used in Division 27.

27 13 Communications Backbone Cabling

27 13 23 – Communications Optical Fiber Backbone Cabling

27 13 23.13 Communications Optical Fiber		Daily Crew	Labor Output	Hours	Unit	Material	2020 Bare Labor	Costs 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.	23	61.50		84.50	117
0080 Multi mode				8		30	61.50		91.50	125
0090 4 strand, single mode				7.34	1.090		38.50	67		105.50
0095 Multi mode				7.34	1.090		50.50	67		117.50
0100 12 strand, single mode				6.67	1.199		86	73.50		159.50
0105 Multi mode				6.67	1.199	↓	99	73.50		172.50
0150 Jumper					Ea.		34.50			34.50
0200 Pigtail							36			36
0300 Connector		1 Elec	24	.333		26.50	20.50		47	59.50
0350 Finger splice				32	.250		37.50	15.35		52.85
0400 Transceiver (low cost bi-directional)				8	1		455	61.50		516.50
0450 Rack housing, 4 rack spaces, 12 panels (144 fibers)				2	4		615	245		860
0500 Patch panel, 12 ports				6	1.333		295	82		377
0600 Cable connector panel, 6 fiber				6	1.333	↓	295	82		377
1000 Cable, 62.5 microns, direct burial, 4 fiber		R-15	1200	.040	L.F.	.93	2.40	.23	3.56	4.86
1020 Indoor, 2 fiber		R-19	1000	.020		.44	1.23		1.67	2.31
1040 Outdoor, aerial/duct				1670	.012		.65	.74		1.39
1060 50 microns, direct burial, 8 fiber		R-22	4000	.009		1.30	.52		1.82	2.21
1080 12 fiber				4000	.009		2.43	.52		2.95
1100 Indoor, 12 fiber		↓	759	.049	↓	2.01	.276		4.77	6.30
1120 Connectors, 62.5 micron cable, transmission		R-19	40	.500	Ea.	14.70	30.50		45.20	62
1140 Cable splice				40	.500		17.50	30.50		48
1160 125 micron cable, transmission				16	1.250		15.45	.77		92.45
1180 Receiver, 1.2 mile range				20	1		282	61.50		343.50
1200 1.9 mile range				20	1		249	61.50		310.50
1220 6.2 mile range				5	4		325	246		571
1240 Transmitter, 1.2 mile range				20	1		315	61.50		376.50
1260 1.9 mile range				20	1		284	61.50		345.50
1280 6.2 mile range				5	4		435	246		681
1300 Modem, 1.2 mile range				5	4		183	246		429
1320 6.2 mile range				5	4		325	246		571
1340 1.9 mile range, 12 channel				5	4		2,075	246		2,321
1360 Repeater, 1.2 mile range				10	2		370	123		493
1380 1.9 mile range				10	2		495	123		618
1400 6.2 mile range				5	4		910	246		1,156
1420 1.2 mile range, digital		↓	5	4	↓	455	246		701	865

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	126	82		208	261
0400 30 outlets				10	.800		254	49		303
0600 100 outlets				13	.615		295	38		333
0800 VHF & UHF reception & distribution, 12 outlets				6	1.333		247	82		329
1000 30 outlets				10	.800		169	49		218
1200 100 outlets				13	.615		168	38		206
1400 School and deluxe systems, 12 outlets				2.40	3.333	↓	325	205		530
										665

27 41 Audio-Video Systems

27 41 33 – Master Antenna Television Systems

27 41 33.10 TV Systems	Crew	Daily Output	Labor-Hours		Material	2020 Bare Costs		Total	Total Incl O&P
			Unit	Outlet		Labor	Equipment		
1600 30 outlets	1 Elec	4	2	Outlet	286	123		409	500
1800 80 outlets		5.30	1.509	"	275	92.50		367.50	440

27 51 Distributed Audio-Video Communications Systems

27 51 16 – Public Address Systems

27 51 16.10 Public Address System

0010 PUBLIC ADDRESS SYSTEM	Crew	Daily Output	1.501 Speaker	171	92			263	325
0100 Conventional, office	1 Elec	5.33	1.501 Speaker	171	92			263	325
0200 Industrial	"	2.70	2.963 "	330	182			512	630

27 51 19 – Sound Masking Systems

27 51 19.10 Sound System

0010 SOUND SYSTEM, not including rough-in wires, cables & conduits	Crew	Daily Output	1 Ea.	61.50	61.50			123	160
0100 Components, projector outlet	1 Elec	8	1	Ea.	61.50	61.50		123	160
0200 Microphone	"	4	2	"	115	123		238	310
0400 Speakers, ceiling or wall	"	8	1	"	157	61.50		218.50	265
0600 Trumpets	"	4	2	"	291	123		414	505
0800 Privacy switch	"	8	1	"	117	61.50		178.50	220
1000 Monitor panel	"	4	2	"	520	123		643	755
1200 Antenna, AM/FM	"	4	2	"	155	123		278	355
1400 Volume control	"	8	1	"	60	61.50		121.50	158
1600 Amplifier, 250 W	"	1	8	"	1,400	490		1,890	2,275
1800 Cabinets	"	1	8	"	1,125	490		1,615	1,975
2000 Intercom, 30 station capacity, master station	2 Elec	2	8	"	2,400	490		2,890	3,375
2200 Remote station	1 Elec	8	1	"	217	61.50		278.50	330
2400 Intercom outlets	"	8	1	"	128	61.50		189.50	232
2600 Handset	"	4	2	"	425	123		548	650
2800 Emergency call system, 12 zones, annunciator	"	1.30	6.154	"	1,275	380		1,655	1,950
3000 Bell	"	5.30	1.509	"	132	92.50		224.50	283
3200 Light or relay	"	8	1	"	66	61.50		127.50	164
3400 Transformer	"	4	2	"	291	123		414	505
3600 House telephone, talking station	"	1.60	5	"	625	305		930	1,150
3800 Press to talk, release to listen	"	5.30	1.509	"	145	92.50		237.50	297
4000 System-on button	"			"	87			87	95.50
4200 Door release	1 Elec	4	2	"	155	123		278	355
4400 Combination speaker and microphone	"	8	1	"	265	61.50		326.50	385
4600 Termination box	"	3.20	2.500	"	83.50	153		236.50	320
4800 Amplifier or power supply	"	5.30	1.509	"	955	92.50		1,047.50	1,200
5000 Vestibule door unit	"	16	.500	Name	161	30.50		191.50	223
5200 Strip cabinet	"	27	.296	Ea.	330	18.20		348.20	390
5400 Directory	"	16	.500	"	156	30.50		186.50	217

27 52 Healthcare Communications and Monitoring Systems

27 52 23 – Nurse Call/Code Blue Systems

			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
27 52 23.10 Nurse Call Systems											
0010	NURSE CALL SYSTEMS										
0100	Single bedside call station		1 Elec	8	1	Ea.	182	61.50		243.50	292
0200	Ceiling speaker station			8	1		90	61.50		151.50	191
0400	Emergency call station			8	1		92.50	61.50		154	194
0600	Pillow speaker			8	1		223	61.50		284.50	335
0800	Double bedside call station			4	2		169	123		292	370
1000	Duty station			4	2		137	123		260	335
1200	Standard call button			8	1		125	61.50		186.50	229
1400	Lights, corridor, dome or zone indicator			8	1		64.50	61.50		126	163
1600	Master control station for 20 stations		2 Elec	.65	24.615	Total	3,725	1,500		5,225	6,350

27 53 Distributed Systems

27 53 13 – Clock Systems

27 53 13.50 Clock Equipments

			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
0010	CLOCK EQUIPMENTS , not including wires & conduits										
0100	Time system components, master controller		1 Elec	.33	24.242	Ea.	1,575	1,475		3,050	3,950
0200	Program bell			8	1		114	61.50		175.50	217
0400	Combination clock & speaker			3.20	2.500		200	153		353	450
0600	Frequency generator			1	2	4	2,725	245		2,970	3,350
0800	Job time automatic stamp recorder			4	2		560	123		683	800
1600	Master time clock system, clocks & bells, 20 room 50 room		4 Elec	.20	160		6,025	9,825		15,850	21,200
1800			"	.08	400		12,700	24,500		37,200	50,500
1900	Time clock			3.20	2.500		375	153		528	645
2000	100 cards in & out, 1 color						10.45			10.45	11.50
2200	2 colors							9.90		9.90	10.90
2800	Metal rack for 25 cards		1 Elec	.7	1.143		50	70		120	159

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

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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28 15 Access Control Hardware Devices

28 15 11 – Integrated Credential Readers and Field Entry Management

28 15 11.11 Standard Card Readers	Description	Daily	Labor-	Unit	Material	2020 Bare Costs		Total	Total Ind O&P
		Crew	Output			Labor	Equipment		
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.		1,525		1,525
0060 Card key system for 2 doors							2,350		2,600
0080 Card key system for 4 doors							2,500		2,750
0100 Processor for card key access system							1,175		1,175
0160 Magnetic lock for electric access, 600 pound holding force							185		203
0170 Magnetic lock for electric access, 1200 pound holding force							185		203
0200 Proximity card reader							188		206

28 15 11.15 Biometric Identity Devices

28 15 11.15 Biometric Identity Devices	Description	1 Elec	3	2.667	Ea.	2,450	164	2,614	2,950
0220 Hand geometry scanner, mem of 512 users, excl. striker/power									
0230 Memory upgrade for, adds 9,700 user profiles			8	1		410	61.50	471.50	540
0240 Adds 32,500 user profiles			8	1		695	61.50	756.50	855
0250 Prison type, memory of 256 users, excl. striker/power				3	2.667		2,775	164	2,939
0260 Memory upgrade for, adds 3,300 user profiles			8	1		385	61.50	446.50	515
0270 Adds 9,700 user profiles			8	1		565	61.50	626.50	715
0280 Adds 27,900 user profiles			8	1		755	61.50	816.50	920
0290 All weather, mem of 512 users, excl. striker/power				3	2.667		4,375	164	4,539
0300 Facial & fingerprint scanner, combination unit, excl. striker/power			3	2.667		930	164	1,094	1,275
0310 Access for, for initial setup, excl. striker/power				3	2.667		1,350	164	1,514

28 18 Security Access Detection Equipment

28 18 11 – Security Access Metal Detectors

28 18 11.13 Security Access Metal Detectors	Description	1 Elec	3	2.667	Ea.	129	129	129	138
0010 SECURITY ACCESS METAL DETECTORS									
0240 Metal detector, hand-held, wand type, unit only									
0250 Metal detector, walk through portal type, single zone			1 Elec	2	4		3,750	245	3,995
0260 Multi-zone		"	2	4		4,875	245		5,120

28 18 13 – Security Access X-Ray Equipment

28 18 13.16 Security Access X-Ray Equipment	Description	1 Elec	3	2.667	Ea.	3,425	123	3,548	3,950
0010 SECURITY ACCESS X-RAY EQUIPMENT									
0290 X-ray machine, desk top, for mail/small packages/letters									
0300 Conveyor type, incl. monitor									
0310 Includes additional features									
0320 X-ray machine, large unit, for airports, incl. monitor		2 Elec	1	16		39,400	980	40,380	44,800
0330 Full console		"	.50	32		67,500	1,975	69,475	77,000

28 18 15 – Security Access Explosive Detection Equipment

28 18 15.23 Security Access Explosive Detection Equipment	Description	1 Elec	3	2.667	Ea.	48,800	245	49,045	54,000
0010 SECURITY ACCESS EXPLOSIVE DETECTION EQUIPMENT									
0270 Explosives detector, walk through portal type									
0280 Hand-held, battery operated									

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	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
0010 CLOSED CIRCUIT TELEVISION SYSTEM										
2000	Surveillance, one station (camera & monitor)		2 Elec	2.60	6.154	Total	665	380	1,045	1,300
2200	For additional camera stations, add		1 Elec	2.70	2.963	Ea.	320	182	502	620
2400	Industrial quality, one station (camera & monitor)		2 Elec	2.60	6.154	Total	1,650	380	2,030	2,375
2600	For additional camera stations, add		1 Elec	2.70	2.963	Ea.	690	182	872	1,025
2610	For low light, add			2.70	2.963		525	182	707	845
2620	For very low light, add			2.70	2.963		3,450	182	3,632	4,075
2800	For weatherproof camera station, add			1.30	6.154		540	380	920	1,150
3000	For pan and tilt, add			1.30	6.154		1,575	380	1,955	2,275
3200	For zoom lens - remote control, add			2	4		1,800	245	2,045	2,350
3400	Extended zoom lens			2	4		5,025	245	5,270	5,900
3410	For automatic iris for low light, add			2	4		1,025	245	1,270	1,500
3600	Educational TV studio, basic 3 camera system, black & white,									
3800	electrical & electronic equip. only		4 Elec	.80	40	Total	8,275	2,450	10,725	12,800
4000	Full console			.28	114		25,300	7,000	32,300	38,300
4100	As above, but color system			.28	114		50,500	7,000	57,500	66,000
4120	Full console			.12	267		190,000	16,400	206,400	233,500
4200	For film chain, black & white, add		1 Elec	1	8	Ea.	12,500	490	12,990	14,400
4250	Color, add			.25	32		8,925	1,975	10,900	12,800
4400	For video recorders, add			1	8		2,450	490	2,940	3,400
4600	Premium		4 Elec	.40	80		16,000	4,900	20,900	24,900

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.	171	164	335	430
0210 Accessories for video recorder, single camera				3	2.667		195	164	359	460
0220 For multiple cameras				3	2.667		1,675	164	1,839	2,100
0230 Video cameras, wireless, for under vehicle searching, complete				2	4		15,200	245	15,445	17,100
0234 Master monitor station, 3 doors x 5 color monitor with tilt feature				2	4		985	245	1,230	1,450

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.	289	123	412	505
0200 Electrical trigger				4	2		345	123	468	565
0400 For outside key control, add				8	1		89.50	61.50	151	190
0600 For remote signaling circuitry, add				8	1		143	61.50	204.50	249
0800 Card reader, flush type, standard				2.70	2.963		725	182	907	1,075
1000 Multi-code				2.70	2.963		1,250	182	1,432	1,650
1200 Door switches, hinge switch				5.30	1.509		64.50	92.50	157	209
1400 Magnetic switch				5.30	1.509		105	92.50	197.50	254
1600 Exit control locks, horn alarm				4	2		218	123	341	425
1800 Flashing light alarm				4	2		247	123	370	455
2000 Indicating panels, 1 channel				2.70	2.963		244	182	426	540
2200 10 channel			2 Elec	3.20	5		1,175	305	1,480	1,750
2400 20 channel				2	8		2,525	490	3,015	3,500
2600 40 channel				1.14	14.035		4,650	860	5,510	6,400
2800 Ultrasonic motion detector, 12 V			1 Elec	2.30	3.478		200	213	413	540
3000 Infrared photoelectric detector				4	2		133	123	256	330

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	Material	2020 Labor	Bare 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.	3,125			3,125	3,450
0160	9 channel, for external monitoring				"	1,225			1,225	1,350
0200	Probes									
0210	Well monitoring									
0220	Liquid phase detection				Ea.	725			725	800
0230	Hydrocarbon vapor, fixed position					870			870	960
0240	Hydrocarbon vapor, float mounted					615			615	675
0250	Both liquid and vapor hydrocarbon					645			645	710
0300	Secondary containment, liquid phase									
0310	Pipe trench/manway sump				Ea.	765			765	840
0320	Double wall pipe and manual sump					640			640	705
0330	Double wall fiberglass annular space					430			430	470
0340	Double wall steel tank annular space					282			282	310
0500	Accessories									
0510	Modem, non-dedicated phone line				Ea.	281			281	310
0600	Monitoring, internal									
0610	Automatic tank gauge, incl. overfill				Ea.	1,325			1,325	1,450
0620	Product line				"	1,375			1,375	1,525
0700	Monitoring, special									
0710	Cathodic protection				Ea.	695			695	765
0720	Annular space chemical monitor				"	945			945	1,050

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	1 Elec	24	.333	Ea.	51.50	20.50		72	87
8400	Smoke and carbon monoxide alarm battery operated photoelectric low profile	1 Elec	24	.333	Ea.	51.50	20.50		72	87
8410	low profile photoelectric battery powered		24	.333		40	20.50		60.50	75
8420	photoelectric low profile sealed lithium		24	.333		70.50	20.50		91	108
8430	Photoelectric low profile sealed lithium smoke and CO with voice combo		24	.333		50.50	20.50		71	86
8500	Carbon monoxide sensor, wall mount 1Mod 1 relay output smoke & heat		24	.333		490	20.50		510.50	570
8700	Carbon monoxide detector, battery operated, wall mounted		16	.500		43	30.50		73.50	93
8710	Hardwired, wall and ceiling mounted		8	1		84.50	61.50		146	185
8720	Duct mounted		8	1		350	61.50		411.50	475

28 46 11.27 Other Sensors

0010	OTHER SENSORS	1 Elec	6.20	1.290	Ea.	120	79		199	251
5200	Smoke detector, ceiling type	6	1.333			224	82		306	370
5240	Smoke detector, addressable type									
5400	Duct type		3.20	2.500		295	153		448	555
5420	Duct addressable type		3.20	2.500		520	153		673	805
8300	Smoke alarm with integrated strobe light 120 V, 16DB 60 fpm flash rate		16	.500		119	30.50		149.50	177
8310	Photoelectric smoke detector with strobe 120 V, 90 DB ceiling mount		12	.667		227	41		268	310
8320	120 V, 90 DB wall mount		12	.667		202	41		243	283
8440	Fire alarm beam detector, motorized reflective, infrared optical beam	2 Elec	1.60	10		750	615		1,365	1,750
8450	Fire alarm beam detector, motorized reflective, IR/UV optical beam	"	1.60	10		1,025	615		1,640	2,050

28 46 Fire Detection and Alarm

28 46 11 – Fire Sensors and Detectors

		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
28 46 11.50 Fire and Heat Detectors											
0010 FIRE & HEAT DETECTORS	Detector, rate of rise	1 Elec	8	1	Ea.	52	61.50			113.50	149

28 46 20 – Fire Alarm

28 46 20.50 Alarm Panels and Devices

0010	ALARM PANELS AND DEVICES , not including wires & conduits										
2200	Intercom remote station	1 Elec	8	1	Ea.	89.50	61.50			151	190
2400	Intercom outlet	1 Elec	8	1	Ea.	64.50	61.50			126	163
2600	Sound system, intercom handset	1 Elec	8	1	Ea.	485	61.50			546.50	625
3600	4 zone	2 Elec	2	8		410	490			900	1,175
3800	8 zone		1	16		875	980			1,855	2,425
3810	5 zone		1.50	10.667		700	655			1,355	1,750
3900	10 zone		1.25	12.800		1,025	785			1,810	2,325
4000	12 zone		1.67	23.988		2,350	1,475			3,825	4,775
4020	Alarm device, tamper, flow	1 Elec	8	1	Ea.	230	61.50			291.50	345
4025	Fire alarm, loop expander card		16	.500		680	30.50			710.50	795
4050	Actuating device		8	1		340	61.50			401.50	460
4200	Battery and rack		4	2		460	123			583	695
4400	Automatic charger		8	1		525	61.50			586.50	670
4600	Signal bell		8	1		66.50	61.50			128	165
4610	Fire alarm signal bell 10" red 20-24 V P		8	1		154	61.50			215.50	261
4800	Trouble buzzer or manual station		8	1		88.50	61.50			150	189
5425	Duct smoke and heat detector 2 wire		8	1		125	61.50			186.50	230
5430	Fire alarm duct detector controller		3	2.667		254	164			418	525
5435	Fire alarm duct detector sensor kit		8	1		75	61.50			136.50	174
5440	Remote test station for smoke detector duct type		5.30	1.509		54.50	92.50			147	198
5460	Remote fire alarm indicator light		5.30	1.509		25	92.50			117.50	166
5600	Strobe and horn		5.30	1.509		137	92.50			229.50	289
5610	Strobe and horn (ADA type)		5.30	1.509		165	92.50			257.50	320
5620	Visual alarm (ADA type)		6.70	1.194		119	73.50			192.50	240
5800	electric bell		6.70	1.194		54	73.50			127.50	169
6000	Door holder, electro-magnetic		4	2		92	123			215	284
6200	Combination holder and closer		3.20	2.500		146	153			299	390
6600	Drill switch		8	1		400	61.50			461.50	530
6800	Master box		2.70	2.963		6,675	182			6,857	7,600
7000	Break glass station		8	1		58	61.50			119.50	155
7800	Remote annunciator, 8 zone lamp		1.80	4.444		212	273			485	640
8000	12 zone lamp	2 Elec	2.60	6.154		415	380			795	1,025
8200	16 zone lamp	"	2.20	7.273		370	445			815	1,075

28 47 Mass Notification

28 47 12 – Notification Systems

28 47 12.10 Mass Notification System

0010	MASS NOTIFICATION SYSTEM										
0100	Wireless command center, 10,000 devices	2 Elec	1.33	12.030	Ea.	2,325	740			3,065	3,650
0200	Option, email notification					2,100				2,100	2,325
0210	Remote device supervision & monitor					2,650				2,650	2,900
0300	Antenna VHF or UHF, for medium range	1 Elec	4	2		93	123			216	286
0310	For high-power transmitter		2	4		1,125	245			1,370	1,625
0400	Transmitter, 25 watt		4	2		1,750	123			1,873	2,100
0410	40 watt		2.66	3.008		2,025	185			2,210	2,500

28 47 Mass Notification

28 47 12 – Notification Systems

				Daily Crew	Labor- Output	Unit	2020 Bare Costs			Total	
							Material	Labor	Equipment	Incl O&P	
28 47 12.10 Mass Notification System											
0420	100 watt			1 Elec	1.33	6.015	Ed.	6,600	370-	6,970	7,800
0500	Wireless receiver/control module for speaker				8	1		286	61.50	347.50	405
0600	Desktop paging controller, stand alone				4	2		850	123	973	1,125

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			Daily Crew Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl Q&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.	12.60	2.34	4.42	19.36	22
0700	Screened loam		600	.047		29	2.34	4.42	35.76	40.50
0800	Topsoil, weed free		600	.047		26.50	2.34	4.42	33.26	37.50
0900	For 5 mile haul, add	B-34B	200	.040			1.96	2.86	4.82	6.10

31 05 16 – Aggregates for Earthwork

31 05 16.10 Borrow

31 05 16.10 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.	18.60	2.34	4.42	25.36	29
0300	Crushed stone (1.40 tons per C.Y.), 1-1/2"		600	.047		27.50	2.34	4.42	34.26	39
0320	3/4"		600	.047		27.50	2.34	4.42	34.26	39
0340	1/2"		600	.047		27	2.34	4.42	33.76	38
0360	3/8"		600	.047		32	2.34	4.42	38.76	44
0400	Sand, washed, concrete		600	.047		35.50	2.34	4.42	42.26	47.50
0500	Dead or bank sand		600	.047		18.25	2.34	4.42	25.01	28.50
0600	Select structural fill		600	.047		24.50	2.34	4.42	31.26	35.50
0900	For 5 mile haul, add	B-34B	200	.040			1.96	2.86	4.82	6.10

31 05 23 – Cement and Concrete for Earthwork

31 05 23.30 Plant Mixed Bituminous Concrete

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	74.50
0040	Asphaltic concrete less than 300 tons add trucking costs									
0200	All weather patching mix, hot				Ton	66			66	73
0250	Cold patch					69.50			69.50	76.50
0300	Berm mix				↓	68			68	75

31 06 Schedules for Earthwork

31 06 60 – Schedules for Special Foundations and Load Bearing Elements

31 06 60.14 Piling Special Costs

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.	79			79	122
0600	With steel thin shell, add		38	.211		11.40			11.40	17.75
0700	Steel pile or "H" piles		19	.421		23			23	35.50
0800	Wood piles	↓	38	.211	↓	11.40			11.40	17.75
0900	Pre-augering up to 30' deep, average soil, 24" diameter	B-43	180	.267	L.F.	12.45	4.28	16.73	23.50	
0920	36" diameter		115	.417		19.50	6.70	26.20	36.50	
0960	48" diameter		70	.686		32	11	43	60	
0980	60" diameter		50	.960		45	15.40	60.40	84	
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%	

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	2020 Bare Costs			Total	Total Incl O&P
						Labor	Equipment	Total		
0010 MOBILIZATION										
0020 Set up & remove, air compressor, 600 CFM	A-5	3.30	5.455	Ea.		233	14.85	247.85	365	
0100 1,200 CFM	"	2.20	8.182			350	22.50	372.50	550	
0200 Crane, with pile leads and pile hammer, 75 ton	B-19	.60	107			5,900	3,350	9,250	12,700	
0300 150 ton	"	.36	178			9,825	5,575	15,400	21,200	
0500 Drill rig, for caissons, to 36", minimum	B-43	2	24			1,125	385	1,510	2,100	
0520 Maximum			.50	96		4,475	1,550	6,025	8,425	
0600 Up to 84"			1	48		2,250	770	3,020	4,200	
0800 Auxiliary boiler, for steam small	A-5	1.66	10.843			465	29.50	494.50	730	
0900 Large	"	.83	21.687			925	59	984	1,475	
1100 Rule of thumb: complete pile driving set up, small	B-19	.45	142			7,850	4,475	12,325	16,900	
1200 Large	"	.27	237			13,100	7,450	20,550	28,200	
1500 Mobilization, barge, by tug boat	B-83	25	.640	Mile		31.50	28.50	60	79	

31 11 Clearing and Grubbing

31 11 10 – Clearing and Grubbing Land

31 11 10.10 Clear and Grub Site

0010 CLEAR AND GRUB SITE	B-7	1	48	Acre		2,150	1,650	3,800	5,025
0020 Cut & chip light trees to 6" diam.	B-30	2	12			620	915	1,535	1,925
0150 Grub stumps and remove	B-7	70	68.571			3,075	2,350	5,425	7,200
0200 Cut & chip medium trees to 12" diam.	B-30	1	24			1,225	1,825	3,050	3,875
0250 Grub stumps and remove	B-7	.30	160			7,175	5,475	12,650	16,800
0300 Cut & chip heavy trees to 24" diam.	B-30	.50	48			2,475	3,675	6,150	7,725
0350 Grub stumps and remove								40%	40%
0400 If burning is allowed, deduct cut & chip	B-86	20	.400	Ea.		22.50	9.70	32.20	44.50
3000 Chipping stumps, to 18" deep, 12" diam.		16	.500			28.50	12.15	40.65	56
3040 18" diameter		14	.571			32.50	13.90	46.40	64
3080 24" diameter		12	.667			38	16.20	54.20	74.50
3100 30" diameter		10	.800			45.50	19.45	64.95	89.50
3120 36" diameter		8	1			57	24.50	81.50	112
3160 48" diameter									
5000 Tree thinning, feller buncher, conifer	B-93	240	.033	Ea.		1.89	2.45	4.34	5.55
5080 Up to 8" diameter		160	.050			2.84	3.68	6.52	8.30
5120 12" diameter		240	.033			1.89	2.45	4.34	5.55
5240 Hardwood, up to 4" diameter		180	.044			2.52	3.27	5.79	7.35
5280 8" diameter		120	.067			3.78	4.91	8.69	11.05
5320 12" diameter									
7000 Tree removal, congested area, aerial lift truck	B-85	7	5.714	Ea.		265	115	380	525
7040 8" diameter		6	6.667			310	134	444	610
7080 12" diameter		5	8			370	161	531	730
7120 18" diameter		4	10			465	201	666	915
7160 24" diameter		3	13.333			620	268	888	1,225
7240 36" diameter		2	20			930	400	1,330	1,850
7280 48" diameter									

31 13 Selective Tree and Shrub Removal and Trimming

31 13 13 – Selective Tree and Shrub Removal

			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
		Crew					Labor	Equipment		
31 13 13.10 Selective Clearing										
0010	SELECTIVE CLEARING									
0020	Clearing brush with brush saw	A-1C	.25	32	Acre		1,350	208	1,558	2,250
0100	By hand	1 Club	.12	66.667			2,800		2,800	4,225
0300	With dozer, ball and chain, light clearing	B-11A	2	8			395	750	1,145	1,425
0400	Medium clearing		1.50	10.667			525	1,000	1,525	1,900
0500	With dozer and brush rake, light		10	1.600			79	150	229	283
0550	Medium brush to 4" diameter		8	2			99	188	287	355
0600	Heavy brush to 4" diameter		6.40	2.500			124	235	359	445
1000	Brush mowing, tractor w/rotary mower, no removal									
1020	Light density	B-84	2	4	Acre		227	183	410	540
1040	Medium density		1.50	5.333			305	244	549	725
1080	Heavy density		1	8			455	365	820	1,075
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		830	2,350	3,180	3,825
0340	25% to 50% hardwoods		.60	20			1,025	2,950	3,975	4,775
0370	75% to 100% hardwoods		.45	26.667			1,375	3,925	5,300	6,375
0400	500 trees/acre, up to 25% hardwoods		.60	20			1,025	2,950	3,975	4,775
0440	25% to 50% hardwoods		.48	25			1,300	3,675	4,975	6,000
0470	75% to 100% hardwoods		.36	33.333			1,725	4,900	6,625	8,000
0500	More than 600 trees/acre, up to 25% hardwoods		.52	23.077			1,200	3,400	4,600	5,525
0540	25% to 50% hardwoods		.42	28.571			1,475	4,200	5,675	6,850
0570	75% to 100% hardwoods		.31	38.710			2,000	5,700	7,700	9,250
0900	Large tract clearing per tree									
1500	300 HP dozer, to 12" diameter, softwood	B-10M	320	.038	Ea.		1.95	5.50	7.45	8.95
1550	Hardwood		100	.120			6.20	17.65	23.85	28.50
1600	12" to 24" diameter, softwood		200	.060			3.11	8.80	11.91	14.35
1650	Hardwood		80	.150			7.80	22	29.80	36
1700	24" to 36" diameter, softwood		100	.120			6.20	17.65	23.85	28.50
1750	Hardwood		50	.240			12.45	35.50	47.95	57.50
1800	36" to 48" diameter, softwood		70	.171			8.90	25	33.90	41
1850	Hardwood		35	.343			17.80	50.50	68.30	82
2000	Stump removal on site by hydraulic backhoe, 1-1/2 C.Y.									
2040	4" to 6" diameter	B-17	60	.533	Ea.		25	10.70	35.70	49
2050	8" to 12" diameter	B-30	33	.727			37.50	55.50	93	117
2100	14" to 24" diameter		25	.960			49.50	73.50	123	155
2150	26" to 36" diameter		16	1.500			77.50	115	192.50	242
3000	Remove selective trees, on site using chain saws and chipper, not incl. stumps, up to 6" diameter	B-7	18	2.667	Ea.		120	91.50	211.50	280
3050	8" to 12" diameter		12	4			180	137	317	420
3100	14" to 24" diameter		10	4.800			215	164	379	505
3150	26" to 36" diameter		8	6			269	206	475	630
3200	Machine load, 2 mile haul to dump, 12" diam. tree	A-3B	8	2			106	159	265	335

31 14 Earth Stripping and Stockpiling

31 14 13 – Soil Stripping and Stockpiling

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Equipment	Total	Total Incl O&P
31 14 13.23 Topsoil Stripping and Stockpiling									
0010 TOPSOIL STRIPPING AND STOCKPILING									
0020	200 HP dozer, ideal conditions	B-10B	2300	.005	C.Y.	.27	.65	.92	1.13
0100	Adverse conditions	"	1150	.010		.54	1.31	1.85	2.25
0200	300 HP dozer, ideal conditions	B-10M	3000	.004		.21	.59	.80	.96
0300	Adverse conditions	"	1650	.007		.38	1.07	1.45	1.74
0400	400 HP dozer, ideal conditions	B-10X	3900	.003		.16	.71	.87	1.02
0500	Adverse conditions	"	2000	.006		.31	1.39	1.70	2
0600	Clay, dry and soft, 200 HP dozer, ideal conditions	B-10B	1600	.008		.39	.94	1.33	1.61
0700	Adverse conditions	"	800	.015		.78	1.88	2.66	3.23
1000	Medium hard, 300 HP dozer, ideal conditions	B-10M	2000	.006		.31	.88	1.19	1.44
1100	Adverse conditions	"	1100	.011		.57	1.60	2.17	2.61
1200	Very hard, 400 HP dozer, ideal conditions	B-10X	2600	.005		.24	1.07	1.31	1.54
1300	Adverse conditions	"	1340	.009		.46	2.07	2.53	2.98
1400	Loam or topsoil, remove and stockpile on site								
1420	6" deep, 200' haul	B-10B	865	.014	C.Y.	.72	1.74	2.46	2.99
1430	300' haul		520	.023		1.20	2.89	4.09	4.97
1440	500' haul		225	.053		2.77	6.70	9.47	11.50
1450	Alternate method: 6" deep, 200' haul		5090	.002	S.Y.	.12	.30	.42	.51
1460	500' haul		1325	.009	"	.47	1.14	1.61	1.95
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.	10.25		10.25	15.40
1520	By skid steer, 6" deep, 100' haul, 101-500 S.Y.	B-62	500	.048		2.20	.36	2.56	3.68
1530	100' haul, 501-900 S.Y.	"	900	.027		1.22	.20	1.42	2.05
1540	200' haul, 901-1,100 S.Y.	B-63	1000	.040		1.77	.18	1.95	2.86
1550	By dozer, 200' haul, 1,101-4,000 S.Y.	B-10B	4000	.003		.16	.38	.54	.64

31 22 Grading

31 22 13 – Rough Grading

31 22 13.20 Rough Grading Sites

		B-1	2	12	Ea.	515	515	770
0100	Rough grade sites 400 S.F. or less, hand labor							
0120	410-1,000 S.F.	"	1	24		1,025	1,025	1,550
0130	1,100-3,000 S.F., skid steer & labor	B-62	1.50	16		730	118	848
0140	3,100-5,000 S.F.	"	1	24		1,100	178	1,278
0150	5,100-8,000 S.F.	B-63	1	40		1,775	178	1,953
0160	8,100-10,000 S.F.	"	.75	53.333		2,350	237	2,587
0170	8,100-10,000 S.F., dozer	B-10L	1	12		620	400	1,020
0200	Rough grade open sites 10,000-20,000 S.F., grader	B-11L	1.80	8.889		440	590	1,030
0210	20,100-25,000 S.F.		1.40	11.429		565	760	1,325
0220	25,100-30,000 S.F.		1.20	13.333		660	885	1,545
0230	30,100-35,000 S.F.		1	16		790	1,050	1,840
0240	35,100-40,000 S.F.		.90	17.778		880	1,175	2,055
0250	40,100-45,000 S.F.		.80	20		990	1,325	2,315
0260	45,100-50,000 S.F.		.72	22.222		1,100	1,475	2,575
0270	50,100-75,000 S.F.		.50	32		1,575	2,125	3,700
0280	75,100-100,000 S.F.		.36	44.444		2,200	2,950	5,150
								6,550

31 22 Grading

31 22 16 – Fine Grading

31 22 16.10 Finish Grading		Daily Crew Output	Labor-Hours	Unit	Material	2020 Bare Costs	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.	1.98	2.66	4.64	5.90
0100	Large area		2000	.008		.40	.53	.93	1.17
1100	Fine grade for slab on grade, machine		1040	.015		.76	1.02	1.78	2.26
1150	Hand grading	B-18	700	.034	↓	1.47	.24	1.71	2.46
3500	Finish grading lagoon bottoms	B-11L	4	4	M.S.F.	198	266	464	590

31 23 Excavation and Fill

31 23 16 – Excavation

31 23 16.13 Excavating, Trench

EXCAVATING, TRENCH

0011	Or continuous footing	B-11C	150	.107	B.C.Y.	5.25	1.43	6.68	9.45	
0060	1/2 C.Y. excavator	B-11M	200	.080		3.95	1.16	5.11	7.20	
0090	4' to 6' deep, 1/2 C.Y. excavator	"	200	.080		3.95	1.16	5.11	7.20	
0100	5/8 C.Y. excavator	B-12Q	250	.064		3.24	2.39	5.63	7.50	
0110	3/4 C.Y. excavator	B-12F	300	.053		2.70	2.31	5.01	6.60	
0300	1/2 C.Y. excavator, truck mounted	B-12J	200	.080		4.05	4.23	8.28	10.70	
0500	6' to 10' deep, 3/4 C.Y. excavator	B-12F	225	.071		3.60	3.09	6.69	8.80	
0510	1 C.Y. excavator	B-12A	400	.040		2.03	1.99	4.02	5.25	
0600	1 C.Y. excavator, truck mounted	B-12K	400	.040		2.03	2.43	4.46	5.70	
0610	1-1/2 C.Y. excavator	B-12B	600	.027		1.35	1.15	2.50	3.28	
0900	10' to 14' deep, 3/4 C.Y. excavator	B-12F	200	.080		4.05	3.47	7.52	9.85	
0910	1 C.Y. excavator	B-12A	360	.044		2.25	2.21	4.46	5.80	
1000	1-1/2 C.Y. excavator	B-12B	540	.030		1.50	1.27	2.77	3.65	
1300	14' to 20' deep, 1 C.Y. excavator	B-12A	320	.050		2.53	2.49	5.02	6.50	
1310	1-1/2 C.Y. excavator	B-12B	480	.033		1.69	1.43	3.12	4.11	
1320	2-1/2 C.Y. excavator	B-12S	765	.021		1.06	1.92	2.98	3.70	
1340	20' to 24' deep, 1 C.Y. excavator	B-12A	288	.056		2.81	2.76	5.57	7.25	
1342	1-1/2 C.Y. excavator	B-12B	432	.037		1.88	1.59	3.47	4.56	
1344	2-1/2 C.Y. excavator	B-12S	685	.023		1.18	2.14	3.32	4.12	
1352	4' to 6' deep, 1/2 C.Y. excavator w/trench box	B-13H	188	.085		4.31	5.15	9.46	12.10	
1354	5/8 C.Y. excavator	"	235	.068		3.45	4.10	7.55	9.65	
1356	3/4 C.Y. excavator	B-13G	282	.057		2.87	2.88	5.75	7.50	
1362	6' to 10' deep, 3/4 C.Y. excavator w/trench box	"	212	.075		3.82	3.83	7.65	9.95	
1370	1 C.Y. excavator	B-13D	376	.043		2.16	2.43	4.59	5.90	
1371	1-1/2 C.Y. excavator	B-13E	564	.028		1.44	1.43	2.87	3.72	
1374	10' to 14' deep, 3/4 C.Y. excavator w/trench box	B-13G	188	.085		4.31	4.32	8.63	11.20	
1375	1 C.Y. excavator	B-13D	338	.047		2.40	2.70	5.10	6.55	
1376	1-1/2 C.Y. excavator	B-13E	508	.032		1.60	1.59	3.19	4.13	
1381	14' to 20' deep, 1 C.Y. excavator w/trench box	B-13D	301	.053		2.69	3.03	5.72	7.35	
1382	1-1/2 C.Y. excavator	B-13E	451	.035		1.80	1.79	3.59	4.65	
1383	2-1/2 C.Y. excavator	B-13I	720	.022		1.13	2.20	3.33	4.11	
1386	20' to 24' deep, 1 C.Y. excavator w/trench box	B-13D	271	.059		2.99	3.37	6.36	8.20	
1387	1-1/2 C.Y. excavator	B-13E	406	.039		2	1.98	3.98	5.15	
1388	2-1/2 C.Y. excavator	B-13J	645	.025	↓	1.26	2.45	3.71	4.58	
1391	Shoring by S.F./day trench wall protected loose mat., 4' W	B-6	3200	.008	S.F. Wall	.51	.34	.07	.92	1.14
1392	Rent shoring per week per S.F. wall protected, loose mat., 4' W					1.40		1.40	1.54	
1395	Hydraulic shoring, S.F. trench wall protected stable mat., 4' W	2 Clab	2700	.006	↓	.20	.25	.45	.60	

31 23 Excavation and Fill

31 23 16 – Excavation

		Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
					Material	Labor	Equipment		
31 23 16.13 Excavating, Trench									
1397	semi-stable material, 4' W	2 Clab	.2400	.007	SF Wall	.28	.28	.56	.73
1398	Rent hydraulic shoring per day/S.F. wall, stable mat., 4' W					.32		.32	.36
1399	semi-stable material					.41		.41	.45
1400	By hand with pick and shovel 2' to 6' deep, light soil	1 Clab	8	1	B.C.Y.	42		42	63.50
1500	Heavy soil	"	4	2	"	84		84	127
1700	For tamping backfilled trenches, air tamp, add	A-1G	100	.080	E.C.Y.	3.37	.54	3.91	5.65
1900	Vibrating plate, add	B-18	180	.133	"	5.70	.92	6.62	9.55
2100	Trim sides and bottom for concrete pours, common earth		1500	.016	S.F.	.68	.11	.79	1.15
2300	Hardpan		600	.040	"	1.71	.28	1.99	2.87
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.	1.56	.76	2.32	3.16
3040	100' haul	"	200	.060	"	3.11	1.51	4.62	6.30
3080	2-1/4 C.Y. bucket, minimum haul	B-10T	600	.020	"	1.04	1.17	2.21	2.84
3090	100' haul	"	300	.040	"	2.07	2.34	4.41	5.70
5020	Loom & 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.	4.88	1.32	6.20	8.75
5060	1/2 C.Y. excavator	B-11M	216	.074	"	3.66	1.08	4.74	6.70
5080	4' to 6' deep, 1/2 C.Y. excavator	"	216	.074	"	3.66	1.08	4.74	6.70
5090	5/8 C.Y. excavator	B-12Q	276	.058	"	2.94	2.17	5.11	6.80
5100	3/4 C.Y. excavator	B-12F	324	.049	"	2.50	2.14	4.64	6.10
5130	1/2 C.Y. excavator, truck mounted	B-12J	216	.074	"	3.75	3.92	7.67	9.90
5140	6' to 10' deep, 3/4 C.Y. excavator	B-12F	243	.066	"	3.33	2.86	6.19	8.15
5150	1 C.Y. excavator	B-12A	432	.037	"	1.88	1.84	3.72	4.84
5160	1 C.Y. excavator, truck mounted	B-12K	432	.037	"	1.88	2.25	4.13	5.30
5170	1-1/2 C.Y. excavator	B-12B	648	.025	"	1.25	1.06	2.31	3.04
5190	10' to 14' deep, 3/4 C.Y. excavator	B-12F	216	.074	"	3.75	3.21	6.96	9.15
5200	1 C.Y. excavator	B-12A	389	.041	"	2.08	2.04	4.12	5.35
5210	1-1/2 C.Y. excavator	B-12B	583	.027	"	1.39	1.18	2.57	3.38
5250	14' to 20' deep, 1 C.Y. excavator	B-12A	346	.046	"	2.34	2.30	4.64	6.05
5260	1-1/2 C.Y. excavator	B-12B	518	.031	"	1.56	1.33	2.89	3.80
5270	2-1/2 C.Y. excavator	B-12S	826	.019	"	.98	1.77	2.75	3.42
5300	20' to 24' deep, 1 C.Y. excavator	B-12A	311	.051	"	2.61	2.56	5.17	6.70
5310	1-1/2 C.Y. excavator	B-12B	467	.034	"	1.74	1.47	3.21	4.22
5320	2-1/2 C.Y. excavator	B-12S	740	.022	"	1.10	1.98	3.08	3.82
5352	4' to 6' deep, 1/2 C.Y. excavator w/trench box	B-13H	205	.078	"	3.95	4.70	8.65	11.05
5354	5/8 C.Y. excavator	"	257	.062	"	3.15	3.75	6.90	8.85
5356	3/4 C.Y. excavator	B-13G	308	.052	"	2.63	2.64	5.27	6.85
5362	6' to 10' deep, 3/4 C.Y. excavator w/trench box	"	231	.069	"	3.51	3.51	7.02	9.10
5364	1 C.Y. excavator	B-13D	410	.039	"	1.98	2.23	4.21	5.40
5366	1-1/2 C.Y. excavator	B-13E	616	.026	"	1.32	1.31	2.63	3.41
5370	10' to 14' deep, 3/4 C.Y. excavator w/trench box	B-13G	205	.078	"	3.95	3.96	7.91	10.25
5372	1 C.Y. excavator	B-13D	370	.043	"	2.19	2.47	4.66	6
5374	1-1/2 C.Y. excavator	B-13E	554	.029	"	1.46	1.45	2.91	3.79
5382	14' to 20' deep, 1 C.Y. excavator w/trench box	B-13D	329	.049	"	2.46	2.78	5.24	6.75
5384	1-1/2 C.Y. excavator	B-13E	492	.033	"	1.65	1.64	3.29	4.27
5386	2-1/2 C.Y. excavator	B-13J	780	.021	"	1.04	2.03	3.07	3.79
5392	20' to 24' deep, 1 C.Y. excavator w/trench box	B-13D	295	.054	"	2.75	3.10	5.85	7.50
5394	1-1/2 C.Y. excavator	B-13E	444	.036	"	1.83	1.81	3.64	4.73
5396	2-1/2 C.Y. excavator	B-13J	695	.023	"	1.17	2.28	3.45	4.25
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.	4.79	1.30	6.09	8.65
6060	1/2 C.Y. excavator	B-11M	220	.073	"	3.60	1.06	4.66	6.55

31 23 Excavation and Fill

31 23 16 – Excavation

31 23 16.13	Excavating, Trench		Daily	Labor-	Material	2020 Bare Costs			Total
			Output	Hours		Labor	Equipment	Total	
6080	4' to 6' deep, 1/2 C.Y. excavator	B-11M	220	.073	B.C.Y.	3.60	1.06	4.66	6.55
6090	5/8 C.Y. excavator	B-12Q	275	.058		2.95	2.18	5.13	6.80
6100	3/4 C.Y. excavator	B-12F	330	.048		2.46	2.10	4.56	6
6130	1/2 C.Y. excavator, truck mounted	B-12J	220	.073		3.68	3.85	7.53	9.75
6140	6' to 10' deep, 3/4 C.Y. excavator	B-12F	248	.065		3.27	2.80	6.07	8
6150	1 C.Y. excavator	B-12A	440	.036		1.84	1.81	3.65	4.75
6160	1 C.Y. excavator, truck mounted	B-12K	440	.036		1.84	2.21	4.05	5.20
6170	1-1/2 C.Y. excavator	B-12B	660	.024		1.23	1.04	2.27	2.99
6190	10' to 14' deep, 3/4 C.Y. excavator	B-12F	220	.073		3.68	3.16	6.84	8.95
6200	1 C.Y. excavator	B-12A	396	.040		2.05	2.01	4.06	5.30
6210	1-1/2 C.Y. excavator	B-12B	594	.027		1.36	1.16	2.52	3.31
6250	14' to 20' deep, 1 C.Y. excavator	B-12A	352	.045		2.30	2.26	4.56	5.95
6260	1-1/2 C.Y. excavator	B-12B	528	.030		1.53	1.30	2.83	3.73
6270	2-1/2 C.Y. excavator	B-12S	840	.019		.96	1.74	2.70	3.37
6300	20' to 24' deep, 1 C.Y. excavator	B-12A	317	.050		2.56	2.51	5.07	6.60
6310	1-1/2 C.Y. excavator	B-12B	475	.034		1.71	1.45	3.16	4.15
6320	2-1/2 C.Y. excavator	B-12S	755	.021		1.07	1.94	3.01	3.74
6352	4' to 6' deep, 1/2 C.Y. excavator w/trench box	B-13H	209	.077		3.88	4.61	8.49	10.90
6354	5/8 C.Y. excavator	"	261	.061		3.10	3.69	6.79	8.70
6356	3/4 C.Y. excavator	B-13G	314	.051		2.58	2.59	5.17	6.70
6362	6' to 10' deep, 3/4 C.Y. excavator w/trench box	"	236	.068		3.43	3.44	6.87	8.95
6364	1 C.Y. excavator	B-13D	418	.038		1.94	2.18	4.12	5.30
6366	1-1/2 C.Y. excavator	B-13E	627	.026		1.29	1.28	2.57	3.35
6370	10' to 14' deep, 3/4 C.Y. excavator w/trench box	B-13G	209	.077		3.88	3.89	7.77	10.05
6372	1 C.Y. excavator	B-13D	376	.043		2.16	2.43	4.59	5.90
6374	1-1/2 C.Y. excavator	B-13E	564	.028		1.44	1.43	2.87	3.72
6382	14' to 20' deep, 1 C.Y. excavator w/trench box	B-13D	334	.048		2.43	2.73	5.16	6.65
6384	1-1/2 C.Y. excavator	B-13E	502	.032		1.61	1.60	3.21	4.18
6386	2-1/2 C.Y. excavator	B-13J	790	.020		1.03	2	3.03	3.74
6392	20' to 24' deep, 1 C.Y. excavator w/trench box	B-13D	301	.053		2.69	3.03	5.72	7.35
6394	1-1/2 C.Y. excavator	B-13E	452	.035		1.79	1.78	3.57	4.65
6396	2-1/2 C.Y. excavator	B-13J	710	.023	↓	1.14	2.23	3.37	4.16
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	1.62	7.62	10.80
7060	1/2 C.Y. excavator	B-11M	176	.091		4.49	1.32	5.81	8.20
7080	4' to 6' deep, 1/2 C.Y. excavator	"	176	.091		4.49	1.32	5.81	8.20
7090	5/8 C.Y. excavator	B-12Q	220	.073		3.68	2.72	6.40	8.50
7100	3/4 C.Y. excavator	B-12F	264	.061		3.07	2.63	5.70	7.50
7130	1/2 C.Y. excavator, truck mounted	B-12J	176	.091		4.60	4.81	9.41	12.20
7140	6' to 10' deep, 3/4 C.Y. excavator	B-12F	198	.081		4.09	3.51	7.60	10
7150	1 C.Y. excavator	B-12A	352	.045		2.30	2.26	4.56	5.95
7160	1 C.Y. excavator, truck mounted	B-12K	352	.045		2.30	2.77	5.07	6.50
7170	1-1/2 C.Y. excavator	B-12B	528	.030		1.53	1.30	2.83	3.73
7190	10' to 14' deep, 3/4 C.Y. excavator	B-12F	176	.091		4.60	3.94	8.54	11.25
7200	1 C.Y. excavator	B-12A	317	.050		2.56	2.51	5.07	6.60
7210	1-1/2 C.Y. excavator	B-12B	475	.034		1.71	1.45	3.16	4.15
7250	14' to 20' deep, 1 C.Y. excavator	B-12A	282	.057		2.87	2.82	5.69	7.40
7260	1-1/2 C.Y. excavator	B-12B	422	.038		1.92	1.63	3.55	4.67
7270	2-1/2 C.Y. excavator	B-12S	675	.024		1.20	2.17	3.37	4.19
7300	20' to 24' deep, 1 C.Y. excavator	B-12A	254	.063		3.19	3.13	6.32	8.20
7310	1-1/2 C.Y. excavator	B-12B	380	.042		2.13	1.81	3.94	5.20
7320	2-1/2 C.Y. excavator	B-12S	605	.026	↓	1.34	2.42	3.76	4.67

31 23 Excavation and Fill

31 23 16 – Excavation

31 23 16.14 Excavating, Utility Trench		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total		Total Incl O&P
							Labor	Equipment	Total	
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.		.53	.20	.73	1.01
0150	18" deep		750	.011			.57	.21	.78	1.08
0200	24" deep		700	.011			.61	.22	.83	1.16
0300	6" wide trench, 12" deep		650	.012			.65	.24	.89	1.25
0350	18" deep		600	.013			.71	.26	.97	1.35
0400	24" deep		550	.015			.77	.29	1.06	1.46
0450	36" deep		450	.018			.94	.35	1.29	1.79
0600	8" wide trench, 12" deep		475	.017			.89	.33	1.22	1.69
0650	18" deep		400	.020			1.06	.39	1.45	2.01
0700	24" deep		350	.023			1.21	.45	1.66	2.30
0750	36" deep	↓	300	.027	↓		1.41	.52	1.93	2.69
1000	Backfill by hand including compaction, add									
1050	4" wide trench, 12" deep	A-1G	800	.010	L.F.		.42	.07	.49	.70
1100	18" deep		530	.015			.64	.10	.74	1.06
1150	24" deep		400	.020			.84	.14	.98	1.42
1300	6" wide trench, 12" deep		540	.015			.62	.10	.72	1.05
1350	18" deep		405	.020			.83	.13	.96	1.40
1400	24" deep		270	.030			1.25	.20	1.45	2.09
1450	36" deep		180	.044			1.87	.30	2.17	3.14
1600	8" wide trench, 12" deep		400	.020			.84	.14	.98	1.42
1650	18" deep		265	.030			1.27	.20	1.47	2.13
1700	24" deep		200	.040			1.68	.27	1.95	2.83
1750	36" deep	↓	135	.059	↓		2.49	.40	2.89	4.19
2000	Chain trencher, 40 HP operator riding									
2050	6" wide trench and backfill, 12" deep	B-54	1200	.007	L.F.		.35	.34	.69	.90
2100	18" deep		1000	.008			.42	.40	.82	1.07
2150	24" deep		975	.008			.44	.41	.85	1.10
2200	36" deep		900	.009			.47	.45	.92	1.19
2250	48" deep		750	.011			.57	.54	1.11	1.44
2300	60" deep		650	.012			.65	.62	1.27	1.66
2400	8" wide trench and backfill, 12" deep		1000	.008			.42	.40	.82	1.07
2450	18" deep		950	.008			.45	.42	.87	1.14
2500	24" deep		900	.009			.47	.45	.92	1.19
2550	36" deep		800	.010			.53	.50	1.03	1.34
2600	48" deep		650	.012			.65	.62	1.27	1.66
2700	12" wide trench and backfill, 12" deep		975	.008			.44	.41	.85	1.10
2750	18" deep		860	.009			.49	.47	.96	1.25
2800	24" deep		800	.010			.53	.50	1.03	1.34
2850	36" deep		725	.011			.58	.55	1.13	1.48
3000	16" wide trench and backfill, 12" deep		835	.010			.51	.48	.99	1.29
3050	18" deep		750	.011	↓		.57	.54	1.11	1.44
3100	24" deep	↓	700	.011	↓		.61	.57	1.18	1.54
3200	Compaction with vibratory plate, add									35%
5100	Hand excavate and trim for pipe bells after trench excavation									35%
5200	8" pipe	1 Clab	155	.052	L.F.		2.17		2.17	3.26
5300	18" pipe	"	130	.062	"		2.59		2.59	3.89

31 23 Excavation and Fill

31 23 16 – Excavation

31 23 16.16 Structural Excavation for Minor Structures			Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
							Labor	Equipment			
0010	STRUCTURAL EXCAVATION FOR MINOR STRUCTURES	R312316-40									
0015	Hand, pits to 6' deep, sandy soil		1 Club	8	1	B.C.Y.		42		42	63.50
0100	Heavy soil or clay			4	2			84		84	127
0300	Pits 6' to 12' deep, sandy soil			5	1.600			67.50		67.50	101
0500	Heavy soil or clay			3	2.667			112		112	169
0700	Pits 12' to 18' deep, sandy soil			4	2			84		84	127
0900	Heavy soil or clay			2	4			168		168	253
1100	Hand loading trucks from stock pile, sandy soil			12	.667			28		28	42
1300	Heavy soil or clay			8	1			42		42	63.50
1500	For wet or muck hand excavation, add to above									50%	50%
6000	Machine excavation, for spread and mat footings, elevator pits, and small building foundations										
6030	Common earth, hydraulic backhoe, 1/2 C.Y. bucket		B-12E	55	.291	B.C.Y.		14.75	8.20	22.95	31
6035	3/4 C.Y. bucket		B-12F	90	.178			9	7.70	16.70	22
6040	1 C.Y. bucket		B-12A	108	.148			7.50	7.35	14.85	19.35
6050	1-1/2 C.Y. bucket		B-12B	144	.111			5.65	4.77	10.42	13.70
6060	2 C.Y. bucket		B-12C	200	.080			4.05	4.76	8.81	11.30
6070	Sand and gravel, 3/4 C.Y. bucket		B-12F	100	.160			8.10	6.95	15.05	19.80
6080	1 C.Y. bucket		B-12A	120	.133			6.75	6.65	13.40	17.40
6090	1-1/2 C.Y. bucket		B-12B	160	.100			5.05	4.30	9.35	12.35
6100	2 C.Y. bucket		B-12C	220	.073			3.68	4.32	8	10.25
6110	Clay, till, or blasted rock, 3/4 C.Y. bucket		B-12F	80	.200			10.15	8.70	18.85	25
6120	1 C.Y. bucket		B-12A	95	.168			8.55	8.35	16.90	22
6130	1-1/2 C.Y. bucket		B-12B	130	.123			6.25	5.30	11.55	15.15
6140	2 C.Y. bucket		B-12C	175	.091			4.63	5.45	10.08	12.95
6230	Sandy clay & loam, hydraulic backhoe, 1/2 C.Y. bucket		B-12E	60	.267			13.50	7.55	21.05	28.50
6235	3/4 C.Y. bucket		B-12F	98	.163			8.25	7.10	15.35	20
6240	1 C.Y. bucket		B-12A	116	.138			7	6.85	13.85	18
6250	1-1/2 C.Y. bucket		B-12B	156	.103			5.20	4.41	9.61	12.65
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%
9026	For hauling, see Section 31 23 23.20										15%
9030	For sheeting or soldier bms/logging, 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		B-47	316	.076	L.F.		3.52	4.92	8.44	10.70
0015	Drilling only rock, 2" hole for rock bolts			250	.096			4.45	6.20	10.65	13.55
04600	2-1/2" hole for pre-splitting			240	.100			4.64	6.50	11.14	14.10

31 23 16.30 Drilling and Blasting Rock

0010	DRILLING AND BLASTING ROCK		B-47	225	.107	B.C.Y.	4.54	4.95	6.90	16.39	20
0020	Rock, open face, under 1,500 C.Y.			300	.080		4.54	3.71	5.20	13.45	16.25
0100	Over 1,500 C.Y.			175	.137		4.54	6.35	8.90	19.79	24.50
0200	Areas where blasting mats are required, under 1,500 C.Y.			250	.096		4.54	4.45	6.20	15.19	18.55
0250	Over 1,500 C.Y.										
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		4.54	22.50	31	58.04	72.50
1400	Over 1,500 C.Y.			66	.364		4.54	16.85	23.50	44.89	56.50
1900	Restricted areas, up to 1,500 C.Y.			13	1.846		4.54	85.50	120	210.04	265

31 23 Excavation and Fill

31 23 16 – Excavation

		Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
					Material	Labor	Equipment		
31 23 16.30 Drilling and Blasting Rock									
2000	Over 1,500 C.Y.	B-47	20	1.200	B.C.Y.	4.54	55.50	78	138.04
2200	Trenches, up to 1,500 C.Y.		22	1.091		13.15	50.50	70.50	134.15
2300	Over 1,500 C.Y.		26	.923		13.15	43	60	116.15
2500	Pier holes, up to 1,500 C.Y.		22	1.091		4.54	50.50	70.50	125.54
2600	Over 1,500 C.Y.		31	.774		4.54	36	50	90.54
2800	Boulders under 1/2 C.Y., loaded on truck, no hauling	B-100	80	.150			7.80	12	19.80
2900	Boulders, drilled, blasted	B-47	100	.240		4.54	11.15	15.55	31.24
3100	Jackhammer operators with foreman compressor, air tools	B-9	1	40	Day		1,700	355	2,055
3300	Track drill, compressor, operator and foreman	B-47	1	24	"		1,125	1,550	2,675
3500	Blasting caps				Ea.	6.65			6.65
3700	Explosives					.54			.54
3800	Blasting mats, for purchase, no mobilization, 10' x 15' x 12"					1,275			1,275
3900	Blasting mats, rent, for first day					211			211
4000	Per added day					65.50			65.50
4200	Preblast survey for 6 room house, individual lot, minimum	A-6	2.40	6.667			355	12.85	367.85
4300	Maximum		"	1.35	11.852		625	23	648
4500	City block within zone of influence, minimum	A-8	25200	.001	S.F.		.07		.07
4600	Maximum		"	15100	.002	"	.12		.12
									.18

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								
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.		1.01	.99	2
0250	1-1/2 C.Y. cap. = 125 C.Y./hr.	B-12B	1000	.016			.81	.69	1.50
0260	2 C.Y. cap. = 165 C.Y./hr.	B-12C	1320	.012			.61	.72	1.33
0300	3 C.Y. cap. = 260 C.Y./hr.	B-12D	2080	.008			.39	1.04	1.43
0305	3-1/2 C.Y. cap. = 300 C.Y./hr.		"	2400	.007		.34	.90	1.24
0310	Wheel mounted, 1/2 C.Y. cap. = 40 C.Y./hr.	B-12E	320	.050			2.53	1.41	3.94
0360	3/4 C.Y. cap. = 60 C.Y./hr.	B-12F	480	.033			1.69	1.45	3.14
0500	Clamshell, 1/2 C.Y. cap. = 20 C.Y./hr.	B-12G	160	.100			5.05	5.35	10.40
0550	1 C.Y. cap. = 35 C.Y./hr.	B-12H	280	.057			2.89	4.28	7.17
0950	Dragline, 1/2 C.Y. cap. = 30 C.Y./hr.	B-12I	240	.067			3.38	4.26	7.64
1000	3/4 C.Y. cap. = 35 C.Y./hr.		"	280	.057		2.89	3.65	6.54
1050	1-1/2 C.Y. cap. = 65 C.Y./hr.	B-12P	520	.031			1.56	2.44	4
1200	Front end loader, track mtd., 1-1/2 C.Y. cap. = 70 C.Y./hr.	B-10N	560	.021			1.11	1.01	2.12
1250	2-1/2 C.Y. cap. = 95 C.Y./hr.	B-100	760	.016			.82	1.26	2.08
1300	3 C.Y. cap. = 130 C.Y./hr.	B-10P	1040	.012			.60	1.12	1.72
1350	5 C.Y. cap. = 160 C.Y./hr.	B-10Q	1280	.009			.49	1.16	1.65
1500	Wheel mounted, 3/4 C.Y. cap. = 45 C.Y./hr.	B-10R	360	.033			1.73	.84	2.57
1550	1-1/2 C.Y. cap. = 80 C.Y./hr.	B-10S	640	.019			.97	.66	1.63
1600	2-1/4 C.Y. cap. = 100 C.Y./hr.	B-10T	800	.015			.78	.88	1.66
1650	5 C.Y. cap. = 185 C.Y./hr.	B-10U	1480	.008			.42	.65	1.07
1800	Hydraulic excavator, truck mtd. 1/2 C.Y. = 30 C.Y./hr.	B-12J	240	.067			3.38	3.53	6.91
1850	48" bucket, 1 C.Y. = 45 C.Y./hr.	B-12K	360	.044			2.25	2.70	4.95
3700	Shovel, 1/2 C.Y. cap. = 55 C.Y./hr.	B-12L	440	.036			1.84	1.95	3.79
3750	3/4 C.Y. cap. = 85 C.Y./hr.	B-12M	680	.024			1.19	1.52	2.71
3800	1 C.Y. cap. = 120 C.Y./hr.	B-12N	960	.017			.84	1.26	2.10
3850	1-1/2 C.Y. cap. = 160 C.Y./hr.	B-12O	1280	.013			.63	1.01	1.64
3900	3 C.Y. cap. = 250 C.Y./hr.	B-12T	2000	.008			.41	1.06	1.47
4000	For soft soil or sand, deduct								15% 15%

31 23 Excavation and Fill

31 23 16 – Excavation

31 23 16.42 Excavating, Bulk Bank Measure		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	Total	Total Ind O&P
					B.C.Y.				
4100	For heavy soil or stiff clay, add							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			5.05	7.50	12.55
4450	Maximum	"	60	.267	↓		13.50	19.95	33.45
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.		.84	.83	1.67
5150	1-1/2 C.Y. cap. = 150 C.Y./hr.	B-12B	1200	.013			.68	.57	1.25
5300	2 C.Y. cap. = 195 C.Y./hr.	B-12C	1560	.010			.52	.61	1.13
5400	3 C.Y. cap. = 300 C.Y./hr.	B-12D	2400	.007			.34	.90	1.24
5500	3-1/2 C.Y. cap. = 350 C.Y./hr.	"	2800	.006			.29	.77	1.06
5610	Wheel mounted, 1/2 C.Y. cap. = 44 C.Y./hr.	B-12E	352	.045			2.30	1.28	3.58
5660	3/4 C.Y. cap. = 66 C.Y./hr.	B-12F	528	.030	↓		1.53	1.31	2.84
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.		1.35	.87	2.22
2010	Sandy clay & loam		440	.027			1.41	.91	2.32
2020	Common earth		400	.030			1.56	1	2.56
2040	Clay		250	.048			2.49	1.61	4.10
2200	150' haul, sand & gravel		230	.052			2.71	1.75	4.46
2210	Sandy clay & loam		220	.055			2.83	1.82	4.65
2220	Common earth		200	.060			3.11	2.01	5.12
2240	Clay		125	.096			4.98	3.21	8.19
2400	300' haul, sand & gravel		120	.100			5.20	3.35	8.55
2410	Sandy clay & loam		115	.104			5.40	3.49	8.89
2420	Common earth		100	.120			6.20	4.01	10.21
2440	Clay		65	.185			9.60	6.20	15.80
3000	105 HP, 50' haul, sand & gravel	B-10W	700	.017			.89	.91	1.80
3010	Sandy clay & loam		680	.018			.92	.93	1.85
3020	Common earth		610	.020			1.02	1.04	2.06
3040	Clay		385	.031			1.62	1.65	3.27
3200	150' haul, sand & gravel		310	.039			2.01	2.04	4.05
3210	Sandy clay & loam		300	.040			2.07	2.11	4.18
3220	Common earth		270	.044			2.31	2.35	4.66
3240	Clay		170	.071			3.66	3.73	7.39
3300	300' haul, sand & gravel		140	.086			4.45	4.53	8.98
3310	Sandy clay & loam		135	.089			4.61	4.70	9.31
3320	Common earth		120	.100			5.20	5.30	10.50
3340	Clay		100	.120			6.20	6.35	12.55
4000	200 HP, 50' haul, sand & gravel	B-10B	1400	.009			.44	1.07	1.51
4010	Sandy clay & loam		1360	.009			.46	1.11	1.57
4020	Common earth		1230	.010			.51	1.22	1.73
4040	Clay		770	.016			.81	1.95	2.76
4200	150' haul, sand & gravel		595	.020			1.05	2.53	3.58
4210	Sandy clay & loam		580	.021			1.07	2.59	3.66
4220	Common earth		516	.023			1.21	2.92	4.13
4240	Clay		325	.037			1.92	4.63	6.55
4400	300' haul, sand & gravel		310	.039			2.01	4.85	6.86
4410	Sandy clay & loam		300	.040			2.07	5	7.07

31 23 Excavation and Fill

31 23 16 – Excavation

31 23 16.46	Excavating, Bulk, Dozer	Crew	Daily	Labor-	Unit	Material	2020 Bare Costs		Total	Total
			Output	Hours			Labor	Equipment		
4420	Common earth	B-10B	270	.044	B.C.Y.		2.31	5.55	7.86	9.60
4440	Clay		170	.071			3.66	8.85	12.51	15.25
5000	300 HP, 50' haul, sand & gravel	B-10M	1900	.006			.33	.93	1.26	1.51
5010	Sandy clay & loam		1850	.006			.34	.95	1.29	1.55
5020	Common earth		1650	.007			.38	1.07	1.45	1.74
5040	Clay		1025	.012			.61	1.72	2.33	2.80
5200	150' haul, sand & gravel		920	.013			.68	1.92	2.60	3.12
5210	Sandy clay & loam		895	.013			.70	1.97	2.67	3.21
5220	Common earth		800	.015			.78	2.21	2.99	3.59
5240	Clay		500	.024			1.24	3.53	4.77	5.75
5400	300' haul, sand & gravel		470	.026			1.32	3.75	5.07	6.10
5410	Sandy clay & loam		455	.026			1.37	3.88	5.25	6.30
5420	Common earth		410	.029			1.52	4.30	5.82	7
5440	Clay		250	.048			2.49	7.05	9.54	11.50
5500	460 HP, 50' haul, sand & gravel	B-10X	1930	.006			.32	1.44	1.76	2.06
5506	Sandy clay & loam		1880	.006			.33	1.48	1.81	2.12
5510	Common earth		1680	.007			.37	1.65	2.02	2.37
5520	Clay		1050	.011			.59	2.65	3.24	3.80
5530	150' haul, sand & gravel		1290	.009			.48	2.15	2.63	3.09
5535	Sandy clay & loam		1250	.010			.50	2.22	2.72	3.19
5540	Common earth		1120	.011			.56	2.48	3.04	3.56
5550	Clay		700	.017			.89	3.97	4.86	5.70
5560	300' haul, sand & gravel		660	.018			.94	4.21	5.15	6.05
5565	Sandy clay & loam		640	.019			.97	4.34	5.31	6.25
5570	Common earth		575	.021			1.08	4.83	5.91	6.90
5580	Clay		350	.034			1.78	7.95	9.73	11.40
6000	700 HP, 50' haul, sand & gravel	B-10V	3500	.003			.18	1.46	1.64	1.88
6006	Sandy clay & loam		3400	.004			.18	1.51	1.69	1.93
6010	Common earth		3035	.004			.20	1.69	1.89	2.16
6020	Clay		1925	.006			.32	2.66	2.98	3.40
6030	150' haul, sand & gravel		2025	.006			.31	2.53	2.84	3.24
6035	Sandy clay & loam		1960	.006			.32	2.61	2.93	3.35
6040	Common earth		1750	.007			.36	2.93	3.29	3.75
6050	Clay		1100	.011			.57	4.66	5.23	5.95
6060	300' haul, sand & gravel		1030	.012			.60	4.97	5.57	6.35
6065	Sandy clay & loam		1005	.012			.62	5.10	5.72	6.55
6070	Common earth		900	.013			.69	5.70	6.39	7.30
6080	Clay		550	.022			1.13	9.30	10.43	11.95

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.		1.07	2.28	3.35	4.11
0150	3,000' haul		610	.023			1.21	2.58	3.79	4.65
0200	5,000' haul		505	.028			1.46	3.12	4.58	5.60
0300	Common earth, 1,500' haul		600	.023			1.23	2.62	3.85	4.73
0350	3,000' haul		530	.026			1.39	2.97	4.36	5.35
0400	5,000' haul		440	.032			1.67	3.58	5.25	6.45
0410	Sandy clay & loam, 1,500' haul		648	.022			1.14	2.43	3.57	4.37
0420	3,000' haul		572	.024			1.29	2.75	4.04	4.96
0430	5,000' haul		475	.029			1.55	3.31	4.86	5.95
0500	Clay, 1,500' haul		375	.037			1.96	4.20	6.16	7.55
0550	3,000' haul		330	.042			2.23	4.77	7	8.60
0600	5,000' haul		275	.051			2.68	5.70	8.38	10.30

31 23 Excavation and Fill

31 23 16 – Excavation

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
Line No.	Description					Labor	Equipment		
31 23 16.50	Excavation, Bulk, Scrapers								
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.	.80	3.08	3.88	4.59
1100	3,000' haul		805	.017		.91	3.52	4.43	5.25
1200	5,000' haul		645	.022		1.14	4.40	5.54	6.55
1300	Common earth, 1,500' haul		800	.018		.92	3.55	4.47	5.30
1350	3,000' haul		700	.020		1.05	4.05	5.10	6.05
1400	5,000' haul		560	.025		1.31	5.05	6.36	7.50
1420	Sandy clay & loam, 1,500' haul		864	.016		.85	3.28	4.13	4.88
1430	3,000' haul		786	.018		.94	3.61	4.55	5.35
1440	5,000' haul		605	.023		1.22	4.69	5.91	6.95
1500	Clay, 1,500' haul		500	.028		1.47	5.65	7.12	8.45
1550	3,000' haul		440	.032		1.67	6.45	8.12	9.60
1600	5,000' haul		350	.040		2.10	8.10	10.20	12.05
2000	21 C.Y., 1/4 push dozer, sand & gravel, 1,500' haul	B-33E	1180	.012		.62	2.60	3.22	3.79
2100	3,000' haul		910	.015		.81	3.37	4.18	4.92
2200	5,000' haul		750	.019		.98	4.09	5.07	5.95
2300	Common earth, 1,500' haul		1030	.014		.71	2.98	3.69	4.35
2350	3,000' haul		790	.018		.93	3.88	4.81	5.65
2400	5,000' haul		650	.022		1.13	4.72	5.85	6.90
2420	Sandy clay & loam, 1,500' haul		1112	.013		.66	2.76	3.42	4.03
2430	3,000' haul		854	.016		.86	3.59	4.45	5.25
2440	5,000' haul		702	.020		1.05	4.37	5.42	6.40
2500	Clay, 1,500' haul		645	.022		1.14	4.76	5.90	6.95
2550	3,000' haul		495	.028		1.49	6.20	7.69	9.05
2600	5,000' haul		405	.035		1.82	7.60	9.42	11.05
2700	Towed, 10 C.Y., 1/4 push dozer, sand & gravel, 1,500' haul	B-33B	560	.025		1.31	4.22	5.53	6.60
2720	3,000' haul		450	.031		1.64	5.25	6.89	8.25
2730	5,000' haul		365	.038		2.02	6.50	8.52	10.15
2750	Common earth, 1,500' haul		420	.033		1.75	5.65	7.40	8.80
2770	3,000' haul		400	.035		1.84	5.90	7.74	9.25
2780	5,000' haul		310	.045		2.37	7.65	10.02	11.95
2785	Sandy clay & loam, 1,500' haul		454	.031		1.62	5.20	6.82	8.20
2790	3,000' haul		432	.032		1.70	5.45	7.15	8.55
2795	5,000' haul		340	.041		2.16	6.95	9.11	10.90
2800	Clay, 1,500' haul		315	.044		2.34	7.50	9.84	11.75
2820	3,000' haul		300	.047		2.45	7.90	10.35	12.30
2840	5,000' haul		225	.062		3.27	10.50	13.77	16.45
2900	15 C.Y., 1/4 push dozer, sand & gravel, 1,500' haul	B-33C	800	.018		.92	2.98	3.90	4.66
2920	3,000' haul		640	.022		1.15	3.72	4.87	5.80
2940	5,000' haul		520	.027		1.41	4.58	5.99	7.15
2960	Common earth, 1,500' haul		600	.023		1.23	3.97	5.20	6.20
2980	3,000' haul		560	.025		1.31	4.25	5.56	6.65
3000	5,000' haul		440	.032		1.67	5.40	7.07	8.45
3005	Sandy clay & loam, 1,500' haul		648	.022		1.14	3.67	4.81	5.75
3010	3,000' haul		605	.023		1.22	3.94	5.16	6.15
3015	5,000' haul		475	.029		1.55	5	6.55	7.80
3020	Clay, 1,500' haul		450	.031		1.64	5.30	6.94	8.25
3040	3,000' haul		420	.033		1.75	5.65	7.40	8.85
3060	5,000' haul		320	.044		2.30	7.45	9.75	11.65

31 23 Excavation and Fill

31 23 19 – Dewatering

31 23 19.20 Dewatering Systems				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
0010	DEWATERING SYSTEMS							Labor	Equipment	Total		
0020	Excavate drainage trench, 2' wide, 2' deep	B-11C	90	.178	C.Y.			8.80	2.38	11.18	15.75	
0100	2' wide, 3' deep, with backhoe loader	"	135	.119				5.85	1.58	7.43	10.55	
0200	Excavate sump pits by hand, light soil	1 Clab	7.10	1.127				47.50		47.50	71.50	
0300	Heavy soil	"	3.50	2.286	↓			96		96	145	
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			156	24.50	180.50	260	
0650	4" diaphragm pump used for 8 hrs.	B-10I	4	3				156	37	193	274	
0800	8 hrs. attended, 2" diaphragm pump	B-10H	1	12				620	98.50	718.50	1,050	
0900	3" centrifugal pump	B-10J	1	12				620	92	712	1,025	
1000	4" diaphragm pump	B-10I	1	12				620	148	768	1,100	
1100	6" centrifugal pump	B-10K	1	12	↓			620	294	914	1,250	
1300	CMP, incl. excavation 3' deep, 12" diameter	B-6	115	.209	L.F.			12.40	9.55	1.86	23.81	
1400	18" diameter		100	.240	"			18.80	11	2.14	31.94	
1600	Sump hole construction, incl. excavation and gravel, pit		1250	.019	C.F.			1.10	.88	.17	2.15	
1700	With 12" gravel collar, 12" pipe, corrugated, 16 ga.			.343	L.F.			23	15.70	3.05	41.75	
1800	15" pipe, corrugated, 16 ga.			.436				30	19.95	3.89	53.84	
1900	18" pipe, corrugated, 16 ga.			.480				35	22	4.28	61.28	
2000	24" pipe, corrugated, 14 ga.			.600	▼			42	27.50	5.35	74.85	
2200	Wood lining, up to 4' x 4', add			.080	SFCFA			16.40	3.66	.71	20.77	
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.			37.50	6.65	1.30	45.45
0050	Average		98	.245				44.50	11.20	2.18	57.88
0100	Maximum		49	.490	▼			48	22.50	4.36	74.86
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			31.50		31.50	47.50
0200	2.0 labor-hours per L.F.	"	4	2	"			84		84	127
0400	Pump operation, 4 @ 6 hr. shifts										
0410	Per 24 hr. day	4 Eqlt	1.27	25.197	Day			1,325		1,325	2,000
0500	Per 168 hr. week, 160 hr. straight, 8 hr. double time		.18	178	Week			9,425		9,425	14,100
0550	Per 4.3 week month		.04	800	Month			42,400		42,400	63,500
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			160	525	685	960
0800	Thereafter, per month							4.13	7.748	538	755
1000	200' long header, 8" diameter, first month							6	5.333	154	283
1100	Thereafter, per month							8.39	3.814	72	202
1300	500' long header, 8" diameter, first month							10.63	3.010	56	160
1400	Thereafter, per month							20.91	1.530	40	81
1600	1,000' long header, 10" diameter, first month							11.62	2.754	48	146
1700	Thereafter, per month							41.81	.765	24	40.50
1900	Note: above figures include pumping 168 hrs. per week,										

31 23 Excavation and Fill

31 23 19 - Dewatering

31 23 19.40 Wellpoints		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	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											
0100 Heavy soil											
0300 Compaction in 6" layers, hand tamp, add to above											
0400 Roller compaction operator walking, add											
0500 Air tamp, add											
0600 Vibrating plate, add											
0800 Compaction in 12" layers, hand tamp, add to above											
0900 Roller compaction operator walking, add											
1000 Air tamp, add											
1100 Vibrating plate, add											
1300 Dozer backfilling, bulk, up to 300' haul, no compaction											
1400 Air tamped, add											
1600 Compacting backfill, 6" to 12" lifts, vibrating roller											
1700 Sheepfoot roller											
1900 Dozer backfilling, trench, up to 300' haul, no compaction											
2000 Air tamped, add											
2200 Compacting backfill, 6" to 12" lifts, vibrating roller											
2300 Sheepfoot roller											
2350 Spreading in 8" layers, small dozer											
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											
2000 80 HP, 50' haul, sand & gravel											
2010 Sandy clay & loam											
2020 Common earth											
2040 Clay											
2400 300' haul, sand & gravel											
2410 Sandy clay & loam											
2420 Common earth											
2440 Clay											
3000 105 HP, 50' haul, sand & gravel											
3010 Sandy clay & loam											
3020 Common earth											
3040 Clay											
3300 300' haul, sand & gravel											
3310 Sandy clay & loam											
3320 Common earth											
3340 Clay											
4000 200 HP, 50' haul, sand & gravel											
4010 Sandy clay & loam											
4020 Common earth											
4040 Clay											
4400 300' haul, sand & gravel											
4410 Sandy clay & loam											
4420 Common earth											
4440 Clay											

31 23 Excavation and Fill

31 23 23 – Fill

		Daily Output	Labor Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
		Crew			Labor	Equipment	Total		
31 23 23.14 Backfill, Structural									
5000	300 HP, 50' haul, sand & gravel	B-10M	3170	.004	L.C.Y.		.20	.56	.76
5010	Sandy clay & loam		3110	.004			.20	.57	.77
5020	Common earth		2900	.004			.21	.61	.82
5040	Clay		2700	.004			.23	.65	.88
5400	300' haul, sand & gravel		1500	.008			.42	1.18	1.60
5410	Sandy clay & loam		1470	.008			.42	1.20	1.62
5420	Common earth		1350	.009			.46	1.31	1.77
5440	Clay		1225	.010			.51	1.44	1.95
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

FILL BY BORROW AND UTILITY BEDDING		B-15	1200	.023	L.C.Y.	12.60	1.17	2.21	15.98	18.05
0015 Fill by borrow, load, 1 mile haul, spread with dozer										
0020 for embankments		B-15	1200	.023	L.C.Y.	12.60	1.17	2.21	15.98	18.05
0035 Select fill for shoulders & embankments										
0040 Fill, for hauling over 1 mile, add to above per C.Y., see Section 31 23 23.20										
0049 Utility bedding, for pipe & conduit, not incl. compaction										
0050 Crushed or screened bank run gravel		B-6	150	.160	L.C.Y.	21	7.30	1.43	29.73	35.50
0100 Crushed stone 3/4" to 1/2"			150	.160		27.50	7.30	1.43	36.23	43
0200 Sand, dead or bank			150	.160		18.25	7.30	1.43	26.98	32.50
0500 Compacting bedding in trench		A-1D	90	.089	E.C.Y.		3.74	.35	4.09	6
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

GENERAL FILL		B-10B	1000	.012	L.C.Y.		.62	1.50	2.12	2.58
0011 Spread dumped material, no compaction										
0020 By dozer										
0100 By hand		1 Club	12	.667	"		28		28	42
0500 Gravel fill, compacted, under floor slabs, 4" deep		B-37	10000	.005	S.F.	.49	.21	.03	.73	.89
0600 6" deep			8600	.006		.74	.25	.03	1.02	1.21
0700 9" deep			7200	.007		1.23	.30	.04	1.57	1.83
0800 12" deep			6000	.008		1.72	.35	.04	2.11	2.47
1000 Alternate pricing method, 4" deep			120	.400	E.C.Y.	37	17.70	2.13	56.83	69.50
1100 6" deep			160	.300		37	13.30	1.60	51.90	62
1200 9" deep			200	.240		37	10.60	1.28	48.88	58
1300 12" deep			220	.218		37	9.65	1.16	47.81	56.50
1500 For fill under exterior paving, see Section 32 11 23.23										

31 23 23.20 Hauling

HAULING		B-34A	320	.025	L.C.Y.		1.22	1.34	2.56	3.30
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/l.d./uld.										
0016 cycle 1 mile			272	.029			1.44	1.57	3.01	3.89
0018 cycle 2 miles			208	.038			1.88	2.06	3.94	5.10
0020 cycle 4 miles			144	.056			2.72	2.97	5.69	7.35
0022 cycle 6 miles			112	.071			3.50	3.82	7.32	9.45
0024 cycle 8 miles			88	.091			4.45	4.86	9.31	12
0026 20 MPH avg., cycle 0.5 mile			336	.024			1.17	1.27	2.44	3.15
0028 cycle 1 mile			296	.027			1.32	1.45	2.77	3.57
0030 cycle 2 miles			240	.033			1.63	1.78	3.41	4.40
0032 cycle 4 miles			176	.045			2.22	2.43	4.65	6

31 23 Excavation and Fill

31 23 23 – Fill

31 23 23.20 Hauling		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
						Labor	Equipment	Total		
0034	cycle 6 miles	B-34A	136	.059	L.C.Y.	2.88	3.15	6.03	7.75	
0036	cycle 8 miles		112	.071		3.50	3.82	7.32	9.45	
0044	25 MPH avg., cycle 4 miles		192	.042		2.04	2.23	4.27	5.50	
0046	cycle 6 miles		160	.050		2.45	2.68	5.13	6.60	
0048	cycle 8 miles		128	.063		3.06	3.34	6.40	8.25	
0050	30 MPH avg., cycle 4 miles		216	.037		1.81	1.98	3.79	4.90	
0052	cycle 6 miles		176	.045		2.22	2.43	4.65	6	
0054	cycle 8 miles		144	.056		2.72	2.97	5.69	7.35	
0114	15 MPH avg., cycle 0.5 mile, 15 min. wait/l.d./uld.		224	.036		1.75	1.91	3.66	4.72	
0116	cycle 1 mile		200	.040		1.96	2.14	4.10	5.30	
0118	cycle 2 miles		168	.048		2.33	2.55	4.88	6.30	
0120	cycle 4 miles		120	.067		3.26	3.57	6.83	8.80	
0122	cycle 6 miles		96	.083		4.08	4.46	8.54	11	
0124	cycle 8 miles		80	.100		4.90	5.35	10.25	13.25	
0126	20 MPH avg., cycle 0.5 mile		232	.034		1.69	1.85	3.54	4.56	
0128	cycle 1 mile		208	.038		1.88	2.06	3.94	5.10	
0130	cycle 2 miles		184	.043		2.13	2.33	4.46	5.75	
0132	cycle 4 miles		144	.056		2.72	2.97	5.69	7.35	
0134	cycle 6 miles		112	.071		3.50	3.82	7.32	9.45	
0136	cycle 8 miles		96	.083		4.08	4.46	8.54	11	
0144	25 MPH avg., cycle 4 miles		152	.053		2.58	2.82	5.40	6.95	
0146	cycle 6 miles		128	.063		3.06	3.34	6.40	8.25	
0148	cycle 8 miles		112	.071		3.50	3.82	7.32	9.45	
0150	30 MPH avg., cycle 4 miles		168	.048		2.33	2.55	4.88	6.30	
0152	cycle 6 miles		144	.056		2.72	2.97	5.69	7.35	
0154	cycle 8 miles		120	.067		3.26	3.57	6.83	8.80	
0214	15 MPH avg., cycle 0.5 mile, 20 min. wait/l.d./uld.		176	.045		2.22	2.43	4.65	6	
0216	cycle 1 mile		160	.050		2.45	2.68	5.13	6.60	
0218	cycle 2 miles		136	.059		2.88	3.15	6.03	7.75	
0220	cycle 4 miles		104	.077		3.77	4.12	7.89	10.20	
0222	cycle 6 miles		88	.091		4.45	4.86	9.31	12	
0224	cycle 8 miles		72	.111		5.45	5.95	11.40	14.70	
0226	20 MPH avg., cycle 0.5 mile		176	.045		2.22	2.43	4.65	6	
0228	cycle 1 mile		168	.048		2.33	2.55	4.88	6.30	
0230	cycle 2 miles		144	.056		2.72	2.97	5.69	7.35	
0232	cycle 4 miles		120	.067		3.26	3.57	6.83	8.80	
0234	cycle 6 miles		96	.083		4.08	4.46	8.54	11	
0236	cycle 8 miles		88	.091		4.45	4.86	9.31	12	
0244	25 MPH avg., cycle 4 miles		128	.063		3.06	3.34	6.40	8.25	
0246	cycle 6 miles		112	.071		3.50	3.82	7.32	9.45	
0248	cycle 8 miles		96	.083		4.08	4.46	8.54	11	
0250	30 MPH avg., cycle 4 miles		136	.059		2.88	3.15	6.03	7.75	
0252	cycle 6 miles		120	.067		3.26	3.57	6.83	8.80	
0254	cycle 8 miles		104	.077		3.77	4.12	7.89	10.20	
0314	15 MPH avg., cycle 0.5 mile, 25 min. wait/l.d./uld.		144	.056		2.72	2.97	5.69	7.35	
0316	cycle 1 mile		128	.063		3.06	3.34	6.40	8.25	
0318	cycle 2 miles		112	.071		3.50	3.82	7.32	9.45	
0320	cycle 4 miles		96	.083		4.08	4.46	8.54	11	
0322	cycle 6 miles		80	.100		4.90	5.35	10.25	13.25	
0324	cycle 8 miles		64	.125		6.10	6.70	12.80	16.50	
0326	20 MPH avg., cycle 0.5 mile		144	.056		2.72	2.97	5.69	7.35	
0328	cycle 1 mile		136	.059		2.88	3.15	6.03	7.75	
0330	cycle 2 miles		120	.067		3.26	3.57	6.83	8.80	

31 23 Excavation and Fill

31 23 23 – Fill

31 23 23.20 Hauling		cycle 4 miles	B-34A	Daily	Labor-	Material	2020 Bare Costs			Total
				Output	Hours		Labor	Equipment	Total	
0332		cycle 6 miles		104	.077	L.C.Y.	3.77	4.12	7.89	10.20
0334		cycle 8 miles		88	.091		4.45	4.86	9.31	12
0336		25 MPH avg., cycle 4 miles		80	.100		4.90	5.35	10.25	13.25
0344		cycle 6 miles		112	.071		3.50	3.82	7.32	9.45
0346		cycle 8 miles		96	.083		4.08	4.46	8.54	11
0348		30 MPH avg., cycle 4 miles		88	.091		4.45	4.86	9.31	12
0350		cycle 6 miles		112	.071		3.50	3.82	7.32	9.45
0352		cycle 8 miles		104	.077		3.77	4.12	7.89	10.20
0354		15 MPH avg., cycle 0.5 mile, 30 min. wait/l.d./uld.		96	.083		4.08	4.46	8.54	11
0414		cycle 1 mile		120	.067		3.26	3.57	6.83	8.80
0416		cycle 2 miles		112	.071		3.50	3.82	7.32	9.45
0418		cycle 4 miles		96	.083		4.08	4.46	8.54	11
0420		cycle 6 miles		80	.100		4.90	5.35	10.25	13.25
0422		cycle 8 miles		72	.111		5.45	5.95	11.40	14.70
0424		20 MPH avg., cycle 0.5 mile		64	.125		6.10	6.70	12.80	16.50
0426		cycle 1 mile		120	.067		3.26	3.57	6.83	8.80
0428		cycle 2 miles		112	.071		3.50	3.82	7.32	9.45
0430		cycle 4 miles		104	.077		3.77	4.12	7.89	10.20
0432		cycle 6 miles		88	.091		4.45	4.86	9.31	12
0434		cycle 8 miles		80	.100		4.90	5.35	10.25	13.25
0436		15 MPH avg., cycle 0.5 mile, 35 min. wait/l.d./uld.		72	.111		5.45	5.95	11.40	14.70
0444		cycle 6 miles		96	.083		4.08	4.46	8.54	11
0446		cycle 8 miles		88	.091		4.45	4.86	9.31	12
0448		20 MPH avg., cycle 0.5 mile		80	.100		4.90	5.35	10.25	13.25
0450		30 MPH avg., cycle 4 miles		96	.083		4.08	4.46	8.54	11
0452		cycle 6 miles		88	.091		4.45	4.86	9.31	12
0454		cycle 8 miles		80	.100		4.90	5.35	10.25	13.25
0514		15 MPH avg., cycle 0.5 mile, 35 min. wait/l.d./uld.		104	.077		3.77	4.12	7.89	10.20
0516		cycle 1 mile		96	.083		4.08	4.46	8.54	11
0518		cycle 2 miles		88	.091		4.45	4.86	9.31	12
0520		cycle 4 miles		72	.111		5.45	5.95	11.40	14.70
0522		cycle 6 miles		64	.125		6.10	6.70	12.80	16.50
0524		cycle 8 miles		56	.143		7	7.65	14.65	18.90
0526		20 MPH avg., cycle 0.5 mile		104	.077		3.77	4.12	7.89	10.20
0528		cycle 1 mile		96	.083		4.08	4.46	8.54	11
0530		cycle 2 miles		96	.083		4.08	4.46	8.54	11
0532		cycle 4 miles		80	.100		4.90	5.35	10.25	13.25
0534		cycle 6 miles		72	.111		5.45	5.95	11.40	14.70
0536		cycle 8 miles		64	.125		6.10	6.70	12.80	16.50
0544		25 MPH avg., cycle 4 miles		88	.091		4.45	4.86	9.31	12
0546		cycle 6 miles		80	.100		4.90	5.35	10.25	13.25
0548		cycle 8 miles		72	.111		5.45	5.95	11.40	14.70
0550		30 MPH avg., cycle 4 miles		88	.091		4.45	4.86	9.31	12
0552		cycle 6 miles		80	.100		4.90	5.35	10.25	13.25
0554		cycle 8 miles		72	.111		5.45	5.95	11.40	14.70
1014		12 C.Y. truck, cycle 0.5 mile, 15 MPH avg., 15 min. wait/l.d./uld.	B-34B	336	.024		1.17	1.71	2.88	3.63
1016		cycle 1 mile		300	.027		1.31	1.91	3.22	4.06
1018		cycle 2 miles		252	.032		1.55	2.27	3.82	4.83
1020		cycle 4 miles		180	.044		2.18	3.18	5.36	6.75
1022		cycle 6 miles		144	.056		2.72	3.98	6.70	8.45
1024		cycle 8 miles		120	.067		3.26	4.77	8.03	10.15
1025		cycle 10 miles		96	.083		4.08	5.95	10.03	12.65
1026		20 MPH avg., cycle 0.5 mile		348	.023		1.13	1.65	2.78	3.50

31 23 Excavation and Fill

31 23 23 – Fill

31 23 23.20 Hauling		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Ind O&P
						Labor	Equipment	Total		
1028	cycle 1 mile	B-34B	312	.026	L.C.Y.	1.26	1.84	3.10	3.90	
1030	cycle 2 miles		276	.029		1.42	2.08	3.50	4.41	
1032	cycle 4 miles		216	.037		1.81	2.65	4.46	5.65	
1034	cycle 6 miles		168	.048		2.33	3.41	5.74	7.25	
1036	cycle 8 miles		144	.056		2.72	3.98	6.70	8.45	
1038	cycle 10 miles		120	.067		3.26	4.77	8.03	10.15	
1040	25 MPH avg., cycle 4 miles		228	.035		1.72	2.51	4.23	5.35	
1042	cycle 6 miles		192	.042		2.04	2.98	5.02	6.35	
1044	cycle 8 miles		168	.048		2.33	3.41	5.74	7.25	
1046	cycle 10 miles		144	.056		2.72	3.98	6.70	8.45	
1050	30 MPH avg., cycle 4 miles		252	.032		1.55	2.27	3.82	4.83	
1052	cycle 6 miles		216	.037		1.81	2.65	4.46	5.65	
1054	cycle 8 miles		180	.044		2.18	3.18	5.36	6.75	
1056	cycle 10 miles		156	.051		2.51	3.67	6.18	7.80	
1060	35 MPH avg., cycle 4 miles		264	.030		1.48	2.17	3.65	4.61	
1062	cycle 6 miles		228	.035		1.72	2.51	4.23	5.35	
1064	cycle 8 miles		204	.039		1.92	2.81	4.73	5.95	
1066	cycle 10 miles		180	.044		2.18	3.18	5.36	6.75	
1068	cycle 20 miles		120	.067		3.26	4.77	8.03	10.15	
1069	cycle 30 miles		84	.095		4.66	6.80	11.46	14.50	
1070	cycle 40 miles		72	.111		5.45	7.95	13.40	16.90	
1072	40 MPH avg., cycle 6 miles		240	.033		1.63	2.39	4.02	5.05	
1074	cycle 8 miles		216	.037		1.81	2.65	4.46	5.65	
1076	cycle 10 miles		192	.042		2.04	2.98	5.02	6.35	
1078	cycle 20 miles		120	.067		3.26	4.77	8.03	10.15	
1080	cycle 30 miles		96	.083		4.08	5.95	10.03	12.65	
1082	cycle 40 miles		72	.111		5.45	7.95	13.40	16.90	
1084	cycle 50 miles		60	.133		6.55	9.55	16.10	20.50	
1094	45 MPH avg., cycle 8 miles		216	.037		1.81	2.65	4.46	5.65	
1096	cycle 10 miles		204	.039		1.92	2.81	4.73	5.95	
1098	cycle 20 miles		132	.061		2.97	4.34	7.31	9.20	
1100	cycle 30 miles		108	.074		3.63	5.30	8.93	11.30	
1102	cycle 40 miles		84	.095		4.66	6.80	11.46	14.50	
1104	cycle 50 miles		72	.111		5.45	7.95	13.40	16.90	
1106	50 MPH avg., cycle 10 miles		216	.037		1.81	2.65	4.46	5.65	
1108	cycle 20 miles		144	.056		2.72	3.98	6.70	8.45	
1110	cycle 30 miles		108	.074		3.63	5.30	8.93	11.30	
1112	cycle 40 miles		84	.095		4.66	6.80	11.46	14.50	
1114	cycle 50 miles		72	.111		5.45	7.95	13.40	16.90	
1214	15 MPH avg., cycle 0.5 mile, 20 min. wait/lb./uld.		264	.030		1.48	2.17	3.65	4.61	
1216	cycle 1 mile		240	.033		1.63	2.39	4.02	5.05	
1218	cycle 2 miles		204	.039		1.92	2.81	4.73	5.95	
1220	cycle 4 miles		156	.051		2.51	3.67	6.18	7.80	
1222	cycle 6 miles		132	.061		2.97	4.34	7.31	9.20	
1224	cycle 8 miles		108	.074		3.63	5.30	8.93	11.30	
1225	cycle 10 miles		96	.083		4.08	5.95	10.03	12.65	
1226	20 MPH avg., cycle 0.5 mile		264	.030		1.48	2.17	3.65	4.61	
1228	cycle 1 mile		252	.032		1.55	2.27	3.82	4.83	
1230	cycle 2 miles		216	.037		1.81	2.65	4.46	5.65	
1232	cycle 4 miles		180	.044		2.18	3.18	5.36	6.75	
1234	cycle 6 miles		144	.056		2.72	3.98	6.70	8.45	
1236	cycle 8 miles		132	.061		2.97	4.34	7.31	9.20	
1238	cycle 10 miles		108	.074		3.63	5.30	8.93	11.30	

31 23 Excavation and Fill

31 23 23 – Fill

31 23 23.20 Hauling		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
						Labor	Equipment	Total		
1240	25 MPH avg., cycle 4 miles	B-34B	.192	.042	L.C.Y.		2.04	2.98	5.02	6.35
1242	cycle 6 miles		.168	.048			2.33	3.41	5.74	7.25
1244	cycle 8 miles		.144	.056			2.72	3.98	6.70	8.45
1246	cycle 10 miles		.132	.061			2.97	4.34	7.31	9.20
1250	30 MPH avg., cycle 4 miles		.204	.039			1.92	2.81	4.73	5.95
1252	cycle 6 miles		.180	.044			2.18	3.18	5.36	6.75
1254	cycle 8 miles		.156	.051			2.51	3.67	6.18	7.80
1256	cycle 10 miles		.144	.056			2.72	3.98	6.70	8.45
1260	35 MPH avg., cycle 4 miles		.216	.037			1.81	2.65	4.46	5.65
1262	cycle 6 miles		.192	.042			2.04	2.98	5.02	6.35
1264	cycle 8 miles		.168	.048			2.33	3.41	5.74	7.25
1266	cycle 10 miles		.156	.051			2.51	3.67	6.18	7.80
1268	cycle 20 miles		.108	.074			3.63	5.30	8.93	11.30
1269	cycle 30 miles		.072	.111			5.45	7.95	13.40	16.90
1270	cycle 40 miles		.060	.133			6.55	9.55	16.10	20.50
1272	40 MPH avg., cycle 6 miles		.192	.042			2.04	2.98	5.02	6.35
1274	cycle 8 miles		.180	.044			2.18	3.18	5.36	6.75
1276	cycle 10 miles		.156	.051			2.51	3.67	6.18	7.80
1278	cycle 20 miles		.108	.074			3.63	5.30	8.93	11.30
1280	cycle 30 miles		.084	.095			4.66	6.80	11.46	14.50
1282	cycle 40 miles		.072	.111			5.45	7.95	13.40	16.90
1284	cycle 50 miles		.060	.133			6.55	9.55	16.10	20.50
1294	45 MPH avg., cycle 8 miles		.180	.044			2.18	3.18	5.36	6.75
1296	cycle 10 miles		.168	.048			2.33	3.41	5.74	7.25
1298	cycle 20 miles		.120	.067			3.26	4.77	8.03	10.15
1300	cycle 30 miles		.096	.083			4.08	5.95	10.03	12.65
1302	cycle 40 miles		.072	.111			5.45	7.95	13.40	16.90
1304	cycle 50 miles		.060	.133			6.55	9.55	16.10	20.50
1306	50 MPH avg., cycle 10 miles		.180	.044			2.18	3.18	5.36	6.75
1308	cycle 20 miles		.132	.061			2.97	4.34	7.31	9.20
1310	cycle 30 miles		.096	.083			4.08	5.95	10.03	12.65
1312	cycle 40 miles		.084	.095			4.66	6.80	11.46	14.50
1314	cycle 50 miles		.072	.111			5.45	7.95	13.40	16.90
1414	15 MPH avg., cycle 0.5 mile, 25 min. wait/l.d./uld.		.204	.039			1.92	2.81	4.73	5.95
1416	cycle 1 mile		.192	.042			2.04	2.98	5.02	6.35
1418	cycle 2 miles		.168	.048			2.33	3.41	5.74	7.25
1420	cycle 4 miles		.132	.061			2.97	4.34	7.31	9.20
1422	cycle 6 miles		.120	.067			3.26	4.77	8.03	10.15
1424	cycle 8 miles		.096	.083			4.08	5.95	10.03	12.65
1425	cycle 10 miles		.084	.095			4.66	6.80	11.46	14.50
1426	20 MPH avg., cycle 0.5 mile		.216	.037			1.81	2.65	4.46	5.65
1428	cycle 1 mile		.204	.039			1.92	2.81	4.73	5.95
1430	cycle 2 miles		.180	.044			2.18	3.18	5.36	6.75
1432	cycle 4 miles		.156	.051			2.51	3.67	6.18	7.80
1434	cycle 6 miles		.132	.061			2.97	4.34	7.31	9.20
1436	cycle 8 miles		.120	.067			3.26	4.77	8.03	10.15
1438	cycle 10 miles		.096	.083			4.08	5.95	10.03	12.65
1440	25 MPH avg., cycle 4 miles		.168	.048			2.33	3.41	5.74	7.25
1442	cycle 6 miles		.144	.056			2.72	3.98	6.70	8.45
1444	cycle 8 miles		.132	.061			2.97	4.34	7.31	9.20
1446	cycle 10 miles		.108	.074			3.63	5.30	8.93	11.30
1450	30 MPH avg., cycle 4 miles		.168	.048			2.33	3.41	5.74	7.25
1452	cycle 6 miles		.156	.051			2.51	3.67	6.18	7.80

31 23 Excavation and Fill

31 23 23 – Fill

31 23 23.20 Hauling		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
						Labor	Equipment	Total		
1454	cycle 8 miles	B-34B	132	.061	L.C.Y.	2.97	4.34	7.31	9.20	
1456	cycle 10 miles		120	.067		3.26	4.77	8.03	10.15	
1460	35 MPH avg., cycle 4 miles		180	.044		2.18	3.18	5.36	6.75	
1462	cycle 6 miles		156	.051		2.51	3.67	6.18	7.80	
1464	cycle 8 miles		144	.056		2.72	3.98	6.70	8.45	
1466	cycle 10 miles		132	.061		2.97	4.34	7.31	9.20	
1468	cycle 20 miles		96	.083		4.08	5.95	10.03	12.65	
1469	cycle 30 miles		72	.111		5.45	7.95	13.40	16.90	
1470	cycle 40 miles		60	.133		6.55	9.55	16.10	20.50	
1472	40 MPH avg., cycle 6 miles		168	.048		2.33	3.41	5.74	7.25	
1474	cycle 8 miles		156	.051		2.51	3.67	6.18	7.80	
1476	cycle 10 miles		144	.056		2.72	3.98	6.70	8.45	
1478	cycle 20 miles		96	.083		4.08	5.95	10.03	12.65	
1480	cycle 30 miles		84	.095		4.66	6.80	11.46	14.50	
1482	cycle 40 miles		60	.133		6.55	9.55	16.10	20.50	
1484	cycle 50 miles		60	.133		6.55	9.55	16.10	20.50	
1494	45 MPH avg., cycle 8 miles		156	.051		2.51	3.67	6.18	7.80	
1496	cycle 10 miles		144	.056		2.72	3.98	6.70	8.45	
1498	cycle 20 miles		108	.074		3.63	5.30	8.93	11.30	
1500	cycle 30 miles		84	.095		4.66	6.80	11.46	14.50	
1502	cycle 40 miles		72	.111		5.45	7.95	13.40	16.90	
1504	cycle 50 miles		60	.133		6.55	9.55	16.10	20.50	
1506	50 MPH avg., cycle 10 miles		156	.051		2.51	3.67	6.18	7.80	
1508	cycle 20 miles		120	.067		3.26	4.77	8.03	10.15	
1510	cycle 30 miles		96	.083		4.08	5.95	10.03	12.65	
1512	cycle 40 miles		72	.111		5.45	7.95	13.40	16.90	
1514	cycle 50 miles		60	.133		6.55	9.55	16.10	20.50	
1614	15 MPH avg., cycle 0.5 mile, 30 min. wait/l.d./uld.		180	.044		2.18	3.18	5.36	6.75	
1616	cycle 1 mile		168	.048		2.33	3.41	5.74	7.25	
1618	cycle 2 miles		144	.056		2.72	3.98	6.70	8.45	
1620	cycle 4 miles		120	.067		3.26	4.77	8.03	10.15	
1622	cycle 6 miles		108	.074		3.63	5.30	8.93	11.30	
1624	cycle 8 miles		84	.095		4.66	6.80	11.46	14.50	
1625	cycle 10 miles		84	.095		4.66	6.80	11.46	14.50	
1626	20 MPH avg., cycle 0.5 mile		180	.044		2.18	3.18	5.36	6.75	
1628	cycle 1 mile		168	.048		2.33	3.41	5.74	7.25	
1630	cycle 2 miles		156	.051		2.51	3.67	6.18	7.80	
1632	cycle 4 miles		132	.061		2.97	4.34	7.31	9.20	
1634	cycle 6 miles		120	.067		3.26	4.77	8.03	10.15	
1636	cycle 8 miles		108	.074		3.63	5.30	8.93	11.30	
1638	cycle 10 miles		96	.083		4.08	5.95	10.03	12.65	
1640	25 MPH avg., cycle 4 miles		144	.056		2.72	3.98	6.70	8.45	
1642	cycle 6 miles		132	.061		2.97	4.34	7.31	9.20	
1644	cycle 8 miles		108	.074		3.63	5.30	8.93	11.30	
1646	cycle 10 miles		108	.074		3.63	5.30	8.93	11.30	
1650	30 MPH avg., cycle 4 miles		144	.056		2.72	3.98	6.70	8.45	
1652	cycle 6 miles		132	.061		2.97	4.34	7.31	9.20	
1654	cycle 8 miles		120	.067		3.26	4.77	8.03	10.15	
1656	cycle 10 miles		108	.074		3.63	5.30	8.93	11.30	
1660	35 MPH avg., cycle 4 miles		156	.051		2.51	3.67	6.18	7.80	
1662	cycle 6 miles		144	.056		2.72	3.98	6.70	8.45	
1664	cycle 8 miles		132	.061		2.97	4.34	7.31	9.20	
1666	cycle 10 miles		120	.067		3.26	4.77	8.03	10.15	

31 23 Excavation and Fill

31 23 23 – Fill

31 23 23.20 Hauling		B-34B	Daily	Labor-	Material	2020 Bare Costs			Total	Total
			Output	Hours		Labor	Equipment	Total		Incl O&P
1668	cycle 20 miles		84	.095	L.C.Y.	4.66	6.80	11.46		14.50
1669	cycle 30 miles		72	.111		5.45	7.95	13.40		16.90
1670	cycle 40 miles		60	.133		6.55	9.55	16.10		20.50
1672	40 MPH avg., cycle 6 miles		144	.056		2.72	3.98	6.70		8.45
1674	cycle 8 miles		132	.061		2.97	4.34	7.31		9.20
1676	cycle 10 miles		120	.067		3.26	4.77	8.03		10.15
1678	cycle 20 miles		96	.083		4.08	5.95	10.03		12.65
1680	cycle 30 miles		72	.111		5.45	7.95	13.40		16.90
1682	cycle 40 miles		60	.133		6.55	9.55	16.10		20.50
1684	cycle 50 miles		48	.167		8.15	11.95	20.10		25.50
1694	45 MPH avg., cycle 8 miles		144	.056		2.72	3.98	6.70		8.45
1696	cycle 10 miles		132	.061		2.97	4.34	7.31		9.20
1698	cycle 20 miles		96	.083		4.08	5.95	10.03		12.65
1700	cycle 30 miles		84	.095		4.66	6.80	11.46		14.50
1702	cycle 40 miles		60	.133		6.55	9.55	16.10		20.50
1704	cycle 50 miles		60	.133		6.55	9.55	16.10		20.50
1706	50 MPH avg., cycle 10 miles		132	.061		2.97	4.34	7.31		9.20
1708	cycle 20 miles		108	.074		3.63	5.30	8.93		11.30
1710	cycle 30 miles		84	.095		4.66	6.80	11.46		14.50
1712	cycle 40 miles		72	.111		5.45	7.95	13.40		16.90
1714	cycle 50 miles		60	.133		6.55	9.55	16.10		20.50
2000	Hauling, 8 C.Y. truck, small project cost per hour	B-34A	8	1	Hr.	49	53.50	102.50		133
2100	12 C.Y. truck	B-34B	8	1		49	71.50	120.50		153
2150	16.5 C.Y. truck	B-34C	8	1		49	78.50	127.50		160
2175	18 C.Y. 8 wheel truck	B-34I	8	1		49	89	138		172
2200	20 C.Y. truck	B-34D	8	1		49	80.50	129.50		162
2300	Grading at dump, or embankment if required, by dozer	B-10B	1000	.012	L.C.Y.	.62	1.50	2.12		2.58
2310	Spotter at fill or cut, if required	1 Club	8	1	Hr.	42		42		63.50
9014	18 C.Y. truck, 8 wheels, 15 min. wait/lb./uld., 15 MPH, cycle 0.5 mi.	B-34I	504	.016	L.C.Y.	.78	1.42	2.20		2.72
9016	cycle 1 mile		450	.018		.87	1.59	2.46		3.05
9018	cycle 2 miles		378	.021		1.04	1.89	2.93		3.63
9020	cycle 4 miles		270	.030		1.45	2.64	4.09		5.10
9022	cycle 6 miles		216	.037		1.81	3.31	5.12		6.35
9024	cycle 8 miles		180	.044		2.18	3.97	6.15		7.60
9025	cycle 10 miles		144	.056		2.72	4.96	7.68		9.55
9026	20 MPH avg., cycle 0.5 mile		522	.015		.75	1.37	2.12		2.62
9028	cycle 1 mile		468	.017		.84	1.52	2.36		2.93
9030	cycle 2 miles		414	.019		.95	1.72	2.67		3.32
9032	cycle 4 miles		324	.025		1.21	2.20	3.41		4.23
9034	cycle 6 miles		252	.032		1.55	2.83	4.38		5.45
9036	cycle 8 miles		216	.037		1.81	3.31	5.12		6.35
9038	cycle 10 miles		180	.044		2.18	3.97	6.15		7.60
9040	25 MPH avg., cycle 4 miles		342	.023		1.14	2.09	3.23		4.02
9042	cycle 6 miles		288	.028		1.36	2.48	3.84		4.77
9044	cycle 8 miles		252	.032		1.55	2.83	4.38		5.45
9046	cycle 10 miles		216	.037		1.81	3.31	5.12		6.35
9050	30 MPH avg., cycle 4 miles		378	.021		1.04	1.89	2.93		3.63
9052	cycle 6 miles		324	.025		1.21	2.20	3.41		4.23
9054	cycle 8 miles		270	.030		1.45	2.64	4.09		5.10
9056	cycle 10 miles		234	.034		1.67	3.05	4.72		5.85
9060	35 MPH avg., cycle 4 miles		396	.020		.99	1.80	2.79		3.46
9062	cycle 6 miles		342	.023		1.14	2.09	3.23		4.02
9064	cycle 8 miles		288	.028		1.36	2.48	3.84		4.77

31 23 Excavation and Fill

31 23 23 – Fill

31 23 23.20 Hauling		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total Incl O&P
						Labor	Equipment	Total	
9066	cycle 10 miles	B-34I	270	.030	L.C.Y.	1.45	2.64	4.09	5.10
9068	cycle 20 miles		162	.049		2.42	4.41	6.83	8.45
9070	cycle 30 miles		126	.063		3.11	5.65	8.76	10.90
9072	cycle 40 miles		90	.089		4.35	7.95	12.30	15.20
9074	40 MPH avg., cycle 6 miles		360	.022		1.09	1.98	3.07	3.81
9076	cycle 8 miles		324	.025		1.21	2.20	3.41	4.23
9078	cycle 10 miles		288	.028		1.36	2.48	3.84	4.77
9080	cycle 20 miles		180	.044		2.18	3.97	6.15	7.60
9082	cycle 30 miles		144	.056		2.72	4.96	7.68	9.55
9084	cycle 40 miles		108	.074		3.63	6.60	10.23	12.70
9086	cycle 50 miles		90	.089		4.35	7.95	12.30	15.20
9094	45 MPH avg., cycle 8 miles		324	.025		1.21	2.20	3.41	4.23
9096	cycle 10 miles		306	.026		1.28	2.33	3.61	4.49
9098	cycle 20 miles		198	.040		1.98	3.60	5.58	6.95
9100	cycle 30 miles		144	.056		2.72	4.96	7.68	9.55
9102	cycle 40 miles		126	.063		3.11	5.65	8.76	10.90
9104	cycle 50 miles		108	.074		3.63	6.60	10.23	12.70
9106	50 MPH avg., cycle 10 miles		324	.025		1.21	2.20	3.41	4.23
9108	cycle 20 miles		216	.037		1.81	3.31	5.12	6.35
9110	cycle 30 miles		162	.049		2.42	4.41	6.83	8.45
9112	cycle 40 miles		126	.063		3.11	5.65	8.76	10.90
9114	cycle 50 miles		108	.074		3.63	6.60	10.23	12.70
9214	20 min. wait/ld./old., 15 MPH, cycle 0.5 mi.		396	.020		.99	1.80	2.79	3.46
9216	cycle 1 mile		360	.022		1.09	1.98	3.07	3.81
9218	cycle 2 miles		306	.026		1.28	2.33	3.61	4.49
9220	cycle 4 miles		234	.034		1.67	3.05	4.72	5.85
9222	cycle 6 miles		198	.040		1.98	3.60	5.58	6.95
9224	cycle 8 miles		162	.049		2.42	4.41	6.83	8.45
9225	cycle 10 miles		144	.056		2.72	4.96	7.68	9.55
9226	20 MPH avg., cycle 0.5 mile		396	.020		.99	1.80	2.79	3.46
9228	cycle 1 mile		378	.021		1.04	1.89	2.93	3.63
9230	cycle 2 miles		324	.025		1.21	2.20	3.41	4.23
9232	cycle 4 miles		270	.030		1.45	2.64	4.09	5.10
9234	cycle 6 miles		216	.037		1.81	3.31	5.12	6.35
9236	cycle 8 miles		198	.040		1.98	3.60	5.58	6.95
9238	cycle 10 miles		162	.049		2.42	4.41	6.83	8.45
9240	25 MPH avg., cycle 4 miles		288	.028		1.36	2.48	3.84	4.77
9242	cycle 6 miles		252	.032		1.55	2.83	4.38	5.45
9244	cycle 8 miles		216	.037		1.81	3.31	5.12	6.35
9246	cycle 10 miles		198	.040		1.98	3.60	5.58	6.95
9250	30 MPH avg., cycle 4 miles		306	.026		1.28	2.33	3.61	4.49
9252	cycle 6 miles		270	.030		1.45	2.64	4.09	5.10
9254	cycle 8 miles		234	.034		1.67	3.05	4.72	5.85
9256	cycle 10 miles		216	.037		1.81	3.31	5.12	6.35
9260	35 MPH avg., cycle 4 miles		324	.025		1.21	2.20	3.41	4.23
9262	cycle 6 miles		288	.028		1.36	2.48	3.84	4.77
9264	cycle 8 miles		252	.032		1.55	2.83	4.38	5.45
9266	cycle 10 miles		234	.034		1.67	3.05	4.72	5.85
9268	cycle 20 miles		162	.049		2.42	4.41	6.83	8.45
9270	cycle 30 miles		108	.074		3.63	6.60	10.23	12.70
9272	cycle 40 miles		90	.089		4.35	7.95	12.30	15.20
9274	40 MPH avg., cycle 6 miles		288	.028		1.36	2.48	3.84	4.77
9276	cycle 8 miles		270	.030		1.45	2.64	4.09	5.10

31 23 Excavation and Fill

31 23 23 – Fill

31 23 23.20 Hauling		Crew	Daily	Labor-	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
			Output	Hours			L.C.Y.	Labor	Equipment		
9278	cycle 10 miles	B-34I	234	.034				1.67	3.05	4.72	5.85
9280	cycle 20 miles		162	.049				2.42	4.41	6.83	8.45
9282	cycle 30 miles		126	.063				3.11	5.65	8.76	10.90
9284	cycle 40 miles		108	.074				3.63	6.60	10.23	12.70
9286	cycle 50 miles		90	.089				4.35	7.95	12.30	15.20
9294	45 MPH avg., cycle 8 miles		270	.030				1.45	2.64	4.09	5.10
9296	cycle 10 miles		252	.032				1.55	2.83	4.38	5.45
9298	cycle 20 miles		180	.044				2.18	3.97	6.15	7.60
9300	cycle 30 miles		144	.056				2.72	4.96	7.68	9.55
9302	cycle 40 miles		108	.074				3.63	6.60	10.23	12.70
9304	cycle 50 miles		90	.089				4.35	7.95	12.30	15.20
9306	50 MPH avg., cycle 10 miles		270	.030				1.45	2.64	4.09	5.10
9308	cycle 20 miles		198	.040				1.98	3.60	5.58	6.95
9310	cycle 30 miles		144	.056				2.72	4.96	7.68	9.55
9312	cycle 40 miles		126	.063				3.11	5.65	8.76	10.90
9314	cycle 50 miles		108	.074				3.63	6.60	10.23	12.70
9414	25 min. wait/lid./ld., 15 MPH, cycle 0.5 mi.		306	.026				1.28	2.33	3.61	4.49
9416	cycle 1 mile		288	.028				1.36	2.48	3.84	4.77
9418	cycle 2 miles		252	.032				1.55	2.83	4.38	5.45
9420	cycle 4 miles		198	.040				1.98	3.60	5.58	6.95
9422	cycle 6 miles		180	.044				2.18	3.97	6.15	7.60
9424	cycle 8 miles		144	.056				2.72	4.96	7.68	9.55
9425	cycle 10 miles		126	.063				3.11	5.65	8.76	10.90
9426	20 MPH avg., cycle 0.5 mile		324	.025				1.21	2.20	3.41	4.23
9428	cycle 1 mile		306	.026				1.28	2.33	3.61	4.49
9430	cycle 2 miles		270	.030				1.45	2.64	4.09	5.10
9432	cycle 4 miles		234	.034				1.67	3.05	4.72	5.85
9434	cycle 6 miles		198	.040				1.98	3.60	5.58	6.95
9436	cycle 8 miles		180	.044				2.18	3.97	6.15	7.60
9438	cycle 10 miles		144	.056				2.72	4.96	7.68	9.55
9440	25 MPH avg., cycle 4 miles		252	.032				1.55	2.83	4.38	5.45
9442	cycle 6 miles		216	.037				1.81	3.31	5.12	6.35
9444	cycle 8 miles		198	.040				1.98	3.60	5.58	6.95
9446	cycle 10 miles		180	.044				2.18	3.97	6.15	7.60
9450	30 MPH avg., cycle 4 miles		252	.032				1.55	2.83	4.38	5.45
9452	cycle 6 miles		234	.034				1.67	3.05	4.72	5.85
9454	cycle 8 miles		198	.040				1.98	3.60	5.58	6.95
9456	cycle 10 miles		180	.044				2.18	3.97	6.15	7.60
9460	35 MPH avg., cycle 4 miles		270	.030				1.45	2.64	4.09	5.10
9462	cycle 6 miles		234	.034				1.67	3.05	4.72	5.85
9464	cycle 8 miles		216	.037				1.81	3.31	5.12	6.35
9466	cycle 10 miles		198	.040				1.98	3.60	5.58	6.95
9468	cycle 20 miles		144	.056				2.72	4.96	7.68	9.55
9470	cycle 30 miles		108	.074				3.63	6.60	10.23	12.70
9472	cycle 40 miles		90	.089				4.35	7.95	12.30	15.20
9474	40 MPH avg., cycle 6 miles		252	.032				1.55	2.83	4.38	5.45
9476	cycle 8 miles		234	.034				1.67	3.05	4.72	5.85
9478	cycle 10 miles		216	.037				1.81	3.31	5.12	6.35
9480	cycle 20 miles		144	.056				2.72	4.96	7.68	9.55
9482	cycle 30 miles		126	.063				3.11	5.65	8.76	10.90
9484	cycle 40 miles		90	.089				4.35	7.95	12.30	15.20
9486	cycle 50 miles		90	.089				4.35	7.95	12.30	15.20
9494	45 MPH avg., cycle 8 miles		234	.034				1.67	3.05	4.72	5.85

31 23 Excavation and Fill

31 23 23 - Fill

31 23 23.20 Hauling		Crew	Daily	Labor-	Unit	2020 Bare Costs			Total	Total
			Output	Hours		Material	Labor	Equipment		Incl O&P
9496	cycle 10 miles	B-34I	216	.037	L.C.Y.		1.81	3.31	5.12	6.35
9498	cycle 20 miles		162	.049			2.42	4.41	6.83	8.45
9500	cycle 30 miles		126	.063			3.11	5.65	8.76	10.90
9502	cycle 40 miles		108	.074			3.63	6.60	10.23	12.70
9504	cycle 50 miles		90	.089			4.35	7.95	12.30	15.20
9506	50 MPH avg., cycle 10 miles		234	.034			1.67	3.05	4.72	5.85
9508	cycle 20 miles		180	.044			2.18	3.97	6.15	7.60
9510	cycle 30 miles		144	.056			2.72	4.96	7.68	9.55
9512	cycle 40 miles		108	.074			3.63	6.60	10.23	12.70
9514	cycle 50 miles		90	.089			4.35	7.95	12.30	15.20
9614	30 min. wait/l.d./uld., 15 MPH, cycle 0.5 mi.		270	.030			1.45	2.64	4.09	5.10
9616	cycle 1 mile		252	.032			1.55	2.83	4.38	5.45
9618	cycle 2 miles		216	.037			1.81	3.31	5.12	6.35
9620	cycle 4 miles		180	.044			2.18	3.97	6.15	7.60
9622	cycle 6 miles		162	.049			2.42	4.41	6.83	8.45
9624	cycle 8 miles		126	.063			3.11	5.65	8.76	10.90
9625	cycle 10 miles		126	.063			3.11	5.65	8.76	10.90
9626	20 MPH avg., cycle 0.5 mile		270	.030			1.45	2.64	4.09	5.10
9628	cycle 1 mile		252	.032			1.55	2.83	4.38	5.45
9630	cycle 2 miles		234	.034			1.67	3.05	4.72	5.85
9632	cycle 4 miles		198	.040			1.98	3.60	5.58	6.95
9634	cycle 6 miles		180	.044			2.18	3.97	6.15	7.60
9636	cycle 8 miles		162	.049			2.42	4.41	6.83	8.45
9638	cycle 10 miles		144	.056			2.72	4.96	7.68	9.55
9640	25 MPH avg., cycle 4 miles		216	.037			1.81	3.31	5.12	6.35
9642	cycle 6 miles		198	.040			1.98	3.60	5.58	6.95
9644	cycle 8 miles		180	.044			2.18	3.97	6.15	7.60
9646	cycle 10 miles		162	.049			2.42	4.41	6.83	8.45
9650	30 MPH avg., cycle 4 miles		216	.037			1.81	3.31	5.12	6.35
9652	cycle 6 miles		198	.040			1.98	3.60	5.58	6.95
9654	cycle 8 miles		180	.044			2.18	3.97	6.15	7.60
9656	cycle 10 miles		162	.049			2.42	4.41	6.83	8.45
9660	35 MPH avg., cycle 4 miles		234	.034			1.67	3.05	4.72	5.85
9662	cycle 6 miles		216	.037			1.81	3.31	5.12	6.35
9664	cycle 8 miles		198	.040			1.98	3.60	5.58	6.95
9666	cycle 10 miles		180	.044			2.18	3.97	6.15	7.60
9668	cycle 20 miles		126	.063			3.11	5.65	8.76	10.90
9670	cycle 30 miles		108	.074			3.63	6.60	10.23	12.70
9672	cycle 40 miles		90	.089			4.35	7.95	12.30	15.20
9674	40 MPH avg., cycle 6 miles		216	.037			1.81	3.31	5.12	6.35
9676	cycle 8 miles		198	.040			1.98	3.60	5.58	6.95
9678	cycle 10 miles		180	.044			2.18	3.97	6.15	7.60
9680	cycle 20 miles		144	.056			2.72	4.96	7.68	9.55
9682	cycle 30 miles		108	.074			3.63	6.60	10.23	12.70
9684	cycle 40 miles		90	.089			4.35	7.95	12.30	15.20
9686	cycle 50 miles		72	.111			5.45	9.90	15.35	19.05
9694	45 MPH avg., cycle 8 miles		216	.037			1.81	3.31	5.12	6.35
9696	cycle 10 miles		198	.040			1.98	3.60	5.58	6.95
9698	cycle 20 miles		144	.056			2.72	4.96	7.68	9.55
9700	cycle 30 miles		126	.063			3.11	5.65	8.76	10.90
9702	cycle 40 miles		108	.074			3.63	6.60	10.23	12.70
9704	cycle 50 miles		90	.089			4.35	7.95	12.30	15.20
9706	50 MPH avg., cycle 10 miles		198	.040			1.98	3.60	5.58	6.95

31 23 Excavation and Fill

31 23 23 – Fill

31 23 23.20 Hauling			Daily Crew	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Ind O&P
			B-34I	.162	L.C.Y.		Labor	Equipment	Total	
9708		cycle 20 miles					2.42	4.41	6.83	8.45
9710		cycle 30 miles		.126	.063		3.11	5.65	8.76	10.90
9712		cycle 40 miles		.108	.074		3.63	6.60	10.23	12.70
9714		cycle 50 miles		.090	.089		4.35	7.95	12.30	15.20

31 23 23.24 Compaction, Structural

0010 COMPACTION, STRUCTURAL			R312323-30							
0020	Steel wheel tandem roller, 5 tons		B-10E	8	1.500	Hr.	78	32	110	151
0100	10 tons		B-10F	8	1.500	"	78	29.50	107.50	149
0300	Sheepsfoot or wobbly wheel roller, 8" lifts, common fill		B-10G	1300	.009	E.C.Y.	.48	1.04	1.52	1.86
0400	Select fill		"	1500	.008		.42	.90	1.32	1.61
0600	Vibratory plate, 8" lifts, common fill		A-1D	200	.040		1.68	.16	1.84	2.70
0700	Select fill		"	216	.037		1.56	.15	1.71	2.50

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			G	B-80A	2400	.010	S.Y.	1.03	.42	.34	1.79	2.14
0020	Jute mesh, 100 S.Y. per roll, 4' wide, stapled		G	B-1	2500	.010		.18	.41		.59	.82
0070	Paper biodegradable mesh		G	B-64	20000	.001		.16	.04	.02	.22	.25
0080	Paper mulch		G	B-1	2500	.010		.27	.41		.68	.92
0100	Plastic netting, stapled, 2" x 1" mesh, 20 mil		G	B-1	2500	.010		.27	.41		.68	.92
0200	Polypropylene mesh, stapled, 6.5 oz./S.Y.		G	B-1	2500	.010		1.70	.41		2.11	2.49
0300	Tobacco netting, or jute mesh #2, stapled		G	B-1	2500	.010		.31	.41		.72	.96
0600	Straw in polymeric netting, biodegradable log		A-2	1000	.024		L.F.	6.45	1.05	.20	7.70	8.90
0705	Sediment Log, Filter Sock, 9"			1000	.024			3.50	1.05	.20	4.75	5.65
0710	Sediment Log, Filter Sock, 12"			1000	.024			4.95	1.05	.20	6.20	7.25
1000	Silt fence, install and maintain, remove		G	B-62	1300	.018		.45	.84	.14	1.43	1.92

31 31 Soil Treatment

31 31 16 – Termite Control

31 31 16.13 Chemical Termite Control			1 Skwk	1200	.007	SF Flr.	.33	.37		.70	.91
0020	Slab and walls, residential			2496	.003		.35	.18		.53	.66
0100	Commercial, minimum			1645	.005		.53	.27		.80	.98
0200	Maximum			14.20	.563	Gal.	70.50	31		101.50	124
0400	Insecticides for termite control, minimum			11	.727	"	120	40		160	193
0500	Maximum										

31 32 Soil Stabilization

31 32 13 – Soil Mixing Stabilization

31 32 13.30 Calcium Chloride		Crew	Daily Output	Labor Hours	Unit	Material	2020 Labor	Bare Costs	Equipment	Total	Total Incl O&P
0010	CALCIUM CHLORIDE										
0020	Calcium chloride, delivered, 100 lb. bags, truckload lots				Ton	635		635		700	
0030	Solution, 4 lb. flake per gallon, tank truck delivery				Gal.	1.67		1.67		1.84	

31 33 Rock Stabilization

31 33 13 – Rock Bolting and Grouting

31 33 13.10 Rock Bolting

0010 ROCK BOLTING		12 Skwk	32	.500	Ea.	190	27.50			217.50	252
2020	Hollow core, prestressable anchor, 1" diameter, 5' long		24	.667		320	36.50			356.50	405
2025	10' long		32	.500		705	27.50			732.50	815
2060	2" diameter, 5' long		24	.667		1,250	36.50			1,286.50	1,425
2065	10' long		32	.500		127	36.50			163.50	195
2100	Super high-tensile, 3/4" diameter, 5' long		24	.667		400	27.50			98	
2105	10' long		32	.500		705	36.50			163.50	195
2160	2" diameter, 5' long		24	.667		1,231	36.50			427.50	480
2165	10' long		32	.500		705	36.50			741.50	830
4400	Drill hole for rock bolt, 1-3/4" diam., 5' long (for 3/4" bolt)	B-56	17	.941		45	89.50			134.50	165
4405	10' long		9	1.778		84.50	169			253.50	315
4420	2" diameter, 5' long (for 1" bolt)		13			58.50	117			175.50	216
4425	10' long		7	2.286		109	217			326	400
4460	3-1/2" diameter, 5' long (for 2" bolt)		10	1.600		76	152			228	281
4465	10' long		5	3.200		152	305			457	565

31 36 Gabions

31 36 13 – Gabion Boxes

31 36 13.10 Gabion Box Systems

0010 GABION BOX SYSTEMS		B-13	200	.280	S.Y.	18.30	12.90	2.90	34.10	42.50
0400	Gabions, galvanized steel mesh mats or boxes, stone filled, 6" deep		163	.344		25.50	15.80	3.56	44.86	56
0500	9" deep		153	.366		37	16.85	3.80	57.65	70.50
0600	12" deep		102	.549		47.50	25.50	5.70	78.70	96.50
0700	18" deep		60	.933		80	43	9.70	132.70	163
0800	36" deep									

31 37 Riprap

31 37 13 – Machined Riprap

31 37 13.10 Riprap and Rock Lining

0010 RIPRAP AND ROCK LINING		B-126	62	.258	L.C.Y.	32	13.05	13.85	58.90	70
0011	Random, broken stone									
0100	Machine placed for slope protection	B-13	80	.700	S.Y.	64.50	32	7.25	103.75	128
0110	3/8 to 1/4 C.Y. pieces, grouted		"	53	1.057	"	19.85	48.50	10.95	79.30
0200	18" minimum thickness, not grouted	B-11A	800	.020	Ton	28.50	.99	1.88	31.37	35
0300	Dumped, 50 lb. average									
0350	100 lb. average		700	.023		28.50	1.13	2.15	31.78	35.50
0370	300 lb. average		600	.027		28.50	1.32	2.51	32.33	36

31 41 Shoring

31 41 13 – Timber Shoring

31 41 13.10 Building Shoring		Crew	Daily Output	Labor Hours	Unit	Material	2020 Labor	Bare Costs	Equipment	Total	Total Incl O&P
BUILDING SHORING											
0020	Shoring, existing building, with timber, no salvage allowance	B-51	2.20	21.818	M.B.F.	860	945	89	1,894	2,475	
1000	On cribbing with 35 ton screw jacks, per box and jack	"	3.60	13.333	Jack	65	575	54.50	694.50	995	
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		B-40	10.81	5.920	Ton	1,875	325	320	2,520	2,900
0020	Sheet piling, 50,000 psi steel, not incl. wales, 22 psf, left in place	R314116-40	6	10.667		525	590	580	1,695	2,100
0100	Drive, extract & salvage		12.95	4.942		1,875	273	269	2,417	2,775
0300	20' deep excavation, 27 psf, left in place	R314116-45	6.55	9.771		525	540	530	1,595	1,975
0400	Drive, extract & salvage		19	3.368		1,875	186	183	2,244	2,525
0600	25' deep excavation, 38 psf, left in place		10.50	6.095		525	335	330	1,190	1,450
0700	Drive, extract & salvage		21.20	3.019		1,875	167	164	2,206	2,475
0900	40' deep excavation, 38 psf, left in place		12.25	5.224		525	289	284	1,098	1,325
1000	Drive, extract & salvage		983	.065	S.F.	21.50	3.60	3.54	28.64	33.50
1200	15' deep excavation, 22 psf, left in place		545	.117		5.90	6.50	6.40	18.80	23.50
1300	Drive, extract & salvage		960	.067		27.50	3.68	3.62	34.80	39.50
1500	20' deep excavation, 27 psf, left in place		485	.132		7.65	7.30	7.15	22.10	27.50
1600	Drive, extract & salvage		1000	.064		40	3.54	3.48	47.02	53
1800	25' deep excavation, 38 psf, left in place		553	.116	↓ Ton	10.50	6.40	6.30	23.20	28.50
1900	Drive, extract & salvage				↓ Ton	335			335	370
2100	Rent steel sheet piling and wales, first month									
2200	Per added month					33.50			33.50	37
2300	Rental piling left in place, add to rental					1,200			1,200	1,325
2500	Wales, connections & struts, 2/3 salvage					535			535	585
2700	High strength piling, 60,000 psi, add					187			187	206
2800	65,000 psi, add					280			280	310
3000	Tie rod, not upset, 1-1/2" to 4" diameter with turnbuckle					2,275			2,275	2,500
3100	No turnbuckle					1,650			1,650	1,800
3300	Upset, 1-3/4" to 4" diameter with turnbuckle					2,400			2,400	2,650
3400	No turnbuckle					2,125			2,125	2,325
3600	Lightweight, 18" to 28" wide, 7 ga., 9.22 psf, and									
3610	9 ga., 8.6 psf, minimum				lb.	.73			.73	.80
3700	Average					.92			.92	1.01
3750	Maximum				↓	1.02			1.02	1.12
3900	Wood, solid sheathing, incl. wales, braces and spacers,	R314116-40								
3910	drive, extract & salvage, 8' deep excavation	B-31	330	.121	S.F.	2.06	5.40	.78	8.24	11.25
4000	10' deep, 50 S.F./hr. in & 150 S.F./hr. out		300	.133		2.12	5.95	.86	8.93	12.20
4100	12' deep, 45 S.F./hr. in & 135 S.F./hr. out		270	.148		2.18	6.60	.95	9.73	13.40
4200	14' deep, 42 S.F./hr. in & 126 S.F./hr. out		250	.160		2.24	7.15	1.03	10.42	14.35
4300	16' deep, 40 S.F./hr. in & 120 S.F./hr. out		240	.167		2.31	7.45	1.07	10.83	14.90
4400	18' deep, 38 S.F./hr. in & 114 S.F./hr. out		230	.174		2.39	7.80	1.12	11.31	15.55
4500	20' deep, 35 S.F./hr. in & 105 S.F./hr. out		210	.190		2.47	8.50	1.22	12.19	16.85
4520	Left in place, 8' deep, 55 S.F./hr.		440	.091		3.70	4.06	.58	8.34	10.80
4540	10' deep, 50 S.F./hr.		400	.100		3.90	4.47	.64	9.01	11.70
4560	12' deep, 45 S.F./hr.		360	.111		4.11	4.97	.71	9.79	12.75
4565	14' deep, 42 S.F./hr.		335	.119		4.35	5.35	.77	10.47	13.65
4570	16' deep, 40 S.F./hr.		320	.125		4.63	5.60	.80	11.03	14.40
4580	18' deep, 38 S.F./hr.		305	.131		4.94	5.85	.84	11.63	15.20
4590	20' deep, 35 S.F./hr.		280	.143	↓	5.30	6.40	.92	12.62	16.40
4700	Alternate pricing, left in place, 8' deep			1.76	22.727 M.B.F.	830	1,025	146	2,001	2,600
4800	Drive, extract and salvage, 8' deep			1.32	30.303 "	740	1,350	195	2,285	3,050

31 41 Shoring

31 41 16 – Sheet Piling

31 41 16.10 Sheet Piling Systems

5000 For treated lumber add cost of treatment to lumber

	Daily Crew	Output	Labor-Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
5000									

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	19.30	14.40	2.49	36.19	45.50
0100	Maximum		51	.784	"	19.30	35	6.05	60.35	80.50
0200	Cement and sand, 1:1 mix, minimum		250	.160	C.F.	38.50	7.15	1.23	46.88	54.50
0300	Maximum		100	.400		58	17.85	3.08	78.93	94.50
0400	Epoxy cement grout, minimum		137	.292		785	13.05	2.25	800.30	885
0500	Maximum		57	.702	▼	785	31.50	5.40	821.90	920
0700	Alternate pricing method: (Add for materials)									
0710	5 person crew and equipment	B-61	1	40	Day		1,775	310	2,085	3,025

31 45 Vibroflotation and Densification

31 45 13 – Vibroflotation

31 45 13.10 Vibroflotation Densification

0010 VIBROFLOTATION DENSIFICATION

0900	Vibroflotation compacted sand cylinder, minimum	R314513-90	B-60	750	.075	V.L.F.		3.67	3	6.67	8.80
0950	Maximum			325	.172			8.45	6.90	15.35	20.50
1100	Vibro replacement compacted stone cylinder, minimum			500	.112			5.50	4.49	9.99	13.20
1150	Maximum			250	.224	▼		11	9	20	26.50
1300	Mobilization and demobilization, minimum			.47	119	Total		5,850	4,775	10,625	14,000
1400	Maximum			14	400	"		19,700	16,000	35,700	47,000

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		B-9	7.10	5.634	Ea.		59	239	50.50	348.50	480
0400	Block, concrete, 8" thick			6.70	5.970			68	254	53.50	375.50	515
0420	12" thick			5.70	7.018			68	298	62.50	428.50	595
0800	Brick, 4" thick with 8" backup block			6.20	6.452			59	274	57.50	390.50	540
1000	Brick, solid, 8" thick			4.90	8.163			68	345	73	486	675
1040	12" thick			4.50	8.889			87	380	79.50	546.50	755
1080	16" thick											
2000	Add for additional floors of shoring		B-1	6	4	▼		59	171		230	320

31 48 Underpinning

31 48 13 – Underpinning Piers

31 48 13.10 Underpinning Foundations		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Ind 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.	340	1,175	254	1,769	2,425
0200 Over 500 C.Y.				2.50	22.400		305	1,100	234	1,639
0400 16' to 25' below grade, 100 to 500 C.Y.				2	28		370	1,375	292	2,037
0500 Over 500 C.Y.				2.10	26.667		350	1,300	278	1,928
0700 26' to 40' below grade, 100 to 500 C.Y.				1.60	35		405	1,700	365	2,470
0800 Over 500 C.Y.				1.80	31.111		370	1,525	325	2,220
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

31 52 16.10 Cofferdams		B-50	545	.206	S.F.	8.60	10.75	4.72	24.07	31
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										
0200 Maximum			495	.226		9.55	11.85	5.20	26.60	34.50
0400 15' to 22' deep with 2 lines of braces, 10" H, minimum			360	.311		10.15	16.30	7.15	33.60	44
0500 Maximum			330	.339		11.50	17.75	7.80	37.05	48
0700 23' to 35' deep with 3 lines of braces, 12" H, minimum			325	.345		13.25	18.05	7.90	39.20	51
0800 Maximum			295	.380		14.35	19.90	8.70	42.95	56
1000 36' to 45' deep with 4 lines of braces, 14" H, minimum			290	.386		14.85	20	8.85	43.70	57
1100 Maximum			265	.423		15.65	22	9.70	47.35	62
1300 No hydrostatic head, left in place, 15' deep, 1 line of braces, min.			635	.176		11.50	9.25	4.05	24.80	31
1400 Maximum			575	.195		12.30	10.20	4.47	26.97	34
1600 15' to 22' deep with 2 lines of braces, minimum			455	.246		17.20	12.90	5.65	35.75	45
1700 Maximum			415	.270		19.15	14.15	6.20	39.50	49.50
1900 23' to 35' deep with 3 lines of braces, minimum			420	.267		20.50	13.95	6.10	40.55	51
2000 Maximum			380	.295		22.50	15.45	6.75	44.70	56
2200 36' to 45' deep with 4 lines of braces, minimum			385	.291		24.50	15.25	6.70	46.45	58
2300 Maximum			350	.320		28.50	16.75	7.35	52.60	65
2350 Logging only, 3" thick wood between piles 8' OC, minimum		B-46	400	.120		1.91	5.80	.10	7.81	11.10
2370 Maximum			250	.192		2.87	9.30	.17	12.34	17.60
2400 Open sheeting no bracing, for trenches to 10' deep, min.			1736	.028		.86	1.34	.02	2.22	3.03
2450 Maximum			1510	.032		.96	1.54	.03	2.53	3.44
2500 Tie-back method, add to open sheeting, add, minimum									20%	20%
2550 Maximum									60%	60%
2700 Tie-backs only, based on tie-backs total length, minimum		B-46	86.80	.553	L.F.	17.25	27	.48	44.73	60.50
2750 Maximum			38.50	1.247		30.50	60.50	1.07	92.07	127
3500 Tie-backs only, typical average, 25' long			2	24	Ea.	760	1,175	20.50	1,955.50	2,625
3600 35' long			1.58	30.380	"	1,025	1,475	26	2,526	3,400
6000 See also Section 31 41 16.10										

31 56 Slurry Walls

31 56 23 – Lean Concrete Slurry Walls

		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
31 56 23.20 Slurry Trench										
0010 SLURRY TRENCH										
0011 Excavated slurry trench in wet soils										
0020 backfilled with 3,000 psi concrete, no reinforcing steel										
0050 Minimum		G-7	333	.216	C.F.	9.55	9.90	3.24	22.69	29
0100 Maximum			200	.360	"	16	16.45	5.40	37.85	48
0200 Alternate pricing method, minimum			150	.480	S.F.	19.10	22	7.20	48.30	62
0300 Maximum			120	.600	"	28.50	27.50	9	65	82.50
0500 Reinforced slurry trench, minimum		B-48	177	.316	"	14.30	15.05	5.90	35.25	45
0600 Maximum			69	.812	"	47.50	38.50	15.20	101.20	127
0800 Haul for disposal, 2 mile haul, excavated material, add		B-34B	99	.081	C.Y.		3.96	5.80	9.76	12.30
0900 Haul bentonite castings for disposal, add			40	.200	"		9.80	14.30	24.10	30.50

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.	29.50	4.91	2.79	37.20	42.50
2300	14" diameter, 2-1/2" wall		680	.094	"	38	5.20	2.96	46.16	53
2500	16" diameter, 3" wall		640	.100	"	50.50	5.50	3.14	59.14	67.50
2600	18" diameter, 3-1/2" wall	B-19A	600	.107	"	63.50	5.90	4.91	74.31	84.50
2800	20" diameter, 4" wall		560	.114	"	55.50	6.30	5.25	67.05	76.50
2900	24" diameter, 5" wall		520	.123	"	75.50	6.80	5.65	87.95	99.50
3100	Precast, prestressed, 40' long, 10" thick, square	B-19	700	.091	"	14.10	5.05	2.87	22.02	26.50
3200	12" thick, square		680	.094	"	26	5.20	2.96	34.16	39.50
3400	14" thick, square		600	.107	"	29	5.90	3.35	38.25	44.50
3500	Octagonal		640	.100	"	28	5.50	3.14	36.64	43
3700	16" thick, square		560	.114	"	30	6.30	3.59	39.89	46.50
3800	Octagonal		600	.107	"	33.50	5.90	3.35	42.75	49.50
4000	18" thick, square	B-19A	520	.123	"	52	6.80	5.65	64.45	73.50
4100	Octagonal	B-19	560	.114	"	45	6.30	3.59	54.89	63
4300	20" thick, square	B-19A	480	.133	"	47.50	7.35	6.15	61	70.50
4400	Octagonal	B-19	520	.123	"	50.50	6.80	3.86	61.16	70
4600	24" thick, square	B-19A	440	.145	"	57.50	8.05	6.70	72.25	82.50
4700	Octagonal	B-19	480	.133	"	59.50	7.35	4.19	71.04	81.50
4730	Precast, prestressed, 60' long, 10" thick, square		700	.091	"	14.85	5.05	2.87	22.77	27
4740	12" thick, square (60' long)		680	.094	"	27	5.20	2.96	35.16	40.50
4750	Mobilization for 10,000 L.F. pile job, add		3300	.019	"		1.07	.61	1.68	2.31
4800	25,000 L.F. pile job, add		8500	.008	"		.42	.24	.66	.90

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.	18.85	4.65	2.64	26.14	30.50
0120	60' depth with extension		740	.086	"	36.50	4.78	2.72	44	51
0130	80' depth with extensions		700	.091	"	57	5.05	2.87	64.92	73.50
0250	"H" Sections, 50' long, HP8 x 36		640	.100	"	18.35	5.50	3.14	26.99	32
0400	HP10 x 42		610	.105	"	20.50	5.80	3.29	29.59	35
0500	HP10 x 57		610	.105	"	28	5.80	3.29	37.09	43.50
0700	HP12 x 53		590	.108	"	27.50	6	3.41	36.91	43

31 62 Driven Piles

31 62 16 – Steel Piles

31 62 16.13 Steel Piles		Crew	Daily	Labor-	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
			Output	Hours			Labor	Equipment	Total		
0800	HP12 x 74	B-19A	590	.108	V.L.F.	35	6	4.99	45.99	53	
1000	HP14 x 73		540	.119		37	6.55	5.45	49	56.50	
1100	HP14 x 89		540	.119		47.50	6.55	5.45	59.50	68	
1300	HP14 x 102		510	.125		54	6.95	5.80	66.75	76.50	
1400	HP14 x 117		510	.125		62.50	6.95	5.80	75.25	85.50	
1600	Splice on standard points, not in leads, 8" or 10"	1 Sswl	5	1.600	Ea.	111	92		203	266	
1700	12" or 14"		4	2		155	115		270	350	
1900	Heavy duty points, not in leads, 10" wide		4	2		186	115		301	385	
2100	14" wide		3.50	2.286		228	131		359	455	

31 62 19 – Timber Piles

31 62 19.10 Wood Piles

0010	WOOD PILES										
0011	Friction or end bearing, not including 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.	13.70	5.65	3.22	22.57	27	
0200	30' to 39' long, 12" butts, 8" points		700	.091		14.45	5.05	2.87	22.37	27	
0300	40' to 49' long, 12" butts, 7" points		720	.089		15.20	4.91	2.79	22.90	27.50	
0400	50' to 59' long, 13" butts, 7" points		800	.080		21.50	4.42	2.51	28.43	33	
0500	60' to 69' long, 13" butts, 7" points		840	.076		24.50	4.21	2.39	31.10	36	
0600	70' to 80' long, 13" butts, 6" points		840	.076		25	4.21	2.39	31.60	36	
0800	ACZA Treated piles, 1.5 lb./C.F.										
0810	friction or end bearing, ASTM class B	B-19	625	.102	V.L.F.	18.20	5.65	3.22	27.07	32	
1000	Up to 30' long, 12" butts, 8" points		700	.091		18.90	5.05	2.87	26.82	32	
1100	30' to 39' long, 12" butts, 8" points		720	.089		20.50	4.91	2.79	28.20	33	
1200	40' to 49' long, 12" butts, 7" points		800	.080		23.50	4.42	2.51	30.43	35.50	
1300	50' to 59' long, 13" butts, 7" points		840	.076		25.50	4.21	3.51	33.22	38.50	
1400	60' to 69' long, 13" butts, 6" points	B-19A	840	.076		28	4.21	3.51	35.72	41	
1500	70' to 80' long, 13" butts, 6" points										
1600	ACZA Treated piles, 2.5 lb./C.F.										
1610	8" butts, 10' long	B-19	400	.160	V.L.F.	7.35	8.85	5	21.20	27	
1620	11' to 16' long		500	.128		7.35	7.05	4.02	18.42	23.50	
1630	17' to 20' long		575	.111		7.35	6.15	3.49	16.99	21.50	
1640	10" butts, 10' to 16' long		500	.128		22	7.05	4.02	33.07	39.50	
1650	17' to 20' long		575	.111		22	6.15	3.49	31.64	37.50	
1660	21' to 40' long		700	.091		22	5.05	2.87	29.92	35	
1670	12" butts, 10' to 20' long		575	.111		23	6.15	3.49	32.64	39	
1680	21' to 35' long		650	.098		23	5.45	3.09	31.54	37.50	
1690	36' to 40' long		700	.091		23.50	5.05	2.87	31.42	37	
1695	14" butts, to 40' long		700	.091		16.90	5.05	2.87	24.82	29.50	
1700	Boot for pile tip, minimum	1 Pile	27	.296	Ea.	45.50	16.05		61.55	75	
1800	Maximum		21	.381		136	20.50		156.50	181	
2000	Point for pile tip, minimum		20	.400		45.50	21.50		67	83.50	
2100	Maximum		15	.533		163	29		192	224	
2300	Splice for piles over 50' long, minimum	B-46	35	1.371		59	66.50	1.18	126.68	168	
2400	Maximum		20	2.400		75.50	116	2.06	193.56	263	
2600	Concrete encasement with wire mesh and tube		331	.145	V.L.F.	75.50	7.05	.12	82.67	94	
2700	Mobilization for 10,000 L.F. pile job, add	B-19	3300	.019			1.07	.61	1.68	2.31	
2800	25,000 L.F. pile job, add		8500	.008			.42	.24	.66	.90	

31 62 Driven Piles

31 62 23 – Composite Piles

		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Bare Labor	Casts Equipment	Total	Total Incl O&P
31 62 23.13 Concrete-Filled Steel Piles										
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.	21.50	7.05	4.02	32.57	39
2700	Concrete filled		460	.139		25.50	7.70	4.37	37.57	44.50
2900	10" diameter, 34 lb./L.F., no concrete		500	.128		24	7.05	4.02	35.07	42
3000	Concrete filled		450	.142		30	7.85	4.47	42.32	50
3200	12" diameter, 44 lb./L.F., no concrete		475	.135		31.50	7.45	4.23	43.18	50.50
3300	Concrete filled		415	.154		35.50	8.50	4.84	48.84	57.50
3500	14" diameter, 46 lb./L.F., no concrete		430	.149		33.50	8.20	4.67	46.37	55
3600	Concrete filled		355	.180		41.50	9.95	5.65	57.10	67
3800	16" diameter, 52 lb./L.F., no concrete		385	.166		38	9.20	5.20	52.40	61.50
3900	Concrete filled		335	.191		52	10.55	6	68.55	80.50
4100	18" diameter, 59 lb./L.F., no concrete		355	.180		47	9.95	5.65	62.60	73
4200	Concrete filled	↓	310	.206	↓	61.50	11.40	6.50	79.40	92.50
4400	Splices for pipe piles, stl., not in leads, 8" diameter	1 Sswl	5	1.600	Ea.	81	92		173	233
4410	10" diameter		4.75	1.684		88.50	97		185.50	249
4430	12" diameter		4.50	1.778		106	102		208	276
4500	14" diameter		4.25	1.882		146	108		254	330
4600	16" diameter		4	2		165	115		280	360
4650	18" diameter		3.75	2.133		274	123		397	490
4710	Steel pipe pile backing rings, w/spacer, 8" diameter		12	.667		9.10	38.50		47.60	70
4720	10" diameter		12	.667		11.90	38.50		50.40	73
4730	12" diameter		10	.800		14.35	46		60.35	88
4740	14" diameter		9	.889		18.35	51		69.35	100
4750	16" diameter		8	1		21.50	57.50		79	114
4760	18" diameter		6	1.333		24	76.50		100.50	146
4800	Points, standard, 8" diameter		4.61	1.735		93	99.50		192.50	258
4840	10" diameter		4.45	1.798		123	103		226	297
4880	12" diameter		4.25	1.882		164	108		272	350
4900	14" diameter		4.05	1.975		209	113		322	410
5000	16" diameter		3.37	2.374		296	136		432	540
5050	18" diameter		3.50	2.286		385	131		516	625
5200	Points, heavy duty, 10" diameter		2.90	2.759		242	158		400	515
5240	12" diameter		2.95	2.712		305	156		461	580
5260	14" diameter		2.95	2.712		305	156		461	580
5280	16" diameter		2.95	2.712		350	156		506	630
5290	18" diameter		2.80	2.857	↓	425	164		589	725
5500	For reinforcing steel, add	↓	1150	.007	lb.	.79	.40		1.19	1.50
5700	For thick wall sections, add			"		.68			.68	.75

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	casing or ground water, 18" diam., 0.065 C.Y./L.F.	B-43
0200	24" diameter, 0.116 C.Y./L.F.	190
0300	30" diameter, 0.182 C.Y./L.F.	150
0400	36" diameter, 0.262 C.Y./L.F.	125
		.240
		.253
		.320
		.384
		V.L.F.
		10.20
		18.20
		28.50
		41
		11.20
		11.80
		14.95
		17.95
		3.85
		4.06
		5.15
		6.15
		25.25
		34.06
		48.60
		65.10
		32
		42
		59.50
		79

31 63 Bored Piles

31 63 26 – Drilled Caissons

31 63 26.13 Fixed End Caisson Piles	Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
						Labor	Equipment	Total		
0500 48" diameter, 0.465 C.Y./L.F.	B-43	100	.480	V.L.F.	73	22.50	7.70	103.20	123	
0600 60" diameter, 0.727 C.Y./L.F.		90	.533		114	25	8.55	147.55	173	
0700 72" diameter, 1.05 C.Y./L.F.		80	.600		165	28	9.65	202.65	234	
0800 84" diameter, 1.43 C.Y./L.F.		75	.640		225	30	10.30	265.30	305	
1000 For bell excavation and concrete, add										
1020 4' bell diameter, 24" shaft, 0.444 C.Y.	B-43	20	2.400	Ea.	57	112	38.50	207.50	274	
1040 6' bell diameter, 30" shaft, 1.57 C.Y.		5.70	8.421		202	395	135	732	960	
1060 8' bell diameter, 36" shaft, 3.72 C.Y.		2.40	20		480	935	320	1,735	2,275	
1080 9' bell diameter, 48" shaft, 4.48 C.Y.		2	24		575	1,125	385	2,085	2,725	
1100 10' bell diameter, 60" shaft, 5.24 C.Y.		1.70	28.235		675	1,325	455	2,455	3,225	
1120 12' bell diameter, 72" shaft, 8.74 C.Y.		1	48		1,125	2,250	770	4,145	5,450	
1140 14' bell diameter, 84" shaft, 13.6 C.Y.		.70	68.571		1,750	3,200	1,100	6,050	7,925	
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.	10.20	16.65	6.55	33.40	43.50	
1400 24" diameter, 0.116 C.Y./L.F.		125	.448		18.20	21.50	8.40	48.10	61	
1500 30" diameter, 0.182 C.Y./L.F.		85	.659		28.50	31.50	12.30	72.30	92	
1600 36" diameter, 0.262 C.Y./L.F.		60	.933		41	44.50	17.45	102.95	131	
1700 48" diameter, 0.465 C.Y./L.F.	B-49	55	1.600		73	80	29.50	182.50	234	
1800 60" diameter, 0.727 C.Y./L.F.		35	2.514		114	126	46.50	286.50	365	
1900 72" diameter, 1.05 C.Y./L.F.		30	2.933		165	147	54.50	366.50	465	
2000 84" diameter, 1.43 C.Y./L.F.		25	3.520		225	176	65	466	585	
2100 For bell excavation and concrete, add										
2120 4' bell diameter, 24" shaft, 0.444 C.Y.	B-48	19.80	2.828	Ea.	57	135	53	245	325	
2140 6' bell diameter, 30" shaft, 1.57 C.Y.		5.70	9.825		202	470	184	856	1,125	
2160 8' bell diameter, 36" shaft, 3.72 C.Y.		2.40	23.333		480	1,100	435	2,015	2,675	
2180 9' bell diameter, 48" shaft, 4.48 C.Y.	B-49	3.30	26.667		575	1,325	495	2,395	3,200	
2200 10' bell diameter, 60" shaft, 5.24 C.Y.		2.80	31.429		675	1,575	580	2,830	3,750	
2220 12' bell diameter, 72" shaft, 8.74 C.Y.		1.60	55		1,125	2,750	1,025	4,900	6,525	
2240 14' bell diameter, 84" shaft, 13.6 C.Y.		1	88		1,750	4,400	1,625	7,775	10,400	
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.	10.20	88	32.50	130.70	180	
2500 24" diameter, 0.116 C.Y./L.F.		30	2.933		18.20	147	54.50	219.70	300	
2600 30" diameter, 0.182 C.Y./L.F.		20	4.400		28.50	221	81.50	331	455	
2700 36" diameter, 0.262 C.Y./L.F.		15	5.867		41	294	109	444	610	
2800 48" diameter, 0.465 C.Y./L.F.		10	8.800		73	440	163	676	925	
2900 60" diameter, 0.727 C.Y./L.F.		7	12.571		114	630	233	977	1,325	
3000 72" diameter, 1.05 C.Y./L.F.		6	14.667		165	735	271	1,171	1,575	
3100 84" diameter, 1.43 C.Y./L.F.		5	17.600		225	880	325	1,430	1,925	
3200 For bell excavation and concrete, add										
3220 4' bell diameter, 24" shaft, 0.444 C.Y.	B-49	10.90	8.073	Ea.	57	405	149	611	835	
3240 6' bell diameter, 30" shaft, 1.57 C.Y.		3.10	28.387		202	1,425	525	2,152	2,950	
3260 8' bell diameter, 36" shaft, 3.72 C.Y.		1.30	67.692		480	3,400	1,250	5,130	7,025	
3280 9' bell diameter, 48" shaft, 4.48 C.Y.		1.10	80		575	4,000	1,475	6,050	8,300	
3300 10' bell diameter, 60" shaft, 5.24 C.Y.		.90	97.778		675	4,900	1,800	7,375	10,100	
3320 12' bell diameter, 72" shaft, 8.74 C.Y.		.60	147		1,125	7,350	2,725	11,200	15,300	
3340 14' bell diameter, 84" shaft, 13.6 C.Y.		.40	220		1,750	11,000	4,075	16,825	23,000	
3600 For rock excavation, sockets, add, minimum		120	.733	C.F.		37	13.55	50.55	70.50	
3650 Average		95	.926			46.50	17.15	63.65	89	
3700 Maximum		48	1.833	V.L.F.	92	34	126	177		
3900 For 50' to 100' deep, add							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.	1.38		1.38	1.52	

31 63 Bored Piles

31 63 26 – Drilled Caissons

31 63 26.13 Fixed End Caisson Piles		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
4300	For other than 50 lb. reinf. per C.Y., add or deduct				Lb.	1.29			1.29	1.42
4400	For steel I-beam cores, add	B-49	8.30	10.602	Ton	2,300	530	196	3,026	3,550
4500	Load and haul excess excavation, 2 miles	B-34B	178	.045	L.C.Y.		2.20	3.22	5.42	6.85
4600	For mobilization, 50 mile radius, rig to 36"	B-43	2	24	Ea.		1,125	385	1,510	2,100
4650	Rig to 84"	B-48	1.75	32			1,525	600	2,125	2,925
4700	For low headroom, add								50%	50%
4750	For difficult access, add								25%	25%
5000	Bottom inspection	1 Skwk	1,20	6.667				365	365	555

31 63 26.16 Concrete Caissons for Marine Construction

CONCRETE CAISSENS FOR MARINE CONSTRUCTION										
0100	Caissons, incl. mobilization and demobilization, up to 50 miles	B-44	88	.727	V.L.F.	26	39.50	23	88.50	115
0200	Uncased shafts, 30 to 80 tons cap., 17" diam., 10' depth		165	.388		18.40	21	12.30	51.70	65.50
0300	25' depth		80	.800		32	43.50	25.50	101	130
0400	80 to 150 ton capacity, 22" diameter, 10' depth		130	.492		26	26.50	15.65	68.15	86.50
0500	20' depth		175	.366		18.40	19.80	11.60	49.80	63.50
0700	Cased shafts, 10 to 30 ton capacity, 10-5/8" diam., 20' depth		240	.267		17.15	14.45	8.45	40.05	50
0800	30' depth		160	.400		26	21.50	12.70	60.20	75.50
0850	30 to 60 ton capacity, 12" diameter, 20' depth		230	.278		19.80	15.10	8.85	43.75	54.50
0900	40' depth		160	.400		37	21.50	12.70	71.20	87.50
1000	80 to 100 ton capacity, 16" diameter, 20' depth		230	.278		34.50	15.10	8.85	58.45	70.50
1100	40' depth		160	.400		39.50	16.50	9.70	65.70	79.50
1200	110 to 140 ton capacity, 17-5/8" diameter, 20' depth		230	.278		39.50	21.50	12.70	73.70	90.50
1300	40' depth		130	.492		37	15.10	8.85	60.95	73
1400	140 to 175 ton capacity, 19" diameter, 20' depth		210	.305		43	26.50	15.65	85.15	105
1500	40' depth									

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

UNCASED DRILLED CONCRETE PIERS										
0020	Unless specified otherwise, not incl. pile caps or mobilization	B-43	540	.089	V.L.F.	4.23	4.15	1.43	9.81	12.40
0050	Cast in place augered piles, no casing or reinforcing		480	.100		6.75	4.67	1.61	13.03	16.15
0060	8" diameter		420	.114		9.50	5.35	1.84	16.69	20.50
0065	10" diameter		360	.133		12.75	6.25	2.14	21.14	26
0070	12" diameter		300	.160		17.20	7.45	2.57	27.22	33
0075	14" diameter		240	.200		21.50	9.35	3.21	34.06	41
0080	16" diameter									
0085	18" diameter									
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.	9.50	5.05	2.87	17.42	21.50
0200	10" diameter, 16 ga. corrugated, 7.3 lb./L.F.		650	.098		12.45	5.45	3.09	20.99	25.50
0300	12" diameter, 16 ga. corrugated, 8.7 lb./L.F.		600	.107		16.20	5.90	3.35	25.45	30.50
0400	14" diameter, 16 ga. corrugated, 10.0 lb./L.F.		550	.116		19.05	6.45	3.65	29.15	35
0500	16" diameter, 16 ga. corrugated, 11.6 lb./L.F.		500	.128		23.50	7.05	4.02	34.57	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.	29.50	5.90	3.35	38.75	45
1000	14" diameter, 7 ga.		560	.114		32	6.30	3.59	41.89	49
1100	16" diameter, 7 ga.		520	.123		38	6.80	3.86	48.66	56
1200	18" diameter, 7 ga.		480	.133		44.50	7.35	4.19	56.04	64.50
1300	End bearing, fluted, constant diameter,									
1320	4,000 psi concrete, no reinforcing									

31 63 Bored Piles

31 63 29 – Drilled Concrete Piers and Shafts

31 63 29.13 Uncased Drilled Concrete Piers	Crew	Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
					Material	Labor	Equipment		
1340 12" diameter, 7 ga.	B-19	600	.107	V.L.F.	31	5.90	3.35	40.25	46.50
1360 14" diameter, 7 ga.		560	.114		39	6.30	3.59	48.89	56
1380 16" diameter, 7 ga.		520	.123		45	6.80	3.86	55.66	64
1400 18" diameter, 7 ga.		480	.133		49.50	7.35	4.19	61.04	70.50

31 63 29.20 Cast In Place Piles, Adds

0010 CAST IN PLACE PILES, ADDS

1500 For reinforcing steel, add					lb.	1.13			1.13	1.24
1700 For ball or pedestal end, add	B-19	11	5.818	C.Y.	150	320	183	653	855	
1900 For lengths above 60', concrete, add		11	5.818		157	320	183	660	865	
2000 For steel thin shell, pipe only				lb.	1.67				1.67	1.84

Division Notes

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 Operation and Maintenance of Exterior Improvements

32 01 11 – Paving Cleaning

32 01 11.51 Rubber and Paint Removal From Paving		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
0010 RUBBER AND PAINT REMOVAL FROM PAVING										
2000 Minimum labor/equipment charge		1 Club	2	4	Job		168		168	253

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.		1.39	.17	.16	1.72	1.96
5400 Thermoplastic coal-tar, Type I, small or irregular area	B-90	2400	.027			4.32	1.25	.92	6.49	7.65
5450 Roadway or large area		8000	.008			4.32	.37	.27	4.96	5.60
5500 Type II, small or irregular area		2400	.027			5.50	1.25	.92	7.67	8.95
6000 Gravel surfacing on asphalt, screened and rolled	B-11L	160	.100	C.Y.		23	4.94	6.65	34.59	40
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.		1.48	.32	.23	2.03	2.36
2120 Roadway or large area	"	18000	.004	"		1.27	.18	.13	1.58	1.81

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.		.84	.17	.16	1.17	1.35
0030 1,000 to 10,000 S.Y.	"	3000	.005			.84	.28	.27	1.39	1.64
0100 Under 1,000 S.Y.	B-1	1050	.023			.84	.98		1.82	2.39
0300 Petroleum resistant, over 10,000 S.Y.	B-45	5000	.003			1.40	.17	.16	1.73	1.97
0320 1,000 to 10,000 S.Y.	"	3000	.005			1.40	.28	.27	1.95	2.26
0400 Under 1,000 S.Y.	B-1	1050	.023			1.40	.98		2.38	3.01
0600 Non-skid pavement renewal, over 10,000 S.Y.	B-45	5000	.003			1.37	.17	.16	1.70	1.94
0620 1,000 to 10,000 S.Y.	"	3000	.005			1.37	.28	.27	1.92	2.23
0700 Under 1,000 S.Y.	B-1	1050	.023			1.37	.98		2.35	2.98
0800 Prepare and clean surface for above	A-2	8545	.003	"			.12	.02	.14	.21
1000 Hand seal asphalt curbing	B-1	4420	.005	L.F.		.59	.23		.82	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.		1.41	.65	.45	2.51	3.02
1910 Roadway or large area		10000	.006	"		1.30	.32	.23	1.85	2.16
1920 Bituminous surface treatment, 12' wide roadway, single course		7	9.143	Mile		7,525	460	320	8,305	9,325
1950 Asphalt surface treatment, dbl. course for small area		3000	.021	S.Y.		2.97	1.08	.75	4.80	5.70
1960 Roadway or large area		6000	.011	"		2.67	.54	.38	3.59	4.16
1980 Asphalt surface treatment, single course, for shoulders		7500	.009	"		1.46	.43	.30	2.19	2.59

32 01 19 – Rigid Paving Surface Treatment

32 01 19.61 Sealing of Joints In Rigid Paving

0010 SEALING OF JOINTS IN RIGID PAVING										
9000 Minimum labor/equipment charge	1 Club	2	4	Job		168			168	253

32 06 Schedules for Exterior Improvements

32 06 10 – Schedules for Bases, Ballasts, and Paving

32 06 10.10 Sidewalks, Driveways and Patios			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P	
0010	SIDEWALKS, DRIVEWAYS AND PATIOS	No base	Crew			Labor	Equipment				
0020	Asphaltic concrete, 2" thick		B-37	720	.067	S.Y.	7.20	2.95	.36	10.51	12.70
0100	2-1/2" thick		"	660	.073	"	9.10	3.22	.39	12.71	15.30
0300	Concrete, 3,000 psi, CIP, 6 x 6 - W1.4 x W1.4 mesh,	broomed finish, no base, 4" thick	B-24	600	.040	S.F.	2.31	1.94		4.25	5.45
0310	5" thick		"	545	.044	"	2.86	2.13		4.99	6.35
0400	6" thick		"	510	.047	"	3.34	2.28		5.62	7.05
0450	For bank run gravel base, 4" thick, add		B-18	2500	.010	"	.43	.41	.07	.91	1.17
0520	8" thick, add		"	1600	.015	"	.87	.64	.10	1.61	2.03
0550	Exposed aggregate finish, add to above, minimum		B-24	1875	.013	"	.13	.62		.75	1.06
0600	Maximum		"	455	.053	"	.43	2.55		2.98	4.28
1000	Crushed stone, 1" thick, white marble		2 Clab	1700	.009	"	.49	.40		.89	1.13
1050	Bluestone		"	1700	.009	"	.18	.40		.58	.80
1700	Redwood, prefabricated, 4' x 4' sections		2 Carp	316	.051	"	4.89	2.69		7.58	9.40
1750	Redwood planks, 1" thick, on sleepers		"	240	.067	"	4.89	3.54		8.43	10.65
2250	Stone dust, 4" thick		B-62	900	.027	S.Y.	5.25	1.22	.20	6.67	7.85

32 06 10.20 Steps

0010 STEPS											
0011	Incl. excav., borrow & concrete base as required										
0100	Brick steps	B-24	35	.686	LF Riser	17.95	33			50.95	69.50
0200	Railroad ties	2 Clab	25	.640	"	3.75	27			30.75	44.50
0300	Bluestone treads, 12" x 2" or 12" x 1-1/2"	B-24	30	.800	"	44.50	38.50			83	107
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.	4.58	2.63			7.21	9
4050	Edging, landscape timber or railroad ties, 6" x 8"	2 Carp	170	.094	"	2.48	5			7.48	10.25

32 11 Base Courses

32 11 23 – Aggregate Base Courses

32 11 23.23 Base Course Drainage Layers										
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.	2.70	.41	.82	3.93	4.47
0100	6" deep	"	5000	.008	"	5.40	.42	.85	6.67	7.50
0200	9" deep	"	4600	.009	"	8.10	.46	.92	9.48	10.60
0300	12" deep	"	4200	.010	"	10.80	.50	1.01	12.31	13.75
0301	Crushed 1-1/2" stone base, compacted to 4" deep	B-36B	6000	.011	"	4.87	.54	.82	6.23	7.05
0302	6" deep	"	5400	.012	"	7.30	.60	.91	8.81	9.95
0303	8" deep	"	4500	.014	"	9.75	.72	1.09	11.56	13
0304	12" deep	"	3800	.017	"	14.60	.85	1.29	16.74	18.80
0350	Bank run gravel, spread and compacted									
0370	6" deep	B-32	6000	.005	S.Y.	3.62	.28	.47	4.37	4.91
0390	9" deep	"	4900	.007	"	5.45	.35	.57	6.37	7.10
0400	12" deep	"	4200	.008	"	7.25	.40	.67	8.32	9.30
6000	Stabilization fabric, polypropylene, 6 oz./S.Y.	B-6	10000	.002	"	.91	.11	.02	1.04	1.18
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.		.83	1.15	1.98	2.51
8000	Large areas over 2,500 S.Y.	"	3500	.007	"		.36	.49	.85	1.07
8050	For roadways	B-32	4000	.008	"		.42	.70	1.12	1.41

32 11 Base Courses

32 11 26 – Asphaltic Base Courses

32 11 26.19 Bituminous-Stabilized Base Courses		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Ind 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.	4.84	.14	.14	5.12	5.65
0800 Prime and seal, cut back asphalt			6000	.003	"	5.70	.14	.14	5.98	6.65
1000 Macadam penetration crushed stone, 2 gal./S.Y., 4" thick			6000	.003	S.Y.	9.70	.14	.14	9.98	11
1100 6" thick, 3 gal./S.Y.			4000	.004		14.50	.21	.21	14.92	16.50
1200 8" thick, 4 gal./S.Y.			3000	.005		19.35	.28	.27	19.90	22
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	.53	.35	6.43	7.25
0120 2" thick			6345	.014		7.40	.64	.43	8.47	9.55
0130 2-1/2" thick			5620	.016		9.25	.72	.48	10.45	11.75
0160 3" thick			4905	.018		11.05	.83	.55	12.43	14.05
0170 3-1/2" thick			4520	.019		12.90	.90	.60	14.40	16.20
0200 4" thick			4140	.021		14.75	.98	.65	16.38	18.45
0300 Wearing course, 1" thick		B-25B	10575	.009		3.66	.43	.28	4.37	4.98
0340 1-1/2" thick			7725	.012		6.15	.59	.38	7.12	8.05
0380 2" thick			6345	.015		8.25	.71	.46	9.42	10.70
0420 2-1/2" thick			5480	.018		10.20	.83	.54	11.57	13.05
0460 3" thick			4900	.020		12.15	.92	.60	13.67	15.40
0470 3-1/2" thick			4520	.021		14.25	1	.65	15.90	17.90
0480 4" thick			4140	.023		16.30	1.09	.71	18.10	20.50
0500 Open graded friction course		B-25C	5000	.010		2.55	.45	.47	3.47	4
0800 Alternate method of figuring paving costs										
0810 Binder course, 1-1/2" thick		B-25	630	.140	Ton	68	6.45	4.29	78.74	89
0811 2" thick			690	.128		68	5.90	3.91	77.81	87.50
0812 3" thick			800	.110		68	5.10	3.37	76.47	86
0813 4" thick			900	.098		68	4.53	3	75.53	84.50
0850 Wearing course, 1" thick		B-25B	575	.167		73.50	7.85	5.10	86.45	98.50
0851 1-1/2" thick			630	.152		73.50	7.20	4.66	85.36	97
0852 2" thick			690	.139		73.50	6.55	4.26	84.31	95.50
0853 2-1/2" thick			765	.125		73.50	5.90	3.84	83.24	94
0854 3" thick			800	.120		73.50	5.65	3.67	82.82	93.50
1000 Pavement replacement over trench, 2" thick		B-37	90	.533	S.Y.	7.60	23.50	2.84	33.94	47
1050 4" thick			70	.686		15.10	30.50	3.65	49.25	66
1080 6" thick			55	.873		24	38.50	4.65	67.15	89.50

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.	1.92	.25	.26	2.43	2.78
0025 2" binder course, 2" topping			9000	.005		2.36	.25	.26	2.87	3.27
0030 3" binder course, 2" topping			9000	.005		2.78	.25	.26	3.29	3.73
0035 4" binder course, 2" topping			9000	.005		3.19	.25	.26	3.70	4.17

32 12 Flexible Paving

32 12 16 – Asphalt Paving

32 12 16.14 Asphaltic Concrete Paving		Daily Output	Labor Hours	Unit	2020 Bare Costs			Total	Total Incl O&P	
					Material	Labor	Equipment			
0040	1-1/2" binder course, 1" topping	B-25C	9000	.005	S.F.	1.72	.25	.26	2.23	2.56
0042	3" binder course, 1" topping		9000	.005		2.33	.25	.26	2.84	3.24
0045	3" binder course, 3" topping		9000	.005		3.23	.25	.26	3.74	4.22
0050	4" binder course, 3" topping		9000	.005		3.63	.25	.26	4.14	4.67
0055	4" binder course, 4" topping		9000	.005		4.08	.25	.26	4.59	5.15
0300	Binder course, 1-1/2" thick		35000	.001		.62	.06	.07	.75	.85
0400	2" thick		25000	.002		.80	.09	.09	.98	1.12
0500	3" thick		15000	.003		1.23	.15	.16	1.54	1.76
0600	4" thick		10800	.004		1.62	.21	.22	2.05	2.34
0800	Sand finish course, 3/4" thick		41000	.001		.31	.06	.06	.43	.48
0900	1" thick		34000	.001		.38	.07	.07	.52	.60
1000	Fill pot holes, hot mix, 2" thick	B-16	4200	.008		.82	.34	.14	1.30	1.56
1100	4" thick		3500	.009		1.20	.41	.16	1.77	2.11
1120	6" thick		3100	.010		1.61	.46	.18	2.25	2.66
1140	Cold patch, 2" thick	B-51	3000	.016		.87	.69	.07	1.63	2.07
1160	4" thick		2700	.018		1.66	.77	.07	2.50	3.07
1180	6" thick		1900	.025		2.58	1.09	.10	3.77	4.59

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)	B-91	5000	.013	S.Y.	1.10	.65	.45	2.20	2.68
1010	Small, irregular areas	B-91D	15000	.007		1.10	.34	.22	1.66	1.97
1020	Parking Lot	"	30000	.003		1.10	.17	.11	1.38	1.58
1090	Roadway				↓	.23			.23	.25
1100	For Each .5% Latex Additive, Add									
1110	Medium Fine - PMCRS-2h (25lbs/sy, 5/16" (No.8), .35gal/sy app. rate)	B-91	4000	.016	S.Y.	1.29	.81	.56	2.66	3.24
1120	Small, irregular areas	B-91D	12000	.009		1.29	.42	.28	1.99	2.36
1130	Parking Lot	"	24000	.004		1.29	.21	.14	1.64	1.88
1190	Roadway				↓	.28			.28	.31
1200	For Each .5% Latex Additive, Add									
1210	Medium - PMCRS-2h (30lbs/sy, 3/8" (No.6), .40gal/sy app. rate)	B-91	3330	.019	S.Y.	1.41	.97	.68	3.06	3.74
1220	Small, irregular areas	B-91D	10000	.010		1.41	.51	.34	2.26	2.68
1230	Parking Lot	"	20000	.005		1.41	.25	.17	1.83	2.11
1290	Roadway				↓	.34			.34	.37
1300	For Each .5% Latex Additive, Add									
1310	Course - PMCRS-2h (30lbs/sy, 1/2" (No.4), .40gal/sy app. rate)	B-91	2500	.026	S.Y.	1.39	1.29	.90	3.58	4.45
1320	Small, irregular areas	B-91D	7500	.014		1.39	.68	.45	2.52	3.03
1330	Parking Lot	"	15000	.007		1.39	.34	.22	1.95	2.28
1390	Roadway				↓	.34			.34	.37
1400	For Each .5% Latex Additive, Add									
1410	Double - PMCRS-2h (Course Base w/ Fine Top)	B-91	2000	.032	S.Y.	2.36	1.62	1.13	5.11	6.25
1420	Small, irregular areas	B-91D	6000	.017		2.36	.85	.56	3.77	4.49
1430	Parking Lot	"	12000	.009		2.36	.42	.28	3.06	3.55
1490	Roadway				↓	.56			.56	.62
1490	For Each .5% Latex Additive, Add									

32 12 36.14 Flush Coat

0010 FLUSH COAT

0011	Fog Seal w/ Sand Cover 18 gal/sy, 6lbs/sy	B-91	2000	.032	S.Y.	.52	1.62	1.13	3.27	4.24
1010	Small, irregular areas		6000	.011		.52	.54	.38	1.44	1.80
1020	Parking lot				↓	.52	.27	.19	.98	1.19
1030	Roadway									

32 12 Flexible Paving

32 12 36 – Seal Coats

		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Ind O&P
32 12 36.33 Slurry Seal										
0010 SLURRY SEAL										
0011 Includes sweeping and cleaning of area										
1000 Type I-PMQS-1h-EAS (12lbs/sy, 1/8", 20% asphalt emulsion)										
1010 Small, irregular areas		B-90	8000	.008	S.Y.	.98	.37	.27	1.62	1.93
1020 Parking lot			25000	.003		.98	.12	.09	1.19	1.35
1030 Roadway			50000	.001		.98	.06	.04	1.08	1.21
1090 For Each .5% Latex Additive, Add						.15			.15	.16
1100 Type II-PMQS-1h-EAS (15lbs/sy, 1/4", 18% asphalt emulsion)										
1110 Small, irregular areas		B-90	6000	.011	S.Y.	1.10	.50	.37	1.97	2.36
1120 Parking lot			20000	.003		1.10	.15	.11	1.36	1.55
1130 Roadway			40000	.002		1.10	.07	.05	1.22	1.38
1200 Type III-PMQS-1h-EAS (25lbs/sy, 3/8", 15% asphalt emulsion)										
1210 Small, irregular areas		B-90	4000	.016	S.Y.	1.51	.75	.55	2.81	3.38
1220 Parking lot			12000	.005		1.51	.25	.18	1.94	2.23
1230 Roadway			24000	.003		1.51	.12	.09	1.72	1.95
1290 For Each .5% Latex Additive, Add						.29			.29	.32

32 12 36.36 Microsurfacing

		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Ind O&P
0010 MICROSURFACING										
1100 Type II-MSE (20lbs/sy, 1/4", 18% microsurfacing emulsion)										
1110 Small, irregular areas		B-90	5000	.013	S.Y.	1.65	.60	.44	2.69	3.19
1120 Parking lot			15000	.004		1.65	.20	.15	2	2.27
1130 Roadway			30000	.002		1.65	.10	.07	1.82	2.04
1200 Type IIIa-MSE (32lbs/sy, 3/8", 15% microsurfacing emulsion)										
1210 Small, irregular areas		B-90	3000	.021	S.Y.	2.29	1	.73	4.02	4.83
1220 Parking lot			9000	.007		2.29	.33	.24	2.86	3.29
1230 Roadway			18000	.004		2.29	.17	.12	2.58	2.90

32 13 Rigid Paving

32 13 13 – Concrete Paving

32 13 13.25 Concrete Pavement, Highways

		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Ind O&P
0010 CONCRETE PAVEMENT, HIGHWAYS										
0015 Including joints, finishing and curing										
0020 Fixed form, 12' pass, unreinforced, 6" thick		B-26	3000	.029	S.Y.	26	1.38	1.18	28.56	32
0100 8" thick			2750	.032		35.50	1.50	1.29	38.29	42.50
0110 8" thick, small area			1375	.064		35.50	3.01	2.57	41.08	46.50
0200 9" thick			2500	.035		40	1.65	1.41	43.06	48.50
0300 10" thick			2100	.042		44	1.97	1.68	47.65	53.50
0310 10" thick, small area			1050	.084		44	3.94	3.37	51.31	58
0400 12" thick			1800	.049		50.50	2.30	1.96	54.76	61.50
0410 Conc. pavement, w/it, frsh.& curing, fix form, 24' pass, unreinforced, 6" T										
0430 8" thick			6000	.015		24.50	.69	.59	25.78	28.50
0440 9" thick			5500	.016		33.50	.75	.64	34.89	39
0450 10" thick			5000	.018		38.50	.83	.71	40.04	44
0460 12" thick			4200	.021		42.50	.98	.84	44.32	49
0470 15" thick			3600	.024		49	1.15	.98	51.13	56.50
0500 Fixed form 12' pass, 15" thick			3000	.029		64	1.38	1.18	66.56	73.50
0510 For small irregular areas, add			1500	.059		64.50	2.76	2.36	69.62	77.50
0520 Welded wire fabric, sheets for rigid paving 2.33 lb./S.Y.		2 Rodm	389	.041	S.Y.	1.46	2.32		3.78	5.10
0530 Reinforcing steel for rigid paving 12 lb./S.Y.			666	.024		7.15	1.35		8.50	9.90
0540 Reinforcing steel for rigid paving 18 lb./S.Y.			444	.036		10.70	2.03		12.73	14.80

32 13 Rigid Paving

32 13 13 – Concrete Paving

			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total
		Crew				Labor	Equipment	Total	Incl O&P
32 13 13.25	Concrete Pavement, Highways								
0620	Slip form, 12' pass, unreinforced, 6" thick	B-26A	5600	.016	S.Y.	25	.74	.65	26.39
0624	8" thick		5300	.017		34.50	.78	.69	35.97
0626	9" thick		4820	.018		39	.86	.76	40.62
0628	10" thick		4050	.022		43	1.02	.90	44.92
0630	12" thick		3470	.025		49.50	1.19	1.05	51.74
0632	15" thick		2890	.030		62.50	1.43	1.26	65.19
0640	Slip form, 24' pass, unreinforced, 6" thick		11200	.008		24.50	.37	.33	25.20
0644	8" thick		10600	.008		33	.39	.34	33.73
0646	9" thick		9640	.009		38	.43	.38	38.81
0648	10" thick		8100	.011		41.50	.51	.45	42.46
0650	12" thick		6940	.013		48.50	.60	.53	49.63
0652	15" thick		5780	.015		60.50	.71	.63	61.84
0700	Finishing, broom finish small areas	2 Cefi	120	.133			6.65		6.65
1000	Curing, with sprayed membrane by hand	2 Clab	1500	.011		1.12	.45		1.57
1650	For integral coloring, see Section 03 05 13.20								1.90

32 14 Unit Paving

32 14 13 – Precast Concrete Unit Paving

32 14 13.13	INTERLOCKING PRECAST CONCRETE UNIT PAVING	D-1	205	.078	S.F.	11.15	3.66		14.81	17.85
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"										
0750 Exposed local aggregate, natural										
0800 Colors										
0850 Exposed granite or limestone aggregate										
0900 Exposed white tumbledstone aggregate										

32 14 13.18 Precast Concrete Plantable Pavers

0010	PRECAST CONCRETE PLANTABLE PAVERS (50% grass)	B-63	800	.050	S.F.	4.52	2.21	.22	6.95	8.55
0015 Subgrade preparation and grass planting not included										
0100 Precast concrete plantable pavers with topsoil, 24" x 16"										
0200 Less than 600 S.F. or irregular area										
0300 3/4" crushed stone base for plantable pavers, 6" depth										
0400 8" depth										
0500 10" depth										
0600 12" depth										
0700 Hydro seeding plantable pavers										
0800 Apply fertilizer and seed to plantable pavers										

32 14 16 – Brick Unit Paving

32 14 16.10	BRICK PAVING	D-1	110	.145	S.F.	2.66	6.80		9.46	13.25
0012 4" x 8" x 1-1/2", without joints (4.5 bricks/S.F.)										
0100 Grouted, 3/8" joint (3.9 bricks/S.F.)										
0200 4" x 8" x 2-1/4", without joints (4.5 bricks/S.F.)										
0300 Grouted, 3/8" joint (3.9 bricks/S.F.)										
0455 Pervious brick paving, 4" x 8" x 3-1/4", without joints (4.5 bricks/S.F.)										
0500 Bedding, asphalt, 3/4" thick										
0540 Course washed sand bed, 1" thick										
0580 Mortar, 1" thick										

32 14 Unit Paving

32 14 16 – Brick Unit Paving

32 14 16.10 Brick Paving		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
0620	2" thick	D-1	200	.080	S.F.	1.37	3.75			5.12	7.20
1500	Brick on 1" thick sand bed laid flat, 4.5/S.F.		100	.160		3.05	7.50			10.55	14.75
2000	Brick pavers, laid on edge, 7.2/S.F.		70	.229		4.61	10.70			15.31	21.50
2500	For 4" thick concrete bed and joints, add		595	.027		1.31	1.26			2.57	3.36
2800	For steam cleaning, add	A-1H	950	.008		.12	.35	.08	.55	.55	.75

32 14 23 – Asphalt Unit Paving

32 14 23.10 Asphalt Blocks

0010 ASPHALT BLOCKS		D-1	135	.119	S.F.	10.20	5.55			15.75	19.65
0020	Rectangular, 6" x 12" x 1-1/4", w/bed & neopr. adhesive		130	.123		14.30	5.75			20.05	24.50
0100	3" thick		135	.119		10.20	5.55			15.75	19.65
0300	Hexagonal tile, 8" wide, 1-1/4" thick		130	.123		14.30	5.75			20.05	24.50
0400	2" thick		130	.123		14.30	5.75			20.05	24.50
0500	Square, 8" x 8", 1-1/4" thick		135	.119		10.20	5.55			15.75	19.65
0600	2" thick		130	.123		14.30	5.75			20.05	24.50
0900	For exposed aggregate (ground finish), add					.58				.58	.64
0910	For colors, add					.58				.58	.64

32 14 40 – Stone Paving

32 14 40.10 Stone Pavers

0010 STONE PAVERS		D-1	81	.198	S.F.	10.35	9.25			19.60	25.50
1100	Flagging, bluestone, irregular, 1" thick,		92	.174		15.70	8.15			23.85	29.50
1150	Snapped random rectangular, 1" thick		85	.188		18.85	8.85			27.70	34
1200	1-1/2" thick		83	.193		22	9.05			31.05	37.50
1250	2" thick		92	.174		9.75	8.15			17.90	23
1300	Slate, natural cleft, irregular, 3/4" thick		105	.152		21	7.15			28.15	34
1350	Random rectangular, gauged, 1/2" thick		150	.107		22.50	5			27.50	32.50
1400	Random rectangular, butt joint, gauged, 1/4" thick										
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.	21.50	8.15			29.65	36
1600	4" to 12" long, 3" to 5" wide, 3" to 5" thick		98	.163		17.95	7.65			25.60	31.50
1650	6" to 15" long, 3" to 6" wide, 3" to 5" thick		105	.152		9.60	7.15			16.75	21.50

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		C-2	500	.096	L.F.	3.16	4.96			8.12	10.90
0290	Forms only, no concrete		200	.240	"	3.30	12.40			15.70	22
0300	Concrete, wood forms, 6" x 18", straight										
0400	6" x 18", radius										
0402	Forms and concrete complete										
0404	Concrete, wood forms, 6" x 18", straight & concrete	C-2A	500	.096	L.F.	6.75	4.91			11.66	14.80
0406	6" x 18", radius		200	.240		6.90	12.25			19.15	26
0410	Steel forms, 6" x 18", straight		700	.069		7.10	3.50			10.60	13.05
0411	6" x 18", radius		400	.120		7.55	6.15			13.70	17.50
0415	Machine formed, 6" x 18", straight	B-69A	2000	.024		5.15	1.11	.61	.87	8	
0416	6" x 18", radius		900	.053		5.20	2.46	1.35	9.01	10.90	
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.	17.35	6.55			23.90	29
0435	30" wide, 0.066 C.Y./L.F.		340	.141		19.20	7.20			26.40	32
0440	Steel forms, 24" wide, straight		700	.069		9.75	3.50			13.25	15.95

32 16 Curbs, Gutters, Sidewalks, and Driveways

32 16 13 – Curbs and Gutters

				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
				Crew				Labor	Equipment	Total		
32 16 13.13 Cast-in-Place Concrete Curbs and Gutters	Radius		C-2A	500	.096	L.F.	9.25	4.91		14.16	17.50	
0441	30" wide, straight			700	.069		11.40	3.50		14.90	17.80	
0442	Radius			500	.096		10.40	4.91		15.31	18.80	
0443	Machine formed, 24" wide, straight		B-69A	2000	.024		7.20	1.11	.61	8.92	10.30	
0444	Radius			900	.053		7.20	2.46	1.35	11.01	13.10	
0445	30" wide, straight			2000	.024		8.35	1.11	.61	10.07	11.55	
0446	Radius			900	.053		8.35	2.46	1.35	12.16	14.35	

32 16 13.23 Precast Concrete Curbs and Gutters

0010 PRECAST CONCRETE CURBS AND GUTTERS				B-29	700	.080	L.F.	9.15	3.68	1.21	14.04	16.95
0550	Precast, 6" x 18", straight											
0600	6" x 18", radius											

32 16 13.33 Asphalt Curbs

0010 ASPHALT CURBS				B-27	1000	.032	L.F.	1.64	1.36	.27	3.27	4.15
0012	Curbs, asphaltic, machine formed, 8" wide, 6" high, 40 L.F./ton											
0100	8" wide, 8" high, 30 L.F./ton											
0150	Asphaltic berm, 12" W, 3" to 6" H, 35 L.F./ton, before pavement											
0200	12" W, 1-1/2" to 4" H, 60 L.F./ton, laid with pavement											

32 16 13.43 Stone Curbs

0010 STONE CURBS				D-13	275	.175	L.F.	16.50	8.80	1.56	26.86	33
1000	Granite, split face, straight, 5" x 16"											
1100	6" x 18"											
1300	Radius curbing, 6" x 18", over 10' radius			B-29	260	.215		26.50	9.90	3.26	39.66	47.50
1400	Corners, 2' radius						Ea.	89	32	10.60	131.60	158
1600	Edging, 4-1/2" x 12", straight			D-13	300	.160	L.F.	8.25	8.05	1.43	17.73	23
1800	Curb inlets (guttermouth) straight			B-29	41	1.366	Ea.	198	63	20.50	281.50	335
2000	Indian granite (Belgian block)											
2100	Jumbo, 10-1/2" x 7-1/2" x 4", grey			D-1	150	.107	L.F.	9.65	5		14.65	18.20
2150	Pink				150	.107			9.55	5		14.55
2200	Regular, 9" x 4-1/2" x 4-1/2", grey				160	.100			4.64	4.69		9.33
2250	Pink				160	.100			6.75	4.69		11.44
2300	Cubes, 4" x 4" x 4", grey				175	.091			3.34	4.29		7.63
2350	Pink				175	.091			3.99	4.29		8.28
2400	6" x 6" x 6", pink				155	.103			12.60	4.84		17.44
2500	Alternate pricing method for Indian granite											
2550	Jumbo, 10-1/2" x 7-1/2" x 4" (30 lb.), grey						Ton	550			550	605
2600	Pink							555			555	610
2650	Regular, 9" x 4-1/2" x 4-1/2" (20 lb.), grey							325			325	360
2700	Pink							475			475	520
2750	Cubes, 4" x 4" x 4" (5 lb.), grey							405			405	445
2800	Pink							515			515	565
2850	6" x 6" x 6" (25 lb.), pink							490			490	540
2900	For pallets, add							22			22	24

32 17 Paving Specialties

32 17 13 – Parking Bumpers

			Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total		Total Ind O&P
			Crew				Labor	Equipment	Total	
32 17 13.13 Metal Parking Bumpers										
0010	METAL PARKING BUMPERS									
0015	Bumper rails for garages, 12 ga. rail, 6" wide, with steel posts 12'-6" OC, minimum		E-4	190	.168	L.F.	22	9.80	.77	32.57
0020	Average			165	.194		27.50	11.30	.89	39.69
0030	Maximum			140	.229		33	13.30	1.05	47.35
0100	12" channel rail, minimum			160	.200		27.50	11.65	.92	40.07
0400	Maximum			120	.267		41	15.50	1.22	57.72
1300	Pipe bollards, conc. filled/paint, 8' L x 4' D hole, 6" diam.		B-6	20	1.200	Ea.	635	55	10.70	700.70
1400	8" diam.			15	1.600		740	73	14.25	827.25
1500	12" diam.			12	2		1,025	91.50	17.80	1,134.30
2030	Folding with individual padlocks		B-2	50	.800		205	34		239
8000	Parking lot control, see Section 11 12 13.10									
8900	Security bollards, SS, lighted, hyd., incl. controls, group of 3		L-7	.06	509	Ea.	43,000	26,000		69,000
8910	Group of 5		"	.04	683	"	75,000	34,900		109,900
										135,000

32 17 13.16 Plastic Parking Bumpers

0010	PLASTIC PARKING BUMPERS		B-2	120	.333	Ea.	57	14.15		71.15	84
1200	Thermoplastic, 6" x 10" x 6'-0"										

32 17 13.19 Precast Concrete Parking Bumpers

0010	PRECAST CONCRETE PARKING BUMPERS		B-2	120	.333	Ea.	63.50	14.15		77.65	91
1000	Wheel stops, precast concrete incl. dowels, 6" x 10" x 6'-0"		B-2	120	.333	Ea.	63.50	14.15		77.65	91
1100	8" x 13" x 6'-0"		"	120	.333	"	74	14.15		88.15	103

32 17 13.26 Wood Parking Bumpers

0010	WOOD PARKING BUMPERS		B-2	520	.077	L.F.	3.16	3.27		6.43	8.40
0020	Parking barriers, timber w/saddles, treated type										
0100	4" x 4" for cars		B-2	520	.077	"	6.55	3.27		9.82	12.10
0200	6" x 6" for trucks		"	100	.400	Ea.	44.50	17		61.50	74.50
0600	Flexible fixed stanchion, 2' high, 3" diameter										

32 17 23 – Pavement Markings

0010	PAINTED PAVEMENT MARKINGS		B-78	20000	.002	L.F.	.11	.10	.05	.26	.34
0020	Acrylic waterborne, white or yellow, 4" wide, less than 3,000 L.F.			11000	.004		.16	.19	.10	.45	.57
0200	6" wide, less than 3,000 L.F.			10000	.005		.21	.21	.11	.53	.67
0500	8" wide, less than 3,000 L.F.			4000	.012		.32	.52	.26	1.10	1.42
0600	12" wide, less than 3,000 L.F.			2300	.021	S.F.	.22	.90	.46	1.58	2.11
0620	Arrows or gore lines			15000	.003	L.F.	.12	.14	.07	.33	.42
0640	Temporary paint, white or yellow, less than 3,000 L.F.			1 Clb	.027					1.12	1.69
0660	Removal			2 Clb	1500	.011		.53	.45		
0680	Temporary tape			B-79	15000	.003		.42	.12	.12	.66
0710	Thermoplastic, white or yellow, 4" wide, less than 6,000 L.F.			14000	.003		.63	.12	.12	.87	1.02
0730	6" wide, less than 6,000 L.F.			12000	.003		.84	.15	.14	1.13	1.30
0740	8" wide, less than 6,000 L.F.			6000	.007		1.24	.29	.29	1.82	2.12
0750	12" wide, less than 6,000 L.F.			660	.061	S.F.	.69	2.64	2.63	5.96	7.60
0760	Arrows			2500	.016		.69	.70	.69	2.08	2.57
0770	Gore lines			660	.061		.70	2.64	2.63	5.97	7.60
0780	Letters										
1000	Airport painted markings										
1050	Traffic safety flashing truck for airport painting		A-2B	1	8	Day		380	196	576	780
1100	Painting, white or yellow, taxiway markings		B-78	4000	.012	S.F.	.38	.52	.26	1.16	1.49
1110	with 12 lb. beads per 100 S.F.			4000	.012		.46	.52	.26	1.24	1.58
1200	Runway markings			3500	.014		.38	.59	.30	1.27	1.64
1210	with 12 lb. beads per 100 S.F.			3500	.014		.46	.59	.30	1.35	1.73

32 17 Paving Specialties

32 17 23 – Pavement Markings

32 17 23.13 Painted Pavement Markings		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
						Labor	Equipment	Total	
1300	Pavement location or direction signs	B-78	2500	.019	S.F.	.38	.83	.42	1.63
1310	with 12 lb. beads per 100 S.F.		2500	.019	↓	.46	.83	.42	1.71
1350	Mobilization airport pavement painting	↓	4	.12	Ea.		520	265	785
1400	Paint markings or pavement signs removal daytime	B-78B	400	.045	S.F.		1.95	1.01	2.96
1500	Removal nighttime		335	.054	"		2.33	1.20	3.53
1600	Mobilization pavement paint removal	↓	4	4.500	Ea.		195	101	296

32 17 23.14 Pavement Parking Markings

0010 PAVEMENT PARKING MARKINGS		A-2	25000	.001	L.F.	.04	.01	.05	.07
0790	Layout of pavement marking								
0800	Lines on pvt., parking stall, paint, white, 4" wide	B-78B	400	.045	Stall	5.05	1.95	1.01	8.01
0825	Parking stall, small quantities	2 Pord	80	.200		10.10	8.90	19	24.50
0830	Lines on pvt., parking stall, thermoplastic, white, 4" wide	B-79	300	.133	↓	20	5.80	5.80	31.60
1000	Street letters and numbers	B-78B	1600	.011	S.F.	.82	.49	.25	1.56

32 17 26 – Tactile Warning Surfacing

32 17 26.10 Tactile Warning Surfacing

0010 TACTILE WARNING SURFACING		2 Clb	400	.040	S.F.	18.35	1.68		20.03	22.50
0100 Tactile warning tiles S.F.										

32 18 Athletic and Recreational Surfacing

32 18 13 – Synthetic Grass Surfacing

32 18 13.10 Artificial Grass Surfacing

0010 ARTIFICIAL GRASS SURFACING		C-17	3200	.025	S.F.	6.50	1.38		7.88	9.25
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										
0300 Deluxe										
0500 1/2" pile and 5/8" cushion pad, standard										
0600 Deluxe										
0800 For asphaltic concrete base, 2-1/2" thick,										
0900 with 6" crushed stone sub-base, add										
		B-25	12000	.007	S.F.	1.73	.34	.22	2.29	2.66

32 18 16 – Synthetic Resilient Surfacing

32 18 16.13 Playground Protective Surfacing

0010 PLAYGROUND PROTECTIVE SURFACING		2 Skwk	300	.053	S.F.	14.95	2.93		17.88	21
0100 Resilient rubber surface, 4" thick, black										
0150 2" thick topping, colors										
0200 Wood chip mulch, 6" deep										

32 18 16.16 Epoxy Acrylic Coatings

0010 EPOXY ACRYLIC COATINGS		E-11A	1200	.027	S.F.	.34	1.25	.51	2.10	2.88
0100 Surface Prep, Sand blasting to SSPC-SP6, 2.0#/S.F. sand										
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.	.37	.45	.17	.99	1.29
0210 Epoxy intermediate coat										
0220 Epoxy top coat										
0300 Painting epoxy, Foundation/Prime coat, small areas (100 S.F. per Gal)										
0310 Epoxy intermediate coat										
0320 Epoxy top coat										
0330 Adhesive Promoter										
0340 Sealer Concentrate										
0400 Install debris tarp for construction work under 600 S.F.		2 Clb	2100	.008		.76	.32		1.08	1.32

32 18 Athletic and Recreational Surfacing

32 18 16 – Synthetic Resilient Surfacing

32 18 16.16 Epoxy Acrylic Coatings				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
		Crew										
0410	600 S.F. or more	2 Clab	2400	.007	S.F.		.61	.28			.89	1.09

32 18 23 – Athletic Surfacing

32 18 23.33 Running Track Surfacing

0010 RUNNING TRACK SURFACING

0020	Running track, asphalt concrete pavement, 2-1/2"	B-37	300	.160	S.Y.	15.95	7.10	.85	23.90	29
0102	Surface, latex rubber system, 1/2" thick, black	B-20	115	.209		53.50	9.80		63.30	73.50
0152	Colors		115	.209		65.50	9.80		75.30	87
0302	Urethane rubber system, 1/2" thick, black		110	.218		41	10.25		51.25	61
0402	Color coating	↓	110	.218	↓	51	10.25		61.25	71.50

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.	33.50	4.72	.57	38.79	44
0200	Two courts		675	.071		19.35	3.15	.38	22.88	26.50
0300	Clay courts		360	.133		46	5.90	.71	52.61	60
0400	Pulverized natural greenstone with 4" base, fast dry		250	.192		39	8.50	1.02	48.52	56.50
0800	Rubber-acrylic base resilient pavement	↓	600	.080		67	3.54	.43	70.97	80
1000	Colored sealer, acrylic emulsion, 3 coats	2 Clab	800	.020		7.05	.84		7.89	9
1100	3 coats, 2 colors		"	.018		9.80	.75		10.55	11.90
1200	For preparing old courts, add	1 Clab	825	.010			.41		.41	.61
1400	Posts for nets, 3-1/2" diameter with eye bolts	B-1	3.40	7.059	Pr.	282	300		582	765
1500	With pulley & reel		3.40	7.059	"	900	300		1,200	1,450
1700	Net, 42' long, nylon thread with binder		50	.480	Eo.	275	20.50		295.50	335
1800	All metal	↓	6.50	3.692	"	560	158		718	850
2000	Paint markings on asphalt, 2 coats	1 Pord	1.78	4.494	Court	252	200		452	575
2200	Complete court with fence, etc., asphaltic conc., minimum	B-37	.20	240		34,500	10,600	1,275	46,375	55,000
2300	Maximum		.16	300		82,500	13,300	1,600	97,400	112,000
2800	Clay courts, minimum		.20	240		38,000	10,600	1,275	49,875	59,000
2900	Maximum	↓	.16	300	↓	69,500	13,300	1,600	84,400	98,000

32 31 Fences and Gates

32 31 13 – Chain Link Fences and Gates

32 31 13.20 Fence, Chain Link Industrial

0010 FENCE, CHAIN LINK INDUSTRIAL				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Labor	Equipment	Total	Total Incl O&P
		Crew										
0011	Schedule 40, including concrete											
0020	3 strands barb wire, 2" post @ 10' OC, set in concrete, 6' H	B-80C	240	.100	L.F.	19.95	4.38	1.04	25.37	30		
0200	9 ga. wire, galv. steel, in concrete				S.F.	.71			.71	.78		
0248	Fence, add for vinyl coated fabric											
0300	Aluminized steel	B-80C	240	.100	L.F.	22.50	4.38	1.04	27.92	33		
0301	Fence, wrought iron		240	.100		43	4.38	1.04	48.42	55		
0303	Fence, commercial 4' high		240	.100		32.50	4.38	1.04	37.92	43.50		
0304	Fence, commercial 6' high		240	.100		58	4.38	1.04	63.42	72		
0500	6 ga. wire, galv. steel		240	.100		23.50	4.38	1.04	28.92	34		
0600	Aluminized steel		240	.100		31	4.38	1.04	36.42	42		
0800	6 ga. wire, 6' high but omit barbed wire, galv. steel		250	.096		21.50	4.21	1	26.71	31		
0900	Aluminized steel, in concrete		250	.096		28.50	4.21	1	33.71	38.50		
0920	8' H, 6 ga. wire, 2-1/2" line post, galv. steel, in concrete		180	.133		33.50	5.85	1.39	40.74	47.50		
0940	Aluminized steel, in concrete		180	.133	↓	41	5.85	1.39	48.24	55.50		
1100	Add for corner posts, 3" diam., galv. steel, in concrete		40	.600	Eo.	91.50	26.50	6.25	124.25	147		
1200	Aluminized steel, in concrete		40	.600		92.50	26.50	6.25	125.25	148		
1300	Add for braces, galv. steel		80	.300	↓	42.50	13.15	3.13	58.78	70		

32 31 Fences and Gates

32 31 13 – Chain Link Fences and Gates

32 31 13.20 Fence, Chain Link Industrial		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
						Labor	Equipment	Total		
1350	Aluminized steel	B-80C	80	.300	Ea.	49	13.15	3.13	65.28	77
1400	Gate for 6' high fence, 1-5/8" frame, 3' wide, galv. steel		10	2.400		209	105	25	339	415
1500	Aluminized steel, in concrete,		↓	10	2.400	↓	218	105	25	348
2000	5'-0" high fence, 9 ga., no barbed wire, 2" line post, in concrete									425
2010	10' OC, 1-5/8" top rail, in concrete									
2100	Galvanized steel, in concrete	B-80C	300	.080	L.F.	22.50	3.51	.83	26.84	31
2200	Aluminized steel, in concrete		300	.080	"	21	3.51	.83	25.34	29
2400	Gate, 4' wide, 5' high, 2" frame, galv. steel, in concrete		10	2.400	Ea.	229	105	25	359	440
2500	Aluminized steel, in concrete		10	2.400	"	191	105	25	321	395
3100	Overhead slide gate, chain link, 6' high, to 18' wide, in concrete		↓	38	.632	L.E.	95	27.50	6.60	129.10
3110	Cantilever type, in concrete	B-80	48	.667		168	31	21.50	220.50	255
3120	8' high, in concrete		↓	24	1.333		176	62	42.50	280.50
3130	10' high, in concrete		↓	18	1.778	↓	218	83	56.50	357.50
5000	Double swing gates, incl. posts & hardware, in concrete									425
5010	5' high, 12' opening, in concrete	B-80C	3.40	7.059	Opng.	535	310	73.50	918.50	1,125
5020	20' opening, in concrete			2.80	8.571		595	375	89.50	1,059.50
5060	6' high, 12' opening, in concrete			3.20	7.500		465	330	78	873
5070	20' opening, in concrete		↓	2.60	9.231		710	405	96	1,211
5080	8' high, 12' opening, in concrete	B-80	2.13	15.002		545	700	480	1,725	2,175
5090	20' opening, in concrete			1.45	22.069		845	1,025	705	2,575
5100	10' high, 12' opening, in concrete			1.31	24.427		830	1,150	780	2,760
5110	20' opening, in concrete			1.03	31.068		880	1,450	990	3,320
5120	12' high, 12' opening, in concrete			1.05	30.476		1,300	1,425	970	3,695
5130	20' opening, in concrete			.85	37.647	↓	1,325	1,750	1,200	4,275
5190	For aluminized steel, add							20%		5,400

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.	4.95	2.10	.50	7.55	9.15
0050	4' high		400	.060		5.60	2.63	.63	8.86	10.80
0100	6' high		200	.120	↓	7.25	5.25	1.25	13.75	17.30
0150	Add for gate 3' wide, 1-3/8" frame, 3' high		12	2	Ea.	84.50	87.50	21	193	248
0170	4' high		10	2.400		91.50	105	25	221.50	287
0190	6' high		10	2.400		104	105	25	234	300
0200	Add for gate 4' wide, 1-3/8" frame, 3' high		9	2.667		96	117	28	241	310
0220	4' high		9	2.667		103	117	28	248	320
0240	6' high		8	3	↑	118	131	31.50	280.50	360
0350	Aluminized steel, 11 ga. wire, 3' high		500	.048	L.F.	8.60	2.10	.50	11.20	13.20
0380	4' high		400	.060		7.85	2.63	.63	11.11	13.30
0400	6' high		200	.120	↓	11.15	5.25	1.25	17.65	21.50
0450	Add for gate 3' wide, 1-3/8" frame, 3' high		12	2	Ea.	104	87.50	21	212.50	269
0470	4' high		10	2.400		97	105	25	227	293
0490	6' high		10	2.400		137	105	25	267	335
0500	Add for gate 4' wide, 1-3/8" frame, 3' high		10	2.400		108	105	25	238	305
0520	4' high		9	2.667		119	117	28	264	335
0540	6' high		8	3	↓	133	131	31.50	295.50	380
0620	Vinyl covered, 9 ga. wire, 3' high		500	.048	L.F.	7.70	2.10	.50	10.30	12.15
0640	4' high		400	.060		8.20	2.63	.63	11.46	13.65
0660	6' high		200	.120	↓	9.35	5.25	1.25	15.85	19.60
0720	Add for gate 3' wide, 1-3/8" frame, 3' high		12	2	Ea.	88	87.50	21	196.50	252
0740	4' high		10	2.400		95.50	105	25	225.50	291
0760	6' high		10	2.400	↓	132	105	25	262	330

32 31 Fences and Gates

32 31 13 – Chain Link Fences and Gates

32 31 13.25 Fence, Chain Link Residential		Crew B-80C	Daily Output 10	Labor-Hours 2,400	Unit Ea.	Material 109	2020 Bare Costs			Total 239	Total Incl O&P 305
	Add for gate 4' wide, 1-3/8" frame, 3' high						Labor 105	Equipment 25			
0780	4' high		9	2,667		100	117	28	245	315	
0800	6' high		8	3		138	131	31.50	300.50	385	
7076	Fence, for small jobs 100 L.F. fence or less w/o gate, add				L.F.	20%					

32 31 13.26 Tennis Court Fences and Gates

0010 TENNIS COURT FENCES AND GATES		Crew B-80	Daily Output 190	Labor-Hours .168	Unit L.F.	Material 22	2020 Bare Costs			Total 35.20	Total Incl O&P 41.50
	Add for gate 4' wide, 1-5/8" frame 7' high						Labor 7.85	Equipment 5.35			
0860	Tennis courts, 11 ga. wire, 2-1/2" post set										
0870	in concrete, 10' OC, 1-5/8" top rail										
0900	10' high		170	.188	"	23	8.75	6	37.75	45	
0920	12' high		10	3,200	Ea.	231	149	102	482	590	
1000	Add for gate 4' wide, 1-5/8" frame 7' high		190	.168	L.F.	20.50	7.85	5.35	33.70	40	
1040	Aluminized steel, 11 ga. wire 10' high		170	.188	"	25.50	8.75	6	40.25	48	
1100	12' high		10	3,200	Ea.	238	149	102	489	595	
1140	Add for gate 4' wide, 1-5/8" frame, 7' high		190	.168	L.F.	21.50	7.85	5.35	34.70	41	
1250	Vinyl covered, 9 ga. wire, 10' high		170	.188	"	25	8.75	6	39.75	47.50	
1300	12' high		B-80A	8.72	2,752	Ea.	350	116	94	560	665
1310	Fence, CL, tennis court, transom gate, single, galv., 4' x 7'		B-80	10	3,200	"	315	149	102	566	680
1400	Add for gate 4' wide, 1-5/8" frame, 7' high										

32 31 13.33 Chain Link Backstops

0010 CHAIN LINK BACKSTOPS		Crew B-1	Daily Output 1	Labor-Hours 24	Unit Ea.	Material 2,775	2020 Bare Costs			Total 3,800	Total Incl O&P 4,625
	Backstops, baseball, prefabricated, 30' wide, 12' high & 1 overhang						Labor 1,025	Equipment .52			
0015	40' wide, 12' high & 2 overhangs		75	32		7,075	1,375		8,450	9,825	
0100	Basketball, steel, single goal	B-13	3.04	18,421		1,775	850	191	2,816	3,425	
0400	Double goal	"	1.92	29,167	↓	2,550	1,350	300	4,200	5,150	
0600	Tennis, wire mesh with pair of ends	B-1	2.48	9,677	Set	2,775	415		3,190	3,675	
0700	Enclosed court	"	1.30	18,462	Ea.	9,200	790		9,990	11,300	

32 31 13.53 High-Security Chain Link Fences, Gates and Sys.

0010 HIGH-SECURITY CHAIN LINK FENCES, GATES AND SYSTEMS		Crew B-80C	Daily Output 480	Labor-Hours .050	Unit L.F.	Material 46.50	2020 Bare Costs			Total 49.21	Total Incl O&P 55
	Backstop, baseball, prefabricated, 30' wide, 12' high & 1 overhang						Labor 2.19	Equipment .52			
0100	Fence, chain link, security, 7' H, standard FE-7, incl. excavation & posts		400	.060	"	8.20	2.63	.63	11.46	13.65	
0200	Fence, barbed wire, security, 7' H, with 3 wire barbed wire arm										
0300	Complete systems, including material and installation										
0310	Taut 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		Crew B-80C	Daily Output 10	Labor-Hours 2,400	Unit Ea.	Material 128	2020 Bare Costs			Total 258	Total Incl O&P 325
	Residential 4' gate, single incl. hardware and concrete						Labor 25	Equipment .52			
0110	5'		10	2,400		138	105	25	268	340	
0130	6'		10	2,400		149	105	25	279	350	
0510	Residential 4' gate, double incl. hardware and concrete		10	2,400		228	105	25	358	435	
0520	5'		10	2,400		244	105	25	374	455	
0530	6'		10	2,400	↓	284	105	25	414	495	

32 31 13.82 Internal Chain Link Gate

0010 INTERNAL CHAIN LINK GATE		Crew B-80C	Daily Output 10	Labor-Hours 2,400	Unit Ea.	Material 279	2020 Bare Costs			Total 409	Total Incl O&P 490
	Internal 6' gate, single incl. post flange, hardware and concrete						Labor 25	Equipment .52			
0110	8'		10	2,400		320	105	25	450	535	
0120	10'		10	2,400	↓	435	105	25	565	665	

32 31 Fences and Gates

32 31 13 – Chain Link Fences and Gates

32 31 13.82 Internal Chain Link Gate		Crew	Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
						Material	Labor	Equipment		
0510	Internal 6' gate, double incl. post flange, hardware and concrete	B-80C	10	2.400	Ea.	510	105	25	640	745
0520	8'		10	2.400		585	105	25	715	830
0530	10'		10	2.400		740	105	25	870	1,000

32 31 13.84 Industrial Chain Link Gate

0010 INDUSTRIAL CHAIN LINK GATE		B-80C	10	2.400	Ea.	2020 Bare Costs			Total	Total Incl O&P
						Material	Labor	Equipment		
0110	Industrial 8' gate, single incl. hardware and concrete	B-80C	10	2.400	Ea.	475	105	25	605	710
0120	10'		10	2.400		540	105	25	670	780
0510	Industrial 8' gate, double incl. hardware and concrete		10	2.400		740	105	25	870	1,000
0520	10'		10	2.400		845	105	25	975	1,125

32 31 13.88 Chain Link Transom

0010 CHAIN LINK TRANSOM		B-80C	10	2.400	Ea.	2020 Bare Costs			Total	Total Incl O&P
						Material	Labor	Equipment		
0110	Add for, single transom, 3' wide, incl. components & hardware	B-80C	10	2.400	Ea.	118	105	25	248	315
0120	Add for, double transom, 6' wide, incl. components & hardware	"	10	2.400	"	127	105	25	257	325

32 31 19 – Decorative Metal Fences and Gates

32 31 19.10 Decorative Fence

0010 DECORATIVE FENCE		B-80C	300	.080	L.F.	2020 Bare Costs			Total	Total Incl O&P
						Material	Labor	Equipment		
5300	Tubular picket, steel, 6' sections, 1-9/16" posts, 4' high	B-80C	300	.080	L.F.	37	3.51	.83	41.34	47
5400	2" posts, 5' high		240	.100		44	4.38	1.04	49.42	56
5600	2" posts, 6' high		200	.120		53	5.25	1.25	59.50	68
5700	Staggered picket, 1-9/16" posts, 4' high		300	.080		39.50	3.51	.83	43.84	49.50
5800	2" posts, 5' high		240	.100		45	4.38	1.04	50.42	57.50
5900	2" posts, 6' high		200	.120		53	5.25	1.25	59.50	68
6200	Gates, 4' high, 3' wide	B-1	10	2.400	Ea.	335	103		438	525
6300	5' high, 3' wide		10	2.400		245	103		348	425
6400	6' high, 3' wide		10	2.400		288	103		391	470
6500	4' wide		10	2.400		345	103		448	535

32 31 26 – Wire Fences and Gates

32 31 26.10 Fences, Misc. Metal

0010 FENCES, MISC. METAL		B-80C	410	.059	L.F.	2020 Bare Costs			Total	Total Incl O&P
						Material	Labor	Equipment		
0012	Chicken wire, posts @ 4', 1" mesh, 4' high	B-80C	410	.059	L.F.	3.53	2.57	.61	6.71	8.40
0100	2" mesh, 6' high		350	.069		4.01	3	.71	7.72	9.70
0200	Galv. steel, 12 ga., 2" x 4" mesh, posts 5' OC, 3' high		300	.080		2.80	3.51	.83	7.14	9.25
0300	5' high		300	.080		3.37	3.51	.83	7.71	9.90
0400	14 ga., 1" x 2" mesh, 3' high		300	.080		3.48	3.51	.83	7.82	10
0500	5' high		300	.080		4.50	3.51	.83	8.84	11.10
1000	Kennel fencing, 1-1/2" mesh, 6' long, 3'-6" wide, 6'-2" high	2 Clab	4	4	Ea.	495	168		663	800
1050	12' long		4	4		700	168		868	1,025
1200	Top covers, 1-1/2" mesh, 6' long		15	1.067		141	45		186	223
1250	12' long		12	1.333		210	56		266	315
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.	64	68	46.50	178.50	224
4494	Security fence, prison grade, razor wire, set in concrete, 10' high		18	1.778		65.50	83	56.50	205	259
4500	Security fence, prison grade, set in concrete, 12' high		25	1.280		60	59.50	41	160.50	201
4600	16' high		20	1.600		79.50	74.50	51	205	256
4990	Security fence, prison grade, set in concrete, 10' high		25	1.280		60	59.50	41	160.50	201

32 31 26.20 Wire Fencing, General

0010 WIRE FENCING, GENERAL		M.L.F.	2020 Bare Costs			Total	Total Incl O&P
			Material	Labor	Equipment		
0015	Barbed wire, galvanized, domestic steel, hi-tensile 15-1/2 ga.	M.L.F.	149			149	164
0020	Standard, 12-3/4 ga.		164			164	180
0210	Barbless wire, 2-strand galvanized, 12-1/2 ga.		164			164	180
0500	Helical razor ribbon, stainless steel, 18" diam. x 18" spacing	C.L.F.	195			195	215

32 31 Fences and Gates

32 31 26 - Wire Fences and Gates

		Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	Total	Total Ind O&P
						Labor	Equipment		
32 31 26.20 Wire Fencing, General									
0600	Hardware cloth galv., 1/4" mesh, 23 ga., 2' wide			C.S.F.	43.50			43.50	48
0700	3' wide				27.50			27.50	30.50
0900	1/2" mesh, 19 ga., 2' wide				36.50			36.50	40
1000	4' wide				50			50	55
1200	Chain link fabric, steel, 2" mesh, 6 ga., galvanized				61.50			61.50	67.50
1300	9 ga., galvanized				60			60	66
1350	Vinyl coated				32			32	35
1360	Aluminized				228			228	251
1400	2-1/4" mesh, 11-1/2 ga., galvanized				48			48	53
1600	1-3/4" mesh (tennis courts), 11-1/2 ga. (core), vinyl coated				56			56	61.50
1700	9 ga., galvanized				91			91	100
2100	Welded wire fabric, galvanized, 1" x 2", 14 ga.	2 Corp	1600	.010	S.F.	.67	.53	1.20	1.54
2200	2" x 4", 12-1/2 ga.				C.S.F.	39		39	43

32 31 29 - Wood Fences and Gates

		B-1	160	.150	L.F.	8.60	6.40	15	19.10
		B-80C	9	2.667	Ea.	75	117	28	220
32 31 29.20 Fence, Wood Rail									
0010	FENCE, WOOD RAIL								
0012	Picket, No. 2 cedar, Gothic, 2 rail, 3' high								
0050	Gate, 3'-6" wide	B-1	160	.150	L.F.	8.60	6.40	15	19.10
0400	3 rail, 4' high	B-80C	9	2.667	Ea.	75	117	28	220
0500	Gate, 3'-6" wide								
0600	Open rail, rustic, No. 1 cedar, 2 rail, 3' high								
0650	Gate, 3' wide								
0700	3 rail, 4' high								
0900	Gate, 3' wide								
1200	Stockade, No. 2 cedar, treated wood rails, 6' high								
1250	Gate, 3' wide								
1300	No. 1 cedar, 3-1/4" cedar rails, 6' high								
1500	Gate, 3' wide								
1520	Open rail, split, No. 1 cedar, 2 rail, 3' high								
1540	3 rail, 4' high								
3300	Board, shadow box, 1" x 6", treated pine, 6' high								
3400	No. 1 cedar, 6' high								
3900	Basket weave, No. 1 cedar, 6' high								
3950	Gate, 3'-6" wide	B-1	8	.3	Ea.	251	128	379	470
4000	Treated pine, 6' high								
4200	Gate, 3'-6" wide								
5000	Fence rail, redwood, 2" x 4", merch. grade, 8'								
5050	Select grade, 8'								
6000	Fence post, select redwood, earth packed & treated, 4" x 4" x 6'								
6010	4" x 4" x 8'								
6020	Set in concrete, 4" x 4" x 6'								
6030	4" x 4" x 8'								
6040	Wood post, 4' high, set in concrete, incl. concrete								
6050	Earth packed								
6060	6' high, set in concrete, incl. concrete								
6070	Earth packed								

32 32 Retaining Walls

32 32 13 – Cast-in-Place Concrete Retaining Walls

32 32 13.10 Retaining Walls, Cast Concrete		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	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	G-17C	36	2.306	L.F.	82.50	128	15.45	225.95	300	
2000	33° slope embankment		32	2.594		109	144	17.40	270.40	355	
2200	8' high, no surcharge		27	3.074		117	170	20.50	307.50	410	
2300	33° slope embankment		24	3.458		142	192	23	357	470	
2500	10' high, level embankment		19	4.368		167	242	29.50	438.50	580	
2600	33° slope embankment		18	4.611		232	255	31	518	675	
2800	Reinforced concrete cantilever, incl. excavation, backfill & reinf.										
2900	6' high, 33° slope embankment	G-17C	35	2.371	L.F.	86	131	15.90	232.90	310	
3000	8' high, 33° slope embankment		29	2.862		99	159	19.20	277.20	370	
3100	10' high, 33° slope embankment		20	4.150		129	230	28	387	525	
3200	20' high, 500 lb./L.F. surcharge		7.50	11,067		385	615	74.50	1,074.50	1,425	
3500	Concrete cribbing, incl. excavation and backfill										
3700	12' high, open face	B-13	210	.267	S.F.	43	12.30	2.77	58.07	68.50	
3900	Closed face	"	210	.267	"	40.50	12.30	2.77	55.57	66	
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.	14.70	3.66	.59	18.95	22.50	
7150	Straight split		300	.080		14.60	3.66	.59	18.85	22.50	
7160	Medium, lt. wt., 8" high x 18" wide x 12" deep, 3 plane split		400	.060		7.50	2.74	.44	10.68	12.85	
7170	Straight split		400	.060		10.60	2.74	.44	13.78	16.30	
7180	Small unit, 4" x 18" x 10" deep, 3 plane split		400	.060		17.25	2.74	.44	20.43	23.50	
7190	Straight split		400	.060		12.45	2.74	.44	15.63	18.30	
7200	Cap unit, 3 plane split		300	.080		14.70	3.66	.59	18.95	22.50	
7210	Cap unit, straight split		300	.080		14.70	3.66	.59	18.95	22.50	
7250	Geo-grid soil reinforcement 4' x 50'	2 Clad	22500	.001		.80	.03		.83	.92	
7255	Geo-grid soil reinforcement 6' x 150'	"	22500	.001		.62	.03		.65	.72	

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.	29.50	3.97	.89	34.36	39	
0200	8' high, 5.5' deep		615	.091		33.50	4.19	.94	38.63	44.50	
0300	10' high, 7.7' deep		580	.097		37.50	4.45	1	42.95	49	
0400	12' high, 7.7' deep		530	.106		40.50	4.86	1.10	46.46	53	
0500	16' high, 7.7' deep		515	.109		42.50	5	1.13	48.63	55	
0600	16' high, 9.9' deep		500	.112		45.50	5.15	1.16	51.81	59	
0700	20' high, 9.9' deep		470	.119		51	5.50	1.24	57.74	65.50	
0800	20' high, 12.1' deep		460	.122		45	5.60	1.26	51.86	59.50	
0900	24' high, 12.1' deep		455	.123		47.50	5.65	1.28	54.43	62.50	
1000	24' high, 14.3' deep		450	.124		57.50	5.75	1.29	64.54	73.50	
1100	28' high, 14.3' deep		440	.127		60	5.85	1.32	67.17	76.50	
1300	For plain galvanized bin type walls, deduct					10%					

32 32 Retaining Walls

32 32 29 – Timber Retaining Walls

		Daily Crew Output	Labor-Hours Unit	Material	2020 Bare Costs Labor	Equipment	Total	Total Incl O&P
32 32 29.10 Landscape Timber Retaining Walls								
0010	LANDSCAPE TIMBER RETAINING WALLS							
0100	Treated timbers, 6" x 6"	1 Clab	.265 .030 L.F.	2.76	1.27		4.03	4.95
0110	6" x 8"	1 Clab	.200 .040 L.F.	6.65	1.68		8.33	9.85
0120	Drilling holes in timbers for fastening, 1/2"	1 Corp	.450 .018 Inch		.95		.95	1.42
0130	5/8"	"	.450 .018 "		.95		.95	1.42
0140	Reinforcing rods for fastening, 1/2"	1 Clab	.312 .026 L.F.	.41	1.08		1.49	2.08
0150	5/8"	"	.312 .026 "	.65	1.08		1.73	2.33
0160	Reinforcing fabric	2 Clab	.2500 .006 S.Y.	2.22	.27		2.49	2.84
0170	Gravel backfill		.28 .571 C.Y.	16.90	24		40.90	54.50
0180	Perforated pipe, 4" diameter with silt sock	1200	.013 L.F.	1.05	.56		1.61	2
0190	Galvanized 60d common nails	1 Clab	.625 .013 Ea.	.21	.54		.75	1.04
0200	20d common nails	"	.3800 .002 "	.05	.09		.14	.18

32 32 36 – Gabion Retaining Walls

32 32 36.10 Stone Gabion Retaining Walls

		B-13	49	1.143 L.F.	62.50	52.50	11.85	126.85	161
0010	STONE GABION RETAINING WALLS								
4300	Stone filled gabions, not incl. excavation,								
4310	Stone, delivered, 3' wide								
4350	Galvanized, 6' high, 33° slope embankment								
4500	Highway surcharge								
4600	9' high, up to 33° slope embankment								
4700	Highway surcharge								
4900	12' high, up to 33° slope embankment								
5000	Highway surcharge								
5950	For PVC coating, add								
							12%		

32 32 53 – Stone Retaining Walls

32 32 53.10 Retaining Walls, Stone

		D-1	35	.457 S.F.	77	21.50		98.50	118
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								
0300	Mortar set								
0500	Cut stone, to 6' high, 1'-6" thick, dry set								
0600	Mortar set								
0800	Random stone, 6' to 10' high, 2' thick, dry set								
0900	Mortar set								
1100	Cut stone, 6' to 10' high, 2' thick, dry set								
1200	Mortar set								

32 33 Site Furnishings

32 33 33 – Site Manufactured Planters

32 33 33.10 Planters

		2 Clab	15	1.067 Ea.	640	45		685	775
0010	PLANTERS								
0012	Concrete, sandblasted, precast, 48" diameter, 24" high								
0100	Fluted, precast, 7' diameter, 36" high								
0300	Fiberglass, circular, 36" diameter, 24" high								
0320	36" diameter, 27" high								
0330	33" high								
0335	24" diameter, 36" high								
0340	60" diameter, 39" high								

32 33 Site Furnishings

32 33 33 – Site Manufactured Planters

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
32 33 33.10	Planters	Crew			Labor	Equipment			
0400	60" diameter, 24" high		2 Club	10	1,600	Ea.	1,175	67.50	1,242.50
0600	Square, 24" side, 36" high			15	1,067		680	45	725
0610	24" side, 27" high			12	1,333		740	56	796
0620	24" side, 16" high			20	.800		355	33.50	388.50
0700	48" side, 36" high			15	1,067		1,125	45	1,170
0900	Planter/bench, 72" square, 36" high			5	3,200		2,950	135	3,085
1000	96" square, 27" high			5	3,200		3,525	135	3,660
1200	Wood, square, 48" side, 24" high			15	1,067		1,625	45	1,670
1300	Circular, 48" diameter, 30" high			10	1,600		1,125	67.50	1,192.50
1500	72" diameter, 30" high			10	1,600		2,000	67.50	2,067.50
1600	Planter/bench, 72"			5	3,200		3,850	135	3,985
									4,425

32 33 43 – Site Seating and Tables

32 33 43.13 Site Seating

0010 SITE SEATING		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
0012	Seating, benches, park, precast conc., w/backs, wood rails, 4' long	2 Club	5	3,200	Ea.	610	135	745	870
0100	8' long		4	4		1,125	168	1,293	1,500
0300	Fiberglass, without back, one piece, 4' long		10	1,600		1,725	67.50	1,792.50	2,000
0400	8' long		7	2,286		2,300	96	2,396	2,675
0500	Steel barstock pedestals w/backs, 2" x 3" wood rails, 4' long		10	1,600		1,375	67.50	1,442.50	1,625
0510	8' long		7	2,286		1,725	96	1,821	2,050
0515	Powder coated steel, 4" x 4" plastic slats, 6' long		8	2		540	84	624	720
0520	3" x 8" wood plank, 4' long		10	1,600		1,525	67.50	1,592.50	1,775
0530	8' long		7	2,286		1,550	96	1,646	1,875
0540	Backless, 4" x 4" wood plank, 4' square		10	1,600		1,275	67.50	1,342.50	1,500
0550	8' long		7	2,286		1,175	96	1,271	1,450
0560	Powder coated steel, with back and 2 anti-vagrant dividers, 6' long		8	2		1,200	84	1,284	1,450
0600	Aluminum pedestals, with backs, aluminum slats, 8' long		8	2		480	84	564	655
0610	15' long		5	3,200		1,025	135	1,160	1,325
0620	Portable, aluminum slats, 8' long		8	2		470	84	554	645
0630	15' long		5	3,200		505	135	640	760
0800	Cast iron pedestals, back & arms, wood slats, 4' long		8	2		470	84	554	645
0820	8' long		5	3,200		1,050	135	1,185	1,350
0840	Backless, wood slats, 4' long		8	2		715	84	799	910
0860	8' long		5	3,200		1,200	135	1,335	1,525
1700	Steel frame, fir seat, 10' long		10	1,600		410	67.50	477.50	550
2000	Benches, park, with back, galv. stl. frame, 4" x 4" plastic slats, 6' long		7	2,286		545	96	641	745

32 34 Fabricated Bridges

32 34 13 – Fabricated Pedestrian Bridges

32 34 13.10 Bridges, Pedestrian

0010 BRIDGES, PEDESTRIAN		E-2	215	.260	S.F.	161	14.90	7.90	183.80	209
0011 Spans over streams, roadways, etc.										
0020 including erection, not including foundations										
0050 Precast concrete, complete in place, 8' wide, 60' span										
0100 100' span										
0150 120' span										
0200 150' span										
0300 Steel, trussed or arch spans, compl. in place, 8' wide, 40' span										
0400 50' span										
0500 60' span										

32 34 Fabricated Bridges

32 34 13 – Fabricated Pedestrian Bridges

32 34 13.10 Bridges, Pedestrian			Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P	
			E-2	570	.098	S.F.	140	5.60	2.98	148.58	166
0600	80' span			465	.120		197	6.90	3.65	207.55	232
0700	100' span			365	.153		249	8.75	4.65	262.40	293
0800	120' span			310	.181		265	10.30	5.45	280.75	315
0900	150' span			255	.220		265	12.55	6.65	284.20	320
1000	160' span			640	.088		131	5	2.65	138.65	155
1100	10' wide, 80' span			415	.135		170	7.70	4.09	181.79	203
1200	120' span			445	.126		191	7.20	3.81	202.01	225
1300	150' span			205	.273		204	15.60	8.25	227.85	257
1400	200' span			G-12	203	.236	98	12.45	2.32	112.77	129
1600	Wood, laminated type, complete in place, 80' span			"	153	.314	102	16.50	3.08	121.58	140
1700	130' span										

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								
0110	12' H								
0120	16' H								
0130	20' H								
0400	Lt. wt. composite panel, cementitious face, st. posts @ 12' OC, 8' H								
0410	12' H								
0420	16' H								
0430	20' H								

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								
0900	1-1/2" supply								
1020	Pop up spray head w/risers, hi-pop, full circle pattern, 4"								
1030	1/2 circle pattern, 4"								
1040	6", full circle pattern								
1050	1/2 circle pattern, 6"								
1060	12", full circle pattern								
1070	1/2 circle pattern, 12"								
1080	Pop up bubbler head w/risers, hi-pop bubbler head, 4"								
1110	Impact full/part circle sprinklers, 28'-54' @ 25-60 psi								
1120	Spaced 37'-49' @ 25-50 psi								
1130	Spaced 43'-61' @ 30-60 psi								
1140	Spaced 54'-78' @ 40-80 psi								
1145	Impact rotor pop-up full/part commercial circle sprinklers								
1150	Spaced 42'-65' @ 35-80 psi								
1160	Spaced 48'-76' @ 45-85 psi								
1165	Impact rotor pop-up part. circle comm., 53'-75', 55-100 psi, w/accessories								
1180	Sprinkler, premium, pop-up rotator, 50'-100'								

32 84 Planting Irrigation

32 84 23 – Underground Sprinklers

32 84 23.10 Sprinkler Irrigation System	Description	Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Ind O&P
					Material	Labor	Equipment		
1250	Plastic case, 2 nozzle, metal cover	12 Skwk	.25	.640	Ea.	105	35	140	169
1260	Rubber cover		.25	.640		104	35	139	167
1270	Iron case, 2 nozzle, metal cover		.22	.727		149	40	189	225
1280	Rubber cover		.22	.727		148	40	188	224
1282	Impact rotor pop-up full circle commercial, 39'-99', 30-100 psi								
1284	Plastic case, metal cover	2 Skwk	.25	.640	Ea.	74	35	109	135
1286	Rubber cover		.25	.640		108	35	143	172
1288	Iron case, metal cover		.22	.727		143	40	183	218
1290	Rubber cover		.22	.727		168	40	208	246
1292	Plastic case, 2 nozzle, metal cover		.22	.727		107	40	147	178
1294	Rubber cover		.22	.727		109	40	149	181
1296	Iron case, 2 nozzle, metal cover		.20	.800		142	44	186	224
1298	Rubber cover		.20	.800		148	44	192	230
1305	Electric remote control valve, plastic, 3/4"		.18	.889		20.50	49	69.50	96
1310	1"		.18	.889		25	49	74	101
1320	1-1/2"		.18	.889		99	49	148	183
1330	2"		.18	.889		126	49	175	212
1335	Quick coupling valves, brass, locking cover								
1340	Inlet coupling valve, 3/4"	2 Skwk	18.75	.853	Ea.	24.50	47	71.50	98
1350	1"		18.75	.853		33.50	47	80.50	108
1360	Controller valve boxes, 6" round boxes		18.75	.853		7.55	47	54.55	79.50
1370	10" round boxes		14.25	1.123		17.95	61.50	79.45	113
1380	12" square box		9.75	1.641		19.10	90	109.10	157
1388	Electromech. control, 14 day 3-60 min., auto start to 23/day								
1390	4 station	2 Skwk	1.04	15.385	Ea.	82	845	927	1,375
1400	7 station		.64	25		156	1,375	1,531	2,250
1410	12 station		.40	40		184	2,200	2,384	3,525
1420	Dual programs, 18 station		.24	66.667		217	3,650	3,867	5,775
1430	23 station		.16	100		267	5,475	5,742	8,600
1435	Backflow preventer, bronze, 0-175 psi, w/valves, test cocks								
1440	3/4"	2 Skwk	6	2.667	Ea.	93.50	146	239.50	325
1450	1"		6	2.667		106	146	252	340
1460	1-1/2"		6	2.667		269	146	415	515
1470	2"		6	2.667		395	146	541	655
1475	Pressure vacuum breaker, brass, 15-150 psi								
1480	3/4"	2 Skwk	6	2.667	Ea.	24	146	170	248
1490	1"		6	2.667		69	146	215	297
1500	1-1/2"		6	2.667		85	146	231	315
1510	2"		6	2.667		157	146	303	395

32 91 Planting Preparation

32 91 13 – Soil Preparation

32 91 13.16 Mulching

0010	MULCHING	1 Clb	100	.080	S.Y.	4.12	3.37	7.49	9.60
0100	Aged barks, 3" deep, hand spread	B-63	13.50	2.963	M.S.F.	460	131	13.15	604.15
0150	Skid steer loader	"	1500	.027	S.Y.	4.12	1.18	.12	5.42
0160	Skid steer loader								6.45
0200	Hay, 1" deep, hand spread	1 Clb	475	.017	"	.51	.71		1.22
0250	Power mulcher, small	B-64	180	.089	M.S.F.	56.50	3.97	2.32	62.79
0350	Large	B-65	530	.030	"	56.50	1.35	.99	58.84
0400	Humus peat, 1" deep, hand spread	1 Clb	700	.011	S.Y.	3.27	.48		4.32

32 91 Planting Preparation

32 91 13 – Soil Preparation

32 91 13.16 Mulching

			Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
0450	Push spreader		1 Clab	2500	.003 S.Y.	3.27	.13		3.40	3.80
0550	Tractor spreader		B-66	700	.011 M.S.F.	365	.61	.35	365.96	400
0600	Oat straw, 1" deep, hand spread		1 Clab	475	.017 S.Y.	.58	.71		1.29	1.71
0650	Power mulcher, small		B-64	180	.089 M.S.F.	64.50	3.97	2.32	70.79	79.50
0700	Large		B-65	530	.030 "	64.50	1.35	.99	66.84	74
0750	Add for asphaltic emulsion		B-45	1770	.009 Gal.	5.90	.48	.47	6.85	7.75
0800	Peat moss, 1" deep, hand spread		1 Clab	900	.009 S.Y.	5.15	.37		5.52	6.20
0850	Push spreader		"	2500	.003 "	5.15	.13		5.28	5.85
0950	Tractor spreader		B-66	700	.011 M.S.F.	570	.61	.35	570.96	625
1000	Polyethylene film, 6 mil		2 Clab	2000	.008 S.Y.	.51	.34		.85	1.07
1100	Redwood nuggets, 3" deep, hand spread		1 Clab	150	.053 "	3.33	2.25		5.58	7.05
1150	Skid steer loader		B-63	13.50	2.963 M.S.F.	370	131	13.15	514.15	615
1200	Stone mulch, hand spread, ceramic chips, economy		1 Clab	125	.064 S.Y.	7.25	2.69		9.94	12.05
1250	Deluxe		"	95	.084 "	11.40	3.55		14.95	17.90
1300	Granite chips		B-1	10	2.400 C.Y.	80	103		183	242
1400	Marble chips		"	10	2.400 "	245	103		348	425
1600	Pea gravel			28	.857	115	36.50		151.50	181
1700	Quartz			10	2.400	197	103		300	370
1800	Tar paper, 15 lb. felt		1 Clab	800	.010 S.Y.	.47	.42		.89	1.15
1900	Wood chips, 2" deep, hand spread		"	220	.036 "	1.68	1.53		3.21	4.15
1950	Skid steer loader		B-63	20.30	1.970 M.S.F.	187	87.50	8.75	283.25	345

32 91 13.26 Planting Beds

	PLANTING BEDS									
0100	Backfill planting pit, by hand, on site topsoil		2 Clab	18	.889 C.Y.		37.50		37.50	56
0200	Prepared planting mix, by hand		"	24	.667		28		28	42
0300	Skid steer loader, on site topsoil		B-62	340	.071		3.23	.52	3.75	5.40
0400	Prepared planting mix		"	410	.059		2.68	.43	3.11	4.49
1000	Excavate planting pit, by hand, sandy soil		2 Clab	16	1		42		42	63.50
1100	Heavy soil or clay		"	8	2		84		84	127
1200	1/2 C.Y. backhoe, sandy soil		B-11C	150	.107		5.25	1.43	6.68	9.45
1300	Heavy soil or clay		"	115	.139		6.90	1.86	8.76	12.35
2000	Mix planting soil, incl. loam, manure, peat, by hand		2 Clab	60	.267	46.50	11.25		57.75	68
2100	Skid steer loader		B-62	150	.160	46.50	7.30	1.18	54.98	63.50
3000	Pile sod, skid steer loader		"	2800	.009 S.Y.		.39	.06	.45	.66
3100	By hand		2 Clab	400	.040		1.68		1.68	2.53
4000	Remove sod, F.E. loader		B-10S	2000	.006		.31	.21	.52	.70
4100	Sod cutter		B-12K	3200	.005		.25	.30	.55	.71
4200	By hand		2 Clab	240	.067		2.81		2.81	4.22

32 91 19 – Landscape Grading

32 91 19.13 Topsoil Placement and Grading

	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.		3.11	2.12	5.23	7
0500	Up to 200' radius, by hand		1 Clab	14	.571		24		24	36
0600	Top dress by hand, 1 C.Y. for 600 S.F.		"	11.50	.696	29	29.50		58.50	76
0700	Furnish and place, truck dumped, screened, 4" deep		B-10S	1300	.009 S.Y.	3.65	.48	.33	4.46	5.10
0800	6" deep		"	820	.015 "	4.68	.76	.52	5.96	6.85

32 92 Turf and Grasses

32 92 19 – Seeding

32 92 19.13 Mechanical Seeding		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
0010 MECHANICAL SEEDING										
0020	Mechanical seeding, 215 lb./acre	B-66	1.50	5.333	Acre	595	283	161	1,039	1,250
0100	44 lb./M.S.Y.	"	2500	.003	S.Y.	.23	.17	.10	.50	.61
0101	44 lb./M.S.Y.	1 Club	13950	.001	S.F.	.03	.02	.01	.05	.07
0300	Fine grading and seeding incl. lime, fertilizer & seed,									
0310	with equipment	B-14	1000	.048	S.Y.	.47	2.12	.21	2.80	3.95
0400	Fertilizer hand push spreader, 35 lb./M.S.F.	1 Club	200	.040	M.S.F.	10.70	1.68		12.38	14.30
0600	Limestone hand push spreader, 50 lb./M.S.F.		180	.044		5.60	1.87		7.47	8.95
0800	Grass seed hand push spreader, 4.5 lb./M.S.F.		180	.044		25.50	1.87		27.37	31
1000	Hydro or air seeding for large areas, incl. seed and fertilizer	B-81	8900	.003	S.Y.	.64	.13	.07	.84	.97
1100	With wood fiber mulch added	"	8900	.003	"	2.07	.13	.07	2.27	2.55
1300	Seed only, over 100 lb., field seed, minimum				lb.	2.08			2.08	2.29
1400	Maximum					1.97			1.97	2.17
1500	Lawn seed, minimum					1.42			1.42	1.56
1600	Maximum					2.70			2.70	2.97
1800	Aerial operations, seeding only, field seed	B-58	50	.480	Acre	675	22	46	743	830
1900	Lawn seed		50	.480		460	22	46	528	595
2100	Seed and liquid fertilizer, field seed		50	.480		760	22	46	828	920
2200	Lawn seed		50	.480		545	22	46	613	685

32 92 23 – Sodding

32 92 23.10 Sodding Systems

0010 SODDING SYSTEMS		B-63	22	1.818	M.S.F.	223	80.50	8.05	311.55	375
0020	Sodding, 1" deep, bluegrass sod, on level ground, over 8 M.S.F.		17	2.353		286	104	10.45	400.45	485
0300	4 M.S.F.					335	131	13.15	479.15	580
0500	1,000 S.F.		13.50	2.963						
0600	Sloped ground, over 8 M.S.F.		6	6.667		223	295	29.50	547.50	725
0700	4 M.S.F.		5	8		286	355	35.50	676.50	885
0800	1,000 S.F.		4	10		335	445	44.50	824.50	1,075
1000	Bent grass sod, on level ground, over 6 M.S.F.		20	2		305	88.50	8.90	402.40	480
1100	3 M.S.F.		18	2.222		320	98.50	9.85	428.35	515
1200	Sodding 1,000 S.F. or less		14	2.857		345	127	12.70	484.70	585
1500	Sloped ground, over 6 M.S.F.		15	2.667		305	118	11.85	434.85	525
1600	3 M.S.F.		13.50	2.963		320	131	13.15	464.15	565
1700	1,000 S.F.		12	3.333		345	148	14.80	507.80	615

32 93 Plants

32 93 10 – General Planting Costs

32 93 10.12 Travel

0010 TRAVEL add to all nursery items		All	5%	5%
0015	10 to 20 miles one way, add	"		
0100	30 to 50 miles one way, add	"	10%	10%

32 93 13 – Ground Covers

32 93 13.10 Ground Cover Plants

0010 GROUND COVER PLANTS		B-1	15	1.600	C	88.50	68.50		157	200
0012	Plants, pachysandra, in prepared beds		12	2	"	81.50	85.50		167	219
0200	Vinca minor, 1 yr., bare root, in prepared beds		520	.046	Bag	4.78	1.97		6.75	8.20
0600	Stone chips, in 50 lb. bags, Georgia marble		260	.092		16.90	3.95		20.85	24.50
0700	Onyx gemstone		260	.092	↓	17.15	3.95		21.10	25
0800	Quartz		28	.857	Ton	11.80	36.50		48.30	68
0900	Pea gravel, truckload lots									

32 93 Plants

32 93 33 – Shrubs

32 93 33.10 Shrubs and Trees

		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	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.	104	49.50	21.50	175	213	
0150	Globe, 12"-15"	B-1	96	.250		24	10.70		34.70	42	
0300	Cedar, blue, 8'-10'	B-17	18	1.778		241	82.50	35.50	359	430	
0500	Hemlock, Canadian, 2-1/2'-3'	B-1	36	.667		33	28.50		61.50	79.50	
0550	Holly, Savannah, 8'-10' H		9.68	2.479		294	106		400	485	
0600	Juniper, andorra, 18"-24"		80	.300		58.50	12.85		71.35	84	
0620	Wiltoni, 15"-18"		80	.300		28.50	12.85		41.35	51	
0640	Skyrocket, 4-1/2'-5'	B-17	55	.582		111	27	11.65	149.65	175	
0660	Blue pfitzer, 2'-2-1/2'	B-1	44	.545		41	23.50		64.50	80.50	
0680	Keteleerie, 2-1/2'-3'		50	.480		58.50	20.50		79	95.50	
0700	Pine, black, 2-1/2'-3'		50	.480		68	20.50		88.50	106	
0720	Mugo, 18"-24"		60	.400		64.50	17.10		81.60	96.50	
0740	White, 4'-5'	B-17	75	.427		55.50	19.85	8.55	83.90	100	
0800	Spruce, blue, 18"-24"	B-1	60	.400		71.50	17.10		88.60	105	
0840	Norway, 4'-5'	B-17	75	.427		93.50	19.85	8.55	121.90	142	
0900	Yew, denisiforma, 12"-15"	B-1	60	.400		38.50	17.10		55.60	68	
1000	Capitata, 18"-24"		30	.800		34.50	34		68.50	89.50	
1100	Hicksi, 2'-2-1/2'		30	.800		102	34		136	164	

32 93 33.20 Shrubs

0010 SHRUBS

0011	Broadleaf Evergreen, planted in prepared beds										
0100	Andromeda, 15"-18", cont	B-1	96	.250	Ea.	33.50	10.70		44.20	53	
0200	Azalea, 15"-18", cont		96	.250		34	10.70		44.70	53.50	
0300	Barberry, 9"-12", cont		130	.185		18.60	7.90		26.50	32.50	
0400	Boxwood, 15"-18", B&B		96	.250		48	10.70		58.70	68.50	
0500	Euonymus, emerald gaiety, 12"-15", cont		115	.209		28	8.95		36.95	44.50	
0600	Holly, 15"-18", B&B		96	.250		41.50	10.70		52.20	61.50	
0900	Mount laurel, 18"-24", B&B		80	.300		76.50	12.85		89.35	103	
1000	Paxistema, 9"-12" H		130	.185		23	7.90		30.90	37.50	
1100	Rhododendron, 18"-24", cont		48	.500		39.50	21.50		61	75.50	
1200	Rosemary, 1 gal. cont		600	.040		19.80	1.71		21.51	24.50	
2000	Deciduous, planted in prepared beds, amelanchier, 2'-3', B&B		57	.421		132	18		150	172	
2100	Azalea, 15"-18", B&B		96	.250		30.50	10.70		41.20	49.50	
2300	Bayberry, 2'-3', B&B		57	.421		35	18		53	65.50	
2600	Cotoneaster, 15"-18", B&B		80	.300		26.50	12.85		39.35	49	
2800	Dogwood, 3'-4', B&B	B-17	40	.800		36	37	16.05	89.05	113	
2900	Euonymus, alatus compacta, 15"-18", cont	B-1	80	.300		28	12.85		40.85	50.50	
3200	Forsythia, 2'-3', cont	"	60	.400		17.65	17.10		34.75	45	
3300	Hibiscus, 3'-4', B&B	B-17	75	.427		45	19.85	8.55	73.40	89	
3400	Honeysuckle, 3'-4', B&B	B-1	60	.400		29	17.10		46.10	57.50	
3500	Hydrangea, 2'-3', B&B	"	57	.421		33	18		51	63	
3600	Lilac, 3'-4', B&B	B-17	40	.800		22	37	16.05	75.05	97.50	
3900	Privet, bare root, 18"-24"	B-1	80	.300		17.50	12.85		30.35	38.50	
4100	Quince, 2'-3', B&B	"	57	.421		30.50	18		48.50	60.50	
4200	Russian olive, 3'-4', B&B	B-17	75	.427		26	19.85	8.55	54.40	68.50	
4400	Spirea, 3'-4', B&B	B-1	70	.343		21.50	14.65		36.15	45.50	
4500	Viburnum, 3'-4', B&B	B-17	40	.800		27	37	16.05	80.05	104	

32 93 Plants

32 93 43 – Trees

32 93 43.20 Trees

0010 TREES

0011 Deciduous, in prep. beds, balled & burlapped (B&B)

		Crew	Daily Output	Labor Hours	Unit	Material	2020 Labor	Bare Costs	Equipment	Total	Total Incl O&P
0100	Ash, 2" caliper	G	B-17	8	4	Ea.	213	186	80	479	600
0200	Beech, 5'-6'	G		50	.640		240	30	12.85	282.85	325
0300	Birch, 6'-8', 3 stems	G		20	1.600		175	74.50	32	281.50	340
0500	Crabapple, 6'-8'	G		20	1.600		160	74.50	32	266.50	325
0600	Dogwood, 4'-5'	G		40	.800		140	37	16.05	193.05	228
0700	Eastern redbud, 4'-5'	G		40	.800		151	37	16.05	204.05	240
0800	Elm, 8'-10'	G		20	1.600		350	74.50	32	456.50	535
0900	Ginkgo, 6'-7'	G		24	1.333		161	62	27	250	300
1000	Hawthorn, 8'-10', 1" caliper	G		20	1.600		157	74.50	32	263.50	320
1100	Honeylocust, 10'-12', 1-1/2" caliper	G		10	3.200		227	149	64	440	545
1300	Larch, 8'	G		32	1		135	46.50	20	201.50	241
1400	Linden, 8'-10', 1" caliper	G		20	1.600		169	74.50	32	275.50	335
1500	Magnolia, 4'-5'	G		20	1.600		118	74.50	32	224.50	278
1600	Maple, red, 8'-10', 1-1/2" caliper	G		10	3.200		200	149	64	413	515
1700	Mountain ash, 8'-10', 1" caliper	G		16	2		196	93	40	329	400
1800	Oak, 2-1/2"-3" caliper	G		6	5.333		355	248	107	710	880
2100	Planetree, 9'-11', 1-1/4" caliper	G		10	3.200		278	149	64	491	600
2200	Plum, 6'-8', 1" caliper	G		20	1.600		82	74.50	32	188.50	238
2300	Poplar, 9'-11', 1-1/4" caliper	G		10	3.200		102	149	64	315	405
2500	Sumac, 2'-3'	G		75	.427		45.50	19.85	8.55	73.90	89.50
2700	Tulip, 5'-6'	G		40	.800		48.50	37	16.05	101.55	127
2800	Willow, 6'-8', 1" caliper	G		20	1.600		103	74.50	32	209.50	261

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.	2.15	2.63			4.78	6.30
0051	Black paint	G	390	.062		2.49	2.63			5.12	6.70
0052	Black anodized	G	390	.062		2.88	2.63			5.51	7.10
0100	Brick, set horizontally, 1-1/2 bricks per L.F.	D-1	370	.043		1.70	2.03			3.73	4.94
0150	Set vertically, 3 bricks per L.F.	"	135	.119		3.80	5.55			9.35	12.65
0200	Corrugated aluminum, roll, 4" wide	1 Carp	650	.012		2.25	.65			2.90	3.46
0250	6" wide	"	550	.015		2.81	.77			3.58	4.25
0600	Railroad ties, 6" x 8"	2 Carp	170	.094		2.48	5			7.48	10.25
0650	7" x 9"	"	136	.118		2.75	6.25			9	12.45
0750	Redwood 2" x 4"	G	330	.048		2.31	2.58			4.89	6.40
0800	Steel edge strips, incl. stakes, 1/4" x 5"	B-1	390	.062		4.58	2.63			7.21	9
0850	3/16" x 4"	"	390	.062		3.62	2.63			6.25	7.95

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	2 Club	35	.457	Ea.	14.15	19.25			33.40	44.50
0100	Less than 3" caliper, 2 stakes	"	21	.762	"	20	32			52	70
0200	3" to 4" caliper, 3 stakes	"									
1000	Including arrowhead anchor, cable, turnbuckles and wrap	2 Club	20	.800	Ea.	23.50	33.50			57	76
1100	Less than 3" caliper, 3" anchors	"	15	1.067	"	34	45			79	105
1200	3" to 6" caliper, 4" anchors	"									

32 94 Planting Accessories

32 94 50 - Tree Guying

32 94 50.10 Tree Guying Systems	Crew	Daily Output	Labor-Hours		Material	2020 Bare Costs			Total	Total Incl O&P
			Unit	Material		Labor	Equipment	Total		
1300 6" caliper, 6" anchors	2 Clab	12	1.333 Ea.		27.50	56		83.50		115
1400 8" caliper, 8" anchors	"	9	1.778 "		115	75		190		238

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.		39	6.35	45.35	66
0100 24" ball	"	22	1.091 "		50	8.05	58.05	84

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.		293	57	350	505
0400 60" ball	"	1	24 "		1,100	214	1,314	1,875

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 Operation and Maintenance of Utilities

33 01 10 – Operation and Maintenance of Water Utilities

		Daily Crew Output	Labor Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
33 01 10.10 Corrosion Resistance									
0010	CORROSION RESISTANCE								
0012	Wrap & coat, add to pipe, 4" diameter				L.F.	2.38		.238	.262
0040	6" diameter					3.67		.367	.404
0060	8" diameter					5		.5	.550
0100	12" diameter					7.30		.730	.8
0200	24" diameter					14.75		.1475	.1620
0500	Coating, bituminous, per diameter inch, 1 coat, add					.21		.21	.23
0540	3 coat					.57		.57	.63
0560	Coal tar epoxy, per diameter inch, 1 coat, add					.21		.21	.23
0600	3 coat					.66		.66	.73

33 01 30 – Operation and Maintenance of Sewer Utilities

		Daily Crew Output	Labor Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
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.	9.40	34	.28	43.68
0200	24" to 36"		90	.889		15.30	49	.40	64.70
0300	48" to 72"		↓ 80	1	↓	24	55.50	.45	79.95

33 05 Common Work Results for Utilities

33 05 07 – Trenchless Installation of Utility Piping

		Daily Crew Output	Labor Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
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.	122	152	52	326
0200	36" diameter		16	4		215	190	65	470
0300	48" diameter		15	4.267		300	203	69.50	572.50
0500	Railroad work, 24" diameter		15	4.267		122	203	69.50	394.50
0600	36" diameter		14	4.571		215	217	74.50	506.50
0700	48" diameter		↓ 12	5.333		300	253	87	640
0900	For ledge, add							20%	20%

33 05 07.36 Microtunneling

		Daily Crew Output	Labor Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
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

		Daily Crew Output	Labor Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
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.	615	750	1,365	1,825
0100	6' deep		70	22.857		870	1,075	1,945	2,575
0150	8' deep		.50	32	↓	1,125	1,500	2,625	3,500
0200	For depths over 8', add		4	4	V.L.F.	95.50	188	283.50	390
0400	Concrete blocks (radial), 4' ID, 4' deep		1.50	10.667	Ea.	430	500	930	1,225

33 05 Common Work Results for Utilities

33 05 61 – Concrete Manholes

33 05 61.10 Storm Drainage Manholes, Frames and Covers		Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
					Material	Labor	Equipment		
0500	6' deep	D-1	1	16	Ea.	565	750	1,315	1,775
0600	8' deep		.70	22.857		705	1,075	1,780	2,400
0700	For depths over 8', add		5.50	2.909	V.L.F.	71.50	136	207.50	286
0800	Concrete, cast in place, 4' x 4', 8" thick, 4' deep	C-14H	2	24	Ea.	580	1,250	13.45	1,843.45
0900	6' deep		1.50	32		830	1,650	17.90	2,497.90
1000	8' deep		1	48		1,200	2,475	27	3,702
1100	For depths over 8', add		8	6	V.L.F.	133	310	3.36	446.36
1110	Precast, 4' ID, 4' deep	B-22	4.10	7.317	Ea.	880	360	69	1,309
1120	6' deep		3	10		1,025	495	94.50	1,614.50
1130	8' deep		2	15		1,200	740	142	2,082
1140	For depths over 8', add		16	1.875	V.L.F.	134	92.50	17.70	244.20
1150	5' ID, 4' deep	B-6	3	8	Ea.	1,725	365	71.50	2,161.50
1160	6' deep		2	12		2,075	550	107	2,732
1170	8' deep		1.50	16		2,625	730	143	3,498
1180	For depths over 8', add		12	2	V.L.F.	325	91.50	17.80	434.30
1190	6' ID, 4' deep		2	12	Ea.	2,600	550	107	3,257
1200	6' deep		1.50	16		2,975	730	143	3,848
1210	8' deep		1	24		3,675	1,100	214	4,989
1220	For depths over 8', add		8	3	V.L.F.	410	137	26.50	573.50
1250	Slab tops, precast, 8" thick								
1300	4' diameter manhole	B-6	8	3	Ea.	282	137	26.50	445.50
1400	5' diameter manhole		7.50	3.200		440	146	28.50	614.50
1500	6' diameter manhole		7	3.429		705	157	30.50	892.50
3800	Steps, heavyweight cast iron, 7" x 9"	1 Bric	40	.200		18.05	10.40		28.45
3900	8" x 9"		40	.200		21.50	10.40		31.90
3928	12" x 10-1/2"		40	.200		29.50	10.40		39.90
4000	Standard sizes, galvanized steel		40	.200		26.50	10.40		36.90
4100	Aluminum		40	.200		30	10.40		40.40
4150	Polyethylene		40	.200		32.50	10.40		42.90

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.	1,850	1,300	290	3,440
0100	6' x 10' x 6' high, ID		2	28		1,925	1,300	290	3,515
0150	5' x 12' x 6' high, ID		2	28		2,050	1,300	290	3,640
0200	6' x 12' x 6' high, ID		1.80	31.111		2,275	1,425	325	4,025
0250	6' x 13' x 6' high, ID		1.50	37.333		3,000	1,725	385	5,110
0300	8' x 14' x 7' high, ID		1	56		3,250	2,575	580	6,405
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.	540	257		797
0450	4'-6" x 3'-2" x 2'-0", OD, heavy duty	B-6	3	8	"	1,625	365	71.50	2,061.50

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	2,125	214	5,389
0030	Telecommunication		3	16		400	710	71	1,181

33 05 97.10 Utility Accessories

0010	UTILITY ACCESSORIES								
0400	Underground tape, detectable, reinforced, alum. foil core, 2"	1 Club	150	.053	C.L.F.	9	2.25		11.25
0500	6"	"	140	.057	"	38	2.41		40.41

33 11 Groundwater Sources

33 11 13 – Potable Water Supply Wells

33 11 13.10 Wells and Accessories		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	Equipment	Total	Total Incl O&P
0010	WELLS & ACCESSORIES										
0011	Domestic										
0100	Drilled, 4" to 6" diameter	B-23	120	.333	L.F.		14.15	13.25	27.40	36	
0200	8" diameter		95.20	.420	"		17.85	16.70	34.55	45.50	
0400	Gravel pack well, 40' deep, incl. gravel & casing, complete	B-23	.13	308	Total	38,500	13,100	12,200	63,800	75,500	
0500	24" diameter casing x 18" diameter screen		.12	333	"	40,800	14,200	13,300	68,300	81,000	
0600	36" diameter casing x 18" diameter screen										
0800	Observation wells, 1-1/4" riser pipe		163	.245	V.L.F.	19.90	10.45	9.75	40.10	48.50	
0900	For flush Buffalo roadway box, add	1 Skwk	16.60	.482	Ea.	53	26.50		79.50	98	
1200	Test well, 2-1/2" diameter, up to 50' deep (15 to 50 GPM)	B-23	1.51	26.490	"	830	1,125	1,050	3,005	3,775	
1300	Over 50' deep, add			121.80	.328	L.F.	22	13.95	13.05	49	60
1500	Pumps, installed in wells to 100' deep, 4" submersible										
1510	1/2 HP	Q-1	3.22	4.969	Ea.	660	288		948	1,150	
1520	3/4 HP		2.66	6.015		795	350		1,145	1,400	
1600	1 HP			2.29	6.987		975	405		1,380	1,675
1700	1-1/2 HP	Q-22	1.60	10		2,150	580	294	3,024	3,575	
1800	2 HP			1.33	12.030		1,800	700	355	2,855	3,450
1900	3 HP			1.14	14.035		2,425	815	415	3,655	4,350
2000	5 HP			1.14	14.035		2,850	815	415	4,080	4,800
3000	Pump, 6" submersible, 25' to 150' deep, 25 HP, 103 to 400 GPM		.89	17.978		9,325	1,050	530	10,905	12,400	
3100	25' to 500' deep, 30 HP, 104 to 400 GPM			.73	21.918	↓	11,000	1,275	645	12,920	14,700
8000	Steel well casing	B-23A	3020	.008	Lb.	1.29	.38	.29	1.96	2.31	
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		Plum	.80	10	Ea.	1,125	645	1,770	2,225
0011	With pressure control								
1000	Deep well, jet, 42 gal. galvanized tank								
1040	3/4 HP								
3000	Shallow well, jet, 30 gal. galvanized tank								
3040	1/2 HP	1 Plum	2	4	Ea.	915	258	1,173	1,375

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-21A	200	.200	L.F.	42.50	10.45	2.14	55.09	64.50
2040	6" diameter		160	.250		51	13.05	2.68	66.73	78.50
2060	8" diameter		133.33	.300		53.50	15.70	3.21	72.41	86
2080	10" diameter		114.29	.350		71	18.30	3.75	93.05	110
2100	12" diameter		105.26	.380		90.50	19.85	4.07	114.42	134
2120	14" diameter		100	.400		105	21	4.28	130.28	152
2140	16" diameter		72.73	.550		112	29	5.90	146.90	173
2160	18" diameter		68.97	.580		129	30.50	6.20	165.70	194
2170	20" diameter		57.14	.700		132	36.50	7.50	176	208
2180	24" diameter		47.06	.850		168	44.50	9.10	221.60	262
3000	Push-on joint, 4" diameter		400	.100		23	5.25	1.07	29.32	34.50
3020	6" diameter		333.33	.120		23.50	6.25	1.29	31.04	37
3040	8" diameter		200	.200		32.50	10.45	2.14	45.09	54

33 14 Water Utility Transmission and Distribution

33 14 13 – Public Water Utility Distribution Piping

33 14 13.15	Water Supply, Ductile Iron Pipe	B-21A	Daily Output	Labor Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
						Material	Labor	Equipment		
3060	10" diameter	B-21A	181.82	.220	L.F.	50	11.50	2.36	63.86	75
3080	12" diameter		160	.250		53	13.05	2.68	68.73	80.50
3100	14" diameter					53	15.70	3.21	71.91	85
3120	16" diameter					55	18.30	3.75	77.05	92
3140	18" diameter					61	21	4.28	86.28	103
3160	20" diameter		88.89	.450		63.50	23.50	4.82	91.82	110
3180	24" diameter					76.92	.520		86.50	119.05
8000	Piping, fittings, mechanical joint, AWWA C110								27	5.55
8006	90° bend, 4" diameter	B-20A	16	2	Ea.	176	101		277	345
8020	6" diameter		12.80	2.500		256	126		382	470
8040	8" diameter					10.67	2.999		500	652
8060	10" diameter	B-21A	11.43	3.500		730	183	37.50	950.50	1,125
8080	12" diameter					10.53	3.799		960	1,199.50
8100	14" diameter					10	4		1,375	1,627
8120	16" diameter					7.27	5.502		1,750	2,097
8140	18" diameter					6.90	5.797		2,400	2,767
8160	20" diameter					5.71	7.005		2,875	3,315
8180	24" diameter					4.70	8.511		4,975	5,511
8200	Wye or tee, 4" diameter	B-20A	10.67	2.999		390	152		542	650
8220	6" diameter					8.53	3.751		585	775
8240	8" diameter					7.11	4.501		890	1,118
8260	10" diameter	B-21A	7.62	5.249		1,175	274		56	1,505
8280	12" diameter					7.02	5.698		1,975	2,334
8300	14" diameter					6.67	5.997		2,425	3,225
8320	16" diameter					4.85	8.247		2,750	3,268.50
8340	18" diameter					4.60	8.696		4,500	5,048
8360	20" diameter					3.81	10.499		6,525	7,187
8380	24" diameter					3.14	12.739		8,800	9,601
8450	Decreaser, 6" x 4" diameter	B-20A	14.22	2.250		262	114		376	460
8460	8" x 6" diameter		"	11.64	2.749	350	139		489	595
8470	10" x 6" diameter	B-21A	13.33	3.001		425	157		614	740
8480	12" x 6" diameter					12.70	3.150		620	818.50
8490	16" x 6" diameter					10	4		1,075	1,327
8500	20" x 6" diameter					8.42	4.751		1,800	2,099
8550	Piping, butterfly valves, cast iron								248	2,425
8560	4" diameter	B-20	6	4	Ea.	455	188		643	785
8570	6" diameter		"	5	4.800	625	226		851	1,025
8580	8" diameter	B-21	4	7		815	340		47.50	1,202.50
8590	10" diameter					3.50	8		1,375	1,819
8600	12" diameter					3	9.333		1,550	2,068
8610	14" diameter					2	14		2,500	2,475
8620	16" diameter					2	14		3,825	3,875

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.	.61	.86		1.47	1.96
2120	2" diameter		686	.015		.88	.95		1.83	2.39
2140	2-1/2" diameter					500	.020		1.18	1.30
2160	3" diameter	B-20	430	.056		1.59	2.62		2.48	3.24
3010	AWWA C905, PR 100, DR 25								4.21	5.70
3030	14" diameter	B-20A	213	.150	L.F.	14.20	7.60		21.80	27
3040	16" diameter					200	.160		17.30	25.40
									8.10	31

33 14 Water Utility Transmission and Distribution

33 14 13 – Public Water Utility Distribution Piping

33 14 13.25	Water Supply, Polyvinyl Chloride Pipe	Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
							Labor	Equipment	Total		
3050	18" diameter	B-20A	160	.200	L.F.	27.50	10.10		37.60	45.50	
3060	20" diameter		133	.241		30.50	12.15		42.65	52	
3070	24" diameter		107	.299		45	15.10		60.10	72	
3080	30" diameter		80	.400		74.50	20		94.50	113	
3090	36" diameter		80	.400		115	20		135	158	
3100	42" diameter		60	.533		153	27		180	209	
3200	48" diameter		60	.533		200	27		227	261	
4520	Pressure pipe Class 150, SDR 18, AWWA C900, 4" diameter		380	.084		3.03	4.26		7.29	9.75	
4530	6" diameter		316	.101		5	5.10		10.10	13.15	
4540	8" diameter		264	.121		8.60	6.15		14.75	18.65	
4550	10" diameter		220	.145		12.65	7.35		20	25	
4560	12" diameter		186	.172		17.75	8.70		26.45	32.50	
8000	Fittings with rubber gasket										
8003	Class 150, DR 18										
8006	90° bend, 4" diameter	B-20	100	.240	Ea.	42.50	11.30		53.80	63.50	
8020	6" diameter		90	.267		74	12.55		86.55	100	
8040	8" diameter		80	.300		139	14.10		153.10	175	
8060	10" diameter		50	.480		365	22.50		387.50	435	
8080	12" diameter		30	.800		445	37.50		482.50	545	
8100	Tee, 4" diameter		90	.267		63	12.55		75.55	88	
8120	6" diameter		80	.300		139	14.10		153.10	175	
8140	8" diameter		70	.343		199	16.10		215.10	243	
8160	10" diameter		40	.600		660	28		688	770	
8180	12" diameter		20	1.200		905	56.50		961.50	1,075	
8200	45° bend, 4" diameter		100	.240		41.50	11.30		52.80	62.50	
8220	6" diameter		90	.267		77	12.55		89.55	103	
8240	8" diameter		50	.480		137	22.50		159.50	184	
8260	10" diameter		50	.480		305	22.50		327.50	370	
8280	12" diameter		30	.800		400	37.50		437.50	495	
8300	Reducing tee 6" x 4"		100	.240		126	11.30		137.30	156	
8320	8" x 6"		90	.267		202	12.55		214.55	241	
8330	10" x 6"		90	.267		340	12.55		352.55	395	
8340	10" x 8"		90	.267		365	12.55		377.55	420	
8350	12" x 6"		90	.267		420	12.55		432.55	480	
8360	12" x 8"		90	.267		440	12.55		452.55	505	
8400	Tapped service tee (threaded type) 6" x 6" x 3/4"		100	.240		96	11.30		107.30	123	
8430	6" x 6" x 1"		90	.267		96	12.55		108.55	125	
8440	6" x 6" x 1-1/2"		90	.267		90.50	12.55		103.05	118	
8450	6" x 6" x 2"		90	.267		96	12.55		108.55	125	
8460	8" x 8" x 3/4"		90	.267		126	12.55		138.55	158	
8470	8" x 8" x 1"		90	.267		126	12.55		138.55	158	
8480	8" x 8" x 1-1/2"		90	.267		126	12.55		138.55	158	
8490	8" x 8" x 2"		90	.267		126	12.55		138.55	158	
8500	Repair coupling 4"		100	.240		23.50	11.30		34.80	43	
8520	6" diameter		90	.267		36.50	12.55		49.05	59.50	
8540	8" diameter		50	.480		90	22.50		112.50	133	
8560	10" diameter		50	.480		175	22.50		197.50	227	
8580	12" diameter		50	.480		265	22.50		287.50	325	
8600	Plug end 4"		100	.240		21	11.30		32.30	40	
8620	6" diameter		90	.267		43	12.55		55.55	66	
8640	8" diameter		50	.480		63.50	22.50		86	104	
8660	10" diameter		50	.480		97.50	22.50		120	141	
8680	12" diameter		50	.480		120	22.50		142.50	166	

33 14 Water Utility Transmission and Distribution

33 14 19 – Valves and Hydrants for Water Utility Service

			Daily	Labor-		2020	Bare	Costs		Total	Ind O&P
33 14 19.30 Fire Hydrants		Crew	Output	Hours	Unit	Material	Labor	Equipment	Total		
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.	2,900	137	18.90	3,055.90	3,400	
1120	2'-6"					2,925	137	18.90	3,080.90	3,450	
1140	3'-0"					3,000	137	18.90	3,155.90	3,525	
1300	7'-0"					3,475	228	31.50	3,734.50	4,200	
2400	Lower barrel extensions with stems, 1'-0"	B-20	14	1.714		360	80.50		440.50	515	
2480	3'-0"					915	94		1,009	1,150	

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	204,000	
3300	100,000 gallons								280,000	307,500	
3400	250,000 gallons								751,500	826,500	
3600	500,000 gallons								1,336,000	1,470,000	
3700	750,000 gallons								1,622,000	1,783,500	
3900	1,000,000 gallons								2,322,000	2,556,000	

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	244,500	
1000	250,000 gallons								295,500	324,000	
1200	500,000 gallons								417,000	458,500	
1250	750,000 gallons								538,000	591,500	
1300	1,000,000 gallons								558,000	725,500	
1500	2,000,000 gallons								1,043,000	1,148,000	
1600	4,000,000 gallons								2,121,000	2,333,000	
1800	6,000,000 gallons								3,095,000	3,405,000	
1850	8,000,000 gallons								4,068,000	4,475,000	
1910	10,000,000 gallons								5,050,000	5,554,500	
2100	Steel standpipes, ht./diam. more than 1,100' to overflow, no fdn.										
2200	500,000 gallons					Ea.			546,500	600,500	
2400	750,000 gallons								722,500	794,500	
2500	1,000,000 gallons								1,060,500	1,167,000	
2700	1,500,000 gallons								1,749,000	1,923,000	
2800	2,000,000 gallons								2,327,000	2,559,000	

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	329,500	
0100	500,000 gallons								487,000	536,000	
0300	1,000,000 gallons								707,000	807,500	
0400	2,000,000 gallons								1,072,000	1,179,000	
0600	4,000,000 gallons								1,706,000	1,877,000	

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		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
					Ea.		Labor	Equipment	
0700	6,000,000 gallons								2,266,000
0750	8,000,000 gallons								2,924,000
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		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
					Ea.		Labor	Equipment	
7000	Water tanks, vinyl coated fabric pillow tanks, freestanding, 5,000 gallons	4 Clab	4	8	Ea.	3,800	335		4,135
7100	Supporting embankment not included, 25,000 gallons	6 Clab	2	24		13,500	1,000		14,500
7200	50,000 gallons	8 Clab	1.50	42.667		20,500	1,800		22,300
7300	100,000 gallons	9 Clab	.90	80		37,700	3,375		41,075
7400	150,000 gallons		.50	144		44,400	6,050		50,450
7500	200,000 gallons		.40	180		84,500	7,575		92,075
7600	250,000 gallons		.30	240		89,000	10,100		99,100
									113,000

33 31 Sanitary Sewerage Piping

33 31 11 – Public Sanitary Sewerage Gravity Piping

33 31 11.15 Sewage Collection, Concrete Pipe

0010	SEWAGE COLLECTION, CONCRETE PIPE
0020	See Section 33 42 11.60 for sewage/drainage collection, concrete pipe

33 31 11.25 Sewage Collection, Polyvinyl Chloride Pipe

0010	SEWAGE COLLECTION, POLYVINYL CHLORIDE PIPE	Daily Crew	Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
					Ea.		Labor	Equipment	
0020	Not including excavation or backfill								
2000	20' lengths, SDR 35, B&S, 4" diameter	B-20	375	.064	E.F.	1.67	3.01		4.68
2040	6" diameter		350	.069		4.05	3.22		7.27
2080	13' lengths, SDR 35, B&S, 8" diameter		335	.072		6.70	3.37		10.07
2120	10" diameter	B-21	330	.085		11.30	4.14	.57	16.01
2160	12" diameter		320	.088		15.90	4.27	.59	20.76
2170	14" diameter		280	.100		19.45	4.88	.68	25.01
2200	15" diameter		240	.117		22	5.70	.79	28.49
2250	16" diameter		220	.127		29	6.20	.86	36.06
4000	Piping, DWV PVC, no exc./bkfill., 10' L, Sch 40, 4" diameter	B-20	375	.064		3.83	3.01		6.84
4010	6" diameter		350	.069		8.25	3.22		11.47
4020	8" diameter		335	.072		13.40	3.37		16.77
									19.80

33 34 Onsite Wastewater Disposal

33 34 13 – Septic Tanks

33 34 13.13 Concrete Septic Tanks

0010	CONCRETE SEPTIC TANKS	Daily Crew	Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
					Ea.		Labor	Equipment	
0011	Not including excavation or piping								
0015	Septic tanks, precast, 1,000 gallon	B-21	8	3,500	Ea.	1,050	171	23.50	1,244.50
0060	1,500 gallon		7	4		1,625	195	27	1,847
0100	2,000 gallon		5	5,600		2,500	273	38	2,811
0200	5,000 gallon	B-13	3.50	16		6,325	735	166	7,226
0300	15,000 gallon, 4 piece	B-13B	1.70	32,941		23,700	1,525	575	25,800
0400	25,000 gallon, 4 piece		1.10	50,909		47,900	2,350	890	51,140
0500	40,000 gallon, 4 piece		.80	70		53,500	3,225	1,225	57,950
0520	50,000 gallon, 5 piece	B-13C	.60	93,333		61,500	4,300	3,800	69,600
0640	75,000 gallon, cast in place	G-14C	.25	448		74,500	22,600	108	97,208
									116,000

33 34 Onsite Wastewater Disposal

33 34 13 – Septic Tanks

				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total
				Crew				Labor	Equipment	Total	Incl O&P
33 34 13.13 Concrete Septic Tanks											
0660	100,000 gallon			G-14C	.15	747	Ea.	92,500	37,600	179	130,279
1150	Leaching field chambers, 13' x 3'-7" x 1'-4", standard			B-13	16	3,500		500	161	36.50	697.50
1200	Heavy duty, 8' x 4' x 1'-6"				14	4		310	184	41.50	535.50
1300	13' x 3'-9" x 1'-6"				12	4,667		1,350	215	48.50	1,613.50
1350	20' x 4' x 1'-6"				5	11,200		1,225	515	116	1,856
1400	Leaching pit, precast concrete, 3' diameter, 3' deep			B-21	8	3,500		735	171	23.50	929.50
1500	6' diameter, 3' section					4.70	5.957	940	290	40	1,270
2000	Velocity reducing pit, precast conc., 6' diameter, 3' deep					4.70	5.957	1,825	290	40	2,155
											2,500

33 34 13.33 Polyethylene Septic Tanks

				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total		
				Crew				Labor	Equipment	Total	Incl O&P
0010 POLYETHYLENE SEPTIC TANKS											
0015	High density polyethylene, 1,000 gallon			B-21	8	3,500	Ea.	1,475	171	23.50	1,669.50
0020	1,250 gallon				8	3,500		1,325	171	23.50	1,519.50
0025	1,500 gallon				7	4		1,375	195	27	1,597
											1,850

33 34 16 – Septic Tank Effluent Filters

33 34 16.13 Septic Tank Gravity Effluent Filters

				1 Skwk	8	1	Unit	44	55	99	131
3000	Effluent filter, 4" diameter					1,143		42.50	62.50	105	142
3020	6" diameter					7	1,143	252	62.50	314.50	370
3030	8" diameter					7	1,143	500	62.50	562.50	645
3040	8" diameter, very fine					6	1,333	237	73	310	370
3050	10" diameter, very fine					6	1,333	276	73	349	415
3060	10" diameter					6	1,333	655	73	728	830
3080	12" diameter					5	1,600	1,075	88	1,163	1,325
3090	15" diameter										

33 34 51 – Drainage Field Systems

33 34 51.10 Drainage Field Excavation and Fill

				B-12F	.145	.110	C.Y.	5.60	4.79	10.39	13.60
2200	Septic tank & drainage field excavation with 3/4 C.Y. backhoe										
2400	4' trench for disposal field, 3/4 C.Y. backhoe			"	335	.048	L.F.	2.42	2.07	4.49	5.90
2600	Gravel fill, run of bank			B-6	150	.160	C.Y.	16.90	7.30	1.43	25.63
2800	Crushed stone, 3/4"			"	150	.160	"	42	7.30	1.43	50.73
											58.50

33 34 51.13 Utility Septic Tank Tile Drainage Field

				2 Clab	.20	.800	Unit	93.50	33.50	127	154
0015	Distribution box, concrete, 5 outlets										
0020	7 outlets				16	1		103	42	145	178
0025	9 outlets				8	2		545	84	629	725
0115	Distribution boxes, HDPE, 5 outlets					20	.800			110	135
0117	6 outlets					15	1.067		81	45	126
0118	7 outlets					15	1.067		75	45	120
0120	8 outlets					10	1.600		79	67.50	146.50
0240	Distribution boxes, outlet flow leveler			1 Clab	50	.160		2.53	6.75		9.28
0300	Precast concrete, galley, 4' x 4' x 4'			B-21	16	1.750		246	85.50	11.80	343.30
0350	HDPE infiltration chamber 12" H x 15" W			2 Clab	300	.053	L.F.	7	2.25		9.25
0351	12" H x 15" W end cap			1 Clab	32	.250	Ea.	18.90	10.55		29.45
0355	chamber 12" H x 22" W			2 Clab	300	.053	L.F.	6.65	2.25		8.90
0356	12" H x 22" W end cap			1 Clab	32	.250	Ea.	16.60	10.55		27.15
0360	chamber 13" H x 34" W			2 Clab	300	.053	L.F.	14.30	2.25		16.55
0361	13" H x 34" W end cap			1 Clab	32	.250	Ea.	50.50	10.55		61.05
0365	chamber 16" H x 34" W			2 Clab	300	.053	L.F.	19.25	2.25		21.50
0366	16" H x 34" W end cap			1 Clab	32	.250	Ea.	16.55	10.55		27.10
0370	chamber 8" H x 16" W			2 Clab	300	.053	L.F.	9.90	2.25		12.15
											14.25

33 34 Onsite Wastewater Disposal

33 34 51 – Drainage Field Systems

33 34 51.13 Utility Septic Tank Tile Drainage Field		Daily Crew	Labor Output	Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Incl O&P
0371	8" H x 16" W end cap	1 Clb	32	.250	Ea.	11.10	10.55		21.65	28

33 41 Subdrainage

33 41 16 – Subdrainage Piping

33 41 16.10 Piping, Subdrainage, Vitrified Clay

0010 PIPING, SUBDRAINAGE, VITRIFIED CLAY		B-14	315	.152	L.F.	6.25	6.75	.68	13.68	17.75
0020	Not including excavation and backfill									
1000	Foundation drain, 6" diameter									
1010	8" diameter		290	.166		9.30	7.30	.74	17.34	22
1020	12" diameter		275	.175		20	7.70	.78	28.48	34.50
3000	Perforated, 5' lengths, C700, 4" diameter		400	.120		4.70	5.30	.53	10.53	13.70
3020	6" diameter		315	.152		6.65	6.75	.68	14.08	18.20
3040	8" diameter		290	.166		7.25	7.30	.74	15.29	19.80
3060	12" diameter		275	.175		20.50	7.70	.78	28.98	35

33 41 16.25 Piping, Subdrainage, Corrugated Metal

0010 PIPING, SUBDRAINAGE, CORRUGATED METAL		B-20	380	.063	L.F.	6.40	2.97		9.37	11.50
0021	Not including excavation and backfill									
2010	Aluminum, perforated									
2020	6" diameter, 18 ga.									
2200	8" diameter, 16 ga.		"	.370	.065		8.80	3.05		11.85
2220	10" diameter, 16 ga.		B-21	360	.078		11	3.79	.53	15.32
2240	12" diameter, 16 ga.			285	.098		12.30	4.79	.66	17.75
2260	18" diameter, 16 ga.			205	.137		18.50	6.65	.92	26.07
3000	Uncoated galvanized, perforated		B-20	380	.063	L.F.	6.65	2.97		9.62
3020	6" diameter, 18 ga.		"	370	.065		8.10	3.05		11.15
3200	8" diameter, 16 ga.		B-21	360	.078		8.60	3.79	.53	12.92
3220	10" diameter, 16 ga.			285	.098		9.55	4.79	.66	15
3240	12" diameter, 16 ga.			205	.137		14.65	6.65	.92	22.22
3260	18" diameter, 16 ga.		B-20	380	.063	L.F.	6.35	2.97		9.32
4000	Steel, perforated, asphalt coated		"	370	.065		9	3.05		12.05
4020	6" diameter, 18 ga.		B-21	360	.078		10.05	3.79	.53	14.37
4030	8" diameter, 18 ga.			285	.098		11.30	4.79	.66	16.75
4040	10" diameter, 16 ga.			205	.137		17.80	6.65	.92	25.37
4050	12" diameter, 16 ga.		B-20	380	.063	L.F.	6.35	2.97		9.32
4060	18" diameter, 16 ga.		"	370	.065		9	3.05		12.05

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		Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total Costs	Total Incl O&P
0010	PIPING, STORM DRAINAGE, CORRUGATED METAL								
0020	Not including excavation or backfill								
2000	Corrugated metal pipe, galvanized								
2020	Bituminous coated with paved invert, 20' lengths								
2040	8" diameter, 16 ga.	B-14	330	.145	L.F.	8.35	6.45	.65	15.45
2060	10" diameter, 16 ga.		260	.185		8.65	8.15	.82	17.62
2080	12" diameter, 16 ga.		210	.229		12.40	10.10	1.02	23.52
2100	15" diameter, 16 ga.		200	.240		14.60	10.60	1.07	26.27
2120	18" diameter, 16 ga.		190	.253		18.80	11.20	1.12	31.12
2140	24" diameter, 14 ga.		160	.300		24.50	13.30	1.34	39.14
2160	30" diameter, 14 ga.	B-13	120	.467		29	21.50	4.84	55.34
2180	36" diameter, 12 ga.		120	.467		35	21.50	4.84	61.34
2200	48" diameter, 12 ga.		100	.560		46.50	26	5.80	78.30
2220	60" diameter, 10 ga.	B-13B	75	.747		80	34.50	13.05	127.55
2240	72" diameter, 8 ga.	"	45	1.244		84.50	57.50	22	164
2500	Galvanized, uncoated, 20' lengths								
2520	8" diameter, 16 ga.	B-14	355	.135	L.F.	7.85	6	.60	14.45
2540	10" diameter, 16 ga.		280	.171		8.40	7.60	.76	16.76
2560	12" diameter, 16 ga.		220	.218		9.75	9.65	.97	20.37
2580	15" diameter, 16 ga.		220	.218		11.05	9.65	.97	21.67
2600	18" diameter, 16 ga.		205	.234		13.50	10.35	1.04	24.89
2620	24" diameter, 14 ga.		175	.274		23	12.15	1.22	36.37
2640	30" diameter, 14 ga.	B-13	130	.431		32	19.85	4.47	56.32
2660	36" diameter, 12 ga.		130	.431		39	19.85	4.47	63.32
2680	48" diameter, 12 ga.		110	.509		54	23.50	5.30	82.80
2690	60" diameter, 10 ga.	B-13B	78	.718		84	33	12.55	129.55
2780	End sections, 8" diameter	B-14	35	1.371	Ea.	78.50	60.50	6.10	145.10
2785	10" diameter		35	1.371		87	60.50	6.10	153.60
2790	12" diameter		35	1.371		100	60.50	6.10	166.60
2800	18" diameter		30	1.600		117	71	7.10	195.10
2810	24" diameter	B-13	25	2.240		197	103	23	323
2820	30" diameter		25	2.240		350	103	23	476
2825	36" diameter		20	2.800		470	129	29	628
2830	48" diameter		10	5.600		940	258	58	1,256
2835	60" diameter	B-13B	5	11.200		1,725	515	196	2,436
2840	72" diameter	"	4	14		2,175	645	245	3,065

33 42 11.60 Sewage/Drainage Collection, Concrete Pipe

0010 SEWAGE/DRAINAGE COLLECTION, CONCRETE PIPE		Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Equipment	Total Costs	Total Incl O&P
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.	7.80	8	.81	16.61
1020	8" diameter		224	.214		8.55	9.50	.95	19
1030	10" diameter		216	.222		9.50	9.85	.99	20.34
1040	12" diameter		200	.240		10.05	10.60	1.07	21.72
1050	15" diameter		180	.267		14.40	11.80	1.19	27.39
1060	18" diameter		144	.333		18.05	14.75	1.48	34.28
1070	21" diameter		112	.429		18.95	18.95	1.91	39.81
1080	24" diameter		100	.480		22	21	2.14	45.14
2000	Reinforced culvert, class 3, no gaskets								
2010	12" diameter	B-14	150	.320	L.F.	16.15	14.15	1.42	31.72
2020	15" diameter		150	.320		22	14.15	1.42	37.57
2030	18" diameter		132	.364		24.50	16.10	1.62	42.22

33 42 Stormwater Conveyance

33 42 11 – Stormwater Gravity Piping

33 42 11.60 Sewage/Drainage Collection, Concrete Pipe				Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
				Crew				Labor	Equipment			
2035	21" diameter			B-14	120	.400	L.F.	28.50	17.70	1.78	47.98	60
2040	24" diameter				100	.480		28.50	21	2.14	51.64	66
2045	27" diameter			B-13	92	.609		47.50	28	6.30	81.80	101
2050	30" diameter				88	.636		52	29.50	6.60	88.10	108
2060	36" diameter				72	.778		83	36	8.05	127.05	153
2070	42" diameter			B-13B	68	.824		99.50	38	14.40	151.90	182
2080	48" diameter				64	.875		100	40.50	15.30	155.80	187
2085	54" diameter				56	1		147	46	17.50	210.50	249
2090	60" diameter				48	1.167		181	53.50	20.50	255	300
2100	72" diameter				40	1.400		273	64.50	24.50	362	425
2120	84" diameter				32	1.750		405	80.50	30.50	516	600
2140	96" diameter				24	2.333		485	107	41	633	740
2200	With gaskets, class 3, 12" diameter			B-21	168	.167		17.80	8.15	1.13	27.08	33
2220	15" diameter				160	.175		24	8.55	1.18	33.73	40.50
2230	18" diameter				152	.184		27	9	1.24	37.24	45
2235	21" diameter				152	.184		31.50	9	1.24	41.74	49.50
2240	24" diameter				136	.206		35.50	10.05	1.39	46.94	55.50
2260	30" diameter			B-13	88	.636		60	29.50	6.60	96.10	117
2270	36" diameter			"	72	.778		92.50	36	8.05	136.55	164
2290	48" diameter			B-13B	64	.875		114	40.50	15.30	169.80	202
2310	72" diameter			"	40	1.400		294	64.50	24.50	383	450
2330	Flared ends, 12" diameter			B-21	31	.903	Ea.	305	44	6.10	355.10	410
2340	15" diameter				25	1.120		350	54.50	7.55	412.05	475
2400	18" diameter				20	1.400		400	68.50	9.45	477.95	555
2420	24" diameter				14	2		455	97.50	13.50	566	665
2440	36" diameter			B-13	10	5.600		990	258	58	1,306	1,550
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.	40.50	16.65	2.30	59.45	72
3530	24" x 38" inside, round equivalent 30" diameter			B-13	58	.966		69.50	44.50	10	124	154
3540	29" x 45" inside, round equivalent 36" diameter				52	1.077		106	49.50	11.15	166.65	204
3550	38" x 60" inside, round equivalent 48" diameter				38	1.474		171	68	15.30	254.30	305
3560	48" x 76" inside, round equivalent 60" diameter				26	2.154		215	99	22.50	336.50	410
3570	58" x 91" inside, round equivalent 72" diameter				22	2.545		330	117	26.50	473.50	565
3780	Concrete slotted pipe, class 4 mortar joint											
3800	12" diameter			B-21	168	.167	L.F.	33	8.15	1.13	42.28	49.50
3840	18" diameter			"	152	.184	"	37	9	1.24	47.24	55.50
3900	Concrete slotted pipe, Class 4 O-ring joint											
3940	12" diameter			B-21	168	.167	L.F.	30.50	8.15	1.13	39.78	47
3960	18" diameter			"	152	.184	"	32	9	1.24	42.24	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.	14.80	10.60	1.07	26.47	33.50
3040	21" x 15", 16 ga., 18" equivalent				150	.320		19.25	14.15	1.42	34.82	44
3060	28" x 20", 14 ga., 24" equivalent				125	.384		23	17	1.71	41.71	52.50
3080	35" x 24", 14 ga., 30" equivalent				100	.480		30.50	21	2.14	53.64	68
3100	42" x 29", 12 ga., 36" equivalent			B-13	100	.560		36	26	5.80	67.80	84.50
3120	49" x 33", 12 ga., 42" equivalent				90	.622		43.50	28.50	6.45	78.45	98
3140	57" x 38", 12 ga., 48" equivalent				75	.747		56	34.50	7.75	98.25	122

33 42 Stormwater Conveyance

33 42 13 – Stormwater Culverts

33 42 13.15 Oval Arch Culverts	Description	Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
					Material	Labor	Equipment		
3160	Steel, plain oval arch culverts, plain	B-14	225	.213	L.F.	13.25	9.45	.95	23.65
3180	17" x 13", 16 ga., 15" equivalent		175	.274		17.25	12.15	1.22	30.62
3200	21" x 15", 16 ga., 18" equivalent		150	.320		27	14.15	1.42	42.57
3220	28" x 20", 14 ga., 24" equivalent		108	.519		32	24	5.40	61.40
3240	35" x 24", 14 ga., 30" equivalent		108	.519		40	24	5.40	69.40
3260	42" x 29", 12 ga., 36" equivalent		92	.609		59.50	28	6.30	93.80
3280	49" x 33", 12 ga., 42" equivalent								114
3300	57" x 38", 12 ga., 48" equivalent		75	.747		69	34.50	7.75	111.25
3320	End sections, 17" x 13"		22	2.545	Ea.	139	117	26.50	282.50
3340	42" x 29"		17	3.294	"	425	152	34	611
3360	Multi-plate arch, steel	B-20	1690	.014	lb.	1.39	.67		2.06
									2.54

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.	375	141	27.50	543.50
1700	26" D shape, 600 lb.		7	3.429		720	157	30.50	907.50
1800	Light traffic, 18" diameter, 100 lb.		10	2.400		215	110	21.50	346.50
1900	24" diameter, 300 lb.		8.70	2.759		199	126	24.50	349.50
2000	36" diameter, 900 lb.		5.80	4.138		765	189	37	991
2100	Heavy traffic, 24" diameter, 400 lb.		7.80	3.077		295	141	27.50	463.50
2200	36" diameter, 1,150 lb.		3	8		935	365	71.50	1,371.50
2300	Mass. State standard, 26" diameter, 475 lb.		7	3.429		750	157	30.50	937.50
2400	30" diameter, 620 lb.		7	3.429		340	157	30.50	527.50
2500	Watertight, 24" diameter, 350 lb.		7.80	3.077		415	141	27.50	583.50
2600	26" diameter, 500 lb.		7	3.429		450	157	30.50	637.50
2700	32" diameter, 575 lb.		6	4		960	183	35.50	1,178.50
2800	3 piece cover & frame, 10" deep,								
2900	1,200 lb., for heavy equipment	B-6	3	8	Ea.	1,200	365	71.50	1,636.50
3000	Raised for paving 1-1/4" to 2" high								
3100	4 piece expansion ring								
3200	20" to 26" diameter	1 Club	3	2.667	Ea.	213	112		325
3300	30" to 36" diameter	"	3	2.667	"	295	112		407
3320	Frames and covers, existing, raised for paving, 2", including row of brick, concrete collar, up to 12" wide frame	B-6	18	1.333	Ea.	52	61	11.90	124.90
3340	20" to 26" wide frame		11	2.182		78.50	100	19.45	197.95
3360	30" to 36" wide frame		9	2.667		97	122	24	243
3380	Inverts, single channel brick	D-1	3	5.333		112	250		362
3400	Concrete		5	3.200		124	150		274
3500	Triple channel, brick		2	8		182	375		557
3600	Concrete		3	5.333		156	250		406
3700									550

33 42 33.50 Stormwater Management

0010	STORMWATER MANAGEMENT								
0030	Add per S.F. of impervious surface	B-37	6000	.008	S.F.	2.63	.35	.04	3.02
									3.48

33 52 Hydrocarbon Transmission and Distribution

33 52 13 – Liquid Hydrocarbon Piping

33 52 13.16 Gasoline Piping		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Bare Costs	Total	Total Incl O&P
						Labor	Equipment		
0010	GASOLINE PIPING								
0020	Primary containment pipe, fiberglass-reinforced								
0030	Plastic pipe 15' & 30' lengths								
0040	2" diameter		Q-6	425	.056	L.F.	7	3.45	10.45
0050	3" diameter			400	.060		10.65	3.67	14.32
0060	4" diameter			375	.064		13.85	3.92	17.77
0100	Fittings								21
0110	Elbows, 90° & 45°, bell ends, 2"		Q-6	24	1	Ea.	40.50	61	101.50
0120	3" diameter			22	1.091		56	66.50	122.50
0130	4" diameter			20	1.200		70	73.50	143.50
0200	Tees, bell ends, 2"			21	1.143		57	70	127
0210	3" diameter			18	1.333		68	81.50	149.50
0220	4" diameter			15	1.600		81.50	98	179.50
0230	Flanges bell ends, 2"			24	1		31.50	61	92.50
0240	3" diameter			22	1.091		38.50	66.50	105
0250	4" diameter			20	1.200		43.50	73.50	117
0260	Sleeve couplings, 2"			21	1.143		12.05	70	82.05
0270	3" diameter			18	1.333		18.05	81.50	99.55
0280	4" diameter			15	1.600		22.50	98	120.50
0290	Threaded adapters, 2"			21	1.143		19.25	70	89.25
0300	3" diameter			18	1.333		32	81.50	113.50
0310	4" diameter			15	1.600		35.50	98	133.50
0320	Reducers, 2"			27	.889		27	54.50	81.50
0330	3" diameter			22	1.091		27	66.50	93.50
0340	4" diameter			20	1.200		36	73.50	109.50
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.	29.50	3.92	33.42
1130	4" diameter			350	.069		33.50	4.20	37.70
1140	5" diameter			325	.074		35.50	4.52	40.02
1150	6" diameter			300	.080		39.50	4.89	44.39
1200	Fittings								51
1230	Elbows, 90° & 45°, 3" diameter		Q-6	18	1.333	Ea.	131	81.50	212.50
1240	4" diameter			16	1.500		163	92	255
1250	5" diameter			14	1.714		170	105	275
1260	6" diameter			12	2		211	122	333
1270	Tees, 3" diameter			15	1.600		157	98	255
1280	4" diameter			12	2		184	122	306
1290	5" diameter			9	2.667		299	163	462
1300	6" diameter			6	4		340	245	585
1310	Couplings, 3" diameter			18	1.333		54.50	81.50	136
1320	4" diameter			16	1.500		117	92	209
1330	5" diameter			14	1.714		218	105	323
1340	6" diameter			12	2		320	122	442
1350	Cross-over nipples, 3" diameter			18	1.333		10.30	81.50	91.80
1360	4" diameter			16	1.500		12.55	92	104.55
1370	5" diameter			14	1.714		16.30	105	121.30
1380	6" diameter			12	2		17.55	122	139.55
1400	Telescopings, reducers, concentric 4" x 3"			18	1.333		44.50	81.50	126
1410	5" x 4"			17	1.412		94.50	86.50	181
1420	6" x 5"			16	1.500		237	92	329

33 52 Hydrocarbon Transmission and Distribution

33 52 16 – Gas Hydrocarbon Piping

33 52 16.20 Piping, Gas Service and Distribution, P.E.	Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Total Incl O&P
						Labor	Equipment		
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.	.49	2.66		3.15	4.53
1010 1" diameter, SDR 11		544	.059		1.14	2.97		4.11	5.70
1040 1-1/4" diameter, SDR 11		544	.059		1.64	2.97		4.61	6.25
1100 2" diameter, SDR 11		488	.066		2.48	3.31		5.79	7.70
1160 3" diameter, SDR 11		408	.078		6.20	3.96		10.16	12.75
1500 60 psi 40' joints with coupling, 3" diameter, SDR 11	B-21A	408	.098		7.35	5.15	1.05	13.55	16.95
1540 4" diameter, SDR 11		352	.114		13.35	5.95	1.22	20.52	25
1600 6" diameter, SDR 11		328	.122		35.50	6.40	1.31	43.21	50
1640 8" diameter, SDR 11		272	.147		54	7.70	1.58	63.28	72.50
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.	.18	.38	.08	.64	.85
2210 1" CTS diameter, SDR 11.5		1900	.008		.25	.41	.08	.74	.99
2215 80psi coils, butt fusion joint @ 100', IPS 1/2" diameter, SDR 9.3		1950	.008		.26	.40	.08	.74	.98
2220 3/4" diameter, SDR 11		1950	.008		.33	.40	.08	.81	1.05
2225 1" diameter, SDR 11		1850	.009		.80	.42	.08	1.30	1.60
2230 1-1/4" diameter, SDR 11		1850	.009		.80	.42	.08	1.30	1.60
2235 1-1/2" diameter, SDR 11		1750	.009		.98	.44	.09	1.51	1.85
2240 2" diameter, SDR 11		1750	.009		1.33	.44	.09	1.86	2.23
2245 80psi 40' lengths, butt fusion joint, IPS 3" diameter, SDR 11.5	B-22A	660	.061		2.55	2.94	1.22	6.71	8.55
2250 4" diameter, SDR 11.5	"	500	.080		4.02	3.88	1.61	9.51	12.05
2400 Socket fused pipe									
2405 80psi coils, socket fusion coupling @ 100', 1/2" CTS diameter, SDR 7	B-20	1050	.023	L.F.	.20	1.07		1.27	1.84
2410 1" CTS diameter, SDR 11.5		1000	.024		.28	1.13		1.41	2.01
2415 80psi coils, socket fusion coupling @ 100', IPS 1/2" diameter, SDR 9.3		1000	.024		.28	1.13		1.41	2.01
2420 3/4" diameter, SDR 11		1000	.024		.35	1.13		1.48	2.09
2425 1" diameter, SDR 11		950	.025		.82	1.19		2.01	2.70
2430 1-1/4" diameter, SDR 11		950	.025		.82	1.19		2.01	2.70
2435 1-1/2" diameter, SDR 11		900	.027		1.01	1.25		2.26	3
2440 2" diameter, SDR 11		850	.028		1.36	1.33		2.69	3.49
2445 80psi 40' lengths, socket fusion coupling, IPS 3" diameter, SDR 11.5	B-21A	340	.118		3.03	6.15	1.26	10.44	13.90
2450 4" diameter, SDR 11.5	"	260	.154		4.91	8.05	1.65	14.61	19.25
2600 Compression coupled pipe									
2605 80psi coils, compression coupling @ 100', 1/2" CTS diameter, SDR 7	B-20	2250	.011	L.F.	.31	.50		.81	1.10
2610 1" CTS diameter, SDR 11.5		2175	.011		.50	.52		1.02	1.33
2615 80psi coils, compression coupling @ 100', IPS 1/2" diameter, SDR 9.3		2175	.011		.50	.52		1.02	1.33
2620 3/4" diameter, SDR 11		2100	.011		.57	.54		1.11	1.43
2625 1" diameter, SDR 11		2025	.012		1.13	.56		1.69	2.08
3000 Fittings, butt fusion									
3010 SDR 11, IPS unless noted CTS									
3100 Caps, 3/4" diameter	B-22C	28.50	.561	Eq.	3.36	27	5.45	35.81	50.50
3105 1" diameter		27	.593		3.06	28.50	5.80	37.36	53
3110 1-1/4" diameter		27	.593		4.71	28.50	5.80	39.01	55
3115 1-1/2" diameter		25.50	.627		3.67	30.50	6.10	40.27	57
3120 2" diameter		24	.667		6.05	32.50	6.50	45.05	62.50
3125 3" diameter		24	.667		11.50	32.50	6.50	50.50	68.50
3130 4" diameter		18	.889		24	43	8.65	75.65	101
3200 Reducers, 1" x 3/4" diameters		13.50	1.185		6.85	57.50	11.55	75.90	107

33 52 Hydrocarbon Transmission and Distribution

33 52 16 – Gas Hydrocarbon Piping

33 52 16.23 Medium Density Polyethylene Piping		B-22C	Daily	Labor-	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
			Output	Hours			Labor	Equipment	Total		
3205	1-1/4" x 1" diameters		13.50	1.185	Ea.	7	57.50	11.55	76.05	107	
3210	1-1/2" x 3/4" diameters		12.75	1.255		7.15	61	12.25	80.40	113	
3215	1-1/2" x 1" diameters		12.75	1.255		7.15	61	12.25	80.40	113	
3220	1-1/2" x 1-1/4" diameters		12.75	1.255		7.15	61	12.25	80.40	113	
3225	2" x 1" diameters		12	1.333		7.70	64.50	13	85.20	120	
3230	2" x 1-1/4" diameters		12	1.333		10.85	64.50	13	88.35	124	
3235	2" x 1-1/2" diameters		12	1.333		11.95	64.50	13	89.45	125	
3240	3" x 2" diameters		12	1.333		15.10	64.50	13	92.60	128	
3245	4" x 2" diameters		9	1.778		22.50	86	17.35	125.85	174	
3250	4" x 3" diameters		9	1.778		32	86	17.35	135.35	184	
3300	Elbows, 90°, 3/4" diameter		14.25	1.123		4.92	54.50	10.95	70.37	99.50	
3302	1" diameter		13.50	1.185		5.10	57.50	11.55	74.15	105	
3304	1-1/4" diameter		13.50	1.185		9.75	57.50	11.55	78.80	110	
3306	1-1/2" diameter		12.75	1.255		8.60	61	12.25	81.85	114	
3308	2" diameter		12	1.333		11.40	64.50	13	88.90	124	
3310	3" diameter		12	1.333		25.50	64.50	13	103	140	
3312	4" diameter		9	1.778		34.50	86	17.35	137.85	187	
3350	45°, 3" diameter		12	1.333		25.50	64.50	13	103	140	
3352	4" diameter		9	1.778		34.50	86	17.35	137.85	187	
3400	Tees, 3/4" diameter		9.50	1.684		16.95	81.50	16.40	114.85	160	
3405	1" diameter		9	1.778		5.10	86	17.35	108.45	155	
3410	1-1/4" diameter		9	1.778		10.25	86	17.35	113.60	160	
3415	1-1/2" diameter		8.50	1.882		8.70	91.50	18.35	118.55	168	
3420	2" diameter		8	2		12.70	97	19.50	129.20	182	
3425	3" diameter		8	2		25	97	19.50	141.50	195	
3430	4" diameter		6	2.667		34.50	129	26	189.50	261	
3500	Tapping tees, high volume, butt fusion outlets	B-22C	11	1.455	Ea.	92.50	70.50	14.20	177.20	224	
3505	1-1/2" punch, 2" x 2" outlet		11	1.455		93	70.50	14.20	177.70	224	
3510	1-7/8" punch, 3" x 2" outlet		11	1.455		94.50	86	17.35	197.85	253	
3515	4" x 2" outlet		9	1.778		2.92			2.92	3.21	
3550	For protective sleeves, add										
3600	Service saddles, saddle contour x outlet, butt fusion outlets	B-22C	17	.941	Ea.	6.65	45.50	9.20	61.35	86.50	
3602	1-1/4" x 3/4" outlet		17	.941		6.65	45.50	9.20	61.35	86.50	
3604	1-1/4" x 1" outlet		17	.941		6.65	45.50	9.20	61.35	86.50	
3606	1-1/4" x 1-1/4" outlet		16	1		6.65	48.50	9.75	64.90	91	
3608	1-1/2" x 3/4" outlet		16	1		6.65	48.50	9.75	64.90	91	
3610	1-1/2" x 1-1/4" outlet		15	1.067		6.65	51.50	10.40	68.55	97	
3612	2" x 3/4" outlet		12	1.333		6.65	64.50	13	84.15	119	
3614	2" x 1" outlet		12	1.333		6.65	64.50	13	84.15	119	
3616	2" x 1-1/4" outlet		11	1.455		6.65	70.50	14.20	91.35	129	
3618	3" x 3/4" outlet		12	1.333		6.65	64.50	13	84.15	119	
3620	3" x 1" outlet		12	1.333		6.65	64.50	13	84.15	119	
3622	3" x 1-1/4" outlet		11	1.455		6.65	70.50	14.20	91.35	129	
3624	4" x 3/4" outlet		10	1.600		6.65	77.50	15.60	99.75	141	
3626	4" x 1" outlet		10	1.600		6.65	77.50	15.60	99.75	141	
3628	4" x 1-1/4" outlet		9	1.778		6.65	86	17.35	110	156	
3685	For protective sleeves, 3/4" diameter outlets, add					.86			.86	.95	
3690	1" diameter outlets, add					1.45			1.45	1.60	
3695	1-1/4" diameter outlets, add					2.49			2.49	2.74	
3700	Branch saddles, contour x outlet, butt outlets, round base	B-22C	11	1.455	Ea.	17.30	70.50	14.20	102	141	
3702	2" x 2" outlet		11	1.455		18.80	70.50	14.20	103.50	142	
3704	3" x 2" outlet		11	1.455		27	70.50	14.20	111.70	151	

33 52 Hydrocarbon Transmission and Distribution

33 52 16 – Gas Hydrocarbon Piping

33 52 16.23 Medium Density Polyethylene Piping	Crew	Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
					Material	Labor	Equipment		
3708 4" x 2" outlet	B-22C	9	1.778	Ea.	21.50	86	17.35	124.85	173
3710 4" x 3" outlet		9	1.778		27	86	17.35	130.35	179
3712 4" x 4" outlet		9	1.778		36	86	17.35	139.35	189
3750 Rectangular base, 2" x 2" outlet		11	1.455		16.90	70.50	14.20	101.60	140
3752 3" x 2" outlet		11	1.455		18.35	70.50	14.20	103.05	142
3754 3" x 3" outlet		11	1.455		26.50	70.50	14.20	111.20	151
3756 4" x 2" outlet		9	1.778		21	86	17.35	124.35	172
3758 4" x 3" outlet		9	1.778		25.50	86	17.35	128.85	177
3760 4" x 4" outlet		9	1.778		31	86	17.35	134.35	184
4000 Fittings, socket fusion									
4010 SDR 11, IPS unless noted CTS									
4100 Caps, 1/2" CTS diameter	B-20	30	.800	Ea.	2.57	37.50		40.07	59.50
4105 1/2" diameter			28.50	.842		2.43	39.50	41.93	62
4110 3/4" diameter			28.50	.842		3.05	39.50	42.55	63
4115 1" CTS diameter			28	.857		6.90	40.50	47.40	68
4120 1" diameter			27	.889		3.65	42	45.65	67
4125 1-1/4" diameter			27	.889		4.02	42	46.02	67.50
4130 1-1/2" diameter			25.50	.941		5.05	44.50	49.55	72
4135 2" diameter			24	1		4.84	47	51.84	76.50
4140 3" diameter			24	1		19.30	47	66.30	92
4145 4" diameter			18	1.333		33	62.50	95.50	131
4200 Reducers, 1/2" x 1/2" CTS diameters		14.25	1.684		6.40	79		85.40	126
4202 3/4" x 1/2" CTS diameters		14.25	1.684		5.70	79		84.70	125
4204 3/4" x 1/2" diameters		14.25	1.684		6.30	79		85.30	126
4206 1" CTS x 1/2" diameters		14	1.714		5.80	80.50		86.30	127
4208 1" CTS x 3/4" diameters		13.50	1.778		5.55	83.50		89.05	132
4210 1" x 1/2" CTS diameters		13.50	1.778		7.45	83.50		90.95	134
4212 1" x 1/2" diameters		13.50	1.778		6.15	83.50		89.65	133
4214 1" x 3/4" diameters		13.50	1.778		9	83.50		92.50	136
4216 1" x 1" CTS diameters		13.50	1.778		7.85	83.50		91.35	135
4218 1-1/4" x 1/2" CTS diameters		13.50	1.778		16.35	83.50		99.85	144
4220 1-1/4" x 1/2" diameters		13.50	1.778		8.65	83.50		92.15	136
4222 1-1/4" x 3/4" diameters		13.50	1.778		12.80	83.50		96.30	140
4224 1-1/4" x 1" CTS diameters		13.50	1.778		9.20	83.50		92.70	136
4226 1-1/4" x 1" diameters		13.50	1.778		10.90	83.50		94.40	138
4228 1-1/2" x 3/4" diameters		12.75	1.882		9.50	88.50		98	143
4230 1-1/2" x 1" diameters		12.75	1.882		8.25	88.50		96.75	142
4232 1-1/2" x 1-1/4" diameters		12.75	1.882		9.35	88.50		97.85	143
4234 2" x 3/4" diameters		12	2		10.30	94		104.30	153
4236 2" x 1" CTS diameters		12	2		9.75	94		103.75	153
4238 2" x 1" diameters		12	2		11.10	94		105.10	154
4240 2" x 1-1/4" diameters		12	2		10.10	94		104.10	153
4242 2" x 1-1/2" diameters		12	2		9.80	94		103.80	153
4244 3" x 2" diameters		12	2		11.75	94		105.75	155
4246 4" x 2" diameters		9	2.667		26.50	125		151.50	218
4248 4" x 3" diameters		9	2.667		30	125		155	222
4300 Couplings, 1/2" CTS diameter		15	1.600		1.86	75		76.86	115
4305 1/2" diameter		14.25	1.684		1.79	79		80.79	121
4310 3/4" diameter		14.25	1.684		2.25	79		81.25	121
4315 1" CTS diameter		14	1.714		3.08	80.50		83.58	124
4320 1" diameter		13.50	1.778		2.28	83.50		85.78	129
4325 1-1/4" diameter		13.50	1.778		2.34	83.50		85.84	129
4330 1-1/2" diameter		12.75	1.882		2.65	88.50		91.15	136

33 52 Hydrocarbon Transmission and Distribution

33 52 16 – Gas Hydrocarbon Piping

33 52 16.23	Medium Density Polyethylene Piping	Crew	Daily	Labor-	Unit	Material	2020 Bare Costs			Total	Total
			Output	Hours			Labor	Equipment	Total		
4335	2" diameter	B-20	12	2	Ea.	2.86	94		96.86	145	
4340	3" diameter			12	2	19.25	94		113.25	163	
4345	4" diameter			9	2.667	35.50	125		160.50	228	
4400	Elbows, 90°, 1/2" CTS diameter			15	1.600	3.41	75		78.41	117	
4405	1/2" diameter			14.25	1.684	3.42	79		82.42	123	
4410	3/4" diameter			14.25	1.684	4.07	79		83.07	123	
4415	1" CTS diameter			14	1.714	3.37	80.50		83.87	125	
4420	1" diameter			13.50	1.778	3.57	83.50		87.07	130	
4425	1-1/4" diameter			13.50	1.778	4.04	83.50		87.54	130	
4430	1-1/2" diameter			12.75	1.882	6.80	88.50		95.30	141	
4435	2" diameter			12	2	7.40	94		101.40	150	
4440	3" diameter			12	2	25	94		119	170	
4445	4" diameter			9	2.667	71.50	125		196.50	268	
4460	45°, 1" diameter			13.50	1.778	7	83.50		90.50	134	
4465	2" diameter			12	2	9.45	94		103.45	152	
4500	Tees, 1/2" CTS diameter			10	2.400	3.26	113		116.26	174	
4505	1/2" diameter			9.50	2.526	3.07	119		122.07	182	
4510	3/4" diameter			9.50	2.526	3.89	119		122.89	183	
4515	1" CTS diameter			9.33	2.571	3.81	121		124.81	186	
4520	1" diameter			9	2.667	4.55	125		129.55	194	
4525	1-1/4" diameter			9	2.667	5.20	125		130.20	195	
4530	1-1/2" diameter			8.50	2.824	8.95	133		141.95	210	
4535	2" diameter			8	3	10.45	141		151.45	223	
4540	3" diameter			8	3	38	141		179	254	
4545	4" diameter			6	4	74.50	188		262.50	365	
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.	14.95	66.50		81.45	116	
4604	1-1/4" x 1/2" outlet		17	1.412		14.95	66.50		81.45	116	
4606	1-1/4" x 3/4" outlet		17	1.412		14.95	66.50		81.45	116	
4608	1-1/4" x 1" CTS outlet		17	1.412		15.55	66.50		82.05	117	
4610	1-1/4" x 1" outlet		17	1.412		15.55	66.50		82.05	117	
4612	1-1/4" x 1-1/4" outlet		16	1.500		22	70.50		92.50	130	
4614	1-1/2" x 1/2" CTS outlet		16	1.500		11.95	70.50		82.45	119	
4616	1-1/2" x 1/2" outlet		16	1.500		11.95	70.50		82.45	119	
4618	1-1/2" x 3/4" outlet		16	1.500		11.95	70.50		82.45	119	
4620	1-1/2" x 1" CTS outlet		16	1.500		13.05	70.50		83.55	120	
4622	1-1/2" x 1" outlet		16	1.500		13.05	70.50		83.55	120	
4624	1-1/2" x 1-1/4" outlet		15	1.600		22	75		97	137	
4626	2" x 1/2" CTS outlet		12	2		14	94		108	157	
4628	2" x 1/2" outlet		12	2		14	94		108	157	
4630	2" x 3/4" outlet		12	2		14	94		108	157	
4632	2" x 1" CTS outlet		12	2		14.60	94		108.60	158	
4634	2" x 1" outlet		12	2		14.60	94		108.60	158	
4636	2" x 1-1/4" outlet		11	2.182		22.50	103		125.50	180	
4638	3" x 1/2" CTS outlet		12	2		14.50	94		108.50	158	
4640	3" x 1/2" outlet		12	2		14.50	94		108.50	158	
4642	3" x 3/4" outlet		12	2		14.50	94		108.50	158	
4644	3" x 1" CTS outlet		12	2		15.55	94		109.55	159	
4646	3" x 1" outlet		12	2		15.10	94		109.10	159	
4648	3" x 1-1/4" outlet		11	2.182		23.50	103		126.50	181	
4650	4" x 1/2" CTS outlet		10	2.400		12.05	113		125.05	183	
4652	4" x 1/2" outlet		10	2.400		12.05	113		125.05	183	

33 52 Hydrocarbon Transmission and Distribution

33 52 16 – Gas Hydrocarbon Piping

33 52 16.23 Medium Density Polyethylene Piping	Crew	Daily Output	Labor Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
					Material	Labor	Equipment		
4654 4" x 3/4" outlet	B-20	10	2.400	Ea.	12.05	113		125.05	183
4656 4" x 1" CTS outlet		10	2.400		13.15	113		126.15	184
4658 4" x 1" outlet		10	2.400		17.50	113		130.50	189
4660 4" x 1-1/4" outlet		9	2.667		25.50	125		150.50	218
4685 For protective sleeves, 1/2" CTS to 3/4" diameter outlets, add					.86			.86	.95
4690 1" CTS & IPS diameter outlets, add					1.45			1.45	1.60
4695 1-1/4" diameter outlets, add					2.49			2.49	2.74
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.	111	103		214	277
4710 1-7/8" punch, 3" x 1-1/4" outlet		11	2.182		111	103		214	277
4715 4" x 1-1/4" outlet		9	2.667		111	125		236	310
4750 For protective sleeves, add					2.92			2.92	3.21
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.	3.73	66.50		70.23	104
4804 1-1/4" x 1/2" outlet		17	1.412		3.73	66.50		70.23	104
4806 1-1/4" x 3/4" outlet		17	1.412		3.73	66.50		70.23	104
4808 1-1/4" x 1" CTS outlet		17	1.412		6.15	66.50		72.65	107
4810 1-1/4" x 1" outlet		17	1.412		6.15	66.50		72.65	107
4812 1-1/4" x 1-1/4" outlet		16	1.500		9.80	70.50		80.30	117
4814 1-1/2" x 1/2" CTS outlet		16	1.500		3.70	70.50		74.20	110
4816 1-1/2" x 1/2" outlet		16	1.500		3.70	70.50		74.20	110
4818 1-1/2" x 3/4" outlet		16	1.500		3.70	70.50		74.20	110
4820 1-1/2" x 1-1/4" outlet		15	1.600		9.80	75		84.80	124
4822 2" x 1/2" CTS outlet		12	2		3.73	94		97.73	146
4824 2" x 1/2" outlet		12	2		3.73	94		97.73	146
4826 2" x 3/4" outlet		12	2		3.73	94		97.73	146
4828 2" x 1" CTS outlet		12	2		6.15	94		100.15	149
4830 2" x 1" outlet		12	2		6.15	94		100.15	149
4832 2" x 1-1/4" outlet		11	2.182		9.80	103		112.80	166
4834 3" x 1/2" CTS outlet		12	2		3.70	94		97.70	146
4836 3" x 1/2" outlet		12	2		3.70	94		97.70	146
4838 3" x 3/4" outlet		12	2		3.73	94		97.73	146
4840 3" x 1" CTS outlet		12	2		6.10	94		100.10	149
4842 3" x 1" outlet		12	2		6.15	94		100.15	149
4844 3" x 1-1/4" outlet		11	2.182		9.90	103		112.90	166
4846 4" x 1/2" CTS outlet		10	2.400		3.70	113		116.70	174
4848 4" x 1/2" outlet		10	2.400		3.70	113		116.70	174
4850 4" x 3/4" outlet		10	2.400		3.73	113		116.73	174
4852 4" x 1" CTS outlet		10	2.400		6.10	113		119.10	177
4854 4" x 1" outlet		10	2.400		6.15	113		119.15	177
4856 4" x 1-1/4" outlet		9	2.667		9.90	125		134.90	200
4885 For protective sleeves, 1/2" CTS to 3/4" diameter outlets, add					.86			.86	.95
4890 1" CTS & IPS diameter outlets, add					1.45			1.45	1.60
4895 1-1/4" diameter outlets, add					2.49			2.49	2.74
4900 Spigot fittings, tees, SDR 7, 1/2" CTS diameter	B-20	10	2.400		25.50	113		138.50	198
4901 SDR 9.3, 1/2" diameter		9.50	2.526		11.30	119		130.30	191
4902 SDR 10, 1-1/4" diameter		9	2.667		11.30	125		136.30	201
4903 SDR 11, 3/4" diameter		9.50	2.526		23.50	119		142.50	205
4904 2" diameter		8	3		21.50	141		162.50	236
4906 SDR 11.5, 1" CTS diameter		9.33	2.571		60	121		181	248
4907 3" diameter		8	3		61	141		202	279
4908 4" diameter		6	4		157	188		345	455

33 52 Hydrocarbon Transmission and Distribution

33 52 16 – Gas Hydrocarbon Piping

	Description	Crew	Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl Q&P
						Material	Labor	Equipment		
33 52 16.23	Medium Density Polyethylene Piping									
4921	90° elbows, SDR 7, 1/2" CTS diameter	B-20	15	1.600	Ea.	13.45	75		88.45	128
4922	SDR 9.3, 1/2" diameter		14.25	1.684		5.80	79		84.80	125
4923	SDR 10, 1-1/4" diameter		13.50	1.778		5.90	83.50		89.40	133
4924	SDR 11, 3/4" diameter		14.25	1.684		6.60	79		85.60	126
4925	2" diameter			12	2	25	94		119	170
4927	SDR 11.5, 1" CTS diameter			14	1.714	33	80.50		113.50	158
4928	3" diameter			12	2	56.50	94		150.50	204
4929	4" diameter			9	2.667	121	125		246	320
4935	Caps, SDR 7, 1/2" CTS diameter		30	.800		4.46	37.50		41.96	61.50
4936	SDR 9.3, 1/2" diameter		28.50	.842		4.46	39.50		43.96	64.50
4937	SDR 10, 1-1/4" diameter		27	.889		4.65	42		46.65	68
4938	SDR 11, 3/4" diameter		28.50	.842		4.77	39.50		44.27	65
4939	1" diameter		27	.889		5.30	42		47.30	69
4940	2" diameter		24	1		5.70	47		52.70	77.50
4942	SDR 11.5, 1" CTS diameter		28	.857		18.70	40.50		59.20	81
4943	3" diameter		24	1		30.50	47		77.50	105
4944	4" diameter		18	1.333		29	62.50		91.50	127
4946	SDR 13.5, 4" diameter		18	1.333		73.50	62.50		136	175
4950	Reducers, SDR 10 x SDR 11, 1-1/4" x 3/4" diameters		13.50	1.778		15.25	83.50		98.75	143
4951	1-1/4" x 1" diameters		13.50	1.778		15.25	83.50		98.75	143
4952	SDR 10 x SDR 11.5, 1-1/4" x 1" CTS diameters		13.50	1.778		15.25	83.50		98.75	143
4953	SDR 11 x SDR 7, 3/4" x 1/2" CTS diameters		14.25	1.684		6.80	79		85.80	127
4954	SDR 11 x SDR 9.3, 3/4" x 1/2" diameters		14.25	1.684		6.80	79		85.80	127
4955	SDR 11 x SDR 10, 2" x 1-1/4" diameters		12	2		15.80	94		109.80	159
4956	SDR 11 x SDR 11, 1" x 3/4" diameters		13.50	1.778		7.85	83.50		91.35	135
4957	2" x 3/4" diameters		12	2		15.60	94		109.60	159
4958	2" x 1" diameters		12	2		15.70	94		109.70	159
4959	SDR 11 x SDR 11.5, 1" x 1" CTS diameters		13.50	1.778		8	83.50		91.50	135
4960	2" x 1" CTS diameters		12	2		15.60	94		109.60	159
4962	SDR 11.5 x SDR 11, 3" x 2" diameters		12	2		21	94		115	165
4963	4" x 2" diameters		9	2.667		32	125		157	224
4964	SDR 11.5 x SDR 11.5, 4" x 3" diameters		9	2.667		34.50	125		159.50	227
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.	12.85	18.80		31.65	42.50
6104	SDR 9.3, 1/2" IPS diameter		58	.414		23	19.45		42.45	55
6106	SDR 10, 1/2" CTS diameter		60	.400		11.35	18.80		30.15	41
6108	1-1/4" IPS diameter		54	.444		74.50	21		95.50	114
6110	SDR 11, 3/4" IPS diameter		58	.414		20	19.45		39.45	51.50
6112	1" IPS diameter		54	.444		32.50	21		53.50	67
6114	1-1/4" IPS diameter		54	.444		78	21		99	118
6116	1-1/2" IPS diameter		52	.462		98.50	21.50		120	141
6118	2" IPS diameter		50	.480		86	22.50		108.50	129
6120	SDR 11.5, 1" CTS diameter		56	.429		21	20		41	53.50
6122	SDR 12.5, 1" CTS diameter		56	.429		24	20		44	57
6202	Reducers, SDR 7 x SDR 10, 1/2" CTS x 1/2" CTS diameters		30	.800		17.35	37.50		54.85	75.50
6204	SDR 9.3 x SDR 7, 1/2" IPS x 1/2" CTS diameters		29	.828		51.50	39		90.50	115
6206	SDR 11 x SDR 7, 3/4" IPS x 1/2" CTS diameters		29	.828		51.50	39		90.50	115
6208	1" IPS x 1/2" CTS diameters		27	.889		60	42		102	129
6210	SDR 11 x SDR 9.3, 3/4" IPS x 1/2" IPS diameters		29	.828		50	39		89	114
6212	1" IPS x 1/2" IPS diameters		27	.889		64.50	42		106.50	134
6214	SDR 11 x SDR 10, 2" IPS x 1-1/4" IPS diameters		25	.960		95.50	45		140.50	173
6216	SDR 11 x SDR 11, 1" IPS x 3/4" IPS diameters		27	.889		60	42		102	129

33 52 Hydrocarbon Transmission and Distribution

33 52 16 – Gas Hydrocarbon Piping

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
						Labor	Equipment	Total		
33 52 16.23 Medium Density Polyethylene Piping										
6218	1-1/4" IPS x 1" IPS diameters	B-20	.27	.889	Ea.	58.50	42	100.50	128	
6220	2" IPS x 1-1/4" IPS diameters		.25	.960		95.50	45	140.50	173	
6222	SDR 11 x SDR 11.5, 1" IPS x 1" CTS diameters		.27	.889		46	42	88	114	
6224	SDR 11 x SDR 12.5, 1" IPS x 1" CTS diameters		.27	.889		56	42	98	125	
6226	SDR 11.5 x SDR 7, 1" CTS x 1/2" CTS diameters		.28	.857		34	40.50	74.50	98	
6228	SDR 11.5 x SDR 9.3, 1" CTS x 1/2" IPS diameters		.28	.857		39.50	40.50	80	104	
6230	SDR 11.5 x SDR 11, 1" CTS x 3/4" IPS diameters		.28	.857		55	40.50	95.50	121	
6232	SDR 12.5 x SDR 7, 1" CTS x 1/2" CTS diameters		.28	.857		36	40.50	76.50	100	
6234	SDR 12.5 x SDR 9.3, 1" CTS x 1/2" IPS diameters		.28	.857		40.50	40.50	81	105	
6236	SDR 12.5 x SDR 11, 1" CTS x 3/4" IPS diameters		.28	.857		34.50	40.50	75	98.50	
6302	Couplings, SDR 7, 1/2" CTS diameter		.30	.800		13.10	37.50	50.60	71	
6304	SDR 9.3, 1/2" IPS diameter		.29	.828		23.50	39	62.50	84.50	
6306	SDR 10, 1/2" CTS diameter		.30	.800		12.40	37.50	49.90	70	
6308	SDR 11, 3/4" IPS diameter		.29	.828		24	39	63	84.50	
6310	1" IPS diameter		.27	.889		32.50	42	74.50	99	
6312	SDR 11.5, 1" CTS diameter		.28	.857		25	40.50	65.50	88.50	
6314	SDR 12.5, 1" CTS diameter		.28	.857		28	40.50	68.50	91	
6402	Repair couplings, SDR 10, 1-1/4" IPS diameter		.27	.889		71.50	42	113.50	142	
6404	SDR 11, 1-1/4" IPS diameter		.27	.889		76	42	118	147	
6406	1-1/2" IPS diameter		.26	.923		81.50	43.50	125	155	
6408	2" IPS diameter		.25	.960		95	45	140	172	
6502	Elbows, 90°, SDR 7, 1/2" CTS diameter		.30	.800		22.50	37.50	60	81.50	
6504	SDR 9.3, 1/2" IPS diameter		.29	.828		41.50	39	80.50	104	
6506	SDR 10, 1-1/4" IPS diameter		.27	.889		102	42	144	175	
6508	SDR 11, 3/4" IPS diameter		.29	.828		37.50	39	76.50	99.50	
6510	1" IPS diameter		.27	.889		35	42	77	102	
6512	1-1/4" IPS diameter		.27	.889		101	42	143	174	
6514	1-1/2" IPS diameter		.26	.923		151	43.50	194.50	232	
6516	2" IPS diameter		.25	.960		124	45	169	205	
6518	SDR 11.5, 1" CTS diameter		.28	.857		37	40.50	77.50	101	
6520	SDR 12.5, 1" CTS diameter		.28	.857		53.50	40.50	94	120	
6602	Tees, SDR 7, 1/2" CTS diameter		.20	1.200		42	56.50	98.50	131	
6604	SDR 9.3, 1/2" IPS diameter		19.33	1.241		46	58.50	104.50	139	
6606	SDR 10, 1-1/4" IPS diameter		.18	1.333		127	62.50	189.50	235	
6608	SDR 11, 3/4" IPS diameter		19.33	1.241		58.50	58.50	117	153	
6610	1" IPS diameter			18	1.333		64.50	62.50	127	165
6612	1-1/4" IPS diameter			18	1.333		107	62.50	169.50	213
6614	1-1/2" IPS diameter			17.33	1.385		224	65	289	345
6616	2" IPS diameter			16.67	1.440		143	67.50	210.50	260
6618	SDR 11.5, 1" CTS diameter				18.67	1.286	59	60.50	119.50	156
6620	SDR 12.5, 1" CTS diameter				18.67	1.286	59	60.50	119.50	156
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.	5.45	27.50	32.95	47.50	
8120	For tapping tees, socket outlets, CTS, 1/2" diameter		18	.444		1.42	24.50	25.92	38.50	
8122	1" diameter		18	.444		2.51	24.50	27.01	40	
8124	IPS, 1/2" diameter		18	.444		1.96	24.50	26.46	39	
8126	3/4" diameter		18	.444		2.51	24.50	27.01	40	
8128	1" diameter		18	.444		3.42	24.50	27.92	41	
8130	1-1/4" diameter		18	.444		4.31	24.50	28.81	41.50	
8205	Tapping tee test caps, type I, yellow PE cap, "oldy style"		45	.178		44	9.75	53.75	63.50	
8210	Type II, yellow polyethylene cap		45	.178		44	9.75	53.75	63.50	
8215	High volume, yellow polyethylene cap		45	.178		56.50	9.75	66.25	77.50	

33 52 Hydrocarbon Transmission and Distribution

33 52 16 – Gas Hydrocarbon Piping

33 52 16.23	Medium Density Polyethylene Piping		Daily	Labor-	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
			Output	Hours			Labor	Equipment	Total		
8250	Quick connector, female x female inlets, 1/4" N.P.T.		1 Skwk	.50	.160	Ea.	18.45	8.80	27.25	34	
8255	Test hose, 24" length, 3/8" ID, male outlets, 1/4" N.P.T.			.50	.160		25	8.80	33.80	41	
8260	Quick connector and test hose assembly				.160		43.50	8.80	52.30	61.50	
8305	Purge point caps, butt fusion, SDR 10, 1-1/4" diameter	B-22C	27	.593		32	28.50	5.80	66.30	85	
8310	SDR 11, 1-1/4" diameter			.593		32	28.50	5.80	66.30	85	
8315	2" diameter			.667		32.50	32.50	6.50	71.50	91	
8320	3" diameter			.667		46	32.50	6.50	85	106	
8325	4" diameter			.889		45	43	8.65	96.65	124	
8340	Socket fusion, SDR 11, 1-1/4" diameter			.593		8.20	28.50	5.80	42.50	59	
8345	2" diameter			.667		9.85	32.50	6.50	48.85	66.50	
8350	3" diameter			.667		60.50	32.50	6.50	99.50	122	
8355	4" diameter			.889		44.50	43	8.65	96.15	124	
8360	Purge test quick connector, female x female inlets, 1/4" N.P.T.	1 Skwk	.50	.160		18.45	8.80		27.25	34	
8365	Purge test hose, 24" length, 3/8" ID, male outlets, 1/4" N.P.T.			.50	.160		25	8.80	33.80	41	
8370	Purge test quick connector and test hose assembly			.160		43.50	8.80		52.30	61.50	
8405	Transition fittings, MDPE x zinc plated steel, SDR 7, 1/2" CTS x 1/2" MPT	B-22C	30	.533		25	26	5.20	56.20	72	
8410	SDR 9.3, 1/2" IPS x 3/4" MPT			.561		39.50	27	5.45	71.95	90.50	
8415	SDR 10, 1-1/4" IPS x 1-1/4" MPT			.593		37.50	28.50	5.80	71.80	91	
8420	SDR 11, 3/4" IPS x 3/4" MPT			.561		20	27	5.45	52.45	69	
8425	1" IPS x 1" MPT			.593		24.50	28.50	5.80	58.80	77	
8430	1-1/4" IPS x 1-1/4" MPT			.941		46	45.50	9.20	100.70	130	
8435	1-1/2" IPS x 1-1/2" MPT			.627		47	30.50	6.10	83.60	104	
8440	2" IPS x 2" MPT			.667		53.50	32.50	6.50	92.50	115	
8445	SDR 11.5, 1" CTS x 1" MPT			.571		33	27.50	5.55	66.05	84.50	

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.	.13	.38	.08	.59	.79	
2210	160psi coils, butt fusion joint @ 100', IPS 1/2" diameter, SDR 9			.1950	.008		.18	.40	.08	.66	.89
2215	3/4" diameter, SDR 11			.1950	.008		.26	.40	.08	.74	.98
2220	1" diameter, SDR 11			.1850	.009		.42	.42	.08	.92	1.18
2225	1-1/4" diameter, SDR 11			.1850	.009		.62	.42	.08	1.12	1.40
2230	1-1/2" diameter, SDR 11			.1750	.009		1.17	.44	.09	1.70	2.06
2235	2" diameter, SDR 11			.1750	.009		.94	.44	.09	1.47	1.80
2240	3" diameter, SDR 11			.1650	.010		1.55	.47	.09	2.11	2.52
2245	160psi 40' lengths, butt fusion joint, IPS 3" diameter, SDR 11	B-22A	660	.061		1.69	2.94	1.22	5.85	7.60	
2250	4" diameter, SDR 11	"	500	.080	↓	2.78	3.88	1.61	8.27	10.70	
2400	Socket fused pipe										
2405	125psi coils, socket fusion coupling @ 100', 1/2" CTS diameter, SDR 7	B-20	1050	.023	L.F.	.15	1.07		1.22	1.79	
2410	160psi coils, socket fusion coupling @ 100', IPS 1/2" diameter, SDR 9			1000	.024		.20	1.13		1.33	1.92
2415	3/4" diameter, SDR 11			1000	.024		.28	1.13		1.41	2
2420	1" diameter, SDR 11			950	.025		.44	1.19		1.63	2.27
2425	1-1/4" diameter, SDR 11			950	.025		.64	1.19		1.83	2.50
2430	1-1/2" diameter, SDR 11			900	.027		1.19	1.25		2.44	3.20
2435	2" diameter, SDR 11			850	.028		.97	1.33		2.30	3.06
2440	3" diameter, SDR 11			850	.028		1.66	1.33		2.99	3.83
2445	160psi 40' lengths, socket fusion coupling, IPS 3" diameter, SDR 11	B-21A	340	.118		1.98	6.15	1.26	9.39	12.75	
2450	4" diameter, SDR 11	"	260	.154	↓	3.34	8.05	1.65	13.04	17.55	
2600	Compression coupled pipe										
2610	160psi coils, compression coupling @ 100', IPS 1/2" diameter, SDR 9	B-20	1000	.024	L.F.	.42	1.13		1.55	2.16	
2615	3/4" diameter, SDR 11			1000	.024		.50	1.13		1.63	2.25

33 52 Hydrocarbon Transmission and Distribution

33 52 16 – Gas Hydrocarbon Piping

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
						Labor	Equipment	Total		
33 52 16.26 High Density Polyethylene Piping										
2620	1" diameter, SDR 11	B-20	950	.025	L.F.	.75	1.19	1.94	2.61	
2625	1-1/4" diameter, SDR 11		950	.025		1.38	1.19	2.57	3.31	
2630	1-1/2" diameter, SDR 11		900	.027		1.99	1.25	3.24	4.07	
2635	2" diameter, SDR 11	↓	850	.028	↓	1.89	1.33	3.22	4.08	
3000	Fittings, butt fusion									
3010	SDR 11, IPS unless noted CTS									
3105	Caps, 1/2" diameter	B-22C	28.50	.561	ea.	6.60	27	5.45	39.05	54.50
3110	3/4" diameter		28.50	.561		3.53	27	5.45	35.98	51
3115	1" diameter		27	.593		3.62	28.50	5.80	37.92	54
3120	1-1/4" diameter		27	.593		4.79	28.50	5.80	39.09	55
3125	1-1/2" diameter		25.50	.627		4.42	30.50	6.10	41.02	57.50
3130	2" diameter		24	.667		4.73	32.50	6.50	43.73	61
3135	3" diameter		24	.667		7.15	32.50	6.50	46.15	63.50
3140	4" diameter		18	.889		15.05	43	8.65	66.70	91
3205	Reducers, 1/2" x 1/2" CTS diameters		14.25	1.123		12.25	54.50	10.95	77.70	108
3210	3/4" x 1/2" CTS diameters		14.25	1.123		8.80	54.50	10.95	74.25	104
3215	1" x 1/2" CTS diameters		13.50	1.185		13.65	57.50	11.55	82.70	114
3220	1" x 1/2" diameters		13.50	1.185		12.25	57.50	11.55	81.30	113
3225	1" x 3/4" diameters		13.50	1.185		10.65	57.50	11.55	79.70	111
3230	1-1/4" x 1" diameters		13.50	1.185		10.80	57.50	11.55	79.85	111
3232	1-1/2" x 3/4" diameters		12.75	1.255		7.80	61	12.25	81.05	114
3233	1-1/2" x 1" diameters		12.75	1.255		7.80	61	12.25	81.05	114
3234	1-1/2" x 1-1/4" diameters		12.75	1.255		7.80	61	12.25	81.05	114
3235	2" x 1" diameters		12	1.333		8.60	64.50	13	86.10	121
3240	2" x 1-1/4" diameters		12	1.333		8.20	64.50	13	85.70	121
3245	2" x 1-1/2" diameters		12	1.333		9.05	64.50	13	86.55	122
3250	3" x 2" diameters		12	1.333		10.40	64.50	13	87.90	123
3255	4" x 2" diameters		9	1.778		14.40	86	17.35	117.75	165
3260	4" x 3" diameters		9	1.778		15.40	86	17.35	118.75	166
3305	Elbows, 90°, 3/4" diameter		14.25	1.123		5.85	54.50	10.95	71.30	101
3310	1" diameter		13.50	1.185		5.95	57.50	11.55	75	106
3315	1-1/4" diameter		13.50	1.185		6.60	57.50	11.55	75.65	106
3320	1-1/2" diameter		12.75	1.255		7.90	61	12.25	81.15	114
3325	2" diameter		12	1.333		8.25	64.50	13	85.75	121
3330	3" diameter		12	1.333		16.25	64.50	13	93.75	130
3335	4" diameter		9	1.778		20.50	86	17.35	123.85	172
3380	45°, 3/4" diameter		14.25	1.123		6.70	54.50	10.95	72.15	101
3385	1" diameter		13.50	1.185		6.70	57.50	11.55	75.75	107
3390	1-1/4" diameter		13.50	1.185		6.90	57.50	11.55	75.95	107
3395	1-1/2" diameter		12.75	1.255		9	61	12.25	82.25	115
3400	2" diameter		12	1.333		9.95	64.50	13	87.45	123
3405	3" diameter		12	1.333		16.45	64.50	13	93.95	130
3410	4" diameter		9	1.778		20.50	86	17.35	123.85	172
3505	Tees, 1/2" CTS diameter		10	1.600		8.05	77.50	15.60	101.15	143
3510	1/2" diameter		9.50	1.684		8.90	81.50	16.40	106.80	151
3515	3/4" diameter		9.50	1.684		6.70	81.50	16.40	104.60	148
3520	1" diameter		9	1.778		7.25	86	17.35	110.60	157
3525	1-1/4" diameter		9	1.778		7.35	86	17.35	110.70	157
3530	1-1/2" diameter		8.50	1.882		12.65	91.50	18.35	122.50	172
3535	2" diameter		8	2		10	97	19.50	126.50	179
3540	3" diameter		8	2		17.85	97	19.50	134.35	187
3545	4" diameter	↓	6	2.667	↓	27	129	26	182	253
3600	Tapping tees, type II, 3/4" punch, butt fusion outlets									

33 52 Hydrocarbon Transmission and Distribution

33 52 16 – Gas Hydrocarbon Piping

33 52 16.26 High Density Polyethylene Piping		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
							Labor	Equipment	Total		
3601	Saddle contour x outlet diameter, IPS unless noted CTS										
3602	1-1/4" x 1/2" CTS outlet	B-22C	17	.941	Ea.	11.20	45.50	9.20	65.90	91.50	
3604	1-1/4" x 1/2" outlet		17	.941		11.20	45.50	9.20	65.90	91.50	
3606	1-1/4" x 3/4" outlet		17	.941		11.20	45.50	9.20	65.90	91.50	
3608	1-1/4" x 1" outlet		17	.941		13.05	45.50	9.20	67.75	93.50	
3610	1-1/4" x 1-1/4" outlet		16	1		23.50	48.50	9.75	81.75	109	
3612	1-1/2" x 1/2" CTS outlet		16	1		11.20	48.50	9.75	69.45	96	
3614	1-1/2" x 1/2" outlet		16	1		11.20	48.50	9.75	69.45	96	
3616	1-1/2" x 3/4" outlet		16	1		11.20	48.50	9.75	69.45	96	
3618	1-1/2" x 1" outlet		16	1		13.05	48.50	9.75	71.30	98	
3620	1-1/2" x 1-1/4" outlet		15	1.067		23.50	51.50	10.40	85.40	115	
3622	2" x 1/2" CTS outlet		12	1.333		11.20	64.50	13	88.70	124	
3624	2" x 1/2" outlet		12	1.333		11.20	64.50	13	88.70	124	
3626	2" x 3/4" outlet		12	1.333		11.20	64.50	13	88.70	124	
3628	2" x 1" outlet		12	1.333		13.05	64.50	13	90.55	126	
3630	2" x 1-1/4" outlet		11	1.455		23.50	70.50	14.20	108.20	147	
3632	3" x 1/2" CTS outlet		12	1.333		11.20	64.50	13	88.70	124	
3634	3" x 1/2" outlet		12	1.333		11.20	64.50	13	88.70	124	
3636	3" x 3/4" outlet		12	1.333		11.20	64.50	13	88.70	124	
3638	3" x 1" outlet		12	1.333		13.15	64.50	13	90.65	126	
3640	3" x 1-1/4" outlet		11	1.455		23.50	70.50	14.20	108.20	148	
3642	4" x 1/2" CTS outlet		10	1.600		11.20	77.50	15.60	104.30	146	
3644	4" x 1/2" outlet		10	1.600		11.20	77.50	15.60	104.30	146	
3646	4" x 3/4" outlet		10	1.600		11.20	77.50	15.60	104.30	146	
3648	4" x 1" outlet		10	1.600		13.05	77.50	15.60	106.15	149	
3650	4" x 1-1/4" outlet		9	1.778		23.50	86	17.35	126.85	175	
3675	For protective sleeves, 1/2" to 3/4" diameter outlets, add					.86			.86	.95	
3680	1" diameter outlets, add					1.45			1.45	1.60	
3685	1-1/4" diameter outlets, add					2.49			2.49	2.74	
3700	Tapping tees, high volume, butt fusion outlets										
3705	1-1/2" punch, 2" x 2" outlet	B-22C	11	1.455	Ea.	110	70.50	14.20	194.70	243	
3710	1-7/8" punch, 3" x 2" outlet		11	1.455		110	70.50	14.20	194.70	243	
3715	4" x 2" outlet		9	1.778		110	86	17.35	213.35	270	
3750	For protective sleeves, add					2.92			2.92	3.21	
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.	6.65	45.50	9.20	61.35	86.50	
3804	1-1/4" x 1" outlet		16	1		6.65	48.50	9.75	64.90	91	
3806	1-1/4" x 1-1/4" outlet		16	1		6.95	48.50	9.75	65.20	91.50	
3808	1-1/2" x 3/4" outlet		16	1		6.65	48.50	9.75	64.90	91	
3810	1-1/2" x 1-1/4" outlet		15	1.067		6.95	51.50	10.40	68.85	97	
3812	2" x 3/4" outlet		12	1.333		6.65	64.50	13	84.15	119	
3814	2" x 1" outlet		11	1.455		6.65	70.50	14.20	91.35	129	
3816	2" x 1-1/4" outlet		11	1.455		6.95	70.50	14.20	91.65	129	
3818	3" x 3/4" outlet		12	1.333		6.65	64.50	13	84.15	119	
3820	3" x 1" outlet		11	1.455		6.65	70.50	14.20	91.35	129	
3822	3" x 1-1/4" outlet		11	1.455		6.95	70.50	14.20	91.65	129	
3824	4" x 3/4" outlet		10	1.600		6.65	77.50	15.60	99.75	141	
3826	4" x 1" outlet		9	1.778		6.65	86	17.35	110	156	
3828	4" x 1-1/4" outlet		9	1.778		6.95	86	17.35	110.30	157	
3880	For protective sleeves, 3/4" diameter outlets, add					.86			.86	.95	
3885	1" diameter outlets, add					1.45			1.45	1.60	
3890	1-1/4" diameter outlets, add					2.49			2.49	2.74	

33 52 Hydrocarbon Transmission and Distribution

33 52 16 – Gas Hydrocarbon Piping

		Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
						Labor	Equipment	Total		
33 52 16.26 High Density Polyethylene Piping										
3905	Branch saddles, contour x outlet, 2" x 2" outlet	B-22C	11	1.455	Ea.	18.75	70.50	14.20	103.45	142
3910	3" x 2" outlet		11	1.455		18.75	70.50	14.20	103.45	142
3915	3" x 3" outlet		11	1.455		25	70.50	14.20	109.70	149
3920	4" x 2" outlet		9	1.778		18.75	86	17.35	122.10	170
3925	4" x 3" outlet		9	1.778		25	86	17.35	128.35	177
3930	4" x 4" outlet		9	1.778		34.50	86	17.35	137.85	187
3980	Ball valves, full port, 3/4" diameter		14.25	1.123		59	54.50	10.95	124.45	159
3982	1" diameter		13.50	1.185		59	57.50	11.55	128.05	164
3984	1-1/4" diameter		13.50	1.185		59.50	57.50	11.55	128.55	165
3986	1-1/2" diameter		12.75	1.255		86.50	61	12.25	159.75	200
3988	2" diameter		12	1.333		135	64.50	13	212.50	261
3990	3" diameter		12	1.333		320	64.50	13	397.50	460
3992	4" diameter		9	1.778		420	86	17.35	523.35	610
4000	Fittings, socket fusion									
4010	SDR 11, IPS unless noted CTS									
4105	Caps, 1/2" CTS diameter	B-20	30	.800	Ea.	2.39	37.50		39.89	59
4110	1/2" diameter		28.50	.842		2.44	39.50		41.94	62
4115	3/4" diameter		28.50	.842		2.60	39.50		42.10	62.50
4120	1" diameter		27	.889		3.38	42		45.38	66.50
4125	1-1/4" diameter		27	.889		3.53	42		45.53	67
4130	1-1/2" diameter		25.50	.941		3.91	44.50		48.41	71
4135	2" diameter		24	1		4.01	47		51.01	75.50
4140	3" diameter		24	1		24.50	47		71.50	98
4145	4" diameter		18	1.333		41	62.50		103.50	140
4205	Reducers, 1/2" x 1/2" CTS diameters		14.25	1.684		6.05	79		85.05	126
4210	3/4" x 1/2" CTS diameters		14.25	1.684		6.15	79		85.15	126
4215	3/4" x 1/2" diameters		14.25	1.684		6.15	79		85.15	126
4220	1" x 1/2" CTS diameters		13.50	1.778		6	83.50		89.50	133
4225	1" x 1/2" diameters		13.50	1.778		6.35	83.50		89.85	133
4230	1" x 3/4" diameters		13.50	1.778		3.99	83.50		87.49	130
4235	1-1/4" x 1/2" CTS diameters		13.50	1.778		6	83.50		89.50	133
4240	1-1/4" x 3/4" diameters		13.50	1.778		6.60	83.50		90.10	133
4245	1-1/4" x 1" diameters		13.50	1.778		5.80	83.50		89.30	132
4250	1-1/2" x 3/4" diameters		12.75	1.882		8.30	88.50		96.80	142
4252	1-1/2" x 1" diameters		12.75	1.882		8.25	88.50		96.75	142
4255	1-1/2" x 1-1/4" diameters		12.75	1.882		8.45	88.50		96.95	142
4260	2" x 3/4" diameters		12	2		8.85	94		102.85	152
4265	2" x 1" diameters		12	2		9	94		103	152
4270	2" x 1-1/4" diameters		12	2		9.10	94		103.10	152
4275	3" x 2" diameters		12	2		12.15	94		106.15	155
4280	4" x 2" diameters		9	2.667		28	125		153	220
4285	4" x 3" diameters		9	2.667		26	125		151	218
4305	Couplings, 1/2" CTS diameter		15	1.600		2.02	75		77.02	115
4310	1/2" diameter		14.25	1.684		2.02	79		81.02	121
4315	3/4" diameter		14.25	1.684		1.54	79		80.54	121
4320	1" diameter		13.50	1.778		1.54	83.50		85.04	128
4325	1-1/4" diameter		13.50	1.778		2.22	83.50		85.72	128
4330	1-1/2" diameter		12.75	1.882		2.49	88.50		90.99	136
4335	2" diameter		12	2		2.59	94		96.59	145
4340	3" diameter		12	2		11.45	94		105.45	155
4345	4" diameter		9	2.667		22.50	125		147.50	214
4405	Elbows, 90°, 1/2" CTS diameter		15	1.600		3.46	75		78.46	117
4410	1/2" diameter		14.25	1.684		3.48	79		82.48	123

33 52 Hydrocarbon Transmission and Distribution

33 52 16 – Gas Hydrocarbon Piping

		Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
					Material	Labor	Equipment		
33 52 16.26 High Density Polyethylene Piping									
4415	3/4" diameter	B-20	14.25	1.684	Ea.	2.73	79	81.73	122
4420	1" diameter		13.50	1.778		3.36	83.50	86.86	130
4425	1-1/4" diameter		13.50	1.778		4.12	83.50	87.62	131
4430	1-1/2" diameter		12.75	1.882		6.85	88.50	95.35	141
4435	2" diameter		12	2		7	94	101	150
4440	3" diameter		12	2		25	94	119	170
4445	4" diameter		9	2.667		102	125	227	300
4450	45°, 3/4" diameter		14.25	1.684		7.05	79	86.05	127
4455	1" diameter		13.50	1.778		7.85	83.50	91.35	135
4460	1-1/4" diameter		13.50	1.778		6.60	83.50	90.10	133
4465	1-1/2" diameter		12.75	1.882		10.35	88.50	98.85	144
4470	2" diameter		12	2		7.70	94	101.70	150
4475	3" diameter		12	2		42.50	94	136.50	189
4480	4" diameter		9	2.667		55	125	180	250
4505	Tees, 1/2" CTS diameter		10	2.400		3.14	113	116.14	173
4510	1/2" diameter		9.50	2.526		2.95	119	121.95	182
4515	3/4" diameter		9.50	2.526		2.94	119	121.94	182
4520	1" diameter		9	2.667		3.62	125	128.62	193
4525	1-1/4" diameter		9	2.667		5.05	125	130.05	195
4530	1-1/2" diameter		8.50	2.824		8.45	133	141.45	209
4535	2" diameter		8	3		9.20	141	150.20	222
4540	3" diameter		8	3		37.50	141	178.50	253
4545	4" diameter		6	4		72.50	188	260.50	365
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.	11.25	66.50	77.75	112
4604	1-1/4" x 1/2" outlet		17	1.412		11.25	66.50	77.75	112
4606	1-1/4" x 3/4" outlet		17	1.412		11.25	66.50	77.75	112
4608	1-1/4" x 1" outlet		17	1.412		13.15	66.50	79.65	114
4610	1-1/4" x 1-1/4" outlet		16	1.500		23.50	70.50	94	132
4612	1-1/2" x 1/2" CTS outlet		16	1.500		11.25	70.50	81.75	118
4614	1-1/2" x 1/2" outlet		16	1.500		11.25	70.50	81.75	118
4616	1-1/2" x 3/4" outlet		16	1.500		11.25	70.50	81.75	118
4618	1-1/2" x 1" outlet		16	1.500		13.15	70.50	83.65	120
4620	1-1/2" x 1-1/4" outlet		15	1.600		23.50	75	98.50	139
4622	2" x 1/2" CTS outlet		12	2		11.25	94	105.25	154
4624	2" x 1/2" outlet		12	2		11.25	94	105.25	154
4626	2" x 3/4" outlet		12	2		11.25	94	105.25	154
4628	2" x 1" outlet		12	2		13.15	94	107.15	156
4630	2" x 1-1/4" outlet		11	2.182		23.50	103	126.50	181
4632	3" x 1/2" CTS outlet		12	2		11.25	94	105.25	154
4634	3" x 1/2" outlet		12	2		11.25	94	105.25	154
4636	3" x 3/4" outlet		12	2		11.25	94	105.25	154
4638	3" x 1" outlet		12	2		13.15	94	107.15	156
4640	3" x 1-1/4" outlet		11	2.182		23.50	103	126.50	181
4642	4" x 1/2" CTS outlet		10	2.400		11.25	113	124.25	182
4644	4" x 1/2" outlet		10	2.400		11.25	113	124.25	182
4646	4" x 3/4" outlet		10	2.400		11.25	113	124.25	182
4648	4" x 1" outlet		10	2.400		13.15	113	126.15	184
4650	4" x 1-1/4" outlet		9	2.667		23.50	125	148.50	215
4675	For protective sleeves, 1/2" to 3/4" diameter outlets, add					.86		.86	.95
4680	1" diameter outlets, add					1.45		1.45	1.60
4685	1-1/4" diameter outlets, add					2.49		2.49	2.74

33 52 Hydrocarbon Transmission and Distribution

33 52 16 – Gas Hydrocarbon Piping

33 52 16.26 High Density Polyethylene Piping	Crew	Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P
					Material	Labor	Equipment		
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.	111	103		214	277
4710 1-7/8" punch, 3" x 1-1/4" outlet		11	2.182		111	103		214	277
4715 4" x 1-1/4" outlet		9	2.667		111	125		236	310
4750 For protective sleeves, add					2.92			2.92	3.21
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.	5.95	66.50		72.45	107
4804 1-1/4" x 1/2" outlet		17	1.412		5.95	66.50		72.45	107
4806 1-1/4" x 3/4" outlet		17	1.412		5.95	66.50		72.45	107
4808 1-1/4" x 1" outlet		16	1.500		7	70.50		77.50	114
4810 1-1/4" x 1-1/4" outlet		16	1.500		9.90	70.50		80.40	117
4812 1-1/2" x 1/2" CTS outlet		16	1.500		5.95	70.50		76.45	113
4814 1-1/2" x 1/2" outlet		16	1.500		5.95	70.50		76.45	113
4816 1-1/2" x 3/4" outlet		16	1.500		5.95	70.50		76.45	113
4818 1-1/2" x 1-1/4" outlet		15	1.600		9.90	75		84.90	124
4820 2" x 1/2" CTS outlet		12	2		5.95	94		99.95	149
4822 2" x 1/2" outlet		12	2		5.95	94		99.95	149
4824 2" x 3/4" outlet		12	2		5.95	94		99.95	149
4826 2" x 1" outlet		11	2.182		7	103		110	163
4828 2" x 1-1/4" outlet		11	2.182		9.90	103		112.90	166
4830 3" x 1/2" CTS outlet		12	2		5.95	94		99.95	149
4832 3" x 1/2" outlet		12	2		5.95	94		99.95	149
4834 3" x 3/4" outlet		12	2		5.95	94		99.95	149
4836 3" x 1" outlet		11	2.182		7	103		110	163
4838 3" x 1-1/4" outlet		11	2.182		9.90	103		112.90	166
4840 4" x 1/2" CTS outlet		10	2.400		5.95	113		118.95	177
4842 4" x 1/2" outlet		10	2.400		5.95	113		118.95	177
4844 4" x 3/4" outlet		10	2.400		5.95	113		118.95	177
4846 4" x 1" outlet		9	2.667		7	125		132	197
4848 4" x 1-1/4" outlet		9	2.667		9.90	125		134.90	200
4880 For protective sleeves, 1/2" to 3/4" diameter outlets, add					.86			.86	.95
4885 1" diameter outlets, add					1.45			1.45	1.60
4890 1-1/4" diameter outlets, add					2.49			2.49	2.74
4900 Reducer tees, 1-1/4" x 3/4" x 3/4" diameters	B-20	9	2.667		7.35	125		132.35	197
4902 1-1/4" x 3/4" x 1" diameters		9	2.667		9.55	125		134.55	200
4904 1-1/4" x 3/4" x 1-1/4" diameters		9	2.667		9.55	125		134.55	200
4906 1-1/4" x 1" x 3/4" diameters		9	2.667		9.55	125		134.55	200
4908 1-1/4" x 1" x 1" diameters		9	2.667		7.60	125		132.60	197
4910 1-1/4" x 1" x 1-1/4" diameters		9	2.667		9.55	125		134.55	200
4912 1-1/4" x 1-1/4" x 3/4" diameters		9	2.667		7.20	125		132.20	197
4914 1-1/4" x 1-1/4" x 1" diameters		9	2.667		7.30	125		132.30	197
4916 1-1/2" x 3/4" x 3/4" diameters		8.50	2.824		12.15	133		145.15	213
4918 1-1/2" x 3/4" x 1" diameters		8.50	2.824		12.15	133		145.15	213
4920 1-1/2" x 3/4" x 1-1/4" diameters		8.50	2.824		12.15	133		145.15	213
4922 1-1/2" x 3/4" x 1-1/2" diameters		8.50	2.824		12.15	133		145.15	213
4924 1-1/2" x 1" x 3/4" diameters		8.50	2.824		12.15	133		145.15	213
4926 1-1/2" x 1" x 1" diameters		8.50	2.824		12.15	133		145.15	213
4928 1-1/2" x 1" x 1-1/4" diameters		8.50	2.824		12.15	133		145.15	213
4930 1-1/2" x 1" x 1-1/2" diameters		8.50	2.824		12.15	133		145.15	213
4932 1-1/2" x 1-1/4" x 3/4" diameters		8.50	2.824		10.15	133		143.15	211
4934 1-1/2" x 1-1/4" x 1" diameters		8.50	2.824		10.15	133		143.15	211
4936 1-1/2" x 1-1/4" x 1-1/4" diameters		8.50	2.824		10.15	133		143.15	211

33 52 Hydrocarbon Transmission and Distribution

33 52 16 – Gas Hydrocarbon Piping

33 52 16.26 High Density Polyethylene Piping	Crew	Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Incl O&P	
					Material	Labor	Equipment			
4938 1-1/2" x 1-1/4" x 1-1/2" diameters	B-20	8.50	2.824	Ed.	12.15	133		145.15	213	
4940 1-1/2" x 1-1/2" x 3/4" diameters		8.50	2.824		9.75	133		142.75	211	
4942 1-1/2" x 1-1/2" x 1" diameters		8.50	2.824		9.75	133		142.75	211	
4944 1-1/2" x 1-1/2" x 1-1/4" diameters		8.50	2.824		9.75	133		142.75	211	
4946 2" x 1-1/4" x 3/4" diameters		8	3		11	141		152	224	
4948 2" x 1-1/4" x 1" diameters		8	3		11	141		152	224	
4950 2" x 1-1/4" x 1-1/4" diameters		8	3		11.45	141		152.45	225	
4952 2" x 1-1/2" x 3/4" diameters		8	3		11	141		152	224	
4954 2" x 1-1/2" x 1" diameters		8	3		11	141		152	224	
4956 2" x 1-1/2" x 1-1/4" diameters		8	3		11	141		152	224	
4958 2" x 2" x 3/4" diameters		8	3		10.95	141		151.95	224	
4960 2" x 2" x 1" diameters		8	3		11.10	141		152.10	224	
4962 2" x 2" x 1-1/4" diameters		8	3		11.45	141		152.45	225	
8100 Fittings, accessories										
8105 SDR 11, IPS unless noted CTS										
8110 Flange adapters, 2" x 6" long		1 Skwk	32	.250	Ed.	14.55	13.70		28.25	36.50
8115 3" x 6" long			32	.250		17.65	13.70		31.35	40
8120 4" x 6" long			24	.333		22	18.30		40.30	51.50
8135 Backup flanges, 2" diameter			32	.250		19.55	13.70		33.25	42
8140 3" diameter			32	.250		26.50	13.70		40.20	49.50
8145 4" diameter			24	.333		51.50	18.30		69.80	84.50
8200 Tapping tees, test caps										
8205 Type II, yellow polyethylene cap		1 Skwk	45	.178	Ed.	44	9.75		53.75	63.50
8210 High volume, black polyethylene cap			45	.178		56.50	9.75		66.25	77.50
8215 Quick connector, female x female inlets, 1/4" N.P.T.			50	.160		18.45	8.80		27.25	34
8220 Test hose, 24" length, 3/8" ID, male outlets, 1/4" N.P.T.			50	.160		25	8.80		33.80	41
8225 Quick connector and test hose assembly			50	.160		43.50	8.80		52.30	61.50
8300 Threaded transition fittings										
8302 HDPE x MPT zinc plated steel, SDR 7, 1/2" CTS x 1/2" MPT	B-22C	30	.533	Ed.	31.50	26	5.20	62.70	79	
8304 SDR 9.3, 1/2" IPS x 3/4" MPT		28.50	.561		41.50	27	5.45	73.95	93	
8306 SDR 11, 3/4" IPS x 3/4" MPT		28.50	.561		20.50	27	5.45	52.95	69.50	
8308 1" IPS x 1" MPT		27	.593		26.50	28.50	5.80	60.80	79	
8310 1-1/4" IPS x 1-1/4" MPT		27	.593		42.50	28.50	5.80	76.80	97	
8312 1-1/2" IPS x 1-1/2" MPT		25.50	.627		49.50	30.50	6.10	86.10	107	
8314 2" IPS x 2" MPT		24	.667		56.50	32.50	6.50	95.50	118	
8322 HDPE x MPT 316 stainless steel, SDR 11, 3/4" IPS x 3/4" MPT		28.50	.561		27	27	5.45	59.45	77	
8324 1" IPS x 1" MPT		27	.593		28	28.50	5.80	62.30	81	
8326 1-1/4" IPS x 1-1/4" MPT		27	.593		34.50	28.50	5.80	68.80	88	
8328 2" IPS x 2" MPT		24	.667		40.50	32.50	6.50	79.50	100	
8330 3" IPS x 3" MPT		24	.667		82.50	32.50	6.50	121.50	147	
8332 4" IPS x 4" MPT		18	.889		113	43	8.65	164.65	200	
8342 HDPE x FPT 316 stainless steel, SDR 11, 3/4" IPS x 3/4" FPT		28.50	.561		35.50	27	5.45	67.95	86	
8344 1" IPS x 1" FPT		27	.593		47.50	28.50	5.80	81.80	102	
8346 1-1/4" IPS x 1-1/4" FPT		27	.593		76.50	28.50	5.80	110.80	134	
8348 1-1/2" IPS x 1-1/2" FPT		25.50	.627		72.50	30.50	6.10	109.10	132	
8350 2" IPS x 2" FPT		24	.667		96.50	32.50	6.50	135.50	162	
8352 3" IPS x 3" FPT		24	.667		187	32.50	6.50	226	262	
8354 4" IPS x 4" FPT		18	.889		269	43	8.65	320.65	370	
8362 HDPE x MPT epoxy carbon steel, SDR 11, 3/4" IPS x 3/4" MPT		28.50	.561		20.50	27	5.45	52.95	69.50	
8364 1" IPS x 1" MPT		27	.593		22.50	28.50	5.80	56.80	75	
8366 1-1/4" IPS x 1-1/4" MPT		27	.593		24	28.50	5.80	58.30	76.50	
8368 1-1/2" IPS x 1-1/2" MPT		25.50	.627		26	30.50	6.10	62.60	82	
8370 2" IPS x 2" MPT		24	.667		28.50	32.50	6.50	67.50	86.50	

33 52 Hydrocarbon Transmission and Distribution

33 52 16 – Gas Hydrocarbon Piping

33 52 16.26 High Density Polyethylene Piping	B-22C	Daily Output	Labor-Hours	Unit	2020 Bare Costs			Total	Total Ind O&P
					Material	Labor	Equipment		
8372 3" IPS x 3" MPT	B-22C	24	.667	Ea.	43.50	32.50	6.50	82.50	104
8374 4" IPS x 4" MPT		18	.889		59	43	8.65	110.65	140
8382 HDPE x FPT epoxy carbon steel, SDR 11, 3/4" IPS x 3/4" FPT		28.50	.561		25	27	5.45	57.45	74.50
8384 1" IPS x 1" FPT		27	.593		27	28.50	5.80	61.30	80
8386 1-1/4" IPS x 1-1/4" FPT		27	.593		58.50	28.50	5.80	92.80	114
8388 1-1/2" IPS x 1-1/2" FPT		25.50	.627		58.50	30.50	6.10	95.10	117
8390 2" IPS x 2" FPT		24	.667		63	32.50	6.50	102	125
8392 3" IPS x 3" FPT		24	.667		107	32.50	6.50	146	174
8394 4" IPS x 4" FPT		18	.889		134	43	8.65	185.65	222
8402 HDPE x MPT poly coated carbon steel, SDR 11, 1" IPS x 1" MPT		27	.593		22	28.50	5.80	56.30	74
8404 1-1/4" IPS x 1-1/4" MPT		27	.593		28.50	28.50	5.80	62.80	81.50
8406 1-1/2" IPS x 1-1/2" MPT		25.50	.627		34	30.50	6.10	70.60	90.50
8408 2" IPS x 2" MPT		24	.667		38.50	32.50	6.50	77.50	98
8410 3" IPS x 3" MPT		24	.667		75	32.50	6.50	114	138
8412 4" IPS x 4" MPT		18	.889		116	43	8.65	167.65	202
8602 Socket fused HDPE x MPT brass, SDR 11, 3/4" IPS x 3/4" MPT	B-20	28.50	.842		12	39.50		51.50	72.50
8604 1" IPS x 3/4" MPT		27	.889		14.50	42		56.50	79
8606 1" IPS x 1" MPT		27	.889		14	42		56	78.50
8608 1-1/4" IPS x 3/4" MPT		27	.889		15	42		57	79.50
8610 1-1/4" IPS x 1" MPT		27	.889		15	42		57	79.50
8612 1-1/4" IPS x 1-1/4" MPT		27	.889		21.50	42		63.50	86.50
8614 1-1/2" IPS x 1-1/2" MPT		25.50	.941		29.50	44.50		74	99
8616 2" IPS x 2" MPT		24	1		30	47		77	104
8618 Socket fused HDPE x FPT brass, SDR 11, 3/4" IPS x 3/4" FPT		28.50	.842		12	39.50		51.50	72.50
8620 1" IPS x 1/2" FPT		27	.889		12	42		54	76
8622 1" IPS x 3/4" FPT		27	.889		14.50	42		56.50	79
8624 1" IPS x 1" FPT		27	.889		14	42		56	78.50
8626 1-1/4" IPS x 3/4" FPT		27	.889		15	42		57	79.50
8628 1-1/4" IPS x 1" FPT		27	.889		14.50	42		56.50	79
8630 1-1/4" IPS x 1-1/4" FPT		27	.889		21.50	42		63.50	86.50
8632 1-1/2" IPS x 1-1/2" FPT		25.50	.941		30	44.50		74.50	99.50
8634 2" IPS x 1-1/2" FPT		24	1		30.50	47		77.50	105
8636 2" IPS x 2" FPT		24	1		32	47		79	106

33 71 Electrical Utility Transmission and Distribution

33 71 16 – Electrical Utility Poles

33 71 16.33 Wood Electrical Utility Poles

0010 WOOD ELECTRICAL UTILITY POLES

0011 Excludes excavation, backfill and cast-in-place concrete	R-3	3.10	6.452	Ea.	256	395	61	712	940
6200 Wood, class 3 Douglas Fir, penta-treated, 20'		2.60	7.692		320	470	72.50	862.50	1,125
6600 30'		2.30	8.696		630	530	82	1,242	1,575
7000 40'		1.70	11.765		900	720	111	1,731	2,175
7200 45'									
7400 Cross arms with hardware & insulators	1 Elec	2.50	3.200	Ea.	156	196		352	465
7600 4' long									
7800 5' long		2.40	3.333		168	205		373	490
8000 6' long		2.20	3.636		190	223		413	540

33 71 Electrical Utility Transmission and Distribution

33 71 19 – Electrical Underground Ducts and Manholes

33 71 19.17 Electric and Telephone Underground		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	Equipment	Total	Total Incl O&P
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.	545	510	79	1,134	1,450	
0800	3' x 3' x 3' deep		1.90	10.526		705	645	99.50	1,449.50	1,850	
1000	4' x 4' x 4' deep	↓	1.40	14.286	↓	1,600	875	135	2,610	3,200	
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.	3,000	1,300	290	4,590	5,550	
1600	6' x 8' x 7' deep		1.90	29.474		3,375	1,350	305	5,030	6,050	
1800	6' x 10' x 7' deep	↓	1.80	31.111	↓	3,775	1,425	325	5,525	6,650	
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	2.04			3.16	4.27
4600	2 @ 2" diameter		240	.067		2.23	4.09			6.32	8.55
4800	4 @ 2" diameter		120	.133		4.47	8.20			12.67	17.10
5000	2 @ 3" diameter		200	.080		3.24	4.91			8.15	10.85
5200	4 @ 3" diameter		100	.160		6.45	9.80			16.25	21.50
5400	2 @ 4" diameter		160	.100		3.72	6.15			9.87	13.25
5600	4 @ 4" diameter		80	.200		7.45	12.25			19.70	26.50
5800	6 @ 4" diameter		54	.296		11.15	18.20			29.35	39.50
6200	Rigid galvanized steel, 2 @ 2" diameter		180	.089		15.75	5.45			21.20	25.50
6400	4 @ 2" diameter		90	.178		31.50	10.90			42.40	51
6800	2 @ 3" diameter		100	.160		29	9.80			38.80	46
7000	4 @ 3" diameter		50	.320		57.50	19.65			77.15	92.50
7200	2 @ 4" diameter		70	.229		45.50	14			59.50	71
7400	4 @ 4" diameter		34	.471		91.50	29			120.50	143
7600	6 @ 4" diameter	↓	22	.727	↓	137	44.50			181.50	218

33 81 Communications Structures

33 81 13 – Communications Transmission Towers

33 81 13.10 Radio Towers

0010	RADIO TOWERS	2 Swk	1	16	Ea.	2,875	920			3,795	4,625
0020	Guyed, 50' H, 40 lb. section, 70 MPH basic wind speed										
0100	Wind load 90 MPH basic wind speed	"	1	16		3,325	920			4,245	5,100
0300	190' high, 40 lb. section, wind load 70 MPH basic wind speed	K-2	.33	72.727		9,575	4,000	2,475		16,050	19,400
0400	200' high, 70 lb. section, wind load 90 MPH basic wind speed		.33	72.727		15,100	4,000	2,475		21,575	25,500
0600	300' high, 70 lb. section, wind load 70 MPH basic wind speed		.20	120		24,900	6,575	4,100		35,575	42,100
0700	270' high, 90 lb. section, wind load 90 MPH basic wind speed		.20	120		28,100	6,575	4,100		38,775	45,600
0800	400' high, 100 lb. section, wind load 70 MPH basic wind speed		.14	171		37,600	9,400	5,850		52,850	62,500
0900	Self-supporting, 60' high, wind load 70 MPH basic wind speed		.80	30		4,750	1,650	1,025		7,425	8,900
0910	60' high, wind load 90 MPH basic wind speed		.45	53.333		5,575	2,925	1,825		10,325	12,700
1000	120' high, wind load 70 MPH basic wind speed		.40	60		10,100	3,300	2,050		15,450	18,500
1200	190' high, wind load 90 MPH basic wind speed		.20	120		29,000	6,575	4,100		39,675	46,500
2000	For states west of Rocky Mountains, add for shipping				↓		10%				

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 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 33 36
 1500 Relay rail " 16.40 16.40 18.05

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

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.	56	23.50	2.37	81.87	99.50
1700	L.C.L. lots		90	.533		59	23.50	2.37	84.87	103
1900	Heavy duty, 7" x 9" x 8'-6", C.L. lots		70	.686		61.50	30.50	3.05	95.05	117
2000	L.C.L. lots		70	.686		61.50	30.50	3.05	95.05	117

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.	3,375	575	57.50	4,007.50	4,625	
1300	Complete set of timbers, 3.7 MBF for #8 switch	"	1	48	Total	13,000	2,125	214	15,339	17,700	

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.	3,650	1,050	107	4,807	5,750
0100	Heavy duty		2	24		6,925	1,050	107	8,082	9,325
0200	Derails hand throw (sliding)		10	4.800		1,525	212	21.50	1,758.50	2,025
0300	Hand throw with standard timbers, open stand & target		8	6	↓	1,650	266	26.50	1,942.50	2,225
2400	Wheel stops, fixed		18	2.667	Pr.	920	118	11.85	1,049.85	1,225
2450	Hinged	↓	14	3.429	"	1,250	152	15.25	1,417.25	1,625

34 11 93.60 Track Material

0010	TRACK MATERIAL							
0020	Track bolts		Ea.	3.64		3.64		4
0100	Joint bars		Pr.	90		90		98.50
0200	Spikes		Ea.	2.37		2.37		2.61
0300	Tie plates		"	15		15		16.50

34 41 Roadway Signaling and Control Equipment

34 41 13 – Traffic Signals

34 41 13.10 Traffic Signals Systems		Daily Crew	Labor-Output	Hours	Unit	Material	2020 Labor	Bare 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	10,700	6,525	1,275	18,500	23,000
1100	Horizontal arm	R-11	.50	1,120	Signal	230	65.50	12.75	308.25	365
1110	Per linear foot of arm									
1200	Traffic signal	R-11	2.50	22,400	Signal	1,150	1,300	255	2,705	3,500
1210	Includes signal, bracket, sensor, and wiring									
1300	Pedestrian signals and callers	R-11	2.50	22,400	Signal	3,775	1,300	255	5,330	6,375
1310	Includes four signals with brackets and two call buttons									
1400	Controller, design, and underground conduit									
1410	Includes miscellaneous signage and adjacent surface work	R-11	.25	224	Signal	25,700	13,100	2,550	41,350	50,500

34 71 Roadway Construction

34 71 13 – Vehicle Barriers

34 71 13.17 Security Vehicle Barriers		B-11M	8	2	Ea.	555	99	29	683	790
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.	555	99	29	683	790
0200	48" diam. x 36" high		8	2		790	99	29	918	1,050
0300	53" diam. x 18" high		8	2		720	99	29	848	970
0400	72" diam. x 18" high with seats		8	2		1,975	99	29	2,103	2,350
0450	84" diam. x 36" high		8	2		2,075	99	29	2,203	2,475
0500	36" x 36" x 24" high square		8	2		460	99	29	588	685
0600	36" x 36" x 30" high square		8	2		580	99	29	708	815
0700	48" L x 24" W x 30" H rectangle		8	2		485	99	29	613	710
0800	72" L x 24" W x 30" H rectangle		8	2		580	99	29	708	815
0900	96" L x 24" W x 30" H rectangle		8	2		745	99	29	873	1,000
0950	Decorative geometric concrete barrier, 96" L x 24" W x 36" H		8	2		820	99	29	948	1,075
1000	Concrete security planter, filling with washed sand or gravel <1 C.Y.		8	2		34	99	29	162	217
1050	2 C.Y. or less		6	2.667		67.50	132	39	238.50	315
1200	Jersey concrete barrier, 10' L x 2' by 0.5' W x 30" H	B-21B	16	2.500		395	115	29.50	539.50	640
1300	10 or more same site		24	1.667		395	76.50	19.65	491.15	570
1400	10' L x 2' by 0.5' W x 32" H		16	2.500		820	115	29.50	964.50	1,100
1500	10 or more same site		24	1.667		820	76.50	19.65	916.15	1,025
1600	20' L x 2' by 0.5' W x 30" H		12	3.333		790	153	39.50	982.50	1,150
1700	10 or more same site		18	2.222		790	102	26	918	1,050
1800	20' L x 2' by 0.5' W x 32" H		12	3.333		695	153	39.50	887.50	1,050
1900	10 or more same site		18	2.222		695	102	26	823	945
2000	GFRC decorative security barrier per 10' section including concrete		4	10		3,625	460	118	4,203	4,825
2100	Per 12' section including concrete		4	10		4,350	460	118	4,928	5,625
2210	GFRC decorative security barrier will stop 30 MPH, 4,000 lb. vehicle		B-11C	4	4	Ea.	25	198	53.50	276.50
2300	High security barrier base prep per 12' section on bare ground		B-11C	4	4	Ea.	25	198	53.50	276.50
2310	GFRC barrier base prep does not include haulaway of excavated matl.		B-21B	3	13.333	Ea.	5,850	610	157	6,617
2400	GFRC decorative high security barrier per 12' section w/concrete		B-6	4	6	Ea.	2,275	274	53.50	2,602.50
2410	GFRC decorative high security barrier will stop 50 MPH, 15,000 lb. vehicle		"	4	6	"	2,750	274	53.50	3,077.50
2500	GFRC decorative impaler security barrier per 10' section w/prep		B-6	10	2.400	Ea.	865	110	21.50	996.50
2600	Per 12' section w/prep		"	4	6	"	2,750	274	53.50	3,500
2610	Impaler barrier should stop 50 MPH, 15,000 lb. vehicle w/some penetr.		B-6	10	2.400	Ea.	865	110	21.50	996.50
2700	Pipe bollards, steel, concrete filled/painted, 8' L x 4' D hole, 8" diam.		B-6	10	2.400	Ea.	865	110	21.50	1,150

34 71 Roadway Construction

34 71.13 – Vehicle Barriers

34 71 13.17 Security Vehicle Barriers		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Labor	Bare Costs	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	137	26.50	1,163.50	1,325
2900	Per 12' section excludes soil		8	3		1,225	137	26.50	1,388.50	1,550
3000	GFRC decorative 8" diameter bollard cover		12	2		390	91.50	17.80	499.30	585
3100	GFRC decorative barrier face 10' section excludes earth backing	↓	10	2.400	↓	980	110	21.50	1,111.50	1,275
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							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		B-80	850	.038	L.F.	27.50	1.75	1.20	30.45	34
0012	Corrugated stl., galv. stl. posts, 6'-3" OC									
0200	End sections, galvanized, flared		50	.640	Ea.	99	30	20.50	149.50	176
0300	Wrap around end		50	.640	"	141	30	20.50	191.50	223
0400	Timber guide rail, 4" x 8" with 6" x 8" wood posts, treated		960	.033	L.F.	13.45	1.55	1.06	16.06	18.25
0600	Cable guide rail, 3 at 3/4" cables, steel posts, single face		900	.036		11.75	1.66	1.13	14.54	16.70
0700	Wood posts		950	.034		13.30	1.57	1.07	15.94	18.15
0900	Guide rail, steel box beam, 6" x 6"		120	.267		37.50	12.45	8.50	58.45	69
1100	Median barrier, steel box beam, 6" x 8"	↓	215	.149		52	6.95	4.75	63.70	72.50
1400	Resilient guide fence and light shield, 6' high	B-2	130	.308		22	13.10		35.10	44
1500	Concrete posts, individual, 6'-5", triangular	B-80	110	.291	Ea.	71.50	13.55	9.30	94.35	110
1550	Square	"	110	.291	"	77	13.55	9.30	99.85	116
2000	Median, precast concrete, 3'-6" high, 2' wide, single face	B-29	380	.147	L.F.	60.50	6.80	2.23	69.53	79
2200	Double face	"	340	.165	"	69	7.60	2.49	79.09	90
2400	Speed bumps, thermoplastic, 10-1/2" x 2-1/4" x 48" long	B-2	120	.333	Ea.	112	14.15		126.15	145
3030	Impact barrier, MUTCD, barrel type	B-16	30	1.067	"	405	47.50	19.10	471.60	535

34 71 19 – Vehicle Delineators

34 71 19.13 Fixed Vehicle Delineators

0010 FIXED VEHICLE DELINEATORS		A-7	2000	.012	Ea.	.69	.02	.71	1.05	
0020	Crash barriers									
0100	Traffic channelizing pavement markers, layout only									
0110	13" x 7-1/2" x 2-1/2" high, non-plowable, install	2 Clob	96	.167		29.50	7		36.50	43
0200	8" x 8" x 3-1/4" high, non-plowable, install		96	.167		29	7		36	42.50
0230	4" x 4" x 3-1/4" high, non-plowable, install	↓	120	.133		2.68	5.60		8.28	11.40
0240	9-1/4" x 5-7/8" x 1-1/4" high, plowable, concrete pavmt.	A-2A	70	.343		4.78	15	4.40	24.18	32.50
0250	9-1/4" x 5-7/8" x 1-1/4" high, plowable, asphalt pavmt.	"	120	.200		3.93	8.75	2.56	15.24	20.50
0300	Barrier and curb delineators, reflectorized, 4" x 6"	2 Clob	150	.107		3.66	4.49		8.15	10.80
0310	3" x 5"	"	150	.107	↓	5	4.49		9.49	12.25
0500	Rumble strip, polycarbonate									
0510	24" x 3-1/2" x 1-1/2" high	2 Clob	50	.320	Ea.	10.25	13.45		23.70	31.50

34 72 Railway Construction

34 72 16 – Railway Siding

34 72 16.50 Railroad Sidings		R347216-10	Daily Crew	Labor-Output	Hours	Unit	Material	2020 Bare Labor	Costs Equipment	Total	Total Ind O&P
0010	RAILROAD SIDINGS										
0800	Siding, yard spur, level grade		B-14	.57	.842	L.F.	132	37.50	3.75	173.25	205
0820	100 lb. new rail										
1002	Steel ties in concrete, incl. fasteners & plates										
1020	100 lb. new rail		B-14 22 2.182 L.F.				193	96.50	9.70	299.20	370
34 72 16.60 Railroad Turnouts											
0010	RAILROAD TURNOUTS										
2200	Turnout, #8 complete, w/rails, plates, bars, frog, switch point, timbers, and ballast to 6" below bottom of ties										
2280	90 lb. rails		B-13	.25	224	Ea.	40,900	10,300	2,325	53,525	63,000
2290	90 lb. relay rails			.25	224		27,500	10,300	2,325	40,125	48,400
2300	100 lb. rails			.25	224		45,600	10,300	2,325	58,225	68,000
2310	100 lb. relay rails			.25	224		30,700	10,300	2,325	43,325	52,000
2320	110 lb. rails			.25	224		50,500	10,300	2,325	63,125	73,500
2330	110 lb. relay rails			.25	224		33,800	10,300	2,325	46,425	55,500
2340	115 lb. rails			.25	224		55,000	10,300	2,325	67,625	78,500
2350	115 lb. relay rails			.25	224		35,800	10,300	2,325	48,425	57,500
2360	132 lb. rails			.25	224		63,000	10,300	2,325	75,625	87,000
2370	132 lb. relay rails			.25	224		41,700	10,300	2,325	54,325	64,000

Division Notes

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

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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	Material	2020 Labor	Bare 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.		5.05	3.94	8.99	11.95
1100	Maximum		310	.155	"		7.50	5.85	13.35	17.70
1400	Into scows dumped 20 miles, minimum		425	.113	"		5.50	4.27	9.77	12.90
1500	Maximum		243	.198	"		9.60	7.45	17.05	22.50
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		B-8	.53	121	Total	5,900	5,475	11,375	14,800	
0015	Add, Marine Equipment Rental, See Section 01 54 33.80									
0020	Dredging mobilization and demobilization, add to below, minimum	B-57	310	.155	B.C.Y.		7.50	5.85	13.35	17.70
0100	Maximum	"	213	.225	"		10.95	8.50	19.45	26
0300	Barge mounted clamshell excavation into scows	B-57	310	.155	B.C.Y.		7.50	5.85	13.35	17.70
0310	Dumped 20 miles at sea, minimum									
0400	Maximum									
0500	Barge mounted dragline or clamshell, hopper dumped,	B-57	340	.141	B.C.Y.		6.85	5.35	12.20	16.10
0510	pumped 1,000' to shore dump, minimum									
0525	All pumping uses 2,000 gallons of water per cubic yard	B-57	243	.198	B.C.Y.		9.60	7.45	17.05	22.50
0600	Maximum									

35 51 Floating Construction

35 51 13 – Floating Piers

35 51 13.23 Floating Wood Piers

0010 FLOATING WOOD PIERS		F-3	330	.121	S.F.	30.50	6.60	1.43	38.53	45
0020	Polyethylene encased polystyrene, no pilings included		130	.308		29.50	16.75	3.62	49.87	61.50
0200	Pile supported, shore constructed, minimum		120	.333		32.50	18.10	3.93	54.53	67
0250	Maximum		250	.160		27.50	8.70	1.88	38.08	45.50
0400	Floating, small boat, prefab, no shore facilities, minimum		150	.267		59.50	14.50	3.14	77.14	91
0500	Maximum		1.59	25.157	Ea.	5,850	1,375	296	7,521	8,800
0700	Per slip, minimum (180 S.F. each)		1.40	28.571	"	9,100	1,550	335	10,985	12,700
0800	Maximum									

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		Daily Crew	Output	Labor-Hours	Unit	Material	2020 Bare Costs		Total	Incl O&P
0010	CONTAINER PIECE MATERIAL CONVEYORS						Labor	Equipment		
0020	Gravity fed, 2" rollers, 3" OC					Ea.	530		530	580
0050	10' sections with 2 supports, 600 lb. capacity, 18" wide									
0100	24" wide						595		595	655
0150	1,400 lb. capacity, 18" wide						705		705	775
0200	24" wide				↓		595		595	655
0350	Horizontal belt, center drive and takeup, 60 fpm									
0400	16" belt, 26.5' length	2 Mill	.50	32	Ea.	3,675	1,800		5,475	6,625
0450	24" belt, 41.5' length		.40	40		5,525	2,225		7,750	9,325
0500	61.5' length		.30	53.333	↓	7,700	2,975		10,675	12,800
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	2,975		10,900	13,000
0700	24" belt	"	.15	107	"	9,975	5,975		15,950	19,700
3600	Monorail, overhead, manual, channel type									
3700	125 lb./L.F.	1 Mill	.26	.308	L.F.	20	17.20		37.20	47
3900	500 lb./L.F.	"	.21	.381	"	19.60	21.50		41.10	52.50
4000	Trolleys for above, 2 wheel, 125 lb. capacity					Ea.	92		92	101
4200	4 wheel, 250 lb. capacity						405		405	445
4300	8 wheel, 500 lb. capacity					↓	805		805	885

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.	1.44	.55	.04	2.03	2.49
0200	Running track only, 104 lb. per yard		5600	.006	"	.72	.33	.03	1.08	1.34
0210	Running track only, 104 lb. per yard, 20' piece	↓	160	.200	L.F.	25	11.65	.92	37.57	47

41 22 13.13 Bridge Cranes

0010	BRIDGE CRANES									
0100	1 girder, 20' span, 3 ton	M-3	1	34	Ea.	28,000	2,200	146	30,346	34,200
0125	5 ton		1	34		30,900	2,200	146	33,246	37,300
0150	7.5 ton		1	34		36,400	2,200	146	38,746	43,500
0175	10 ton		.80	42.500		48,900	2,725	182	51,807	58,000
0176	12.5 ton		.80	42.500		58,500	2,725	182	61,407	69,000
0200	15 ton		.80	42.500		63,000	2,725	182	65,907	74,000
0225	30' span, 3 ton		1	34		29,200	2,200	146	31,546	35,500
0250	5 ton		1	34		32,200	2,200	146	34,546	38,900
0275	7.5 ton		1	34		38,300	2,200	146	40,646	45,600
0300	10 ton		.80	42.500		50,500	2,725	182	53,407	60,000
0325	15 ton	↓	.80	42.500		66,000	2,725	182	68,907	77,000
0350	2 girder, 40' span, 3 ton	M-4	.50	72		47,500	4,600	375	52,475	59,000
0375	5 ton		.50	72		49,800	4,600	375	54,775	62,000
0400	7.5 ton		.50	72		54,500	4,600	375	59,475	67,000
0425	10 ton		.40	90		52,000	5,750	470	58,220	66,500
0450	15 ton		.40	90		88,000	5,750	470	94,220	106,000
0475	25 ton		.30	120		103,000	7,650	630	111,280	125,000
0500	50' span, 3 ton		.50	72		51,500	4,600	375	56,475	64,000
0525	5 ton		.50	72		56,500	4,600	375	61,475	69,500
0550	7.5 ton		.50	72		61,000	4,600	375	65,975	74,000
0575	10 ton		.40	90		70,500	5,750	470	76,720	86,500
0600	15 ton	↓	.40	90	↓	92,000	5,750	470	98,220	110,500

41 22 Cranes and Hoists

41 22 13 – Cranes

41 22 13.13 Bridge Cranes	0625	25 ton	Daily	Labor-	Unit	2020 Bare Costs			Total Incl O&P		
			Crew	Output		Labor	Equipment	Total			
			M-4	.30	120	Ea.	108,000	7,650	630	116,280	130,500

41 22 13.19 Jib Cranes

0010 JIB CRANES	0020	Jib crane, wall cantilever, 500 lb. capacity, 8' span	2 Mill	1	16	Ea.	1,325	895	2,220	2,750	
	0040	12' span			1	16		1,450	895	2,345	2,900
	0060	16' span			1	16		1,700	895	2,595	3,150
	0080	20' span			1	16		2,025	895	2,920	3,525
	0100	1,000 lb. capacity, 8' span			1	16		1,425	895	2,320	2,850
	0120	12' span			1	16		1,550	895	2,445	3,000
	0130	16' span			1	16		2,150	895	3,045	3,650
	0150	20' span			1	16		2,400	895	3,295	3,925

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.	3,700		3,700	4,075
	1600	4,000 lb. capacity					5,075		5,075	5,575
	1800	Movable gantry type, 12' to 15' range, 2,000 lb. capacity					4,775		4,775	5,250
	1900	6,000 lb. capacity					7,450		7,450	8,200
	2100	Hoists, electric overhead, chain, hook hung, 15' lift, 1 ton cap.					2,825		2,825	3,100
	2200	3 ton capacity					3,800		3,800	4,200
	2500	5 ton capacity					8,350		8,350	9,200
	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.	25.50		25.50
	3100	5 ton, add					"	78.50		78.50
	3110	Air powered hoist, 500 lb. capacity	2 Mill	2.67	5.993	Ea.	4,025	335		4,360
	3300	Lifts, scissor type, portable, electric, 36" high, 2,000 lb.					3,875		3,875	4,250
	3400	48" high, 4,000 lb.					4,700		4,700	5,175

Division Notes

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.

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44 11 Particulate Control Equipment

44 11 16 – Fugitive Dust Barrier Systems

44 11 16.10 Dust Collection Systems			Daily Crew	Labor-Output	Unit	Material	2020 Labor	Bare 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.	4,850	475		5,325	6,050
0220	1,000 CFM, 10" inlet, 3 HP			2.20	9.091	5,100	520		5,620	6,375
0240	1,500 CFM, 10" inlet, 5 HP			2	10	5,775	570		6,345	7,250
0260	3,000 CFM, 13" inlet, 10 HP			1.50	13.333	16,100	760		16,860	18,900
0280	5,000 CFM, 16" inlet, 2 @ 10 HP			1	20	17,100	1,150		18,250	20,500
1000	Vacuum tubing, galvanized									
1100	2-1/8" OD, 16 ga.		Q-9	440	.036 L.F.	3.60	2.04		5.64	7.05
1110	2-1/2" OD, 16 ga.			420	.038	3.98	2.14		6.12	7.60
1120	3" OD, 16 ga.			400	.040	4.80	2.24		7.04	8.70
1130	3-1/2" OD, 16 ga.			380	.042	6.80	2.36		9.16	11.10
1140	4" OD, 16 ga.			360	.044	7.40	2.49		9.89	11.90
1150	5" OD, 14 ga.			320	.050	13.30	2.80		16.10	18.85
1160	6" OD, 14 ga.			280	.057	14.85	3.20		18.05	21
1170	8" OD, 14 ga.			200	.080	21.50	4.49		25.99	30.50
1180	10" OD, 12 ga.			160	.100	48.50	5.60		54.10	62
1190	12" OD, 12 ga.			120	.133	51.50	7.50		59	68
1200	14" OD, 12 ga.			80	.200	65	11.20		76.20	88.50
1940	Hose, flexible wire reinforced rubber									
1956	3" diam.		Q-9	400	.040 L.F.	6.90	2.24		9.14	10.95
1960	4" diam.			360	.044	8.10	2.49		10.59	12.70
1970	5" diam.			320	.050	10.05	2.80		12.85	15.30
1980	6" diam.			280	.057	10.70	3.20		13.90	16.60
2000	90° elbow, slip fit									
2110	2-1/8" diam.		Q-9	70	.229 Ea.	13.05	12.80		25.85	34
2120	2-1/2" diam.			65	.246	18.25	13.80		32.05	41
2130	3" diam.			60	.267	24.50	14.95		39.45	49.50
2140	3-1/2" diam.			55	.291	30.50	16.30		46.80	58
2150	4" diam.			50	.320	38	17.95		55.95	69
2160	5" diam.			45	.356	72	19.95		91.95	109
2170	6" diam.			40	.400	99	22.50		121.50	143
2180	8" diam.			30	.533	189	30		219	253
2400	45° elbow, slip fit									
2410	2-1/8" diam.		Q-9	70	.229 Ea.	11.45	12.80		24.25	32
2420	2-1/2" diam.			65	.246	16.85	13.80		30.65	39.50
2430	3" diam.			60	.267	20.50	14.95		35.45	45
2440	3-1/2" diam.			55	.291	25.50	16.30		41.80	52.50
2450	4" diam.			50	.320	33	17.95		50.95	63.50
2460	5" diam.			45	.356	56	19.95		75.95	91.50
2470	6" diam.			40	.400	75.50	22.50		98	117
2480	8" diam.			35	.457	148	25.50		173.50	202
2800	90° TY, slip fit thru 6" diam.									
2810	2-1/8" diam.		Q-9	42	.381 Ea.	21	21.50		42.50	56
2820	2-1/2" diam.			39	.410	27.50	23		50.50	65
2830	3" diam.			36	.444	36.50	25		61.50	78.50
2840	3-1/2" diam.			33	.485	46.50	27		73.50	92.50
2850	4" diam.			30	.533	45.50	30		75.50	95.50
2860	5" diam.			27	.593	74.50	33		107.50	133
2870	6" diam.			24	.667	111	37.50		148.50	179
2880	8" diam., butt end					180			180	198
2890	10" diam., butt end					565			565	625

44 11 Particulate Control Equipment

44 11 16 – Fugitive Dust Barrier Systems

44 11 16.10 Dust Collection Systems		Crew	Daily Output	Labor-Hours	Unit	Material	2020 Bare Costs			Total	Total Incl O&P
							Labor	Equipment	Total		
2900	12" diam., butt end				Ea.	565			565	625	
2910	14" diam., butt end					1,025			1,025	1,125	
2920	6" x 4" diam., butt end					127			127	140	
2930	8" x 4" diam., butt end					241			241	265	
2940	10" x 4" diam., butt end					315			315	350	
2950	12" x 4" diam., butt end					360			360	395	
3100	90° elbow, butt end, segmented										
3110	8" diam., butt end, segmented				Ea.	158			158	174	
3120	10" diam., butt end, segmented					470			470	515	
3130	12" diam., butt end, segmented					595			595	655	
3140	14" diam., butt end, segmented					745			745	820	
3200	45° elbow, butt end, segmented										
3210	8" diam., butt end, segmented				Ea.	148			148	163	
3220	10" diam., butt end, segmented					340			340	375	
3230	12" diam., butt end, segmented					345			345	380	
3240	14" diam., butt end, segmented					640			640	705	
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.	13.55	20.50	30.50	34.05	46	
3480	2-1/2" diam.		44	.364		13.55	20.50	30.50	34.05	46	
3490	3" diam.		38	.421		19.45	23.50	30.50	42.95	57.50	
3500	3-1/2" diam.		35	.457		22	25.50	30.50	47.50	63	
3510	4" diam.		33	.485		24	27	30.50	51	67	
3520	5" diam.		29	.552		27	31	30.50	58	77	
3530	6" diam.		26	.615		33	34.50	30.50	67.50	89	
3540	8" diam.		22	.727		57.50	41	30.50	98.50	125	
3550	10" diam.		20	.800		93.50	45	30.50	138.50	171	
3560	12" diam.		18	.889		115	50	30.50	165	202	
3570	14" diam.		16	1		150	56	30.50	206	250	
3800	Air gate valves, galvanized	Q-9	30	.533	Ea.	122	30	30.50	152	180	
3810	2-1/8" diam.		28	.571		133	32	30.50	165	195	
3820	2-1/2" diam.		26	.615		141	34.50	30.50	175.50	209	
3830	3" diam.		23	.696		164	39	30.50	203	239	
3840	4" diam.		18	.889		228	50	30.50	278	325	

Division Notes

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.

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46 07 Packaged Water and Wastewater Treatment Equipment

46 07 53 – Packaged Wastewater Treatment Equipment

		Daily Crew	Output	Labor- Hours	Unit	Material	2020 Labor	Bare Equipment	Total	Total Incl O&P
46 07 53.10 Biological Pkg. Wastewater Treatment Plants										
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					Gal.				
1010	10,000 GPD								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					Gal.				
1720	1.0 MGD								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	258	808	990
2100	For voltage converter, add		"	16	1		320	64.50	384.50	445
2200	For high level alarm, add		1 Plum	7.80	1.026		123	66	189	235

46 07 53.20 Wastewater Treatment System

0010	WASTEWATER TREATMENT SYSTEM	B-21	1.29	21.705	Ea.	4,450	1,050	147	5,647	6,650
0020	Fiberglass, 1,000 gallon	"	1.03	27.184	"	9,700	1,925	184	11,209	12,900
0100	1,500 gallon	"								

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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48 15 Wind Energy Electrical Power Generation Equipment

48 15 13 – Wind Turbines

48 15 13.50 Wind Turbines and Components		Crew	Daily Output	Labor Hours	Unit	Material	2020 Bare Costs	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.	1,800	239	2,039	2,325
3400	Mounting hardware									
3500	30' guyed tower kit	[G]	2 Clab	5.12	3.125	Ea.	415	132	547	655
3505	3' galvanized helical earth screw	[G]	1 Clab	8	1		55.50	42	97.50	125
3510	Attic mount kit	[G]	1 Rofc	2.56	3.125		224	144	368	485
3520	Roof mount kit	[G]	1 Clab	3.41	2.346		240	99	339	415
8900	Equipment									
9100	DC to AC inverter for, 48 V, 4,000 W	[G]	1 Elec	2	4	Ea.	2,275	245	2,520	2,875

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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Historical Cost Indexes

R23 Heating, Ventilating & Air Conditioning 880

City Cost Indexes

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Location Factors

R31 Earthwork 884

Reference Tables

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Equipment Rental Costs

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.
- Weekly rental rates are about 1/3 of the monthly rates, and daily rental rates are about 1/3 of the weekly rate.
- 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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		UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY
10	0010 CONCRETE EQUIPMENT RENTAL without operators 0200 Bucket, concrete lightweight, 1/2 C.Y.	R015433 -10	Ea.	.87	38.50	115	345
	1 C.Y.			.98	63.50	190	570
	1-1/2 C.Y.			1.23	60	180	540
	2 C.Y.			1.34	73.50	220	660
	8 C.Y.			6.47	93.50	280	840
	0600 Cart, concrete, self-propelled, operator walking, 10 C.F.			2.85	175	525	1,575
	0700 Operator riding, 18 C.F.			4.81	192	575	1,725
	0800 Conveyor for concrete, portable, gas, 16" wide, 26' long			10.61	160	480	1,450
	0900 46' long			10.98	175	525	1,575
	1000 56' long			11.15	192	575	1,725
	1100 Core drill, electric, 2-1/2 H.P., 1" to 8" bit diameter			1.56	83.50	250	750
	1150 11 H.P., 8" to 18" cores			5.38	119	356.32	1,075
	1200 Finisher, concrete floor, gas, riding trowel, 96" wide			9.64	153	459.60	1,375
	1300 Gas, walk-behind, 3 blade, 36" trowel			2.03	96	287.50	865
	1400 4 blade, 48" trowel			3.06	104	312.50	940
	1500 Float, hand-operated (Bull float), 48" wide			.08	12.35	37	111
	1570 Curb builder, 14 H.P., gas, single screw			14.00	253	760	2,275
	1590 Double screw			15.00	253	760	2,275
	1600 Floor grinder, concrete and terrazzo, electric, 22" path			3.03	134	401.75	1,200
	1700 Edger, concrete, electric, 7" path			1.18	57.50	172.50	520
	1750 Vacuum pick-up system for floor grinders, wet/dry			1.61	102	305.71	915
	1800 Mixer, powered, mortar and concrete, gas, 6 C.F., 18 H.P.			7.39	97	291	875
	1900 10 C.F., 25 H.P.			8.97	114	342.50	1,025
	2000 16 C.F.			9.33	144	432.50	1,300
	2100 Concrete, stationary, tilt drum, 2 C.Y.			7.21	80	240	720
	2120 Pump, concrete, truck mounted, 4" line, 80' boom			29.79	287	860	2,575
	2140 5" line, 110' boom			37.34	287	860	2,575
	2160 Mud jack, 50 C.F. per hr.			6.43	228	685	2,050
	2180 225 C.F. per hr.			8.52	293	880	2,650
	2190 Shotcrete pump rig, 12 C.Y./hr.			13.93	223	670	2,000
	2200 35 C.Y./hr.			15.75	287	860	2,575
	2600 Saw, concrete, manual, gas, 18 H.P.			5.52	112	337	1,000
	2650 Self-propelled, gas, 30 H.P.			7.87	81	242.71	730
	2675 V-groove crack chaser, manual, gas, 6 H.P.			1.64	100	300	900
	2700 Vibrators, concrete, electric, 60 cycle, 2 H.P.			.47	73	218.50	655
	2800 3 H.P.			.56	73.50	221	665
	2900 Gas engine, 5 H.P.			1.54	16.85	50.61	152
	3000 8 H.P.			2.08	17.05	51.12	153
	3050 Vibrating screed, gas engine, 8 H.P.			2.80	88	263.50	790
	3120 Concrete transit mixer, 6 x 4, 250 H.P., 8 C.Y., rear discharge			50.57	70	210	630
	3200 Front discharge			58.71	135	405	1,225
	3300 6 x 6, 285 H.P., 12 C.Y., rear discharge			57.97	150	450	1,350
	3400 Front discharge			60.41	170	510	1,525
20	0010 EARTHWORK EQUIPMENT RENTAL without operators	R015433 -10	Ea.				
	0040 Aggregate spreader, push type, 8' to 12' wide			2.59	75	225	675
	0045 Tailgate type, 8' wide			2.54	63.50	190	570
	0055 Earth auger, truck mounted, for fence & sign posts, utility poles			13.81	150	450	1,350
	0060 For borings and monitoring wells			42.52	83.50	250	750
	0070 Portable, trailer mounted			2.29	100	300	900
	0075 Truck mounted, for caissons, water wells			85.14	150	450	1,350
	0080 Horizontal boring machine, 12" to 36" diameter, 45 H.P.			22.70	104	312	935
	0090 12" to 48" diameter, 65 H.P.			31.16	108	325	975
	0095 Auger, for fence posts, gas engine, hand held			.45	84	251.50	755
	0100 Excavator, diesel hydraulic, crawler mounted, 1/2 C.Y. cap.			21.66	465	1,394.28	4,175
	0120 5/8 C.Y. capacity			28.95	610	1,833.22	5,500
	0140 3/4 C.Y. capacity			32.56	725	2,168.88	6,500
	0150 1 C.Y. capacity			41.09	780	2,333	7,000

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		UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY	
20	0200	1-1/2 C.Y. capacity	Ea.	48.44	500	1,500	4,500	687.55
	0300	2 C.Y. capacity		56.41	835	2,500	7,500	951.30
	0320	2-1/2 C.Y. capacity		82.39	1,350	4,027.92	12,100	1,465
	0325	3-1/2 C.Y. capacity		119.76	2,000	6,000	18,000	2,158
	0330	4-1/2 C.Y. capacity		151.17	3,675	11,000	33,000	3,409
	0335	6 C.Y. capacity		191.81	3,225	9,650	29,000	3,464
	0340	7 C.Y. capacity		174.67	3,400	10,200	30,600	3,437
	0342	Excavator attachments, bucket thumbs		3.39	258	774.60	2,325	182.05
	0345	Grapplers		3.13	222	666.16	2,000	158.30
	0346	Hydraulic hammer for boom mounting, 4000 ft lb.		13.44	890	2,670	8,000	641.50
	0347	5000 ft lb.		15.90	950	2,850	8,550	697.25
	0348	8000 ft lb.		23.47	1,200	3,600	10,800	907.75
	0349	12,000 ft lb.		25.64	1,100	3,333	10,000	871.75
	0350	Gradall type, truck mounted, 3 ton @ 15' radius, 5/8 C.Y.		43.31	835	2,500	7,500	846.50
	0370	1 C.Y. capacity		59.22	835	2,500	7,500	973.80
	0400	Backhoe-loader, 40 to 45 H.P., 5/8 C.Y. capacity		11.86	244	732.50	2,200	241.40
	0450	45 H.P. to 60 H.P., 3/4 C.Y. capacity		17.97	117	350	1,050	213.75
	0460	80 H.P., 1-1/4 C.Y. capacity		20.30	117	350	1,050	232.40
	0470	112 H.P., 1-1/2 C.Y. capacity		32.89	610	1,833.22	5,500	629.75
	0482	Backhoe-loader attachment, compactor, 20,000 lb.		6.42	155	464.76	1,400	144.30
	0485	Hydraulic hammer, 750 ft lb.		3.67	107	320.17	960	93.40
	0486	Hydraulic hammer, 1200 ft lb.		6.53	205	614.52	1,850	175.15
	0500	Brush chipper, gas engine, 6" cutter head, 35 H.P.		9.14	247	740	2,225	221.10
	0550	Diesel engine, 12" cutter head, 130 H.P.		23.60	340	1,020	3,050	392.80
	0600	15" cutter head, 165 H.P.		26.51	415	1,239.36	3,725	459.90
	0750	Bucket, clamshell, general purpose, 3/8 C.Y.		1.40	91.50	275	825	66.15
	0800	1/2 C.Y.		1.51	91.50	275	825	67.10
	0850	3/4 C.Y.		1.64	91.50	275	825	68.10
	0900	1 C.Y.		1.70	91.50	275	825	68.55
	0950	1-1/2 C.Y.		2.78	91.50	275	825	77.25
	1000	2 C.Y.		2.91	91.50	275	825	78.30
	1010	Bucket, dragline, medium duty, 1/2 C.Y.		.82	91.50	275	825	61.55
	1020	3/4 C.Y.		.78	91.50	275	825	61.25
	1030	1 C.Y.		.80	91.50	275	825	61.35
	1040	1-1/2 C.Y.		1.26	91.50	275	825	65.05
	1050	2 C.Y.		1.29	91.50	275	825	65.30
	1070	3 C.Y.		2.07	91.50	275	825	71.60
	1200	Compactor, manually guided 2-drum vibratory smooth roller, 7.5 H.P.		7.20	181	542.50	1,625	166.10
	1250	Rammer/tamper, gas, 8"		2.20	48	144.59	435	46.50
	1260	15"		2.62	55	165.25	495	54
	1300	Vibratory plate, gas, 18" plate, 3000 lb. blow		2.12	24.50	72.81	218	31.55
	1350	21" plate, 5000 lb. blow		2.61	241	722.50	2,175	165.35
	1370	Curb builder/extruder, 14 H.P., gas, single screw		13.99	253	760	2,275	263.95
	1390	Double screw		14.99	253	760	2,275	271.95
	1500	Disc harrow attachment, for tractor		.47	82.50	246.84	740	53.15
	1810	Feller buncher, shearing & accumulating trees, 100 H.P.		39.08	460	1,380	4,150	588.60
	1860	Grader, self-propelled, 25,000 lb.		33.25	1,100	3,333	10,000	932.60
	1910	30,000 lb.		32.76	1,325	4,000	12,000	1,062
	1920	40,000 lb.		51.73	1,550	4,667	14,000	1,347
	1930	55,000 lb.		66.73	1,775	5,333	16,000	1,600
	1950	Hammer, pavement breaker, self-propelled, diesel, 1000 to 1250 lb.		28.31	600	1,800	5,400	586.50
	2000	1300 to 1500 lb.		42.67	1,000	3,020.94	9,075	945.55
	2050	Pile driving hammer, steam or air, 4150 ft lb. @ 225 bpm		12.11	500	1,500	4,500	396.90
	2100	8750 ft lb. @ 145 bpm		14.30	700	2,100	6,300	534.45
	2150	15,000 ft lb. @ 60 bpm		14.63	835	2,500	7,500	617.05
	2200	24,450 ft lb. @ 111 bpm		15.64	965	2,900	8,700	705.15
	2250	Leads, 60' high for pile driving hammers up to 20,000 ft lb.		3.66	300	900	2,700	209.25
	2300	90' high for hammers over 20,000 ft lb.		5.43	540	1,620	4,850	367.45

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		UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY
20	2350 Diesel type hammer, 22,400 ft lb.	Ea.	17.76	490	1,471.74	4,425	436.45
	2400 41,300 ft lb.		25.61	620	1,859.04	5,575	576.65
	2450 141,000 ft lb.		41.20	980	2,943.48	8,825	918.35
	2500 Vib. elec. hammer/extractor, 200 kW diesel generator, 34 H.P.		41.25	715	2,143.06	6,425	758.60
	2550 80 H.P.		72.81	1,025	3,098.40	9,300	1,202
	2600 150 H.P.		134.74	2,000	5,964.42	17,900	2,271
	2700 Hydro Excavator w/EXT boom 12 C.Y., 1200 gallons		37.70	1,600	4,800	14,400	1,262
	2800 Log chipper, up to 22" diameter, 600 H.P.		46.13	305	915	2,750	552
	2850 Logger, for skidding & stacking logs, 150' H.P.		43.40	930	2,785	8,350	904.20
	2860 Mulcher, diesel powered, trailer mounted		17.99	305	915	2,750	326.90
	2900 Rake, spring tooth, with tractor		14.67	370	1,110.26	3,325	339.45
	3000 Roller, vibratory, tandem, smooth drum, 20 H.P.		7.78	320	967	2,900	255.65
	3050 35 H.P.		10.10	260	779.76	2,350	236.75
	3100 Towed type vibratory compactor, smooth drum, 50 H.P.		25.20	520	1,566	4,700	514.75
	3150 Sheepfoot, 50 H.P.		25.56	385	1,161.90	3,475	436.90
	3170 Landfill compactor, 220 H.P.		69.80	1,650	4,985	15,000	1,555
	3200 Pneumatic tire roller, 80 H.P.		12.88	405	1,213.54	3,650	345.75
	3250 120 H.P.		19.33	665	1,988.14	5,975	552.25
	3300 Sheepfoot vibratory roller, 240 H.P.		62.02	1,425	4,260.30	12,800	1,348
	3320 340 H.P.		83.57	2,175	6,500	19,500	1,969
	3350 Smooth drum vibratory roller, 75 H.P.		23.27	655	1,962.32	5,875	578.60
	3400 125 H.P.		27.53	740	2,220.52	6,650	664.35
	3410 Rotary mower, brush, 60", with tractor		18.73	360	1,084.44	3,250	366.75
	3420 Rototiller, walk-behind, gas, 5 H.P.		2.13	60	180	540	53.05
	3422 8 H.P.		2.80	132	395	1,175	101.40
	3440 Scrapers, towed type, 7 C.Y. capacity		6.42	127	382.14	1,150	127.80
	3450 10 C.Y. capacity		7.18	170	511.24	1,525	159.70
	3500 15 C.Y. capacity		7.38	196	588.70	1,775	176.75
	3525 Self-propelled, single engine, 14 C.Y. capacity		132.89	2,225	6,660	20,000	2,395
	3550 Dual engine, 21 C.Y. capacity		140.95	2,500	7,500	22,500	2,628
	3600 31 C.Y. capacity		187.28	3,625	10,844.40	32,500	3,667
	3640 44 C.Y. capacity		231.98	4,650	13,942.80	41,800	4,644
	3650 Elevating type, single engine, 11 C.Y. capacity		61.68	1,075	3,200	9,600	1,133
	3700 22 C.Y. capacity		114.28	1,625	4,850	14,600	1,884
	3710 Screening plant, 110 H.P. w/5' x 10' screen		21.07	645	1,933	5,800	555.15
	3720 5' x 16' screen		26.60	1,325	4,000	12,000	1,013
	3850 Shovel, crawler-mounted, front-loading, 7 C.Y. capacity		218.00	3,925	11,773.92	35,300	4,099
	3855 12 C.Y. capacity		335.89	5,450	16,318.24	49,000	5,951
	3860 Shovel/backhoe bucket, 1/2 C.Y.		2.68	73	218.95	655	65.25
	3870 3/4 C.Y.		2.66	82	245.81	735	70.40
	3880 1 C.Y.		2.75	91	272.66	820	76.50
	3890 1-1/2 C.Y.		2.94	107	320.17	960	87.60
	3910 3 C.Y.		3.43	145	433.78	1,300	114.15
	3950 Stump chipper, 18" deep, 30 H.P.		6.88	232	697	2,100	194.45
	4110 Dozer, crawler, torque converter, diesel 80 H.P.		25.18	335	1,000	3,000	401.40
	4150 105 H.P.		34.23	600	1,800	5,400	633.85
	4200 140 H.P.		41.15	720	2,166	6,500	762.40
	4260 200 H.P.		62.97	1,675	5,000	15,000	1,504
	4310 300 H.P.		80.49	1,875	5,600	16,800	1,764
	4360 410 H.P.		106.42	3,200	9,630	28,900	2,777
	4370 500 H.P.		132.98	3,900	11,670	35,000	3,398
	4380 700 H.P.		229.47	5,475	16,421.52	49,300	5,120
	4400 Loader, crawler, torque conv., diesel, 1-1/2 C.Y., 80 H.P.		29.45	550	1,651	4,950	565.80
	4450 1-1/2 to 1-3/4 C.Y., 95 H.P.		30.18	695	2,091.42	6,275	659.75
	4510 1-3/4 to 2-1/4 C.Y., 130 H.P.		47.61	965	2,900	8,700	960.90
	4530 2-1/2 to 3-1/4 C.Y., 190 H.P.		57.61	1,175	3,540	10,600	1,169
	4560 3-1/2 to 5 C.Y., 275 H.P.		71.19	1,525	4,595.96	13,800	1,489
	4610 Front end loader, 4WD, articulated frame, diesel, 1 to 1-1/4 C.Y., 70 H.P.		16.58	282	846.90	2,550	302

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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.	19.94	440	1,320	3,950	423.50	20
	4650	1-3/4 to 2 C.Y., 130 H.P.		21.00	395	1,187.72	3,575	405.55	
	4710	2-1/2 to 3-1/2 C.Y., 145 H.P.		29.44	780	2,333	7,000	702.10	
	4730	3 to 4-1/2 C.Y., 185 H.P.		31.99	890	2,667	8,000	789.35	
	4760	5-1/4 to 5-3/4 C.Y., 270 H.P.		53.03	890	2,666	8,000	957.50	
	4810	7 to 9 C.Y., 475 H.P.		90.90	2,550	7,667	23,000	2,261	
	4870	9 to 11 C.Y., 620 H.P.		131.52	2,700	8,107.48	24,300	2,674	
	4880	Skid-steer loader, wheeled, 10 C.F., 30 H.P. gas		9.54	169	506.07	1,525	177.55	
	4890	1 C.Y., 78 H.P., diesel		18.38	420	1,265.18	3,800	400.10	
	4892	Skid-steer attachment, auger		.74	145	433.50	1,300	92.65	
	4893	Backhoe		.74	122	366.64	1,100	79.25	
	4894	Broom		.70	140	420.25	1,250	89.70	
	4895	Forks		.15	32	96	288	20.45	
	4896	Grapple		.72	88.50	265.25	795	58.80	
	4897	Concrete hammer		1.05	183	550	1,650	118.40	
	4898	Tree spade		.60	103	309.84	930	66.75	
	4899	Trencher		.65	102	305	915	66.20	
	4900	Trencher, chain, boom type, gas, operator walking, 12 H.P.		4.16	206	618.25	1,850	156.95	
	4910	Operator riding, 40 H.P.		16.64	450	1,343.75	4,025	401.85	
	5000	Wheel type, diesel, 4' deep, 12" wide		68.50	965	2,891.84	8,675	1,126	
	5100	6' deep, 20" wide		87.32	1,050	3,127.50	9,375	1,324	
	5150	Chain type, diesel, 5' deep, 8" wide		16.25	360	1,084.44	3,250	346.90	
	5200	Diesel, 8' deep, 16" wide		89.39	1,925	5,783.68	17,400	1,872	
	5202	Rock trencher, wheel type, 6" wide x 18" deep		46.98	90	270	810	429.85	
	5206	Chain type, 18" wide x 7' deep		104.38	283	850	2,550	1,005	
	5210	Tree spade, self-propelled		13.65	230	690	2,075	247.20	
	5250	Truck, dump, 2-axle, 12 ton, 8 C.Y. payload, 220 H.P.		23.88	395	1,185	3,550	428.05	
	5300	Three axle dump, 16 ton, 12 C.Y. payload, 400 H.P.		44.50	360	1,084.44	3,250	572.90	
	5310	Four axle dump, 25 ton, 18 C.Y. payload, 450 H.P.		49.85	525	1,575.02	4,725	713.80	
	5350	Dump trailer only, rear dump, 16-1/2 C.Y.		5.73	151	454.43	1,375	136.70	
	5400	20 C.Y.		6.18	170	511.24	1,525	151.70	
	5450	Flatbed, single axle, 1-1/2 ton rating		19.00	73.50	221.02	665	196.15	
	5500	3 ton rating		23.05	1,050	3,180	9,550	820.40	
	5550	Off highway rear dump, 25 ton capacity		62.67	1,475	4,389.40	13,200	1,379	
	5600	35 ton capacity		66.90	665	2,000	6,000	935.20	
	5610	50 ton capacity		83.87	1,825	5,499.66	16,500	1,771	
	5620	65 ton capacity		89.56	2,000	5,990.24	18,000	1,915	
	5630	100 ton capacity		121.24	2,950	8,830.44	26,500	2,736	
	6000	Vibratory plow, 25 H.P., walking		6.77	300	900	2,700	234.20	
40	0010	GENERAL EQUIPMENT RENTAL without operators	R015433 -10						40
	0020	Aerial lift, scissor type, to 20' high, 1200 lb. capacity, electric	Ea.	3.48	129	385.75	1,150	105	
	0030	To 30' high, 1200 lb. capacity		3.77	203	607.67	1,825	151.70	
	0040	Over 30' high, 1500 lb. capacity		5.13	243	727.50	2,175	186.60	
	0070	Articulating boom, to 45' high, 500 lb. capacity, diesel	R015433 -15	9.92	250	750	2,250	229.35	
	0075	To 60' high, 500 lb. capacity		13.66	300	900	2,700	289.25	
	0080	To 80' high, 500 lb. capacity		16.05	900	2,702.25	8,100	668.85	
	0085	To 125' high, 500 lb. capacity		18.34	1,525	4,603.50	13,800	1,067	
	0100	Telescoping boom to 40' high, 500 lb. capacity, diesel		11.24	315	945	2,825	278.90	
	0105	To 45' high, 500 lb. capacity		12.51	320	965	2,900	293.05	
	0110	To 60' high, 500 lb. capacity		16.36	300	900	2,700	310.90	
	0115	To 80' high, 500 lb. capacity		21.27	355	1,067	3,200	383.55	
	0120	To 100' high, 500 lb. capacity		28.71	865	2,587.75	7,775	747.25	
	0125	To 120' high, 500 lb. capacity		29.16	1,450	4,348.50	13,000	1,103	
	0195	Air compressor, portable, 6.5 CFM, electric		.90	44.50	133	400	33.80	
	0196	Gasoline		.65	56	167.50	505	38.70	
	0200	Towed type, gas engine, 60 CFM		9.43	129	387.50	1,175	152.95	
	0300	160 CFM		10.47	198	595	1,775	202.80	

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			UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY
40	0400	Diesel engine, rotary screw, 250 CFM	Ea.	12.08	175	524	1,575	201.50
	0500	365 CFM		16.00	310	937	2,800	315.40
	0550	450 CFM		19.95	277	832.25	2,500	326.05
	0600	600 CFM		34.10	248	743.62	2,225	421.50
	0700	750 CFM		34.62	435	1,306.50	3,925	538.25
	0930	Air tools, breaker, pavement, 60 lb.		.57	81.50	245	735	53.50
	0940	80 lb.		.56	81	242.50	730	53
	0950	Drills, hand (jackhammer), 65 lb.		.67	68	203.50	610	46.05
	0960	Track or wagon, swing boom, 4" drifter		54.66	1,025	3,104	9,300	1,058
	0970	5" drifter		63.30	1,025	3,104	9,300	1,127
	0975	Track mounted quarry drill, 6" diameter drill		101.91	1,900	5,665	17,000	1,948
	0980	Dust control per drill		1.04	25	75.50	227	23.40
	0990	Hammer, chipping, 12 lb.		.60	46	138	415	32.40
	1000	Hose, air with couplings, 50' long, 3/4" diameter		.07	12	36	108	7.75
	1100	1" diameter		.08	12.35	37	111	8
	1200	1-1/2" diameter		.22	37.50	112.50	340	24.25
	1300	2" diameter		.24	45	135	405	28.90
	1400	2-1/2" diameter		.36	57.50	172.50	520	37.35
	1410	3" diameter		.42	58.50	175	525	38.35
	1450	Drill, steel, 7/8" x 2'		.08	12.90	38.73	116	8.40
	1460	7/8" x 6'		.12	19.60	58.87	177	12.70
	1520	Moli points		.03	7	21	63	4.40
	1525	Pneumatic nailer w/accessories		.48	39.50	118	355	27.40
	1530	Sheeting driver for 60 lb. breaker		.04	7.75	23.24	69.50	5
	1540	For 90 lb. breaker		.13	10.50	31.50	94.50	7.35
	1550	Spade, 25 lb.		.50	7.40	22.21	66.50	8.45
	1560	Tamper, single, 35 lb.		.59	48.50	145.75	435	33.85
	1570	Triple, 140 lb.		.89	61.50	184.87	555	44.05
	1580	Wrenches, impact, air powered, up to 3/4" bolt		.43	49.50	148.25	445	33.05
	1590	Up to 1-1/4" bolt		.58	79.50	238.50	715	52.30
	1600	Barricades, barrels, reflectorized, 1 to 99 barrels		.03	4	12	36	2.65
	1610	100 to 200 barrels		.02	4.41	13.22	39.50	2.85
	1620	Barrels with flashers, 1 to 99 barrels		.03	6.40	19.16	57.50	4.10
	1630	100 to 200 barrels		.03	5.10	15.34	46	3.30
	1640	Barrels with steady burn type C lights		.05	8.45	25.30	76	5.45
	1650	Illuminated board, trailer mounted, with generator		3.28	139	418.28	1,250	109.85
	1670	Portable barricade, stock, with flashers, 1 to 6 units		.03	6.35	19.11	57.50	4.10
	1680	25 to 50 units		.03	5.95	17.82	53.50	3.85
	1685	Butt fusion machine, wheeled, 1.5 HP electric, 2" - 8" diameter pipe		2.63	225	675	2,025	156.05
	1690	Tracked, 20 HP diesel, 4"-12" diameter pipe		11.23	560	1,685	5,050	426.85
	1695	83 HP diesel, 8" - 24" diameter pipe		51.32	1,100	3,325	9,975	1,076
	1700	Carts, brick, gas engine, 1,000 lb. capacity		2.94	65	195	585	62.55
	1800	1500 lb., 7-1/2' lift		2.92	69.50	208	625	64.95
	1822	Dehumidifier, medium, 6 lb./hr., 150 CFM		1.19	76.50	229.28	690	55.35
	1824	Large, 18 lb./hr., 600 CFM		2.19	585	1,750	5,250	367.55
	1830	Distributor, asphalt, trailer mounted, 2000 gal., 38 H.P. diesel		10.99	355	1,058.62	3,175	299.65
	1840	3000 gal., 38 H.P. diesel		12.87	380	1,136.08	3,400	330.15
	1850	Drill, rotary hammer, electric		1.11	71.50	214	640	51.70
	1860	Carbide bit, 1-1/2" diameter, add to electric rotary hammer		.03	41.50	125	375	25.25
	1865	Rotary, crawler, 250 H.P.		135.77	2,300	6,868.12	20,600	2,460
	1870	Emulsion sprayer, 65 gal., 5 H.P. gas engine		2.77	107	320.17	960	86.15
	1880	200 gal., 5 H.P. engine		7.22	179	537.06	1,600	165.20
	1900	Floor auto-scrubbing machine, walk-behind, 28" path		5.62	222	667	2,000	178.40
	1930	Floodlight, mercury vapor, or quartz, on tripod, 1000 watt		.46	36.50	110	330	25.65
	1940	2000 watt		.59	28	84.69	254	21.65
	1950	Floodlights, trailer mounted with generator, 1 - 300 watt light		3.54	78.50	235.48	705	75.45
	1960	2 - 1000 watt lights		4.49	87.50	262.33	785	88.35
	2000	4 - 300 watt lights		4.24	100	299.51	900	93.85

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		UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY		
40	2005	Foam spray rig, incl. box trailer, compressor, generator, proportioner	Ea.	25.46	535	1,600.84	4,800	523.85	40
	2015	Forklift, pneumatic tire, rough terr, straight mast, 5000 lb, 12' lift, gas		18.59	219	655.83	1,975	279.90	
	2025	8000 lb, 12' lift		22.68	360	1,084.44	3,250	398.35	
	2030	5000 lb, 12' lift, diesel		15.41	244	733.29	2,200	269.90	
	2035	8000 lb, 12' lift, diesel		16.70	277	831.40	2,500	299.90	
	2045	All terrain, telescoping boom, diesel, 5000 lb, 10' reach, 19' lift		17.20	233	700	2,100	277.60	
	2055	6600 lb, 29' reach, 42' lift		21.04	233	700	2,100	308.30	
	2065	10,000 lb, 31' reach, 45' lift		23.03	315	950	2,850	374.20	
	2070	Cushion tire, smooth floor, gas, 5000 lb capacity		8.23	247	741.50	2,225	214.10	
	2075	8000 lb capacity		11.33	275	826.25	2,475	255.90	
	2085	Diesel, 5000 lb capacity		7.73	210	629.25	1,900	187.65	
	2090	12,000 lb capacity		12.01	400	1,194.50	3,575	335	
	2095	20,000 lb capacity		17.20	660	1,980	5,950	533.60	
	2100	Generator, electric, gas engine, 1.5 kW to 3 kW		2.57	46.50	140	420	48.55	
	2200	5 kW		3.21	91	272.50	820	80.15	
	2300	10 kW		5.91	108	322.50	970	111.80	
	2400	25 kW		7.38	405	1,210	3,625	301.10	
	2500	Diesel engine, 20 kW		9.18	229	687.50	2,075	210.95	
	2600	50 kW		15.90	370	1,110	3,325	349.20	
	2700	100 kW		28.51	445	1,340.50	4,025	496.20	
	2800	250 kW		54.19	750	2,249.33	6,750	883.40	
	2850	Hammer, hydraulic, for mounting on boom, to 500 ft lb.		2.89	93.50	279.89	840	79.10	
	2860	1000 ft lb.		4.59	139	418.28	1,250	120.40	
	2900	Heaters, space, oil or electric, 50 MBH		1.46	46.50	140	420	39.65	
	3000	100 MBH		2.71	46.50	140	420	49.70	
	3100	300 MBH		7.90	135	405	1,225	144.20	
	3150	500 MBH		13.12	200	600	1,800	224.95	
	3200	Hose, water, suction with coupling, 20' long, 2" diameter		.02	5.65	17	51	3.55	
	3210	3" diameter		.03	14.15	42.50	128	8.75	
	3220	4" diameter		.03	28	84	252	17.05	
	3230	6" diameter		.11	40.50	121.50	365	25.20	
	3240	8" diameter		.27	53.50	160	480	34.15	
	3250	Discharge hose with coupling, 50' long, 2" diameter		.01	6.50	19.50	58.50	4	
	3260	3" diameter		.01	7.35	22	66	4.50	
	3270	4" diameter		.02	21	62.50	188	12.65	
	3280	6" diameter		.06	29	87	261	17.90	
	3290	8" diameter		.24	37.50	112.50	340	24.40	
	3295	Insulation blower		.83	117	350	1,050	76.65	
	3300	Ladders, extension type, 16' to 36' long		.18	41.50	125	375	26.45	
	3400	40' to 60' long		.64	120	360.50	1,075	77.20	
	3405	Lance for cutting concrete		2.20	65	195	585	56.60	
	3407	Lawn mower, rotary, 22", 5 H.P.		1.05	38.50	115	345	31.40	
	3408	48" self-propelled		2.89	138	415	1,250	106.10	
	3410	Level, electronic, automatic, with tripod and leveling rod		1.05	37.50	112	335	30.80	
	3430	Laser type, for pipe and sewer line and grade		2.17	117	350	1,050	87.35	
	3440	Rotating beam for interior control		.90	64	192.50	580	45.70	
	3460	Builder's optical transit, with tripod and rod		.10	37.50	112	335	23.20	
	3500	Light towers, towable, with diesel generator, 2000 watt		4.25	101	303.64	910	94.75	
	3600	4000 watt		4.50	165	495	1,475	135	
	3700	Mixer, powered, plaster and mortar, 6 C.F., 7 H.P.		2.05	83.50	250	750	66.40	
	3800	10 C.F., 9 H.P.		2.24	124	372.50	1,125	92.40	
	3850	Nailer, pneumatic		.48	33.50	100.18	300	23.85	
	3900	Paint sprayers complete, 8 CFM		.85	61.50	184.87	555	43.75	
	4000	17 CFM		1.60	110	330.50	990	78.85	
	4020	Pavers, bituminous, rubber tires, 8' wide, 50 H.P., diesel		31.93	570	1,704.12	5,100	596.25	
	4030	10' wide, 150 H.P.		95.62	1,950	5,835.32	17,500	1,932	
	4050	Crawler, 8' wide, 100 H.P., diesel		87.59	2,050	6,170.98	18,500	1,935	
	4060	10' wide, 150 H.P.		103.97	2,350	7,048.86	21,100	2,241	

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		UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY
40	4070 Concrete paver, 12' to 24' wide, 250 H.P.	Ea.	87.62	1,675	5,060.72	15,200	1,713
	4080 Placer-spreader-trimmer, 24' wide, 300 H.P.		117.51	2,550	7,668.54	23,000	2,474
	4100 Pump, centrifugal gas pump, 1-1/2" diam., 65 GPM		3.92	54	162.15	485	63.80
	4200 2" diameter, 130 GPM		4.98	44	132.50	400	66.35
	4300 3" diameter, 250 GPM		5.12	56	167.50	505	74.45
	4400 6" diameter, 1500 GPM		22.24	91.50	275	825	232.90
	4500 Submersible electric pump, 1-1/4" diameter, 55 GPM		.40	36	107.50	325	24.70
	4600 1-1/2" diameter, 83 GPM		.44	43.50	130	390	29.55
	4700 2" diameter, 120 GPM		1.64	61.50	185	555	50.15
	4800 3" diameter, 300 GPM		3.03	109	327.50	985	89.75
	4900 4" diameter, 560 GPM		14.75	61.50	185	555	155
	5000 6" diameter, 1590 GPM		22.08	65	195	585	215.60
	5100 Diaphragm pump, gas, single, 1-1/2" diameter		1.13	38.50	115	345	32
	5200 2" diameter		3.98	91.50	275	825	86.80
	5300 3" diameter		4.05	95	285	855	89.40
	5400 Double, 4" diameter		6.03	95	285	855	105.25
	5450 Pressure washer 5 GPM, 3000 psi		3.87	110	330	990	96.95
	5460 7 GPM, 3000 psi		4.94	85	255	765	90.50
	5470 High pressure water jet 10 ksi		39.55	720	2,160	6,475	748.40
	5480 40 ksi		27.88	980	2,940	8,825	811.05
	5500 Trash pump, self-priming, gas, 2" diameter		3.82	108	325	975	95.55
	5600 Diesel, 4" diameter		6.68	162	485	1,450	150.40
	5650 Diesel, 6" diameter		16.85	162	485	1,450	231.80
	5655 Grout Pump		18.70	281	841.73	2,525	317.90
	5700 Salamanders, L.P. gas fired, 100,000 BTU		2.88	57.50	172.50	520	57.55
	5705 50,000 BTU		1.66	23.50	71	213	27.50
	5720 Sandblaster, portable, open top, 3 C.F. capacity		.60	132	395	1,175	83.80
	5730 6 C.F. capacity		1.00	132	395	1,175	87
	5740 Accessories for above		.14	24	71.26	214	15.35
	5750 Sander, floor		.77	73.50	220	660	50.15
	5760 Edger		.52	35	105	315	25.15
	5800 Saw, chain, gas engine, 18" long		1.75	63.50	190	570	52
	5900 Hydraulic powered, 36" long		.78	58.50	175	525	41.25
	5950 60" long		.78	65	195	585	45.25
	6000 Masonry, table mounted, 14" diameter, 5 H.P.		1.32	76.50	230	690	56.55
	6050 Portable cut-off, 8 H.P.		1.81	77.50	232.50	700	61
	6100 Circular, hand held, electric, 7-1/4" diameter		.23	13.85	41.50	125	10.10
	6200 12" diameter		.24	41	122.50	370	26.40
	6250 Wall saw, w/hydraulic power, 10 H.P.		3.29	98.50	296	890	85.50
	6275 Shot blaster, walk-behind, 20" wide		4.73	281	841.73	2,525	206.20
	6280 Sidewalk broom, walk-behind		2.24	82.50	247.87	745	67.50
	6300 Steam cleaner, 100 gallons per hour		3.34	82.50	247.87	745	76.30
	6310 200 gallons per hour		4.33	100	299.51	900	94.55
	6340 Tar Kettle/Pot, 400 gallons		16.48	127	380	1,150	207.85
	6350 Torch, cutting, acetylene-oxygen, 150' hose, excludes gases		.45	15.30	45.96	138	12.80
	Hourly operating cost includes tips and gas		20.92	7	20.98	63	171.55
	6410 Toilet, portable chemical		.13	23	69.20	208	14.90
	6420 Recycle flush type		.16	28.50	85.72	257	18.45
	6430 Toilet, fresh water flush, garden hose,		.19	34	102.25	305	22
	6440 Hoisted, non-flush, for high rise		.16	28	83.66	251	18
	6465 Tractor, farm with attachment		17.37	390	1,172.50	3,525	373.40
	6480 Trailers, platform, flush deck, 2 axle, 3 ton capacity		1.69	94.50	284	850	70.30
	6500 25 ton capacity		6.23	143	428.61	1,275	135.55
	6600 40 ton capacity		8.04	203	609.35	1,825	186.20
	6700 3 axle, 50 ton capacity		8.72	225	676.48	2,025	205.05
	6800 75 ton capacity		11.08	300	898.54	2,700	268.30
	6810 Trailer mounted cable reel for high voltage line work		5.89	28.50	85	255	64.10
	6820 Trailer mounted cable tensioning rig		11.67	28.50	85	255	110.40

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		UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY		
40	6830	Cable pulling rig	Ea.	73.77	28.50	85	255	607.15	
	6850	Portable cable/wire puller, 8000 lb max pulling capacity		3.70	120	360	1,075	101.60	
	6900	Water tank trailer, engine driven discharge, 5000 gallons		7.16	158	475.09	1,425	152.25	
	6925	10,000 gallons		9.75	215	645.50	1,925	207.10	
	6950	Water truck, off highway, 6000 gallons		71.75	835	2,504.54	7,525	1,075	
	7010	Tram car for high voltage line work, powered, 2 conductor		6.88	28.50	85	255	72.05	
	7020	Transit (builder's level) with tripod		.10	17.55	52.67	158	11.30	
	7030	Trench box, 3000 lb., 6' x 8'		.56	96.50	290.22	870	62.50	
	7040	7200 lb., 6' x 20'		.72	187	560	1,675	117.75	
	7050	8000 lb., 8' x 16'		1.08	186	557.71	1,675	120.15	
	7060	9500 lb., 8' x 20'		1.20	232	697.14	2,100	149.05	
	7065	11,000 lb., 8' x 24'		1.26	219	655.83	1,975	141.25	
	7070	12,000 lb., 10' x 20'		1.49	263	790.09	2,375	169.95	
	7100	Truck, pickup, 3/4 ton, 2 wheel drive		9.24	61.50	184.87	555	110.85	
	7200	4 wheel drive		9.48	167	500	1,500	175.85	
	7250	Crew carrier, 9 passenger		12.66	108	325	975	166.25	
	7290	Flat bed truck, 20,000 lb. GVW		15.26	133	397.63	1,200	201.60	
	7300	Tractor, 4 x 2, 220 H.P.		22.25	215	645.50	1,925	307.10	
	7410	330 H.P.		32.33	294	883.04	2,650	435.25	
	7500	6 x 4, 380 H.P.		36.09	340	1,022.47	3,075	493.25	
	7600	450 H.P.		44.23	415	1,239.36	3,725	601.75	
	7610	Tractor, with A frame, boom and winch, 225 H.P.		24.74	293	877.88	2,625	373.50	
	7620	Vacuum truck, hazardous material, 2500 gallons		12.79	310	929.52	2,800	288.25	
	7625	5,000 gallons		13.02	440	1,316.82	3,950	367.55	
	7650	Vacuum, HEPA, 16 gallon, wet/dry		.85	122	365	1,100	79.80	
	7655	55 gallon, wet/dry		.78	25.50	76.50	230	21.50	
	7660	Water tank, portable		.73	160	480.25	1,450	101.90	
	7690	Sewer/catch basin vacuum, 14 C.Y., 1500 gallons		17.31	665	1,988.14	5,975	536.15	
	7700	Welder, electric, 200 amp		3.81	33.50	100	300	50.50	
	7800	300 amp		5.55	103	310	930	106.40	
	7900	Gas engine, 200 amp		8.95	58.50	175	525	106.55	
	8000	300 amp		10.13	110	330	990	147	
	8100	Wheelbarrow, any size		.06	11.15	33.50	101	7.20	
	8200	Wrecking ball, 4000 lb.		2.50	60	180	540	56	
50	0010	HIGHWAY EQUIPMENT RENTAL without operators	R015433 -10	Ea.	88.41	1,550	4,621.78	13,900	1,632
	0050	Asphalt batch plant, portable drum mixer, 100 ton/hr.			101.99	1,650	4,931.62	14,800	1,802
	0060	200 ton/hr.			119.86	1,925	5,783.68	17,400	2,116
	0070	300 ton/hr.							
	0100	Backhoe attachment, long stick, up to 185 H.P., 10.5' long			.37	25.50	76.43	229	18.25
	0140	Up to 250 H.P., 12' long			.41	28.50	85.72	257	20.45
	0180	Over 250 H.P., 15' long			.56	39	116.71	350	27.85
	0200	Special dipper arm, up to 100 H.P., 32' long			1.16	79.50	238.58	715	56.95
	0240	Over 100 H.P., 33' long			1.44	100	299.51	900	71.45
	0280	Catch basin/sewer cleaning truck, 3 ton, 9 C.Y., 1000 gal.			35.39	420	1,265.18	3,800	536.15
	0300	Concrete batch plant, portable, electric, 200 C.Y./hr.			24.18	560	1,678.30	5,025	529.15
	0520	Grader/dozer attachment, ripper/scarifier, rear mounted, up to 135 H.P.			3.15	63.50	190.04	570	63.20
	0540	Up to 180 H.P.			4.13	95.50	287.12	860	90.50
	0580	Up to 250 H.P.			5.85	153	459.60	1,375	138.75
	0700	Pvmt. removal bucket, for hyd. excavator, up to 90 H.P.			2.16	58	174.54	525	52.20
	0740	Up to 200 H.P.			2.31	74.50	223.08	670	63.05
	0780	Over 200 H.P.			2.52	91	273.69	820	74.90
	0900	Aggregate spreader, self-propelled, 187 H.P.			50.60	740	2,220.52	6,650	848.90
	1000	Chemical spreader, 3 C.Y.			3.17	96.50	290	870	83.35
	1900	Hammermill, traveling, 250 H.P.			67.35	515	1,550	4,650	848.80
	2000	Horizontal borer, 3" diameter, 13 H.P. gas driven			5.42	232	695	2,075	182.35
	2150	Horizontal directional drill, 20,000 lb. thrust, 78 H.P. diesel			27.58	530	1,590	4,775	538.65
	2160	30,000 lb. thrust, 115 H.P.			33.90	615	1,850	5,550	641.20
	2170	50,000 lb. thrust, 170 H.P.			48.60	710	2,135	6,400	815.80

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			UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY
50	2190	Mud trailer for HDD, 1500 gallons, 175 H.P., gas	Ea.	25.50	175	525	1,575	309
	2200	Hydromulcher, diesel, 3000 gallon, for truck mounting		17.43	227	680	2,050	275.45
	2300	Gas, 600 gallon		7.49	95	285	855	116.95
	2400	Joint & crack cleaner, walk behind, 25 H.P.		3.16	45.50	136	410	52.45
	2500	Filler, trailer mounted, 400 gallons, 20 H.P.		8.35	147	440	1,325	154.75
	3000	Paint striper, self-propelled, 40 gallon, 22 H.P.		6.76	122	365	1,100	127.10
	3100	120 gallon, 120 H.P.		19.23	380	1,140	3,425	381.80
	3200	Post drivers, 6' I-Beam frame, for truck mounting		12.41	320	960	2,875	291.30
	3400	Road sweeper, self-propelled, 8' wide, 90 H.P.		35.91	715	2,143.06	6,425	715.85
	3450	Road sweeper, vacuum assisted, 4 C.Y., 220 gallons		58.28	670	2,013.96	6,050	869
	4000	Road mixer, self-propelled, 130 H.P.		46.23	825	2,478.72	7,425	865.60
	4100	310 H.P.		75.01	2,150	6,480.82	19,400	1,896
	4220	Cold mix paver, incl. pug mill and bitumen tank, 165 H.P.		94.97	2,325	6,945.58	20,800	2,149
	4240	Pavement brush, towed		3.43	100	299.51	900	87.30
	4250	Paver, asphalt, wheel or crawler, 130 H.P., diesel		94.23	2,275	6,816.48	20,400	2,117
	4300	Paver, road widener, gas, 1' to 6', 67 H.P.		46.66	975	2,917.66	8,750	956.80
	4400	Diesel, 2' to 14', 88 H.P.		56.38	1,150	3,459.88	10,400	1,143
	4600	Slipform pavers, curb and gutter, 2 track, 75 H.P.		57.83	1,250	3,769.72	11,300	1,217
	4700	4 track, 165 H.P.		35.69	845	2,530.36	7,600	791.55
	4800	Median barrier, 215 H.P.		58.43	1,350	4,027.92	12,100	1,273
	4901	Trailer, low bed, 75 ton capacity		10.71	282	846.90	2,550	255.05
	5000	Road planer, walk behind, 10" cutting width, 10 H.P.		2.45	243	730	2,200	165.65
	5100	Self-propelled, 12" cutting width, 64 H.P.		8.26	190	570	1,700	180.05
	5120	Traffic line remover, metal ball blaster, truck mounted, 115 H.P.		46.56	905	2,720	8,150	916.50
	5140	Grinder, truck mounted, 115 H.P.		50.89	905	2,720	8,150	951.15
	5160	Walk-behind, 11 H.P.		3.56	142	425	1,275	113.45
	5200	Pavement profiler, 4' to 6' wide, 450 H.P.		216.58	1,275	3,800	11,400	2,493
	5300	8' to 10' wide, 750 H.P.		331.58	1,325	3,975	11,900	3,448
	5400	Roadway plate, steel, 1" x 8' x 20'		.09	61	182.50	550	37.20
	5600	Stabilizer, self-propelled, 150 H.P.		41.14	1,025	3,100	9,300	949.10
	5700	310 H.P.		76.18	1,300	3,900	11,700	1,389
	5800	Striper, truck mounted, 120 gallon paint, 460 H.P.		48.74	340	1,015	3,050	592.95
	5900	Thermal paint heating kettle, 115 gallons		7.71	61.50	185	555	98.65
	6000	Tar kettle, 330 gallon, trailer mounted		12.27	96.50	290	870	156.20
	7000	Tunnel locomotive, diesel, 8 to 12 ton		29.76	620	1,859.04	5,575	609.85
	7005	Electric, 10 ton		29.25	705	2,117.24	6,350	657.40
	7010	Muck cars, 1/2 C.Y. capacity		2.30	26.50	80.04	240	34.40
	7020	1 C.Y. capacity		2.51	35	104.31	315	40.95
	7030	2 C.Y. capacity		2.66	39	116.71	350	44.60
	7040	Side dump, 2 C.Y. capacity		2.87	48	144.59	435	51.90
	7050	3 C.Y. capacity		3.85	53	159.05	475	62.65
	7060	5 C.Y. capacity		5.62	68.50	205.53	615	86.10
	7100	Ventilating blower for tunnel, 7-1/2 H.P.		2.14	52.50	158.02	475	48.70
	7110	10 H.P.		2.42	55	165.25	495	52.40
	7120	20 H.P.		3.54	71.50	214.82	645	71.30
	7140	40 H.P.		6.14	94.50	284.02	850	105.90
	7160	60 H.P.		8.69	102	304.68	915	130.45
	7175	75 H.P.		10.37	158	475.09	1,425	177.95
	7180	200 H.P.		20.78	310	934.68	2,800	353.20
	7800	Windrow loader, elevating		53.94	1,650	4,975	14,900	1,427
60	0010	LIFTING AND HOISTING EQUIPMENT RENTAL without operators	R015433 -10					60
	0150	Crane, flatbed mounted, 3 ton capacity	Ea.	14.41	201	604.19	1,825	236.10
	0200	Crane, climbing, 106' jib, 6000 lb. capacity, 410 fpm	R312316 -45					
	0300	101' jib, 10,250 lb. capacity, 270 fpm		39.72	2,600	7,800	23,400	1,878
	0500	Tower, static, 130' high, 106' jib, 6200 lb. capacity at 400 fpm		45.16	2,250	6,715	20,100	1,704
	0520	Mini crawler spider crane, up to 24" wide, 1990 lb. lifting capacity		12.50	550	1,652.48	4,950	430.50
	0525	Up to 30" wide, 6450 lb. lifting capacity		14.52	655	1,962.32	5,875	508.65
	0530	Up to 52" wide, 6680 lb. lifting capacity		23.10	800	2,401.26	7,200	665.05

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		UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY	
60	0535	Up to 55" wide, 8920 lb. lifting capacity	Ea.	25.79	885	2,659.46	7,975	738.25
	0540	Up to 66" wide, 13,350 lb. lifting capacity		34.92	1,375	4,131.20	12,400	1,106
	0600	Crawler mounted, lattice boom, 1/2 C.Y., 15 tons at 12' radius		36.96	830	2,483	7,450	792.30
	0700	3/4 C.Y., 20 tons at 12' radius		50.42	930	2,790	8,375	961.35
	0800	1 C.Y., 25 tons at 12' radius		67.42	985	2,950	8,850	1,129
	0900	1-1/2 C.Y., 40 tons at 12' radius		66.31	1,125	3,375	10,100	1,206
	1000	2 C.Y., 50 tons at 12' radius		88.77	1,325	4,000	12,000	1,510
	1100	3 C.Y., 75 tons at 12' radius		75.26	2,325	7,000	21,000	2,002
	1200	100 ton capacity, 60' boom		85.91	2,675	8,000	24,000	2,287
	1300	165 ton capacity, 60' boom		106.10	3,000	9,000	27,000	2,649
	1400	200 ton capacity, 70' boom		138.21	3,825	11,500	34,500	3,406
	1500	350 ton capacity, 80' boom		182.20	4,175	12,500	37,500	3,958
	1600	Truck mounted, lattice boom, 6 x 4, 20 tons at 10' radius		39.76	1,950	5,850	17,600	1,488
	1700	25 tons at 10' radius		42.73	2,325	7,000	21,000	1,742
	1800	8 x 4, 30 tons at 10' radius		45.54	2,500	7,500	22,500	1,864
	1900	40 tons at 12' radius		48.55	2,725	8,200	24,600	2,028
	2000	60 tons at 15' radius		53.69	1,650	4,950	14,900	1,419
	2050	82 tons at 15' radius		59.43	1,775	5,350	16,100	1,545
	2100	90 tons at 15' radius		66.39	1,950	5,825	17,500	1,696
	2200	115 tons at 15' radius		74.90	2,175	6,525	19,600	1,904
	2300	150 tons at 18' radius		81.09	2,700	8,100	24,300	2,269
	2350	165 tons at 18' radius		87.03	2,425	7,275	21,800	2,151
	2400	Truck mounted, hydraulic, 12 ton capacity		29.50	390	1,175	3,525	471
	2500	25 ton capacity		36.36	485	1,450	4,350	580.85
	2550	33 ton capacity		50.67	900	2,700	8,100	945.35
	2560	40 ton capacity		49.47	900	2,700	8,100	935.80
	2600	55 ton capacity		53.78	915	2,750	8,250	980.20
	2700	80 ton capacity		75.71	1,475	4,400	13,200	1,486
	2720	100 ton capacity		74.96	1,550	4,675	14,000	1,535
	2740	120 ton capacity		102.81	1,825	5,500	16,500	1,922
	2760	150 ton capacity		109.92	2,050	6,125	18,400	2,104
	2800	Self-propelled, 4 x 4, with telescoping boom, 5 ton		15.14	430	1,285	3,850	378.10
	2900	12-1/2 ton capacity		21.42	430	1,285	3,850	428.30
	3000	15 ton capacity		34.42	450	1,350	4,050	545.35
	3050	20 ton capacity		24.02	650	1,950	5,850	582.20
	3100	25 ton capacity		36.69	1,425	4,250	12,800	1,144
	3150	40 ton capacity		44.90	660	1,975	5,925	754.20
	3200	Derricks, guy, 20 ton capacity, 60' boom, 75' mast		22.74	1,425	4,250	12,800	1,032
	3300	100' boom, 115' mast		36.04	2,000	6,000	18,000	1,488
	3400	Stiffleg, 20 ton capacity, 70' boom, 37' mast		25.41	615	1,850	5,550	573.25
	3500	100' boom, 47' mast		39.32	665	2,000	6,000	714.55
	3550	Helicopter, small, lift to 1250 lb. maximum, w/pilot		99.14	2,150	6,435	19,300	2,080
	3600	Hoists, chain type, overhead, manual, 3/4 ton		.14	10.25	30.70	92	7.30
	3900	10 ton		.79	6.20	18.59	56	10
	4000	Hoist and tower, 5000 lb. cap., portable electric, 40' high		5.12	142	426	1,275	126.20
	4100	For each added 10' section, add		.12	31.50	95	285	19.95
	4200	Hoist and single tubular tower, 5000 lb. electric, 100' high		6.96	105	315	945	118.65
	4300	For each added 6'-6" section, add		.21	38.50	115	345	24.65
	4400	Hoist and double tubular tower, 5000 lb., 100' high		7.57	105	315	945	123.60
	4500	For each added 6'-6" section, add		.23	41.50	125	375	26.80
	4550	Hoist and tower, mast type, 6000 lb., 100' high		8.24	94.50	284	850	122.70
	4570	For each added 10' section, add		.13	31.50	95	285	20.05
	4600	Hoist and tower, personnel, electric, 2000 lb., 100' @ 125 fpm		17.50	25	75	225	155
	4700	3000 lb., 100' @ 200 fpm		20.02	25	75	225	175.15
	4800	3000 lb., 150' @ 300 fpm		22.22	25	75	225	192.75
	4900	4000 lb., 100' @ 300 fpm		22.98	25	75	225	198.85
	5000	6000 lb., 100' @ 275 fpm		24.70	25	75	225	212.60
	5100	For added heights up to 500', add	L.F.	.01	3.33	10	30	2.10

01 54 | Construction Aids

01 54 33 Equipment Rental		UNIT	HOURLY OPER. COST	RENT PER DAY	RENT PER WEEK	RENT PER MONTH	EQUIPMENT COST/DAY
60	5200 Jacks, hydraulic, 20 ton 5500 100 ton	Ea.	.05 .40	19.65 26	59 78.50	177 236	12.20 18.90
	6100 Jacks, hydraulic, climbing w/50' jackrods, control console, 30 ton cap. 6150 For each added 10' jackrod section, add		2.17 .05	31 5	93 15	279 45	35.90 3.40
	6300 50 ton capacity 6350 For each added 10' jackrod section, add			3.48 .06	33.50 5	100 15	47.85 3.50
	6500 125 ton capacity 6550 For each added 10' jackrod section, add			9.10 .61	51.50 5	155 15	103.85 7.90
	6600 Cable jack, 10 ton capacity with 200' cable 6650 For each added 50' of cable, add			1.82 .22	35.50 15	107 45	35.95 10.75
70	WELLPOINT EQUIPMENT RENTAL without operators 0020 Based on 2 months rental	R015433 -10					
	0100 Combination jetting & wellpoint pump, 60 H.P. diesel 0200 High pressure gas jet pump, 200 H.P., 300 psi	Ea.	15.67 "	298 275	895 825	2,675 2,475	304.35 435.65
	0300 Discharge pipe, 8" diameter 0350 12" diameter	L.F.	.01 .01	1.40 2.07	4.20 6.20	12.60 18.60	.90 1.35
	0400 Header pipe, flows up to 150 GPM, 4" diameter 0500 400 GPM, 6" diameter			.01 .01	.73 1.07	2.20 3.20	.50 .70
	0600 800 GPM, 8" diameter 0700 1500 GPM, 10" diameter			.01 .01	1.40 1.73	4.20 5.20	.95 1.15
	0800 2500 GPM, 12" diameter 0900 4500 GPM, 16" diameter			.03 .03	2.07 2.40	6.20 7.20	18.60 21.50
	0950 For quick coupling aluminum and plastic pipe, add 1100 Wellpoint, 25' long, with fittings & riser pipe, 1-1/2" or 2" diameter	Ea.	.03 .07	9.35 132	28 395	84 1,175	5.85 79.55
	1200 Wellpoint pump, diesel powered, 4" suction, 20 H.P. 1300 6" suction, 30 H.P.			7.00 9.39	150 167	450 500	1,350 1,500
	1400 8" suction, 40 H.P. 1500 10" suction, 75 H.P.			12.73 18.77	250 265	750 795	2,250 2,375
	1600 12" suction, 100 H.P. 1700 12" suction, 175 H.P.			27.24 38.98	298 315	895 950	2,675 3,850
80	MARINE EQUIPMENT RENTAL without operators 0200 Barge, 400 Ton, 30' wide x 90' long	R015433 -10	Ea.	17.63	1,200	3,588.98	10,800
	0240 800 Ton, 45' wide x 90' long 2000 Tugboat, diesel, 100 H.P.			22.14 29.57	1,475 238	4,415.22 712.63	13,200 2,150
	2040 250 H.P. 2080 380 H.P.			57.41 124.99	430 1,300	1,291 3,873	3,875 11,600
	3000 Small work boat, gas, 16-foot, 50 H.P. 4000 Large, diesel, 48-foot, 200 H.P.			11.35 74.68	48 1,375	143.56 4,105.38	430 12,300
							119.50 1,418

Crews - Standard

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Building Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$42.10	\$63.25
1 Concrete Saw, Gas Manual		111.55		122.71	13.94	15.34
8 L.H., Daily Totals		\$448.35		\$628.71	\$56.04	\$78.59
Crew A-1A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Skilled Worker	\$54.85	\$438.80	\$82.95	\$663.60	\$54.85	\$82.95
1 Shot Blaster, 20"		206.20		226.82	25.77	28.35
8 L.H., Daily Totals		\$645.00		\$890.42	\$80.63	\$111.30
Crew A-1B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Building Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$42.10	\$63.25
1 Concrete Saw		111.50		122.65	13.94	15.33
8 L.H., Daily Totals		\$448.30		\$628.65	\$56.04	\$78.58
Crew A-1C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Building Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$42.10	\$63.25
1 Chain Saw, Gas, 18"		52.00		57.20	6.50	7.15
8 L.H., Daily Totals		\$388.80		\$563.20	\$48.60	\$70.40
Crew A-1D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Building Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$42.10	\$63.25
1 Vibrating Plate, Gas, 18"		31.55		34.70	3.94	4.34
8 L.H., Daily Totals		\$368.35		\$540.71	\$46.04	\$67.59
Crew A-1E	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Building Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$42.10	\$63.25
1 Vibrating Plate, Gas, 21"		165.35		181.88	20.67	22.74
8 L.H., Daily Totals		\$502.15		\$687.88	\$62.77	\$85.99
Crew A-1F	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Building Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$42.10	\$63.25
1 Hammer/Tamper, Gas, 8"		46.50		51.15	5.81	6.39
8 L.H., Daily Totals		\$383.30		\$557.15	\$47.91	\$69.64
Crew A-1G	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Building Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$42.10	\$63.25
1 Rammer/Tamper, Gas, 15"		54.00		59.40	6.75	7.42
8 L.H., Daily Totals		\$390.80		\$565.40	\$48.85	\$70.67
Crew A-1H	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Building Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$42.10	\$63.25
1 Exterior Steam Cleaner		76.30		83.93	9.54	10.49
8 L.H., Daily Totals		\$413.10		\$589.93	\$51.64	\$73.74
Crew A-1I	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Building Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$42.10	\$63.25
1 Cultivator, Walk-Behind, 5 H.P.		53.05		58.35	6.63	7.29
8 L.H., Daily Totals		\$389.85		\$564.36	\$48.73	\$70.54
Crew A-1K	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Building Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$42.10	\$63.25
1 Cultivator, Walk-Behind, 8 H.P.		101.40		111.54	12.68	13.94
8 L.H., Daily Totals		\$438.20		\$617.54	\$54.77	\$77.19
Crew A-1M	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Building Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$42.10	\$63.25
1 Snow Blower, Walk-Behind		67.50		74.25	8.44	9.28
8 L.H., Daily Totals		\$404.30		\$580.25	\$50.54	\$72.53

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Laborers	\$42.10	\$673.60	\$63.25	\$1012.00	\$43.82	\$65.77
1 Truck Driver (light)	47.25	378.00	70.80	566.40		
1 Flatbed Truck, Gas, 1.5 Ton		196.15		215.76	8.17	8.99
24 L.H., Daily Totals		\$1247.75		\$1794.17	\$51.99	\$74.76
Crew A-2A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Laborers	\$42.10	\$673.60	\$63.25	\$1012.00	\$43.82	\$65.77
1 Truck Driver (light)	47.25	378.00	70.80	566.40		
1 Flatbed Truck, Gas, 1.5 Ton		196.15		215.76	12.82	14.10
24 L.H., Daily Totals		\$1359.25		\$1916.82	\$56.64	\$79.87
Crew A-2B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Truck Driver (light)	\$47.25	\$378.00	\$70.80	\$566.40	\$47.25	\$70.80
1 Flatbed Truck, Gas, 1.5 Ton		196.15		215.76	24.52	26.97
8 L.H., Daily Totals		\$574.15		\$782.16	\$71.77	\$97.77
Crew A-3A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (light)	\$53.00	\$424.00	\$79.20	\$633.60	\$53.00	\$79.20
1 Pickup Truck, 4x4, 3/4 Ton		175.85		193.44	21.98	24.18
8 L.H., Daily Totals		\$599.85		\$827.03	\$74.98	\$103.38
Crew A-3B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$52.85	\$79.10
1 Truck Driver (heavy)	48.95	391.60	73.35	586.80		
1 Dump Truck, 12 C.Y., 400 H.P.		572.90		630.19	79.69	87.66
1 F.E. Loader, W.M., 2.5 C.Y.		702.10		772.31		
16 L.H., Daily Totals		\$2120.60		\$2668.10	\$132.54	\$166.76
Crew A-3C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (light)	\$53.00	\$424.00	\$79.20	\$633.60	\$53.00	\$79.20
1 Loader, Skid Steer, 78 H.P.		400.10		440.11	50.01	55.01
8 L.H., Daily Totals		\$824.10		\$1073.71	\$103.01	\$134.21
Crew A-3D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Truck Driver (light)	\$47.25	\$378.00	\$70.80	\$566.40	\$47.25	\$70.80
1 Pickup Truck, 4x4, 3/4 Ton		175.85		193.44		
1 Flatbed Trailer, 25 Ton		135.55		149.10	38.92	42.82
8 L.H., Daily Totals		\$689.40		\$908.94	\$86.17	\$113.62
Crew A-3E	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$54.08	\$80.92
1 Truck Driver (heavy)	48.95	391.60	73.35	586.80		
1 Pickup Truck, 4x4, 3/4 Ton		175.85		193.44	10.99	12.09
16 L.H., Daily Totals		\$1041.05		\$1488.23	\$65.07	\$93.01
Crew A-3F	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$54.08	\$80.92
1 Truck Driver (heavy)	48.95	391.60	73.35	586.80		
1 Pickup Truck, 4x4, 3/4 Ton		175.85		193.44	542.58	
1 Truck Tractor, 6x4, 380 H.P.		493.25		542.58		
1 Lowbed Trailer, 75 Ton		255.05		280.56	57.76	63.54
16 L.H., Daily Totals		\$1789.35		\$2311.36	\$111.83	\$144.46

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Crews - Standard

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour		Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P		Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew A-3G													
1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$54.08	\$80.92							
1 Truck Driver (heavy)	48.95	391.60	73.35	586.80									
1 Pickup Truck, 4x4, 3/4 Ton			175.85		193.44								
1 Truck Tractor, 6x4, 450 H.P.			601.75		661.92								
1 Lowbed Trailer, 75 Ton			255.05		280.56								
16 L.H., Daily Totals		\$1897.85		\$2430.72	\$118.62	\$151.92							
Crew A-3H													
1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$59.20	\$88.50							
1 Hyd. Crane, 12 Ton (Daily)		724.85		797.34	90.61	99.67							
8 L.H., Daily Totals		\$1198.45		\$1505.34	\$149.81	\$188.17							
Crew A-3I													
1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$59.20	\$88.50							
1 Hyd. Crane, 25 Ton (Daily)		801.40		881.54	100.18	110.19							
8 L.H., Daily Totals		\$1275.00		\$1589.54	\$159.38	\$198.69							
Crew A-3J													
1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$59.20	\$88.50							
1 Hyd. Crane, 40 Ton (Daily)		1272.00		1399.20	159.00	174.90							
8 L.H., Daily Totals		\$1745.60		\$2107.20	\$218.20	\$263.40							
Crew A-3K													
1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$54.88	\$82.03							
1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40									
1 Hyd. Crane, 55 Ton (Daily)		1362.00		1498.20									
1 P/U Truck, 3/4 Ton (Daily)		142.15		156.37	94.01	103.41							
16 L.H., Daily Totals		\$2382.15		\$2966.97	\$148.88	\$185.44							
Crew A-3L													
1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$54.88	\$82.03							
1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40									
1 Hyd. Crane, 80 Ton (Daily)		2101.00		2311.10									
1 P/U Truck, 3/4 Ton (Daily)		142.15		156.37	140.20	154.22							
16 L.H., Daily Totals		\$3121.15		\$3779.86	\$195.07	\$236.24							
Crew A-3M													
1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$54.88	\$82.03							
1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40									
1 Hyd. Crane, 100 Ton (Daily)		2227.00		2449.70									
1 P/U Truck, 3/4 Ton (Daily)		142.15		156.37	148.07	162.88							
16 L.H., Daily Totals		\$3247.15		\$3918.47	\$202.95	\$244.90							
Crew A-3N													
1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$59.20	\$88.50							
1 Tower Crane (monthly)		1693.00		1862.30	211.63	232.79							
8 L.H., Daily Totals		\$2166.60		\$2570.30	\$270.82	\$321.29							
Crew A-3P													
1 Equip. Oper. (light)	\$53.00	\$424.00	\$79.20	\$633.60	\$53.00	\$79.20							
1 A.T. Forklift, 31' reach, 45' lift		374.20		411.62	46.77	51.45							
8 L.H., Daily Totals		\$798.20		\$1045.22	\$99.78	\$130.65							
Crew A-3Q													
1 Equip. Oper. (light)	\$53.00	\$424.00	\$79.20	\$633.60	\$53.00	\$79.20							
1 Pickup Truck, 4x4, 3/4 Ton		175.85		193.44									
1 Flatbed Trailer, 3 Ton		70.30		77.33	30.77	33.85							
8 L.H., Daily Totals		\$670.15		\$904.37	\$83.77	\$113.05							

Crews - Standard

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew A-10D						
2 Asbestos Workers	\$58.65	\$938.40	\$90.05	\$1440.80	\$56.76	\$86.04
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00		
1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40		
1 Hydraulic Crane, 33 Ton	945.35		111	1039.89	29.54	32.50
32 L.H., Daily Totals		\$2761.75		\$3793.09	\$86.30	\$118.53
Crew A-11						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Asbestos Foreman	\$59.15	\$473.20	\$90.80	\$726.40	\$58.71	\$90.14
7 Asbestos Workers	58.65	3284.40	90.05	5042.80		
2 Chip. Hammers, 12 Lb., Elec.		64.80		71.28	1.01	1.11
64 L.H., Daily Totals		\$3822.40		\$5840.48	\$59.73	\$91.26
Crew A-12						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Asbestos Foreman	\$59.15	\$473.20	\$90.80	\$726.40	\$58.71	\$90.14
7 Asbestos Workers	58.65	3284.40	90.05	5042.80		
1 Trk-Mtd Vac, 14 CY, 1500 Gal.		536.15		589.76		
1 Flatbed Truck, 20,000 GWW		201.60		221.76	11.53	12.68
64 L.H., Daily Totals		\$4495.35		\$6580.73	\$70.24	\$102.82
Crew A-13						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (light)	\$53.00	\$424.00	\$79.20	\$633.60	\$53.00	\$79.20
1 Trk-Mtd Vac, 14 CY, 1500 Gal.		536.15		589.76		
1 Flatbed Truck, 20,000 GWW		201.60		221.76	92.22	101.44
8 L.H., Daily Totals		\$1161.75		\$1445.13	\$145.22	\$180.64
Crew B-1						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$42.77	\$64.25
2 Laborers	42.10	673.60	63.25	1012.00		
24 L.H., Daily Totals		\$1026.40		\$1542.00	\$42.77	\$64.25
Crew B-1A						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$42.77	\$64.25
2 Laborers	42.10	673.60	63.25	1012.00		
2 Cutting Torches		25.60		28.16		
2 Sets of Gases		343.10		377.41	15.36	16.90
24 L.H., Daily Totals		\$1395.10		\$1947.57	\$58.13	\$81.15
Crew B-1B						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$46.88	\$70.31
2 Laborers	42.10	673.60	63.25	1012.00		
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00		
2 Cutting Torches		25.60		28.16		
2 Sets of Gases		343.10		377.41		
1 Hyd. Crane, 12 Ton		471.00		518.10	26.24	28.86
32 L.H., Daily Totals		\$2339.70		\$3173.67	\$73.12	\$99.18
Crew B-1C						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$42.77	\$64.25
2 Laborers	42.10	673.60	63.25	1012.00		
1 Telescoping Boom Lift, to 60'		310.90		341.99	12.95	14.25
24 L.H., Daily Totals		\$1337.30		\$1883.99	\$55.72	\$78.50
Crew B-1D						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Laborers	\$42.10	\$673.60	\$63.25	\$1012.00	\$42.10	\$63.25
1 Small Work Boat, Gas, 50 H.P.		119.50		131.45		
1 Pressure Washer, 7 GPM		90.50		99.55	13.13	14.44
16 L.H., Daily Totals		\$883.60		\$1243.00	\$55.23	\$77.69

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew B-1E						
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$42.60	\$64.00
3 Laborers	42.10	1010.40	63.25	1518.00		
1 Work Boat, Diesel, 200 H.P.		1418.00		1559.80		
2 Pressure Washers, 7 GPM		181.00		199.10	49.97	54.97
32 L.H., Daily Totals		\$2962.20		\$3806.90	\$92.57	\$118.97
Crew B-1F						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Skilled Workers	\$54.85	\$877.60	\$82.95	\$1327.20	\$50.60	\$76.38
1 Laborer	42.10	336.80	63.25	506.00		
1 Small Work Boat, Gas, 50 H.P.		119.50		131.45		
1 Pressure Washer, 7 GPM		90.50		99.55	8.75	9.63
24 L.H., Daily Totals		\$1424.40		\$2064.20	\$59.35	\$86.01
Crew B-1G						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Laborers	\$42.10	\$673.60	\$63.25	\$1012.00	\$42.10	\$63.25
1 Small Work Boat, Gas, 50 H.P.		119.50		131.45	7.47	8.22
16 L.H., Daily Totals		\$793.10		\$1143.45	\$49.57	\$71.47
Crew B-1H						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Skilled Workers	\$54.85	\$877.60	\$82.95	\$1327.20	\$50.60	\$76.38
1 Laborer	42.10	336.80	63.25	506.00		
1 Small Work Boat, Gas, 50 H.P.		119.50		131.45	4.98	5.48
24 L.H., Daily Totals		\$1333.90		\$1964.65	\$55.58	\$81.86
Crew B-1J						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (inside)	\$42.60	\$340.80	\$64.00	\$512.00	\$42.35	\$63.63
1 Laborer	42.10	336.80	63.25	506.00		
16 L.H., Daily Totals		\$677.60		\$1018.00	\$42.35	\$63.63
Crew B-1K						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Carpenter Foreman (inside)	\$53.65	\$429.20	\$80.60	\$644.80	\$53.40	\$80.22
1 Carpenter	53.15	425.20	79.85	638.80		
16 L.H., Daily Totals		\$854.40		\$1283.60	\$53.40	\$80.22
Crew B-2						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$42.50	\$63.85
4 Laborers	42.10	1347.20	63.25	2024.00		
40 L.H., Daily Totals		\$1700.00		\$2554.00	\$42.50	\$63.85
Crew B-2A						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$42.77	\$64.25
2 Laborers	42.10	673.60	63.25	1012.00		
1 Telescoping Boom Lift, to 60'		310.90		341.99	12.95	14.25
24 L.H., Daily Totals		\$1337.30		\$1883.99	\$55.72	\$78.50
Crew B-3						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$47.16	\$70.72
2 Laborers	42.10	673.60	63.25	1012.00		
1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80		
2 Truck Drivers (heavy)	48.95	783.20	73.35	1173.60		
1 Crawler Loader, 3 C.Y.		1169.00		1285.90		
2 Dump Trucks, 12 C.Y., 400 H.P.		1145.80		1260.38	48.23	53.05
48 L.H., Daily Totals		\$4578.40		\$5940.68	\$95.38	\$123.76
Crew B-3A						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
4 Laborers	\$42.10	\$1347.20	\$63.25	\$2024.00	\$45.03	\$67.57
1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80		
1 Hyd. Excavator, 1.5 C.Y.		687.55		756.30	17.19	18.91
40 L.H., Daily Totals		\$2488.75		\$3459.11	\$62.22	\$86.48

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Crews - Standard

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour		Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P		Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew B-3B							Crew B-5C						
2 Laborers	\$42.10	\$673.60	\$63.25	\$1012.00	\$47.48	\$71.17	3 Laborers	\$42.10	\$1010.40	\$63.25	\$1518.00	\$48.84	\$73.17
1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80			1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80		
1 Truck Driver (heavy)	48.95	391.60	73.35	586.80			2 Truck Drivers (heavy)	48.95	783.20	73.35	1173.60		
1 Backhoe Loader, 80 H.P.			232.40	255.64			1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00		
1 Dump Truck, 12 C.Y., 400 H.P.	572.90	630.19		25.17	27.68		1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40		
32 L.H., Daily Totals		\$2324.50		\$3163.43	\$72.64	\$98.86	2 Dump Trucks, 12 C.Y., 400 H.P.			1145.80	1260.38		
Crew B-3C							1 Crawler Loader, 4 C.Y.			1489.00	1637.90		
3 Laborers	\$42.10	\$1010.40	\$63.25	\$1518.00	\$45.76	\$68.65	1 S.P. Crane, 4x4, 25 Ton			1144.00	1258.40	59.04	64.95
1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80			64 L.H., Daily Totals			\$6904.40	\$8839.48	\$107.88	\$138.12
1 Crawler Loader, 4 C.Y.	1489.00			1637.90	46.53	51.18							
32 L.H., Daily Totals		\$2953.40		\$3834.70	\$92.29	\$119.83	Crew B-5D						
Crew B-4							1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$46.87	\$70.29
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$43.58	\$65.43	4 Laborers	42.10	1347.20	63.25	2024.00		
4 Laborers	42.10	1347.20	63.25	2024.00			2 Equip. Oper. (medium)	56.75	908.00	84.85	1357.60		
1 Truck Driver (heavy)	48.95	391.60	73.35	586.80			1 Truck Driver (heavy)	48.95	391.60	73.35	586.80		
1 Truck Tractor, 220 H.P.			307.10	337.81			1 Air Compressor, 250 cfm			201.50	221.65		
1 Flatbed Trailer, 40 Ton	186.20			204.82	10.28	11.30	2 Breakers, Pavement, 60 lb.			107.00	117.70		
48 L.H., Daily Totals		\$2584.90		\$3683.43	\$53.85	\$76.74	2-50' Air Hoses, 1.5"			48.50	53.35		
Crew B-5							1 Crawler Loader, 3 C.Y.			1169.00	1285.90		
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$46.57	\$69.85	1 Dump Truck, 12 C.Y., 400 H.P.			572.90	630.19	32.80	36.07
4 Laborers	42.10	1347.20	63.25	2024.00			64 L.H., Daily Totals			\$5098.50	\$6807.19	\$79.66	\$106.36
2 Equip. Oper. (medium)	56.75	908.00	84.85	1357.60									
1 Air Compressor, 250 cfm			201.50	221.65			Crew B-5E						
2 Breakers, Pavement, 60 lb.			107.00	117.70			1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$46.87	\$70.29
2-50' Air Hoses, 1.5"			48.50	53.35			4 Laborers	42.10	1347.20	63.25	2024.00		
1 Crawler Loader, 3 C.Y.	1169.00			1285.90	27.25	29.98	2 Equip. Oper. (medium)	56.75	908.00	84.85	1357.60		
56 L.H., Daily Totals		\$4134.00		\$5590.20	\$73.82	\$99.83	1 Truck Driver (heavy)	48.95	391.60	73.35	586.80		
Crew B-5A							1 Water Tank Trailer, 5000 Gal.			152.25	167.47		
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$46.76	\$70.11	1 High Press. Water Jet, 40 KSI			81.05	892.16		
6 Laborers	42.10	2020.80	63.25	3036.00			2-50' Air Hoses, 1.5"			48.50	53.35		
2 Equip. Oper. (medium)	56.75	908.00	84.85	1357.60			1 Crawler Loader, 3 C.Y.			1169.00	1285.90		
1 Equip. Oper. (light)	53.00	424.00	79.20	633.60			1 Dump Truck, 12 C.Y., 400 H.P.			572.90	630.19	43.03	47.33
2 Truck Drivers (heavy)	48.95	783.20	73.35	1173.60			64 L.H., Daily Totals			\$5753.30	\$7527.47	\$89.90	\$117.62
1 Air Compressor, 365 cfm			315.40	346.94									
2 Breakers, Pavement, 60 lb.			107.00	117.70			Crew B-6						
8-50' Air Hoses, 1"			64.00	70.40			2 Laborers	\$42.10	\$673.60	\$63.25	\$1012.00	\$45.73	\$68.57
2 Dump Trucks, 8 C.Y., 220 H.P.			856.10	941.71	13.98	15.38	1 Equip. Oper. (light)	53.00	424.00	79.20	633.60		
96 L.H., Daily Totals		\$5831.30		\$8207.55	\$60.74	\$85.50	1 Backhoe Loader, 48 H.P.			213.75	235.13	8.91	9.80
Crew B-5B							24 L.H., Daily Totals			\$1311.35	\$1880.72	\$54.64	\$78.36
1 Powderman	\$54.85	\$438.80	\$82.95	\$663.60	\$52.53	\$78.78							
2 Equip. Oper. (medium)	56.75	908.00	84.85	1357.60			Crew B-6A						
3 Truck Drivers (heavy)	48.95	1174.80	73.35	1760.40			.5 Labor Foreman (outside)	\$44.10	\$176.40	\$66.25	\$265.00	\$48.36	\$72.49
1 F.E. Loader, W.M., 2.5 C.Y.			702.10		772.31		1 Laborer	42.10	336.80	63.25	506.00		
3 Dump Trucks, 12 C.Y., 400 H.P.			1718.70	1890.57			1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80		
1 Air Compressor, 365 cfm			315.40	346.94	57.00	62.70	1 Vacuum Truck, 5000 Gal.			367.55	404.31	18.38	20.22
48 L.H., Daily Totals		\$5257.80		\$6791.42	\$109.54	\$141.49	20 L.H., Daily Totals			\$1334.75	\$1854.11	\$66.74	\$92.71
Crew B-5B							Crew B-6B						
2 Labor Foremen (outside)	\$44.10	\$705.60	\$66.25	\$1060.00	\$42.77	\$64.25	2 Labor Foremen (outside)	\$44.10	\$705.60	\$66.25	\$1060.00	\$42.77	\$64.25
4 Laborers	42.10	1347.20	63.25	2024.00			4 Laborers						
1 S.P. Crane, 4x4, 5 Ton			378.10				1 S.P. Crane, 4x4, 5 Ton						
1 Flatbed Truck, Gas, 1.5 Ton			196.15				1 Butt Fusion Mach., 4"-12" diam.						
1 Butt Fusion Mach., 4"-12" diam.			426.85				48 L.H., Daily Totals			\$3053.90	\$4185.21	\$63.62	\$87.19

Crews - Standard

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour		Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P		Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew B-6C							Crew B-8						
2 Labor Foremen (outside)	\$44.10	\$705.60	\$66.25	\$1060.00	\$42.77	\$64.25	1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$48.78	\$73.09
4 Laborers	42.10	1347.20	63.25	2024.00			2 Laborers	42.10	673.60	63.25	1012.00		
1 S.P. Crane, 4x4, 12 Ton		428.30		471.13			2 Equip. Oper. (medium)	56.75	908.00	84.85	1357.60		
1 Flatbed Truck, Gas, 3 Ton		820.40		902.44			1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40		
1 Butt Fusion Mach., 8"-24" diam.		1076.00		1183.60	48.43	53.27	2 Truck Drivers (heavy)	48.95	783.20	73.35	1173.60		
48 L.H., Daily Totals		\$4377.50		\$5641.17	\$91.20	\$117.52	1 Hyd. Crane, 25 Ton		580.85		638.93		
Crew B-6D							1 Crawler Loader, 3 C.Y.		1169.00		1285.90		
0.5 Labor Foreman (outside)	\$44.10	\$176.40	\$66.25	\$265.00	\$48.36	\$72.49	2 Dump Trucks, 12 C.Y., 400 H.P.		1145.80		1260.38	45.24	49.77
1 Laborer	42.10	336.80	63.25	506.00			64 L.H., Daily Totals		\$6017.65		\$7862.81	\$94.03	\$122.86
1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80			Crew B-9					Bare	Incl.
1 Hydro Excavator, 12 C.Y.		1262.00		1388.20	63.10	69.41	1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$42.50	\$63.85
20 L.H., Daily Totals		\$2229.20		\$2838.00	\$111.46	\$141.90	4 Laborers	42.10	1347.20	63.25	2024.00		
Crew B-7							1 Air Compressor, 250 cfm		201.50		221.65		
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$44.88	\$67.35	2 Breakers, Pavement, 60 lb.		107.00		117.70		
4 Laborers	42.10	1347.20	63.25	2024.00			2-50' Air Hoses, 1.5"		48.50		53.35	8.93	9.82
1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80			40 L.H., Daily Totals		\$2057.00		\$2946.70	\$51.42	\$73.67
1 Brush Chipper, 12", 130 H.P.		392.80		432.08			Crew B-9A					Bare	Incl.
1 Crawler Loader, 3 C.Y.		1169.00		1285.90			2 Laborers	\$42.10	\$673.60	\$63.25	\$1012.00	\$44.38	\$66.62
2 Chain Saws, Gas, 36" Long		82.50		90.75	34.26	37.68	1 Truck Driver (heavy)	48.95	391.60	73.35	586.80		
48 L.H., Daily Totals		\$3798.30		\$5041.53	\$79.13	\$105.03	1 Water Tank Trailer, 5000 Gal.		152.25		167.47		
Crew B-7A							1 Truck Tractor, 220 H.P.		307.10		337.81		
2 Laborers	\$42.10	\$673.60	\$63.25	\$1012.00	\$45.73	\$68.57	2-50' Discharge Hoses, 3"		9.00		9.90	19.51	21.47
1 Equip. Oper. (light)	53.00	424.00	79.20	633.60			24 L.H., Daily Totals		\$1533.55		\$2113.99	\$63.90	\$88.08
1 Rake w/Tractor		339.45		373.39			Crew B-9B					Bare	Incl.
2 Chain Saw, Gas, 18"		104.00		114.40	18.48	20.32	2 Laborers	\$42.10	\$673.60	\$63.25	\$1012.00	\$44.38	\$66.62
24 L.H., Daily Totals		\$1541.05		\$2133.40	\$64.21	\$88.89	1 Truck Driver (heavy)	48.95	391.60	73.35	586.80		
Crew B-7B							1 Water Tank Trailer, 5000 Gal.		152.25		167.47		
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$45.46	\$68.21	1 Truck Tractor, 220 H.P.		307.10		337.81		
4 Laborers	42.10	1347.20	63.25	2024.00			1 Pressure Washer		96.95		106.65	23.55	25.91
1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80			24 L.H., Daily Totals		\$1630.50		\$2220.63	\$67.94	\$92.53
1 Truck Driver (heavy)	48.95	391.60	73.35	586.80			Crew B-9D					Bare	Incl.
1 Brush Chipper, 12", 130 H.P.		392.80		432.08			1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$42.50	\$63.85
1 Crawler Loader, 3 C.Y.		1169.00		1285.90			4 Common Laborers	42.10	1347.20	63.25	2024.00		
2 Chain Saws, Gas, 36" Long		82.50		90.75			2-50' Air Hoses, 1.5"		201.50		221.65		
1 Dump Truck, 8 C.Y., 220 H.P.		428.05		470.86	37.01	40.71	2 Air Powered Tampers		48.50		53.35		
56 L.H., Daily Totals		\$4617.95		\$6099.19	\$82.46	\$108.91	40 L.H., Daily Totals		\$2017.70		\$2903.47	\$50.44	\$72.59
Crew B-7C							Crew B-9E					Bare	Incl.
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$45.46	\$68.21	1 Cement Finisher	\$49.95	\$399.60	\$73.45	\$587.60	\$46.02	\$68.35
4 Laborers	42.10	1347.20	63.25	2024.00			1 Laborer	42.10	336.80	63.25	506.00		
1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80			1 Chip. Hammers, 12 Lb., Elec.		32.40		35.64	2.02	2.23
1 Truck Driver (heavy)	48.95	391.60	73.35	586.80			16 L.H., Daily Totals		\$768.80		\$1129.24	\$48.05	\$70.58
1 Brush Chipper, 12", 130 H.P.		392.80		432.08			Crew B-10					Bare	Incl.
1 Crawler Loader, 3 C.Y.		1169.00		1285.90			1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$51.87	\$77.65
2 Chain Saws, Gas, 36" Long		82.50		90.75			.5 Laborer	42.10	168.40	63.25	253.00		
1 Dump Truck, 12 C.Y., 400 H.P.		572.90		630.19	39.59	43.55	12 L.H., Daily Totals		\$622.40		\$931.80	\$51.87	\$77.65
56 L.H., Daily Totals		\$4762.80		\$6258.52	\$85.05	\$111.76	Crew B-10A					Bare	Incl.

Crews - Standard

Crew No.	Incl. Bare Costs		Cost Subs O&P		Cost Per Labor-Hour		Crew No.	Incl. Bare Costs		Cost Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P		Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew B-10B							Crew B-10K						
1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$51.87	\$77.65	1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$51.87	\$77.65
.5 Laborer	42.10	168.40	63.25	253.00			.5 Laborer	42.10	168.40	63.25	253.00		
1 Dozer, 200 H.P.		1504.00		1654.40	125.33	137.87	1 Centr. Water Pump, 6"		232.90		256.19		
12 L.H., Daily Totals		\$2126.40		\$2586.20	\$177.20	\$215.52	1-20' Suction Hose, 6"		25.20		27.72		
Crew B-10C							2-50' Discharge Hoses, 6"		35.80		39.38	24.49	26.94
1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$51.87	\$77.65	12 L.H., Daily Totals		\$916.30		\$1255.09	\$76.36	\$104.59
.5 Laborer	42.10	168.40	63.25	253.00								Bare Costs	Incl. O&P
1 Dozer, 200 H.P.		1504.00		1654.40	168.23	185.05	Crew B-10L						
1 Vibratory Roller, Towed, 23 Ton		514.75		566.23			1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$51.87	\$77.65
12 L.H., Daily Totals		\$2641.15		\$3152.43	\$220.10	\$262.70	.5 Laborer	42.10	168.40	63.25	253.00		
Crew B-10D							1 Dozer, 80 H.P.		401.40		441.54	33.45	36.80
1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$51.87	\$77.65	12 L.H., Daily Totals		\$1023.80		\$1373.34	\$85.32	\$114.44
.5 Laborer	42.10	168.40	63.25	253.00								Bare Costs	Incl. O&P
1 Dozer, 200 H.P.		1504.00		1654.40	161.74	177.92	Crew B-10M						
1 Sheepsoft. Roller, Towed		436.90		480.59			1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$51.87	\$77.65
12 L.H., Daily Totals		\$2563.30		\$3066.79	\$213.61	\$255.57	.5 Laborer	42.10	168.40	63.25	253.00		
Crew B-10E							1 Dozer, 300 H.P.		1764.00		1940.40	147.00	161.70
1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$51.87	\$77.65	12 L.H., Daily Totals		\$2386.40		\$2872.20	\$198.87	\$239.35
.5 Laborer	42.10	168.40	63.25	253.00								Bare Costs	Incl. O&P
1 Tandem Roller, 5 Ton		255.65		281.21	21.30	23.43	Crew B-10N						
12 L.H., Daily Totals		\$878.05		\$1213.02	\$73.17	\$101.08	1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$51.87	\$77.65
Crew B-10F							.5 Laborer	42.10	168.40	63.25	253.00		
1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$51.87	\$77.65	1 F.E. Loader, T.M., 1.5 C.Y.		565.80		622.38	47.15	51.87
.5 Laborer	42.10	168.40	63.25	253.00			12 L.H., Daily Totals		\$1188.20		\$1554.18	\$99.02	\$129.51
1 Tandem Roller, 10 Ton		236.75		260.43	19.73	21.70						Bare Costs	Incl. O&P
12 L.H., Daily Totals		\$859.15		\$1192.22	\$71.60	\$99.35	Crew B-10O						
Crew B-10G							1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$51.87	\$77.65
1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$51.87	\$77.65	.5 Laborer	42.10	168.40	63.25	253.00		
.5 Laborer	42.10	168.40	63.25	253.00			1 F.E. Loader, T.M., 2.25 C.Y.		960.90		1056.99	80.08	88.08
1 Sheepfoot Roller, 240 H.P.		1348.00		1482.80	112.33	123.57	12 L.H., Daily Totals		\$1583.30		\$1988.79	\$131.94	\$165.73
12 L.H., Daily Totals		\$1970.40		\$2414.60	\$164.20	\$201.22						Bare Costs	Incl. O&P
Crew B-10H							Crew B-10P						
1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$51.87	\$77.65	1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$51.87	\$77.65
.5 Laborer	42.10	168.40	63.25	253.00			.5 Laborer	42.10	168.40	63.25	253.00		
1 Diaphragm Water Pump, 2"		86.80		95.48			1 Crawler Loader, 3 C.Y.		1169.00		1285.90	97.42	107.16
1-20' Suction Hose, 2"		3.55		3.90			12 L.H., Daily Totals		\$1791.40		\$2217.70	\$149.28	\$184.81
2-50' Discharge Hoses, 2"		8.00		8.80	8.20	9.02						Bare Costs	Incl. O&P
12 L.H., Daily Totals		\$720.75		\$1039.98	\$60.06	\$86.67	Crew B-10Q						
Crew B-10I							1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$51.87	\$77.65
1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$51.87	\$77.65	.5 Laborer	42.10	168.40	63.25	253.00		
.5 Laborer	42.10	168.40	63.25	253.00			1 Crawler Loader, 4 C.V.		1489.00		1637.90	124.08	136.49
1 Diaphragm Water Pump, 4"		105.25		115.78			12 L.H., Daily Totals		\$2111.40		\$2569.70	\$175.95	\$214.14
1-20' Suction Hose, 4"		17.05		18.75								Bare Costs	Incl. O&P
2-50' Discharge Hoses, 4"		25.30		27.83	12.30	13.53	Crew B-10R						
12 L.H., Daily Totals		\$770.00		\$1094.16	\$64.17	\$91.18	1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$51.87	\$77.65
Crew B-10J							.5 Laborer	42.10	168.40	63.25	253.00		
1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$51.87	\$77.65	1 F.E. Loader, W.M., 1 C.Y.		302.00		332.20	25.17	27.68
.5 Laborer	42.10	168.40	63.25	253.00			12 L.H., Daily Totals		\$924.40		\$1264.00	\$77.03	\$105.33
1 Centrifugal Water Pump, 3"		74.45		81.89								Bare Costs	Incl. O&P
1-20' Suction Hose, 3"		8.75		9.63			Crew B-10S						
2-50' Discharge Hoses, 3"		9.00		9.90	7.68	8.45	1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$51.87	\$77.65
12 L.H., Daily Totals		\$714.60		\$1033.22	\$59.55	\$86.10	.5 Laborer	42.10	168.40	63.25	253.00		
Crew B-10T							1 F.E. Loader, W.M., 1.5 C.Y.		423.50		465.85	35.29	38.82
1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$51.87	\$77.65	12 L.H., Daily Totals		\$1045.90		\$1397.65	\$87.16	\$116.47
.5 Laborer	42.10	168.40	63.25	253.00								Bare Costs	Incl. O&P
1 F.E. Loader, W.M., 2.5 C.Y.		702.10		772.31			Crew B-10U						
12 L.H., Daily Totals		\$1324.50		\$1704.11			1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$51.87	\$77.65
							.5 Laborer	42.10	168.40	63.25	253.00		
							1 F.E. Loader, W.M., 2.5 C.Y.		702.10		772.31	58.51	64.36
							12 L.H., Daily Totals		\$1324.50		\$1704.11	\$110.38	\$142.01

Crews - Standard

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour		Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P		Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew B-10U													
1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$51.87	\$77.65							
.5 Laborer	42.10	168.40	63.25	253.00									
1 F.E. Loader, W.M., 5.5 C.Y.		957.50		1053.25	79.79	87.77							
12 L.H., Daily Totals		\$1579.90		\$1985.05	\$131.66	\$165.42							
Crew B-10V													
1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$51.87	\$77.65							
.5 Laborer	42.10	168.40	63.25	253.00									
1 Dozer, 700 H.P.		5120.00		5632.00	426.67	469.33							
12 L.H., Daily Totals		\$5742.40		\$6563.80	\$478.53	\$546.98							
Crew B-10W													
1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$51.87	\$77.65							
.5 Laborer	42.10	168.40	63.25	253.00									
1 Dozer, 105 H.P.		633.85		697.24	52.82	58.10							
12 L.H., Daily Totals		\$1256.25		\$1629.04	\$104.69	\$135.75							
Crew B-10X													
1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$51.87	\$77.65							
.5 Laborer	42.10	168.40	63.25	253.00									
1 Dozer, 410 H.P.		2777.00		3054.70	231.42	254.56							
12 L.H., Daily Totals		\$3399.40		\$3986.50	\$283.28	\$332.21							
Crew B-10Y													
1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$51.87	\$77.65							
.5 Laborer	42.10	168.40	63.25	253.00									
1 Vibr. Roller, Towed, 12 Ton		578.60		636.46	48.22	53.04							
12 L.H., Daily Totals		\$1201.00		\$1568.26	\$100.08	\$130.69							
Crew B-11A													
1 Equipment Oper. (med.)	\$56.75	\$454.00	\$84.85	\$678.80	\$49.42	\$74.05							
1 Laborer	42.10	336.80	63.25	506.00									
1 Dozer, 200 H.P.		1504.00		1654.40	94.00	103.40							
16 L.H., Daily Totals		\$2294.80		\$2839.20	\$143.43	\$177.45							
Crew B-11B													
1 Equipment Oper. (light)	\$53.00	\$424.00	\$79.20	\$633.60	\$47.55	\$71.22							
1 Laborer	42.10	336.80	63.25	506.00									
1 Air Powered Tamper		33.85		37.23									
1 Air Compressor, 365 cfm		315.40		346.94									
2-50' Air Hoses, 1.5"		48.50		53.35	24.86	27.35							
16 L.H., Daily Totals		\$1158.55		\$1577.13	\$72.41	\$98.57							
Crew B-11C													
1 Equipment Oper. (med.)	\$56.75	\$454.00	\$84.85	\$678.80	\$49.42	\$74.05							
1 Laborer	42.10	336.80	63.25	506.00									
1 Backhoe Loader, 48 H.P.		213.75		235.13	13.36	14.70							
16 L.H., Daily Totals		\$1004.55		\$1419.93	\$62.78	\$88.75							
Crew B-11J													
1 Equipment Oper. (med.)	\$56.75	\$454.00	\$84.85	\$678.80	\$49.42	\$74.05							
1 Laborer	42.10	336.80	63.25	506.00									
1 Grader, 30,000 Lbs.		1062.00		1168.20									
1 Ripper, Beam & 1 Shank		90.50		99.55	72.03	79.23							
16 L.H., Daily Totals		\$1943.30		\$2452.55	\$121.46	\$153.28							
Crew B-11K													
1 Equipment Oper. (med.)	\$56.75	\$454.00	\$84.85	\$678.80	\$49.42	\$74.05							
1 Laborer	42.10	336.80	63.25	506.00									
1 Trencher, Chain Type, 8' D					1872.00								
16 L.H., Daily Totals													
Crew B-11L													
1 Equipment Oper. (med.)	\$56.75	\$454.00	\$84.85	\$678.80	\$49.42	\$74.05							
1 Laborer	42.10	336.80	63.25	506.00									
1 Grader, 30,000 Lbs.					1062.00								
16 L.H., Daily Totals													
Crew B-11M													
1 Equipment Oper. (med.)	\$56.75	\$454.00	\$84.85	\$678.80	\$49.42	\$74.05							
1 Laborer	42.10	336.80	63.25	506.00									
1 Backhoe Loader, 80 H.P.					232.40								
16 L.H., Daily Totals													
Crew B-11N													
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00									
2 Equipment Operators (med.)		56.75	908.00	84.85	1357.60								
6 Truck Drivers (heavy)		48.95	2349.60	73.35	3520.80								
1 F.E. Loader, W.M., 5.5 C.Y.					957.50								
1 Dozer, 410 H.P.					2777.00								
6 Dump Trucks, Off Hwy., 50 Ton						10626.00							
72 L.H., Daily Totals													
Crew B-11Q													
1 Equipment Operator (med.)	\$56.75	\$454.00	\$84.85	\$678.80	\$51.87	\$77.65							
.5 Laborer	42.10	168.40	63.25	253.00									
1 Dozer, 140 H.P.					762.40								
12 L.H., Daily Totals													
Crew B-11R													
1 Equipment Operator (med.)	\$56.75	\$454.00	\$84.85	\$678.80	\$51.87	\$77.65							
.5 Laborer	42.10	168.40	63.25	253.00									
1 Dozer, 200 H.P.					1504.00								
12 L.H., Daily Totals													
Crew B-11S													
1 Equipment Operator (med.)	\$56.75	\$454.00	\$84.85	\$678.80	\$51.87	\$77.65							
.5 Laborer	42.10	168.40	63.25	253.00									
1 Dozer, 300 H.P.					1764.00								
1 Ripper, Beam & 1 Shank						90.50							
12 L.H., Daily Totals													
Crew B-11T													
1 Equipment Operator (med.)	\$56.75	\$454.00	\$84.85	\$678.80	\$51.87	\$77.65							
.5 Laborer	42.10	168.40	63.25	253.00									
1 Dozer, 410 H.P.					2777.00								
1 Ripper, Beam & 2 Shanks						138.75							
12 L.H., Daily Totals													
Crew B-11U													
1 Equipment Operator (med.)	\$56.75	\$454.00	\$84.85	\$678.80	\$51.87	\$77.65							
.5 Laborer	42.10	168.40	63.25	253.00									
1 Dozer, 520 H.P.					3398.00								
12 L.H., Daily Totals													

Crews - Standard

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour		Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P		Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew B-11V							Crew B-12G						
3 Laborers	\$42.10	\$1010.40	\$63.25	\$1518.00	\$42.10	\$63.25	1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$50.65	\$75.88
1 Roller, 2-Drum, W.B., 7.5 H.P.		166.10		182.71		6.92	1 Laborer	42.10	336.80	63.25	506.00		
24 L.H., Daily Totals		\$1176.50		\$1700.71		\$49.02	1 Crawler Crane, 15 Ton		792.30		871.53		
Crew B-11W							1 Clamshell Bucket, .5 C.Y.		67.10		73.81		53.71
1 Equipment Operator (med.)	\$56.75	\$454.00	\$84.85	\$678.80	\$49.03	\$73.47	16 L.H., Daily Totals		\$1669.80		\$2159.34		\$104.36
1 Common Laborer	42.10	336.80	63.25	506.00									\$134.96
10 Truck Drivers (heavy)	48.95	3916.00	73.35	5868.00			Crew B-12H						
1 Dozer, 200 H.P.		1504.00		1654.40			1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$50.65	\$75.88
1 Vibratory Roller, Towed, 23 Ton		514.75		566.23			1 Laborer	42.10	336.80	63.25	506.00		
10 Dump Trucks, 8 C.Y., 220 H.P.		4280.50		4708.55			1 Crawler Crane, 25 Ton		1129.00		1241.90		
96 L.H., Daily Totals		\$11006.05		\$13981.98		\$114.65	1 Clamshell Bucket, 1 C.Y.		68.55		75.41		74.85
Crew B-11Y							16 L.H., Daily Totals		\$2007.95		\$2531.30		\$125.50
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$47.21	\$70.78							\$158.21
5 Common Laborers	42.10	1684.00	63.25	2530.00			Crew B-12I						
3 Equipment Operators (med.)	56.75	1362.00	84.85	2036.40			1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$50.65	\$75.88
1 Dozer, 80 H.P.		401.40		441.54			1 Laborer	42.10	336.80	63.25	506.00		
2 Rollers, 2-Drum, W.B., 7.5 H.P.		332.20		365.42			1 Crawler Crane, 20 Ton		961.35		1057.48		
4 Vibrating Plates, Gas, 21"		661.40		727.54			1 Dragline Bucket, .75 C.Y.		61.25		67.38		63.91
72 L.H., Daily Totals		\$4793.80		\$6630.90		\$19.38	16 L.H., Daily Totals		\$1833.00		\$2338.86		\$114.56
Crew B-12A													\$146.18
1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$50.65	\$75.88	Crew B-12J						
1 Laborer	42.10	336.80	63.25	506.00			1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$50.65	\$75.88
1 Hyd. Excavator, 1 C.Y.		795.30		874.83			1 Laborer	42.10	336.80	63.25	506.00		
16 L.H., Daily Totals		\$1605.70		\$2088.83		49.71	1 Gradall, 5/8 C.Y.		846.50		931.15		52.91
Crew B-12B							16 L.H., Daily Totals		\$1656.90		\$2145.15		\$103.56
1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$50.65	\$75.88							\$134.07
1 Laborer	42.10	336.80	63.25	506.00			Crew B-12K						
1 Hyd. Excavator, 1.5 C.Y.		687.55		756.30			1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$50.65	\$75.88
16 L.H., Daily Totals		\$1497.95		\$1970.31		42.97	1 Laborer	42.10	336.80	63.25	506.00		
Crew B-12C							1 Gradall, 3 Ton, 1 C.Y.		973.80		1071.18		60.86
1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$50.65	\$75.88	16 L.H., Daily Totals		\$1784.20		\$2285.18		\$111.51
1 Laborer	42.10	336.80	63.25	506.00									\$142.82
1 Hyd. Excavator, 1.5 C.Y.		687.55		756.30			Crew B-12L						
16 L.H., Daily Totals		\$1497.95		\$1970.31		47.27	1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$50.65	\$75.88
Crew B-12D							1 Laborer	42.10	336.80	63.25	506.00		
1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$50.65	\$75.88	1 Crawler Crane, 15 Ton		792.30		871.53		
1 Laborer	42.10	336.80	63.25	506.00			1 F.E. Attachment, .5 C.Y.		65.25		71.78		53.60
1 Hyd. Excavator, 2 C.Y.		951.30		1046.43			16 L.H., Daily Totals		\$1667.95		\$2157.30		\$104.25
16 L.H., Daily Totals		\$1761.70		\$2260.43		59.46							\$134.83
Crew B-12E							Crew B-12M						
1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$50.65	\$75.88	1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$50.65	\$75.88
1 Laborer	42.10	336.80	63.25	506.00			1 Laborer	42.10	336.80	63.25	506.00		
1 Hyd. Excavator, 2 C.Y.		951.30		1046.43			1 Crawler Crane, 20 Ton		961.35		1057.48		
16 L.H., Daily Totals		\$1761.70		\$2260.43		59.46	1 F.E. Attachment, .75 C.Y.		76.50		84.15		64.48
Crew B-12F							16 L.H., Daily Totals		\$1842.15		\$2348.93		\$115.13
1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$50.65	\$75.88							\$146.81
1 Laborer	42.10	336.80	63.25	506.00			Crew B-12N						
1 Hyd. Excavator, 3.5 C.Y.		2158.00		2373.80			1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$50.65	\$75.88
16 L.H., Daily Totals		\$2968.40		\$3587.80		134.88	1 Laborer	42.10	336.80	63.25	506.00		
Crew B-12G							1 Crawler Crane, 25 Ton		1129.00		1241.90		
1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$50.65	\$75.88	1 F.E. Attachment, 1 C.Y.		76.50		84.15		75.34
1 Laborer	42.10	336.80	63.25	506.00			16 L.H., Daily Totals		\$2015.90		\$2540.05		\$125.99
1 Hyd. Excavator, .5 C.Y.		452.10		497.31		28.26							\$158.75
16 L.H., Daily Totals		\$1262.50		\$1711.31		31.08	Crew B-12O						
Crew B-12H							1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$50.65	\$75.88
1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$50.65	\$75.88	1 Laborer	42.10	336.80	63.25	506.00		
1 Laborer	42.10	336.80	63.25	506.00			1 Crawler Crane, 40 Ton		1206.00		1326.60		
1 Hyd. Excavator, .75 C.Y.		694.25		763.67		43.39	1 F.E. Attachment, 1.5 C.Y.		87.60		96.36		80.85
16 L.H., Daily Totals		\$1504.65		\$1977.68		47.73	16 L.H., Daily Totals		\$2104.00		\$2636.96		\$131.50
Crew B-12I													\$164.81

Crews - Standard

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew B-12P						
1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$50.65	\$75.88
1 Laborer	42.10	336.80	63.25	506.00		
1 Crawler Crane, 40 Ton		1206.00		1326.60		
1 Dragline Bucket, 1.5 C.Y.		65.05		71.56	79.44	87.38
16 L.H., Daily Totals		\$2081.45		\$2612.16	\$130.09	\$163.26
Crew B-12Q						
1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$50.65	\$75.88
1 Laborer	42.10	336.80	63.25	506.00		
1 Hyd. Excavator, 5/8 C.Y.		598.25		658.08	37.39	41.13
16 L.H., Daily Totals		\$1408.65		\$1872.08	\$88.04	\$117.00
Crew B-12S						
1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$50.65	\$75.88
1 Laborer	42.10	336.80	63.25	506.00		
1 Hyd. Excavator, 2.5 C.Y.		1465.00		1611.50	91.56	100.72
16 L.H., Daily Totals		\$2275.40		\$2825.50	\$142.21	\$176.59
Crew B-12T						
1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$50.65	\$75.88
1 Laborer	42.10	336.80	63.25	506.00		
1 Crawler Crane, 75 Ton		2002.00		2202.20		
1 F.E. Attachment, 3 C.Y.		114.15		125.57	132.26	145.49
16 L.H., Daily Totals		\$2926.55		\$3541.76	\$182.91	\$221.36
Crew B-12V						
1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$50.65	\$75.88
1 Laborer	42.10	336.80	63.25	506.00		
1 Crawler Crane, 75 Ton		2002.00		2202.20		
1 Dragline Bucket, 3 C.Y.		71.60		78.76	129.60	142.56
16 L.H., Daily Totals		\$2884.00		\$3494.96	\$180.25	\$218.44
Crew B-12Y						
1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$47.80	\$71.67
2 Laborers	42.10	673.60	63.25	1012.00		
1 Hyd. Excavator, 3.5 C.Y.		2158.00		2373.80	89.92	98.91
24 L.H., Daily Totals		\$3305.20		\$4093.80	\$137.72	\$170.57
Crew B-12Z						
1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$47.80	\$71.67
2 Laborers	42.10	673.60	63.25	1012.00		
1 Hyd. Excavator, 2.5 C.Y.		1465.00		1611.50	61.04	67.15
24 L.H., Daily Totals		\$2612.20		\$3331.50	\$108.84	\$138.81
Crew B-13						
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$46.04	\$69.04
4 Laborers	42.10	1347.20	63.25	2024.00		
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00		
1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40		
1 Hyd. Crane, 25 Ton		580.85		638.93	10.37	11.41
56 L.H., Daily Totals		\$3158.85		\$4505.34	\$56.41	\$80.45

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew B-13A						
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$48.53	\$72.74
2 Laborers	42.10	673.60	63.25	1012.00		
2 Equipment Operators (med.)	56.75	908.00	84.85	1357.60		
2 Truck Drivers (heavy)	48.95	783.20	73.35	1173.60		
1 Crawler Crane, 75 Ton		2002.00		2202.20		
1 Crawler Loader, 4 C.Y.		1489.00		1637.90		
2 Dump Trucks, 8 C.Y., 220 H.P.		856.10		941.71	77.63	85.39
56 L.H., Daily Totals		\$7064.70		\$8855.01	\$126.16	\$158.13
Crew B-13B						
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$46.04	\$69.04
4 Laborers	42.10	1347.20	63.25	2024.00		
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00		
1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40		
1 Hyd. Crane, 55 Ton		980.20		1078.22	17.50	19.25
56 L.H., Daily Totals		\$3558.20		\$4944.62	\$63.54	\$88.30
Crew B-13C						
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$46.04	\$69.04
4 Laborers	42.10	1347.20	63.25	2024.00		
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00		
1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40		
1 Crawler Crane, 100 Ton		2287.00		2515.70	40.84	44.92
56 L.H., Daily Totals		\$4865.00		\$6382.10	\$86.88	\$113.97
Crew B-13D						
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$50.65	\$75.88
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00		
1 Hyd. Excavator, 1 C.Y.		795.30		874.83		
1 Trench Box		117.75		129.53	57.07	62.77
16 L.H., Daily Totals		\$1723.45		\$2218.36	\$107.72	\$138.65
Crew B-13E						
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$50.65	\$75.88
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00		
1 Hyd. Excavator, 1.5 C.Y.		687.55		756.30		
1 Trench Box		117.75		129.53	50.33	55.36
16 L.H., Daily Totals		\$1615.70		\$2099.83	\$100.98	\$131.24
Crew B-13F						
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$50.65	\$75.88
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00		
1 Hyd. Excavator, 3.5 C.Y.		2158.00		2373.80		
1 Trench Box		117.75		129.53	142.23	156.46
16 L.H., Daily Totals		\$3086.15		\$3717.32	\$192.88	\$232.33
Crew B-13G						
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$50.65	\$75.88
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00		
1 Hyd. Excavator, .75 C.Y.		694.25		763.67		
1 Trench Box		117.75		129.53	50.75	55.83
16 L.H., Daily Totals		\$1622.40		\$2107.20	\$101.40	\$131.70
Crew B-13H						
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$50.65	\$75.88
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00		
1 Gradall, 5/8 C.Y.		846.50		931.15		
1 Trench Box		117.75		129.53	60.27	66.29
16 L.H., Daily Totals		\$1774.65		\$2274.68	\$110.92	\$142.17

Crews - Standard

Crew No.	Incl. Subs O&P		Cost Per Labor-Hour		Crew No.	Incl. Subs O&P		Cost Per Labor-Hour	
	Bare Costs		Bare Costs	Incl. O&P		Bare Costs		Bare Costs	Incl. O&P
Crew B-13I	Hr.	Daily	Hr.	Daily					
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$50.65	\$75.88			
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00					
1 Gradall, 3 Ton, 1 C.Y.		973.80		1071.18					
1 Trench Box		117.75		129.53	68.22	75.04			
16 L.H., Daily Totals		\$1901.95		\$2414.70	\$118.87	\$150.92			
Crew B-13J	Hr.	Daily	Hr.	Daily					
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$50.65	\$75.88			
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00					
1 Hyd. Excavator, 2.5 C.Y.		1465.00		1611.50					
1 Trench Box		117.75		129.53	98.92	108.81			
16 L.H., Daily Totals		\$2393.15		\$2955.03	\$149.57	\$184.69			
Crew B-13K	Hr.	Daily	Hr.	Daily					
2 Equip. Opers. (crane)	\$59.20	\$947.20	\$88.50	\$1416.00	\$59.20	\$88.50			
1 Hyd. Excavator, .75 C.Y.		694.25		763.67					
1 Hyd. Hammer, 4000 ft-lb		641.50		705.65					
1 Hyd. Excavator, .75 C.Y.		694.25		763.67	126.88	139.56			
16 L.H., Daily Totals		\$2977.20		\$3649.00	\$186.07	\$228.06			
Crew B-13L	Hr.	Daily	Hr.	Daily					
2 Equip. Opers. (crane)	\$59.20	\$947.20	\$88.50	\$1416.00	\$59.20	\$88.50			
1 Hyd. Excavator, 1.5 C.Y.		687.55		756.30					
1 Hyd. Hammer, 5000 ft-lb		697.25		766.98					
1 Hyd. Excavator, .75 C.Y.		694.25		763.67	129.94	142.93			
16 L.H., Daily Totals		\$3026.25		\$3702.95	\$189.14	\$231.43			
Crew B-13M	Hr.	Daily	Hr.	Daily					
2 Equip. Opers. (crane)	\$59.20	\$947.20	\$88.50	\$1416.00	\$59.20	\$88.50			
1 Hyd. Excavator, 2.5 C.Y.		1465.00		1611.50					
1 Hyd. Hammer, 8000 ft-lb		907.75		998.52					
1 Hyd. Excavator, 1.5 C.Y.		687.55		756.30	191.27	210.40			
16 L.H., Daily Totals		\$4007.50		\$4782.33	\$250.47	\$298.90			
Crew B-13N	Hr.	Daily	Hr.	Daily					
2 Equip. Opers. (crane)	\$59.20	\$947.20	\$88.50	\$1416.00	\$59.20	\$88.50			
1 Hyd. Excavator, 3.5 C.Y.		2158.00		2373.80					
1 Hyd. Hammer, 12,000 ft-lb		871.75		958.92					
1 Hyd. Excavator, 1.5 C.Y.		687.55		756.30	232.33	255.56			
16 L.H., Daily Totals		\$4664.50		\$5505.03	\$291.53	\$344.06			
Crew B-14	Hr.	Daily	Hr.	Daily					
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$44.25	\$66.41			
4 Laborers	42.10	1347.20	63.25	2024.00					
1 Equip. Oper. (light)	53.00	424.00	79.20	633.60					
1 Backhoe Loader, 48 H.P.		213.75		235.13	4.45	4.90			
48 L.H., Daily Totals		\$2337.75		\$3422.72	\$48.70	\$71.31			
Crew B-14A	Hr.	Daily	Hr.	Daily					
1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$53.50	\$80.08			
.5 Laborer	42.10	168.40	63.25	253.00					
1 Hyd. Excavator, 4.5 C.Y.		3409.00		3749.90	284.08	312.49			
12 L.H., Daily Totals		\$4051.00		\$4710.90	\$337.58	\$392.57			
Crew B-14B	Hr.	Daily	Hr.	Daily					
1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$53.50	\$80.08			
.5 Laborer	42.10	168.40	63.25	253.00					
1 Hyd. Excavator, 6 C.Y.		3464.00		3810.40	288.67	317.53			
12 L.H., Daily Totals		\$4106.00		\$4771.40	\$342.17	\$397.62			
Crew B-14C	Hr.	Daily	Hr.	Daily					
1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$53.50	\$80.08			
.5 Laborer	42.10	168.40	63.25	253.00					
1 Hyd. Excavator, 7 C.Y.				3437.00		3780.70			
12 L.H., Daily Totals					\$4079.00				
Crew B-14F	Hr.	Daily	Hr.	Daily					
1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$53.50	\$80.08			
.5 Laborer	42.10	168.40	63.25	253.00					
1 Hyd. Shovel, 7 C.Y.		4099.00		4508.90		341.58			
12 L.H., Daily Totals						\$4741.00			
Crew B-14G	Hr.	Daily	Hr.	Daily					
1 Equip. Oper. (crane)	\$59.20	\$473.60	\$88.50	\$708.00	\$53.50	\$80.08			
.5 Laborer	42.10	168.40	63.25	253.00					
1 Hyd. Shovel, 12 C.Y.		5951.00		6546.10		495.92			
12 L.H., Daily Totals						\$6593.00			
Crew B-14J	Hr.	Daily	Hr.	Daily					
1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$51.87	\$77.65			
.5 Laborer	42.10	168.40	63.25	253.00					
1 F.E. Loader, 8 C.Y.		2261.00		2487.10		188.42			
12 L.H., Daily Totals						\$2883.40			
Crew B-14K	Hr.	Daily	Hr.	Daily					
1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$51.87	\$77.65			
.5 Laborer	42.10	168.40	63.25	253.00					
1 F.E. Loader, 10 C.Y.		2674.00		2941.40		222.83			
12 L.H., Daily Totals						\$3296.40			
Crew B-15	Hr.	Daily	Hr.	Daily					
1 Equipment Oper. (med.)	\$56.75	\$454.00	\$84.85	\$678.80	\$50.20	\$75.19			
.5 Laborer	42.10	168.40	63.25	253.00					
2 Truck Drivers (heavy)	48.95	783.20	73.35	1173.60					
2 Dump Trucks, 12 C.Y., 400 H.P.				1145.80		1260.38			
1 Dozer, 200 H.P.		1504.00		1654.40		94.64			
28 L.H., Daily Totals						\$4055.40			
Crew B-16	Hr.	Daily	Hr.	Daily					
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$44.31	\$66.53			
2 Laborers	42.10	673.60	63.25	1012.00					
1 Truck Driver (heavy)	48.95	391.60	73.35	586.80					
1 Dump Truck, 12 C.Y., 400 H.P.		572.90		630.19		17.90			
32 L.H., Daily Totals						\$1990.90			
Crew B-17	Hr.	Daily	Hr.	Daily					
2 Laborers	\$42.10	\$673.60	\$63.25	\$1012.00	\$46.54	\$69.76			
1 Equip. Oper. (light)	53.00	424.00	79.20	633.60					
1 Truck Driver (heavy)	48.95	391.60	73.35	586.80					
1 Backhoe Loader, 48 H.P.		213.75		235.13					
1 Dump Truck, 8 C.Y., 220 H.P.				428.05		470.86			
32 L.H., Daily Totals						\$2131.00			
Crew B-17A	Hr.	Daily	Hr.	Daily					
2 Labor Foremen (outside)	\$44.10	\$705.60	\$66.25	\$1060.00	\$45.25	\$68.09			
6 Laborers	42.10	2020.80	63.25	3036.00					
1 Skilled Worker Foreman (out)	56.85	454.80	86.00	688.00					
1 Skilled Worker	54.85	438.80	82.95	663.60					
80 L.H., Daily Totals						\$3620.00			
Crew B-17B	Hr.	Daily	Hr.	Daily					
2 Labor Foremen (inside)	\$44.10	\$705.60	\$66.25	\$1060.00	\$45.25	\$68.09			
6 Laborers	42.10	2020.80	63.25	3036.00					
1 Skilled Worker Foreman (in)	56.85	454.80	86.00	688.00					
1 Skilled Worker	54.85	438.80	82.95	663.60					
80 L.H., Daily Totals						\$5447.60			

Crews - Standard

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour		Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P		Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew B-17B													
2 Laborers	\$42.10	\$673.60	\$63.25	\$1012.00	\$46.54	\$69.76	Crew B-20A						
1 Equip. Oper. (light)	53.00	424.00	79.20	633.60			1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$50.55	\$75.78
1 Truck Driver (heavy)	48.95	391.60	73.35	586.80			1 Laborer	42.10	336.80	63.25	506.00		
1 Backhoe Loader, 48 H.P.			213.75		235.13		1 Plumber	64.45	515.60	96.45	771.60		
1 Dump Truck, 12 C.Y., 400 H.P.			572.90		630.19	24.58	1 Plumber Apprentice	51.55	412.40	77.15	617.20		
32 L.H., Daily Totals		\$2275.85		\$3097.72	\$71.12	\$96.80	32 L.H., Daily Totals		\$1617.60		\$2424.80	\$50.55	\$75.78
Crew B-18							Crew B-21						
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$48.76	\$73.34
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$42.77	\$64.25	1 Skilled Worker	54.85	438.80	82.95	663.60		
2 Laborers	42.10	673.60	63.25	1012.00			1 Laborer	42.10	336.80	63.25	506.00		
1 Vibrating Plate, Gas, 21"		165.35		181.88	6.89	7.58	.5 Equip. Oper. (crane)	59.20	236.80	88.50	354.00		
24 L.H., Daily Totals		\$1191.75		\$1723.89	\$49.66	\$71.83	.5 S.P. Crane, 4x4, 5 Ton		189.05		207.96	6.75	7.43
Crew B-19							28 L.H., Daily Totals		\$1554.25		\$2261.55	\$55.51	\$80.77
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	Crew B-21A						
1 Pile Driver Foreman (outside)	\$56.20	\$449.60	\$87.30	\$698.40	\$55.24	\$84.58	1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$52.28	\$78.32
4 Pile Drivers	54.20	1734.40	84.20	2694.40			1 Laborer	42.10	336.80	63.25	506.00		
2 Equip. Oper. (crane)	59.20	947.20	88.50	1416.00			1 Plumber	64.45	515.60	96.45	771.60		
1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40			1 Plumber Apprentice	51.55	412.40	77.15	617.20		
1 Crawler Crane, 40 Ton		1206.00		1326.60			1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00		
1 Lead, 90' High		367.45		404.19			1 S.P. Crane, 4x4, 12 Ton		428.30		471.13	10.71	11.78
1 Hammer, Diesel, 22k ft-lb		436.45		480.10	31.40	34.55	40 L.H., Daily Totals		\$2519.50		\$3603.93	\$62.99	\$90.10
64 L.H., Daily Totals		\$5545.50		\$7624.09	\$86.65	\$119.13	Crew B-21B						
Crew B-19A							1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$45.92	\$68.90
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	3 Laborers	42.10	1010.40	63.25	1518.00		
1 Pile Driver Foreman (outside)	\$56.20	\$449.60	\$87.30	\$698.40	\$55.24	\$84.58	1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00		
4 Pile Drivers	54.20	1734.40	84.20	2694.40			1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40		
2 Equip. Oper. (crane)	59.20	947.20	88.50	1416.00			2 Cutting Torches		25.60		28.16		
1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40			2 Sets of Gases		343.10		377.41		
1 Crawler Crane, 75 Ton		2002.00		2202.20			1 Lattice Boom Crane, 90 Ton		1696.00		1865.60	36.87	40.56
1 Lead, 90' High		367.45		404.19			56 L.H., Daily Totals		\$4642.70		\$6137.57	\$82.91	\$109.60
1 Hammer, Diesel, 41k ft-lb		576.65		634.32	46.03	50.64	Crew B-21C						
64 L.H., Daily Totals		\$6481.70		\$8653.91	\$101.28	\$135.22	1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$46.04	\$69.04
Crew B-19B							4 Laborers	42.10	1347.20	63.25	2024.00		
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00		
1 Pile Driver Foreman (outside)	\$56.20	\$449.60	\$87.30	\$698.40	\$55.24	\$84.58	1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40		
4 Pile Drivers	54.20	1734.40	84.20	2694.40			2 Sets of Gases		25.60		28.16		
2 Equip. Oper. (crane)	59.20	947.20	88.50	1416.00			1 Lattice Boom Crane, 90 Ton		343.10		377.41		
1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40			56 L.H., Daily Totals		\$4642.70		\$6137.57	\$82.91	\$109.60
1 Crawler Crane, 40 Ton		1206.00		1326.60			Crew B-22						
1 Lead, 90' High		367.45		404.19			1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$49.45	\$74.35
1 Hammer, Diesel, 22k ft-lb		436.45		480.10			3 Laborers	54.85	438.80	82.95	663.60		
1 Barge, 400 Ton		858.85		944.74	44.82	49.31	1 Equip. Oper. (oiler)	42.10	336.80	63.25	506.00		
64 L.H., Daily Totals		\$6404.35		\$8568.83	\$100.07	\$133.89	.75 Equip. Oper. (crane)	59.20	355.20	88.50	531.00		
Crew B-19C							.75 S.P. Crane, 4x4, 5 Ton		283.57		311.93	9.45	10.40
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	30 L.H., Daily Totals		\$1767.18		\$2542.53	\$58.91	\$84.75
1 Pile Driver Foreman (outside)	\$56.20	\$449.60	\$87.30	\$698.40	\$55.24	\$84.58	Crew B-22A						
4 Pile Drivers	54.20	1734.40	84.20	2694.40			1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$48.47	\$72.84
2 Equip. Oper. (crane)	59.20	947.20	88.50	1416.00			1 Skilled Worker	54.85	438.80	82.95	663.60		
1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40			2 Laborers	42.10	673.60	63.25	1012.00		
1 Crawler Crane, 75 Ton		2002.00		2202.20			1 Equipment Operator, Crane	59.20	473.60	88.50	708.00		
1 Lead, 90' High		367.45		404.19			1 S.P. Crane, 4x4, 5 Ton		378.10		415.91		
1 Hammer, Diesel, 41k ft-lb		576.65		634.32			1 Butt Fusion Mach., 4"-12" diam.		426.85		469.54	20.12	22.14
1 Barge, 400 Ton		858.85		944.74	59.45	65.40	40 L.H., Daily Totals		\$2743.75		\$3799.05	\$68.59	\$94.98
64 L.H., Daily Totals		\$7340.55		\$9598.65	\$114.70	\$149.98							
Crew B-20													
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P							
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$47.02	\$70.82							
1 Skilled Worker	54.85	438.80	82.95	663.60									
1 Laborer	42.10	336.80	63.25	506.00									
24 L.H., Daily Totals		\$1128.40		\$1699.60	\$47.02	\$70.82							

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Crews - Standard

Crew No.	Incl. Subs O&P		Cost Per Labor-Hour		Crew No.	Incl. Subs O&P		Cost Per Labor-Hour					
	Bare Costs		Hr.	Daily		Bare Costs		Hr.	Daily	Bare Costs	Incl. O&P		
Crew B-22B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	Crew B-25C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$48.47	\$72.84	1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$47.32	\$70.95
1 Skilled Worker	54.85	438.80	82.95	663.60			3 Laborers	42.10	1010.40	63.25	1518.00		
2 Laborers	42.10	673.60	63.25	1012.00			2 Equip. Oper. (medium)	56.75	908.00	84.85	1357.60		
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00			1 Asphalt Paver, 130 H.P.		2117.00		2328.70		
1 S.P. Crane, 4x4, 5 Ton					41.95	1183.60	36.35	236.75		260.43	49.04	53.94	
1 Butt Fusion Mach., 8"-24" diam.	1076.00						48 L.H., Daily Totals		\$4624.95		\$5994.73	\$96.35	\$124.89
40 L.H., Daily Totals	\$3392.90		\$4513.11		\$84.82	\$112.83	Crew B-25D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew B-22C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$47.54	\$71.28
1 Skilled Worker	54.85	438.80	82.95	663.60	\$48.48	\$73.10	3 Laborers	42.10	1010.40	63.25	1518.00		
1 Laborer	42.10	336.80	63.25	506.00			2.125 Equip. Oper. (medium)	56.75	964.75	84.85	1442.45		
1 Butt Fusion Mach., 2"-8" diam.	156.05				41.95	171.66	9.75	73.35		73.35			
16 L.H., Daily Totals	\$931.65		\$1341.26		\$58.23	\$83.83	.125 Truck Driver (heavy)			61.66	67.82		
Crew B-23	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	.125 Truck Tractor, 6x4, 380 H.P.			41.27	45.40		
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$42.50	\$63.85	1 Asphalt Paver, 130 H.P.		2117.00		2328.70		
4 Laborers	42.10	1347.20	63.25	2024.00			1 Tandem Roller, 10 Ton		236.75		260.43	49.13	54.05
1 Drill Rig, Truck-Mounted			771.10		848.21		50 L.H., Daily Totals		\$4833.58		\$6266.14	\$96.67	\$125.32
1 Flatbed Truck, Gas, 3 Ton			820.40		902.44		Crew B-25E	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
40 L.H., Daily Totals	\$3291.50		\$4304.65		\$82.29	\$107.62	1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$47.74	\$71.58
Crew B-23A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	3 Laborers	42.10	1010.40	63.25	1518.00		
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$47.65	\$71.45	2.250 Equip. Oper. (medium)	56.75	1021.50	84.85	1527.30		
1 Laborer	42.10	336.80	63.25	506.00			.25 Truck Driver (heavy)	48.95	97.90	73.35	146.70		
1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80			.25 Truck Tractor, 6x4, 380 H.P.		123.31		135.64		
1 Drill Rig, Truck-Mounted			771.10		848.21		.25 Dist. Tanker, 3000 Gallon		82.54		90.79		
1 Pickup Truck, 3/4 Ton			110.85		121.94		1 Asphalt Paver, 130 H.P.		2117.00		2328.70		
24 L.H., Daily Totals	\$2025.55		\$2684.95		\$84.40	\$111.87	1 Tandem Roller, 10 Ton		236.75		260.43	49.22	54.15
Crew B-23B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	52 L.H., Daily Totals		\$5042.20		\$6537.56	\$96.97	\$125.72
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$47.65	\$71.45	Crew B-26	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	42.10	336.80	63.25	506.00			1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$46.96	\$70.35
1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80			6 Laborers	42.10	2020.80	63.25	3036.00		
1 Drill Rig, Truck-Mounted			771.10		848.21		2 Equip. Oper. (medium)	56.75	908.00	84.85	1357.60		
1 Pickup Truck, 3/4 Ton			110.85		121.94		1 Rodman (reinf.)	56.40	451.20	84.90	679.20		
1 Centr. Water Pump, 6"			232.90		256.19		1 Cement Finisher	49.95	399.60	73.45	587.60		
24 L.H., Daily Totals	\$2258.45		\$2941.14		\$94.10	\$122.55	1 Grader, 30,000 Lbs.		1062.00		1168.20		
Crew B-24	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	1 Paving Mach. & Equip.		2474.00		2721.40	40.18	44.20
1 Cement Finisher	\$49.95	\$399.60	\$73.45	\$587.60	\$48.40	\$72.18	88 L.H., Daily Totals		\$7668.40		\$10080.00	\$87.14	\$114.55
1 Laborer	42.10	336.80	63.25	506.00			Crew B-26A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Carpenter	53.15	425.20	79.85	638.80			1 Labor Foreman (outs'de)	\$44.10	\$352.80	\$66.25	\$530.00	\$46.96	\$70.35
24 L.H., Daily Totals	\$1161.60		\$1732.40		\$48.40	\$72.18	6 Laborers	42.10	2020.80	63.25	3036.00		
Crew B-25	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	2 Equip. Oper. (medium)	56.75	908.00	84.85	1357.60		
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$46.28	\$69.41	1 Rodman (reinf.)	56.40	451.20	84.90	679.20		
7 Laborers	42.10	2357.60	63.25	3542.00			1 Cement Finisher	49.95	399.60	73.45	587.60		
3 Equip. Oper. (medium)	56.75	1362.00	84.85	2036.40			1 Grader, 30,000 Lbs.		1062.00		1168.20		
1 Asphalt Paver, 130 H.P.			2117.00		2328.70		1 Paving Mach. & Equip.		2474.00		2721.40		
1 Tandem Roller, 10 Ton			236.75		260.43		1 Concrete Saw		111.50		122.65	41.45	45.59
1 Roller, Pneum. Whl., 12 Ton			345.75		380.32		88 L.H., Daily Totals		\$7779.90		\$10202.65	\$88.41	\$115.94
88 L.H., Daily Totals	\$6771.90		\$9077.85		\$76.95	\$103.16	Crew B-26B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew B-25B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$47.77	\$71.55
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$47.15	\$70.70	6 Laborers	42.10	2020.80	63.25	3036.00		
7 Laborers	42.10	2357.60	63.25	3542.00			3 Equip. Oper. (medium)	56.75	1362.00	84.85	2036.40		
4 Equip. Oper. (medium)	56.75	1816.00	84.85	2715.20			1 Rodman (reinf.)	56.40	451.20	84.90	679.20		
1 Asphalt Paver, 130 H.P.			2117.00		2328.70		1 Cement Finisher	49.95	399.60	73.45	587.60		
2 Tandem Rollers, 10 Ton			473.50		520.85		1 Grader, 30,000 Lbs.		1062.00		1168.20		
1 Roller, Pneum. Whl., 12 Ton			345.75		380.32		1 Paving Mach. & Equip.		2474.00		2721.40		
96 L.H., Daily Totals	\$7462.65		\$10017.08		\$77.74	\$104.34	1 Concrete Pump, 110' Boom		470.75		517.83	41.74	45.91

Crews - Standard

Crew No.	Incl. Subs O&P		Cost Per Labor-Hour		Crew No.	Incl. Subs O&P		Cost Per Labor-Hour	
	Bare Costs					Bare Costs			
Crew B-26C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P			
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$45.98	\$68.89			
6 Laborers	42.10	2020.80	63.25	3036.00					
1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80					
1 Rodman (reinf.)	56.40	451.20	84.90	679.20					
1 Cement Finisher	49.95	399.60	73.45	587.60					
1 Paving Mach. & Equip.		2474.00		2721.40					
1 Concrete Saw		111.50		122.65	32.32	35.55			
80 L.H., Daily Totals		\$6263.90		\$8355.65	\$78.30	\$104.45			
Crew B-27	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P			
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$42.60	\$64.00			
3 Laborers	42.10	1010.40	63.25	1518.00					
1 Berm Machine		271.95		299.14	8.50	9.35			
32 L.H., Daily Totals		\$1635.15		\$2347.15	\$51.10	\$73.35			
Crew B-28	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P			
2 Carpenters	\$53.15	\$850.40	\$79.85	\$1277.60	\$49.47	\$74.32			
1 Laborer	42.10	336.80	63.25	506.00					
24 L.H., Daily Totals		\$1187.20		\$1783.60	\$49.47	\$74.32			
Crew B-29	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P			
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$46.04	\$69.04			
4 Laborers	42.10	1347.20	63.25	2024.00					
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00					
1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40					
1 Gradall, 5/8 C.Y.		846.50		931.15	15.12	16.63			
56 L.H., Daily Totals		\$3424.50		\$4797.55	\$61.15	\$85.67			
Crew B-30	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P			
1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$51.55	\$77.18			
2 Truck Drivers (heavy)	48.95	783.20	73.35	1173.60					
1 Hyd. Excavator, 1.5 C.Y.		687.55		756.30					
2 Dump Trucks, 12 C.Y., 400 H.P.		1145.80		1260.38	76.39	84.03			
24 L.H., Daily Totals		\$3070.55		\$3869.09	\$127.94	\$161.21			
Crew B-31	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P			
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$44.71	\$67.17			
3 Laborers	42.10	1010.40	63.25	1518.00					
1 Carpenter	53.15	425.20	79.85	638.80					
1 Air Compressor, 250 cfm		201.50		221.65					
1 Sheeting Driver		7.35		8.09					
2 5/8" Air Hoses, 1.5"		48.50		53.35	6.43	7.08			
40 L.H., Daily Totals		\$2045.75		\$2969.89	\$51.14	\$74.25			
Crew B-32	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P			
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$53.09	\$79.45			
3 Equip. Oper. (medium)	56.75	1362.00	84.85	2036.40					
1 Grader, 30,000 lbs.		1062.00		1168.20					
1 Tandem Roller, 10 Ton		236.75		260.43					
1 Dozer, 200 H.P.		1504.00		1654.40	87.59	96.34			
32 L.H., Daily Totals		\$4501.55		\$5625.43	\$140.67	\$175.79			
Crew B-32A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P			
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$51.87	\$77.65			
2 Equip. Oper. (medium)	56.75	908.00	84.85	1357.60					
1 Grader, 30,000 Lbs.		1062.00		1168.20					
1 Roller, Vibratory, 25 Ton		664.35		730.78	71.93	79.12			
24 L.H., Daily Totals		\$2971.15		\$3762.59	\$123.80	\$156.77			
Crew B-32B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P			
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$42.10	\$51.87	\$77.65		
2 Equip. Oper. (medium)		56.75		908.00	84.85	1357.60			
1 Dozer, 200 H.P.				1504.00		1654.40			
1 Roller, Vibratory, 25 Ton				664.35		730.78	90.35	99.38	
24 L.H., Daily Totals					\$3413.15		\$4248.78		\$142.21 \$177.03
Crew B-32C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P			
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$44.10	\$49.76	\$74.55		
2 Laborers	42.10	673.60	63.25	1012.00					
3 Equip. Oper. (medium)		56.75	1362.00	84.85	2036.40				
1 Grader, 30,000 Lbs.			1062.00		1168.20				
1 Tandem Roller, 10 Ton		236.75		260.43					
1 Dozer, 200 H.P.		1504.00		1654.40	84.85	98.39	64.23		
48 L.H., Daily Totals					\$5191.15		\$6661.43		\$108.15 \$138.78
Crew B-33A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P			
1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$56.75	\$52.56	\$78.68		
.5 Laborer	42.10	168.40	63.25	253.00					
.25 Equip. Oper. (medium)		56.75	113.50	84.85	169.70				
1 Scraper, Towed, 7 C.Y.			127.80		140.58				
1.25 Dozers, 300 H.P.			2205.00		2425.50				
14 L.H., Daily Totals					\$3068.70		\$3667.58		\$219.19 \$261.97
Crew B-33B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P			
1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$56.75	\$52.56	\$78.68		
.5 Laborer	42.10	168.40	63.25	253.00					
.25 Equip. Oper. (medium)		56.75	113.50	84.85	169.70				
1 Scraper, Towed, 10 C.Y.		159.70		175.67					
1.25 Dozers, 300 H.P.		2205.00		2425.50					
14 L.H., Daily Totals					\$3100.60		\$3702.67		\$221.47 \$264.48
Crew B-33C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P			
1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$56.75	\$52.56	\$78.68		
.5 Laborer	42.10	168.40	63.25	253.00					
.25 Equip. Oper. (medium)		56.75	113.50	84.85	169.70				
1 Scraper, Towed, 15 C.Y.		176.75		194.43					
1.25 Dozers, 300 H.P.		2205.00		2425.50					
14 L.H., Daily Totals					\$3117.65		\$3721.43		\$222.69 \$265.82
Crew B-33D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P			
1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$56.75	\$52.56	\$78.68		
.5 Laborer	42.10	168.40	63.25	253.00					
.25 Equip. Oper. (medium)		56.75	113.50	84.85	169.70				
1 S.P. Scraper, 14 C.Y.		2395.00		2634.50					
.25 Dozer, 300 H.P.		441.00		485.10					
14 L.H., Daily Totals					\$3571.90		\$4221.10		\$255.14 \$301.51
Crew B-33E	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P			
1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$56.75	\$52.56	\$78.68		
.5 Laborer	42.10	168.40	63.25	253.00					
.25 Equip. Oper. (medium)		56.75	113.50	84.85	169.70				
1 S.P. Scraper, 21 C.Y.		2628.00		2890.80					
.25 Dozer, 300 H.P.		441.00		485.10					
14 L.H., Daily Totals					\$3804.90		\$4477.40		\$271.78 \$319.81

Crews - Standard

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour		Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P		Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew B-33F													
1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$52.56	\$78.68							
.5 Laborer	42.10	168.40	63.25	253.00									
.25 Equip. Oper. (medium)	56.75	113.50	84.85	169.70									
1 Elev. Scraper, 11 C.Y.		1133.00		1246.30									
.25 Dozer, 300 H.P.		441.00		485.10									
14 L.H., Daily Totals		\$2309.90		\$2832.90		\$164.99	\$202.35						
Crew B-33G													
1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$52.56	\$78.68							
.5 Laborer	42.10	168.40	63.25	253.00									
.25 Equip. Oper. (medium)	56.75	113.50	84.85	169.70									
1 Elev. Scraper, 22 C.Y.		1884.00		2072.40									
.25 Dozer, 300 H.P.		441.00		485.10									
14 L.H., Daily Totals		\$3060.90		\$3659.00		\$218.64	\$261.36						
Crew B-33H													
.5 Laborer	\$42.10	\$168.40	\$63.25	\$253.00	\$52.56	\$78.68							
1 Equipment Operator (med.)	56.75	454.00	84.85	678.80									
.25 Equipment Operator (med.)	56.75	113.50	84.85	169.70									
1 S.P. Scraper, 44 C.Y.		4644.00		5108.40									
.25 Dozer, 410 H.P.		694.25		763.67									
14 L.H., Daily Totals		\$6074.15		\$6973.57		\$433.87	\$498.11						
Crew B-33J													
1 Equipment Operator (med.)	\$56.75	\$454.00	\$84.85	\$678.80	\$56.75	\$84.85							
1 S.P. Scraper, 14 C.Y.		2395.00		2634.50		299.38	329.31						
8 L.H., Daily Totals		\$2849.00		\$3313.30		\$356.13	\$414.16						
Crew B-33K													
1 Equipment Operator (med.)	\$56.75	\$454.00	\$84.85	\$678.80	\$52.56	\$78.68							
.25 Equipment Operator (med.)	56.75	113.50	84.85	169.70									
.5 Laborer	42.10	168.40	63.25	253.00									
1 S.P. Scraper, 31 C.Y.		3667.00		4033.70									
.25 Dozer, 410 H.P.		694.25		763.67									
14 L.H., Daily Totals		\$5097.15		\$5898.88		\$364.08	\$421.35						
Crew B-34A													
1 Truck Driver (heavy)	\$48.95	\$391.60	\$73.35	\$586.80	\$48.95	\$73.35							
1 Dump Truck, 8 C.Y., 220 H.P.		428.05		470.86		53.51	58.86						
8 L.H., Daily Totals		\$819.65		\$1057.66		\$102.46	\$132.21						
Crew B-34B													
1 Truck Driver (heavy)	\$48.95	\$391.60	\$73.35	\$586.80	\$48.95	\$73.35							
1 Dump Truck, 12 C.Y., 400 H.P.		572.90		630.19		71.61	78.77						
8 L.H., Daily Totals		\$964.50		\$1216.99		\$120.56	\$152.12						
Crew B-34C													
1 Truck Driver (heavy)	\$48.95	\$391.60	\$73.35	\$586.80	\$48.95	\$73.35							
1 Truck Tractor, 6x4, 380 H.P.		493.25		542.58									
1 Dump Trailer, 16.5 C.Y.		136.70		150.37									
8 L.H., Daily Totals		\$1021.55		\$1279.74		\$127.69	\$159.97						
Crew B-34D													
1 Truck Driver (heavy)	\$48.95	\$391.60	\$73.35	\$586.80	\$48.95	\$73.35							
1 Truck Tractor, 6x4, 380 H.P.		493.25		542.58									
1 Dump Trailer, 20 C.Y.		151.70		166.87									
8 L.H., Daily Totals		\$1036.55		\$1296.24		\$129.57	\$162.03						
Crew B-34E													
1 Truck Driver (heavy)	\$48.95	\$391.60	\$73.35	\$586.80	\$48.95	\$73.35							
1 Dump Truck, Off Hwy., 25 Ton		1379.00											
8 L.H., Daily Totals		\$1770.60											
Crew B-34F													
1 Truck Driver (heavy)	\$48.95	\$391.60	\$73.35	\$586.80	\$48.95	\$73.35							
1 Dump Truck, Off Hwy., 35 Ton		935.20											
8 L.H., Daily Totals		\$1326.80											
Crew B-34G													
1 Truck Driver (heavy)	\$48.95	\$391.60	\$73.35	\$586.80	\$48.95	\$73.35							
1 Dump Truck, Off Hwy., 50 Ton		1771.00											
8 L.H., Daily Totals		\$2162.60											
Crew B-34H													
1 Truck Driver (heavy)	\$48.95	\$391.60	\$73.35	\$586.80	\$48.95	\$73.35							
1 Dump Truck, Off Hwy., 65 Ton		1915.00											
8 L.H., Daily Totals		\$2306.60											
Crew B-34I													
1 Truck Driver (heavy)	\$48.95	\$391.60	\$73.35	\$586.80	\$48.95	\$73.35							
1 Dump Truck, 18 C.Y., 450 H.P.		713.80											
8 L.H., Daily Totals		\$1105.40											
Crew B-34J													
1 Truck Driver (heavy)	\$48.95	\$391.60	\$73.35	\$586.80	\$48.95	\$73.35							
1 Dump Truck, Off Hwy., 100 Ton		2736.00											
8 L.H., Daily Totals		\$3127.60											
Crew B-34K													
1 Truck Driver (heavy)	\$48.95	\$391.60	\$73.35	\$586.80	\$48.95	\$73.35							
1 Truck Tractor, 6x4, 450 H.P.		601.75											
1 Lowbed Trailer, 75 Ton		255.05											
8 L.H., Daily Totals		\$1248.40											
Crew B-34L													
1 Equip. Oper. (light)	\$53.00	\$424.00	\$79.20	\$633.60	\$53.00	\$79.20							
1 Flatbed Truck, Gas, 1.5 Ton		196.15											
8 L.H., Daily Totals		\$620.15											
Crew B-34M													
1 Equip. Oper. (light)	\$53.00	\$424.00	\$79.20	\$633.60	\$53.00	\$79.20							
1 Flatbed Truck, Gas, 3 Ton		820.40											
8 L.H., Daily Totals		\$1244.40											
Crew B-34N													
1 Truck Driver (heavy)	\$48.95	\$391.60	\$73.35	\$586.80	\$52.85	\$79.10							
1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80									
1 Truck Tractor, 6x4, 380 H.P.		493.25		542.58									
1 Flatbed Trailer, 40 Ton		186.20		204.82									
16 L.H., Daily Totals		\$1525.05		\$2012.99									
Crew B-34P													
1 Pipe Fitter	\$65.55	\$524.40	\$98.10	\$784.80	\$56.52	\$84.58							
1 Truck Driver (light)	47.25	378.00	70.80	566.40									
1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80									
1 Flatbed Truck, Gas, 3 Ton		820.40		902.44									
1 Backhoe Loader, 48 H.P.		213.75		235.13									
24 L.H., Daily Totals		\$2390.55		\$3167.57									

Crews - Standard

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour		Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P		Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew B-34Q							Crew B-34W						
1 Pipe Fitter	\$65.55	\$524.40	\$98.10	\$784.80	\$57.33	\$85.80	5 Truck Drivers (heavy)	\$48.95	\$1958.00	\$73.35	\$2934.00	\$51.60	\$77.27
1 Truck Driver (light)	47.25	378.00	70.80	566.40			2 Equip. Oper. (crane)	59.20	947.20	88.50	1416.00		
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00			1 Equip. Oper. (mechanic)	59.15	473.20	88.40	707.20		
1 Flatbed Trailer, 25 Ton		135.55		149.10			1 Laborer	42.10	336.80	63.25	506.00		
1 Dump Truck, 8 C.Y., 220 H.P.		428.05		470.86			4 Truck Tractors, 6x4, 380 H.P.		1973.00		2170.30		
1 Hyd. Crane, 25 Ton		580.85		638.93	47.69	52.45	2 Equipment Trailers, 50 Ton		410.10		451.11		
24 L.H., Daily Totals		\$2520.45		\$3318.09	\$105.02	\$138.25	2 Flatbed Trailers, 40 Ton		372.40		409.64		
Crew B-34R							1 Pickup Truck, 4x4, 3/4 Ton		175.85		193.44		
1 Pipe Filter	\$65.55	\$524.40	\$98.10	\$784.80	\$57.33	\$85.80	1 S.P. Crane, 4x4, 20 Ton		582.20		640.42	48.80	53.68
1 Truck Driver (light)	47.25	378.00	70.80	566.40			72 L.H., Daily Totals		\$7228.75		\$9428.10	\$100.40	\$130.95
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00									
1 Flatbed Trailer, 25 Ton		135.55		149.10									
1 Dump Truck, 8 C.Y., 220 H.P.		428.05		470.86									
1 Hyd. Crane, 25 Ton		580.85		638.93									
1 Hyd. Excavator, 1 C.Y.		795.30		874.83	80.82	88.91							
24 L.H., Daily Totals		\$3315.75		\$4192.93	\$138.16	\$174.71							
Crew B-34S							Crew B-35						
2 Pipe Fitters	\$65.55	\$1048.80	\$98.10	\$1569.60	\$59.81	\$89.51	1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$52.54	\$78.83
1 Truck Driver (heavy)	48.95	391.60	73.35	586.80			1 Skilled Worker	54.85	438.80	82.95	663.60		
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00			1 Welder (plumber)	64.45	515.60	96.45	771.60		
1 Flatbed Trailer, 40 Ton		186.20		204.82			1 Laborer	42.10	336.80	63.25	506.00		
1 Truck Tractor, 6x4, 380 H.P.		493.25		542.58			1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00		
1 Hyd. Crane, 80 Ton		1486.00		1634.60			1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40		
1 Hyd. Excavator, 2 C.Y.		951.30		1046.43	97.40	107.14	1 Welder, Electric, 300 amp		106.40		117.04		
32 L.H., Daily Totals		\$5030.75		\$6292.82	\$157.21	\$196.65	1 Hyd. Excavator, .75 C.Y.		694.25		763.67	16.68	18.35
Crew B-34T							48 L.H., Daily Totals		\$3322.65		\$4664.31	\$69.22	\$97.17
2 Pipe Fitters	\$65.55	\$1048.80	\$98.10	\$1569.60	\$59.81	\$89.51							
1 Truck Driver (heavy)	48.95	391.60	73.35	586.80			Crew B-35A						
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00			1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$51.05	\$76.60
1 Flatbed Trailer, 40 Ton		186.20		204.82			2 Laborers	42.10	673.60	63.25	1012.00		
1 Truck Tractor, 6x4, 380 H.P.		493.25		542.58			1 Skilled Worker	54.85	438.80	82.95	663.60		
1 Hyd. Crane, 80 Ton		1486.00		1634.60			1 Welder (plumber)	64.45	515.60	96.45	771.60		
32 L.H., Daily Totals		\$4079.45		\$5246.40	\$127.48	\$163.95	1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00		
Crew B-34U							1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40		
1 Truck Driver (heavy)	\$48.95	\$391.60	\$73.35	\$586.80	\$50.98	\$76.28	1 Welder, Gas Engine, 300 amp		147.00		161.70		
1 Equip. Oper. (light)	53.00	424.00	79.20	633.60			1 Crawler Crane, 75 Ton		2002.00		2202.20	38.38	42.21
1 Truck Tractor, 220 H.P.		307.10		337.81			56 L.H., Daily Totals		\$5007.80		\$6653.50	\$89.42	\$118.81
1 Flatbed Trailer, 25 Ton		135.55		149.10	27.67	30.43							
16 L.H., Daily Totals		\$1258.25		\$1707.32	\$78.64	\$106.71	Crew B-36						
Crew B-34V							1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$48.36	\$72.49
1 Truck Driver (heavy)	\$48.95	\$391.60	\$73.35	\$586.80	\$53.72	\$80.35	2 Laborers	42.10	673.60	63.25	1012.00		
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00			2 Equip. Oper. (medium)	56.75	908.00	84.85	1357.60		
1 Equip. Oper. (light)	53.00	424.00	79.20	633.60			1 Dozer, 200 H.P.		1504.00		1654.40		
1 Truck Tractor, 220 H.P.		307.10		337.81			1 Aggregate Spreader		65.75		72.33		
1 Flatbed Trailer, 25 Ton		135.55		149.10	27.67	30.43	1 Tandem Roller, 10 Ton		236.75		260.43	45.16	49.68
16 L.H., Daily Totals		\$1258.25		\$1707.32	\$78.64	\$106.71	40 L.H., Daily Totals		\$3740.90		\$4886.75	\$93.52	\$122.17
Crew B-34W													
1 Truck Driver (heavy)	\$48.95	\$391.60	\$73.35	\$586.80	\$53.72	\$80.35	Crew B-36A						
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00			1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$50.76	\$76.02
1 Equip. Oper. (light)	53.00	424.00	79.20	633.60			2 Laborers	42.10	673.60	63.25	1012.00		
1 Truck Tractor, 6x4, 450 H.P.		601.75		661.92			4 Equip. Oper. (medium)	56.75	1816.00	84.85	2715.20		
1 Equipment Trailer, 50 Ton		205.05		225.56			1 Dozer, 200 H.P.		1504.00		1654.40		
1 Pickup Truck, 4x4, 3/4 Ton		175.85		193.44	40.94	45.04	1 Aggregate Spreader		65.75		72.33		
24 L.H., Daily Totals		\$2271.85		\$3009.32	\$94.66	\$125.39	1 Tandem Roller, 10 Ton		236.75		260.43		
							1 Roller, Pneu. Whl, 12 Ton		345.75		380.32	38.43	42.28
							56 L.H., Daily Totals		\$4994.65		\$6624.68	\$89.19	\$118.30

Crews - Standard

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour		Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P		Hr.	Daily	Bare Costs	Incl. O&P	Hr.	Daily
Crew B-36B													
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$50.53	\$75.69							
2 Laborers	42.10	673.60	63.25	1012.00									
4 Equip. Oper. (medium)	56.75	1816.00	84.85	2715.20									
1 Truck Driver (heavy)	48.95	391.60	73.35	586.80									
1 Grader, 30,000 Lbs.		1062.00		1168.20									
1 F.E. Loader, Crt. 1.5 C.Y.		659.75		725.73									
1 Dozer, 300 H.P.		1764.00		1940.40									
1 Roller, Vibratory, 25 Ton		664.35		730.78									
1 Truck Tractor, 6x4, 450 H.P.		601.75		661.92									
1 Water Tank Trailer, 5000 Gal.		152.25		167.47		76.63	84.29						
64 L.H., Daily Totals		\$8138.10		\$10238.51		\$127.16	\$159.98						
Crew B-36C													
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$52.66	\$78.83							
3 Equip. Oper. (medium)	56.75	1362.00	84.85	2036.40									
1 Truck Driver (heavy)	48.95	391.60	73.35	586.80									
1 Grader, 30,000 Lbs.		1062.00		1168.20									
1 Dozer, 300 H.P.		1764.00		1940.40									
1 Roller, Vibratory, 25 Ton		664.35		730.78									
1 Truck Tractor, 6x4, 450 H.P.		601.75		661.92									
1 Water Tank Trailer, 5000 Gal.		152.25		167.47		106.11	116.72						
40 L.H., Daily Totals		\$6350.75		\$7821.98		\$158.77	\$195.55						
Crew B-36D													
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$53.59	\$80.20							
3 Equip. Oper. (medium)	56.75	1362.00	84.85	2036.40									
1 Grader, 30,000 Lbs.		1062.00		1168.20									
1 Dozer, 300 H.P.		1764.00		1940.40									
1 Roller, Vibratory, 25 Ton		664.35		730.78		109.07	119.98						
32 L.H., Daily Totals		\$5205.15		\$6405.78		\$162.66	\$200.18						
Crew B-37													
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$44.25	\$66.41							
4 Laborers	42.10	1347.20	63.25	2024.00									
1 Equip. Oper. (light)	53.00	424.00	79.20	633.60									
1 Tandem Roller, 5 Ton		255.65		281.21		5.33	5.86						
48 L.H., Daily Totals		\$2379.65		\$3468.82		\$49.58	\$72.27						
Crew B-37A													
2 Laborers	\$42.10	\$673.60	\$63.25	\$1012.00	\$43.82	\$65.77							
1 Truck Driver (light)	47.25	378.00	70.80	566.40									
1 Flatbed Truck, Gas, 1.5 Ton		196.15		215.76									
1 Tar Kettle, T.M.		156.20		171.82		14.68	16.15						
24 L.H., Daily Totals		\$1403.95		\$1965.98		\$58.50	\$81.92						
Crew B-37B													
3 Laborers	\$42.10	\$1010.40	\$63.25	\$1518.00	\$43.39	\$65.14							
1 Truck Driver (light)	47.25	378.00	70.80	566.40									
1 Flatbed Truck, Gas, 1.5 Ton		196.15		215.76									
1 Tar Kettle, T.M.		156.20		171.82		11.01	12.11						
32 L.H., Daily Totals		\$1740.75		\$2471.99		\$54.40	\$77.25						
Crew B-37C													
2 Laborers	\$42.10	\$673.60	\$63.25	\$1012.00	\$44.67	\$67.03							
2 Truck Drivers (light)	47.25	756.00	70.80	1132.80									
2 Flatbed Trucks, Gas, 1.5 Ton		392.30		431.53									
1 Tar Kettle, T.M.		156.20		171.82		17.14	18.85						
32 L.H., Daily Totals		\$1978.10		\$2748.15		\$61.82	\$85.88						

Crews - Standard

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour		Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P		Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew B-37I													
3 Laborers	\$42.10	\$1010.40	\$63.25	\$1518.00	\$47.22	\$70.77	Crew B-40						
1 Equip. Oper. (light)	53.00	424.00	79.20	633.60			1 Pile Driver Foreman (outside)	\$56.20	\$449.60	\$87.30	\$698.40	\$55.24	\$84.58
1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80			4 Pile Drivers	54.20	1734.40	84.20	2694.40		
2 Truck Drivers (light)	47.25	756.00	70.80	1132.80			2 Equip. Oper. (crane)	59.20	947.20	88.50	1416.00		
4 Barrels w/ Flasher		16.40		18.04			1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40		
1 Concrete Saw		111.50		122.65			1 Crawler Crane, 40 Ton		1206.00		1326.60		
1 Rotary Hammer Drill		51.70		56.87			1 Vibratory Hammer & Gen.		2271.00		2498.10	54.33	59.76
1 Hammer Drill Bit		25.25		27.77			64 L.H., Daily Totals		\$7012.60		\$9237.90	\$109.57	\$144.34
1 Air Compressor, 60 cfm		152.95		168.25									
1-50' Air Hose, 3/4"		7.75		8.53			Crew B-40B						
1 Spade (Chipper)		8.45		9.29			1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$46.69	\$70.01
1 Loader, Skid Steer, 30 H.P.		177.55		195.31			3 Laborers	42.10	1010.40	63.25	1518.00		
1 Conc. Hammer Attach.		118.40		130.24			1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00		
1 Concrete Mixer, 10 C.F.		140.30		154.33			1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40		
1 Vibrating Plate, Gas, 18"		31.55		34.70			1 Lattice Boom Crane, 40 Ton		2028.00		2230.80	42.25	46.48
2 Flatbed Trucks, Gas, 1.5 Ton		392.30		431.53			48 L.H., Daily Totals		\$4269.20		\$5591.20	\$88.94	\$116.48
56 L.H., Daily Totals		\$3878.50		\$5320.71									
Crew B-37J							Crew B-41						
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$44.25	\$66.41	1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$43.63	\$65.50
4 Laborers	42.10	1347.20	63.25	2024.00			4 Laborers	42.10	1347.20	63.25	2024.00		
1 Equip. Oper. (light)	53.00	424.00	79.20	633.60			.25 Equip. Oper. (crane)	59.20	118.40	88.50	177.00		
1 Air Compressor, 60 cfm		152.95		168.25			.25 Equip. Oper. (oiler)	50.55	101.10	75.55	151.10		
1-50' Air Hose, 3/4"		7.75		8.53			.25 Crawler Crane, 40 Ton		301.50		331.65	6.85	7.54
2 Concrete Mixers, 10 C.F.		280.60		308.66			44 L.H., Daily Totals		\$2221.00		\$3213.75	\$50.48	\$73.04
2 Flatbed Trucks, Gas, 1.5 Ton		392.30		431.53									
1 Shot Blaster, 20"		206.20		226.82			Crew B-42						
48 L.H., Daily Totals		\$3163.80		\$4331.38			1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$47.46	\$71.67
Crew B-37K							4 Laborers	42.10	1347.20	63.25	2024.00		
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$44.25	\$66.41	1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00		
4 Laborers	42.10	1347.20	63.25	2024.00			1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40		
1 Equip. Oper. (light)	53.00	424.00	79.20	633.60			1 Welder	57.45	459.60	90.10	720.80		
1 Air Compressor, 60 cfm		152.95		168.25			1 Hyd. Crane, 25 Ton		580.85		638.93		
1-50' Air Hose, 3/4"		7.75		8.53			1 Welder, Gas Engine, 300 amp		147.00		161.70		
2 Flatbed Trucks, Gas, 1.5 Ton		392.30		431.53			1 Horz. Boring Csg. Mch.		314.25		345.68	16.28	17.91
1 Shot Blaster, 20"		206.20		226.82			64 L.H., Daily Totals		\$4079.70		\$5733.51	\$63.75	\$89.59
48 L.H., Daily Totals		\$2883.20		\$4022.72									
Crew B-38							Crew B-43						
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$47.61	\$71.36	1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$46.69	\$70.01
2 Laborers	42.10	673.60	63.25	1012.00			3 Laborers	42.10	1010.40	63.25	1518.00		
1 Equip. Oper. (light)	53.00	424.00	79.20	633.60			1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00		
1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80			1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40		
1 Backhoe Loader, 48 H.P.		213.75		235.13			1 Drill Rig, Truck-Mounted		771.10		848.21	16.06	17.67
1 Hyd. Hammer (1200 lb.)		175.15		192.66			48 L.H., Daily Totals		\$3012.30		\$4208.61	\$62.76	\$87.68
1 F.E. Loader, W.M., 4 C.Y.		789.35		868.28									
1 Pvmt. Rem. Bucket		63.05		69.36			Crew B-44						
40 L.H., Daily Totals		\$3145.70		\$4219.83			1 Pile Driver Foreman (outside)	\$56.20	\$449.60	\$87.30	\$698.40	\$54.19	\$83.04
Crew B-39							4 Pile Drivers	54.20	1734.40	84.20	2694.40		
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$44.25	\$66.41	2 Equip. Oper. (crane)	59.20	947.20	88.50	1416.00		
4 Laborers	42.10	1347.20	63.25	2024.00			1 Laborer	42.10	336.80	63.25	506.00		
1 Equip. Oper. (light)	53.00	424.00	79.20	633.60			1 Crawler Crane, 40 Ton		1206.00		1326.60		
1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80			1 Lead, 60' High		209.25		230.18		
1 Backhoe Loader, 48 H.P.		213.75		235.13			1 Hammer, Diesel, 15K ft-lbs.		617.05		678.76	31.75	34.93
1 Hyd. Hammer (1200 lb.)		175.15		192.66			64 L.H., Daily Totals		\$5500.30		\$7550.33	\$85.94	\$117.97
1 F.E. Loader, W.M., 4 C.Y.		789.35		868.28									
1 Pvmt. Rem. Bucket		63.05		69.36			Crew B-45						
40 L.H., Daily Totals		\$2481.00		\$3580.30			1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$52.85	\$79.10
							1 Truck Driver (heavy)	48.95	391.60	73.35	586.80		
							1 Dist. Tanker, 3000 Gallon		330.15		363.17		
							1 Truck Tractor, 6x4, 380 H.P.		493.25		542.58	51.46	56.61
							16 L.H., Daily Totals		\$1669.00		\$2171.34	\$104.31	\$135.71

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

Crews - Standard

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour		Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P		Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew B-46							Crew B-48						
1 Pile Driver Foreman (outside)	\$56.20	\$449.60	\$87.30	\$698.40	\$48.48	\$74.24	1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$47.59	\$71.32
2 Pile Drivers	54.20	867.20	84.20	1347.20			3 Laborers	42.10	1010.40	63.25	1518.00		
3 Laborers	42.10	1010.40	63.25	1518.00			1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00		
1 Chain Saw, Gas, 36" Long			41.25		45.38	.86 .95	1 Equip. Oper. (oilier)	50.55	404.40	75.55	604.40		
48 L.H., Daily Totals		\$2368.45		\$3608.97	\$49.34	\$75.19	1 Equip. Oper. (light)	53.00	424.00	79.20	633.60		
Crew B-47							1 Centr. Water Pump, 6"		232.90		256.19		
1 Blast Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$46.40	\$69.57	1-20' Suction Hose, 6"		25.20		27.72		
1 Driller	42.10	336.80	63.25	506.00			1-50' Discharge Hose, 6"		17.90		19.69		
1 Equip. Oper. (light)	53.00	424.00	79.20	633.60			1 Drill Rig, Truck-Mounted		771.10		848.21		18.70 20.57
1 Air Track Drill, 4"		1058.00		1163.80			56 L.H., Daily Totals		\$3712.30		\$5145.81		\$66.29 \$91.89
1 Air Compressor, 600 cfm		421.50		463.65			Crew B-49						
2-50' Air Hoses, 3"		76.70		84.37			1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$50.12	\$75.61
24 L.H., Daily Totals		\$2669.80		\$3381.42	\$111.24	\$140.89	3 Laborers	42.10	1010.40	63.25	1518.00		
Crew B-47A							2 Equip. Oper. (crane)	59.20	947.20	88.50	1416.00		
1 Drilling Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$51.28	\$76.77	2 Equip. Oper. (oilier)	50.55	808.80	75.55	1208.80		
1 Equip. Oper. (heavy)	59.20	473.60	88.50	708.00			1 Equip. Oper. (light)	53.00	424.00	79.20	633.60		
1 Equip. Oper. (oilier)	50.55	404.40	75.55	604.40			2 Pile Drivers	54.20	867.20		1347.20		
1 Air Track Drill, 5"		1127.00		1239.70			1 Hyd. Crane, 25 Ton		580.85		638.93		
24 L.H., Daily Totals		\$2357.80		\$3082.10	\$98.24	\$128.42	1 Centr. Water Pump, 6"		232.90		256.19		
Crew B-47C							1-20' Suction Hose, 6"		25.20		27.72		
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$47.55	\$71.22	1-50' Discharge Hose, 6"		17.90		19.69		
1 Equip. Oper. (light)	53.00	424.00	79.20	633.60			1 Drill Rig, Truck-Mounted		771.10		848.21		18.50 20.35
1 Air Compressor, 750 cfm		538.25		592.08			88 L.H., Daily Totals		\$6038.35		\$8444.34		\$66.62 \$95.96
2-50' Air Hoses, 3"		76.70		84.37			Crew B-50						
1 Air Track Drill, 4"		1058.00		1163.80	104.56	115.02	2 Pile Driver Foremen (outside)	\$56.20	\$899.20	\$87.30	\$1396.80	\$52.35	\$80.15
16 L.H., Daily Totals		\$2433.75		\$2979.84	\$152.11	\$186.24	6 Pile Drivers	54.20	2601.60	84.20	4041.60		
Crew B-47E							2 Equip. Oper. (crane)	59.20	947.20	88.50	1416.00		
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$42.60	\$64.00	1 Equip. Oper. (oilier)	50.55	404.40	75.55	604.40		
3 Laborers	42.10	1010.40	63.25	1518.00			3 Laborers	42.10	1010.40	63.25	1518.00		
1 Flatbed Truck, Gas, 3 Ton		820.40		902.44			1 Crawler Crane, 40 Ton		1206.00		1326.60		
32 L.H., Daily Totals		\$2183.60		\$2950.44	\$68.24	\$92.20	1 Lead, 60' High		209.25		230.18		
Crew B-47G							1 Hammer, Diesel, 15K ft-lbs.		617.05		678.76		
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$45.33	\$67.99	1 Air Compressor, 600 cfm		421.50		463.65		
2 Laborers	42.10	673.60	63.25	1012.00			2-50' Air Hoses, 3"		76.70		84.37		
1 Equip. Oper. (light)	53.00	424.00	79.20	633.60			1 Chain Saw, Gas, 36" Long		41.25		45.38		22.96 25.26
1 Air Track Drill, 4"		1058.00		1163.80			112 L.H., Daily Totals		\$8434.55		\$11805.73		\$75.31 \$105.41
1 Air Compressor, 600 cfm		421.50		463.65			Crew B-51						
2-50' Air Hoses, 3"		76.70		84.37			1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$43.29	\$65.01
1 Gunita Pump Rig		317.90		349.69			4 Laborers	42.10	1347.20	63.25	2024.00		
32 L.H., Daily Totals		\$3324.50		\$4237.11	\$103.89	\$132.41	1 Truck Driver (light)	47.25	378.00	70.80	566.40		
Crew B-47H							1 Flatbed Truck, Gas, 1.5 Ton		196.15		215.76		4.09 4.50
1 Skilled Worker Foreman (out)	\$56.85	\$454.80	\$86.00	\$688.00	\$55.35	\$83.71	48 L.H., Daily Totals		\$2274.15		\$3336.17		\$47.38 \$69.50
3 Skilled Workers	54.85	1316.40	82.95	1990.80			Crew B-52						
1 Flatbed Truck, Gas, 3 Ton		820.40		902.44			1 Carpenter Foreman (outside)	\$55.15	\$441.20	\$82.85	\$662.80	\$48.73	\$72.97
32 L.H., Daily Totals		\$2591.60		\$3581.24	\$80.99	\$111.91	1 Carpenter	53.15	425.20	79.85	638.80		

Crews - Standard

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour
	Hr.	Daily	Hr.	Daily			Bare Costs	Incl. O&P	Hr.	Daily	
Crew B-54						Crew B-57					
1 Equip. Oper. (light)	\$53.00	\$424.00	\$79.20	\$633.60	\$53.00	\$79.20	1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00
1 Trencher, Chain, 40 H.P.		401.85		442.04		2 Laborers	42.10	673.60	63.25	1012.00	
8 L.H., Daily Totals						1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00	
						1 Equip. Oper. (light)	53.00	424.00	79.20	633.60	
						1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40	
						1 Crawler Crane, 25 Ton				1241.90	
						1 Clamshell Bucket, 1 C.Y.				68.55	
						1 Cent. Water Pump, 6"				75.41	
						1-20' Suction Hose, 6"				232.90	
						20-50' Discharge Hoses, 6"				25.20	
										358.00	
										393.80	
										37.78	
										41.56	
										48 L.H., Daily Totals	
											\$4142.05
											\$5483.02
											\$86.29
											\$114.23
Crew B-54A						Crew B-58					
17 Labor Foreman (outside)	\$44.10	\$88.20	\$66.25	\$132.50	\$54.22	2 Laborers	\$42.10	\$673.60	\$63.25	\$1012.00	
1 Equipment Operator (med.)	56.75	454.00	84.85	678.80		1 Equip. Oper. (light)	53.00	424.00	79.20	633.60	
1 Wheel Trencher, 67 H.P.		1324.00		1456.40		1 Backhoe Loader, 48 H.P.				213.75	
16 L.H., Daily Totals						1 Small Helicopter, w/ Pilot				208.00	
										2288.00	
										95.57	
										105.13	
										24 L.H., Daily Totals	
											\$3391.35
											\$4168.73
											\$141.31
											\$173.70
Crew B-54B						Crew B-59					
25 Labor Foreman (outside)	\$44.10	\$88.20	\$66.25	\$132.50	\$54.22	1 Truck Driver (heavy)	\$48.95	\$391.60	\$73.35	\$586.80	
1 Equipment Operator (med.)	56.75	454.00	84.85	678.80		1 Truck Tractor, 220 H.P.				307.10	
1 Wheel Trencher, 150 H.P.		1324.00		1456.40		1 Water Tank Trailer, 5000 Gal.				152.25	
10 L.H., Daily Totals										167.47	
										850.95	
											\$1092.09
											\$106.37
											\$136.51
Crew B-54C						Crew B-59A					
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$49.42	2 Laborers	\$42.10	\$673.60	\$63.25	\$1012.00	
1 Equipment Operator (med.)	56.75	454.00	84.85	678.80		1 Truck Driver (heavy)	48.95	391.60	73.35	586.80	
1 Wheel Trencher, 67 H.P.		1126.00		1238.60		1 Water Tank Trailer, 5000 Gal.				307.10	
16 L.H., Daily Totals						1 Truck Tractor, 220 H.P.				152.25	
										337.81	
										19.14	
										21.05	
										1524.55	
											\$2104.09
											\$63.52
											\$87.67
Crew B-54D						Crew B-60					
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$49.42	1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	
1 Equipment Operator (med.)	56.75	454.00	84.85	678.80		2 Laborers	42.10	673.60	63.25	1012.00	
1 Rock Trencher, 6" Width		429.85		472.83		1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00	
16 L.H., Daily Totals						2 Equip. Oper. (light)	53.00	848.00	79.20	1267.20	
						1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40	
						1 Crawler Crane, 40 Ton				1206.00	
						1 Lead, 60' High				209.25	
						1 Hammer, Diesel, 15K ft-lbs.				230.18	
										617.05	
										678.76	
										213.75	
										235.13	
										40.11	
										44.12	
										56 L.H., Daily Totals	
											\$4998.45
											\$6592.26
											\$89.26
											\$117.72
Crew B-55						Crew B-61					
2 Laborers	\$42.10	\$673.60	\$63.25	\$1012.00	\$43.82	1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	
1 Truck Driver (light)	47.25	378.00	70.80	566.40		3 Laborers	42.10	673.60	63.25	1012.00	
1 Truck-Mounted Earth Auger		390.20		429.22		1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00	
1 Flatbed Truck, Gas, 3 Ton		820.40		902.44		2 Equip. Oper. (light)	53.00	848.00	79.20	1267.20	
24 L.H., Daily Totals						1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40	
						1 Crawler Crane, 40 Ton				1206.00	
						1 Lead, 60' High				209.25	
						1 Hammer, Diesel, 15K ft-lbs.				230.18	
										617.05	
										678.76	
										213.75	
										235.13	
										40.11	
										44.12	
Crew B-56						Crew B-62					
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$47.55	1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	
1 Equip. Oper. (light)	53.00	424.00	79.20	633.60		3 Laborers	42.10	1010.40	63.25	1518.00	
1 Air Track Drill, 4"		1058.00		1163.80		1 Equip. Oper. (crane)	53.00	424.00	79.20	633.60	
1 Air Compressor, 600 cfm		421.50		463.65		1 Cement Mixer, 2 C.Y.				105.70	
1 50' Air Hose, 3"		38.35		42.19		1 Air Compressor, 160 cfm				116.27	
16 L.H., Daily Totals										202.80	
										223.08	
										7.71	
										8.48	
										40 L.H., Daily Totals	
											\$2095.70
											\$3020.95
											\$52.39
											\$75.52
Crew B-57						Crew B-63					
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00		2 Laborers	\$42.10	\$673.60	\$63.25	\$1012.00	
2 Laborers	42.10	673.60	63.25	1012.00		1 Equip. Oper. (light)	53.00	424.00	79.20	633.60	
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00		1 Loader, Skid Steer, 30 H.P.				177.55	
1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40		16 L.H., Daily Totals				195.31	
1 Crawler Crane, 25 Ton										7.40	
1 Clamshell Bucket, 1 C.Y.										8.14	
1 Cent. Water Pump, 6"										24 L.H., Daily Totals	
1-20' Suction Hose, 6"											\$1275.15
20-50' Discharge Hoses, 6"											\$1840.91
											\$53.13
											\$76.70

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

Crews - Standard

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour		Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P		Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew B-62A													
2 Laborers	\$42.10	\$673.60	\$63.25	\$1012.00	\$45.73	\$68.57							
1 Equip. Oper. (light)		53.00	424.00	79.20	633.60								
1 Loader, Skid Steer, 30 H.P.			177.55		195.31								
1 Trencher Attachment			66.20		72.82	10.16	11.17						
24 L.H., Daily Totals			\$1341.35		\$1913.72	\$55.89	\$79.74						
Crew B-63													
4 Laborers	\$42.10	\$1347.20	\$63.25	\$2024.00	\$44.28	\$66.44							
1 Equip. Oper. (light)		53.00	424.00	79.20	633.60								
1 Loader, Skid Steer, 30 H.P.			177.55		195.31	4.44	4.88						
40 L.H., Daily Totals			\$1948.75		\$2852.91	\$48.72	\$71.32						
Crew B-63B													
1 Labor Foreman (inside)	\$42.60	\$340.80	\$64.00	\$512.00	\$44.95	\$67.42							
2 Laborers		42.10	673.60	63.25	1012.00								
1 Equip. Oper. (light)		53.00	424.00	79.20	633.60								
1 Loader, Skid Steer, 78 H.P.			400.10		440.11	12.50	13.75						
32 L.H., Daily Totals			\$1838.50		\$2597.71	\$57.45	\$81.18						
Crew B-64													
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$44.67	\$67.03							
1 Truck Driver (light)		47.25	378.00	70.80	566.40								
1 Power Mulcher (small)			221.10		243.21								
1 Flatbed Truck, Gas, 1.5 Ton			196.15		215.76	26.08	28.69						
16 L.H., Daily Totals			\$1132.05		\$1531.38	\$70.75	\$95.71						
Crew B-65													
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$44.67	\$67.03							
1 Truck Driver (light)		47.25	378.00	70.80	566.40								
1 Power Mulcher (Large)			326.90		359.59								
1 Flatbed Truck, Gas, 1.5 Ton			196.15		215.76	32.69	35.96						
16 L.H., Daily Totals			\$1237.85		\$1647.76	\$77.37	\$102.98						
Crew B-66													
1 Equip. Oper. (light)	\$53.00	\$424.00	\$79.20	\$633.60	\$53.00	\$79.20							
1 Loader/Backhoe, 40 H.P.			241.40		265.54	30.18	33.19						
8 L.H., Daily Totals			\$665.40		\$899.14	\$83.17	\$112.39						
Crew B-67													
1 Millwright	\$55.90	\$447.20	\$81.00	\$648.00	\$54.45	\$80.10							
1 Equip. Oper. (light)		53.00	424.00	79.20	633.60								
1 R.T. Forklift, 5,000 Lb., diesel			269.90		296.89	16.87	18.56						
16 L.H., Daily Totals			\$1141.10		\$1578.49	\$71.32	\$98.66						
Crew B-67B													
1 Millwright Foreman (inside)	\$56.40	\$451.20	\$81.70	\$653.60	\$56.15	\$81.35							
1 Millwright			55.90	447.20	81.00	648.00							
16 L.H., Daily Totals			\$898.40		\$1301.60	\$56.15	\$81.35						
Crew B-68													
2 Millwrights	\$55.90	\$894.40	\$81.00	\$1296.00	\$54.93	\$80.40							
1 Equip. Oper. (light)		53.00	424.00	79.20	633.60								
1 R.T. Forklift, 5,000 Lb., diesel			269.90		296.89	11.25	12.37						
24 L.H., Daily Totals			\$1588.30		\$2226.49	\$66.18	\$92.77						
Crew B-68A													
1 Millwright Foreman (inside)	\$56.40	\$451.20	\$81.70	\$653.60	\$56.07	\$81.23							
2 Millwrights			55.90	894.40	81.00	1296.00							
1 Forklift, Smooth Floor, 8,000 Lb.					255.90		281.49	10.66	11.73				
24 L.H., Daily Totals			\$1601.50		\$2231.09	\$66.73	\$92.96						
Crew B-68B													
1 Millwright Foreman (inside)	\$56.40	\$451.20	\$81.70	\$653.60	\$59.97	\$88.47							
2 Millwrights			55.90	894.40	81.00	1296.00							
2 Electricians			61.35		98.160	91.35	1461.60						
2 Plumbers			64.45		1031.20	96.45	1543.20						
1 R.T. Forklift, 5,000 Lb., gas					279.90		307.89	5.00	5.50				
56 L.H., Daily Totals					\$3638.30		\$5262.29	\$64.97	\$93.97				
Crew B-68C													
1 Millwright Foreman (inside)	\$56.40	\$451.20	\$81.70	\$653.60	\$59.52	\$87.63							
1 Millwright			55.90	447.20	81.00	648.00							
1 Electrician			61.35		490.80	91.35	730.80						
1 Plumber			64.45		515.60	96.45	771.60						
1 R.T. Forklift, 5,000 Lb., gas					279.90		307.89	8.75	9.62				
32 L.H., Daily Totals					\$2184.70		\$3111.89	\$68.27	\$97.25				
Crew B-68D													
1 Labor Foreman (inside)	\$42.60	\$340.80	\$64.00	\$512.00	\$45.90	\$68.82							
1 Laborer		42.10	336.80	63.25	506.00								
1 Equip. Oper. (light)		53.00	424.00	79.20	633.60								
1 R.T. Forklift, 5,000 Lb., gas					279.90		307.89	11.66	12.83				
24 L.H., Daily Totals					\$1381.50		\$1959.49	\$57.56	\$81.65				
Crew B-68E													
1 Struc. Steel Foreman (inside)	\$58.15	\$465.20	\$91.20	\$729.60	\$57.71	\$90.53							
3 Struc. Steel Workers			57.65	1383.60	90.45	2170.80							
1 Welder			57.45		459.60	90.10	720.80						
1 Forklift, Smooth Floor, 8,000 Lb.					255.90		281.49	6.40	7.04				
40 L.H., Daily Totals					\$2564.30		\$3902.69	\$64.11	\$97.57				
Crew B-68F													
1 Skilled Worker Foreman (out)	\$56.85	\$454.80	\$86.00	\$688.00	\$55.52	\$83.97							
2 Skilled Workers			54.85	877.60	82.95	1327.20							
1 R.T. Forklift, 5,000 Lb., gas					279.90		307.89	11.66	12.83				
24 L.H., Daily Totals					\$1612.30		\$2323.09	\$67.18	\$96.80				
Crew B-68G													
2 Structural Steel Workers	\$57.65	\$922.40	\$90.45	\$1447.20	\$57.65	\$90.45							
1 R.T. Forklift, 5,000 Lb., gas					279.90		307.89	17.49	19.24				
16 L.H., Daily Totals					\$1202.30		\$1755.09	\$75.14	\$109.69				
Crew B-69													
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$46.69	\$70.01							
3 Laborers			42.10	1010.40	63.25	1518.00							
1 Equip. Oper. (crane)			59.20		473.60	88.50	708.00						
1 Equip. Oper. (boiler)			50.55		404.40	75.55	604.40						
1 Hyd. Crane, 80 Ton					1486.00		1634.60	30.96	34.05				
48 L.H., Daily Totals					\$3727.20		\$4995.00	\$77.65	\$104.06				
Crew B-69A													
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$46.18	\$69.05							
3 Laborers			42.10	1010.40	63.25	1518.00							
1 Equip. Oper. (medium)			56.75		454.00	84.85	678.80						
1 Concrete Finisher			49.95		399.60	73.45	587.60						
1 Curb/Gutter Paver, 2-Track					1217.00		1338.70	25.35	27.89				
48 L.H., Daily Totals					\$3433.80		\$4653.10	\$71.54	\$96.94				

Crews - Standard

Crew No.	Incl. Cost		Cost		Crew No.	Incl. Cost		Cost	
	Bare Costs	Subs O&P	Per Labor-Hour	Bare Costs	Subs O&P	Bare Costs	Incl. O&P		
Crew B-69B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	Hr.	Daily	Bare Costs
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$46.18	\$69.05	1 Labor Foreman (outside)	\$44.10	\$352.80
3 Laborers	42.10	1010.40	63.25	1518.00			1 Laborer	42.10	336.80
1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80			4 Equip. Oper. (medium)	56.75	1816.00
1 Cement Finisher	49.95	399.60	73.45	587.60			2 Truck Drivers (heavy)	48.95	783.20
1 Curb/Gutter Paver, 4-Track		791.55		870.71	16.49	18.14	1 Grader, 30,000 Lbs.		1062.00
48 L.H., Daily Totals							1 Ripper, Beam & 1 Shank		90.50
		\$3008.35		\$4185.10	\$62.67	\$87.19	2 Stabilizers, 310 H.P.		2778.00
Crew B-70	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	1 Flatbed Truck, Gas, 3 Ton		820.40
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$48.66	\$72.94	1 Chem. Spreader, Towed		83.35
3 Laborers	42.10	1010.40	63.25	1518.00			1 Roller, Vibratory, 25 Ton		664.35
3 Equip. Oper. (medium)	56.75	1362.00	84.85	2036.40			1 Water Tank Trailer, 5000 Gal.		152.25
1 Grader, 30,000 Lbs.		1062.00		1168.20			1 Truck Tractor, 220 H.P.		307.10
1 Ripper, Beam & 1 Shank		90.50		99.55			64 L.H., Daily Totals		
1 Road Sweeper, S.P., 8' wide		715.85		787.43				\$9246.75	
1 F.E. Loader, W.M., 1.5 C.Y.		423.50		465.85	40.93	45.02			\$11478.55
56 L.H., Daily Totals		\$5017.05		\$6605.44	\$89.59	\$117.95			\$144.48
									\$179.35
Crew B-70A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	Crew B-75	Hr.	Daily
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$53.82	\$80.53	1 Labor Foreman (outside)	\$44.10	\$352.80
4 Equip. Oper. (medium)	56.75	1816.00	84.85	2715.20			1 Laborer	42.10	336.80
1 Grader, 40,000 Lbs.		1347.00		1481.70			4 Equip. Oper. (medium)	56.75	1816.00
1 F.E. Loader, W.M., 2.5 C.Y.		702.10		772.31			1 Truck Driver (heavy)	48.95	391.60
1 Dozer, 80 H.P.		401.40		441.54			1 Grader, 30,000 Lbs.		1062.00
1 Roller, Pneum. Whl., 12 Ton		345.75		380.32	69.91	76.90	1 Ripper, Beam & 1 Shank		90.50
40 L.H., Daily Totals		\$4949.05		\$6297.07	\$123.73	\$157.43	2 Stabilizers, 310 H.P.		2778.00
							1 Dist. Tanker, 3000 Gallon		3055.80
Crew B-71	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	1 Truck Tractor, 6x4, 380 H.P.		330.15
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$48.66	\$72.94	1 Roller, Vibratory, 25 Ton		493.25
3 Laborers	42.10	1010.40	63.25	1518.00			64 L.H., Daily Totals		664.35
3 Equip. Oper. (medium)	56.75	1362.00	84.85	2036.40					730.78
1 Pvmnt. Profiler, 750 H.P.		3448.00		3792.80					96.75
1 Road Sweeper, S.P., 8' wide		715.85		787.43					106.43
1 F.E. Loader, W.M., 1.5 C.Y.		423.50		465.85	81.92	90.11			
56 L.H., Daily Totals		\$7312.55		\$9130.49	\$130.58	\$163.04			
Crew B-72	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	Crew B-76	Hr.	Daily
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$49.67	\$74.42	1 Dock Builder Foreman (outside)	\$56.20	\$449.60
3 Laborers	42.10	1010.40	63.25	1518.00			5 Dock Builders	54.20	2168.00
4 Equip. Oper. (medium)	56.75	1816.00	84.85	2715.20			2 Equip. Oper. (crane)	59.20	947.20
1 Pvmnt. Profiler, 750 H.P.		3448.00		3792.80			1 Equip. Oper. (oiler)	50.55	404.40
1 Hammermill, 250 H.P.		848.80		933.68			1 Crawler Crane, 50 Ton		75.55
1 Windrow Loader		1427.00		1569.70			1510.00		604.40
1 Mix Paver, 165 H.P.		2149.00		2363.90			1 Barge, 400 Ton		1661.00
1 Roller, Pneum. Whl., 12 Ton		345.75		380.32	128.41	209.25	858.85		944.74
64 L.H., Daily Totals		\$11397.75		\$13803.61	\$178.09	\$215.68	1 Hammer, Diesel, 15K ft-lbs.		678.76
							1 Lead, 60' High		230.18
Crew B-73	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	1 Air Compressor, 600 cfm		421.50
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$51.51	\$77.13	2-50' Air Hoses, 3"		463.65
2 Laborers	42.10	673.60	63.25	1012.00			72 L.H., Daily Totals		84.37
5 Equip. Oper. (medium)	56.75	2270.00	84.85	3394.00					51.30
1 Road Mixer, 310 H.P.		1896.00		2085.60					56.43
1 Tandem Roller, 10 Ton		236.75		260.43					
1 Hammermill, 250 H.P.		848.80		933.68					
1 Grader, 30,000 Lbs.		1062.00		1168.20					
.5 F.E. Loader, W.M., 1.5 C.Y.		211.75		232.93					
.5 Truck Tractor, 220 H.P.		153.55		168.91					
.5 Water Tank Trailer, 5000 Gal.		76.13		83.74	70.08	77.09			
64 L.H., Daily Totals		\$7781.38		\$9869.47	\$121.58	\$154.21			
Crew B-77	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	Crew B-76A	Hr.	Daily
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$66.25	\$93.00	1 Labor Foreman (outside)	\$44.10	\$352.80
3 Laborers	42.10	1010.40	63.25	1518.00	63.25	2530.00	5 Laborers	42.10	1684.00
4 Equip. Oper. (crane)	59.20	473.60	84.85	885.50	88.50	708.00	1 Equip. Oper. (crane)	59.20	473.60
1 Equip. Oper. (oiler)	50.55	404.40			75.55	604.40	1 Equip. Oper. (oiler)	50.55	404.40
1 Crawler Crane, 50 Ton		1510.00				1510.00	1 Crawler Crane, 50 Ton		1661.00
1 Barge, 400 Ton		858.85				858.85	1 Barge, 400 Ton		944.74
1 Hammer, Diesel, 15K ft-lbs.		617.05				617.05	1 Hammer, Diesel, 15K ft-lbs.		37.01
1 Lead, 60' High		209.25				209.25	1 Lead, 60' High		40.71
1 Air Compressor, 600 cfm		421.50				421.50	1 Air Compressor, 600 cfm		
2-50' Air Hoses, 3"		76.70				76.70	2-50' Air Hoses, 3"		
72 L.H., Daily Totals		\$7662.55							
Crew B-76A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	Crew B-77	Hr.	Daily
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$45.54	\$68.32	1 Labor Foreman (outside)	\$44.10	\$352.80
5 Laborers	42.10	1684.00	63.25	2530.00			3 Laborers	42.10	1010.40
1 Equip. Oper. (crane)	59.20	473.60	84.85	885.50			1 Truck Driver (light)	47.25	378.00
1 Equip. Oper. (oiler)	50.55	404.40					1 Crack Cleaner, 25 H.P.		52.45
1 Crawler Crane, 50 Ton		1510.00					1 Crack Filler, Trailer Mtd.		154.75
1 Barge, 400 Ton		858.85					1 Flatbed Truck, Gas, 3 Ton		820.40
64 L.H., Daily Totals		\$5283.65					64 L.H., Daily Totals		\$3744.76
									\$69.22
									\$93.62

Crews - Standard

Crew No.	Incl. Bare Costs		Cost Per Labor-Hour		Crew No.	Incl. Bare Costs		Cost Per Labor-Hour	
	Bare Costs	Subs O&P				Bare Costs	Subs O&P		
Crew B-78	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P			
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$43.29	\$65.01			
4 Laborers	42.10	1347.20	63.25	2024.00					
1 Truck Driver (light)	47.25	378.00	70.80	566.40					
1 Paint Striper, S.P., 40 Gallon			127.10	139.81					
1 Flatbed Truck, Gas, 3 Ton			820.40	902.44					
1 Pickup Truck, 3/4 Ton			110.85	121.94	22.05	24.25			
48 L.H., Daily Totals		\$3136.35		\$4284.59	\$65.34	\$89.26			
Crew B-78A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P			
1 Equip. Oper. (light)	\$53.00	\$424.00	\$79.20	\$633.60	\$53.00	\$79.20			
1 Line Rem. (Metal Balls) 115 H.P.		916.50		1008.15	114.56	126.02			
8 L.H., Daily Totals		\$1340.50		\$1641.75	\$167.56	\$205.22			
Crew B-78B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P			
2 Laborers	\$42.10	\$673.60	\$63.25	\$1012.00	\$43.31	\$65.02			
.25 Equip. Oper. (light)	53.00	106.00	79.20	158.40					
1 Pickup Truck, 3/4 Ton		110.85		121.94					
1 Line Rem., 11 H.P., Walk Behind		113.45		124.80					
.25 Road Sweeper, S.P., 8' wide		178.96		196.86	22.40	24.64			
18 L.H., Daily Totals		\$1182.86		\$1613.99	\$65.71	\$89.67			
Crew B-78C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P			
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$43.29	\$65.01			
4 Laborers	42.10	1347.20	63.25	2024.00					
1 Truck Driver (light)	47.25	378.00	70.80	566.40					
1 Paint Striper, T.M., 120 Gal.		592.95		652.25					
1 Flatbed Truck, Gas, 3 Ton		820.40		902.44					
1 Pickup Truck, 3/4 Ton		110.85		121.94	31.75	34.93			
48 L.H., Daily Totals		\$3602.20		\$4797.02	\$75.05	\$99.94			
Crew B-78D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P			
2 Labor Foremen (outside)	\$44.10	\$705.60	\$66.25	\$1060.00	\$43.02	\$64.61			
7 Laborers	42.10	2357.60	63.25	3542.00					
1 Truck Driver (light)	47.25	378.00	70.80	566.40					
1 Paint Striper, T.M., 120 Gal.		592.95		652.25					
1 Flatbed Truck, Gas, 3 Ton		820.40		902.44					
3 Pickup Trucks, 3/4 Ton		332.55		365.81					
1 Air Compressor, 60 cfm		152.95		168.25					
1 .50' Air Hose, 3/4"		7.75		8.53					
1 Breaker, Pavement, 60 lb.		53.50		58.85	24.50	26.95			
80 L.H., Daily Totals		\$5401.30		\$7324.51	\$67.52	\$91.56			
Crew B-78E	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P			
2 Labor Foremen (outside)	\$44.10	\$705.60	\$66.25	\$1060.00	\$42.86	\$64.38			
9 Laborers	42.10	3031.20	63.25	4554.00					
1 Truck Driver (light)	47.25	378.00	70.80	566.40					
1 Paint Striper, T.M., 120 Gal.		592.95		652.25					
1 Flatbed Truck, Gas, 3 Ton		820.40		902.44					
4 Pickup Trucks, 3/4 Ton		443.40		487.74					
2 Air Compressors, 60 cfm		305.90		336.49					
2 .50' Air Hoses, 3/4"		15.50		17.05					
2 Breakers, Pavement, 60 lb.		107.00		117.70	23.80	26.18			
96 L.H., Daily Totals		\$6399.95		\$8694.07	\$66.67	\$90.56			
Crew B-78F	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P			
2 Labor Foremen (outside)	\$44.10	\$705.60	\$66.25	\$1060.00	\$42.75	\$64.22			
11 Laborers	42.10	3704.80	63.25	5566.00					
1 Truck Driver (light)	47.25	378.00	70.80	566.40					
1 Paint Striper, T.M., 120 Gal.		592.95		652.25					
1 Flatbed Truck, Gas, 3 Ton		820.40		902.44					
7 Pickup Trucks, 3/4 Ton		775.95		853.54					
3 Air Compressors, 60 cfm		458.85		504.74					
3 .50' Air Hoses, 3/4"		23.25		25.57					
3 Breakers, Pavement, 60 lb.		160.50		176.55					
112 L.H., Daily Totals		\$7620.30		\$10307.49	\$68.04	\$92.03			
Crew B-79	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P			
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$43.53	\$65.36			
3 Laborers	42.10	1010.40	63.25	1518.00					
1 Truck Driver (light)	47.25	378.00	70.80	566.40					
1 Paint Striper, T.M., 120 Gal.		592.95		652.25					
1 Heating Kettle, 115 Gallon		98.65		108.52					
1 Flatbed Truck, Gas, 3 Ton		820.40		902.44					
2 Pickup Trucks, 3/4 Ton		221.70		243.87					
40 L.H., Daily Totals		\$3474.90		\$4521.47	\$86.87	\$113.04			
Crew B-79A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P			
1.5 Equip. Oper. (light)	\$53.00	\$636.00	\$79.20	\$950.40	\$53.00	\$79.20			
.5 Line Remov. (Grinder) 115 H.P.		475.57		523.13					
1 Line Rem. (Metal Balls) 115 H.P.		916.50		1008.15					
12 L.H., Daily Totals		\$2028.08		\$2481.68	\$169.01	\$206.81			
Crew B-79B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P			
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$42.10	\$63.25			
1 Set of Gases		171.55		188.71					
8 L.H., Daily Totals		\$508.35		\$694.71	\$63.54	\$86.84			
Crew B-79C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P			
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$43.12	\$64.76			
5 Laborers	42.10	1684.00	63.25	2530.00					
1 Truck Driver (light)	47.25	378.00	70.80	566.40					
1 Paint Striper, T.M., 120 Gal.		592.95		652.25					
1 Heating Kettle, 115 Gallon		98.65		108.52					
1 Flatbed Truck, Gas, 3 Ton		820.40		902.44					
3 Pickup Trucks, 3/4 Ton		332.55		365.81					
1 Air Compressor, 60 cfm		152.95		168.25					
1 .50' Air Hose, 3/4"		7.75		8.53					
1 Breaker, Pavement, 60 lb.		53.50		58.85					
56 L.H., Daily Totals		\$4473.55		\$5891.02	\$79.88	\$105.20			
Crew B-79D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P			
2 Labor Foremen (outside)	\$44.10	\$705.60	\$66.25	\$1060.00	\$43.24	\$64.94			
5 Laborers	42.10	1684.00	63.25	2530.00					
1 Truck Driver (light)	47.25	378.00	70.80	566.40					
1 Paint Striper, T.M., 120 Gal.		592.95		652.25					
1 Heating Kettle, 115 Gallon		98.65		108.52					
1 Flatbed Truck, Gas, 3 Ton		820.40		902.44					
4 Pickup Trucks, 3/4 Ton		443.40		487.74					
1 Air Compressor, 60 cfm		152.95		168.25					
1 .50' Air Hose, 3/4"		7.75		8.53					
1 Breaker, Pavement, 60 lb.		53.50		58.85					
64 L.H., Daily Totals		\$4937.20		\$6542.96	\$77.14	\$102.23			

Crews - Standard

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour			
	Hr.	Daily	Hr.	Daily			Bare Costs	Incl. O&P	Hr.	Daily				
Crew B-79E														
2 Labor Foremen (outside)	\$44.10	\$705.60	\$66.25	\$1060.00	\$43.02	\$64.61	2 Laborers	\$42.10	\$673.60	\$63.25	\$1012.00	\$47.55	\$71.22	
7 Laborers	42.10	2357.60	63.25	3542.00			2 Equip. Oper. (light)	53.00	848.00	79.20	1267.20			
1 Truck Driver (light)	47.25	378.00	70.80	566.40			2 Dump Truck, 8 C.Y., 220 H.P.		856.10		941.71			
1 Paint Striper, T.M., 120 Gal.							1 Flatbed Trailer, 25 Ton			135.55	149.10			
1 Heating Kettle, 115 Gallon							1 Horiz. Dir. Drill, 20k lb. Thrust			538.65	592.51			
1 Flatbed Truck, Gas, 3 Ton							1 Mud Trailer for HDD, 1500 Gal.			309.00	339.90			
5 Pickup Trucks, 3/4 Ton							1 Pickup Truck, 4x4, 3/4 Ton			175.85	193.44			
2 Air Compressors, 60 cfm							1 Flatbed Trailer, 3 Ton			70.30	77.33			
2 50' Air Hoses, 3/4"							1 Loader, Skid Steer, 78 H.P.			400.10	440.11	77.67	85.44	
2 Breakers, Pavement, 60 lb.							32 L.H., Daily Totals					\$125.22	\$156.67	
80 L.H., Daily Totals		\$5935.85		\$7912.52		\$74.20	\$98.91							
Crew B-80							Crew B-82A							
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$46.61	\$69.88	2 Laborers	\$42.10	\$673.60	\$63.25	\$1012.00	\$47.55	\$71.22	
1 Laborer	42.10	336.80	63.25	506.00			2 Equip. Oper. (light)	53.00	848.00	79.20	1267.20			
1 Truck Driver (light)	47.25	378.00	70.80	566.40			2 Dump Truck, 8 C.Y., 220 H.P.		856.10		941.71			
1 Equip. Oper. (light)	53.00	424.00	79.20	633.60			1 Flatbed Trailer, 25 Ton			135.55	149.10			
1 Flatbed Truck, Gas, 3 Ton							1 Horiz. Dir. Drill, 30k lb. Thrust			641.20	705.32			
1 Earth Auger, Truck-Mtd.							1 Mud Trailer for HDD, 1500 Gal.			309.00	339.90			
32 L.H., Daily Totals		\$2512.50		\$3358.99		\$78.52	\$104.97							
Crew B-80A							Crew B-82B							
3 Laborers	\$42.10	\$1010.40	\$63.25	\$1518.00	\$42.10	\$63.25	2 Laborers	\$42.10	\$673.60	\$63.25	\$1012.00	\$47.55	\$71.22	
1 Flatbed Truck, Gas, 3 Ton		820.40		902.44		34.18	37.60	2 Equip. Oper. (light)	53.00	848.00	79.20	1267.20		
24 L.H., Daily Totals		\$1830.80		\$2420.44		\$76.28	\$100.85	2 Dump Truck, 8 C.Y., 220 H.P.		856.10		941.71		
Crew B-80B							1 Flatbed Trailer, 25 Ton			135.55	149.10			
3 Laborers	\$42.10	\$1010.40	\$63.25	\$1518.00	\$44.83	\$67.24	1 Horiz. Dir. Drill, 50k lb. Thrust		815.80		897.38			
1 Equip. Oper. (light)	53.00	424.00	79.20	633.60			1 Mud Trailer for HDD, 1500 Gal.		309.00		339.90			
1 Crane, Flatbed Mounted, 3 Ton		236.10		259.71		7.38	8.12	1 Pickup Truck, 4x4, 3/4 Ton		175.85		193.44		
32 L.H., Daily Totals		\$1670.50		\$2411.31		\$52.20	\$75.35	1 Flatbed Trailer, 3 Ton		70.30		77.33		
Crew B-80C							1 Loader, Skid Steer, 78 H.P.		400.10		440.11	86.33	94.97	
2 Laborers	\$42.10	\$673.60	\$63.25	\$1012.00	\$43.82	\$65.77	32 L.H., Daily Totals					\$133.88	\$166.19	
1 Truck Driver (light)	47.25	378.00	70.80	566.40			Crew B-82C							
1 Flatbed Truck, Gas, 1.5 Ton		196.15		215.76			2 Laborers	\$42.10	\$673.60	\$63.25	\$1012.00	\$47.55	\$71.22	
1 Manual Fence Post Auger, Gas		53.85		59.23			2 Equip. Oper. (light)	53.00	848.00	79.20	1267.20			
24 L.H., Daily Totals		\$1301.60		\$1853.40		\$10.42	11.46	2 Dump Truck, 8 C.Y., 220 H.P.		856.10		941.71		
Crew B-81							1 Flatbed Trailer, 25 Ton			135.55	149.10			
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$49.27	\$73.82	1 Horiz. Dir. Drill, 50k lb. Thrust		815.80		897.38			
1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80			1 Mud Trailer for HDD, 1500 Gal.		309.00		339.90			
1 Truck Driver (heavy)	48.95	391.60	73.35	586.80			1 Pickup Truck, 4x4, 3/4 Ton		175.85		193.44			
1 Hydromulcher, T.M., 3000 Gal.		275.45		303.00			1 Flatbed Trailer, 3 Ton		70.30		77.33			
1 Truck Tractor, 220 H.P.		307.10		337.81		24.27	26.70	1 Loader, Skid Steer, 78 H.P.		400.10		440.11		
24 L.H., Daily Totals		\$1764.95		\$2412.41		\$73.54	\$100.52	32 L.H., Daily Totals						
Crew B-81A							Crew B-82D							
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$44.67	\$67.03	1 Equip. Oper. (light)	\$53.00	\$424.00	\$79.20	\$633.60	\$53.00	\$79.20	
1 Truck Driver (light)	47.25	378.00	70.80	566.40			1 Mud Trailer for HDD, 1500 Gal.		309.00		339.90	38.63	42.49	
1 Hydromulcher, T.M., 600 Gal.		116.95		128.65			8 L.H., Daily Totals					\$91.63	\$121.69	
1 Flatbed Truck, Gas, 3 Ton		820.40		902.44			Crew B-83							
16 L.H., Daily Totals		\$1652.15		\$2103.49		\$103.26	\$131.47	1 Tugboat Captain	\$56.75	\$454.00	\$84.85	\$678.80	\$49.42	\$74.05
Crew B-82							1 Tugboat Hand	42.10	336.80	63.25	506.00			
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$47.55	\$71.22	1 Tugboat, 250 H.P.		717.50		789.25	44.84	49.33	
1 Equip. Oper. (light)	53.00	424.00	79.20	633.60			16 L.H., Daily Totals					\$1974.05	\$94.27	\$123.38
1 Horiz. Borer, 6 H.P.		182.35		200.59			Crew B-84							
16 L.H., Daily Totals		\$943.15		\$1340.18		\$11.40	12.54	1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$56.75	\$84.85
Crew B-82							1 Rotary Mower/Tractor		366.75		403.43	45.84	50.43	
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$47.55	\$71.22	8 L.H., Daily Totals					\$1082.22	\$102.59	\$135.28
1 Equip. Oper. (light)	53.00	424.00	79.20	633.60			Crew B-85							
1 Horiz. Borer, 6 H.P.		182.35		200.59			3 Laborers	\$42.10	\$1010.40	\$63.25	\$1518.00	\$46.40	\$69.59	
16 L.H., Daily Totals		\$943.15		\$1340.18		\$58.95	\$83.76	1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80		
Crew B-82							1 Truck Driver (heavy)	48.95	391.60	73.35	586.80			
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$47.55	\$71.22	1 Telescoping Boom Lift, to 80'		383.55		421.90			
1 Equip. Oper. (light)	53.00	424.00	79.20	633.60			1 Brush Chipper, 12", 130 H.P.		392.80		432.08			
1 Horiz. Borer, 6 H.P.		182.35		200.59			1 Pruning Saw, Rotary		26.40		29.04	20.07	22.08	
16 L.H., Daily Totals		\$943.15		\$1340.18		\$58.95	\$83.76	40 L.H., Daily Totals						
Crew B-82							26 L.H., Daily Totals					\$2658.75	\$66.47	\$91.67
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$47.55	\$71.22	32 L.H., Daily Totals							
1 Equip. Oper. (light)	53.00	424.00	79.20	633.60			32 L.H., Daily Totals							
1 Horiz. Borer, 6 H.P.		182.35		200.59			32 L.H., Daily Totals							
16 L.H., Daily Totals		\$943.15		\$1340.18		\$58.95	\$83.76	32 L.H., Daily Totals						

Crews - Standard

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour		Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P		Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew B-86							Crew B-90						
1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$56.75	\$84.85	1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$46.79	\$70.14
1 Stump Chipper, S.P.		194.45		213.90	24.31	26.74	3 Laborers	42.10	1010.40	63.25	1518.00		
8 L.H., Daily Totals					\$81.06	\$111.59	2 Equip. Oper. (light)	53.00	848.00	79.20	1267.20		
Crew B-86A							2 Truck Drivers (heavy)	48.95	783.20	73.35	1173.60		
1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$56.75	\$84.85	1 Road Mixer, 310 H.P.		1896.00		2085.60		
1 Grader, 30,000 Lbs.		1062.00		1168.20	132.75	146.03	1 Dist. Truck, 2000 Gal.		299.65		329.62	34.31	37.74
8 L.H., Daily Totals					\$1516.00	\$1847.00	64 L.H., Daily Totals		\$5190.05		\$6904.02	\$81.09	\$107.88
Crew B-86B							Crew B-90A						
1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$56.75	\$84.85	1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$50.76	\$76.02
1 Dozer, 200 H.P.		1504.00		1654.40	188.00	206.80	2 Laborers	42.10	673.60	63.25	1012.00		
8 L.H., Daily Totals					\$1958.00	\$2333.20	4 Equip. Oper. (medium)	56.75	1816.00	84.85	2715.20		
Crew B-87							2 Graders, 30,000 Lbs.		2124.00		2336.40		
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$53.82	\$80.53	1 Tandem Roller, 10 Ton		236.75		260.43		
4 Equip. Oper. (medium)	56.75	1816.00	84.85	2715.20			1 Roller, Pneu. Whl., 12 Ton		345.75		380.32	48.33	53.16
2 Feller Bunchers, 100 H.P.			1177.20		1294.92		56 L.H., Daily Totals		\$5548.90		\$7234.35	\$99.09	\$129.18
1 Log Chipper, 22" Tree		552.00		607.20			Crew B-90B						
1 Dozer, 105 H.P.		633.85		697.24			1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$49.76	\$74.55
1 Chain Saw, Gas, 36" Long		41.25		45.38	60.11	66.12	2 Laborers	42.10	673.60	63.25	1012.00		
40 L.H., Daily Totals					\$4557.10	\$5865.93	3 Equip. Oper. (medium)	56.75	1362.00	84.85	2036.40		
Crew B-88							1 Roller, Pneu. Whl., 12 Ton		345.75		380.32		
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$54.66	\$81.76	1 Road Mixer, 310 H.P.		1896.00		2085.60	46.70	51.37
6 Equip. Oper. (medium)	56.75	2724.00	84.85	4072.80			48 L.H., Daily Totals		\$4630.15		\$6044.32	\$96.46	\$125.92
2 Feller Bunchers, 100 H.P.			1177.20		1294.92		Crew B-90C						
1 Log Chipper, 22" Tree		552.00		607.20			1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$48.15	\$72.17
2 Log Skidders, 50 H.P.		1808.40		1989.24			4 Laborers	42.10	1347.20	63.25	2024.00		
1 Dozer, 105 H.P.		633.85		697.24			3 Equip. Oper. (medium)	56.75	1362.00	84.85	2036.40		
1 Chain Saw, Gas, 36" Long		41.25		45.38	75.23	82.75	3 Truck Drivers (heavy)	48.95	1174.80	73.35	1760.40		
56 L.H., Daily Totals					\$7273.50	\$9212.77	3 Road Mixers, 310 H.P.		5688.00		6256.80	64.64	71.10
Crew B-89							88 L.H., Daily Totals		\$9924.80		\$12607.60	\$112.78	\$143.27
1 Equip. Oper. (light)	\$53.00	\$424.00	\$79.20	\$633.60	\$50.13	\$75.00	Crew B-90D						
1 Truck Driver (light)	47.25	378.00	70.80	566.40			1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$47.22	\$70.80
1 Flatbed Truck, Gas, 3 Ton			820.40		902.44		6 Laborers	42.10	2020.80	63.25	3036.00		
1 Concrete Saw			111.50		122.65		3 Equip. Oper. (medium)	56.75	1362.00	84.85	2036.40		
1 Water Tank, 65 Gal.		101.90		112.09	64.61	71.07	3 Truck Drivers (heavy)	48.95	1174.80	73.35	1760.40		
16 L.H., Daily Totals					\$1835.80	\$2337.18	3 Road Mixers, 310 H.P.		5688.00		6256.80	54.69	60.16
Crew B-89A							104 L.H., Daily Totals		\$10598.40		\$13619.60	\$101.91	\$130.96
1 Skilled Worker	\$54.85	\$438.80	\$82.95	\$663.60	\$48.48	\$73.10	Crew B-90E						
1 Laborer	42.10	336.80	63.25	506.00			1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$47.97	\$71.91
1 Core Drill (Large)		114.30		125.73	7.14	7.86	4 Laborers	42.10	1347.20	63.25	2024.00		
16 L.H., Daily Totals					\$889.90	\$1295.33	3 Equip. Oper. (medium)	56.75	1362.00	84.85	2036.40		
Crew B-89B							1 Truck Driver (heavy)	48.95	391.60	73.35	586.80		
1 Equip. Oper. (light)	\$53.00	\$424.00	\$79.20	\$633.60	\$50.13	\$75.00	1 Road Mixer, 310 H.P.		1896.00		2085.60	26.33	28.97
1 Truck Driver (light)	47.25	378.00	70.80	566.40			72 L.H., Daily Totals		\$5349.60		\$7262.80	\$74.30	\$100.87
1 Wall Saw, Hydraulic, 10 H.P.			85.50		94.05		Crew B-91						
1 Generator, Diesel, 100 kW		496.20		545.82			1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$50.53	\$75.69
1 Water Tank, 65 Gal.		101.90		112.09			2 Laborers	42.10	673.60	63.25	1012.00		
1 Flatbed Truck, Gas, 3 Ton		820.40		902.44	94.00	103.40	4 Equip. Oper. (medium)	56.75	1816.00	84.85	2715.20		
16 L.H., Daily Totals					\$2306.00	\$2854.40	1 Truck Driver (heavy)	48.95	391.60	73.35	586.80		
Crew B-89C							1 Dist. Tanker, 3000 Gallon		330.15		363.17		
1 Cement Finisher	\$49.95	\$399.60	\$73.45	\$587.60	\$49.95	\$73.45	1 Truck Tractor, 6x4, 380 H.P.		493.25		542.58		
1 Masonry cut-off saw, gas		61.00		67.10	7.63	8.39	1 Aggreg. Spreader, S.P.		848.90		933.79		
8 L.H., Daily Totals					\$460.60	\$654.70	1 Roller, Pneu. Whl., 12 Ton		345.75		380.32		
							1 Tandem Roller, 10 Ton		236.75		260.43	35.23	38.75
							64 L.H., Daily Totals		\$5488.80		\$7324.28	\$85.76	\$114.44

Crews - Standard

Incl.
Crew No. Bare Costs Subs O&P Cost
Per Labor-Hour

Crew B-91B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$49.42	\$74.05
1 Equipment Oper. (med.)	56.75	454.00	84.85	678.80		
1 Road Sweeper, Vac. Assist.		869.00		955.90	54.31	59.74
16 L.H., Daily Totals		\$1659.80		\$2140.70	\$103.74	\$133.79

Crew B-91C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$44.67	\$67.03
1 Truck Driver (light)	47.25	378.00	70.80	566.40		
1 Catch Basin Cleaning Truck		536.15		589.76	33.51	36.86
16 L.H., Daily Totals		\$1250.95		\$1662.17	\$78.18	\$103.89

Crew B-91D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$48.94	\$73.34
5 Laborers	42.10	1684.00	63.25	2530.00		
5 Equip. Oper. (medium)	56.75	2270.00	84.85	3394.00		
2 Truck Drivers (heavy)	48.95	783.20	73.35	1173.60		
1 Aggreg. Spreader, S.P.		848.90		933.79		
2 Truck Tractors, 6x4, 380 H.P.		986.50		1085.15		
2 Dist. Tankers, 3000 Gallon		660.30		726.33		
2 Pavement Brushes, Towed		174.60		192.06		
2 Rollers Pneum. Whl., 12 Ton		691.50		760.65	32.33	35.56
104 L.H., Daily Totals		\$8451.80		\$11325.58	\$81.27	\$108.90

Crew B-92	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$42.60	\$64.00
3 Laborers	42.10	1010.40	63.25	1518.00		
1 Crack Cleaner, 25 H.P.		52.45		57.70		
1 Air Compressor, 60 cfm		152.95		168.25		
1 Tar Kettle, T.M.		156.20		171.82		
1 Flatbed Truck, Gas, 3 Ton		820.40		902.44	36.94	40.63
32 L.H., Daily Totals		\$2545.20		\$3348.20	\$79.54	\$104.63

Crew B-93	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Equip. Oper. (medium)	\$56.75	\$454.00	\$84.85	\$678.80	\$56.75	\$84.85
1 Feller Buncher, 100 H.P.		588.60		647.46	73.58	80.93
8 L.H., Daily Totals		\$1042.60		\$1326.26	\$130.32	\$165.78

Crew B-94A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$42.10	\$63.25
1 Diaphragm Water Pump, 2"		86.80		95.48		
1-20' Suction Hose, 2"		3.55		3.90		
2-50' Discharge Hoses, 2"		8.00		8.80	12.29	13.52
8 L.H., Daily Totals		\$435.15		\$614.18	\$54.39	\$76.77

Crew B-94B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$42.10	\$63.25
1 Diaphragm Water Pump, 4"		105.25		115.78		
1-20' Suction Hose, 4"		17.05		18.75		
2-50' Discharge Hoses, 4"		25.30		27.83	18.45	20.30
8 L.H., Daily Totals		\$484.40		\$668.36	\$60.55	\$83.55

Crew B-94C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$42.10	\$63.25
1 Centrifugal Water Pump, 3"		74.45		81.89		
1-20' Suction Hose, 3"		8.75		9.63		
2-50' Discharge Hoses, 3"		9.00		9.90	11.53	12.68
8 L.H., Daily Totals		\$429.00		\$607.42	\$53.63	\$75.93

Incl.
Crew No. Bare Costs Subs O&P Cost
Per Labor-Hour

Crew B-94D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$42.10	\$63.25
1 Centr. Water Pump, 6"		232.90		256.19		
1-20' Suction Hose, 6"				25.20	27.72	
2-50' Discharge Hoses, 6"				35.80	39.38	40.41
8 L.H., Daily Totals		\$630.70		\$829.29	\$78.84	\$103.66

Crew C-1	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
3 Carpenters	\$53.15	\$1275.60	\$79.85	\$1916.40	\$50.39	\$75.70
1 Laborer	42.10	336.80	63.25	506.00		
32 L.H., Daily Totals		\$1612.40		\$2422.40	\$50.39	\$75.70

Crew C-2	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Carpenter Foreman (outside)	\$55.15	\$441.20	\$82.85	\$662.80	\$51.64	\$77.58
4 Carpenters	53.15	1275.60	79.85	2555.20		
1 Laborer	42.10	336.80	63.25	506.00		
48 L.H., Daily Totals		\$2478.80		\$3724.00	\$51.64	\$77.58

Crew C-2A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Carpenter Foreman (outside)	\$55.15	\$441.20	\$82.85	\$662.80	\$51.11	\$76.52
3 Carpenters	53.15	1275.60	79.85	1916.40		
1 Cement Finisher	49.95	399.60	73.45	587.60		
1 Laborer	42.10	336.80	63.25	506.00		
48 L.H., Daily Totals		\$2453.20		\$3672.80	\$51.11	\$76.52

Crew C-3	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Rodman Foreman (outside)	\$58.40	\$467.20	\$87.95	\$703.60	\$52.65	\$79.16
4 Rodmen (reinf.)	56.40	1804.80	84.90	2716.80		
1 Equip. Oper. (light)	53.00	424.00	79.20	633.60		
2 Laborers	42.10	673.60	63.25	1012.00		
3 Stressing Equipment				56.70	62.37	
.5 Grouting Equipment				122.08	134.28	2.79
64 L.H., Daily Totals		\$3548.38		\$5262.65	\$55.44	\$82.23

Crew C-4	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Rodman Foreman (outside)	\$58.40	\$467.20	\$87.95	\$703.60	\$56.90	\$85.66
3 Rodmen (reinf.)	56.40	1353.60	84.90	2037.60		
3 Stressing Equipment				56.70	62.37	1.77
32 L.H., Daily Totals		\$1877.50		\$2803.57	\$58.67	\$87.61

Crew C-4A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Rodmen (reinf.)	\$56.40	\$902.40	\$84.90	\$1358.40	\$56.40	\$84.90
4 Stressing Equipment				75.60	83.16	4.72
16 L.H., Daily Totals		\$978.00		\$1441.56	\$61.13	\$90.10

Crew C-5	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Rodman Foreman (outside)	\$58.40	\$467.20	\$87.95	\$703.60	\$56.25	\$84.51
4 Rodmen (reinf.)	56.40	1804.80	84.90	2716.80		
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00		
1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40		
1 Hyd. Crane, 25 Ton				580.85	638.93	10.37
56 L.H., Daily Totals		\$3730.85		\$5371.73	\$66.62	\$95.92

Crew C-6	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$43.74	\$65.45
4 Laborers	42.10	1347.20	63.25	2024.00		
1 Cement Finisher	49.95	399.60	73.45	587.60		
2 Gas Engine Vibrators				53.70	59.07	1.12
48 L.H., Daily Totals		\$2153.30		\$3200.67	\$44.86	\$66.68

Crews - Standard

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour		Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P		Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew C-6A													
2 Cement Finishers	\$49.95	\$799.20	\$73.45	\$1175.20	\$49.95	\$73.45	1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$45.43	\$68.17
1 Concrete Vibrator, Elec, 2 HP		47.45		52.20	2.97	3.26	3 Laborers	42.10	1010.40	63.25	1518.00		
16 L.H., Daily Totals		\$846.65		\$1227.40	\$52.92	\$76.71	1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80		
Crew C-7							1 Vibrating Power Screed		75.10		82.61		
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$45.76	\$68.48	1 Roller, Vibratory, 25 Ton		664.35		730.78		
5 Laborers	42.10	1684.00	63.25	2530.00			1 Dozer, 200 H.P.		1504.00		1654.40	56.09	61.69
1 Cement Finisher	49.95	399.60	73.45	587.60			40 L.H., Daily Totals		\$4060.65		\$5194.60	\$101.52	\$129.86
1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80									
1 Equip. Oper. (light)	50.55	404.40	75.55	604.40									
2 Gas Engine Vibrators		53.70		59.07									
1 Concrete Bucket, 1 C.Y.		45.80		50.38									
1 Hyd. Crane, 55 Ton		980.20		1078.22	15.00	16.50							
72 L.H., Daily Totals		\$4374.50		\$6118.47	\$60.76	\$84.98							
Crew C-7A							Crew C-8B						
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$44.06	\$66.15	1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$46.18	\$69.05
5 Laborers	42.10	1684.00	63.25	2530.00			3 Laborers	42.10	1010.40	63.25	1518.00		
2 Truck Drivers (heavy)	48.95	783.20	73.35	1173.60			1 Cement Finisher	49.95	399.60	73.45	587.60		
2 Conc. Transit Mixers		1170.50		1287.55	18.29	20.12	1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80		
64 L.H., Daily Totals		\$3990.50		\$5521.15	\$62.35	\$86.27	1 Shotcrete Rig, 12 C.Y./hr		245.40		269.94		
Crew C-7B							1 Air Compressor, 160 cfm		202.80		223.08		
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$45.54	\$68.32	4-50' Air Hoses, 1"		32.00		35.20		
5 Laborers	42.10	1684.00	63.25	2530.00			4-50' Air Hoses, 2"		115.60		127.16	12.41	13.65
1 Equipment Operator, Crane	59.20	473.60	88.50	708.00			48 L.H., Daily Totals		\$2812.60		\$3969.78	\$58.60	\$82.70
1 Equipment Oiler	50.55	404.40	75.55	604.40									
1 Conc. Bucket, 2 C.Y.		54.70		60.17			Crew C-8D						
1 Lattice Boom Crane, 165 Ton		2151.00		2366.10	34.46	37.91	1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$47.29	\$70.54
64 L.H., Daily Totals		\$5120.50		\$6798.67	\$80.01	\$106.23	1 Laborer	42.10	336.80	63.25	506.00		
Crew C-7C							1 Cement Finisher	49.95	399.60	73.45	587.60		
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$46.01	\$69.03	1 Equipment Oper. (light)	53.00	424.00	79.20	633.60		
5 Laborers	42.10	1684.00	63.25	2530.00			1 Air Compressor, 250 cfm		201.50		221.65	6.80	7.48
2 Equipment Operators (med.)	56.75	908.00	84.85	1357.60			2-50' Air Hoses, 1"		15.00		17.60		
2 F.E. Loaders, W.M., 4 C.Y.		1578.70		1736.57	24.67	27.13	32 L.H., Daily Totals		\$1730.70		\$2496.45	\$54.08	\$78.01
64 L.H., Daily Totals		\$4523.50		\$6154.17	\$70.68	\$96.16							
Crew C-7D							Crew C-8E						
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$44.48	\$66.76	1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$45.56	\$68.11
5 Laborers	42.10	1684.00	63.25	2530.00			3 Laborers	42.10	1010.40	63.25	1518.00		
1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80			1 Cement Finisher	49.95	399.60	73.45	587.60		
1 Concrete Conveyer		204.15		224.57	3.65	4.01	1 Equipment Oper. (light)	53.00	424.00	79.20	633.60		
56 L.H., Daily Totals		\$2694.95		\$3963.36	\$48.12	\$70.77	1 Shotcrete Rig, 35 C.Y./hr		298.00		327.80		
Crew C-8							1 Air Compressor, 250 cfm		201.50		221.65		
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$46.72	\$69.68	4-50' Air Hoses, 1"		32.00		35.20		
3 Laborers	42.10	1010.40	63.25	1518.00			4-50' Air Hoses, 2"		115.60		127.16	13.48	14.83
2 Cement Finishers	49.95	799.20	73.45	1175.20			48 L.H., Daily Totals		\$2833.90		\$3981.01	\$59.04	\$82.94
1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80									
1 Concrete Pump (Small)		410.35		451.38	7.33	8.06	Crew C-9						
56 L.H., Daily Totals		\$3026.75		\$4353.39	\$54.05	\$77.74	1 Cement Finisher	49.95	399.60	73.45	587.60	\$46.79	\$69.79
Crew C-8A							2 Laborers	42.10	673.60	63.25	1012.00		
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$45.05	\$67.15	1 Equipment Oper. (light)	53.00	424.00	79.20	633.60		
3 Laborers	42.10	1010.40	63.25	1518.00			1 Grout Pump, 50 C.F./hr.		188.45		207.29		
2 Cement Finishers	49.95	799.20	73.45	1175.20			1 Air Compressor, 160 cfm		202.80		223.08		
1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80			2-50' Air Hoses, 1"		16.00		17.60		
1 Concrete Pump (Small)		410.35		451.38	7.33	8.06	2-50' Air Hoses, 2"		57.80		63.58	14.53	15.99
56 L.H., Daily Totals		\$2162.40		\$3223.20	\$45.05	\$67.15	32 L.H., Daily Totals		\$1962.25		\$2744.76	\$61.32	\$85.77
Crew C-8B													
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$45.05	\$67.15	Crew C-10						
3 Laborers	42.10	1010.40	63.25	1518.00			1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$47.33	\$70.05
2 Cement Finishers	49.95	799.20	73.45	1175.20			2 Cement Finishers	49.95	799.20	73.45	1175.20		
48 L.H., Daily Totals		\$2162.40		\$3223.20	\$45.05	\$67.15	24 L.H., Daily Totals		\$1136.00		\$1681.20	\$47.33	\$70.05
Crew C-10B													
3 Laborers	42.10	1010.40	63.25	1518.00	\$45.05	\$67.15	Crew C-10B						
2 Cement Finishers	49.95	799.20	73.45	1175.20			3 Laborers	\$42.10	\$1010.40	\$63.25	\$1518.00	\$45.24	\$67.33
1 Concrete Mixer, 10 C.F.							1 Equipment Oper. (light)		140.30		154.33		
2 Trowels, 48" Walk-Behind							1 Air Compressor, 160 cfm		174.00		191.40	7.86	8.64
40 L.H., Daily Totals		\$2123.90		\$3038.93			2-50' Air Hoses, 1"						
							2-50' Air Hoses, 2"						

Crews - Standard

Crew No.	Incl. Subs O&P		Cost Per Labor-Hour		Crew No.	Incl. Subs O&P		Cost Per Labor-Hour					
	Bare Costs		Hr.	Daily		Bare Costs	Incl. O&P	Hr.	Daily	Bare Costs	Incl. O&P		
Crew C-10C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	Hr.	Daily	Bare Costs	Incl. O&P			
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$47.33	\$70.05	1 Carpenter Foreman (outside)	\$55.15	\$441.20	\$82.85	\$662.80		
2 Cement Finishers	49.95	799.20	73.45	1175.20			16 Carpenters	53.15	6803.20	79.85	10220.80		
1 Trowel, 48" Walk-Behind		87.00			3.63	3.99	4 Rodmen (reinf.)	56.40	1804.80	84.90	2716.80		
24 L.H., Daily Totals		\$1223.00		\$1776.90	\$50.96	\$74.04	2 Laborers	42.10	673.60	63.25	1012.00		
Crew C-10D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	1 Cement Finisher	49.95	399.60	73.45	587.60		
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$47.33	\$70.05	1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80		
2 Cement Finishers	49.95	799.20	73.45	1175.20			1 Gas Engine Vibrator		26.85		29.54		
1 Vibrating Power Scree		75.10			82.61		1 Concrete Pump (Small)		410.35		451.38		
1 Trowel, 48" Walk-Behind		87.00			95.70	6.75	200 L.H., Daily Totals		\$11013.60		\$16359.72		
24 L.H., Daily Totals		\$1298.10		\$1859.51	\$54.09	\$77.48					\$55.07	\$81.80	
Crew C-10E	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	Crew C-14B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$47.33	\$70.05	1 Carpenter Foreman (outside)	\$55.15	\$441.20	\$82.85	\$662.80	\$52.77	\$79.17
2 Cement Finishers	49.95	799.20	73.45	1175.20			16 Carpenters	53.15	6803.20	79.85	10220.80		
1 Vibrating Power Scree		75.10			82.61		4 Rodmen (reinf.)	56.40	1804.80	84.90	2716.80		
1 Cement Trowel, 96" Ride-On		169.00			185.90	10.17	2 Laborers	42.10	673.60	63.25	1012.00		
24 L.H., Daily Totals		\$1380.10		\$1949.71	\$57.50	\$81.24	1 Cement Finishers	49.95	799.20	73.45	1175.20		
Crew C-10F	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80		
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$47.33	\$70.05	1 Gas Engine Vibrator		26.85		29.54		
2 Cement Finishers	49.95	799.20	73.45	1175.20			1 Concrete Pump (Small)		410.35		451.38	2.10	2.31
1 Telescoping Boom Lift, to 60'		310.90			341.99	12.95	208 L.H., Daily Totals		\$11413.20		\$16947.32	\$54.87	\$81.48
24 L.H., Daily Totals		\$1446.90		\$2023.19	\$60.29	\$84.30	Crew C-14C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew C-11	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	1 Carpenter Foreman (outside)	\$55.15	\$441.20	\$82.85	\$662.80	\$50.37	\$75.59
1 Struc. Steel Foreman (outside)	\$59.65	\$477.20	\$93.55	\$748.40	\$57.26	\$88.92	6 Carpenters	53.15	2551.20	79.85	3832.80		
6 Struc. Steel Workers	57.65	2767.20	90.45	4341.60			2 Rodmen (reinf.)	56.40	902.40	84.90	1358.40		
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00			4 Laborers	42.10	1347.20	63.25	2024.00		
1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40			1 Cement Finisher	49.95	399.60	73.45	587.60		
1 Lattice Boom Crane, 150 Ton		2269.00			2495.90	31.51	112 L.H., Daily Totals		\$5668.45		\$8495.14	\$50.61	\$75.85
72 L.H., Daily Totals		\$6391.40		\$8898.30	\$88.77	\$123.59	Crew C-14D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew C-12	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	1 Carpenter Foreman (outside)	\$55.15	\$441.20	\$82.85	\$662.80	\$52.62	\$78.99
1 Carpenter Foreman (outside)	\$55.15	\$441.20	\$82.85	\$662.80	\$52.65	\$79.03	18 Carpenters	53.15	7653.60	79.85	11498.40		
3 Carpenters	53.15	1275.60	79.85	1916.40			2 Rodmen (reinf.)	56.40	902.40	84.90	1358.40		
1 Laborer	42.10	336.80	63.25	506.00			2 Laborers	42.10	673.60	63.25	1012.00		
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00			1 Cement Finisher	49.95	399.60	73.45	587.60		
1 Hyd. Crane, 12 Ton		471.00			518.10	9.81	112 L.H., Daily Totals		\$5668.45		\$8495.14	\$50.61	\$75.85
48 L.H., Daily Totals		\$2998.20		\$4311.30	\$62.46	\$89.82	Crew C-14D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew C-13	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	1 Carpenter Foreman (outside)	\$55.15	\$441.20	\$82.85	\$662.80	\$52.62	\$78.99
1 Struc. Steel Worker	\$57.65	\$461.20	\$90.45	\$723.60	\$56.08	\$86.80	18 Carpenters	53.15	7653.60	79.85	11498.40		
1 Welder	57.45	459.60	90.10	720.80			2 Rodmen (reinf.)	56.40	902.40	84.90	1358.40		
1 Carpenter	53.15	425.20	79.85	638.80			2 Laborers	42.10	673.60	63.25	1012.00		
1 Welder, Gas Engine, 300 amp		147.00			161.70	6.13	1 Cement Finisher	49.95	399.60	73.45	587.60		
24 L.H., Daily Totals		\$1493.00		\$2244.90	\$62.21	\$93.54	1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80		
Crew C-14	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	1 Gas Engine Vibrator		26.85		29.54		
1 Carpenter Foreman (outside)	\$55.15	\$441.20	\$82.85	\$662.80	\$51.36	\$76.98	1 Concrete Pump (Small)		410.35		451.38	2.19	2.40
5 Carpenters	53.15	2126.00	79.85	3194.00			200 L.H., Daily Totals		\$10961.60		\$16278.92	\$54.81	\$81.39
4 Laborers	42.10	1347.20	63.25	2024.00			Crew C-14E	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
4 Rodmen (reinf.)	56.40	1804.80	84.90	2716.80			1 Carpenter Foreman (outside)	\$55.15	\$441.20	\$82.85	\$662.80	\$51.21	\$76.85
2 Cement Finishers	49.95	799.20	73.45	1175.20			18 Carpenters	53.15	850.40	79.85	1277.60		
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00			2 Rodmen (reinf.)	56.40	1804.80	84.90	2716.80		
1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40			2 Laborers	42.10	1010.40	63.25	1518.00		
1 Hyd. Crane, 80 Ton		1486.00			1634.60	10.32	1 Cement Finisher	49.95	399.60	73.45	587.60		
144 L.H., Daily Totals		\$8882.40		\$12719.80	\$61.68	\$88.33	1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80		
Crew C-14F	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	1 Gas Engine Vibrator		26.85		29.54		
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$47.56	\$70.38	1 Concrete Pump (Small)		410.35		451.38		
2 Laborers	42.10	673.60	63.25	1012.00			200 L.H., Daily Totals		\$3450.85		\$5097.14	\$47.93	\$70.79
6 Cement Finishers	49.95	2397.60	73.45	3525.60									
1 Gas Engine Vibrator		26.85											
72 L.H., Daily Totals		\$3450.85		\$5097.14									

Crews - Standard

Crew No.	Incl. Cost		Per Labor-Hour		Crew No.	Incl. Cost		Per Labor-Hour	
	Bare Costs	Subs O&P	Hr.	Daily		Bare Costs	Subs O&P	Hr.	Daily
Crew C-14G									
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$46.87	\$69.51			
2 Laborers	42.10	673.60	63.25	1012.00					
4 Cement Finishers	49.95	1598.40	73.45	2350.40					
1 Gas Engine Vibrator			26.85	29.54	.48	.53			
56 L.H., Daily Totals		\$2651.65		\$3921.93	\$47.35	\$70.03			
Crew C-14H									
1 Carpenter Foreman (outside)	\$55.15	\$441.20	\$82.85	\$662.80	\$51.65	\$77.36			
2 Carpenters	53.15	850.40	79.85	1277.60					
1 Rodman (reinf.)	56.40	451.20	84.90	679.20					
1 Laborer	42.10	336.80	63.25	506.00					
1 Cement Finisher	49.95	399.60	73.45	587.60					
1 Gas Engine Vibrator			26.85	29.54	.56	.62			
48 L.H., Daily Totals		\$2506.05		\$3742.74	\$52.21	\$77.97			
Crew C-14L									
1 Carpenter Foreman (outside)	\$55.15	\$441.20	\$82.85	\$662.80	\$49.37	\$74.03			
6 Carpenters	53.15	2551.20	79.85	3832.80					
4 Laborers	42.10	1347.20	63.25	2024.00					
1 Cement Finisher	49.95	399.60	73.45	587.60					
1 Gas Engine Vibrator			26.85	29.54	.28	.31			
96 L.H., Daily Totals		\$4766.05		\$7136.73	\$49.65	\$74.34			
Crew C-14M									
1 Carpenter Foreman (outside)	\$55.15	\$441.20	\$82.85	\$662.80	\$51.09	\$76.53			
2 Carpenters	53.15	850.40	79.85	1277.60					
1 Rodman (reinf.)	56.40	451.20	84.90	679.20					
2 Laborers	42.10	673.60	63.25	1012.00					
1 Cement Finisher	49.95	399.60	73.45	587.60					
1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80					
1 Gas Engine Vibrator			26.85	29.54					
1 Concrete Pump (Small)			410.35	451.38	6.83	7.51			
64 L.H., Daily Totals		\$3707.20		\$5378.92	\$57.93	\$84.05			
Crew C-15									
1 Carpenter Foreman (outside)	\$55.15	\$441.20	\$82.85	\$662.80	\$49.34	\$73.79			
2 Carpenters	53.15	850.40	79.85	1277.60					
3 Laborers	42.10	1010.40	63.25	1518.00					
2 Cement Finishers	49.95	799.20	73.45	1175.20					
1 Rodman (reinf.)	56.40	451.20	84.90	679.20					
72 L.H., Daily Totals		\$3552.40		\$5312.80	\$49.34	\$73.79			
Crew C-16									
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$46.72	\$69.68			
3 Laborers	42.10	1010.40	63.25	1518.00					
2 Cement Finishers	49.95	799.20	73.45	1175.20					
1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80					
1 Gunita Pump Rig			317.90	349.69					
2-50' Air Hoses, 3/4"			15.50	17.05					
2-50' Air Hoses, 2"			57.80	63.58	6.99	7.68			
56 L.H., Daily Totals		\$3007.60		\$4332.32	\$53.71	\$77.36			
Crew C-16A									
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$49.69	\$73.75			
2 Cement Finishers	49.95	799.20	73.45	1175.20					
1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80					
1 Gunita Pump Rig			317.90	349.69					
2-50' Air Hoses, 3/4"			15.50	17.05					
2-50' Air Hoses, 2"			57.80	63.58					
1 Telescoping Boom Lift, to 60'			310.90	341.99	21.94	24.13			
32 L.H., Daily Totals		\$2292.10		\$3132.31	\$71.63	\$97.88			
Crew C-17									
2 Skilled Worker Foremen (out)	\$56.85	\$909.60*			\$86.00	\$1376.00			
8 Skilled Workers	54.85	3510.40			82.95	5308.80			
80 L.H., Daily Totals					\$4420.00		\$6684.80		
Crew C-17A									
2 Skilled Worker Foremen (out)	\$56.85	\$909.60			\$86.00	\$1376.00			
8 Skilled Workers	54.85	3510.40			82.95	5308.80			
.125 Equip. Oper. (crane)	59.20		59.20		88.50		88.50		
.125 Hyd. Crane, 80 Ton					185.75		204.32		2.29
81 L.H., Daily Totals							\$4664.95		\$86.14
Crew C-17B									
2 Skilled Worker Foremen (out)	\$56.85	\$909.60			\$86.00	\$1376.00			
8 Skilled Workers	54.85	3510.40			82.95	5308.80			
.25 Equip. Oper. (crane)	59.20		118.40		88.50		177.00		
.25 Hyd. Crane, 80 Ton					371.50		408.65		
.25 Trowel, 48" Walk-Behind					21.75		23.93		4.80
82 L.H., Daily Totals							\$4931.65		\$88.96
Crew C-17C									
2 Skilled Worker Foremen (out)	\$56.85	\$909.60			\$86.00	\$1376.00			
8 Skilled Workers	54.85	3510.40			82.95	5308.80			
.375 Equip. Oper. (crane)	59.20		177.60		88.50		265.50		
.375 Hyd. Crane, 80 Ton					557.25		612.98		6.71
83 L.H., Daily Totals							\$5154.85		\$91.12
Crew C-17D									
2 Skilled Worker Foremen (out)	\$56.85	\$909.60			\$86.00	\$1376.00			
8 Skilled Workers	54.85	3510.40			82.95	5308.80			
.5 Equip. Oper. (crane)	59.20		236.80		88.50		354.00		
.5 Hyd. Crane, 80 Ton					743.00		817.30		8.85
84 L.H., Daily Totals							\$5399.80		\$93.53
Crew C-17E									
2 Skilled Worker Foremen (out)	\$56.85	\$909.60			\$86.00	\$1376.00			
8 Skilled Workers	54.85	3510.40			82.95	5308.80			
1 Hyd. Jack with Rods					35.90		39.49		.45
80 L.H., Daily Totals							\$4455.90		\$84.05
Crew C-18									
.125 Labor Foreman (outside)	\$44.10	\$44.10			\$66.25	\$66.25			
1 Laborer	42.10	336.80			63.25	506.00			
1 Concrete Cart, 10 C.F.					127.85		140.63		14.21
9 L.H., Daily Totals							\$508.75		\$79.21
Crew C-19									
.125 Labor Foreman (outside)	\$44.10	\$44.10			\$66.25	\$66.25			
1 Laborer	42.10	336.80			63.25	506.00			
1 Concrete Cart, 18 C.F.					153.45		168.79		17.05
9 L.H., Daily Totals							\$534.35		\$82.34
Crew C-20									
1 Labor Foreman (outside)	\$44.10	\$352.80			\$66.25	\$530.00			
5 Laborers	42.10	1684.00			63.25	2530.00			
1 Cement Finisher	49.95	399.60			73.45		587.60		
1 Equip. Oper. (medium)	56.75	454.00			84.85		678.80		
2 Gas Engine Vibrators							53.70		59.07
1 Concrete Pump (Small)							410.35		451.38
64 L.H., Daily Totals							\$3354.45		\$75.58

Crews - Standard

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew C-21						
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$45.16	\$67.60
5 Laborers	42.10	1684.00	63.25	2530.00		
1 Cement Finisher	49.95	399.60	73.45	587.60		
1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80		
2 Gas Engine Vibrators					59.07	
1 Concrete Conveyor					224.57	4.03
64 L.H., Daily Totals		\$3148.25		\$4610.03	\$49.19	\$72.03
Crew C-22						
1 Rodman Foreman (outside)	\$58.40	\$467.20	\$87.95	\$703.60	\$56.71	\$85.34
4 Rodmen (reinf.)	56.40	1804.80	84.90	2716.80		
.125 Equip. Oper. (crane)	59.20	59.20	88.50	88.50		
.125 Equip. Oper. (oiler)	50.55	50.55	75.55	75.55		
.125 Hyd. Crane, 25 Ton					79.87	1.73
42 L.H., Daily Totals		\$2454.36		\$3664.32	\$58.44	\$87.25
Crew C-23						
2 Skilled Worker Foremen (out)	\$56.85	\$909.60	\$86.00	\$1376.00	\$55.26	\$83.38
6 Skilled Workers	54.85	2632.80	82.95	3981.60		
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00		
1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40		
1 Lattice Boom Crane, 90 Ton					1865.60	21.20
80 L.H., Daily Totals		\$6116.40		\$8535.60	\$76.45	\$106.69
Crew C-23A						
1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$47.61	\$71.36
2 Laborers	42.10	173.60	63.25	1012.00		
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00		
1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40		
1 Crawler Crane, 100 Ton					2287.00	2515.70
3 Conc. Buckets, 8 C.Y.					323.25	355.57
40 L.H., Daily Totals		\$4514.65		\$5725.68	\$112.87	\$143.14
Crew C-24						
2 Skilled Worker Foremen (out)	\$56.85	\$909.60	\$86.00	\$1376.00	\$55.26	\$83.38
6 Skilled Workers	54.85	2632.80	82.95	3981.60		
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00		
1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40		
1 Lattice Boom Crane, 150 Ton					2269.00	2495.90
80 L.H., Daily Totals		\$6689.40		\$9165.90	\$83.62	\$114.57
Crew C-25						
2 Rodmen (reinf.)	\$56.40	\$902.40	\$84.90	\$1358.40	\$45.50	\$71.00
2 Rodmen Helpers	34.60	553.60	57.10	913.60		
32 L.H., Daily Totals		\$1456.00		\$2272.00	\$45.50	\$71.00
Crew C-27						
2 Cement Finishers	\$49.95	\$799.20	\$73.45	\$1175.20	\$49.95	\$73.45
1 Concrete Saw		111.50		122.65	6.97	7.67
16 L.H., Daily Totals		\$910.70		\$1297.85	\$56.92	\$81.12
Crew C-28						
1 Cement Finisher	\$49.95	\$399.60	\$73.45	\$587.60	\$49.95	\$73.45
1 Portable Air Compressor, Gas		38.70		42.57	4.84	5.32
8 L.H., Daily Totals		\$438.30		\$630.17	\$54.79	\$78.77
Crew C-29						
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$42.10	\$63.25
1 Pressure Washer		96.95		106.65	12.12	13.33
8 L.H., Daily Totals		\$433.75		\$612.64	\$54.22	\$76.58

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew C-30						
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$42.10	\$63.25
1 Concrete Mixer, 10 C.F.		140.30		154.33		17.54
8 L.H., Daily Totals		\$477.10		\$660.33		\$59.64
Crew C-31						
1 Cement Finisher	\$49.95	\$399.60	\$73.45	\$587.60	\$49.95	\$73.45
1 Grout Pump		317.90		349.69		39.74
8 L.H., Daily Totals		\$717.50		\$937.29		\$89.69
Crew C-32						
1 Cement Finisher	\$49.95	\$399.60	\$73.45	\$587.60	\$46.02	\$68.35
1 Laborer		336.80		506.00		
1 Crack Chaser Saw, Gas, 6 H.P.		73.10		80.41		
1 Vacuum Pick-Up System		74.05		81.45		9.20
16 L.H., Daily Totals		\$883.55		\$1255.46		\$55.22
Crew D-1						
1 Bricklayer	\$52.05	\$416.40	\$78.90	\$631.20	\$46.90	\$71.10
1 Bricklayer Helper	41.75	334.00	63.30	506.40		
16 L.H., Daily Totals		\$750.40		\$1137.60		\$46.90
Crew D-2						
3 Bricklayers	\$52.05	\$1249.20	\$78.90	\$1893.60	\$48.40	\$73.31
2 Bricklayer Helpers	41.75	668.00	63.30	1012.80		
.25 Carpenter	53.15	212.60	79.85	319.40		
44 L.H., Daily Totals		\$2129.80		\$3225.80		\$48.40
Crew D-3						
3 Bricklayers	\$52.05	\$1249.20	\$78.90	\$1893.60	\$48.18	\$73.00
2 Bricklayer Helpers	41.75	668.00	63.30	1012.80		
.25 Carpenter	53.15	106.30	79.85	159.70		
42 L.H., Daily Totals		\$2023.50		\$3066.10		\$48.18
Crew D-4						
1 Bricklayer	\$52.05	\$416.40	\$78.90	\$631.20	\$47.14	\$71.17
2 Bricklayer Helpers	41.75	668.00	63.30	1012.80		
1 Equip. Oper. (light)	53.00	424.00	79.20	633.60		
1 Grout Pump, 50 C.F./hr.		188.45		207.29		5.89
32 L.H., Daily Totals		\$1696.85		\$2484.90		\$53.03
Crew D-5						
1 Bricklayer	52.05	416.40	78.90	631.20	52.05	78.90
8 L.H., Daily Totals		\$416.40		\$631.20		\$52.05
Crew D-6						
3 Bricklayers	\$52.05	\$1249.20	\$78.90	\$1893.60	\$47.15	\$71.45
3 Bricklayer Helpers	41.75	1002.00	63.30	1519.20		
.25 Carpenter	53.15	106.30	79.85	159.70		
50 L.H., Daily Totals		\$2357.50		\$3572.50		\$47.15
Crew D-7						
1 Tile Layer	\$49.50	\$396.00	\$72.60	\$580.80	\$44.15	\$64.75
1 Tile Layer Helper	38.80	310.40	56.90	455.20		
16 L.H., Daily Totals		\$706.40		\$1036.00		\$44.15
Crew D-8						
3 Bricklayers	\$52.05	\$1249.20	\$78.90	\$1893.60	\$47.93	\$72.66
2 Bricklayer Helpers	41.75	668.00	63.30	1012.80		
40 L.H., Daily Totals		\$1917.20		\$2906.40		\$47.93

Crews - Standard

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour		Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P		Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew D-9													
3 Bricklayers	\$52.05	\$1249.20	\$78.90	\$1893.60	\$46.90	\$71.10	1 Struc. Steel Foreman (outside)	\$59.65	\$477.20	\$93.55	\$748.40	\$58.25	\$91.37
3 Bricklayer Helpers	41.75	1002.00	63.30	1519.20			1 Struc. Steel Worker	57.65	461.20	90.45	723.60		
48 L.H., Daily Totals		\$2251.20		\$3412.80	\$46.90	\$71.10	1 Welder	57.45	459.60	90.10	720.80		
Crew D-10							1 Welder, Gas Engine, 300 amp		147.00		161.70		
1 Bricklayer Foreman (outside)	\$54.05	\$432.40	\$81.95	\$655.60	\$51.76	\$78.16	1 Telescoping Boom Lift, to 40'		278.90		306.79	17.75	19.52
1 Bricklayer	52.05	416.40	78.90	631.20			24 L.H., Daily Totals		\$1823.90		\$2661.29	\$76.00	\$110.89
1 Bricklayer Helper	41.75	334.00	63.30	506.40									
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00			Crew E-4					Bare Costs	Incl. O&P
1 S.P. Crane, 4x4, 12 Ton	428.30		471.13		13.38	14.72	1 Struc. Steel Foreman (outside)	\$59.65	\$477.20	\$93.55	\$748.40	\$58.15	\$91.22
32 L.H., Daily Totals		\$2084.70		\$2972.33	\$65.15	\$92.89	3 Struc. Steel Workers	57.65	1383.60	90.45	2170.80		
Crew D-11							1 Welder, Gas Engine, 300 amp		147.00		161.70	4.59	5.05
1 Bricklayer Foreman (outside)	\$54.05	\$432.40	\$81.95	\$655.60	\$49.28	\$74.72	32 L.H., Daily Totals		\$2007.80		\$3080.90	\$62.74	\$96.28
1 Bricklayer	52.05	416.40	78.90	631.20									
1 Bricklayer Helper	41.75	334.00	63.30	506.40			Crew E-5					Bare Costs	Incl. O&P
24 L.H., Daily Totals		\$1182.80		\$1793.20	\$49.28	\$74.72	2 Struc. Steel Foremen (outside)	\$59.65	\$954.40	\$93.55	\$1496.80	\$57.48	\$89.35
Crew D-12							5 Struc. Steel Workers	57.65	2306.00	90.45	3618.00		
1 Bricklayer Foreman (outside)	\$54.05	\$432.40	\$81.95	\$655.60	\$47.40	\$71.86	1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00		
1 Bricklayer	52.05	416.40	78.90	631.20			1 Welder	57.45	459.60	90.10	720.80		
2 Bricklayer Helpers	41.75	668.00	63.30	1012.80			1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40		
32 L.H., Daily Totals		\$1516.80		\$2299.60	\$47.40	\$71.86	1 Lattice Boom Crane, 90 Ton		1696.00		1865.60		
Crew D-13							1 Welder, Gas Engine, 300 amp		147.00		161.70	23.04	25.34
1 Bricklayer Foreman (outside)	\$54.05	\$432.40	\$81.95	\$655.60	\$50.33	\$75.97	80 L.H., Daily Totals		\$6441.00		\$9175.30	\$80.51	\$114.69
1 Bricklayer	52.05	416.40	78.90	631.20									
2 Bricklayer Helpers	41.75	668.00	63.30	1012.80			Crew E-6					Bare Costs	Incl. O&P
1 Carpenter	53.15	425.20	79.85	638.80			3 Struc. Steel Foremen (outside)	\$59.65	\$1431.60	\$93.55	\$2245.20	\$57.38	\$89.25
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00			9 Struc. Steel Workers	57.65	4150.80	90.45	6512.40		
1 S.P. Crane, 4x4, 12 Ton	428.30		471.13		8.92	9.82	1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00		
48 L.H., Daily Totals		\$2843.90		\$4117.53	\$59.25	\$85.78	1 Welder	57.45	459.60	90.10	720.80		
Crew D-14							1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40		
3 Bricklayers	\$52.05	\$1249.20	\$78.90	\$1893.60	\$49.48	\$75.00	1 Equip. Oper. (light)	53.00	424.00	79.20	633.60		
1 Bricklayer Helper	41.75	334.00	63.30	506.40			1 Lattice Boom Crane, 90 Ton		1696.00		1865.60		
32 L.H., Daily Totals		\$1583.20		\$2400.00	\$49.48	\$75.00	1 Welder, Gas Engine, 300 amp		147.00		161.70		
Crew E-1							1 Air Compressor, 160 cfm		202.80		223.08		
1 Welder Foreman (outside)	\$59.45	\$475.60	\$93.25	\$746.00	\$56.63	\$87.52	2 Impact Wrenches		104.60		115.06	16.80	18.48
1 Welder	57.45	459.60	90.10	720.80			128 L.H., Daily Totals		\$9494.40		\$13789.84	\$74.17	\$107.73
1 Equip. Oper. (light)	53.00	424.00	79.20	633.60									
1 Welder, Gas Engine, 300 amp		147.00		161.70	6.13	6.74	Crew E-7					Bare Costs	Incl. O&P
24 L.H., Daily Totals		\$1506.20		\$2262.10	\$62.76	\$94.25	1 Struc. Steel Foreman (outside)	\$59.65	\$477.20	\$93.55	\$748.40	\$57.44	\$89.28
Crew E-2							4 Struc. Steel Workers	57.65	1844.80	90.45	2894.40		
1 Struc. Steel Foreman (outside)	\$59.65	\$477.20	\$93.55	\$748.40	\$57.14	\$88.49	1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00		
4 Struc. Steel Workers	57.65	1844.80	90.45	2894.40			1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40		
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00			1 Welder Foreman (outside)	59.45	475.60	93.25	746.00		
1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40			2 Welders	57.45	919.20	90.10	1441.60		
1 Lattice Boom Crane, 90 Ton	1696.00		1865.60		30.29	33.31	1 Lattice Boom Crane, 90 Ton		1696.00		1865.60		
56 L.H., Daily Totals		\$4896.00		\$6820.80	\$87.43	\$121.80	2 Welder, Gas Engine, 300 amp		294.00		323.40	24.88	27.36
Crew E-3							80 L.H., Daily Totals		\$6584.80		\$9331.80	\$82.31	\$116.65
1 Struc. Steel Foreman (outside)	\$59.65	\$477.20	\$93.55	\$748.40									
1 Struc. Steel Worker	57.65	1844.80	90.45	2894.40			Crew E-8					Bare Costs	Incl. O&P
1 Welder	57.45	459.60	90.10	720.80			1 Struc. Steel Foreman (outside)	\$59.65	\$477.20	\$93.55	\$748.40	\$57.10	\$88.63
1 Welder, Gas Engine, 300 amp	147.00		161.70		6.13	6.74	4 Struc. Steel Workers	57.65	1844.80	90.45	2894.40		
24 L.H., Daily Totals		\$1545.00		\$2354.50	\$64.38	\$98.10	1 Welder Foreman (outside)	59.45	475.60	93.25	746.00		

Crews - Standard

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew E-9						
2 Struc. Steel Foremen (outside)	\$59.65	\$954.40	\$93.55	\$1496.80	\$57.31	\$89.15
5 Struc. Steel Workers	57.65	2306.00	90.45	3618.00		
1 Welder Foreman (outside)	59.45	475.60	93.25	746.00		
5 Welders	57.45	2298.00	90.10	3604.00		
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00		
1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40		
1 Equip. Oper. (light)	53.00	424.00	79.20	633.60		
1 Lattice Boom Crane, 90 Ton				1865.60		
5 Welder, Gas Engine, 300 amp				735.00	808.50	18.99 20.89
128 L.H., Daily Totals		\$9767.00		\$14084.90	\$76.30	\$110.04
Crew E-10						
1 Welder Foreman (outside)	\$59.45	\$475.60	\$93.25	\$746.00	\$58.45	\$91.67
1 Welder	57.45	459.60	90.10	720.80		
1 Welder, Gas Engine, 300 amp				147.00	161.70	9.19 10.11
1 Flatbed Truck, Gas, 3 Ton				820.40	902.44	60.46 66.51
16 L.H., Daily Totals		\$1902.60		\$2530.94	\$118.91	\$158.18
Crew E-11						
2 Painters, Struc. Steel	\$45.85	\$733.60	\$74.45	\$1191.20	\$46.70	\$72.84
1 Building Laborer	42.10	336.80	63.25	506.00		
1 Equip. Oper. (light)	53.00	424.00	79.20	633.60		
1 Air Compressor, 250 cfm				201.50	221.65	
1 Sandblaster, Portable, 3 C.F.				83.80	92.18	
1 Set Sand Blasting Accessories				15.35	16.89	9.40 10.33
32 L.H., Daily Totals		\$1795.05		\$2661.51	\$56.10	\$83.17
Crew E-11A						
2 Painters, Struc. Steel	\$45.85	\$733.60	\$74.45	\$1191.20	\$46.70	\$72.84
1 Building Laborer	42.10	336.80	63.25	506.00		
1 Equip. Oper. (light)	53.00	424.00	79.20	633.60		
1 Air Compressor, 250 cfm				201.50	221.65	
1 Sandblaster, Portable, 3 C.F.				83.80	92.18	
1 Set Sand Blasting Accessories				15.35	16.89	
1 Telescoping Boom Lift, to 60'				310.90	341.99	19.11 21.02
32 L.H., Daily Totals		\$2105.95		\$3003.51	\$65.81	\$93.86
Crew E-11B						
2 Painters, Struc. Steel	\$45.85	\$733.60	\$74.45	\$1191.20	\$44.60	\$70.72
1 Building Laborer	42.10	336.80	63.25	506.00		
2 Paint Sprayer, 8 C.F.M.				87.50	96.25	
1 Telescoping Boom Lift, to 60'				310.90	341.99	16.60 18.26
24 L.H., Daily Totals		\$1468.80		\$2135.44	\$61.20	\$88.98
Crew E-12						
1 Welder Foreman (outside)	\$59.45	\$475.60	\$93.25	\$746.00	\$56.23	\$86.22
1 Equip. Oper. (light)	53.00	424.00	79.20	633.60		
1 Welder, Gas Engine, 300 amp				147.00	161.70	9.19 10.11
16 L.H., Daily Totals		\$1046.60		\$1541.30	\$65.41	\$96.33
Crew E-13						
1 Welder Foreman (outside)	\$59.45	\$475.60	\$93.25	\$746.00	\$57.30	\$88.57
.5 Equip. Oper. (light)	53.00	212.00	79.20	316.80		
1 Welder, Gas Engine, 300 amp				147.00	161.70	12.25 13.48
12 L.H., Daily Totals		\$834.60		\$1224.50	\$69.55	\$102.04
Crew E-14						
1 Welder Foreman (outside)	\$59.45	\$475.60	\$93.25	\$746.00	\$59.45	\$93.25
1 Welder, Gas Engine, 300 amp				147.00	161.70	18.38 20.21
8 L.H., Daily Totals		\$622.60		\$907.70	\$77.83	\$113.46

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew E-16						
1 Welder Foreman (outside)	\$59.45	\$475.60	\$93.25	\$746.00	\$58.45	\$91.67
1 Welder	57.45	459.60	90.10	720.80		
1 Welder, Gas Engine, 300 amp				147.00	161.70	9.19 10.11
16 L.H., Daily Totals					\$1082.20	\$1628.50
Crew E-17						
1 Struc. Steel Foreman (outside)	\$59.65	\$477.20	\$93.55	\$748.40	\$58.65	\$92.00
1 Structural Steel Worker	57.65	461.20	90.45	723.60		
16 L.H., Daily Totals					\$938.40	\$1472.00
Crew E-18						
1 Struc. Steel Foreman (outside)	\$59.65	\$477.20	\$93.55	\$748.40	\$57.87	\$89.95
3 Structural Steel Workers	57.65	1383.60	90.45	2170.80		
1 Equipment Operator (med.)	56.75	454.00	84.85	678.80		
1 Lattice Boom Crane, 20 Ton				1488.00	1636.80	37.20 40.92
40 L.H., Daily Totals					\$3802.80	\$5234.80
Crew E-19						
1 Struc. Steel Foreman (outside)	\$59.65	\$477.20	\$93.55	\$748.40	\$56.77	\$87.73
1 Structural Steel Worker	57.65	461.20	90.45	723.60		
1 Equip. Oper. (light)	53.00	424.00	79.20	633.60		
1 Lattice Boom Crane, 20 Ton				1488.00	1636.80	62.00 68.20
24 L.H., Daily Totals					\$2850.40	\$3742.40
Crew E-20						
1 Struc. Steel Foreman (outside)	\$59.65	\$477.20	\$93.55	\$748.40	\$57.21	\$88.73
5 Structural Steel Workers	57.65	2306.00	90.45	3618.00		
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00		
1 Equip. Oper. (oiler)	50.55	404.40	75.55	604.40		
1 Lattice Boom Crane, 40 Ton				2028.00	2230.80	31.69 34.86
64 L.H., Daily Totals					\$5689.20	\$7909.60
Crew E-22						
1 Skilled Worker Foreman (out)	\$56.85	\$454.80	\$86.00	\$688.00	\$55.52	\$83.97
2 Skilled Workers	54.85	877.60	82.95	1327.20		
24 L.H., Daily Totals					\$1332.40	\$2015.20
Crew E-24						
3 Structural Steel Workers	\$57.65	\$1383.60	\$90.45	\$2170.80	\$57.42	\$89.05
1 Equipment Operator (med.)	56.75	454.00	84.85	678.80		
1 Hyd. Crane, 25 Ton				580.85	638.93	18.15 19.97
32 L.H., Daily Totals					\$2418.45	\$3488.53
Crew E-25						
1 Welder Foreman (outside)	\$59.45	\$475.60	\$93.25	\$746.00	\$59.45	\$93.25
1 Cutting Torch				12.80	14.08	1.60 1.76
8 L.H., Daily Totals					\$488.40	\$760.08
Crew E-26						
1 Struc. Steel Foreman (outside)	\$59.65	\$477.20	\$93.55	\$748.40	\$58.91	\$91.73
1 Struc. Steel Worker	57.65	461.20	90.45	723.60		
1 Welder	57.45	459.60	90.10	720.80		
.25 Electrician	61.35	122.70	91.35	182.70		
.25 Plumber	64.45	128.90	96.45	192.90		
1 Welder, Gas Engine, 300 amp				147.00	161.70	5.25 5.78
28 L.H., Daily Totals					\$1796.60	\$2730.10

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Crews - Standard

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour		Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P		Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew E-27													
1 Struc. Steel Foreman (outside)	\$59.65	\$477.20	\$93.55	\$748.40	\$57.21	\$88.73	1 Roofer Composition	\$46.20	\$369.60	\$76.25	\$610.00	\$40.97	\$65.53
5 Struc. Steel Workers	57.65	2306.00	90.45	3618.00			1 Roofer Helper	34.60	276.80	57.10	456.80		
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00			1 Building Laborer	42.10	336.80	63.25	506.00		
1 Equip. Oper. (oilier)	50.55	404.40	75.55	604.40			1 Foam Spray Rig, Trailer-Mtd.		523.85		576.24		
1 Hyd. Crane, 12 Ton		471.00		518.10			1 Pickup Truck, 3/4 Ton		110.85		121.94	26.45	29.09
1 Hyd. Crane, 80 Ton		1486.00		1634.60	30.58	33.64	24 L.H., Daily Totals		\$1617.90		\$2270.97	\$67.41	\$94.62
64 L.H., Daily Totals		\$5618.20		\$7831.50	\$87.78	\$122.37							
Crew F-3							Crew G-3						
4 Carpenters	\$53.15	\$1700.80	\$79.85	\$2555.20	\$54.36	\$81.58	2 Sheet Metal Workers	\$62.30	\$996.80	\$94.50	\$1512.00	\$52.20	\$78.88
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00			2 Building Laborers	42.10	673.60	63.25	1012.00		
1 Hyd. Crane, 12 Ton		471.00		518.10			32 L.H., Daily Totals		\$1670.40		\$2524.00	\$52.20	\$78.88
40 L.H., Daily Totals		\$2645.40		\$3781.30	\$66.14	\$94.53							
Crew F-4							Crew G-4						
4 Carpenters	\$53.15	\$1700.80	\$79.85	\$2555.20	\$53.73	\$80.58	1 Labor Foreman (outside)	\$44.10	\$352.80	\$66.25	\$530.00	\$42.77	\$64.25
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00			2 Building Laborers	42.10	673.60	63.25	1012.00		
1 Equip. Oper. (oilier)	50.55	404.40	75.55	604.40			1 Flatbed Truck, Gas, 1.5 Ton		196.15		215.76		
1 Hyd. Crane, 55 Ton		980.20		1078.22	20.42	22.46	1 Air Compressor, 160 cfm		202.80		223.08	16.62	18.29
48 L.H., Daily Totals		\$3559.00		\$4945.82	\$74.15	\$103.04	24 L.H., Daily Totals		\$1425.35		\$1980.85	\$59.39	\$82.54
Crew F-5							Crew G-5						
1 Carpenter Foreman (outside)	\$55.15	\$441.20	\$82.85	\$662.80	\$53.65	\$80.60	1 Roofer Foreman (outside)	\$48.20	\$385.60	\$79.55	\$636.40	\$41.96	\$69.25
3 Carpenters	53.15	1275.60	79.85	1916.40			2 Roofers Composition	46.20	739.20	76.25	1220.00		
32 L.H., Daily Totals		\$1716.80		\$2579.20	\$53.65	\$80.60	2 Roofers Helpers	34.60	553.60	57.10	913.60		
Crew F-6							1 Application Equipment		192.85		212.13	4.82	5.30
2 Carpenters	\$53.15	\$850.40	\$79.85	\$1277.60	\$49.94	\$74.94	40 L.H., Daily Totals		\$1871.25		\$2982.14	\$46.78	\$74.55
2 Building Laborers	42.10	673.60	63.25	1012.00									
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00			Crew G-6A						
1 Hyd. Crane, 12 Ton		471.00		518.10	11.78	12.95	2 Roofers Composition	\$46.20	\$739.20	\$76.25	\$1220.00	\$46.20	\$76.25
40 L.H., Daily Totals		\$2468.60		\$3515.70	\$61.72	\$87.89	1 Small Compressor, Electric		33.80		37.18		
Crew F-7							2 Pneumatic Nailers		54.80		60.28	5.54	6.09
2 Carpenters	\$53.15	\$850.40	\$79.85	\$1277.60	\$47.63	\$71.55	16 L.H., Daily Totals		\$827.80		\$1317.46	\$51.74	\$82.34
2 Building Laborers	42.10	673.60	63.25	1012.00									
32 L.H., Daily Totals		\$1524.00		\$2289.60	\$47.63	\$71.55	Crew G-7						
Crew G-1							1 Carpenter	\$53.15	\$425.20	\$79.85	\$638.80	\$53.15	\$79.85
1 Roofer Foreman (outside)	\$48.20	\$385.60	\$79.55	\$636.40	\$43.17	\$71.25	1 Small Compressor, Electric		33.80		37.18		
4 Roofers Composition	46.20	1478.40	76.25	2440.00			1 Pneumatic Nailer		27.40		30.14	7.65	8.41
2 Roofer Helpers	34.60	553.60	57.10	913.60			8 L.H., Daily Totals		\$486.40		\$706.12	\$60.80	\$88.27
1 Application Equipment		192.85		212.13									
1 Tar Kettle/Pot		207.85		228.63			Crew G-8A						
1 Crew Truck		166.25		182.88	10.12	11.14	2 Glaziers	\$51.00	\$816.00	\$76.40	\$1222.40	\$54.33	\$83.42
56 L.H., Daily Totals		\$2984.55		\$4613.65	\$53.30	\$82.39	2 Struc. Steel Workers	57.65	922.40	90.45	1447.20		
							32 L.H., Daily Totals		\$1738.40		\$2669.60	\$54.33	\$83.42
Crew G-2													
							Crew H-2						
1 Plasterer	\$48.60	\$388.80	\$72.55	\$580.40	\$44.37	\$66.37	2 Glaziers	\$51.00	\$816.00	\$76.40	\$1222.40	\$48.03	\$72.02
1 Plasterer Helper	42.40	339.20	63.30	506.40			1 Building Laborer	42.10	336.80	63.25	506.00		
1 Building Laborer	42.10	336.80	63.25	506.00			24 L.H., Daily Totals		\$1152.80		\$1728.40	\$48.03	\$72.02
1 Grout Pump, 50 C.F./hr.		188.45		207.29	7.85	8.64							
24 L.H., Daily Totals		\$1253.25		\$1800.10	\$52.22	\$75.00	Crew H-3						
							1 Glazier	\$51.00	\$408.00	\$76.40	\$611.20	\$45.48	\$68.67
							1 Helper	39.95	319.60	60.95	487.60		
							16 L.H., Daily Totals		\$727.60		\$1098.80	\$45.48	\$68.67
Crew H-4							Crew H-4						
							1 Carpenter	\$53.15	\$425.20	\$79.85	\$638.80	\$49.51	\$74.59
1 Carpenter		39.95		319.60			1 Carpenter Helper		60.95		487.60		
1 Carpenter Helper		39.95		319.60			.5 Electrician	61.35	245.40	91.35	365.40		
							20 L.H., Daily Totals		\$990.20		\$1491.80	\$49.51	\$74.59

Crews - Standard

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew J-1						
3 Plasterers	\$48.60	\$1166.40	\$72.55	\$1741.20	\$46.12	\$68.85
2 Plasterer Helpers	42.40	678.40	63.30	1012.80		
1 Mixing Machine, 6 C.F.		117.35		129.09	2.93	3.23
40 L.H., Daily Totals		\$1962.15		\$2883.09	\$49.05	\$72.08
Crew J-2						
3 Plasterers	\$48.60	\$1166.40	\$72.55	\$1741.20	\$47.11	\$70.09
2 Plasterer Helpers	42.40	678.40	63.30	1012.80		
1 Lather	52.05	416.40	76.30	610.40		
1 Mixing Machine, 6 C.F.		117.35		129.09	2.44	2.69
48 L.H., Daily Totals		\$2378.55		\$3493.49	\$49.55	\$72.78
Crew J-3						
1 Terrazzo Worker	\$49.40	\$395.20	\$72.45	\$579.60	\$44.95	\$65.92
1 Terrazzo Helper	40.50	324.00	59.40	475.20		
1 Floor Grinder, 22" Path		104.60		115.06		
1 Terrazzo Mixer		161.15		177.26	16.61	18.27
16 L.H., Daily Totals		\$984.95		\$1347.13	\$61.56	\$84.20
Crew J-4						
2 Cement Finishers	\$49.95	\$799.20	\$73.45	\$1175.20	\$47.33	\$70.05
1 Laborer	42.10	336.80	63.25	506.00		
1 Floor Grinder, 22" Path		104.60		115.06		
1 Floor Edger, 7" Path		43.95		48.34		
1 Vacuum Pick-Up System		74.05		81.45	9.28	10.20
24 L.H., Daily Totals		\$1358.60		\$1926.06	\$56.61	\$80.25
Crew J-4A						
2 Cement Finishers	\$49.95	\$799.20	\$73.45	\$1175.20	\$46.02	\$68.35
2 Laborers	42.10	673.60	63.25	1012.00		
1 Floor Grinder, 22" Path		104.60		115.06		
1 Floor Edger, 7" Path		43.95		48.34		
1 Vacuum Pick-Up System		74.05		81.45		
1 Floor Auto Scrubber		178.40		196.24	12.53	13.78
32 L.H., Daily Totals		\$1873.80		\$2628.30	\$58.56	\$82.13
Crew J-4B						
1 Laborer	\$42.10	\$336.80	\$63.25	\$506.00	\$42.10	\$63.25
1 Floor Auto Scrubber		178.40		196.24	22.30	24.53
8 L.H., Daily Totals		\$515.20		\$702.24	\$64.40	\$87.78
Crew J-6						
2 Painters	\$44.40	\$710.40	\$66.05	\$1056.80	\$45.98	\$68.64
1 Building Laborer	42.10	336.80	63.25	506.00		
1 Equip. Oper. (light)	53.00	424.00	79.20	633.60		
1 Air Compressor, 250 cfm		201.50		221.65		
1 Sandblaster, Portable, 3 C.F.		83.80		92.18		
1 Set Sand Blasting Accessories		15.35		16.89	9.40	10.33
32 L.H., Daily Totals		\$1771.85		\$2527.11	\$55.37	\$78.97
Crew J-7						
2 Painters	\$44.40	\$710.40	\$66.05	\$1056.80	\$44.40	\$66.05
1 Floor Belt Sander		50.15		55.16		
1 Floor Sanding Edger		25.15		27.66	4.71	5.18
16 L.H., Daily Totals		\$785.70		\$1139.63	\$49.11	\$71.23

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew K-1						
1 Carpenter	\$53.15	\$425.20	\$79.85	\$638.80	\$50.20	\$75.33
1 Truck Driver (light)	47.25	378.00	70.80	566.40	51.27	56.40
1 Flatbed Truck, Gas, 3 Ton			820.40			
16 L.H., Daily Totals				\$1623.60		\$2107.64
Crew K-2						
1 Struc. Steel Foreman (outside)	\$59.65	\$477.20	\$93.55	\$748.40	\$54.85	\$84.93
1 Struc. Steel Worker	57.65	461.20	90.45	723.60		
1 Truck Driver (light)	47.25	378.00	70.80	566.40		
1 Flatbed Truck, Gas, 3 Ton			820.40		902.44	34.18
24 L.H., Daily Totals				\$2136.80		\$2940.84
Crew L-1						
1 Electrician	\$61.35	\$490.80	\$91.35	\$730.80	\$62.90	\$93.90
1 Plumber	64.45	515.60	96.45	771.60		
16 L.H., Daily Totals				\$1006.40		\$1502.40
Crew L-2						
1 Carpenter	\$53.15	\$425.20	\$79.85	\$638.80	\$46.55	\$70.40
1 Carpenter Helper	39.95	319.60	60.95	487.60		
16 L.H., Daily Totals				\$744.80		\$1126.40
Crew L-3						
1 Carpenter	\$53.15	\$425.20	\$79.85	\$638.80	\$57.49	\$86.39
.5 Electrician	61.35	245.40	91.35	365.40		
.5 Sheet Metal Worker	62.30	249.20	94.50	378.00		
16 L.H., Daily Totals				\$919.80		\$1382.20
Crew L-3A						
1 Carpenter Foreman (outside)	\$55.15	\$441.20	\$82.85	\$662.80	\$57.53	\$86.73
.5 Sheet Metal Worker	62.30	249.20	94.50	378.00		
12 L.H., Daily Totals				\$690.40		\$1040.80
Crew L-4						
2 Skilled Workers	\$54.85	\$877.60	\$82.95	\$1327.20	\$49.88	\$75.62
1 Helper	39.95	319.60	60.95	487.60		
24 L.H., Daily Totals				\$1197.20		\$1814.80
Crew L-5						
1 Struc. Steel Foreman (outside)	\$59.65	\$477.20	\$93.55	\$748.40	\$58.16	\$90.61
5 Struc. Steel Workers	57.65	2306.00	90.45	3618.00		
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00		
1 Hyd. Crane, 25 Ton			580.85		638.93	10.37
56 L.H., Daily Totals				\$3837.65		\$5713.34
Crew L-5A						
1 Struc. Steel Foreman (outside)	\$59.65	\$477.20	\$93.55	\$748.40	\$58.54	\$90.74
2 Structural Steel Workers	57.65	922.40	90.45	1447.20		
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00		
1 S.P. Crane, 4x4, 25 Ton			1144.00		1258.40	35.75
32 L.H., Daily Totals				\$3017.20		\$4162.00

Crews - Standard

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour		Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P		Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew L-5B							Crew M-3						
1 Struc. Steel Foreman (outside)	\$59.65	\$477.20	\$93.55	\$748.40	\$59.83	\$90.82	1 Electrician Foreman (outside)	\$63.35	\$506.80	\$94.35	\$754.80	\$64.39	\$95.86
2 Structural Steel Workers	57.65	922.40	90.45	1447.20			1 Common Laborer	42.10	336.80	63.25	506.00		
2 Electricians	61.35	981.60	91.35	1461.60			.25 Equipment Operator (med.)	56.75	113.50	84.85	169.70		
2 Steamfitters/Pipefitters	65.55	1048.80	98.10	1569.60			1 Elevator Constructor	85.55	684.40	127.00	1016.00		
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00			1 Elevator Apprentice	68.45	547.60	101.60	812.80		
1 Equip. Oper. (boiler)	50.55	404.40	75.55	604.40			.25 S.P. Crane, 4x4, 20 Ton		145.55		160.10	4.28	4.71
1 Hyd. Crane, 80 Ton	1486.00		1634.60		20.64	22.70	34 L.H., Daily Totals		\$2334.65		\$3419.41	\$68.67	\$100.57
72 L.H., Daily Totals		\$5794.00		\$8173.80	\$80.47	\$113.53							
Crew L-6							Crew M-4						
1 Plumber	\$64.45	\$515.60	\$96.45	\$771.60	\$63.42	\$94.75	1 Electrician Foreman (outside)	\$63.35	\$506.80	\$94.35	\$754.80	\$63.75	\$94.94
.5 Electrician	61.35	245.40	91.35	365.40			1 Common Laborer	42.10	336.80	63.25	506.00		
12 L.H., Daily Totals		\$761.00		\$1137.00	\$63.42	\$94.75	.25 Equipment Operator, Crane	59.20	118.40	88.50	177.00		
Crew L-7							.25 Equip. Oper. (boiler)	50.55	101.10	75.55	151.10		
2 Carpenters	\$53.15	\$850.40	\$79.85	\$1277.60	\$51.16	\$76.75	1 Elevator Constructor	85.55	684.40	127.00	1016.00		
1 Building Laborer	42.10	336.80	63.25	506.00			1 Elevator Apprentice	68.45	547.60	101.60	812.80		
.5 Electrician	61.35	245.40	91.35	365.40			.25 S.P. Crane, 4x4, 40 Ton		188.55		207.41	5.24	5.76
28 L.H., Daily Totals		\$1432.60		\$2149.00	\$51.16	\$76.75	36 L.H., Daily Totals		\$2483.65		\$3625.11	\$68.99	\$100.70
Crew L-8							Crew Q-1						
2 Carpenters	\$53.15	\$850.40	\$79.85	\$1277.60	\$55.41	\$83.17	1 Plumber	\$64.45	\$515.60	\$96.45	\$771.60	\$58.00	\$86.80
.5 Plumber	64.45	257.80	96.45	385.80			1 Plumber Apprentice	51.55	412.40	77.15	617.20		
20 L.H., Daily Totals		\$1108.20		\$1663.40	\$55.41	\$83.17	16 L.H., Daily Totals		\$928.00		\$1388.80	\$58.00	\$86.80
Crew L-9							Crew Q-1A						
1 Labor Foreman (inside)	\$42.60	\$340.80	\$64.00	\$512.00	\$47.81	\$72.58	.25 Plumber Foreman (outside)	\$66.45	\$132.90	\$99.45	\$198.90	\$64.85	\$97.05
2 Building Laborers	42.10	673.60	63.25	1012.00			1 Plumber	64.45	515.60	96.45	771.60		
1 Struc. Steel Worker	57.65	461.20	90.45	723.60			10 L.H., Daily Totals		\$648.50		\$970.50	\$64.85	\$97.05
.5 Electrician	61.35	245.40	91.35	365.40			Crew Q-1C						
36 L.H., Daily Totals		\$1721.00		\$2613.00	\$47.81	\$72.58	1 Plumber	\$64.45	\$515.60	\$96.45	\$771.60	\$57.58	\$86.15
Crew L-10							1 Plumber Apprentice	51.55	412.40	77.15	617.20		
1 Struc. Steel Foreman (outside)	\$59.65	\$477.20	\$93.55	\$748.40	\$58.83	\$90.83	1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80		
1 Structural Steel Worker	57.65	461.20	90.45	723.60			1 Trencher, Chain Type, 8' D		1872.00		2059.20	78.00	85.80
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00			24 L.H., Daily Totals		\$3254.00		\$4126.80	\$135.58	\$171.95
1 Hyd. Crane, 12 Ton		471.00		518.10	19.63	21.59	Crew Q-2						
24 L.H., Daily Totals		\$1883.00		\$2698.10	\$78.46	\$112.42	2 Plumbbers	\$64.45	\$1031.20	\$96.45	\$1543.20	\$60.15	\$90.02
Crew L-11							1 Plumber Apprentice	51.55	412.40	77.15	617.20		
2 Wreckers	\$42.10	\$673.60	\$64.80	\$1036.80	\$49.10	\$74.33	24 L.H., Daily Totals		\$1443.60		\$2160.40	\$60.15	\$90.02
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00			Crew Q-3						
1 Equip. Oper. (lift)	53.00	424.00	79.20	633.60			1 Plumber Foreman (inside)	\$64.95	\$519.60	\$97.20	\$777.60	\$61.35	\$91.81
1 Hyd. Excavator, 2.5 C.Y.		1465.00		1611.50			2 Plumbers	64.45	1031.20	96.45	1543.20		
1 Loader, Skid Steer, 78 H.P.		400.10		440.11	58.28	64.11	1 Plumber Apprentice	51.55	412.40	77.15	617.20		
32 L.H., Daily Totals		\$3436.30		\$4430.01	\$107.38	\$138.44	32 L.H., Daily Totals		\$1963.20		\$2938.00	\$61.35	\$91.81
Crew M-1							Crew Q-4						
3 Elevator Constructors	\$85.55	\$2053.20	\$127.00	\$3048.00	\$81.28	\$120.65	1 Plumber Foreman (inside)	\$64.95	\$519.60	\$97.20	\$777.60	\$61.35	\$91.81
1 Elevator Apprentice	68.45	547.60	101.60	812.80			1 Plumber	64.45	515.60	96.45	771.60		
5 Hand Tools		50.00		55.00	1.56	1.72	1 Welder (plumber)	64.45	515.60	96.45	771.60		
32 L.H., Daily Totals		\$2650.80		\$3915.80	\$82.84	\$122.37	1 Plumber Apprentice	51.55	412.40	77.15	617.20		
							1 Welder, Electric, 300 amp		106.40		117.04	3.33	3.66
							32 L.H., Daily Totals		\$2069.60		\$3055.04	\$64.67	\$95.47
							Crew Q-5						
							1 Steamfitter	\$65.55	\$524.40	\$98.10	\$784.80	\$59.00	\$88.30
							1 Steamfitter Apprentice	52.45	419.60	78.50	628.00		
							16 L.H., Daily Totals		\$944.00		\$1412.80	\$59.00	\$88.30

Crews - Standard

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour		Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour			
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P		Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P		
Crew Q-6							Crew Q-16								
2 Steamfitters	\$65.55	\$1048.80	\$98.10	\$1569.60	\$61.18	\$91.57	2 Plumbers	\$64.45	\$1031.20	\$96.45	\$1543.20	\$60.15	\$90.02		
1 Steamfitter Apprentice	52.45	419.60	78.50	628.00			1 Plumber Apprentice	51.55	412.40	77.15	617.20				
24 L.H., Daily Totals		\$1468.40		\$2197.60	\$61.18	\$91.57	1 Welder, Electric, 300 amp		106.40		117.04	4.43	4.88		
Crew Q-7							24 L.H., Daily Totals			\$1550.00		\$2277.44	\$64.58	\$94.89	
1 Steamfitter Foreman (inside)	\$66.05	\$528.40	\$98.85	\$790.80	\$62.40	\$93.39	Crew Q-17								
2 Steamfitters	65.55	1048.80	98.10	1569.60			1 Steamfitter	\$65.55	\$524.40	\$98.10	\$784.80	\$59.00	\$88.30		
1 Steamfitter Apprentice	52.45	419.60	78.50	628.00			1 Steamfitter Apprentice	52.45	419.60	78.50	628.00				
32 L.H., Daily Totals		\$1996.80		\$2988.40	\$62.40	\$93.39	1 Welder, Electric, 300 amp		106.40		117.04	6.65	7.32		
Crew Q-8							16 L.H., Daily Totals			\$1050.40		\$1529.84	\$65.65	\$95.61	
1 Steamfitter Foreman (inside)	\$66.05	\$528.40	\$98.85	\$790.80	\$62.40	\$93.39	Crew Q-17A								
1 Steamfitter	65.55	524.40	98.10	784.80			1 Steamfitter	\$65.55	\$524.40	\$98.10	\$784.80	\$59.07	\$88.37		
1 Welder (steamfitter)	65.55	524.40	98.10	784.80			1 Steamfitter Apprentice	52.45	419.60	78.50	628.00				
1 Steamfitter Apprentice	52.45	419.60	78.50	628.00			1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00				
1 Welder, Electric, 300 amp		106.40		117.04	3.33	3.66	1 Hyd. Crane, 12 Ton		471.00		518.10				
32 L.H., Daily Totals		\$2103.20		\$3105.44	\$65.72	\$97.05	1 Welder, Electric, 300 amp		106.40		117.04	24.06	26.46		
Crew Q-9							24 L.H., Daily Totals				\$1995.00		\$2755.94	\$83.13	\$114.83
1 Sheet Metal Worker	\$62.30	\$498.40	\$94.50	\$756.00	\$56.08	\$85.05	Crew Q-18								
1 Sheet Metal Apprentice	49.85	398.80	75.60	604.80			2 Steamfitters	\$65.55	\$1048.80	\$98.10	\$1569.60	\$61.18	\$91.57		
16 L.H., Daily Totals		\$897.20		\$1360.80	\$56.08	\$85.05	1 Steamfitter Apprentice	52.45	419.60	78.50	628.00				
Crew Q-10							1 Welder, Electric, 300 amp		106.40		117.04	4.43	4.88		
2 Sheet Metal Workers	\$62.30	\$996.80	\$94.50	\$1512.00	\$58.15	\$88.20	24 L.H., Daily Totals			\$1574.80		\$2314.64	\$65.62	\$96.44	
1 Sheet Metal Apprentice	49.85	398.80	75.60	604.80			Crew Q-19								
24 L.H., Daily Totals		\$1395.60		\$2116.80	\$58.15	\$88.20	1 Steamfitter	\$65.55	\$524.40	\$98.10	\$784.80	\$59.78	\$89.32		
Crew Q-11							1 Steamfitter Apprentice	52.45	419.60	78.50	628.00				
1 Sheet Metal Foreman (inside)	\$62.80	\$502.40	\$95.25	\$762.00	\$59.31	\$89.96	1 Electrician	61.35	490.80	91.35	730.80				
2 Sheet Metal Workers	62.30	996.80	94.50	1512.00			24 L.H., Daily Totals			\$1434.80		\$2143.60	\$59.78	\$89.32	
1 Sheet Metal Apprentice	49.85	398.80	75.60	604.80			Crew Q-20								
32 L.H., Daily Totals		\$1898.00		\$2878.80	\$59.31	\$89.96	1 Sheet Metal Worker	\$62.30	\$498.40	\$94.50	\$756.00	\$57.13	\$86.31		
Crew Q-12							1 Sheet Metal Apprentice	49.85	398.80	75.60	604.80				
1 Sprinkler Installer	\$63.25	\$506.00	\$94.80	\$758.40	\$56.92	\$85.33	.5 Electrician	61.35	245.40	91.35	365.40				
1 Sprinkler Apprentice	50.60	404.80	75.85	606.80			20 L.H., Daily Totals			\$1142.60		\$1726.20	\$57.13	\$86.31	
16 L.H., Daily Totals		\$910.80		\$1365.20	\$56.92	\$85.33	Crew Q-21								
Crew Q-13							2 Steamfitters	\$65.55	\$1048.80	\$98.10	\$1569.60	\$61.23	\$91.51		
1 Sprinkler Foreman (inside)	\$63.75	\$510.00	\$95.55	\$764.40	\$60.21	\$90.25	1 Steamfitter Apprentice	52.45	419.60	78.50	628.00				
2 Sprinkler Installers	63.25	1012.00	94.80	1516.80			1 Electrician	61.35	490.80	91.35	730.80				
1 Sprinkler Apprentice	50.60	404.80	75.85	606.80			32 L.H., Daily Totals			\$1959.20		\$2928.40	\$61.23	\$91.51	
32 L.H., Daily Totals		\$1926.80		\$2888.00	\$60.21	\$90.25	Crew Q-22								
Crew Q-14							1 Plumber	\$64.45	\$515.60	\$96.45	\$771.60	\$58.00	\$86.80		
1 Asbestos Worker	\$58.65	\$469.20	\$90.05	\$720.40	\$52.77	\$81.03	1 Plumber Apprentice	51.55	412.40	77.15	617.20				
1 Asbestos Apprentice	46.90	375.20	72.00	576.00			1 Hyd. Crane, 12 Ton		471.00		518.10	29.44	32.38		
16 L.H., Daily Totals		\$844.40		\$1296.40	\$52.77	\$81.03	16 L.H., Daily Totals			\$1399.00		\$1906.90	\$87.44	\$119.18	
Crew Q-15							Crew Q-22A								
1 Plumber	\$64.45	\$515.60	\$96.45	\$771.60	\$58.00	\$86.80	1 Plumber	\$64.45	\$515.60	\$96.45	\$771.60	\$54.33	\$81.34		
1 Plumber Apprentice	51.55	412.40	77.15	617.20			1 Plumber Apprentice	51.55	412.40	77.15	617.20				
1 Welder, Electric, 300 amp		106.40		117.04	6.65	7.32	1 Laborer	42.10	336.80	63.25	506.00				
16 L.H., Daily Totals		\$1034.40		\$1505.84	\$64.65	\$94.11	1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00				
							1 Hyd. Crane, 12 Ton		471.00		518.10	14.72	16.19		
							32 L.H., Daily Totals			\$2209.40		\$3120.90	\$69.04	\$97.53	

Crews - Standard

Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour		Crew No.	Bare Costs		Incl. Subs O&P		Cost Per Labor-Hour	
	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P		Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew Q-23							Crew R-5						
1 Plumber Foreman (outside)	\$66.45	\$531.60	\$99.45	\$795.60	\$62.55	\$93.58	1 Electrician Foreman	\$61.85	\$494.80	\$92.10	\$736.80	\$53.61	\$80.36
1 Plumber	64.45	515.60	96.45	771.60			4 Electrician Linemen	61.35	1963.20	91.35	2923.20		
1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80			2 Electrician Operators	61.35	981.60	91.35	1461.60		
1 Lattice Boom Crane, 20 Ton		1488.00		1636.80	62.00	68.20	4 Electrician Groundmen	39.95	1278.40	60.95	1950.40		
24 L.H., Daily Totals		\$2989.20		\$3882.80	\$124.55	\$161.78	1 Crew Truck			166.25	182.88		
Crew R-1	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	1 Flatbed Truck, 20,000 GW			201.60	221.76		
1 Electrician Foreman	\$61.85	\$494.80	\$92.10	\$736.80	\$57.35	\$85.39	1 Pickup Truck, 3/4 Ton			110.85	121.94		
3 Electricians	61.35	1472.40	91.35	2192.40			.2 Hyd. Crane, 55 Ton			196.04	215.64		
2 Electrician Apprentices	49.10	785.60	73.10	1169.60			.2 Hyd. Crane, 12 Ton			94.20	103.62		
48 L.H., Daily Totals		\$2752.80		\$4098.80	\$57.35	\$85.39	.2 Earth Auger, Truck-Mtd.			40.10	44.11		
Crew R-1A	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	1 Tractor w/Winch			373.50	410.85	13.44	14.78
1 Electrician	\$61.35	\$490.80	\$91.35	\$730.80	\$55.23	\$82.22	88 L.H., Daily Totals			\$5900.54	\$8372.79	\$67.05	\$95.15
1 Electrician Apprentice	49.10	392.80	73.10	584.80									
16 L.H., Daily Totals		\$883.60		\$1315.60	\$55.23	\$82.22	Crew R-6	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
Crew R-1B	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	1 Electrician Foreman	\$61.85	\$494.80	\$92.10	\$736.80	\$53.61	\$80.36
1 Electrician	\$61.35	\$490.80	\$91.35	\$730.80	\$53.18	\$79.18	4 Electrician Linemen	61.35	1963.20	91.35	2923.20		
2 Electrician Apprentices	49.10	785.60	73.10	1169.60			2 Electrician Operators	61.35	981.60	91.35	1461.60		
24 L.H., Daily Totals		\$1276.40		\$1900.40	\$53.18	\$79.18	4 Electrician Groundmen	39.95	1278.40	60.95	1950.40		
Crew R-1C	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	1 Crew Truck			166.25	182.88		
2 Electricians	\$61.35	\$981.60	\$91.35	\$1461.60	\$55.23	\$82.22	1 Flatbed Truck, 20,000 GW			201.60	221.76		
2 Electrician Apprentices	49.10	785.60	73.10	1169.60			1 Pickup Truck, 3/4 Ton			110.85	121.94		
1 Portable cable puller, 8000 lb.		101.60		111.76			.2 Hyd. Crane, 55 Ton			196.04	215.64		
32 L.H., Daily Totals		\$1868.80		\$2742.96	\$58.40	\$85.72	.2 Hyd. Crane, 12 Ton			94.20	103.62		
Crew R-1D	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	.2 Earth Auger, Truck-Mtd.			40.10	44.11		
1 Electrician	\$61.35	\$490.80	\$91.35	\$730.80	\$55.23	\$82.22	1 Tractor w/Winch			373.50	410.85		
1 Electrician Apprentice	49.10	392.80	73.10	584.80			3 Cable Trailers			192.30	211.53		
1 Aerial lift		105.00		115.50			.5 Tensioning Rig			55.20	60.72		
16 L.H., Daily Totals		\$988.60		\$1431.10	\$61.79	\$89.45	.5 Cable Pulling Rig			303.57	333.93	19.70	21.67
Crew R-2	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	88 L.H., Daily Totals			\$6451.61	\$8978.98	\$73.31	\$102.03
1 Electrician Foreman	\$61.85	\$494.80	\$92.10	\$736.80	\$57.61	\$85.84							
3 Electricians	61.35	1472.40	91.35	2192.40			Crew R-7	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
2 Electrician Apprentices	49.10	785.60	73.10	1169.60			1 Electrician Foreman	\$61.85	\$494.80	\$92.10	\$736.80	\$43.60	\$66.14
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00			5 Electrician Groundmen	39.95	1598.00	60.95	2438.00		
1 S.P. Crane, 4x4, 5 Ton		378.10		415.91			1 Crew Truck			166.25	182.88	3.46	3.81
56 L.H., Daily Totals		\$3604.50		\$5222.71	\$64.37	\$93.26	48 L.H., Daily Totals			\$2259.05	\$3357.68	\$47.06	\$69.95
Crew R-3	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P							
1 Electrician Foreman	\$61.85	\$494.80	\$92.10	\$736.80	\$61.12	\$91.08	Crew R-8	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Electrician	61.35	490.80	91.35	730.80			1 Electrician Foreman	\$61.85	\$494.80	\$92.10	\$736.80	\$54.30	\$81.34
.5 Equip. Oper. (crane)	59.20	236.80	88.50	354.00			3 Electrician Linemen	61.35	1472.40	91.35	2192.40		
.5 S.P. Crane, 4x4, 5 Ton		189.05		207.96			2 Electrician Operators	39.95	639.20	60.95	975.20		
20 L.H., Daily Totals		\$1411.45		\$2029.56	\$70.57	\$101.48	1 Pickup Truck, 3/4 Ton			110.85	121.94		
Crew R-4	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	1 Crew Truck			166.25	182.88	5.77	6.35
1 Struc. Steel Foreman (outside)	\$59.65	\$477.20	\$93.55	\$748.40	\$58.79	\$91.25	48 L.H., Daily Totals			\$2883.50	\$4209.21	\$60.07	\$87.69
3 Struc. Steel Workers	57.65	1383.60	90.45	2170.80									
1 Electrician	61.35	490.80	91.35	730.80			Crew R-9	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P
1 Welder, Gas Engine, 300 amp		147.00		161.70			1 Electrician Foreman	\$61.85	\$494.80	\$92.10	\$736.80	\$50.71	\$76.24
40 L.H., Daily Totals		\$2498.60		\$3811.70	\$62.47	\$95.29	1 Electrician Lineman	61.35	490.80	91.35	730.80		
Crew R-10	Hr.	Daily	Hr.	Daily	Bare Costs	Incl. O&P	2 Electrician Operators	61.35	981.60	91.35	1461.60		
1 Electrician Foreman	\$61.85	\$494.80	\$92.10	\$736.80			4 Electrician Groundmen	39.95	1278.40	60.95	1950.40		
4 Electrician Linemen	61.35	1963.20	91.35	2923.20			1 Pickup Truck, 3/4 Ton			110.85	121.94		
1 Electrician Groundman	39.95	319.60	60.95	487.60			1 Crew Truck			166.25	182.88	4.33	4.76
1 Crew Truck							3 Tram Cars			216.15	237.76	7.97	8.76
3 Tram Cars							48 L.H., Daily Totals			\$3160.00	\$4568.24	\$65.83	\$95.17

Crews - Standard

Crew No.	Incl. Bare Costs		Cost Subs O&P Per Labor-Hour		Crew No.	Incl. Bare Costs		Cost Subs O&P Per Labor-Hour			
	Hr.	Daily	Hr.	Daily		Bare Costs	Incl. O&P	Hr.	Daily	Bare Costs	Incl. O&P
Crew R-11											
1 Electrician Foreman	\$61.85	\$494.80	\$92.10	\$736.80		\$58.36	\$87.04				
4 Electricians	61.35	1963.20	91.35	2923.20							
1 Equip. Oper. (crane)	59.20	473.60	88.50	708.00							
1 Common Laborer	42.10	336.80	63.25	506.00							
1 Crew Truck						11.38	12.52				
1 Hyd. Crane, 12 Ton	471.00					166.25	182.88				
56 L.H., Daily Totals		\$3905.65				518.10					
						\$5574.98					
						\$69.74	\$99.55				
Crew R-12											
1 Carpenter Foreman (inside)	\$53.65	\$429.20	\$80.60	\$644.80		\$49.91	\$75.30				
4 Carpenters	53.15	1700.80	79.85	2555.20							
4 Common Laborers	42.10	1347.20	63.25	2024.00							
1 Equip. Oper. (medium)	56.75	454.00	84.85	678.80							
1 Steel Worker	57.65	461.20	90.45	723.60							
1 Dozer, 200 H.P.		1504.00				1654.40					
1 Pickup Truck, 3/4 Ton		110.85				121.94					
88 L.H., Daily Totals						18.35	20.19				
						\$8402.74					
						\$68.26	\$95.49				
Crew R-13											
1 Electrician Foreman	\$61.85	\$494.80	\$92.10	\$736.80		\$59.29	\$88.35				
3 Electricians	61.35	1472.40	91.35	2192.40							
.25 Equip. Oper. (crane)	59.20	118.40	88.50	177.00							
1 Equipment Oller	50.55	404.40	75.55	604.40							
.25 Hydraulic Crane, 33 Ton		236.34				259.97					
42 L.H., Daily Totals						5.63	6.19				
						\$3970.57					
						\$64.91	\$94.54				
Crew R-15											
1 Electrician Foreman	\$61.85	\$494.80	\$92.10	\$736.80		\$60.04	\$89.45				
4 Electricians	61.35	1963.20	91.35	2923.20							
1 Equipment Oper. (light)	53.00	424.00	79.20	633.60							
1 Telescoping Boom Lift, to 40'		278.90				306.79					
48 L.H., Daily Totals						5.81	6.39				
						\$4600.39					
						\$65.85	\$95.84				
Crew R-15A											
1 Electrician Foreman	\$61.85	\$494.80	\$92.10	\$736.80		\$53.63	\$80.08				
2 Electricians	61.35	981.60	91.35	1461.60							
2 Common Laborers	42.10	673.60	63.25	1012.00							
1 Equip. Oper. (light)	53.00	424.00	79.20	633.60							
1 Telescoping Boom Lift, to 40'		278.90				306.79					
48 L.H., Daily Totals						5.81	6.39				
						\$4150.79					
						\$59.44	\$86.47				
Crew R-18											
.25 Electrician Foreman	\$61.85	\$123.70	\$92.10	\$184.20		\$53.85	\$80.18				
1 Electrician	61.35	490.80	91.35	730.80							
2 Electrician Apprentices	49.10	785.60	73.10	1169.60							
26 L.H., Daily Totals						\$2084.60					
						\$53.85	\$80.18				
Crew R-19											
.5 Electrician Foreman	\$61.85	\$247.40	\$92.10	\$368.40		\$61.45	\$91.50				
2 Electricians	61.35	981.60	91.35	1461.60							
20 L.H., Daily Totals						\$1830.00					
						\$61.45	\$91.50				
Crew R-21											
1 Electrician Foreman	\$61.85	\$494.80	\$92.10	\$736.80		\$61.36	\$91.37				
3 Electricians	61.35	1472.40	91.35	2192.40							
.1 Equip. Oper. (medium)	56.75	45.40	84.85	67.88							
.1 S.P. Crane, 4x4, 25 Ton		114.40				125.84					
32.8 L.H., Daily Totals						3.49	3.84				
						\$2127.00					
						\$3122.92					
						\$64.85	\$95.21				

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

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, 2020 costs. Since the Jan. 1, 2020 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, 2020 = 100, divide the historical cost index for a particular year by the actual Jan. 1, 2020 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, 2020 = 100		Year	Historical Cost Index Jan. 1, 1993 = 100	Current Index Based on Jan. 1, 2020 = 100		Year	Historical Cost Index Jan. 1, 1993 = 100	Current Index Based on Jan. 1, 2020 = 100	
	Est.	Actual	Est.	Actual		Actual	Est.	Actual		Actual	Est.	Actual
Oct 2020*					July 2005	151.6	63.4		July 1987	87.7	36.7	
July 2020*					2004	143.7	60.1		1986	84.2	35.2	
Apr 2020*					2003	132.0	55.2		1985	82.6	34.6	
Jan 2020*	239.1		100.0	100.0	2002	128.7	53.8		1984	82.0	34.3	
July 2019		232.2	97.1		2001	125.1	52.3		1983	80.2	33.5	
2018		222.9	93.2		2000	120.9	50.6		1982	76.1	31.8	
2017		213.6	89.3		1999	117.6	49.2		1981	70.0	29.3	
2016		207.3	86.7		1998	115.1	48.1		1980	62.9	26.3	
2015		206.2	86.2		1997	112.8	47.2		1979	57.8	24.2	
2014		204.9	85.7		1996	110.2	46.1		1978	53.5	22.4	
2013		201.2	84.1		1995	107.6	45.0		1977	49.5	20.7	
2012		194.6	81.4		1994	104.4	43.7		1976	46.9	19.6	
2011		191.2	80.0		1993	101.7	42.5		1975	44.8	18.7	
2010		183.5	76.7		1992	99.4	41.6		1974	41.4	17.3	
2009		180.1	75.3		1991	96.8	40.5		1973	37.7	15.8	
2008		180.4	75.4		1990	94.3	39.4		1972	34.8	14.6	
2007		169.4	70.8		1989	92.1	38.5		1971	32.1	13.4	
2006	▼	162.0	67.8	▼	1988	89.9	37.6	▼	1970	28.7	12.0	

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:

$$\frac{\text{Index for Year A}}{\text{Index for Year B}} \times \text{Cost in Year B} = \text{Cost in Year A}$$

$$\frac{\text{INDEX 1970}}{\text{INDEX 2020}} \times \text{Cost 2020} = \text{Cost 1970}$$

$$\frac{28.7}{239.1} \times \$900,000 = .120 \times \$900,000 = \$108,000$$

The construction cost of the building in 1970 was \$108,000.

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 2020 with the known cost of \$600,000 (US\$) in New York, NY in 2020:

$$\text{INDEX Toronto} = 115.6$$

$$\text{INDEX New York} = 137.1$$

$$\frac{\text{INDEX Toronto}}{\text{INDEX New York}} \times \text{Cost New York} = \text{Cost Toronto}$$

$$\frac{115.6}{137.1} \times \$600,000 = .843 \times \$600,000 = \$505,908$$

The construction cost of the building in Toronto is \$505,908 (CN\$).

*Historical Cost Index updates and other resources are provided on the following website:
<http://info.thegordiangroup.com/RSMeans.html>

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.

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, 2019. 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. 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.

$$\frac{\text{City Index}}{100} \times \frac{\text{Cost Based on National Average Costs}}{} = \frac{\text{City Cost}}{\text{(Unknown)}}$$

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	Memphis, TN
Baltimore, MD	Milwaukee, WI
Boston, MA	Minneapolis, MN
Buffalo, NY	Nashville, TN
Chicago, IL	New Orleans, LA
Cincinnati, OH	New York, NY
Cleveland, OH	Philadelphia, PA
Columbus, OH	Phoenix, AZ
Dallas, TX	Pittsburgh, PA
Denver, CO	St. Louis, MO
Detroit, MI	San Antonio, TX
Houston, TX	San Diego, CA
Indianapolis, IN	San Francisco, CA
Kansas City, MO	Seattle, WA
Los Angeles, CA	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

City Cost Indexes

DIVISION	UNITED STATES			ALABAMA															
	30 CITY			ANNISTON			BIRMINGHAM			BUTLER			DECATUR			DOOTHAN			
	AVERAGE	362		350 - 352		369		356		363		365		366		367			
015433	CONTRACTOR EQUIPMENT	100.0	100.0	101.9	101.9	104.7	104.7	99.5	99.5	101.9	101.9	99.5	99.5	99.5	99.5	99.5	99.5		
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	100.0	100.0	99.9	89.5	89.9	91.2	94.5	93.5	106.4	84.4	90.9	84.5	88.1	87.1	102.9	84.8	90.4	
0310	Concrete Forming & Accessories	100.0	100.0	100.0	85.6	68.7	71.2	90.6	89.7	72.8	82.3	88.8	70.8	90.9	62.8	66.9	90.8	69.1	
0320	Concrete Reinforcing	100.0	100.0	100.0	88.8	71.2	80.3	94.2	71.3	83.1	93.9	70.5	82.6	88.1	67.7	78.2	93.9	71.3	
0330	Cast-in-Place Concrete	100.0	100.0	100.0	82.3	67.7	76.9	103.8	69.3	80.3	67.8	75.6	101.9	67.2	89.0	88.3	67.7	73.6	
03	CONCRETE	100.0	100.0	100.0	89.2	70.4	81.0	92.2	71.4	83.1	90.8	70.4	87.6	92.0	67.0	81.0	89.5	70.7	
04	MASONRY	100.0	100.0	89.2	63.1	73.2	87.1	64.3	73.1	93.7	63.1	74.9	85.2	62.4	71.2	95.1	62.9	75.5	
05	METALS	100.0	100.0	100.0	101.8	94.8	99.7	100.5	94.2	98.7	100.7	94.8	98.6	102.9	93.1	100.0	100.7	95.4	
06	WOOD, PLASTICS & COMPOSITES	100.0	100.0	100.0	82.0	69.9	75.3	91.0	70.0	79.4	77.1	69.9	73.0	95.7	62.0	77.2	88.1	69.9	
07	THERMAL & MOISTURE PROTECTION	100.0	100.0	100.0	96.0	63.0	81.6	94.0	67.6	82.5	96.1	65.9	82.9	93.1	64.5	80.7	96.0	65.7	
08	OPENINGS	100.0	100.0	100.0	94.7	69.2	88.7	102.6	69.8	94.9	94.7	69.5	88.8	106.3	64.6	97.0	94.7	69.7	
0920	Plaster & Gypsum Board	100.0	100.0	81.8	69.5	73.5	88.9	69.5	75.9	79.3	69.5	72.7	92.7	61.6	71.7	88.7	69.5	75.8	
0950, 0980	Ceilings & Acoustic Treatment	100.0	100.0	77.1	69.5	72.0	84.8	69.5	74.5	77.1	69.5	72.0	83.2	61.6	68.6	77.1	69.5	72.0	
0960	Flooring	100.0	100.0	82.0	69.1	78.3	99.6	69.1	91.0	86.5	69.1	81.6	89.9	69.1	84.1	91.6	69.1	85.3	
0970, 0990	Wall Finishes & Painting/Coating	100.0	100.0	89.1	66.7	75.9	87.0	66.7	75.0	89.1	45.9	63.5	79.4	61.0	68.6	89.1	80.4	84.0	
09	FINISHES	100.0	100.0	100.0	80.4	68.8	74.1	91.2	69.2	73.3	83.6	66.6	74.4	85.3	63.5	73.5	86.5	70.3	
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	100.0	100.0	74.0	94.2	100.0	83.6	96.3	100.0	74.0	94.2	100.0	72.9	94.0	100.0	74.0	94.2	
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.0	100.0	101.0	51.8	81.7	100.0	66.3	86.8	98.1	67.0	85.9	100.0	64.6	86.1	98.1	65.0	85.1	
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	100.0	100.0	100.0	97.7	59.9	79.1	98.4	59.7	79.3	99.8	61.7	81.0	94.5	63.8	79.4	98.6	76.1	
MF2018	WEIGHTED AVERAGE	100.0	100.0	100.0	95.9	67.7	84.0	97.4	71.8	86.6	96.1	70.6	85.3	97.1	69.2	85.3	96.2	72.7	
DIVISION	ALABAMA															MONTGOMERY			
	EVERGREEN			GADSDEN			HUNTSVILLE			JASPER			MOBILE			360 - 361			
	364	359		357 - 358			355			365 - 366			360 - 361			360 - 361			
015433	CONTRACTOR EQUIPMENT	99.5	99.5	101.9	101.9	101.9	101.9	101.9	101.9	101.9	101.9	101.9	99.5	99.5	102.0	102.0	102.0		
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	105.9	84.4	91.0	89.9	89.5	89.6	84.2	89.4	87.8	89.9	89.5	89.6	97.5	85.4	89.2	95.6	89.9	
0310	Concrete Forming & Accessories	79.4	68.6	70.2	83.9	69.1	71.3	90.9	65.9	69.6	88.5	64.7	68.3	89.4	58.4	71.5	92.8	69.4	
0320	Concrete Reinforcing	94.0	70.4	82.6	93.5	71.3	82.8	88.1	76.3	82.4	88.1	71.3	80.0	91.5	70.5	82.3	99.7	71.4	
0330	Cast-in-Place Concrete	80.3	67.6	75.6	101.9	67.8	89.2	99.2	67.8	87.5	113.0	67.8	96.1	84.2	66.9	77.7	81.5	68.7	
03	CONCRETE	90.7	70.2	81.7	95.5	75.7	85.1	90.8	70.1	81.7	100.1	68.7	85.3	85.5	65.9	78.7	84.1	71.7	
04	MASONRY	93.8	62.9	74.8	83.8	63.1	71.1	86.3	63.5	72.2	81.4	63.1	70.2	92.3	61.4	73.3	89.4	63.2	
05	METALS	100.7	94.6	98.9	100.7	95.2	99.1	102.9	96.7	101.0	100.7	95.1	99.0	102.8	94.9	100.5	101.7	94.3	
06	WOOD, PLASTICS & COMPOSITES	73.8	69.9	71.6	86.7	69.9	77.4	95.7	65.3	79.0	93.0	64.1	77.1	86.7	65.9	77.4	90.3	70.3	
07	THERMAL & MOISTURE PROTECTION	96.0	65.4	82.7	93.3	66.3	81.6	93.0	65.9	81.2	93.3	64.4	86.7	95.6	65.4	82.4	94.2	65.9	
08	OPENINGS	94.7	69.3	88.8	103.4	69.7	95.6	106.6	68.5	97.7	109.4	66.6	94.8	97.3	65.9	90.8	96.2	69.8	
0920	Plaster & Gypsum Board	78.3	69.5	72.4	85.1	69.5	74.6	92.7	64.8	73.6	89.5	63.6	72.1	91.5	65.6	74.6	85.9	69.5	
0950, 0980	Ceilings & Acoustic Treatment	77.1	69.5	72.0	69.5	72.7	85.0	64.8	71.4	79.1	63.6	68.6	88.0	63.5	73.9	84.6	69.5	74.4	
0960	Flooring	84.5	69.1	80.1	86.4	69.1	81.5	89.9	69.1	84.1	88.4	69.1	82.9	91.1	69.1	84.9	91.7	69.1	
0970, 0990	Wall Finishes & Painting/Coating	89.1	45.9	63.5	79.4	57.4	66.4	79.4	63.7	70.1	78.4	66.7	73.9	92.3	45.8	64.8	91.1	66.7	
09	FINISHES	82.9	66.5	74.1	82.9	67.8	74.7	85.7	65.9	75.3	84.0	65.4	73.6	86.1	66.2	73.4	88.3	68.9	
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	73.9	94.2	100.0	82.9	96.2	100.0	82.5	96.1	100.0	73.4	94.1	100.0	82.9	96.1	100.0	83.3	
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	98.1	59.8	83.0	102.3	62.3	86.6	100.0	66.9	87.0	102.3	65.7	87.9	100.0	61.4	84.8	100.0	64.3	
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	97.1	56.8	77.2	94.5	59.7	77.4	95.4	65.9	80.8	94.2	59.9	77.3	100.4	56.8	78.9	101.1	76.1	
MF2018	WEIGHTED AVERAGE	96.8	68.3	84.2	97.3	70.2	85.9	97.1	71.7	86.4	97.8	69.5	86.0	96.1	68.7	84.9	96.3	73.1	
DIVISION	ALASKA															JUNEAU			
	PHENIX CITY			SELMA			TUSCALOOSA			ANCHORAGE			FAIRBANKS			JUNEAU			
	368	367		354			995 - 996			997			998			998			
015433	CONTRACTOR EQUIPMENT	99.5	99.5	99.5	99.5	99.5	101.9	101.9	101.9	101.9	101.9	101.9	101.9	101.9	101.9	101.9	101.9	101.9	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	109.8	85.5	93.0	102.7	85.5	90.8	84.8	89.5	88.0	118.4	121.7	120.7	117.8	124.5	115.5	138.6	121.7	125.4
0310	Concrete Forming & Accessories	85.6	67.6	70.2	83.5	69.1	71.2	90.8	69.2	72.4	120.5	116.2	116.8	124.7	118.2	116.4	125.7	116.2	117.6
0320	Concrete Reinforcing	93.9	66.9	80.9	93.9	71.3	83.0	88.1	71.3	80.0	148.4	120.7	135.0	147.2	120.7	134.4	138.9	120.7	130.1
0330	Cast-in-Place Concrete	80.3	67.9	75.7	80.3	67.8	75.6	103.4	67.9	90.3	105.1	97.5	109.1	107.9	115.6	111.9	116.1	117.8	116.6
03	CONCRETE	93.6	69.3	82.9	89.0	70.7	81.0	92.7	70.6	83.1	107.5	116.7	111.6	101.4	115.5	107.6	114.1	116.7	115.2
04	MASONRY	93.7	63.1	74.9	97.4	63.1	76.3	85.4	63.1	71.7	111.5	119.4	119.5	139.5	118.1	112.3	142.3	116.5	136.2
05	METALS	100.6	93.7	98.6	100.6	95.2	99.0	102.1	95.3	100.1	123.7	104.2	120.5	122.6	108.4	117.5	118.1	134.4	110.6
06	WOOD, PLASTICS & COMPOSITES	81.7	67.7	74.0	78.9	69.9	73.9	95.7	69.9	81.5	123.3	116.5	112.9	116.7	119.1	112.9	118.5	117.3	117.3
07	THERMAL & MOISTURE PROTECTION	96.5	66.1	83.2	95.9	65.9	82.8	93.1	66.3	81.4	116.9	116.9	150.8	136.2	118.6	155.6	138.4	116.9	157.3
08	OPENINGS	94.7	67.4	88.3	94.7	69.7	88.8	106.6	69.7	95.0	130.8	115.8	127.3	132.8	114.7	128.6	131.0	115.8	127.5
0920	Plaster & Gypsum Board	83.0	67.3	72.4	81.1	69.5	73.3	92.7	69.5	77.1	144.1	113.8	113.7	117.5	112.9	134.0	158.2	113.8	128.3
0950, 0980	Ceilings & Acoustic Treatment	77.1	67.3	70.5	77.1	69.5	72.0	85.0	69.5	74.5	131.3	118.3	119.5	129.9	116.5	136.1	138.3	121.0	121.5
0960	Flooring	88.4	69.1	83.0	87.0	69.1	81.9	89.9	69.1	84.1	118.3	119.4	118.6	116.7	119.4	125.0	119.4	120.5	
0970, 0990	Wall Finishes & Painting/Coating	89.1	79.0	83.1	89.1	66.7	75.9	79.4	66.7	71.									

City Cost Indexes

DIVISION	ALASKA			ARIZONA			KINGMAN			MESA/TEMPE		
	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
015433 CONTRACTOR EQUIPMENT	112.9	112.9		88.2	88.2		88.2	88.2		89.3	89.3	--
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	169.1	124.6	138.4	71.5	90.1	84.4	91.2	90.1	90.4	109.0	91.0	96.5
0310 Concrete Forming & Accessories	116.3	116.2	116.2	99.2	70.3	74.6	104.6	67.4	72.8	93.5	70.4	73.8
0320 Concrete Reinforcing	110.6	120.7	115.5	105.5	76.9	91.7	105.4	76.9	91.6	110.5	76.9	94.2
0330 Cast-in-Place Concrete	221.8	117.3	182.9	89.8	67.3	81.4	89.8	67.4	81.5	83.3	67.0	77.2
03 CONCRETE	170.9	116.7	147.1	93.4	70.3	83.3	114.1	69.0	94.3	101.9	70.3	88.0
04 MASONRY	188.6	119.4	146.1	96.0	59.4	73.5	96.1	59.4	73.6	101.7	59.3	75.7
05 METALS	122.8	105.4	117.7	103.0	71.6	93.8	103.5	71.7	94.2	105.8	72.5	96.0
06 WOOD, PLASTICS & COMPOSITES	117.1	113.5	115.1	101.8	73.0	85.9	108.2	68.8	86.5	92.7	73.1	89.4
07 THERMAL & MOISTURE PROTECTION	191.6	116.4	158.9	99.9	69.7	86.8	101.8	69.3	87.7	99.1	68.3	85.7
08 OPENINGS	128.6	115.8	125.6	105.8	69.3	97.3	105.9	70.1	97.6	94.9	69.4	88.9
0920 Plaster & Gypsum Board	161.0	113.8	129.2	92.8	72.5	79.1	96.5	68.2	77.5	88.2	72.5	77.6
0950, 0980 Ceilings & Acoustic Treatment	118.4	113.8	115.3	106.8	72.5	83.6	107.6	68.2	81.1	95.5	72.5	80.0
0960 Flooring	116.4	119.4	117.2	89.7	64.5	82.6	92.0	64.5	84.3	98.6	64.5	89.0
0970, 0990 Wall Finishes & Painting/Coating	111.6	119.1	116.0	87.9	58.6	70.5	87.9	58.6	70.5	90.6	58.6	71.6
09 FINISHES	129.2	117.1	122.7	91.3	68.1	78.8	94.5	65.7	78.9	96.6	68.2	81.2
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	114.2	103.2	100.0	81.8	95.9	100.0	81.3	95.8	100.0	82.1	96.0
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	98.1	107.2	101.7	97.7	76.8	89.5	100.3	77.0	91.1	96.6	76.9	88.9
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	124.2	109.4	116.9	102.3	66.5	84.7	101.3	60.7	81.3	97.1	62.9	80.2
MF2018 WEIGHTED AVERAGE	128.4	113.4	122.1	98.3	71.8	87.1	102.4	70.5	88.9	99.5	71.4	87.6
ARIZONA												
DIVISION	PHOENIX			PRESCOTT		SHOW LOW		TUCSON		BATESVILLE		ARKANSAS
	850,853			863		859		856 - 857		725		717
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
	92.5	92.5		88.2	88.2		89.3	89.3		89.3	89.3	
015433 CONTRACTOR EQUIPMENT	92.5	92.5		88.2	88.2		89.3	89.3		89.7	89.7	
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	98.3	94.3	95.6	78.4	90.1	85.6	111.4	91.0	97.3	92.9	91.0	91.6
0310 Concrete Forming & Accessories	101.2	70.8	75.3	100.8	70.3	74.8	100.6	70.5	74.9	97.1	67.5	71.8
0320 Concrete Reinforcing	109.1	76.9	93.6	105.4	76.9	91.6	111.2	76.9	94.6	92.3	76.9	84.9
0330 Cast-in-Place Concrete	83.6	67.8	77.7	89.8	67.3	81.4	83.3	67.0	77.3	86.5	67.0	79.2
03 CONCRETE	95.5	70.8	84.6	99.0	70.3	86.4	104.2	70.3	89.3	91.6	69.0	81.7
04 MASONRY	94.8	62.1	74.7	96.1	59.4	73.6	101.8	59.3	75.7	88.9	59.3	70.7
05 METALS	107.8	73.7	97.8	103.5	71.6	94.2	105.6	72.5	95.9	107.0	72.6	96.9
06 WOOD, PLASTICS & COMPOSITES	102.1	72.0	85.5	103.3	73.0	86.6	101.2	73.1	85.7	96.9	69.0	81.6
07 THERMAL & MOISTURE PROTECTION	100.3	69.6	86.9	100.5	69.7	87.1	99.3	68.3	85.8	99.9	67.9	86.0
08 OPENINGS	100.7	71.4	93.9	105.9	69.3	97.4	94.2	71.1	88.8	91.4	70.2	86.5
0920 Plaster & Gypsum Board	99.4	71.2	80.4	93.3	72.5	79.3	93.5	72.5	79.4	96.3	68.2	77.4
0950, 0980 Ceilings & Acoustic Treatment	106.5	71.2	82.7	106.0	72.5	83.4	95.5	72.5	80.0	96.4	68.2	77.4
0960 Flooring	102.4	64.5	91.7	90.6	64.5	83.2	102.2	64.5	91.6	91.8	64.8	84.3
0970, 0990 Wall Finishes & Painting/Coating	95.3	57.2	72.8	87.9	58.6	70.5	90.6	58.6	71.6	91.3	58.6	71.9
09 FINISHES	101.0	68.1	83.2	92.0	68.1	79.1	98.6	68.2	82.2	94.5	65.9	79.0
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	83.2	96.2	100.0	81.8	95.9	100.0	82.1	96.0	100.0	66.4	92.5
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	100.0	78.5	91.6	100.3	76.8	91.0	96.6	76.9	88.9	100.1	74.8	90.2
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	99.8	60.7	80.5	101.0	62.9	82.2	94.5	62.9	78.9	96.2	60.6	78.7
MF2018 WEIGHTED AVERAGE	100.6	72.3	88.6	99.9	71.3	87.8	99.7	71.5	87.8	97.7	70.2	86.1
ARKANSAS												
DIVISION	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
	89.7	89.7		89.7	89.7		89.7	89.7		112.7	112.7	
015433 CONTRACTOR EQUIPMENT	89.7	89.7		89.7	89.7		89.7	89.7		92.4	92.4	
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	72.5	85.7	81.6	77.7	85.5	83.1	77.7	85.7	83.3	96.7	102.4	100.7
0310 Concrete Forming & Accessories	78.4	61.8	64.3	95.7	61.6	66.7	86.5	61.8	65.4	76.3	61.8	64.0
0320 Concrete Reinforcing	84.4	62.1	73.6	85.4	66.3	76.2	84.0	69.4	76.9	89.3	69.4	73.6
0330 Cast-in-Place Concrete	72.9	74.6	73.5	83.3	75.5	80.4	80.8	74.5	78.5	78.1	74.6	78.0
03 CONCRETE	72.9	67.0	70.3	80.1	68.0	74.8	79.7	68.2	74.6	78.9	68.2	74.2
04 MASONRY	85.0	60.8	70.1	91.6	60.8	72.7	94.3	60.8	73.7	78.6	60.8	67.7
05 METALS	94.7	73.6	88.5	96.9	74.9	90.4	95.8	76.0	90.0	101.1	76.1	93.7
06 WOOD, PLASTICS & COMPOSITES	87.7	64.0	74.7	107.1	64.0	83.4	96.8	64.0	78.7	86.7	64.0	78.3
07 THERMAL & MOISTURE PROTECTION	103.5	61.9	85.4	103.8	61.7	85.5	103.0	61.9	85.1	97.8	61.9	82.2
08 OPENINGS	100.0	59.6	90.6	102.0	60.1	92.3	100.8	61.3	91.6	103.1	61.3	93.3
0920 Plaster & Gypsum Board	73.0	63.5	66.6	79.7	63.5	68.8	78.8	63.5	68.5	83.4	63.5	71.2
0950, 0980 Ceilings & Acoustic Treatment	88.1	63.5	71.5	89.8	63.5	72.0	89.8	63.5	72.0	86.3	63.5	70.9
0960 Flooring	78.9	70.9	76.7	88.3	70.9	83.4	84.1	70.9	80.4	85.1	70.9	81.1
0970, 0990 Wall Finishes & Painting/Coating	92.2	54.5	69.9	92.2	52.1	68.5	92.2	54.5	69.9	88.8	54.5	65.6
09 FINISHES	75.5	62.9	68.7	79.6	62.6	70.4	78.3	62.9	70.0	79.6	62.9	70.6
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	66.1	92.4	100.0	77.7	95.0	100.0	68.5	93.0	100.0	66.2	92.5
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	96.5	60.0	82.2	100.0	48.0	79.6	96.5	49.1	77.8	96.4	51.5	78.8
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	90.0	53.9	72.2	93.1	57.0	75.3	94.2	57.5	76.1	97.7	65.2	81.0
MF2018 WEIGHTED AVERAGE	90.5	64.1	79.3	94.1	62.6	80.8	92.9	62.8	80.2	93.5	64.4	81.2

City Cost Indexes

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	89.7	89.7	89.7	89.7	89.7	90.9	90.9	90.9	112.7	112.7	95.4	95.4	95.4	99.2	99.2	99.2		
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	82.3	85.6	84.6	74.2	85.7	82.2	92.9	87.8	89.3	103.1	102.8	102.9	100.8	105.3	103.9	97.7	105.5	103.1
0310	Concrete Forming & Accessories	76.1	61.9	64.0	83.1	61.7	64.8	81.4	61.5	64.5	90.6	62.2	66.4	114.4	139.5	135.8	102.9	139.7	134.3
0320	Concrete Reinforcing	90.9	69.4	80.5	84.9	69.4	77.4	90.5	69.3	80.2	81.5	63.3	72.7	105.0	133.6	118.9	95.2	133.5	113.8
0330	Cast-in-Place Concrete	78.1	74.6	76.8	76.3	74.5	75.6	85.2	74.4	81.2	83.2	75.9	80.5	83.3	127.8	99.9	86.7	131.0	103.2
03	CONCRETE	79.7	68.3	74.7	76.0	68.1	72.6	77.8	68.1	73.5	83.8	68.8	77.2	94.2	133.1	111.3	96.2	134.3	112.9
04	MASONRY	110.7	60.8	80.0	90.9	60.8	72.4	92.6	60.8	73.0	75.3	60.8	66.4	106.9	139.4	126.9	78.2	138.0	115.0
05	METALS	101.9	76.1	94.3	94.7	75.9	89.1	93.8	75.8	88.5	90.4	89.1	90.0	79.9	113.2	89.7	107.7	114.2	109.6
06	WOOD, PLASTICS & COMPOSITES	86.4	64.0	74.1	92.3	64.0	76.8	93.4	64.0	77.2	100.7	64.4	80.7	99.3	138.0	120.6	97.5	138.3	119.9
07	THERMAL & MOISTURE PROTECTION	97.9	62.0	82.3	103.7	61.9	85.5	98.5	61.9	82.6	108.9	61.9	88.4	104.2	131.8	116.2	108.9	134.9	120.2
08	OPENINGS	104.3	60.8	94.1	100.0	61.3	91.0	109.2	61.3	98.0	103.2	60.1	93.1	87.8	137.4	99.4	103.9	137.6	111.8
0920	Plaster & Gypsum Board	83.1	63.5	69.9	73.7	63.5	66.8	85.7	63.5	70.7	89.2	63.5	71.9	94.5	139.3	124.6	112.7	139.3	130.6
0950, 0980	Ceilings & Acoustic Treatment	86.3	63.5	70.9	88.1	63.5	71.5	89.6	63.5	72.0	90.2	63.5	72.2	111.0	139.3	130.1	109.3	139.3	129.5
0960	Flooring	84.9	70.9	80.9	81.3	70.9	78.4	86.9	43.4	74.7	61.6	70.9	64.2	104.8	121.1	109.4	99.2	121.1	105.3
0970, 0990	Wall Finishes & Painting/Coating	88.8	52.1	67.1	92.2	54.5	69.9	88.8	54.5	68.5	81.7	54.5	65.6	103.9	120.3	113.6	92.6	120.3	109.0
09	FINISHES	79.6	62.6	70.4	76.4	62.9	69.1	81.7	57.2	68.4	75.9	63.2	69.0	101.8	134.1	119.3	99.4	134.2	118.3
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	77.7	95.0	100.0	66.5	92.5	100.0	66.1	92.5	100.0	67.0	92.6	100.0	119.6	104.4	100.0	120.2	104.5
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.0	51.4	80.9	96.5	50.9	78.6	100.0	54.5	82.1	96.8	64.6	84.2	96.5	130.9	110.0	99.9	130.9	112.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	95.9	57.5	77.0	93.1	57.5	75.6	97.6	57.5	77.9	100.5	65.3	83.1	121.0	129.2	125.0	91.5	113.3	102.2
MF2018	WEIGHTED AVERAGE	96.0	63.6	82.3	91.7	63.1	79.6	94.8	63.3	81.5	93.3	69.8	83.3	96.7	128.6	110.2	99.3	126.6	110.9
DIVISION	CALIFORNIA												LONG BEACH						
	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	98.7	98.7	100.2	100.2	97.1	97.1	97.3	97.3	97.3	97.3	97.3	96.9	96.9	96.9	96.9	96.9	96.9	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	96.1	106.8	103.5	109.8	106.0	107.2	109.0	102.7	104.7	98.9	103.2	101.8	87.7	102.0	97.6	94.7	102.0	99.7
0310	Concrete Forming & Accessories	105.8	139.2	134.3	113.0	168.1	160.0	111.2	154.1	147.8	102.9	153.3	145.8	107.3	139.9	135.1	102.0	139.9	134.3
0320	Concrete Reinforcing	99.8	133.4	116.0	90.7	135.2	112.2	103.7	136.6	119.6	83.3	134.2	107.9	99.8	133.7	116.2	99.0	133.7	115.8
0330	Cast-in-Place Concrete	88.1	130.2	103.8	110.4	133.5	119.0	94.1	129.6	107.3	95.5	129.2	108.0	81.5	130.2	99.6	92.7	130.2	106.7
03	CONCRETE	91.7	133.7	110.2	105.1	148.2	124.0	106.8	140.8	121.7	95.5	139.9	115.0	90.9	134.2	109.9	100.5	134.2	115.3
04	MASONRY	92.1	137.5	120.0	122.7	154.9	142.5	103.3	153.4	134.1	96.9	145.0	126.5	73.1	139.5	113.9	81.7	139.5	117.2
05	METALS	102.5	112.5	105.4	109.9	116.5	111.9	107.4	116.1	109.9	102.8	115.2	106.4	88.0	114.8	95.9	87.9	114.8	95.8
06	WOOD, PLASTICS & COMPOSITES	96.9	138.3	119.7	104.3	173.4	142.3	111.2	157.3	136.6	101.2	157.3	132.1	99.0	138.4	120.7	92.5	138.4	117.8
07	THERMAL & MOISTURE PROTECTION	108.5	124.3	115.4	112.2	155.7	131.2	112.6	151.2	129.4	98.9	132.9	113.7	107.2	133.4	118.6	107.5	133.4	118.8
08	OPENINGS	92.6	134.3	102.3	91.0	161.7	107.5	103.2	143.2	112.5	94.7	145.1	106.5	87.6	137.6	99.2	87.5	137.6	99.2
0920	Plaster & Gypsum Board	94.4	139.3	124.6	113.4	175.0	154.8	117.4	158.8	145.2	90.9	158.8	136.6	100.3	139.3	126.5	96.2	139.3	125.2
0950, 0980	Ceilings & Acoustic Treatment	100.7	139.3	126.8	101.2	175.0	151.0	113.3	158.8	144.0	98.1	158.8	139.0	114.0	139.3	131.1	114.0	139.3	131.1
0960	Flooring	102.2	121.1	107.5	124.0	143.3	129.4	103.2	143.3	114.4	100.4	121.5	106.3	114.7	121.1	116.5	111.5	121.1	114.2
0970, 0990	Wall Finishes & Painting/Coating	92.5	108.6	102.0	111.6	171.3	146.9	94.1	138.6	120.4	101.3	120.7	112.8	115.1	120.3	118.2	115.1	120.3	118.2
09	FINISHES	96.4	133.0	116.2	110.1	165.4	140.0	104.6	152.0	130.3	94.6	146.3	122.6	108.2	134.3	122.4	107.2	134.3	121.9
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	117.7	103.9	100.0	134.0	107.6	100.0	130.8	106.9	100.0	130.8	106.9	100.0	120.5	104.6	100.0	120.5	104.6
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.1	128.8	111.4	96.7	169.6	125.3	96.4	130.6	109.9	100.1	130.1	111.9	96.1	131.0	109.8	96.1	131.0	109.8
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	107.6	108.1	107.8	99.9	161.8	130.4	98.4	124.9	111.5	97.0	107.4	102.2	98.5	129.2	113.6	98.3	129.2	113.5
MF2018	WEIGHTED AVERAGE	98.9	124.6	109.8	103.0	151.9	123.7	102.5	134.1	115.9	98.5	129.4	111.5	93.8	128.8	108.6	95.4	128.8	109.5
DIVISION	CALIFORNIA												OXNARD						
	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	103.3	103.3	97.1	97.1	97.1	97.3	97.3	97.3	102.0	100.2	100.2	102.0	106.0	108.8	99.2	101.6	100.8	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	93.7	109.2	104.4	105.6	102.6	103.5	100.6	102.6	102.0	91.9	103.4	99.8	115.2	106.0	108.8	99.2	101.6	100.8
0310	Concrete Forming & Accessories	105.4	140.1	135.0	101.6	153.6	145.9	98.1	153.7	145.5	113.6	139.3	135.5	102.3	168.2	158.4	105.5	139.8	134.7
0320	Concrete Reinforcing	100.7	133.7	116.6	103.7	134.1	118.4	107.4	134.1	120.3	100.4	133.4	116.4	92.8	136.9	114.1	98.6	133.5	115.5
0330	Cast-in-Place Concrete	84.1	131.4	101.7	105.2	129.2	114.1	94.2	129.3	107.2	82.6	130.1	100.2	104.8	133.5	115.4	96.1	130.4	108.9
03	CONCRETE	98.3	134.7	114.3	107.1	140.0	121.6	98.2	140.1	116.6	87.4	133.8	107.8	106.3	148.5	124.8	95.5	134.1	112.5
04	MASONRY	88.6	139.5	119.0	104.2	142.9	128.0	101.5	142.9	126.9	94.9	137.4	121.0	131.5	154.9	145.9	97.9	136.8	121.8
05	METALS	94.3	115.0	100.4	106.9	114.7	109.2	103.6	114.8	106.9	100.0	113.4	104.0	105.2	117.2	108.7	98.0	113.9	102.7
06	WOOD, PLASTICS & COMPOSITES	105.6	138.6	123.7	98.3	157.3	130.8	93.9	157.3	128.8	100.8	138.4	121.5	92.8	173.4	137.2	95.6	138.4	119.1
07	THERMAL & MOISTURE PROTECTION	103.4	133.9	116.7	112.0	138.9	123.7	111.6	139.5	123.7	105.6	123.7	113.5	110.8	155.7	130.4	108.6	133.3	119.3
08	OPENINGS	98.1	136.9	107.2	102.5	145.6	112.6	101.3	147.4	112.1	89.8								

City Cost Indexes

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	98.1	98.1		100.2	100.2		95.4	95.4		97.1	97.1		-	100.2	100.2	98.1	98.1	
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	89.3	103.6	99.2	106.1	106.0	106.0	97.5	105.3	102.9	122.2	102.6	108.7	114.3	106.0	108.5	96.2	103.6	101.3
0310 Concrete Forming & Accessories	99.8	136.1	130.7	100.5	168.2	158.2	103.4	139.6	134.2	105.0	153.6	146.5	115.5	167.8	160.1	103.5	139.7	134.4
0320 Concrete Reinforcing	109.0	133.5	120.9	90.7	136.7	113.0	106.0	133.6	119.3	137.8	134.1	136.0	90.7	136.7	112.9	105.9	133.5	119.3
0330 Cast-in-Place Concrete	82.7	131.0	100.6	93.4	133.5	108.4	79.1	127.8	97.2	107.2	129.3	115.4	107.4	133.3	117.1	89.9	131.0	105.2
03 CONCRETE	90.5	132.7	109.0	95.3	148.5	118.7	89.9	133.1	108.9	114.0	140.1	125.4	108.0	148.2	125.7	96.4	134.3	113.1
04 MASONRY	76.5	137.7	114.1	105.1	151.5	133.6	93.3	139.4	121.6	131.9	142.9	138.7	122.5	151.5	140.3	77.5	137.7	114.5
05 METALS	108.3	114.1	110.0	102.7	116.9	106.9	80.0	113.2	89.7	103.9	114.7	107.1	102.8	116.6	106.8	107.7	114.2	109.6
06 WOOD, PLASTICS & COMPOSITES	92.1	133.5	114.9	90.4	173.4	136.1	85.4	138.0	114.4	107.8	157.3	135.0	107.5	173.4	143.8	97.5	138.3	119.9
07 THERMAL & MOISTURE PROTECTION	108.1	134.3	119.5	110.0	155.0	129.6	103.8	131.8	116.0	128.2	138.9	132.9	110.6	154.8	129.8	109.0	134.8	120.2
08 OPENINGS	99.9	134.9	108.1	91.1	160.2	107.2	87.8	137.4	99.4	115.9	145.6	122.8	91.1	160.2	107.2	102.6	137.6	110.8
0920 Plaster & Gypsum Board	107.2	134.4	125.5	106.0	175.0	152.4	88.8	139.3	122.8	112.6	158.8	143.7	114.5	175.0	155.2	111.9	139.3	130.4
0950, 0980 Ceilings & Acoustic Treatment	106.0	134.4	125.1	102.0	175.0	151.2	111.0	139.3	130.1	148.8	158.8	155.5	102.0	175.0	151.2	114.2	139.3	131.1
0960 Flooring	101.5	121.1	107.0	115.6	143.3	123.4	98.5	121.1	104.9	87.8	128.6	99.3	126.5	143.3	131.3	102.9	121.1	108.0
0970, 0990 Wall Finishes & Painting/Coating	91.1	120.3	108.4	111.6	171.3	146.9	103.9	120.3	113.6	105.2	134.1	122.3	111.6	171.3	146.9	91.1	120.3	108.4
09 FINISHES	98.0	131.4	116.1	106.5	165.4	138.4	99.0	134.1	118.0	107.2	149.0	129.8	111.6	165.4	140.7	101.0	134.2	119.0
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	119.6	104.4	100.0	134.0	107.6	100.0	119.6	104.4	100.0	130.8	106.9	100.0	133.8	107.5	100.0	119.3	104.3
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	96.4	130.9	109.9	96.7	170.6	125.7	96.5	130.9	110.0	100.3	130.1	112.0	96.7	164.0	123.1	99.9	130.9	112.1
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	94.6	110.8	102.6	99.0	176.6	137.2	117.5	129.2	123.2	101.3	120.8	110.9	99.6	133.2	116.2	91.3	114.4	102.7
MF2018 WEIGHTED AVERAGE	97.4	125.3	109.2	99.2	153.8	122.3	94.8	128.6	109.1	107.6	131.5	117.7	102.4	146.2	120.9	99.3	126.6	110.8
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	99.0	99.0		97.3	97.3		98.1	98.1		102.2	102.2		109.8	109.8		98.7	98.7	
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	95.6	111.3	106.4	112.3	103.2	106.0	76.1	103.6	95.1	105.7	107.8	107.2	116.4	113.1	114.1	131.6	97.9	108.3
0310 Concrete Forming & Accessories	100.5	156.0	147.8	108.9	156.6	149.6	107.1	139.7	134.9	103.8	129.1	125.4	106.1	168.3	159.1	103.9	167.9	158.5
0320 Concrete Reinforcing	86.0	134.4	109.4	99.1	134.6	116.3	105.9	133.5	119.3	102.6	133.4	117.5	105.6	132.1	118.4	94.7	135.0	114.2
0330 Cast-in-Place Concrete	88.6	130.2	104.1	95.0	129.6	107.8	62.1	131.0	87.8	90.5	124.5	103.2	116.9	133.3	123.0	109.4	132.4	118.0
03 CONCRETE	97.9	141.1	116.9	105.8	141.6	121.5	71.1	134.3	98.9	100.2	127.3	112.1	117.8	148.1	131.1	103.9	148.1	123.3
04 MASONRY	106.1	145.9	130.6	95.1	148.4	127.9	83.6	137.7	116.8	86.2	133.4	115.2	104.9	154.6	149.3	131.5	151.5	143.8
05 METALS	100.8	109.8	103.4	102.7	115.8	106.5	107.7	114.2	109.6	94.8	114.1	100.5	110.7	122.4	114.2	101.8	121.6	107.6
06 WOOD, PLASTICS & COMPOSITES	87.1	160.2	127.3	100.6	160.2	133.4	101.2	138.3	121.6	95.0	126.1	112.1	95.1	173.4	138.2	106.0	173.2	143.0
07 THERMAL & MOISTURE PROTECTION	122.2	142.5	131.0	106.2	145.4	123.3	107.1	134.8	119.2	108.2	121.5	114.0	116.5	155.7	133.5	108.0	155.1	128.5
08 OPENINGS	103.9	149.0	114.4	93.5	154.4	107.7	100.0	137.6	108.7	99.8	127.8	106.3	99.5	159.0	113.3	92.6	161.5	108.7
0920 Plaster & Gypsum Board	103.4	161.5	142.5	95.4	161.8	140.1	113.3	139.3	130.8	94.4	126.7	116.1	105.8	175.0	152.4	108.3	175.0	153.2
0950, 0980 Ceilings & Acoustic Treatment	102.0	161.5	142.1	99.4	161.8	141.5	109.3	139.3	129.5	121.1	126.7	124.8	111.7	175.0	154.4	109.3	175.0	153.6
0960 Flooring	115.8	128.6	119.4	95.9	143.3	109.2	105.0	121.1	109.5	108.9	121.1	112.3	117.5	143.3	124.7	92.4	143.3	106.7
0970, 0990 Wall Finishes & Painting/Coating	107.9	134.1	123.4	88.1	171.3	137.3	91.1	120.3	108.4	101.5	118.0	111.2	109.6	174.8	148.2	94.4	171.3	139.9
09 FINISHES	105.3	150.7	129.9	94.6	157.3	128.5	99.4	134.2	118.3	106.6	126.1	117.2	109.9	165.8	140.1	99.9	165.2	135.3
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	131.7	107.1	100.0	131.2	107.0	100.0	117.7	103.9	100.0	115.7	103.5	100.0	128.4	106.3	100.0	133.4	107.5
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	100.1	131.4	112.4	96.5	137.6	112.7	96.4	130.9	110.0	100.0	129.4	111.5	100.1	182.8	132.6	99.9	170.5	127.7
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	94.8	120.8	107.6	96.5	132.1	114.0	94.6	112.6	103.5	103.8	104.3	104.0	99.2	182.8	140.4	100.7	176.6	138.1
MF2018 WEIGHTED AVERAGE	100.8	133.0	114.4	99.1	137.2	115.2	95.0	126.3	108.2	99.7	121.7	109.0	107.4	158.4	129.0	102.6	153.5	124.2
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	97.3	97.3		100.2	100.2		99.4	99.4		98.1	98.1		97.3	97.3		98.7	98.7	
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	104.4	103.4	103.7	112.1	106.0	107.9	107.6	112.0	110.1	87.8	103.6	98.7	99.1	103.4	102.1	131.3	97.7	108.1
0310 Concrete Forming & Accessories	115.3	139.7	136.1	106.3	168.2	159.0	111.5	167.8	159.5	107.4	139.7	134.9	106.1	139.7	134.8	103.9	156.9	149.0
0320 Concrete Reinforcing	100.4	133.4	116.4	90.7	136.9	113.0	91.3	135.1	112.5	109.6	133.5	121.2	98.6	133.4	115.4	117.1	134.6	125.6
0330 Cast-in-Place Concrete	102.1	130.2	112.6	104.0	133.5	115.0	121.1	132.3	125.2	79.3	131.0	98.6	95.8	130.2	108.6	108.7	131.4	117.1
03 CONCRETE	103.3	134.0	116.8	104.6	148.5	123.9	128.2	147.4	136.6	88.0	134.3	108.3	95.4	134.0	112.4	106.4	142.6	122.3
04 MASONRY	96.5	135.9	120.7	122.2	154.6	142.1	99.1	154.6	133.2	73.4	138.0	113.1	95.2	135.9	120.2	135.3	148.6	143.4
05 METALS	100.7	113.8	104.6	102.6	117.1	106.9	103.7	112.4	106.3	107.8	114.2	109.7	98.5	113.8	103.0	109.3	120.2	112.5
06 WOOD, PLASTICS & COMPOSITES	103.0	138.4	122.4	97.9	173.4	139.5	95.0	173.2	138.0	103.0	138.3	122.4	95.6	138.4	119.1	106.0	160.4	135.9
07 THERMAL & MOISTURE PROTECTION	106.4	132.6	117.8	110.4	156.4	130.4	115.0	155.4	132.5	108.4	134.9	119.9	105.8	132.6	117.5	107.6	147.9	125.1
08 OPENINGS	91.7	134.3	1															

City Cost Indexes

DIVISION	CALIFORNIA												COLORADO			
	SANTA ROSA			STOCKTON			SUSANVILLE			VALLEJO			VAN NUYS			
	954	952	961	945	913 - 916	811										
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	
015433	CONTRACTOR EQUIPMENT		97.6	97.6		97.1	97.1		97.1	97.1		99.4	99.4		95.4	95.4
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	101.4	102.6	102.2	100.3	102.6	101.9	129.5	102.6	110.9	96.3	111.1	106.5	115.7	105.3	108.5
0310	Concrete Forming & Accessories	100.7	167.1	157.3	101.9	155.5	147.6	106.2	153.9	146.8	102.3	166.8	157.3	109.8	139.5	135.2
0320	Concrete Reinforcing	104.6	135.1	119.3	107.4	134.1	120.3	137.8	134.1	136.0	92.5	135.0	113.0	106.0	133.6	119.3
0330	Cast-in-Place Concrete	103.3	130.8	113.5	91.7	129.2	105.7	97.5	129.3	109.3	96.4	131.4	109.5	83.4	127.8	99.9
03	CONCRETE	107.1	146.9	124.6	97.3	140.9	116.5	117.0	140.2	127.2	102.4	146.6	121.8	104.4	133.1	117.0
04	MASONRY	101.8	153.5	133.6	101.4	142.9	126.9	130.4	142.9	138.1	77.4	153.5	124.1	106.9	139.4	126.9
05	METALS	108.1	117.7	110.9	103.9	114.7	107.0	102.9	114.7	106.4	103.7	111.7	106.0	79.2	113.2	89.2
06	WOOD, PLASTICS & COMPOSITES	93.6	173.0	137.3	99.5	159.9	132.8	109.6	157.6	136.0	84.8	173.2	133.4	94.1	138.0	118.3
07	THERMAL & MOISTURE PROTECTION	108.9	154.1	128.6	112.1	138.8	123.7	130.2	138.9	134.0	113.1	154.1	130.9	105.0	131.8	116.6
08	OPENINGS	100.8	161.4	114.9	101.3	147.0	112.0	116.8	145.8	123.6	103.2	159.7	116.3	87.7	137.4	99.3
0920	Plaster & Gypsum Board	109.2	175.0	153.5	112.7	161.5	145.5	113.1	159.1	144.1	107.5	175.0	152.9	92.8	139.3	124.1
0950, 0980	Ceilings & Acoustic Treatment	109.3	175.0	153.6	117.5	161.5	147.1	139.9	159.1	152.9	111.1	175.0	154.2	107.8	139.3	129.1
0960	Flooring	102.1	136.5	111.7	99.2	133.0	108.7	88.3	128.6	99.6	126.0	143.3	130.9	101.9	121.1	107.3
0970, 0990	Wall Finishes & Painting/Coating	91.1	165.5	135.2	94.1	134.1	117.8	105.2	134.1	122.3	108.7	165.5	142.3	103.9	129.2	113.6
09	FINISHES	100.0	163.0	134.1	102.6	151.3	129.0	106.7	149.2	129.7	108.4	164.4	138.7	101.2	134.1	119.0
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	132.4	107.2	100.0	128.0	106.2	100.0	130.9	106.9	100.0	132.9	107.3	100.0	119.6	104.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.4	182.2	130.1	99.9	131.7	112.4	96.8	130.1	109.9	100.2	147.2	118.7	96.5	130.9	110.0
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	94.9	124.9	109.7	97.5	114.3	105.8	101.7	120.8	111.1	92.4	127.5	109.7	117.5	129.2	96.3
MF2018	WEIGHTED AVERAGE	101.2	148.4	121.2	100.7	131.3	113.7	107.3	131.6	117.5	100.2	141.6	117.7	97.8	128.6	110.8
DIVISION	COLORADO												FORT COLLINS			
	BOULDER			COLORADO SPRINGS			DENVER			DURANGO			FORT COLLINS			
	803	808 - 809	800 - 802	803	808 - 809	800 - 802	801	803	802	804	805	807	805	806	807	
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	
015433	CONTRACTOR EQUIPMENT	92.2	92.2	90.2	90.2	90.2	99.6	99.6	99.6	90.2	90.2	90.2	92.2	92.2	92.2	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	97.1	91.4	93.2	99.2	86.7	90.6	104.1	102.5	103.0	134.3	84.4	99.9	109.6	91.2	96.9
0310	Concrete Forming & Accessories	107.0	77.4	81.8	97.3	63.5	68.5	106.1	66.4	72.2	109.9	65.7	72.2	104.5	65.8	71.5
0320	Concrete Reinforcing	108.7	68.1	89.0	107.9	67.9	88.6	107.9	70.1	89.6	114.0	67.9	91.7	108.8	68.0	89.2
0330	Cast-in-Place Concrete	113.8	73.9	98.9	116.8	73.4	100.7	121.8	73.6	103.9	115.1	73.1	99.5	128.5	72.5	107.6
03	CONCRETE	105.2	74.9	91.9	108.7	68.4	91.0	111.4	70.2	93.3	114.2	69.3	94.5	116.3	69.2	95.6
04	MASONRY	101.6	65.4	79.4	103.7	62.3	78.3	104.9	64.1	79.9	117.5	60.6	82.5	118.9	63.1	84.6
05	METALS	94.4	77.9	89.6	97.5	77.7	91.7	99.9	79.0	93.8	105.2	78.4	97.3	95.7	77.7	90.4
06	WOOD, PLASTICS & COMPOSITES	107.1	81.4	93.0	96.6	63.6	78.5	108.4	67.1	85.7	108.4	67.4	85.8	104.6	67.0	87.0
07	THERMAL & MOISTURE PROTECTION	108.7	73.2	93.2	109.4	69.7	92.1	107.1	71.7	91.7	111.9	67.5	92.6	109.0	70.6	92.3
08	OPENINGS	95.4	76.2	90.9	99.5	66.4	91.8	102.5	68.8	94.6	103.1	68.5	95.0	95.3	68.3	89.0
0920	Plaster & Gypsum Board	116.3	81.3	92.8	100.3	62.9	75.2	111.7	66.6	81.4	95.3	66.5	75.9	110.3	66.6	80.9
0950, 0980	Ceilings & Acoustic Treatment	91.9	81.3	84.8	100.0	62.9	75.0	104.4	66.6	78.9	102.7	66.5	78.3	91.9	66.6	74.8
0960	Flooring	111.2	76.7	101.5	102.2	69.0	92.9	108.4	76.7	99.5	113.1	69.0	100.7	107.3	76.7	98.7
0970, 0990	Wall Finishes & Painting/Coating	97.1	76.9	85.1	96.8	76.9	85.0	103.4	76.9	87.7	101.7	76.9	87.0	97.1	76.9	85.1
09	FINISHES	100.6	77.7	88.2	97.4	65.3	80.0	102.5	68.9	84.3	102.4	67.4	83.5	99.2	68.6	82.6
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	84.5	96.5	100.0	82.2	96.0	100.0	86.3	96.9	100.0	82.9	96.2	100.0	82.1	96.0
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.5	74.8	87.9	100.1	72.2	89.1	99.9	73.8	89.7	96.5	58.7	81.6	100.0	71.7	88.9
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	99.6	80.6	90.3	103.2	73.1	88.4	105.0	80.4	92.9	95.8	50.3	73.4	99.6	80.6	90.2
MF2018	WEIGHTED AVERAGE	98.7	77.0	89.6	101.2	71.5	88.6	103.0	75.4	91.3	103.9	65.6	87.8	102.2	73.5	90.1
DIVISION	COLORADO												PUEBLO			
	GLENWOOD SPRINGS			GOLDEN			GRAND JUNCTION			GREELEY			MONTROSE			
	816	804	815	816	804	805	815	806	807	814	810	811	814	810	811	
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	
015433	CONTRACTOR EQUIPMENT	93.3	93.3	92.2	92.2	92.2	93.3	93.3	93.3	92.2	92.2	92.2	91.7	91.7	90.2	90.2
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	150.9	91.9	110.2	110.4	91.4	97.3	133.7	92.1	105.0	95.9	91.2	92.7	144.0	87.9	105.3
0310	Concrete Forming & Accessories	100.6	65.5	70.7	99.7	66.7	71.5	108.7	66.6	72.8	102.4	68.5	71.2	100.1	65.5	70.6
0320	Concrete Reinforcing	112.8	68.0	91.2	108.9	68.0	89.2	113.2	67.8	91.2	108.7	68.0	89.0	112.7	67.8	91.0
0330	Cast-in-Place Concrete	100.1	72.1	89.6	111.7	73.9	97.6	110.8	73.5	96.9	107.3	72.5	94.3	100.1	72.6	89.8
03	CONCRETE	118.0	68.9	96.4	114.1	70.0	94.7	110.7	69.9	92.8	100.3	69.1	86.6	108.5	69.0	91.1
04	MASONRY	103.1	63.0	78.5	119.7	65.4	86.3	137.8	61.9	91.2	111.9	62.7	81.7	110.0	59.6	79.0
05	METALS	104.8	78.2	97.0	94.3	77.8	89.5	106.5	78.2	98.2	95.7	77.7	90.4	103.9	78.1	96.3
06	WOOD, PLASTICS & COMPOSITES	93.6	67.1	79.0	98.9	67.0	81.3	106.1	67.2	84.7	101.7	67.0	82.6	94.6	67.2	79.6
07	THERMAL & MOISTURE PROTECTION	111.8	68.2	92.8	109.8	71.6	93.2	110.9	69.3	92.8	108.2	70.4	91.8	112.0	67.2	92.5
08	OPENINGS	102.1	68.3	94.2	95.4	68.2	89.0	102.8	68.4	94.7	95.3	68.3	89.0	103.2	68.4	95.1
0920	Plaster & Gypsum Board	121.2	66.5	84.4	107.5	66.5	79.9	135.4	66.6	89.1	108.7	66.6	80.4	79.9	66.5	70.9
0950, 0980	Ceilings & Acoustic Treatment	101.9	66.5	78.0	91.9	66.5	74.8	101.9	66.6	78.1	91.9	66.6	74.8	102.7	66.5	78.3
0960	Flooring	106.9	76.7	98.4	104.9	76.7	97.0	112.4	70.1	100.5	106.2	73.1	96.9	110.4	73.1	100.0
0970, 0990	Wall Finishes & Painting/Coating	101.7	76.9	87.0	97.1	76.9	85.1	101.7	76.9	87.0	97.1	76.9	85.1	101.7	76.9	87.0
09	FINISHES	105.2	68.7	85.4	98.9	69.1	82.8	106.8	67.9	85.8	97.9	67.9	81.6	100.5	68.0	82.9
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	82.3	96.1	100.0	82.9	96.2	100.0	83.1	96.2	100.0	82.6	96.1	100.0	82.9	96.2
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.5	58.7	81.6	96.5	74.8	87.9	100.0	74.8	90.1	100.0	71.7	88.9	96.5	58.7	81.6
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	93.4	52.3	73.1	100.0	80.6	90.4	95.5	54.6	75.3	99.6	80.6	90.2	95.5	50.3	73.2
MF2018	WEIGHTED AVERAGE	103.9	66.8	88.2	100.9	74.7	89.8	106.7	70.5	90.8	99.3	73.4	88.4	102.6	65.8	87.1

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City Cost Indexes

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	91.7	91.7	95.7	95.7	95.7	95.7	99.0	99.0	-	96.1	96.1	95.7	95.7	95.7	95.7	95.7	95.7		
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	134.0	88.2	102.4	106.1	97.8	100.3	105.1	97.7	100.0	101.6	102.4	102.2	102.8	98.5	99.8	105.3	97.7	100.1	
0310	Concrete Forming & Accessories	108.6	65.9	72.2	103.4	116.7	114.7	103.4	116.6	114.6	103.5	116.8	114.8	103.1	116.6	114.6	103.9	116.6	114.7	
0320	Concrete Reinforcing	112.4	67.9	90.9	116.3	144.5	130.0	116.3	144.5	130.0	111.6	144.6	127.5	116.3	144.5	130.0	116.3	144.5	130.0	
0330	Cast-in-Place Concrete	114.7	72.8	99.1	108.5	127.5	115.6	101.6	127.5	111.2	106.5	128.5	114.7	97.8	127.5	108.8	103.3	127.5	112.3	
03	CONCRETE	109.1	69.3	91.6	104.1	124.5	113.0	100.9	124.4	111.2	101.1	124.8	111.5	99.1	124.4	110.2	101.7	124.4	111.7	
04	MASONRY	138.6	60.6	90.7	109.4	130.9	122.6	100.8	130.9	119.3	100.5	131.0	119.2	100.4	130.9	119.2	102.5	130.9	120.0	
05	METALS	103.6	78.6	96.2	98.1	116.6	103.5	98.1	116.5	103.5	103.1	116.0	106.9	95.4	116.5	101.6	94.5	116.5	100.9	
06	WOOD, PLASTICS & COMPOSITES	102.4	67.2	83.0	105.0	114.2	110.1	105.0	114.2	110.1	96.2	114.4	106.2	105.0	114.2	110.1	105.0	114.2	110.1	
07	THERMAL & MOISTURE PROTECTION	110.8	67.5	92.0	97.9	123.5	110.0	99.8	120.6	108.9	104.4	121.1	111.7	99.8	120.6	108.9	99.8	120.7	108.9	
08	OPENINGS	96.3	68.4	89.8	96.4	120.6	102.0	96.4	120.6	102.0	98.1	120.7	103.4	98.5	120.6	103.7	96.4	120.6	102.0	
0920	Plaster & Gypsum Board	80.2	66.5	71.0	115.7	114.3	114.8	115.7	114.3	114.8	102.5	114.3	110.5	117.3	114.3	115.3	115.7	114.3	114.8	
0950, 0980	Ceilings & Acoustic Treatment	102.7	66.5	78.3	102.0	114.3	110.3	102.0	114.3	110.3	98.8	114.3	109.3	107.5	114.3	112.1	102.0	114.3	110.3	
0960	Flooring	115.9	69.9	103.0	92.6	127.0	102.3	92.6	124.5	101.6	96.9	127.0	105.4	92.6	124.5	101.6	92.6	124.5	101.6	
0970, 0990	Wall Finishes & Painting/Coating	101.7	76.9	87.0	92.0	125.5	111.8	92.0	129.1	113.9	98.1	129.1	116.4	92.0	129.1	113.9	92.0	129.1	113.9	
09	FINISHES	101.1	67.4	82.8	94.7	118.9	107.8	94.7	118.8	107.8	96.2	119.4	108.8	96.0	118.8	108.4	94.7	118.8	107.8	
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	82.7	96.1	100.0	113.9	103.1	100.0	113.9	103.1	100.0	114.4	103.2	100.0	114.0	103.1	100.0	113.9	103.1	
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.5	73.6	87.5	100.1	118.6	107.4	100.1	118.6	107.4	100.0	118.6	107.3	96.6	118.6	105.2	100.1	118.6	107.4	
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	95.7	63.2	79.7	93.0	105.0	98.9	93.0	103.7	98.3	92.7	109.4	100.9	92.9	105.8	99.3	93.0	103.7	98.3	
MF2018	WEIGHTED AVERAGE	103.1	70.9	89.5	99.3	117.0	106.8	98.5	116.7	106.2	99.6	118.0	107.3	97.2	117.0	105.6	98.1	116.7	106.0	
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	96.1	96.1	96.1	96.1	96.1	95.7	95.7	95.7	95.7	95.7	95.7	95.7	95.7	95.7	95.7	95.7	95.7		
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	105.3	98.4	100.5	97.2	98.1	97.8	105.8	97.6	100.2	106.5	97.7	100.4	105.8	97.8	100.2	105.8	97.7	100.2	
0310	Concrete Forming & Accessories	103.2	116.5	114.6	103.1	116.5	114.5	103.4	116.6	114.7	103.4	116.9	114.9	103.4	116.6	114.7	103.4	116.4	114.5	
0320	Concrete Reinforcing	116.3	144.5	130.0	91.2	144.5	117.0	116.3	144.5	130.0	116.3	144.5	130.0	116.3	144.5	130.0	116.3	144.5	130.0	
0330	Cast-in-Place Concrete	105.1	125.5	112.7	89.5	125.5	102.9	106.7	126.7	114.2	108.5	126.8	115.3	108.5	127.5	115.6	101.3	125.5	110.3	
03	CONCRETE	116.3	123.7	119.6	89.2	123.7	104.4	103.3	124.1	112.4	104.1	124.3	113.0	104.1	124.4	113.0	100.8	123.6	110.8	
04	MASONRY	101.1	130.9	119.4	99.3	130.9	118.7	100.6	130.1	118.7	101.4	130.1	119.0	101.4	130.9	119.5	100.6	130.9	119.3	
05	METALS	94.7	116.4	101.1	94.4	116.4	100.9	98.1	116.5	103.5	98.1	116.8	103.6	98.1	116.5	103.5	97.9	116.3	103.3	
06	WOOD, PLASTICS & COMPOSITES	105.0	114.2	110.1	105.0	114.2	110.1	105.0	114.2	110.1	105.0	114.2	110.1	105.0	114.2	110.1	105.0	114.2	110.1	
07	THERMAL & MOISTURE PROTECTION	99.9	120.8	109.0	99.7	120.3	108.7	99.9	123.2	110.0	99.8	123.2	110.0	99.8	121.1	109.1	100.0	120.3	108.8	
08	OPENINGS	96.4	120.6	102.0	98.7	120.6	103.8	96.4	120.6	102.0	96.4	120.6	102.0	96.4	120.6	102.0	98.8	120.6	103.9	
0920	Plaster & Gypsum Board	115.7	114.3	114.8	115.7	114.3	114.8	115.7	114.3	114.8	115.7	114.3	114.8	115.7	114.3	114.8	115.7	114.3	114.8	
0950, 0980	Ceilings & Acoustic Treatment	102.0	114.3	110.3	100.2	114.3	109.7	102.0	114.3	110.3	102.0	114.3	110.3	102.0	114.3	110.3	100.2	114.3	109.7	
0960	Flooring	92.6	127.0	102.3	92.6	127.0	102.3	92.6	124.5	101.6	92.6	127.0	102.3	92.6	127.0	102.3	92.6	121.1	100.6	
0970, 0990	Wall Finishes & Painting/Coating	92.0	125.5	111.8	92.0	129.1	113.9	92.0	125.5	111.8	92.0	125.5	111.8	92.0	129.1	113.9	92.0	129.1	113.9	
09	FINISHES	94.7	118.9	107.8	93.9	119.3	107.6	94.7	118.5	107.6	94.8	118.9	107.8	94.6	119.3	107.9	94.5	118.3	107.3	
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	114.0	103.1	100.0	114.0	103.1	100.0	113.9	103.1	100.0	114.1	103.2	100.0	114.0	103.1	100.0	114.0	103.1	
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.1	118.6	107.4	96.6	118.6	105.2	100.1	118.6	107.4	100.1	118.6	107.4	100.1	118.6	107.4	100.1	118.4	107.3	
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	92.9	106.0	99.4	90.5	106.0	107.7	91.2	107.4	95.0	91.2	107.3	94.9	88.6	107.4	93.0	92.9	59.4	86.1	
MF2018	WEIGHTED AVERAGE	99.9	117.0	107.1	95.2	117.2	104.5	98.8	105.7	98.8	97.7	106.0	101.4	90.5	64.8	79.2	93.4	62.3	79.7	
DIVISION	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	105.3	105.3	118.2	118.2	118.2	119.0	119.0	119.0	118.4	118.4	118.4	99.5	99.5	99.5	92.8	92.8	92.8		
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	103.0	97.8	99.4	106.0	107.5	107.0	104.5	108.7	107.4	102.2	107.8	106.1	117.6	85.0	95.1	95.0	73.2	80.0	
0310	Concrete Forming & Accessories	97.7	73.4	77.0	98.0	99.4	97.2	97.0	99.2	98.9	95.9	95.9	99.4	98.9	97.1	61.6	66.8	93.4	59.4	64.4
0320	Concrete Reinforcing	103.5	86.8	95.4	101.4	115.1	108.0	97.2	115.1	105.9	101.0	115.1	107.8	96.0	61.0	79.1	94.6	59.9	77.8	
0330	Cast-in-Place Concrete	103.6	79.0	94.5	108.1	107.7	107.9	91.2	107.4	95.0	102.6	107.7	104.5	91.8	66.0	82.2	96.3	62.3	83.6	
03	CONCRETE	106.0	78.6	94.0	100.4	106.0	102.9	93.4	105.7	98.8	97.7	106.0	101.4	90.5	64.8	79.2	93.4	62.3	79.7	
04	MASONRY	97.6	87.8	91.6	99.0	98.5	98.7	101.0	98.5	99.5	94.4	98.5	96.9	86.4	60.9	70.7	87.6	54.4	67.2	
05	METALS	103.9	95.6	101.5	102.9	121.9	108.5	104.7	123.1	110.1	103.1	121.9	108.6	101.9	88.9	98.1	96.9	88.2	94.4	
06	WOOD, PLASTICS & COMPOSITES	95.4	72.2	82.6	92.3	97.6	95.2	91.0	97.4	94.5	85.7	97.6	92.2	93.2	60.1	75.0	78.3	60.6	68.6	
07	THERMAL & MOISTURE PROTECTION	104.3	87.1	96.8</																

City Cost Indexes

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		99.5	99.5		99.5	99.5		99.5	99.5		99.5	99.5		99.5	99.5		94.9	94.9	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	106.7	85.2	91.9	127.1	84.8	97.9	117.6	85.2	95.2	108.7	85.2	92.5	125.6	85.1	97.7	96.5	78.9	84.3	
0310	Concrete Forming & Accessories	89.6	63.8	67.6	92.5	57.1	62.4	96.9	60.2	65.6	86.4	63.8	67.1	93.7	61.7	66.4	99.3	60.2	66.0	
0320	Concrete Reinforcing	95.7	76.1	86.2	101.8	61.5	82.3	96.0	61.3	79.2	98.0	76.4	87.6	97.1	65.6	81.9	101.6	60.0	81.5	
0330	Cast-in-Place Concrete	100.4	66.0	87.6	105.4	65.7	90.6	92.7	65.8	82.7	102.7	66.1	89.1	110.7	66.0	94.1	93.1	63.9	82.2	
03	CONCRETE	94.0	68.3	82.7	101.7	62.7	84.6	90.9	64.2	79.2	95.8	68.5	83.8	102.1	65.6	88.1	91.7	63.2	79.2	
04	MASONRY	82.5	58.8	67.9	99.3	60.8	75.7	86.1	58.7	69.3	96.8	61.0	74.8	84.2	60.9	69.9	88.0	55.5	68.0	
05	METALS	99.0	93.6	97.4	100.7	88.4	97.1	100.4	88.6	96.9	98.9	94.7	97.7	110.6	90.6	104.7	97.1	87.6	94.3	
06	WOOD, PLASTICS & COMPOSITES	75.4	63.2	68.7	87.2	54.6	69.3	93.2	58.6	74.2	71.0	63.2	66.7	88.9	60.1	73.0	92.9	60.7	75.2	
07	THERMAL & MOISTURE PROTECTION	106.1	63.2	87.4	101.8	62.5	84.7	101.7	62.4	84.6	106.0	63.8	87.6	101.9	64.1	85.5	106.1	61.4	86.6	
08	OPENINGS	95.5	64.6	88.3	92.5	56.5	84.1	92.9	58.8	84.9	95.5	64.7	88.3	92.2	60.5	84.8	96.6	59.5	88.0	
0920	Plaster & Gypsum Board	103.3	62.7	76.0	89.6	53.8	65.6	92.7	58.0	69.3	100.2	62.7	75.0	89.6	59.5	69.4	96.2	60.0	71.9	
0950, 0980	Ceilings & Acoustic Treatment	79.7	62.7	68.2	72.9	53.8	60.1	78.3	58.0	64.6	79.7	62.7	68.2	77.5	59.5	65.4	85.6	60.0	68.3	
0960	Flooring	94.1	77.2	89.4	97.0	62.7	87.4	99.5	62.7	89.2	92.2	62.7	83.9	97.2	62.7	87.5	98.6	62.7	88.5	
0970, 0990	Wall Finishes & Painting/Coating	101.4	63.2	78.8	103.8	63.2	79.8	79.8	101.4	63.2	78.8	103.8	80.9	90.2	100.2	58.3	75.4			
09	FINISHES	91.1	66.1	77.6	90.4	58.1	72.9	91.6	60.4	74.7	90.2	63.1	75.6	91.0	63.2	76.0	90.9	59.8	74.1	
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	80.0	95.5	100.0	80.8	95.7	100.0	78.0	95.1	100.0	80.0	95.5	100.0	81.4	95.9	100.0	81.5	95.9	
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	98.1	59.3	82.9	98.6	63.1	84.7	99.9	63.1	85.5	98.1	59.9	83.1	99.9	74.2	89.8	100.0	63.8	85.8	
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	96.6	60.0	78.6	97.0	58.6	78.0	96.4	61.9	79.4	95.0	58.5	77.0	97.7	62.7	80.5	98.4	77.9	88.3	
MF2018	WEIGHTED AVERAGE	96.5	67.7	84.3	98.8	65.8	84.8	96.9	66.6	84.1	97.1	67.6	84.6	100.1	70.3	87.5	96.7	68.0	84.6	
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		102.0	102.0		99.5	99.5		99.5	99.5		99.5	99.5		99.5	99.5		102.0	102.0	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	115.8	89.6	97.7	131.4	85.2	99.5	131.3	85.0	99.3	119.0	85.2	95.7	110.4	85.0	92.9	110.2	88.9	96.1	
0310	Concrete Forming & Accessories	101.8	61.5	67.4	96.2	66.2	70.6	94.2	61.6	66.4	93.7	63.7	68.1	92.8	60.8	65.5	99.0	62.2	67.6	
0320	Concrete Reinforcing	104.9	65.6	85.9	100.3	67.4	84.4	102.8	67.4	85.7	96.6	76.2	86.7	98.0	76.0	87.4	98.4	61.5	80.5	
0330	Cast-in-Place Concrete	111.6	66.7	94.9	97.4	65.9	85.7	120.4	65.3	99.9	105.1	66.1	90.6	103.8	65.8	89.7	92.3	66.7	82.8	
03	CONCRETE	100.8	65.7	85.4	100.0	67.9	85.9	109.7	65.6	90.3	95.3	68.4	83.5	97.3	66.9	83.9	90.0	65.3	79.2	
04	MASONRY	94.8	60.9	74.0	90.6	60.3	72.0	109.1	59.9	78.9	88.7	61.0	71.6	132.4	58.7	87.1	85.2	60.3	69.9	
05	METALS	96.7	89.1	94.5	101.5	90.9	98.4	102.6	90.8	99.1	102.5	93.9	100.0	99.8	93.5	98.0	101.7	87.7	97.6	
06	WOOD, PLASTICS & COMPOSITES	91.7	60.2	74.4	92.0	66.6	78.0	90.3	61.1	74.2	92.5	63.2	76.4	79.5	59.3	68.4	95.6	61.2	76.7	
07	THERMAL & MOISTURE PROTECTION	109.2	66.0	90.4	102.0	64.1	85.5	101.9	63.2	85.1	100.1	63.8	84.3	106.2	62.2	87.1	96.7	64.0	82.4	
08	OPENINGS	97.8	60.6	89.1	91.0	64.5	84.9	91.0	61.4	84.1	97.8	64.2	90.0	94.3	62.5	86.9	97.9	60.2	89.1	
0920	Plaster & Gypsum Board	93.3	59.5	70.6	91.9	66.1	74.6	99.6	60.5	73.3	97.2	62.7	74.0	105.6	58.7	74.0	100.0	60.5	73.4	
0950, 0980	Ceilings & Acoustic Treatment	89.7	59.5	69.3	77.5	66.1	69.8	77.5	60.5	66.0	83.9	62.7	69.6	81.6	58.7	66.1	86.2	60.5	68.9	
0960	Flooring	95.7	62.7	86.4	99.1	72.5	91.6	95.1	62.7	86.0	103.5	54.9	89.9	96.1	60.8	86.2	97.6	61.7	87.5	
0970, 0990	Wall Finishes & Painting/Coating	95.6	60.3	74.7	103.8	63.2	79.8	103.8	63.2	79.8	99.0	63.2	77.8	101.4	63.2	78.8	101.6	63.2	78.9	
09	FINISHES	93.2	61.1	75.8	92.6	66.8	78.6	92.1	61.6	75.6	96.0	61.8	77.5	92.6	60.5	75.2	94.4	61.8	76.7	
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	81.7	95.9	100.0	80.6	95.7	100.0	79.7	95.5	100.0	80.0	95.5	100.0	79.6	95.4	100.0	81.5	95.9	
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.0	56.4	82.9	99.9	63.2	85.5	99.9	62.7	85.3	99.9	58.5	83.6	100.0	59.9	84.2	100.0	65.5	86.5	
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	98.4	63.1	81.0	95.5	58.6	77.3	99.0	50.7	75.2	96.9	58.5	78.0	95.0	60.6	78.0	103.7	58.6	81.4	
MF2018	WEIGHTED AVERAGE	99.0	66.6	85.3	98.6	68.3	85.8	101.2	65.8	86.2	98.8	67.0	85.4	99.7	66.8	85.8	98.2	67.7	85.3	
DIVISION	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		99.5	99.5		92.8	92.8		93.7	93.7		92.6	92.6		96.6	96.6		92.6	92.6	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	110.9	87.0	94.4	91.6	73.2	78.9	107.3	76.7	86.1	102.8	90.8	94.5	99.7	96.0	97.1	95.9	91.9	93.2	
0310	Concrete Forming & Accessories	95.4	64.1	68.7	59.1	64.7	60.6	90.6	66.5	70.1	90.0	43.6	50.4	94.3	72.3	75.5	90.9	73.0	75.6	
0320	Concrete Reinforcing	94.6	76.5	85.8	97.3	57.5	78.1	96.5	71.3	84.3	94.5	63.5	79.5	93.9	71.3	83.0	94.9	70.7	83.2	
0330	Cast-in-Place Concrete	101.5	66.2	88.3	91.5	62.2	80.6	94.6	69.1	85.1	109.7	69.5	94.7	113.1	71.1	97.5	103.6	70.0	91.1	
03	CONCRETE	95.9	68.7	83.9	90.1	61.8	77.7	86.9	70.1	79.5	99.6	57.4	88.1	101.8	72.4	88.9	92.5	72.2	83.6	
04	MASONRY	88.3	61.0	71.5	87.1	52.2	65.7	92.5	68.7	77.9	75.0	77.0	76.2	87.8	68.9	76.2	88.1	68.8	76.2	
05	METALS	99.0	95.0	97.8	95.9	87.0	93.3	106.2	97.4	103.6	95.3	79.1	90.6	96.2	83.5	92.5	95.0	82.6	91.4	
06	WOOD, PLASTICS & COMPOSITES	83.3	63.2	72.2	83.1	60.6	70.7	80.1	66.4	72.6	92.5	35.8	61.3	97.8	74.0	84.7	93.8	75.3	83.6	
07	THERMAL & MOISTURE PROTECTION	106.5	63.8	87.9	106.0	60.6	86.2	100.6	68.0	86.4	95.4	68.3	83.6	96.8	73.8	86.8	95.1	71.4	84.8	
08	OPENINGS	95.5	64.7	88.3	93.8	59.0	85.7	85.7	68.5	81.7	91.3	50.2	81.7	99.4	73.5	93.3	91.4	74.0	87.3	
0920	Plaster & Gypsum Board	108.2	62.7	77.6	111.9	60.0	77.0	101.1	66.0	77.5	93.0	34.4	53.6	95.0	73.					

City Cost Indexes

DIVISION	GEORGIA												STATESBORO												
	COLUMBUS			DALTON			GAINESVILLE			MACON			SAVANNAH			304									
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	
015433	CONTRACTOR EQUIPMENT	93.7	93.7	102.6	95.8	97.9	102.5	90.7	94.3	108.6	91.0	96.4	107.0	82.0	89.7	103.7	78.0	85.9	96.7	96.7	96.7	95.5	95.5	95.5	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	107.2	76.7	86.2	102.6	95.8	107.6	92.6	92.6	103.2	103.2	-	96.7	96.7	96.7	103.7	78.0	85.9	103.7	78.0	85.9	103.7	78.0	85.9	
0310	Concrete Forming & Accessories	90.5	66.6	70.1	83.2	64.5	67.3	93.3	40.7	48.5	90.3	66.6	70.1	93.4	72.0	75.2	78.5	52.2	56.1	97.6	97.6	97.6	97.6	97.6	97.6
0320	Concrete Reinforcing	96.6	71.3	84.4	94.1	60.9	78.0	94.4	63.4	79.4	97.8	71.3	85.0	104.1	70.7	88.0	93.7	71.2	82.8	97.8	97.8	97.8	97.8	97.8	97.8
0330	Cast-in-Place Concrete	94.2	68.8	84.8	106.6	68.0	92.2	115.3	68.7	98.0	93.0	68.3	83.8	98.3	69.5	87.6	109.5	68.6	94.3	98.3	98.3	98.3	98.3	98.3	98.3
03	CONCRETE	86.8	70.0	79.4	98.9	67.0	84.9	101.4	55.8	81.4	86.3	69.8	79.1	88.5	72.5	81.5	99.3	63.4	83.5	99.3	99.3	99.3	99.3	99.3	99.3
04	MASONRY	92.5	68.7	77.9	75.8	75.5	75.6	83.2	76.2	78.9	104.8	68.9	82.7	87.4	68.8	75.9	77.8	77.0	77.3	77.8	77.0	77.3	77.8	77.0	77.3
05	METALS	105.9	97.6	103.4	96.4	94.0	95.7	94.6	78.5	89.9	100.9	97.6	100.0	102.1	96.0	100.3	100.0	98.9	99.7	100.0	98.9	99.7	100.0	98.9	99.7
06	WOOD, PLASTICS & COMPOSITES	80.1	66.4	72.6	75.9	65.2	70.0	96.1	33.2	61.5	85.9	66.5	75.2	87.4	73.9	80.0	69.7	47.2	57.3	87.4	73.9	80.0	69.7	47.2	57.3
07	THERMAL & MOISTURE PROTECTION	100.5	68.9	86.8	97.3	70.1	85.5	95.4	67.7	83.3	99.0	70.6	86.6	98.5	70.4	86.3	95.9	67.1	83.4	99.0	70.4	86.3	95.9	67.1	83.4
08	OPENINGS	85.7	69.3	81.9	92.8	65.8	85.5	91.3	48.8	81.4	85.5	69.3	81.7	95.3	73.2	90.2	93.7	58.5	85.5	95.3	73.2	90.2	93.7	58.5	85.5
0920	Plaster & Gypsum Board	101.1	66.0	77.5	81.9	64.7	70.3	94.9	31.8	52.4	104.7	66.0	78.7	103.3	73.6	83.3	83.6	46.2	58.4	103.3	73.6	83.3	83.6	46.2	58.4
0950, 0980	Ceilings & Acoustic Treatment	77.5	66.0	69.8	110.2	64.7	79.5	96.6	31.8	52.9	72.8	66.0	68.3	87.3	73.6	78.0	105.8	46.2	65.6	87.3	73.6	78.0	105.8	46.2	65.6
0960	Flooring	99.4	70.8	91.4	97.0	81.9	92.8	97.8	81.9	93.3	77.9	70.8	75.9	95.6	70.8	88.6	114.6	81.9	105.4	95.6	70.8	88.6	114.6	81.9	105.4
0970, 0990	Wall Finishes & Painting/Coating	88.7	87.4	87.9	82.8	70.1	75.3	92.4	90.0	93.3	90.7	94.0	92.6	88.0	86.1	90.8	70.1	78.5	90.8	70.1	78.5	90.8	70.1	78.5	
09	FINISHES	91.6	68.9	79.3	104.5	68.2	84.9	95.5	52.1	72.0	80.5	69.7	74.7	92.9	73.2	82.3	107.9	57.9	80.9	92.9	73.2	82.3	107.9	57.9	80.9
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	85.9	96.9	100.0	85.3	96.7	100.0	35.5	85.6	100.0	86.0	96.9	100.0	87.0	97.1	100.0	83.8	96.4	100.0	87.0	97.1	100.0	83.8	96.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.1	66.8	87.0	96.7	60.8	82.6	96.6	65.6	84.4	100.1	68.2	87.6	100.1	64.8	86.3	97.2	67.3	85.5	100.1	64.8	86.3	97.2	67.3	85.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	95.7	67.7	81.9	106.9	62.2	84.9	97.8	70.8	84.5	94.2	62.7	78.6	99.1	63.7	81.7	98.3	63.4	81.1	98.3	63.4	81.1	98.3	63.4	81.1
MF2018	WEIGHTED AVERAGE	96.5	72.2	86.2	97.5	71.4	86.5	96.2	65.6	83.2	95.2	73.1	85.8	97.3	72.7	86.9	97.8	69.7	85.9	97.8	69.7	85.9	97.8	69.7	85.9
DIVISION	GEORGIA												IDAHO												
	VALDOSTA			WAYCROSS			HILO			HONOLULU			STATES & POSS., GUAM			BOISE									
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	
015433	CONTRACTOR EQUIPMENT	93.7	93.7	93.7	93.7	93.7	93.7	97.8	97.8	99.3	99.3	99.3	160.5	160.5	160.5	94.6	94.6	94.6	94.6	94.6	94.6	94.6	94.6	94.6	94.6
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	116.9	76.7	89.1	113.7	77.0	88.3	142.5	103.1	115.3	150.0	106.6	120.0	186.3	98.5	125.7	186.8	92.0	90.4	186.8	92.0	90.4	186.8	92.0	90.4
0310	Concrete Forming & Accessories	81.7	41.6	47.5	83.5	64.0	66.8	108.2	123.8	121.5	120.2	123.7	123.2	110.5	51.5	60.2	100.2	81.1	83.9	100.2	81.1	83.9	100.2	81.1	83.9
0320	Concrete Reinforcing	98.7	59.5	79.8	98.7	59.8	79.9	143.4	127.0	135.5	166.8	127.0	147.6	253.7	27.4	144.2	107.6	79.5	94.0	107.6	79.5	94.0	107.6	79.5	94.0
0330	Cast-in-Place Concrete	92.6	68.7	83.7	104.7	68.6	91.2	180.3	123.3	159.1	145.0	123.5	137.0	156.3	95.7	133.7	90.6	96.6	92.8	90.6	96.6	92.8	90.6	92.8	
03	CONCRETE	91.2	56.6	76.0	94.5	66.5	82.2	144.7	123.2	135.3	137.9	123.1	131.4	147.9	63.9	111.0	97.6	86.4	92.7	97.6	86.4	92.7	97.6	86.4	92.7
04	MASONRY	97.8	77.1	85.1	98.7	77.0	85.4	148.6	122.1	132.3	135.5	122.2	127.3	206.7	34.8	101.0	126.3	86.2	101.7	126.3	86.2	101.7	126.3	86.2	101.7
05	METALS	105.3	93.0	101.7	104.4	88.9	99.8	110.8	108.1	110.0	124.1	107.1	119.1	143.1	76.0	123.4	109.6	82.7	101.7	109.6	82.7	101.7	109.6	82.7	101.7
06	WOOD, PLASTICS & COMPOSITES	68.7	33.0	49.0	70.2	63.4	66.5	111.4	124.3	118.5	132.8	124.2	128.1	123.4	53.9	85.1	93.5	79.9	86.0	93.5	79.9	86.0	93.5	79.9	86.0
07	THERMAL & MOISTURE PROTECTION	100.8	66.6	86.0	100.6	69.1	86.9	128.7	119.3	124.6	146.3	120.0	134.9	150.7	58.2	110.4	101.4	86.6	94.9	101.4	86.6	94.9	101.4	86.6	94.9
08	OPENINGS	82.5	47.6	74.4	82.8	61.8	77.9	114.1	123.2	116.2	128.1	123.2	126.9	118.4	43.8	101.0	96.9	92.0	96.9	92.0	96.9	92.0	96.9	92.0	
09	FINISHES	89.4	52.5	69.4	89.0	67.5	77.4	110.8	129.1	120.7	125.5	129.1	127.4	185.1	48.0	110.9	92.7	78.2	84.9	92.7	78.2	84.9	92.7	78.2	84.9
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	82.2	96.0	100.0	85.5	96.8	100.0	11.7	103.1	100.0	113.6	103.0	100.0	66.0	92.4	100.0	88.6	97.4	100.0	88.6	97.4	100.0	88.6	97.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.1	68.5	87.7	97.9	63.6	84.4	100.3	112.4	105.0	100.4	112.3	105.1	102.6	33.5	75.5	100.1	74.2	89.9	100.1	74.2	89.9	100.1	74.2	89.9
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	94.1	57.8	76.2	97.7	63.4	80.8	108.1	124.6	116.2	109.8	124.5	117.1	158.1	35.9	97.9	97.2	68.2	82.9	97.2	68.2	82.9	97.2	68.2	82.9
MF2018	WEIGHTED AVERAGE	96.7	66.2	83.8	96.8	70.0	85.5	114.8	118.4	116.3	119.1	118.5	118.9	137.1	51.4	100.9	101.0	79.9	92.1	101.0	79.9	92.1	101.0	79.9	92.1
DIVISION	IDAHO												BLOOMINGTON												
	COEUR D'ALENE			IDAHO FALLS			LEWISTON			POCATELLO			TWIN FALLS			BLOOMINGTON									
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	
015433	CONTRACTOR EQUIPMENT	89.7	89.7	94.6	94.6	94.6	99.7	99.7	94.6	94.6	94.6	94.6	94.6	94.6	94.6	94.6	94.6	94.6	94.6	94.6	94.6	94.6	94.6	94.6	94.6
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	85.5	86.5	86.2	85.1	92.1	89.9	92.2	87.2	88.7	88.3	92.0	90.9	95.4	91.8	92.9	94.9	96.0	95.7	94.9	96.0	95.7	94.9	96.0	95.7
0310	Concrete Forming & Accessories	108.7	81.4	85.4	94.1	78.3	80.6	113.9	81.1	85.9	100.4	80.5	83.4	101.5	76.5	80.2	84.0	116.0	111.2	116.0	111.2	116.0	111.2	116.0	111.2
0320	Concrete Reinforcing	115.7	96.2	106.3	109.6	77.9	94.3	115.7	96.2	106.3	108.0	79.4	94.2	110.0	77.8	94.4	94.4	93.0	102.4	97.5	93.0	102.4	97.5</td		

City Cost Indexes

DIVISION	ILLINOIS																	
	CARBONDALE			CENTRALIA			CHAMPAIGN			CHICAGO			DECATUR			EAST ST. LOUIS		
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433 CONTRACTOR EQUIPMENT	110.3	110.3	110.3	110.3	110.3	110.3	102.8	102.8	102.8	100.3	100.3	100.3	102.8	102.8	102.8	110.3	110.3	110.3
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	100.9	96.8	98.1	101.3	98.6	99.5	104.0	97.2	99.3	105.4	104.4	104.7	94.8	97.0	96.3	103.5	97.7	99.5
0310 Concrete Forming & Accessories	90.0	108.9	106.1	91.6	114.2	110.9	90.3	116.7	112.8	97.4	159.7	150.5	92.1	117.9	114.1	87.5	114.2	110.2
0320 Concrete Reinforcing	82.2	103.4	92.5	82.2	104.0	92.8	93.0	101.6	97.2	103.8	153.3	127.7	80.6	99.8	89.9	82.2	104.0	92.7
0330 Cast-in-Place Concrete	91.5	102.7	95.7	92.0	119.6	102.3	113.7	110.8	112.6	126.0	155.6	137.0	99.9	114.6	105.4	93.6	118.4	102.8
03 CONCRETE	79.9	107.3	91.9	80.4	115.8	96.0	104.1	112.7	107.9	108.0	156.5	129.3	90.3	114.3	100.8	81.4	115.4	96.3
04 MASONRY	75.0	111.5	97.4	75.0	122.9	104.5	133.1	125.4	128.4	105.3	163.4	141.0	70.9	122.8	102.8	75.3	123.0	104.6
05 METALS	100.9	130.4	109.6	100.9	133.5	110.5	95.2	120.3	102.6	95.9	146.8	110.8	104.9	120.7	109.5	102.1	133.5	111.3
06 WOOD, PLASTICS & COMPOSITES	87.7	105.8	97.7	90.2	111.2	101.7	88.5	114.0	102.5	100.0	158.4	132.1	88.7	116.8	104.2	84.8	111.2	99.3
07 THERMAL & MOISTURE PROTECTION	90.6	101.3	95.3	90.7	111.5	99.8	96.2	115.6	104.6	95.2	150.7	119.4	95.9	113.3	103.5	90.7	110.7	99.4
08 OPENINGS	87.3	116.3	94.1	87.3	119.2	94.8	91.8	116.9	97.7	100.9	169.3	116.9	98.2	118.2	102.9	87.4	118.4	94.6
0920 Plaster & Gypsum Board	93.7	106.2	102.1	95.0	111.6	106.2	91.0	114.5	106.8	101.3	160.0	140.8	96.5	117.4	110.6	92.2	111.6	105.3
0950, 0980 Ceilings & Acoustic Treatment	80.6	106.2	97.8	80.6	111.6	101.5	83.9	114.5	104.5	100.4	160.0	140.6	87.1	117.4	107.5	80.6	111.6	101.5
0960 Flooring	113.7	116.6	114.5	114.6	116.6	115.1	89.2	116.6	96.9	91.3	163.8	111.7	101.8	117.1	106.1	112.6	116.6	113.7
0970, 0990 Wall Finishes & Painting/Coating	103.1	105.0	104.2	103.1	111.6	108.2	87.6	114.9	103.7	96.7	170.3	140.2	95.5	117.8	108.7	103.1	111.6	108.2
09 FINISHES	92.1	110.7	102.1	92.5	114.4	104.4	88.1	116.9	103.7	95.8	162.4	131.8	92.2	118.3	106.3	91.6	114.4	103.9
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	106.9	101.5	100.0	105.8	101.3	100.0	109.2	102.0	100.0	129.3	106.5	100.0	108.6	101.9	100.0	108.3	101.9
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	96.3	106.8	100.4	96.3	97.8	96.9	96.5	107.0	100.6	99.9	137.4	114.6	99.9	98.8	99.5	99.9	99.2	99.6
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	91.9	107.8	99.8	93.1	106.3	99.6	99.0	95.4	97.2	97.9	136.2	116.8	95.3	103.7	99.5	92.7	99.7	96.2
MF2018 WEIGHTED AVERAGE	92.5	109.6	99.7	92.8	111.2	100.5	98.5	110.5	103.6	100.1	145.6	119.3	96.6	110.1	102.3	93.8	110.4	100.9
DIVISION	ILLINOIS																	
	EFFINGHAM			GALESBURG			JOLIET			KANKAKEE			LA SALLE			NORTH SUBURBAN		
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433 CONTRACTOR EQUIPMENT	102.8	102.8	101.9	101.9	101.9	101.9	93.7	93.7	93.7	93.7	93.7	93.7	101.9	101.9	101.9	93.7	93.7	93.7
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	99.3	95.9	97.0	97.3	95.8	96.3	101.2	97.2	98.5	94.7	97.1	96.4	96.7	96.8	96.8	100.5	97.9	98.7
0310 Concrete Forming & Accessories	96.5	114.6	111.9	90.2	117.0	113.0	96.8	156.7	147.8	90.5	145.4	137.3	103.7	125.3	122.1	96.1	158.5	149.3
0320 Concrete Reinforcing	83.3	93.8	88.4	92.5	105.6	98.8	103.8	136.6	119.7	104.6	135.1	119.3	92.7	132.9	112.1	103.8	149.1	125.7
0330 Cast-in-Place Concrete	99.6	109.9	103.4	100.9	109.2	104.0	114.6	143.9	125.5	106.8	135.8	117.6	100.8	121.8	108.6	114.6	152.9	128.9
03 CONCRETE	91.0	109.9	99.3	94.8	113.0	102.8	101.0	147.9	121.6	95.0	139.7	114.7	95.6	126.1	109.0	101.0	154.1	124.3
04 MASONRY	79.1	115.3	101.3	110.4	122.4	117.8	104.5	156.7	136.6	106.0	147.0	129.1	110.4	129.7	122.3	101.2	158.8	136.6
05 METALS	101.9	114.9	105.7	95.2	123.6	103.5	94.1	134.7	106.0	94.1	133.4	105.6	95.3	142.0	109.0	95.1	141.6	108.8
06 WOOD, PLASTICS & COMPOSITES	91.0	114.0	103.6	88.3	115.4	103.2	96.6	157.7	130.2	90.0	144.7	120.1	103.8	123.2	114.5	95.4	158.2	130.0
07 THERMAL & MOISTURE PROTECTION	95.4	109.1	101.4	95.6	110.0	101.9	99.5	144.2	119.0	98.6	139.5	116.4	95.8	122.5	107.4	99.9	147.6	120.7
08 OPENINGS	93.3	114.5	98.2	91.3	115.9	97.0	99.3	161.7	113.9	92.4	156.2	107.3	91.3	133.3	101.1	99.4	167.9	115.4
0920 Plaster & Gypsum Board	96.3	114.5	108.5	91.0	115.9	107.8	93.7	159.5	138.0	92.5	146.1	128.6	98.3	124.0	115.6	97.2	160.0	139.5
0950, 0980 Ceilings & Acoustic Treatment	80.6	114.5	103.4	83.9	115.9	105.5	100.9	159.5	140.4	100.9	146.1	131.4	83.9	124.0	110.9	100.9	160.0	140.8
0960 Flooring	103.0	116.6	106.8	89.1	120.8	98.0	89.4	149.8	106.4	86.3	150.7	104.4	95.7	124.8	103.9	89.9	159.5	109.4
0970, 0990 Wall Finishes & Painting/Coating	95.5	109.3	103.7	87.6	98.5	94.0	89.0	163.0	132.8	89.0	135.7	116.6	87.6	133.0	114.5	91.0	163.9	134.1
09 FINISHES	91.3	115.1	104.2	87.4	116.3	103.1	91.6	157.4	127.2	90.0	145.8	120.2	90.4	124.7	109.0	92.2	160.1	129.0
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	104.5	101.0	100.0	104.4	101.0	100.0	122.6	105.0	100.0	120.6	104.6	100.0	105.6	101.2	100.0	124.1	105.4
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	96.4	104.5	99.6	96.5	105.7	100.1	100.0	130.0	111.8	96.5	129.6	109.5	96.5	128.4	109.0	99.9	136.2	114.1
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	93.5	107.8	100.5	96.7	86.5	91.7	96.9	133.3	114.8	92.4	137.0	114.4	94.0	137.0	115.2	96.7	135.5	115.9
MF2018 WEIGHTED AVERAGE	95.1	109.1	101.0	95.7	108.5	101.1	98.3	138.8	115.4	95.0	134.9	111.9	95.9	127.0	109.0	98.3	142.9	117.1
DIVISION	ILLINOIS																	
	PEORIA			QUINCY			ROCK ISLAND			ROCKFORD			SOUTH SUBURBAN			SPRINGFIELD		
	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	102.8	102.8	101.9	101.9	101.9	101.9	101.9	101.9	101.9	101.9	93.7	93.7	93.7	105.1	105.1	105.1
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	97.9	96.0	96.6	98.1	96.4	96.9	95.5	94.8	95.0	97.4	96.8	97.0	100.5	97.8	98.6	99.8	100.5	100.3
0310 Concrete Forming & Accessories	93.0	115.9	112.5	94.3	113.6	110.8	91.6	99.1	98.0	97.2	127.7	123.2	96.1	158.5	149.3	93.2	115.6	112.3
0320 Concrete Reinforcing	90.1	104.7	97.2	83.0	86.2	84.5	92.5	99.0	95.6	85.3	134.1	108.9	103.8	149.0	125.7	83.2	99.8	91.2
0330 Cast-in-Place Concrete	97.9	115.6	104.5	99.8	106.6	102.3	98.7	98.4	98.6	100.2	126.6	110.0	114.6	152.8	128.8	94.9	109.2	100.2
03 CONCRETE	92.0	114.6	102.0	90.7	107.1	97.9	92.7	100.0	95.9	92.7	129.0	108.7	101.0	154.0	124.3	88.5	111.2	98.5
04 MASONRY	109.7	121.5	116.9	98.9	113.2	107.7	110.2	100.2	104.1	85.6	142.3	120.4	101.2	158.7	136.6	80.7	122.2	106.2
05 METALS	97.9	124.2	105.6	101.9	112.6	105.1	95.2	118.5	102.1	97.9	141.5	110.7	95.1	141.4	108.7	102.5	119.1	107.3
06 WOOD, PLASTICS & COMPOSITES	96.4	113.2	105.6	88.6	114.0	102.6	90.0	97.5	94.1	96.4	123.6	111.3	95.4	158.2	130.0	90.0	114.1	103.3
07 THERMAL & MOISTURE PROTECTION	96.3	112.4	103.3	95.3	106.8	100.3	95.5	98.4	96.8	98.8	129.0	111.9	99.9	147.6	120.7	98.3	114.4	105.3
08 OPENINGS	96.6	119.5	102.0	94.0	112.1	98.2	91.3	103.3	94.1	96.6	136.5	105.9	99.4	167.9	115.4	99.2	116.4	103.2
0920 Plaster & Gypsum Board	95.5	113.7	107.7	95.0	114.5	108.1	91.0	97.6	95.5	95.5	124.4	114.9	97.2	160.0	139.5	99.9	114.5	109.7
0950, 0980 Ceilings & Acoustic Treatment	89.6	113.7	105.8	80.6	114.5	103.4	83.9	97.6	93.2	89.6	124.4	113.1	100.9	160.0	140.8	91.3	114.5	107.0
0960 Flooring	92.6	119.5	100.2	101.8	113.6	105.1	90.2	94.6	91.4	92.6	124.9	101.7	89.9	159.5	109.4	104.8		

City Cost Indexes

DIVISION	INDIANA																		
	ANDERSON			BLOOMINGTON			COLUMBUS			EVANSVILLE			FORT WAYNE			GARY			
	460	474	472	476 - 477	476 - 477	476 - 477	467 - 468	467 - 468	467 - 468	463 - 464	463 - 464	463 - 464							
015433	CONTRACTOR EQUIPMENT	94.5	94.5	81.5	81.5	81.5	81.5	81.5	110.3	110.3	—	94.5	94.5	94.5	94.5	94.5			
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	98.7	89.0	92.0	86.5	87.7	87.3	83.2	87.4	86.1	91.9	115.1	107.9	99.8	88.8	92.2	99.3	92.8	94.8
0310	Concrete Forming & Accessories	94.9	77.4	80.0	100.8	82.1	84.9	95.0	80.2	82.4	94.3	78.6	80.9	92.9	73.7	76.5	95.0	111.1	108.7
0320	Concrete Reinforcing	104.9	83.0	94.3	90.4	86.9	88.7	90.8	86.9	88.9	99.0	81.0	90.3	104.9	77.9	91.9	104.9	115.8	110.2
0330	Cast-in-Place Concrete	106.3	74.9	94.6	101.3	75.7	91.7	100.8	76.5	91.8	96.8	83.2	91.7	113.0	75.2	98.9	111.1	112.2	111.5
03	CONCRETE	95.7	78.1	88.0	99.2	80.3	90.9	98.5	79.6	90.2	99.5	80.8	91.3	98.6	75.7	88.6	97.9	112.1	104.1
04	MASONRY	87.4	74.0	79.2	88.9	74.4	80.0	88.8	74.3	79.9	84.3	77.3	80.0	90.7	71.4	78.8	88.8	110.3	102.0
05	METALS	97.7	88.2	94.9	99.1	75.7	92.2	99.1	74.7	91.9	91.9	83.2	89.3	97.7	86.3	94.3	97.7	107.1	100.5
06	WOOD, PLASTICS & COMPOSITES	93.8	77.6	84.9	109.5	82.9	94.9	104.0	80.5	91.1	90.8	77.7	83.6	93.7	73.8	82.7	91.3	109.1	101.1
07	THERMAL & MOISTURE PROTECTION	109.2	75.0	94.4	95.8	77.9	88.0	95.2	78.7	88.0	100.0	81.7	92.1	108.9	76.8	94.9	107.7	106.2	107.0
08	OPENINGS	93.2	75.8	89.2	97.5	80.0	93.4	93.9	78.6	90.3	91.8	76.0	88.1	93.2	71.2	88.1	93.2	114.6	98.2
0920	Plaster & Gypsum Board	106.4	77.3	86.8	98.6	83.2	88.2	95.4	80.7	85.5	94.2	76.7	82.4	105.8	73.4	84.0	99.5	109.7	106.4
0950, 0980	Ceilings & Acoustic Treatment	89.8	77.3	81.4	77.9	83.2	81.5	77.9	80.7	79.8	81.6	76.7	78.3	89.8	73.4	78.7	89.8	109.7	103.2
0960	Flooring	93.5	75.0	88.3	99.6	83.2	95.0	94.4	83.2	91.2	94.1	71.4	87.7	93.5	71.2	87.2	93.5	110.5	98.3
0970, 0990	Wall Finishes & Painting/Coating	92.8	65.8	76.9	84.4	81.1	82.5	84.4	81.1	82.5	90.3	84.4	86.8	92.8	70.2	79.5	92.8	120.7	109.3
09	FINISHES	91.3	75.7	82.9	90.6	82.4	86.2	88.6	81.0	84.5	89.3	77.7	83.0	91.1	72.9	81.3	90.3	111.8	102.0
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	87.4	97.2	100.0	88.3	97.4	100.0	88.0	97.3	100.0	91.2	98.0	100.0	87.2	97.1	100.0	107.9	101.8
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.0	77.0	91.0	99.7	79.6	91.8	96.2	79.1	89.5	99.9	78.6	91.5	100.0	72.2	89.1	100.0	106.2	102.4
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	87.7	83.2	85.5	99.9	86.6	93.3	99.1	86.7	93.0	95.7	81.4	88.7	88.4	74.9	81.7	99.5	110.1	104.7
MF2018	WEIGHTED AVERAGE	96.0	79.8	89.1	97.8	81.1	90.7	96.1	80.5	89.5	95.5	82.7	90.1	96.6	76.3	88.0	97.5	108.1	102.0
DIVISION	INDIANA																		
	INDIANAPOLIS			KOKOMO			LAFAYETTE			LAWRENCEBURG			MUNCIE			NEW ALBANY			
	461 - 462	469	479	470	470	470	473	473	473	473	473	473	471	471	471				
MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL		
015433	CONTRACTOR EQUIPMENT	86.1	86.1	94.5	94.5	81.5	81.5	100.6	100.6	92.8	92.8	90.6	90.6	90.6	90.6	90.6	90.6	90.6	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	99.8	91.3	93.9	94.9	89.0	90.8	83.9	87.4	86.3	81.2	102.2	95.7	86.6	87.9	87.5	78.5	89.8	86.3
0310	Concrete Forming & Accessories	100.4	85.2	87.4	98.0	78.2	81.1	92.5	78.6	80.7	91.5	78.4	80.3	92.3	76.9	79.2	90.1	76.9	78.9
0320	Concrete Reinforcing	106.1	87.2	97.0	94.9	87.2	91.1	90.4	82.9	86.8	89.7	79.8	84.9	100.0	82.9	91.7	91.0	82.6	86.9
0330	Cast-in-Place Concrete	101.2	84.8	95.1	105.2	81.8	96.5	101.4	77.6	92.5	94.8	74.9	87.4	106.4	73.9	94.3	97.9	73.1	88.7
03	CONCRETE	99.0	84.8	92.8	92.5	81.6	87.7	98.7	78.7	89.9	91.8	78.0	85.7	97.4	77.6	88.7	97.3	76.8	88.3
04	MASONRY	89.8	78.7	83.0	87.1	77.2	81.0	94.0	74.0	81.7	73.8	74.2	74.1	90.5	74.1	80.4	80.2	71.1	74.6
05	METALS	94.7	76.0	89.2	94.2	89.8	92.9	97.4	73.7	90.5	93.9	86.2	91.7	100.8	88.0	97.0	96.0	82.2	91.9
06	WOOD, PLASTICS & COMPOSITES	100.1	86.0	92.4	96.8	77.4	86.1	101.2	79.2	89.1	89.1	78.3	83.2	102.6	77.1	88.6	91.2	77.6	83.7
07	THERMAL & MOISTURE PROTECTION	98.7	82.0	91.4	108.1	77.5	94.8	95.2	77.2	87.4	100.8	76.9	90.4	98.2	76.4	88.7	87.6	72.3	80.9
08	OPENINGS	103.9	81.9	98.8	88.4	76.9	85.7	92.4	76.7	88.8	93.6	75.0	89.3	91.0	75.6	87.4	91.4	76.3	87.9
0920	Plaster & Gypsum Board	96.8	85.8	89.4	111.0	77.1	88.2	93.3	79.4	83.9	71.7	78.4	76.2	94.2	77.3	82.8	92.0	77.5	82.2
0950, 0980	Ceilings & Acoustic Treatment	92.7	85.8	88.0	90.6	77.1	81.5	73.9	79.4	77.6	84.0	78.4	80.2	77.9	77.3	77.5	81.6	77.5	78.8
0960	Flooring	97.2	83.2	93.2	97.3	88.4	94.8	93.3	79.2	89.3	68.9	83.2	72.9	93.7	75.0	88.5	91.6	54.0	81.1
0970, 0990	Wall Finishes & Painting/Coating	96.5	81.1	87.4	92.8	68.8	78.6	84.4	81.4	82.6	85.2	73.0	78.0	84.4	65.8	73.4	90.3	66.3	76.1
09	FINISHES	94.9	84.6	89.4	93.1	79.1	85.5	87.2	79.2	82.8	78.8	78.9	78.8	87.9	75.4	81.1	88.5	71.4	79.2
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	93.7	98.6	100.0	88.6	97.5	100.0	86.6	97.0	100.0	88.0	97.3	100.0	86.3	97.0	100.0	87.7	97.3
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.1	79.9	92.2	96.5	79.3	89.7	96.2	76.2	88.3	97.0	75.9	88.7	99.7	76.9	90.7	96.4	78.6	89.4
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	101.9	86.7	94.4	92.0	78.3	85.3	98.6	78.6	88.7	93.6	74.1	84.0	91.4	74.0	82.9	94.3	74.6	84.6
MF2018	WEIGHTED AVERAGE	98.7	83.2	92.1	94.2	81.1	88.6	95.8	78.1	88.3	92.5	79.6	87.0	96.2	78.2	88.6	93.9	77.3	86.9
DIVISION	IOWA																		
	SOUTH BEND			TERRE HAUTE			WASHINGTON			BURLINGTON			CARROLL			CEDAR RAPIDS			
	465 - 466	478	475	476	476	476	526	526	526	514	514	514	522 - 524	522 - 524	522 - 524				
MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL		
015433	CONTRACTOR EQUIPMENT	108.2	108.2	110.3	110.3	110.3	110.3	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8	95.7	95.7
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	97.7	94.2	95.3	93.4	115.4	108.6	93.2	115.7	108.7	98.0	91.8	93.7	87.1	92.6	90.9	99.9	91.4	94.0
0310	Concrete Forming & Accessories	95.1	76.0	78.9	95.0	77.1	79.7	96.5	80.5	82.8	96.5	94.2	94.5	84.1	83.9	83.9	102.5	83.9	86.6
0320	Concrete Reinforcing	104.1	83.6	94.2	99.0	83.0	91.3	91.6	82.6	87.2	94.7	97.8	96.2	95.4	85.8	90.8	95.3	80.2	88.0
0330	Cast-in-Place Concrete	108.2	78.4	97.1	93.7	78.3	88.0	102.0	85.0	95.6	107.3	54.8	87.8	107.3	82.2	97.9	107.6	83.4	98.6
03	CONCRETE	97.7	79.7	89.8	102.5	78.8	92.1	108.3	82.6	97.0	95.8	81.5	89.6	94.7	84.3	90.1	95.9	83.8	90.6
04	MASONRY	91.2	74.0	80.6	92.0	73.3	80.5	84.5	79.6	81.5	99.5	71.9	82.5	101.1	72.4	83.5	105.0	80.0	89.6
05	METALS	101.5	102.4	101.7	92.6	84.4	90.2	87.1	84.7	86.4	87.9	99.1	91.2	87.9	95.4	90.1	90.3	93.1	91.2
06	WOOD, PLASTICS & COMPOSITES	96.6	75.2	84.8	93.0	76.7	84.0	93.2	79.2	85.5	91.6	98.1	95.2	77.8	88.4	83.6	98.9	83.6	90.5
07	THERMAL & MOISTURE PROTECTION	103.2	78.7	92.5	100.1	79.1	91.0	100.0	83.5	92.8	104.4	77.1	92.5	104.7	78.8	93.4	105.5	80.1	94.4
08	OPENINGS	93.1	75.5	89.0	92.3	75.3	88.3	89.3	77.1	86.4	94.5	95.8	94.8	98.8	84.2	95.4	99.3	81.2	95.1
0920	Plaster & Gypsum Board	97.7	74.7	82.2	94.2	75.7	81.8	94.0	78.3	83.4	105.0	98.3	100.5	100.9	88.3	92.4	110.3	83.6	92.3
0950, 0980	Ceilings & Acoustic Treatment	94.2	74.7	81.1	81.6	75.7	77.6	76.7	78.3	77.8	99.0	98.3	98.5	99.0	88.3	91.8	101.4	83.6	89.4
0960	Flooring	90.7	86.2	89.5	94.1	75.7	88.9	95.1	83.2	91.7	93.7</								

City Cost Indexes

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	95.0	95.0		98.8	98.8		98.8	98.8		98.8	98.8		102.4	102.4		94.5	94.5	
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	104.5	88.5	93.4	92.9	93.6	93.4	98.4	94.6	95.8	96.6	91.6	93.2	98.3	99.3	99.0	97.7	88.7	91.5
0310 Concrete Forming & Accessories	83.5	73.6	75.0	79.2	86.7	85.6	102.0	95.9	96.8	94.0	71.8	75.1	95.6	89.5	90.4	84.9	81.5	82.0
0320 Concrete Reinforcing	97.3	79.8	88.8	96.3	85.9	91.3	95.3	99.0	97.1	94.7	85.2	90.1	101.0	101.6	101.3	94.0	79.9	87.2
0330 Cast-in-Place Concrete	111.8	79.1	99.6	114.6	85.7	103.8	103.6	95.2	100.5	104.4	76.0	93.8	97.6	92.1	95.6	105.3	83.0	97.0
03 CONCRETE	98.1	77.6	89.1	97.7	86.8	92.9	94.0	96.7	95.2	93.8	76.6	86.3	91.0	92.8	91.8	92.7	82.6	88.3
04 MASONRY	106.5	76.2	87.8	99.7	79.9	87.5	102.0	92.2	96.0	120.3	69.2	88.9	87.7	89.0	88.5	105.9	68.8	83.1
05 METALS	95.2	92.8	94.5	88.4	96.0	90.6	90.3	105.5	94.8	88.0	94.2	89.9	94.1	96.8	94.9	88.9	92.4	89.9
06 WOOD, PLASTICS & COMPOSITES	76.5	72.1	74.1	69.7	88.4	80.0	98.9	95.3	96.9	88.5	70.9	78.8	87.6	88.5	88.1	78.3	82.2	80.4
07 THERMAL & MOISTURE PROTECTION	104.8	74.8	91.8	106.2	82.2	95.8	104.9	91.6	99.1	104.6	69.9	89.5	98.5	87.6	93.8	105.1	76.5	92.6
08 OPENINGS	98.4	76.8	93.3	108.6	85.9	103.3	99.3	96.7	98.7	97.4	77.9	92.9	100.8	89.6	98.2	98.4	82.4	94.6
0920 Plaster & Gypsum Board	100.9	71.8	81.3	95.8	88.3	90.8	110.3	95.4	100.2	103.7	70.3	81.2	92.8	88.3	89.8	100.9	82.1	88.3
0950, 0980 Ceilings & Acoustic Treatment	99.0	71.8	80.6	90.2	88.3	88.9	101.4	95.4	97.3	99.0	70.3	79.6	93.4	88.3	90.0	99.0	82.1	87.6
0960 Flooring	87.0	84.3	86.2	81.3	69.1	77.8	96.1	89.4	94.2	93.3	69.1	86.5	95.2	94.5	95.0	99.1	69.1	90.7
0970, 0990 Wall Finishes & Painting/Coating	89.6	59.8	72.0	83.6	84.6	84.2	92.8	90.5	91.4	92.8	84.6	87.9	91.6	84.6	87.5	93.9	78.4	84.8
09 FINISHES	91.0	73.7	81.7	85.1	83.4	84.2	95.7	94.1	94.8	93.5	72.4	82.1	93.6	90.0	91.6	94.8	78.9	86.2
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	91.4	98.1	100.0	91.6	98.1	100.0	96.9	99.3	100.0	88.6	97.5	100.0	95.6	99.0	100.0	92.3	98.3
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	100.0	72.8	89.4	96.3	79.8	89.8	100.0	93.9	97.6	96.5	74.5	87.9	99.8	86.8	94.7	100.0	75.6	90.4
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	103.9	82.7	93.4	93.5	76.9	85.3	96.9	87.6	92.3	98.8	47.2	73.4	105.1	84.3	94.8	102.5	76.9	89.9
MF2018 WEIGHTED AVERAGE	98.9	79.2	90.6	95.7	84.2	90.8	97.1	94.5	96.0	96.4	73.7	86.8	97.2	90.2	94.3	97.2	79.9	89.9
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	98.8	98.8		98.8	98.8		94.5	94.5		95.0	95.0		98.8	98.8		98.8	98.8	
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	101.4	90.5	93.9	101.5	91.5	94.6	98.0	86.7	90.2	102.6	88.6	92.9	107.7	91.6	96.6	109.6	93.3	98.3
0310 Concrete Forming & Accessories	79.8	78.0	78.3	83.6	71.4	73.2	91.9	87.1	87.8	85.1	77.2	78.3	85.7	37.8	44.9	102.5	75.5	79.4
0320 Concrete Reinforcing	96.3	85.2	90.9	96.2	85.2	90.9	94.7	98.0	96.3	97.3	85.8	91.7	97.3	85.1	91.4	95.3	100.8	98.0
0330 Cast-in-Place Concrete	107.6	41.9	83.1	107.6	71.2	94.0	108.0	63.9	91.6	108.1	82.6	98.6	105.9	55.5	87.2	106.6	89.3	100.2
03 CONCRETE	93.1	67.6	81.9	93.3	74.8	85.2	95.4	81.5	89.3	95.6	81.5	89.4	94.7	54.1	76.8	95.3	85.6	91.0
04 MASONRY	98.6	51.9	69.9	111.6	68.0	84.8	102.3	55.2	73.3	106.0	74.5	86.6	124.6	52.2	80.1	99.2	70.0	81.2
05 METALS	88.5	94.0	90.1	88.5	94.2	90.2	87.9	99.7	91.3	94.2	95.6	94.6	88.1	93.3	89.7	90.3	101.3	93.6
06 WOOD, PLASTICS & COMPOSITES	70.1	88.4	80.2	74.0	70.9	72.3	85.7	97.9	92.4	78.3	78.5	78.4	79.1	34.2	54.4	98.9	74.4	85.4
07 THERMAL & MOISTURE PROTECTION	105.5	65.2	88.0	105.0	70.5	90.0	105.3	70.3	90.1	104.0	73.3	90.7	104.3	55.2	82.9	104.9	73.4	91.2
08 OPENINGS	102.5	75.9	96.3	94.7	77.9	90.8	98.8	92.8	97.4	90.2	76.4	87.0	95.6	46.0	84.0	99.3	81.6	95.1
0920 Plaster & Gypsum Board	95.8	88.3	90.8	95.8	70.3	78.6	101.5	98.3	99.3	100.9	78.3	85.7	100.9	32.5	54.9	110.3	73.8	85.8
0950, 0980 Ceilings & Acoustic Treatment	90.2	88.3	88.9	90.2	70.3	76.8	99.0	98.3	98.5	99.0	78.3	85.0	99.0	32.5	54.2	101.4	73.8	82.8
0960 Flooring	82.6	69.1	78.8	84.6	69.1	80.2	102.2	69.1	92.9	87.7	73.9	83.8	88.9	69.1	83.3	96.1	73.3	89.7
0970, 0990 Wall Finishes & Painting/Coating	83.6	81.3	82.2	83.6	84.6	84.2	93.9	84.6	88.4	89.6	84.6	86.6	92.8	83.6	87.3	92.8	69.1	78.8
09 FINISHES	87.0	78.0	82.1	87.6	72.1	79.2	95.9	84.8	89.9	91.1	77.1	83.5	93.3	46.4	67.9	97.2	73.8	84.5
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	84.8	96.6	100.0	88.2	97.4	100.0	87.3	97.2	100.0	88.2	97.4	100.0	78.9	95.3	100.0	91.4	98.1
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	96.3	71.4	86.6	96.3	77.7	89.0	96.5	73.1	87.3	96.5	83.9	91.6	96.5	71.5	86.7	100.0	81.2	92.6
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	99.8	69.4	84.8	98.9	47.2	73.4	100.9	71.0	86.2	98.8	78.4	88.7	98.8	47.2	73.4	98.8	74.0	86.6
MF2018 WEIGHTED AVERAGE	95.5	73.7	86.3	95.3	74.0	86.3	96.3	78.7	88.9	96.1	81.9	90.1	96.8	62.4	82.3	97.7	81.5	90.9
DIVISION	KANSAS																	
	SPENCER			WATERLOO			BELLEVILLE			COLBY			DODGE CITY			EMPIORIA		
	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	98.8	98.8		98.8	98.8		103.7	103.7		103.7	103.7		103.7	103.7		101.9	101.9	
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	107.8	90.4	95.7	106.9	92.7	97.1	111.3	92.0	98.0	106.7	92.7	97.0	109.4	91.7	97.2	103.1	89.7	93.8
0310 Concrete Forming & Accessories	91.8	37.5	45.5	94.4	68.7	72.5	94.8	54.3	60.3	97.5	61.2	66.6	91.1	61.1	65.5	86.2	70.0	72.4
0320 Concrete Reinforcing	97.3	85.1	91.4	96.9	80.3	88.9	98.9	102.6	100.7	97.1	102.6	99.8	94.7	102.3	98.4	97.5	102.8	100.1
0330 Cast-in-Place Concrete	105.9	66.5	90.9	115.2	84.0	103.6	121.0	83.5	107.1	119.5	87.2	107.5	121.6	86.9	108.7	117.0	87.3	106.0
03 CONCRETE	95.0	57.4	78.5	99.0	77.2	89.4	110.5	74.3	94.6	108.3	78.7	95.3	109.7	78.5	96.0	103.1	82.8	94.2
04 MASONRY	124.6	52.2	80.1	99.4	75.1	84.5	86.4	58.5	65.3	100.5	64.6	78.4	110.7	59.6	79.3	91.8	66.0	76.0
05 METALS	88.1	93.0	89.5	90.7	93.0	91.4	95.6	99.2	96.7	92.8	100.0	94.9	94.2	98.6	95.5	95.3	100.2	96.8
06 WOOD, PLASTICS & COMPOSITES	85.5	34.2	57.3	87.2	64.4	74.6	93.3	51.2	70.1	96.9	57.4	75.2	88.9	57.4	71.5	84.3	68.8	75.8
07 THERMAL & MOISTURE PROTECTION	105.3	55.8	83.8	105.3	77.2	93.0	91.4	62.1	78.7	97.8	65.4	83.7	97.8	66.6	84.2	89.5	75.4	83.3
08 OPENINGS	106.7	46.0	92.5	95.1	72.9	90.0	94.1	62.5	86.7	97.9	65.9	90.4	97.8	65.9	90.4	92.1	74.4	88.0
0920 Plaster & Gypsum Board	101.5	32.5	55.1	103.8	63.6	76.7	88.7	50.0	62.6	96.8	56.3	69.6	100.5	56.3	67.5	85.5	68.1	73.8
0950, 0980 Ceilings & Acoustic Treatment	99.0	32.5	54.2	91.8	63.6	72.8	76.5	50.0	58.6	77.3	56.3	63.2	77.3	56.3	63.2	76.5	68.1	70.8
0960 Flooring	91.6	69.1	85.3	89.6	78.9	86.6	92.9	68.4	86.0	87.6	68.4	82.2	83.8	68.4	79			

City Cost Indexes

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				
015433	CONTRACTOR EQUIPMENT	102.8	102.8	103.7	103.7	103.7	103.7	103.7	103.7	-	100.4	100.4	103.7	103.7	103.7	103.7			
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	99.9	89.7	92.8	111.4	92.2	98.2	90.6	92.7	92.0	110.2	92.7	98.1	94.3	90.2	91.5	111.3	92.3	98.2
0310	Concrete Forming & Accessories	102.8	82.9	85.9	95.2	58.9	64.3	86.0	56.6	61.0	105.8	67.8	73.4	99.4	98.4	98.6	91.5	58.8	63.7
0320	Concrete Reinforcing	96.9	100.8	98.8	94.7	102.6	98.5	94.7	102.6	98.5	94.1	100.8	97.3	94.0	105.3	99.4	96.1	102.3	99.1
0330	Cast-in-Place Concrete	108.5	82.4	98.8	94.2	83.8	90.3	87.3	86.9	87.2	122.1	87.1	109.1	92.9	97.4	94.6	94.2	83.5	90.3
03	CONCRETE	98.4	86.6	93.2	99.8	76.5	89.6	83.0	76.5	80.2	110.8	81.3	97.8	90.7	99.7	94.6	101.7	76.3	90.5
04	MASONRY	92.7	56.1	70.2	109.5	58.6	78.2	100.2	64.5	78.3	97.8	64.5	77.3	93.5	98.1	96.3	108.2	53.6	74.6
05	METALS	95.3	99.0	96.4	92.3	99.8	94.5	92.1	99.0	94.1	92.0	98.8	94.0	103.1	106.2	104.0	92.6	98.7	94.4
06	WOOD, PLASTICS & COMPOSITES	103.8	90.5	96.5	93.9	57.4	73.8	84.0	51.4	66.0	107.3	65.9	84.5	99.6	98.5	99.0	89.6	57.4	71.9
07	THERMAL & MOISTURE PROTECTION	90.5	72.8	82.8	98.1	62.8	82.8	96.6	64.3	82.5	97.8	74.9	87.9	90.3	99.3	94.2	98.3	60.9	82.0
08	OPENINGS	92.1	85.9	90.6	97.8	65.9	90.4	97.8	62.6	89.6	95.9	70.2	89.9	93.2	97.4	94.2	97.9	65.9	90.4
0920	Plaster & Gypsum Board	91.2	90.4	90.7	94.3	56.3	68.7	89.2	50.2	63.0	105.0	65.1	78.1	84.8	98.6	94.1	91.4	56.3	67.8
0950, 0980	Ceilings & Acoustic Treatment	76.5	90.4	85.9	77.3	56.3	63.2	77.3	50.2	59.0	77.3	65.1	69.0	76.5	98.6	91.4	77.3	56.3	63.2
0960	Flooring	102.6	66.9	92.5	86.4	68.4	81.3	80.9	68.4	77.3	92.0	66.9	84.9	82.4	95.3	86.0	84.1	68.4	79.6
0970, 0990	Wall Finishes & Painting/Coating	91.3	77.5	83.1	96.1	57.9	73.5	96.1	57.9	73.5	96.1	57.9	73.5	97.1	102.7	100.4	96.1	57.9	73.5
09	FINISHES	88.5	80.7	84.3	84.5	59.3	70.9	80.3	57.3	67.9	87.3	66.1	75.8	83.6	98.3	91.5	83.7	59.3	70.5
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	86.8	97.1	100.0	84.0	96.4	100.0	85.4	96.7	100.0	87.0	97.1	100.0	94.5	98.8	100.0	84.0	96.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.4	67.4	85.0	96.5	67.4	85.1	96.5	71.1	86.5	96.5	70.4	86.3	99.9	99.1	99.6	96.5	69.3	85.8
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	100.6	67.9	84.5	94.6	67.9	81.4	90.5	61.0	75.9	92.3	72.8	82.7	106.2	98.1	102.2	92.9	67.9	80.6
MF2018	WEIGHTED AVERAGE	96.0	77.1	88.0	96.5	72.0	86.1	92.5	71.9	83.8	97.2	76.0	88.2	97.3	98.6	97.8	96.5	71.7	86.0
DIVISION	KANSAS												KENTUCKY						
	SALINA			TOPEKA			WICHITA			ASHLAND			BOWLING GREEN		CAMPION				
	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				
015433	CONTRACTOR EQUIPMENT	103.7	103.7	105.0	105.0	105.0	106.7	106.7	106.7	97.4	97.4	97.4	90.6	90.6	96.8	96.8	96.8	96.8	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	99.8	92.2	94.6	98.4	94.4	95.6	96.8	97.9	97.9	114.0	78.8	89.7	78.7	89.4	86.1	87.5	90.7	89.7
0310	Concrete Forming & Accessories	87.8	61.4	65.3	96.7	66.1	70.7	92.9	57.0	62.3	87.2	89.6	89.3	86.5	78.8	79.9	89.3	80.9	82.2
0320	Concrete Reinforcing	94.1	100.5	97.2	93.5	103.8	98.5	92.4	100.4	96.3	92.5	94.2	93.3	89.7	76.8	83.5	90.6	93.0	91.7
0330	Cast-in-Place Concrete	105.6	83.8	97.5	97.6	86.4	93.4	98.7	79.5	91.5	89.1	94.6	91.1	88.4	69.7	81.4	98.6	68.1	87.2
03	CONCRETE	96.8	77.3	88.2	92.3	80.8	87.3	92.4	73.7	84.2	93.1	93.3	93.2	91.6	75.7	84.6	95.0	78.8	87.9
04	MASONRY	125.4	54.9	82.1	87.7	64.3	73.3	97.5	54.1	70.8	90.7	92.0	91.5	92.7	69.2	78.3	89.7	54.7	68.2
05	METALS	94.0	98.9	95.5	99.5	100.0	99.6	96.2	97.5	96.6	95.1	107.7	98.8	96.7	82.8	92.6	96.0	89.8	94.2
06	WOOD, PLASTICS & COMPOSITES	85.4	60.7	71.8	99.9	65.2	80.8	98.7	54.4	74.3	73.4	87.7	81.3	85.7	80.6	82.9	84.2	88.3	86.5
07	THERMAL & MOISTURE PROTECTION	97.2	62.1	82.0	94.0	74.7	85.6	96.2	60.8	80.8	91.2	88.3	90.0	87.6	77.9	83.4	100.2	67.8	86.1
08	OPENINGS	97.8	67.3	90.7	103.5	74.1	96.7	101.3	63.8	92.5	90.6	89.0	90.2	91.4	77.1	88.1	92.6	87.4	91.4
0920	Plaster & Gypsum Board	89.2	59.8	69.4	99.5	64.2	75.7	95.7	53.1	67.0	59.3	87.6	78.4	87.6	80.6	82.9	87.6	87.6	87.6
0950, 0980	Ceilings & Acoustic Treatment	77.3	59.8	65.5	87.2	64.2	71.7	88.0	53.1	64.5	77.0	87.6	84.2	81.6	80.6	80.9	81.6	87.6	85.7
0960	Flooring	82.2	68.4	78.3	98.2	68.4	89.8	94.3	68.4	87.0	73.8	81.3	75.9	89.5	61.9	81.8	91.6	64.3	83.9
0970, 0990	Wall Finishes & Painting/Coating	96.1	57.9	73.5	92.8	67.7	78.0	94.9	57.9	73.0	91.6	90.4	90.9	93.0	67.6	76.9	90.3	53.9	68.8
09	FINISHES	81.5	61.3	70.6	93.9	65.7	78.6	90.3	57.7	72.7	76.1	88.1	82.6	87.1	74.6	80.3	87.9	75.9	81.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	85.3	96.7	100.0	80.3	95.6	100.0	85.1	96.7	100.0	88.2	97.4	100.0	84.4	96.5	100.0	47.8	88.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.0	70.5	88.5	100.0	73.2	89.5	99.8	71.0	88.5	96.2	85.0	91.8	99.9	77.0	90.9	96.4	76.4	88.6
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	92.7	73.8	83.4	105.1	71.9	88.7	95.9	73.8	85.0	91.9	88.3	90.1	94.6	74.7	84.8	92.1	88.2	90.2
MF2018	WEIGHTED AVERAGE	97.2	73.5	87.2	98.6	76.5	89.3	97.0	72.6	86.7	93.2	89.7	91.7	94.6	77.2	87.3	94.4	78.0	87.5
DIVISION	KENTUCKY												HENDERSON						
	CORBIN			COVINGTON			ELIZABETHTOWN			FRANKFORT			HAZARD		424				
	407 - 409		410			427			406			417 - 418		424					
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL				
015433	CONTRACTOR EQUIPMENT	96.8	96.8	100.6	100.6	100.6	90.6	90.6	90.6	100.1	100.1	96.8	96.8	110.3	110.3	110.3	110.3	110.3	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	91.6	91.2	91.3	82.7	101.9	95.9	72.9	89.3	84.3	90.0	96.8	94.7	85.3	91.8	89.7	81.7	114.6	104.5
0310	Concrete Forming & Accessories	85.0	76.0	77.3	84.9	70.8	72.8	81.3	72.1	73.5	102.0	78.5	82.0	85.8	81.8	82.4	92.3	77.1	79.3
0320	Concrete Reinforcing	89.6	92.3	90.9	89.3	78.6	84.1	90.2	83.7	87.0	94.0	84.0	89.2	91.0	92.5	91.7	89.8	84.4	87.2
0330	Cast-in-Place Concrete	91.0	72.5	84.1	94.3	79.6	88.9	79.9	67.6	75.3	91.1	77.0	85.8	94.8	69.6	85.4	78.1	84.5	80.5
03	CONCRETE	84.2	78.0	81.5	93.4	76.1	85.8	83.5	73.1	79.0	87.1	79.3	83.6	91.8	79.7	86.5	88.7	81.3	85.5
04	MASONRY	81.9	60.0	68.4	104.0	72.0	84.3	77.4	61.8	67.8	78.6	74.2	75.9	88.6	56.8	69.0	96.0	78.7	85.4
05	METALS	90.9	89.3	90.5	93.9	88.1	92.2	95.9	85.3	92.7	93.1	86.4	91.1	96.0	89.8	94.2	86.8	87.0	86.9
06	WOOD, PLASTICS & COMPOSITES	72.1	77.6	75.1	81.8	68.3	74.3	80.6	73.9	76.9	101.5	77.7	88.4	80.9	88.3	85.0	88.4	75.8	81.5
07	THERMAL & MOISTURE PROTECTION	103.8	69.5	88.9	101.1	72.1	88.5	87.0	68.5	79.0	101.8	75.7	90.5	100.1	69.5	86.8	99.3	82.8	92.1
08	OPENINGS	87.3	70.5	83.4	94.5	71.8	89.2	91.4	73.0	87.1	98.9	78.4	94.1	93.0	87.2	91.6	89.6	78.5	87.0
0920	Plaster & Gypsum Board	88.4	76.6	80.5	68.2	68.0	68.1	86.3	73.7	77.8	91.6	76.6	81.5	86.3	87.6	87.2	90.9	74.8	80.0
0950, 0980	Ceilings & Acoustic Treatment	74.7	76.6	76.0	84.0	68.0	73.2												

City Cost Indexes

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	96.8	96.8	93.7	93.7		110.3	110.3		110.3	110.3		97.4	97.4		96.8	96.8		
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	93.8	92.8	93.1	87.8	94.4	92.3	91.8	115.3	108.0	84.4	114.8	105.4	125.2	78.0	92.6	77.9	91.2	87.1
0310	Concrete Forming & Accessories	96.5	73.7	77.1	93.5	79.1	81.2	90.8	76.8	78.9	88.8	81.2	82.3	96.0	85.6	87.2	86.8	76.6	78.1
0320	Concrete Reinforcing	98.4	84.0	91.4	94.8	84.2	89.6	89.8	77.3	83.8	90.4	82.5	86.6	93.0	94.1	93.5	90.2	92.5	91.3
0330	Cast-in-Place Concrete	93.1	84.4	89.9	89.3	70.7	82.4	91.1	83.9	88.4	83.2	81.1	82.4	97.9	89.4	94.8	78.1	87.9	81.7
03	CONCRETE	86.9	79.7	83.8	85.8	77.4	82.1	100.7	79.8	91.5	93.3	81.7	88.2	106.8	89.7	99.3	78.6	83.7	80.8
04	MASONRY	80.6	71.1	74.8	78.7	72.0	74.6	88.8	78.6	82.5	91.5	79.2	83.9	88.5	83.2	85.3	83.3	63.2	71.0
05	METALS	93.3	86.7	91.3	95.5	85.5	92.5	88.3	84.7	87.3	85.3	87.5	86.0	95.0	107.5	98.7	95.9	90.0	94.2
06	WOOD, PLASTICS & COMPOSITES	87.3	71.6	78.6	88.8	80.8	84.4	86.3	75.8	80.5	84.0	81.4	82.6	83.3	87.7	85.7	81.5	77.6	79.3
07	THERMAL & MOISTURE PROTECTION	104.1	73.9	90.9	101.0	75.7	90.0	100.1	76.6	89.9	99.4	82.6	92.1	92.1	80.5	87.0	99.3	71.5	87.2
08	OPENINGS	87.5	74.6	84.5	88.8	76.8	86.0	89.6	76.7	86.6	89.0	81.1	87.1	91.2	85.7	89.9	92.1	77.1	88.6
0920	Plaster & Gypsum Board	97.7	70.4	79.4	93.7	80.6	84.9	89.3	74.8	79.5	88.6	80.6	83.2	63.1	87.6	79.6	86.3	76.6	79.8
0950, 0980	Ceilings & Acoustic Treatment	77.9	70.4	72.9	82.8	80.6	81.3	76.7	74.8	75.4	76.7	80.6	79.3	77.0	87.6	84.2	81.6	76.6	78.2
0960	Flooring	93.4	64.3	85.2	95.0	62.9	86.0	92.6	61.9	84.0	91.5	76.0	87.2	78.1	64.3	74.2	90.1	64.3	82.8
0970, 0990	Wall Finishes & Painting/Coating	87.2	79.7	82.8	93.9	68.1	78.7	90.3	86.7	88.2	90.3	73.1	80.2	91.6	91.7	90.3	68.1	77.2	
09	FINISHES	86.4	72.0	78.6	90.8	74.9	82.2	87.3	74.7	80.5	86.5	79.4	82.7	78.7	82.6	80.8	86.4	73.3	79.3
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	92.1	98.2	100.0	90.5	97.9	100.0	93.0	98.4	100.0	91.1	98.0	100.0	48.2	88.4	100.0	89.2	97.6
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.0	76.4	90.8	99.9	80.0	92.1	99.9	77.1	91.0	96.6	78.2	89.4	96.2	82.3	90.7	96.6	74.0	87.7
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	92.5	74.7	83.7	96.4	77.9	87.3	94.1	73.7	84.0	96.3	77.3	86.9	94.8	88.3	91.6	92.5	88.2	90.4
MF2018	WEIGHTED AVERAGE	93.1	78.1	86.7	93.9	79.6	87.8	94.7	81.0	88.9	92.4	83.2	88.6	95.8	85.4	91.4	91.6	79.5	86.5
DIVISION	LOUISIANA												MONROE						
	ALEXANDRIA			BATON ROUGE			HAMMOND			LAFAYETTE			LAKE CHARLES			MONROE			
	713 - 714	707 - 708	704	704	705	706	704	705	706	705	706	707	704	705	706	704	705	706	
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	
015433	CONTRACTOR EQUIPMENT	90.9	90.9	91.9	91.9		89.3	89.3		89.3	89.3		88.8	88.8		90.9	90.9		
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	98.7	87.7	91.1	102.1	91.2	94.6	101.2	85.7	90.5	102.5	87.9	92.4	103.2	87.1	92.0	98.7	87.6	91.1
0310	Concrete Forming & Accessories	77.8	60.0	62.6	99.0	71.8	75.8	79.0	54.9	58.5	95.6	67.8	71.9	96.4	67.8	72.0	77.4	59.4	62.1
0320	Concrete Reinforcing	92.2	54.3	73.9	93.3	54.3	74.5	92.1	54.3	73.8	93.4	54.3	74.5	93.4	54.3	74.5	91.2	54.3	73.3
0330	Cast-in-Place Concrete	89.0	66.2	80.5	88.8	73.1	82.9	87.6	62.6	78.3	87.1	66.1	79.3	91.7	66.1	82.2	89.0	64.1	79.7
03	CONCRETE	82.8	62.0	73.6	85.5	69.8	78.6	85.8	58.3	73.7	86.8	65.4	77.4	89.0	65.4	78.6	82.6	61.0	73.1
04	MASONRY	109.3	64.3	81.6	91.7	66.7	76.3	95.3	60.0	73.6	95.3	66.6	77.7	94.7	66.6	77.5	103.9	63.1	78.8
05	METALS	92.6	70.9	86.2	96.9	74.0	90.1	88.4	69.3	82.8	87.7	69.6	82.4	87.7	69.6	82.4	92.6	70.8	86.2
06	WOOD, PLASTICS & COMPOSITES	89.2	58.8	72.5	103.0	73.2	86.6	83.0	54.3	67.2	103.7	68.0	84.1	101.9	68.0	83.3	88.6	58.8	72.2
07	THERMAL & MOISTURE PROTECTION	99.0	65.6	84.5	97.7	69.2	85.3	96.7	62.9	82.0	97.3	67.4	84.3	97.1	67.2	84.1	99.0	64.8	84.1
08	OPENINGS	110.8	58.6	98.6	97.9	70.4	91.5	96.2	54.9	86.6	99.8	62.2	91.0	99.8	62.2	91.0	110.7	57.1	98.2
0920	Plaster & Gypsum Board	83.6	58.1	66.4	101.0	72.7	82.0	100.0	53.4	68.7	108.6	67.6	81.0	108.6	67.6	81.0	83.3	58.1	66.3
0950, 0980	Ceilings & Acoustic Treatment	87.1	58.1	67.6	92.9	72.7	79.3	96.9	53.4	67.6	94.4	67.6	76.3	95.3	67.6	76.6	87.1	58.1	67.6
0960	Flooring	85.1	68.2	80.4	93.0	68.2	86.0	89.9	68.2	83.8	98.2	68.2	89.8	98.2	68.2	89.8	84.7	68.2	80.1
0970, 0990	Wall Finishes & Painting/Coating	88.8	59.7	71.6	94.7	59.7	74.0	97.7	59.9	75.3	97.7	59.7	75.2	97.7	59.7	75.2	88.8	59.7	71.6
09	FINISHES	80.9	61.2	70.2	92.2	70.3	80.3	90.4	57.5	72.6	93.5	67.2	79.3	93.7	67.2	79.4	80.7	60.9	70.0
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	79.1	95.3	100.0	84.2	96.5	100.0	80.7	95.7	100.0	83.3	96.3	100.0	83.3	96.3	100.0	78.9	95.3
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.0	63.2	85.6	99.9	64.1	85.9	96.7	61.0	82.7	100.2	64.2	86.0	100.2	64.5	86.2	100.0	61.9	85.0
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	94.3	61.4	78.1	101.7	58.0	80.2	97.0	69.6	83.5	98.1	63.8	81.2	97.7	65.9	82.0	95.9	57.3	76.9
MF2018	WEIGHTED AVERAGE	95.9	65.6	83.1	96.6	69.3	85.1	93.7	64.4	81.3	95.4	67.9	83.8	95.6	68.2	84.1	95.8	64.4	82.5
DIVISION	LOUISIANA												MAINE						
	NEW ORLEANS			SHREVEPORT			THIBODAUX			AUGUSTA			BANGOR			BATH			
	700 - 701	710 - 711	703	703	043	044	703	043	044	703	043	044	704	045	045	704	045	045	
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	
015433	CONTRACTOR EQUIPMENT	88.6	88.6	93.9	93.9		89.3	89.3		98.4	98.4		95.7	95.7		95.7	95.7		
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	104.3	93.9	97.1	101.1	92.3	95.0	103.6	87.6	92.6	88.2	98.0	95.0	90.6	95.5	94.0	88.3	94.2	92.4
0310	Concrete Forming & Accessories	95.7	68.9	72.8	92.9	60.3	65.1	90.2	64.5	68.2	98.6	78.6	81.5	93.0	76.5	79.0	89.1	78.4	80.0
0320	Concrete Reinforcing	92.9	54.4	74.3	92.5	54.3	74.0	92.1	54.3	73.8	102.6	81.1	92.2	94.1	81.1	87.8	93.1	81.1	87.3
0330	Cast-in-Place Concrete	90.7	69.7	82.9	92.0	65.2	82.0	94.1	64.3	83.0	89.8	115.3	99.3	70.9	114.1	87.0	70.9	114.3	87.1
03	CONCRETE	94.4	66.6	82.2	86.2	61.7	75.4	90.6	63.2	75.4	95.5	92.3	94.1	88.5	91.0	89.6	88.6	91.9	90.1
04	MASONRY	99.8	62.6	77.0	94.5	63.4	75.4	119.9	62.8	84.8	101.0	94.1	96.8	115.8	93.7	102.2	122.5	94.1	105.0
05	METALS	99.1	62.6	88.4	96.7	70.2	88.9	88.4	69.5	82.8	105.4	92.3	101.6	93.7	93.0	93.5	92.1	92.9	92.3
06	WOOD, PLASTICS & COMPOSITES	100.3	71.1	84.2	98.0	59.7	76.9	90.5	65.5	76.8	93.5	75.6	83.6	90.7	73.0	80.9	85.1	75.4	79.8
07	THERMAL & MOISTURE PROTECTION	95.0	68.0	83.3	97.4	65.6	83.6	96.9	65.2	83.1	111.0	100.6	106.5	109.0	100.0	105.1	108.9	100.1	105.1
08	OPENINGS	98.8	64.2	90.7	104.7	56.6	93.5	100.7	56.9	90.5	102.7	78.5	97.1	96.4	77.1	91.9	96.4	78.4	92.2
0920	Plaster & Gypsum Board	96.5	70.5	79.0	91.5	58.8	69.5	101.6	65.0	77.0	109.7	74.5	86.0	116.8	71.9	86.6	112.0	74.5	86.8
0950, 0980	Ceilings & Acoustic Treatment	97.5	70.5	79.3	92.8	58.8	69.9	96.9	65.0	75.4	107.1	74.5	85.1	89.6	71.9	77.7	88.6	74.5	79.1
0960	Flooring	103.6	68.2	93.7	91.2	68.2	84.8	95.8	68.2										

City Cost Indexes

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	95.7	95.7	95.7	95.7	95.7	95.7	95.7	95.7	95.7	95.7	95.7	95.7	95.7	95.7	95.7	95.7		
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	90.2	94.2	93.0	79.5	94.3	89.7	88.2	95.5	93.3	89.5	94.2	92.8	87.4	100.6	96.5	86.0	94.2	91.7
0310	Concrete Forming & Accessories	96.7	78.4	81.1	88.8	78.7	80.2	98.2	76.6	79.8	93.8	78.4	80.7	99.8	76.8	80.2	94.9	78.4	80.9
0320	Concrete Reinforcing	94.1	81.1	87.8	89.7	81.1	85.5	115.6	81.1	98.9	94.1	81.1	87.8	106.5	81.1	94.2	94.1	81.1	87.8
0330	Cast-in-Place Concrete	70.9	113.2	86.7	70.7	114.4	87.0	72.4	114.1	87.9	70.9	114.3	87.1	85.8	115.2	96.8	72.4	114.3	88.0
03	CONCRETE	89.5	91.5	90.4	82.1	92.1	86.5	88.1	91.0	89.4	89.0	91.9	90.3	91.5	91.4	91.5	86.0	91.9	88.6
04	MASONRY	97.9	94.1	95.6	106.5	94.1	98.9	98.5	93.7	95.5	97.9	94.1	95.6	104.7	93.7	98.0	92.5	94.1	93.5
05	METALS	92.3	92.8	92.4	86.8	93.1	88.6	97.1	93.0	95.9	92.3	92.8	92.5	103.0	92.5	99.9	92.2	92.9	92.4
06	WOOD, PLASTICS & COMPOSITES	94.5	75.4	84.0	88.2	75.4	81.2	96.3	73.0	83.5	91.5	75.4	82.7	95.8	73.1	83.3	92.4	75.4	83.1
07	Thermal & Moisture Protection	109.1	100.1	105.1	107.8	100.1	104.4	108.7	100.0	104.9	109.0	100.1	105.1	113.6	100.6	107.9	108.6	100.1	104.9
08	OPENINGS	96.5	78.4	92.3	96.1	82.0	92.8	99.3	77.1	94.1	96.5	78.4	92.3	96.8	77.2	92.2	96.4	78.4	92.2
0920	Plaster & Gypsum Board	119.0	74.5	89.0	106.1	74.5	84.8	121.8	71.9	88.2	117.4	74.5	88.5	108.0	71.9	83.7	117.4	74.5	88.5
0950, 0980	Ceilings & Acoustic Treatment	88.6	74.5	79.1	101.8	74.5	83.4	99.3	71.9	80.8	88.6	74.5	79.1	107.4	71.9	83.5	88.6	74.5	79.1
0960	Flooring	83.7	110.6	91.2	86.6	110.6	93.4	85.2	110.6	92.3	82.9	110.6	90.7	89.6	110.6	95.5	83.3	110.6	91.0
0970, 0990	Wall Finishes & Painting/Coating	90.6	88.9	89.6	81.8	102.1	93.8	90.6	88.9	96.0	88.9	89.6	94.6	88.9	91.2	90.6	88.9	89.6	
09	FINISHES	90.2	84.6	87.2	91.6	86.0	88.6	92.6	83.0	87.4	89.7	84.6	88.9	96.2	83.2	89.1	89.4	84.6	86.8
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	97.6	99.5	100.0	100.9	100.2	100.0	99.7	99.9	100.0	97.6	99.5	100.0	100.1	100.0	100.0	100.9	100.2
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.7	74.3	87.9	96.7	80.4	90.3	100.3	74.1	90.0	96.7	74.3	87.9	100.0	74.1	89.9	96.7	74.3	87.9
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	101.9	76.8	89.5	90.3	76.8	83.6	101.9	76.7	89.5	101.9	76.8	89.5	105.0	76.7	91.0	101.8	76.8	89.5
MF2018	WEIGHTED AVERAGE	95.6	85.2	91.2	92.6	87.0	90.2	97.5	84.9	92.2	95.4	85.3	91.1	99.6	85.4	93.6	94.6	85.4	90.7
DIVISION	MAINE																		
	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	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL		
015433	CONTRACTOR EQUIPMENT	95.7	95.7	104.5	104.5	104.1	104.1	107.8	107.8	102.4	102.4	102.4	102.4	102.4	102.4	102.4	102.4	102.4	102.4
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	90.0	94.2	92.9	100.0	93.5	95.5	100.1	97.7	98.4	100.1	93.6	95.5	92.0	90.3	90.8	98.8	87.7	91.1
0310	Concrete Forming & Accessories	88.6	78.4	79.9	101.0	78.1	81.5	98.4	76.2	79.5	85.1	76.2	77.5	92.3	81.9	83.5	90.4	73.6	76.1
0320	Concrete Reinforcing	94.1	81.1	87.8	108.6	94.9	102.0	101.2	87.3	94.5	103.5	94.0	98.9	93.7	87.4	90.6	92.9	87.1	90.1
0330	Cast-in-Place Concrete	70.9	114.3	87.1	114.1	79.4	101.2	113.8	77.1	100.1	109.4	76.4	97.2	98.0	82.9	92.4	108.8	64.8	92.4
03	CONCRETE	90.2	91.9	90.9	101.4	82.7	93.2	102.8	79.4	95.5	105.2	80.9	94.5	91.4	84.5	88.4	99.7	74.2	88.5
04	MASONRY	109.8	94.1	100.2	94.8	76.6	83.6	104.7	73.1	85.2	111.1	74.6	88.7	99.3	85.4	90.8	113.5	58.6	79.7
05	METALS	92.3	92.8	92.4	105.5	105.2	105.4	103.8	96.6	101.7	90.2	108.3	95.5	100.7	104.2	101.8	101.0	99.7	100.6
06	WOOD, PLASTICS & COMPOSITES	84.6	75.4	79.5	97.1	77.2	86.1	102.5	76.7	88.3	77.3	75.7	76.4	86.7	81.0	83.6	84.5	80.8	82.5
07	Thermal & Moisture Protection	109.1	100.1	105.2	103.5	83.4	94.8	102.7	80.7	93.2	105.3	81.7	95.0	100.9	81.9	92.6	101.0	73.3	89.0
08	OPENINGS	96.5	78.4	92.3	102.3	83.0	97.8	100.5	80.7	95.9	92.7	82.4	90.3	97.6	84.6	94.5	96.0	83.0	92.9
0920	Plaster & Gypsum Board	112.0	74.5	86.8	94.4	76.8	82.5	100.3	76.2	84.0	95.3	75.2	81.8	99.9	80.8	87.0	99.9	80.6	86.9
0950, 0980	Ceilings & Acoustic Treatment	88.6	74.5	79.1	89.1	76.8	80.8	100.5	76.2	84.1	115.1	75.2	88.2	99.0	80.8	86.7	99.0	80.6	86.6
0960	Flooring	80.6	110.6	89.0	90.7	79.5	87.6	92.8	75.7	88.0	87.9	78.4	85.2	85.8	93.1	87.9	85.0	75.7	82.4
0970, 0990	Wall Finishes & Painting/Coating	90.6	88.9	89.6	99.2	72.7	83.5	101.3	75.3	85.9	104.8	72.5	85.7	98.2	84.7	90.2	98.2	72.5	83.0
09	FINISHES	88.4	84.6	86.4	88.5	77.3	82.4	97.0	75.7	85.5	95.6	75.6	84.8	93.3	84.2	88.4	93.5	74.4	83.2
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	97.5	99.4	100.0	90.3	97.8	100.0	86.8	97.1	100.0	86.7	97.0	100.0	91.3	98.1	100.0	82.9	96.2
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.7	74.3	87.9	100.0	87.0	94.9	100.1	82.0	93.0	96.5	87.4	93.0	96.4	72.0	86.8	96.4	72.8	87.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	101.9	76.8	89.5	101.6	88.9	95.3	99.6	86.9	93.3	97.3	101.9	99.5	98.2	80.8	89.6	97.7	62.3	80.3
MF2018	WEIGHTED AVERAGE	96.0	85.2	91.4	100.4	86.3	94.4	101.8	83.2	93.9	97.3	87.7	93.2	96.9	83.8	91.4	98.6	74.8	88.5
DIVISION	MARYLAND																		
	Elkton			Hagerstown			Salisbury			Silver Spring			Waldorf			Boston			
	219	217	218	209	206	20	218	209	207	206	205	204	206	205	204	202 - 022, 024			
MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL		
015433	CONTRACTOR EQUIPMENT	102.4	102.4	102.4	102.4	102.4	102.4	102.4	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	99.7	103.0	103.0
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	86.3	89.0	88.1	90.6	90.4	90.4	98.8	87.6	91.1	88.9	85.7	86.7	95.1	85.7	88.6	92.7	102.1	99.2
0310	Concrete Forming & Accessories	96.2	92.3	92.9	91.5	78.8	80.7	104.5	50.2	58.2	93.0	75.5	78.1	99.7	75.4	79.0	105.1	139.7	134.6
0320	Concrete Reinforcing	92.9	117.3	104.7	93.7	87.4	90.6	92.9	65.2	79.5	102.3	93.9	98.3	103.0	93.9	98.6	117.7	156.9	136.7
0330	Cast-in-Place Concrete	88.1	72.2	82.2	93.3	82.9	89.5	108.8	62.9	91.7	112.1	76.8	98.9	125.6	76.7	107.4	99.2	141.8	115.1
03	CONCRETE	84.0	90.6	86.9	87.7	83.1	85.7	100.5	59.2	82.4	102.8	80.5	93.0	113.3	80.5	98.9	105.4	142.7	121.8
04	MASONRY	98.6	67.0	79.2	105.1	85.4	93.0	112.9	55.2	77.4	110.6	75.0	88.7	94.7	75.0	82.6	112.0	146.3	133.1
05	METALS	101.0	114.0	104.8	100.9	104.3	101.0	101.9	98.1	94.8	104.3	97.6	94.8	104.3	97.5	102.8	136.1	112.6	
06	WOOD, PLASTICS & COMPOSITES	91.9	101.3	97.0	85.8	76.7	80.8	102.6	51.4	74.4	84.0	75.0	79.0	90.8	75.0	82.1	103.8	140.2	123.8
07	Thermal & Moisture Protection	100.5	79.4	91.3	101.2	83.0	93.3	101.3	68.5	87.0	108.4	86.5	98.9	109.0	86.5	99.2	107.2	137.1	120.2
08	OPENINGS	96.0	102.1	97.4	95.9	81.2	92.5	96.2	60.8	87.9	84.9	82.1	84.2	85.5	81.5	84.5	99.9	147.3	111.0
0920	Plaster & Gypsum Board	102.8	101.7	102.0	99.9	76.4	84.1	109.4	50.4	69.7	101.9	75.2	83.9	104.8	75.2	84.8	109.0	141.0	130.6
0950, 0980	Ceilings & Acoustic Treatment	99.0	101.7	100.8	101.7	76.4	84.6	99.0	50.4	66.2	123.2	75.2	90.8	123.2	75.2	90.8	100.5	141.0	127.8
0960	Flooring	87.2	75.7	84.0	85.4	93.1	87.6	90.7</td											

City Cost Indexes

DIVISION		MASSACHUSETTS																	
		BROCKTON			BUZZARDS BAY			FALL RIVER			FITCHBURG			FRAMINGHAM		GREENFIELD			
		023	025		027	014		017	013		018	019		020	021				
MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL		
015433	CONTRACTOR EQUIPMENT	98.1	98.1		98.1	98.1	98.9	98.9		95.7	95.7		97.4	97.4		95.7	95.7		
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	91.1	98.0	95.8	81.2	98.1	92.9	90.3	98.0	95.6	82.7	97.8	93.1	79.5	97.8	92.1	86.4	97.3	93.9
0310	Concrete Forming & Accessories	100.7	121.1	118.1	98.5	120.6	117.4	100.7	120.8	117.8	94.0	118.5	114.9	101.4	121.3	118.4	92.4	117.7	114.0
0320	Concrete Reinforcing	109.7	142.7	125.7	88.0	122.3	104.6	109.7	122.3	105.8	87.9	142.5	114.3	87.9	142.8	114.4	91.5	126.5	108.4
0330	Cast-in-Place Concrete	88.1	136.6	106.2	73.2	136.4	96.7	85.2	136.9	104.4	78.4	136.5	100.0	78.4	136.7	100.1	80.5	122.2	96.0
03	CONCRETE	95.1	129.8	110.3	80.7	126.0	100.6	93.8	126.2	108.0	79.5	128.3	101.0	82.3	130.0	103.2	83.0	120.3	99.4
04	MASONRY	105.4	135.1	123.6	97.9	135.1	120.8	105.9	135.1	123.8	98.2	131.9	118.9	104.7	136.1	124.0	102.7	119.1	112.8
05	METALS	98.8	125.6	106.7	93.6	117.0	100.5	98.8	117.3	104.3	95.3	122.1	103.2	95.3	125.8	104.3	97.8	113.8	102.5
06	WOOD, PLASTICS & COMPOSITES	98.1	119.7	109.9	94.7	119.7	108.4	98.1	119.9	110.1	94.5	116.5	106.6	101.0	119.4	111.2	92.5	119.7	107.4
07	Thermal & Moisture Protection	103.2	128.4	114.2	102.0	125.7	112.3	103.0	124.9	112.5	103.2	122.1	111.4	103.3	128.3	114.2	103.3	109.9	106.2
08	OPENINGS	97.4	128.4	104.6	93.4	118.9	99.3	97.4	118.3	102.2	99.2	126.7	105.6	89.8	128.3	98.7	99.4	120.3	104.3
0920	Plaster & Gypsum Board	92.3	119.9	110.9	87.3	119.9	109.3	92.3	119.9	110.9	111.3	116.7	114.9	114.4	119.9	118.1	112.6	119.9	117.5
0950, 0980	Ceilings & Acoustic Treatment	104.3	119.9	114.9	86.2	119.9	108.9	104.3	119.9	114.9	93.9	116.7	109.3	93.9	119.9	111.5	103.7	119.9	114.6
0960	Flooring	85.0	162.0	106.6	82.6	162.0	104.9	83.8	162.0	105.8	86.7	162.0	107.8	88.2	162.0	108.9	85.9	135.0	99.7
0970, 0990	Wall Finishes & Painting/Coating	85.0	139.2	117.1	85.0	139.2	117.1	85.0	139.2	117.1	86.2	139.2	117.6	87.1	139.2	117.9	86.2	109.3	99.9
09	FINISHES	90.8	130.8	112.5	85.2	130.8	109.9	90.5	131.0	112.4	89.5	128.9	110.9	90.2	130.6	112.1	91.7	120.9	107.5
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	109.7	102.2	100.0	109.7	102.2	100.0	110.2	102.3	100.0	104.2	100.9	100.0	109.3	102.1	100.0	102.9	100.7
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.4	103.9	101.7	96.8	103.5	99.4	100.4	103.5	101.6	97.0	104.5	99.9	97.0	121.1	106.4	97.0	98.5	97.6
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	101.3	97.7	99.5	98.5	100.1	99.3	101.2	97.7	99.4	100.6	104.1	102.3	97.4	124.4	110.7	100.5	96.1	98.4
MF2018	WEIGHTED AVERAGE	98.5	116.7	106.2	93.2	115.2	102.5	98.3	114.9	105.3	94.6	116.2	103.7	94.0	124.2	106.8	95.9	109.0	101.4
DIVISION		MASSACHUSETTS																	
		HYANNIS			LAWRENCE			LOWELL			NEW BEDFORD			PITTSFIELD		SPRINGFIELD			
		026	019		018	027		027	012		012	010 - 011		010	011				
MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL		
015433	CONTRACTOR EQUIPMENT	98.1	98.1		98.1	98.1	95.7	95.7		98.9	98.9		95.7	95.7		95.7	95.7		
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	87.4	98.1	94.8	91.6	98.0	96.0	90.6	98.1	95.8	88.7	98.0	95.1	91.6	96.7	95.2	91.1	97.1	95.2
0310	Concrete Forming & Accessories	92.7	120.6	116.5	102.5	121.6	118.8	99.0	122.6	119.1	100.7	120.8	117.9	99.0	102.9	102.3	99.3	117.7	115.0
0320	Concrete Reinforcing	88.0	122.3	104.6	108.8	148.3	127.9	109.7	148.1	128.2	109.7	122.4	115.8	90.8	114.1	102.1	109.7	126.5	117.8
0330	Cast-in-Place Concrete	80.4	136.4	101.3	90.7	136.8	107.9	82.4	138.5	103.3	75.1	136.9	98.1	90.0	113.4	98.7	85.8	122.2	99.4
03	CONCRETE	86.7	126.0	104.0	96.2	131.1	111.5	88.0	131.9	107.3	89.1	126.3	105.4	89.0	108.3	97.5	89.5	120.2	103.0
04	MASONRY	104.3	135.1	123.2	110.1	135.9	125.9	97.3	134.9	120.4	104.2	135.7	123.6	98.0	111.5	106.3	97.6	119.1	110.8
05	METALS	95.1	117.0	101.5	98.2	128.4	107.1	98.2	125.0	106.1	98.8	117.4	104.3	98.0	108.2	101.0	100.9	113.7	104.6
06	WOOD, PLASTICS & COMPOSITES	88.0	119.7	105.4	101.5	119.7	111.5	100.8	119.7	111.2	98.1	119.9	110.1	100.8	102.5	101.8	100.8	119.7	111.2
07	Thermal & Moisture Protection	102.5	125.7	112.6	104.0	128.6	114.7	103.7	128.0	114.3	102.9	125.1	112.6	103.8	104.3	104.0	103.7	109.9	106.4
08	OPENINGS	93.9	118.9	99.8	93.4	129.9	101.9	100.4	129.9	107.3	97.4	123.0	103.3	100.4	107.6	102.1	100.4	120.3	105.1
0920	Plaster & Gypsum Board	83.2	119.9	107.9	117.3	119.9	119.1	117.3	119.9	119.1	92.3	119.9	110.9	117.3	102.3	107.2	117.3	119.9	119.1
0950, 0980	Ceilings & Acoustic Treatment	96.2	119.9	112.2	105.5	119.9	115.2	105.5	119.9	115.2	104.3	119.9	114.9	105.5	102.3	103.4	105.5	119.9	115.2
0960	Flooring	80.0	162.0	103.0	88.8	162.0	109.4	88.8	162.0	109.4	83.8	162.0	105.8	89.1	129.8	100.6	88.2	135.0	101.3
0970, 0990	Wall Finishes & Painting/Coating	85.0	139.2	117.1	86.3	139.2	117.6	86.2	139.2	117.6	85.0	139.2	117.1	86.2	109.3	99.9	87.0	109.3	100.2
09	FINISHES	86.3	130.8	110.4	93.8	130.8	113.8	93.7	131.6	114.2	90.4	131.0	112.3	93.8	108.6	101.8	93.6	120.9	108.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	109.7	102.2	100.0	109.8	102.2	100.0	110.8	102.4	100.0	110.2	102.3	100.0	99.5	99.9	100.0	102.9	100.7
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.4	104.2	101.9	100.1	119.7	107.8	100.1	121.2	108.4	100.4	103.4	101.5	100.1	94.2	97.8	100.1	98.5	99.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	98.9	97.7	98.3	99.7	97.4	96.4	99.1	78.4	86.4	99.2	77.7	86.0	99.5	98.2	98.7	102.6	99.8	100.9
MF2018	WEIGHTED AVERAGE	95.7	95.7		109.1	109.1	96.1	96.1	109.1	109.1	109.1	109.1	109.1	109.1	109.1	109.1	109.1	109.1	109.1
DIVISION		MICHIGAN																	
		WORCESTER			ANN ARBOR			BATTLE CREEK			BAY CITY			DEARBORN		DETROIT			
		015 - 016	481		490	487		487	481		481	482		482	482				
MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL		
015433	CONTRACTOR EQUIPMENT	95.7	95.7		109.1	109.1	96.1	96.1		109.1	109.1		109.1	109.1		97.8	97.8		
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	91.0	97.9	95.7	81.0	92.2	88.7	93.6	81.7	85.3	72.5	91.7	85.8	80.8	92.3	88.7	98.2	101.2	100.2
0310	Concrete Forming & Accessories	99.6	118.5	115.7	96.3	104.1	103.0	96.0	77.3	80.0	96.4	81.5	83.7	96.2	104.7	103.5	100.4	104.6	
0320	Concrete Reinforcing	109.7	155.5	131.9	101.2	103.5	102.3	98.5	80.9	90.0	101.2	102.7	101.9	101.2	103.6	102.3	101.4	104.8	103.0
0330	Cast-in-Place Concrete	85.3	136.5	104.4	88.3	96.4	91.3	86.1	91.0	87.9	84.5	83.5	84.1	86.4	97.2	90.4	104.5	101.3	103.3
03	CONCRETE	89.3	130.6	107.5	89.8	102.2	95.2	85.7	82.6	84.3	88.0	87.3	87.7	88.9	102.8	95.0	103.1	102.3	103.2
04	MASONRY	97.2	131.9	118.5	99.6	96.4	97.6	99.1	78.4	86.4	99.2	77.7	86.0	99.5	98.2	98.7	102.6	99.8	
05	METALS	100.9	127.4	108.7	102.7	115.7	106.5	103.7	83.7	97.9	103.3	114.0	106.4	102.8	115.8	106.6	104.3	94.3	101.3
06	WOOD, PLASTICS & COMPOSITES	101.2	116.5	109.6	89.2	106.6	98.8	88.4	75.6	81.3	89.2	81.9	85.2	89.2	106.6	98.8	97.1	106.7	102.4
07	Thermal & Moisture Protection	103.8	122.1	111.8	105.3	98.2	102.2	96.1	79.0	88.7	102.7	81.0	93.2	103.6	100.7	102.3	102.6	102.9	102.7
08	OPENINGS	100.4	130.2	107.															

City Cost Indexes

DIVISION	MICHIGAN												KALAMAZOO			
	FLINT			GAYLORD			GRAND RAPIDS			IRON MOUNTAIN			JACKSON			
	484 - 485			497			493, 495			498 - 499			492			
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	
015433 CONTRACTOR EQUIPMENT	109.1	109.1		103.6	103.6		98.3	98.3		91.1	91.1		103.6	103.6	96.1 96.1	
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	70.2	91.8	85.1	87.4	79.6	82.0	92.9	85.9	88.1	96.4	88.5	90.9	111.0	81.2	90.4	
0310 Concrete Forming & Accessories	99.1	81.8	84.4	95.0	73.9	77.0	95.6	75.7	78.6	86.6	78.6	79.8	91.6	82.3	83.7	
0320 Concrete Reinforcing	101.2	103.1	102.1	91.9	93.0	92.4	103.4	80.7	92.4	91.6	85.0	88.4	89.3	103.1	96.0	98.5
0330 Cast-in-Place Concrete	88.9	85.8	87.8	85.8	78.4	83.1	90.4	89.0	89.9	101.7	67.6	89.0	85.7	89.8	87.2	87.8
03 CONCRETE	90.2	88.4	89.4	82.6	80.5	81.6	89.7	81.1	85.9	90.9	76.6	84.6	77.8	89.8	83.1	88.9
04 MASONRY	99.7	85.9	91.2	109.7	72.7	87.0	92.0	74.1	81.0	95.4	79.7	85.7	89.2	86.9	87.8	97.6
05 METALS	102.8	114.6	106.3	105.5	110.8	107.0	100.8	83.2	95.6	104.8	91.1	100.8	105.7	112.7	107.8	103.7
06 WOOD, PLASTICS & COMPOSITES	92.6	80.7	86.1	81.9	73.4	77.2	92.2	73.9	82.2	78.2	78.9	78.6	80.8	79.8	80.2	88.4
07 THERMAL & MOISTURE PROTECTION	103.0	84.5	95.0	94.7	74.7	86.0	98.0	71.8	86.6	98.4	74.8	88.1	94.0	88.3	91.5	96.1
08 OPENINGS	94.2	82.6	91.5	86.0	78.7	84.3	101.8	73.8	95.2	92.5	69.8	87.2	85.2	85.5	85.3	86.5
0920 Plaster & Gypsum Board	109.0	79.8	89.4	91.3	71.8	78.2	99.8	70.2	79.8	51.3	79.0	69.9	90.1	78.3	82.1	91.7
0950, 0980 Ceilings & Acoustic Treatment	84.8	79.8	81.5	77.1	71.8	73.5	91.1	70.2	77.0	76.0	79.0	78.0	77.1	78.3	77.9	78.7
0960 Flooring	91.2	86.0	89.7	84.9	85.6	85.1	95.7	76.1	90.2	102.0	91.0	98.9	83.4	78.7	82.1	91.5
0970, 0990 Wall Finishes & Painting/Coating	82.7	78.3	80.1	78.7	81.6	80.4	89.3	76.9	82.0	94.8	69.6	79.9	78.7	93.8	87.7	82.3
09 FINISHES	90.1	81.6	85.5	84.1	76.2	79.8	91.4	75.2	82.6	84.6	80.0	82.1	85.2	81.9	83.4	84.7
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	88.8	97.5	100.0	77.9	95.1	100.0	93.0	98.4	100.0	85.9	96.8	100.0	91.6	98.1	100.0
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	100.0	83.3	93.4	96.8	79.0	89.8	100.0	79.6	92.0	96.7	83.9	91.7	96.8	85.7	92.4	100.1
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	97.3	89.1	93.2	94.5	76.3	85.5	102.2	82.9	92.7	100.8	80.7	90.9	98.3	103.0	100.6	96.4
MF2018 WEIGHTED AVERAGE	96.8	88.6	93.3	94.5	80.6	88.6	97.9	79.9	90.3	96.5	81.7	90.2	94.0	90.7	92.6	95.8
DIVISION	MICHIGAN												MINNESOTA			
	LANSING			MUSKEGON			ROYAL OAK			SAGINAW			TRVERSE CITY			
	488 - 489			494			480, 483			486			496			
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	
015433 CONTRACTOR EQUIPMENT	111.0	111.0		96.1	96.1		89.8	89.8		109.1	109.1		91.1	91.1		97.7
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	90.7	96.5	94.7	91.5	81.7	84.8	84.8	92.6	90.2	73.5	91.7	86.1	81.8	87.5	85.7	95.1
0310 Concrete Forming & Accessories	93.8	74.9	77.7	96.3	79.4	81.9	92.3	105.2	103.2	96.3	79.7	82.1	86.6	72.4	74.5	88.0
0320 Concrete Reinforcing	104.8	102.9	103.8	99.3	80.7	90.3	91.7	104.8	98.0	101.2	102.7	101.9	93.1	80.2	86.9	97.4
0330 Cast-in-Place Concrete	97.9	85.1	93.1	85.8	90.5	87.5	77.3	97.5	84.8	87.3	83.4	85.8	79.3	76.7	78.3	101.8
03 CONCRETE	91.4	84.9	88.5	84.2	83.3	83.8	77.1	101.6	87.9	89.3	86.5	88.1	74.8	76.1	75.4	91.0
04 MASONRY	94.5	84.6	88.4	96.3	76.2	83.9	93.2	99.5	97.1	101.2	77.7	86.7	93.5	74.8	82.0	98.9
05 METALS	101.6	112.7	104.9	101.5	83.1	96.1	106.3	92.2	102.2	102.8	113.8	106.0	104.8	88.9	100.1	91.2
06 WOOD, PLASTICS & COMPOSITES	87.0	71.2	78.3	85.4	78.0	81.3	85.0	106.6	96.9	85.9	79.7	82.5	78.2	71.9	74.8	68.8
07 THERMAL & MOISTURE PROTECTION	102.0	83.8	94.1	95.0	73.5	85.7	101.2	100.9	101.1	103.9	80.9	93.9	97.3	74.2	87.3	106.3
08 OPENINGS	102.7	77.2	96.8	85.8	76.5	83.6	94.0	101.3	95.7	92.4	82.2	90.0	92.5	65.4	86.2	99.7
0920 Plaster & Gypsum Board	100.1	70.2	79.9	71.8	74.2	73.4	104.8	106.5	106.0	107.4	78.8	88.2	51.3	71.8	65.1	104.3
0950, 0980 Ceilings & Acoustic Treatment	83.9	70.2	74.6	78.7	74.2	75.6	84.1	106.5	99.2	84.8	78.8	80.8	76.0	71.8	73.2	128.8
0960 Flooring	97.2	78.7	92.0	90.2	72.3	85.1	88.2	106.7	93.4	91.2	77.0	87.2	102.0	85.6	97.4	90.7
0970, 0990 Wall Finishes & Painting/Coating	91.1	76.9	82.7	80.5	79.7	80.0	84.2	93.8	89.9	82.7	79.1	80.6	94.8	39.4	62.1	89.6
09 FINISHES	90.2	74.6	81.7	81.1	77.1	78.9	89.7	104.3	97.6	90.5	78.6	84.0	83.5	71.0	76.7	98.2
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	88.8	97.5	100.0	94.5	98.8	100.0	100.0	100.0	100.0	87.7	97.3	100.0	84.4	96.5	100.0
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	99.9	83.7	93.5	99.9	83.4	93.4	96.7	101.4	98.5	100.0	78.3	91.5	96.7	78.9	89.7	96.7
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	99.1	87.6	93.4	96.8	73.0	85.1	99.4	103.1	101.3	95.4	84.5	90.0	96.2	76.2	86.4	105.0
MF2018 WEIGHTED AVERAGE	98.0	86.8	93.3	94.3	80.0	88.3	95.1	100.3	97.3	96.5	85.1	91.7	93.4	77.7	86.8	96.7
DIVISION	MINNESOTA												ROCHESTER			
	BRAINERD			DETROIT LAKES			DULUTH			MANKATO			MINNEAPOLIS			
	564			565			556 - 558			560			553 - 555			
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	
015433 CONTRACTOR EQUIPMENT	100.2	100.2		97.7	97.7		102.9	102.9		100.2	100.2		108.4	108.4		100.7 100.7
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	96.0	99.9	98.7	93.3	95.4	94.7	98.2	101.7	100.6	92.6	99.4	97.3	95.0	108.8	104.5	96.0
0310 Concrete Forming & Accessories	88.7	83.6	84.4	84.9	82.8	83.1	98.4	94.6	95.2	96.9	96.6	96.6	99.3	114.0	111.8	99.2
0320 Concrete Reinforcing	96.2	102.2	99.1	97.4	101.8	99.6	102.6	102.0	102.3	96.0	109.2	102.4	96.1	109.4	102.5	98.9
0330 Cast-in-Place Concrete	110.7	109.1	110.1	98.9	107.5	102.1	94.3	97.7	95.6	101.9	99.5	101.0	95.6	115.3	102.9	94.8
03 CONCRETE	94.8	97.1	95.8	88.6	96.1	91.9	95.3	98.1	96.5	90.5	100.8	95.0	97.6	114.3	104.9	98.6
04 MASONRY	122.5	116.3	118.7	122.6	109.8	114.8	95.3	105.7	101.7	111.3	110.8	111.0	114.5	119.5	117.6	102.9
05 METALS	92.2	118.3	99.9	91.1	117.5	98.9	100.2	119.1	105.8	92.1	121.6	100.7	98.7	124.5	106.3	99.3
06 WOOD, PLASTICS & COMPOSITES	84.9	74.2	79.1	65.8	74.4	70.6	93.9	91.9	92.8	94.5	95.4	95.0	96.1	110.8	104.2	95.2
07 THERMAL & MOISTURE PROTECTION	104.7	102.4	103.7	106.1	99.4	103.2	97.9	102.2	99.8	105.1	93.4	100.1	101.2	115.9	107.6	105.3
08 OPENINGS	86.4	99.8	89.5	99.6	99.9	99.7	103.3	104.6	103.6	90.9	112.2	95.9	99.3	121.5	104.5	98.6
0920 Plaster & Gypsum Board	91.5	74.1	79.8	103.7	74.1	83.8	94.5	92.1	92.9	95.6	95.9	95.8	101.1	111.2	107.9	103.2
0950, 0980 Ceilings & Acoustic Treatment	58.8	74.1	69.1	128.8	74.1	91.9	89.2	92.1	91.1	58.8	95.9	83.8	103.1	111.2	108.6	93.9
0960 Flooring	89.6	85.6	88.4	89.5	85.6	88.4	93.2	123.9	101.8	91.4	81.8	88.7	100.6	114.6	104.5	92.3
0970, 0990 Wall Finishes & Painting/Coating	84.0	105.8	96.9	89.6	83.4	85.9	86.0	104.4	96.9	95.0	103.7	100.2	101.3	123.8	114.6	85.3
09 FINISHES	82.1	85.2	83.8	97.6	82.5	89.4	89.4	100.2	95.3	83.7	94.9	89.7	98.9	115.0	107.6	90.0
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	97.3	99.4	100.0	97.1	99.4	100.0	94.8	98.8	100.0	97.5	99.4	100.0	105.8	101.3	100.0
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	96.0	88.6	93.1	96.7	87.5	93.1	99.8	94.5	97.7	96.0	84.6	91.5	100.0	110.6	104.2	96.7
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	102.7	101.7	102.2	104.8	71.1	88.2	100.3	101.7	101.0	109.1	93.1	101.2	107.2	110.3	108.7	103.0
MF2018 WEIGHTED AVERAGE	95.6	98.6	96.8	97.4	92.4	95.3	98.6	10								

City Cost Indexes

DIVISION	MINNESOTA															MISSISSIPPI		
	SAINT PAUL			ST. CLOUD			THIEF RIVER FALLS			WILLMAR			WINDOM			BILOXI		
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433 CONTRACTOR EQUIPMENT	102.9	102.9	100.2	100.2	97.7	97.7	100.2	100.2	100.2	100.2	98.9	94.4	105.2	85.9	91.9	100.1	100.1	100.1
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	96.5	102.5	100.7	91.4	100.8	97.9	94.0	94.9	94.7	90.6	99.7	96.9	84.5	98.9	94.4	105.2	85.9	91.9
0310 Concrete Forming & Accessories	98.6	117.0	114.3	86.0	113.5	109.5	88.8	81.9	82.9	85.8	86.8	86.7	90.1	82.2	83.4	92.8	64.1	68.4
0320 Concrete Reinforcing	105.4	109.9	107.6	96.2	109.4	102.6	97.8	101.6	99.6	95.8	109.2	102.3	95.8	108.1	101.8	93.4	48.8	71.8
0330 Cast-in-Place Concrete	99.9	116.3	106.0	97.7	115.0	104.1	100.9	81.3	93.6	99.2	79.5	91.9	85.8	83.3	84.8	114.2	66.3	96.4
03 CONCRETE	95.3	116.1	104.4	86.5	114.0	98.5	89.8	86.5	88.3	86.3	89.5	87.7	77.6	88.5	82.4	94.4	64.0	81.0
04 MASONRY	105.3	127.4	118.9	107.3	121.8	116.2	98.9	102.3	101.0	112.1	114.5	113.6	122.0	87.9	101.0	90.4	62.8	73.4
05 METALS	100.1	125.0	107.4	92.9	123.1	101.8	91.3	116.7	98.7	92.0	121.5	100.7	91.9	119.5	100.0	90.3	84.5	88.6
06 WOOD, PLASTICS & COMPOSITES	95.0	114.2	105.6	82.1	110.3	97.6	70.0	77.0	73.8	81.8	79.9	80.8	86.3	79.9	82.8	93.1	64.5	77.3
07 THERMAL & MOISTURE PROTECTION	102.0	120.5	110.1	104.9	111.7	107.9	107.1	88.1	98.8	104.7	101.0	103.1	104.6	83.0	95.2	100.0	63.1	83.9
08 OPENINGS	98.2	124.3	104.3	91.4	122.1	98.5	99.7	101.3	100.1	88.4	102.8	91.7	91.9	102.8	94.4	96.3	55.0	86.7
0920 Plaster & Gypsum Board	94.5	115.0	108.3	91.5	111.2	104.7	104.3	76.8	85.8	91.5	79.9	83.7	91.5	79.9	83.7	103.8	64.0	77.0
0950, 0980 Ceilings & Acoustic Treatment	91.6	115.0	107.4	58.8	111.2	94.1	128.8	76.8	93.7	58.8	79.9	73.0	58.8	79.9	73.0	86.4	64.0	71.3
0960 Flooring	92.4	122.8	101.0	86.4	120.9	96.1	90.4	85.6	89.0	87.8	85.6	87.2	90.3	85.6	89.0	94.0	65.0	85.8
0970, 0990 Wall Finishes & Painting/Coating	92.1	129.1	114.0	95.0	123.8	112.0	89.6	83.4	85.9	89.6	83.4	85.9	89.6	103.7	98.0	86.0	46.9	62.8
09 FINISHES	91.1	119.1	106.3	81.5	115.9	100.1	98.1	82.6	89.7	81.6	85.3	83.6	81.8	84.8	83.4	89.4	62.8	75.0
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	108.7	101.9	100.0	103.2	100.7	100.0	95.5	99.0	100.0	97.3	99.4	100.0	93.7	98.6	100.0	71.9	93.7
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	99.9	116.7	106.5	99.5	110.5	103.8	96.7	84.4	91.9	96.0	101.6	98.2	96.0	81.0	90.1	100.0	55.3	82.4
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	102.9	115.1	108.9	102.7	115.1	108.8	102.1	71.0	86.8	102.7	83.7	93.4	109.1	93.1	101.2	101.0	53.7	77.7
MF2018 WEIGHTED AVERAGE	99.0	117.6	106.9	95.1	114.2	103.2	96.3	89.3	93.3	94.0	98.0	95.7	94.3	91.2	93.0	96.2	63.9	82.6
DIVISION	MISSISSIPPI															LAUREL		
	CLARKSDALE			COLUMBUS			GREENVILLE			GREENWOOD			JACKSON			394		
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433 CONTRACTOR EQUIPMENT	100.1	100.1	100.1	100.1	100.1	100.1	100.1	100.1	100.1	100.1	100.1	100.1	102.6	102.6	100.1	100.1	100.1	100.1
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	101.4	84.4	89.7	103.9	85.2	91.0	107.5	86.1	92.7	104.5	84.1	90.4	101.1	90.6	93.9	109.6	84.5	92.2
0310 Concrete Forming & Accessories	83.8	43.9	49.8	81.9	46.3	51.6	80.7	62.7	65.4	92.5	44.3	51.4	92.0	64.6	68.6	82.0	59.5	62.8
0320 Concrete Reinforcing	104.2	66.5	85.9	99.9	66.6	83.8	104.7	66.7	86.3	104.0	66.5	86.0	104.0	51.7	78.7	100.6	32.4	67.6
0330 Cast-in-Place Concrete	104.1	58.8	87.2	116.5	61.1	95.9	107.2	65.7	91.8	112.0	58.9	92.2	99.6	66.5	87.3	113.9	60.1	93.9
03 CONCRETE	93.8	55.1	76.8	95.8	57.1	78.8	99.3	66.2	84.8	100.1	55.4	80.4	89.2	64.7	78.4	97.9	56.9	79.9
04 MASONRY	89.1	50.8	65.6	115.4	53.6	77.4	132.2	61.4	88.7	89.8	50.7	65.8	95.7	61.5	74.7	111.5	49.4	73.4
05 METALS	92.5	87.9	91.1	87.4	90.4	88.3	93.6	91.2	92.8	92.5	87.8	91.1	96.9	84.6	93.3	87.5	76.0	84.1
06 WOOD, PLASTICS & COMPOSITES	79.4	44.4	60.1	78.8	45.2	60.3	76.2	62.8	68.8	91.8	44.4	65.7	96.3	65.5	79.4	79.9	64.5	71.4
07 THERMAL & MOISTURE PROTECTION	97.7	52.0	77.8	100.0	55.4	80.6	98.2	62.1	82.5	98.1	54.2	79.0	98.3	62.9	82.9	100.2	56.5	81.2
08 OPENINGS	95.1	48.2	84.1	95.9	48.6	84.9	94.8	58.1	86.2	95.1	48.2	84.1	99.5	56.0	89.4	93.2	51.8	83.5
0920 Plaster & Gypsum Board	89.9	43.3	58.6	94.3	44.2	60.6	89.6	62.3	71.2	100.6	43.3	62.1	90.7	64.9	73.3	94.3	64.0	73.9
0950, 0980 Ceilings & Acoustic Treatment	82.3	43.3	56.0	81.5	44.2	56.3	85.0	62.3	69.7	82.3	43.3	56.0	89.7	64.9	73.0	81.5	64.0	69.7
0960 Flooring	97.8	45.0	83.0	87.9	65.0	81.4	96.2	65.0	87.4	103.5	65.0	92.7	92.1	65.0	84.5	86.6	65.0	80.5
0970, 0990 Wall Finishes & Painting/Coating	94.6	46.9	66.4	86.0	46.9	62.8	94.6	56.7	72.1	94.6	46.9	66.4	89.9	56.7	70.3	86.0	46.9	62.8
09 FINISHES	90.2	43.9	65.1	85.4	49.1	65.8	90.8	62.5	75.5	93.7	48.0	68.9	89.9	64.1	75.9	85.6	60.5	72.0
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	48.0	88.4	100.0	49.0	88.6	100.0	71.3	93.6	100.0	48.0	88.4	100.0	71.9	93.7	100.0	34.2	85.3
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	98.4	51.3	79.9	98.0	53.1	80.4	100.0	57.4	83.3	98.4	51.7	80.1	100.0	59.1	83.9	98.1	47.0	78.0
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	96.8	41.6	69.6	98.6	55.1	77.2	96.8	76.6	96.8	96.8	39.0	68.3	102.7	55.9	79.6	100.1	57.9	79.3
MF2018 WEIGHTED AVERAGE	95.3	55.2	78.4	95.9	59.1	80.4	98.7	65.5	84.7	96.6	55.5	79.2	97.3	65.6	83.9	96.1	57.8	79.9
DIVISION	MISSISSIPPI															CHILlicoTHE		
	MCCOMB			MERIDIAN			TUPELO			BOWLING GREEN			CAPE GIRARDEAU			646		
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433 CONTRACTOR EQUIPMENT	100.1	100.1	100.1	100.1	100.1	100.1	100.1	100.1	100.1	107.1	107.1	107.1	107.1	107.1	107.1	101.5	101.5	101.5
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	96.3	84.3	88.0	100.7	86.1	90.7	98.9	84.3	88.8	87.6	90.0	89.3	89.3	89.9	89.7	101.2	88.4	92.3
0310 Concrete Forming & Accessories	81.9	45.5	50.9	79.4	62.8	65.2	81.2	45.9	51.1	96.0	94.0	94.3	88.9	82.0	83.0	86.2	95.7	94.3
0320 Concrete Reinforcing	101.2	34.3	68.8	99.9	51.6	76.6	101.9	66.5	84.8	93.4	96.5	94.9	94.6	79.6	87.3	100.4	102.6	101.5
0330 Cast-in-Place Concrete	101.1	58.4	85.2	108.2	66.0	92.5	104.1	67.9	90.6	90.7	95.5	92.5	89.8	86.6	88.6	91.7	86.0	89.6
03 CONCRETE	85.9	50.2	70.2	90.1	63.8	78.6	93.4	59.2	78.4	91.2	96.4	93.5	90.4	85.0	88.0	95.0	94.3	94.7
04 MASONRY	116.7	50.3	75.9	90.0	62.1	72.9	121.7	53.3	79.6	109.6	97.4	102.4	105.9	80.5	90.3	99.2	92.2	94.9
05 METALS	87.6	75.6	84.1	88.5	85.6	87.7	92.4	87.9	91.1	91.8	117.7	99.4	92.9	109.4	97.8	85.1	110.6	92.5
06 WOOD, PLASTICS & COMPOSITES	78.8	46.8	61.2	76.2	62.8	68.8	76.7	45.2	59.4	96.7	94.4	95.4	89.2	80.0	84.1	94.0	97.0	95.7
07 THERMAL & MOISTURE PROTECTION	99.4	54.2	79.8	99.6	62.4	83.4	97.6	53.9	78.6	96.4	99.2	97.6	95.9	85.3	91.3	92.7	92.7	92.7
08 OPENINGS	96.0	41.3	83.2	95.6	54.8	86.1	95.0	51.4	84.9	98.7	98.2	98.5	98.6	76.1	93.4	86.0	96.2	88.3
0920 Plaster & Gypsum Board	94.3	45.8	61.7	94.3	62.3	72.8	89.6	44.2	59.0	101.7	94.6	96.9	101.1	79.8	86.8	98.2	96.9	97.3
0950, 0980 Ceilings & Acoustic Treatment	81.5	45.8	57.4	82.4	62.3	68.8	82.3	44.2	56.6	88.9	94.6	92.8	88.9	79.8	82.8	87.4	96.9	93.8
0960 Flooring	87.9	65.0	81.4	86.5	65.0	80.5	96.5	65.0	87.6	95.7	96.9	96.0	92.4	84.5	90.2	94.9	99.7	96.2
0970, 0990 Wall Finishes & Painting/Coating	86.0	46.9	62.8	86.0	46.9	62.8	94.6	45.2	65.4	95.4	106.3	101.8	95.4	67.1	78.6	94.3	103.2	99.6

City Cost Indexes

DIVISION	MISSOURI															JOPLIN		
	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
015433 CONTRACTOR EQUIPMENT	110.3	110.3	107.1	107.1	107.1	107.1	101.5	101.5	101.5	101.5	101.5	101.5	113.1	113.1	113.1	104.8	104.8	104.8
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	94.2	93.8	93.9	90.2	89.7	89.8	85.4	89.8	88.4	92.9	89.5	90.6	94.4	98.7	97.4	102.0	92.6	95.5
0310 Concrete Forming & Accessories	84.4	81.0	81.5	102.4	88.3	90.4	94.3	82.5	84.3	83.4	99.0	96.7	96.3	78.6	81.2	97.4	74.2	77.7
0320 Concrete Reinforcing	85.6	93.3	89.3	94.6	102.9	98.6	92.9	96.5	94.6	100.0	110.9	105.3	92.4	93.3	92.9	103.7	84.3	94.3
0330 Cast-In-Place Concrete	88.6	84.8	87.2	93.7	90.6	92.5	85.9	93.5	88.7	93.9	99.7	96.0	93.9	84.1	90.2	99.3	75.5	90.4
03 CONCRETE	80.8	86.3	83.2	94.1	93.3	93.8	87.6	90.5	88.9	91.1	102.0	95.9	87.5	84.8	86.3	93.9	77.7	86.7
04 MASONRY	136.9	86.4	105.9	106.5	76.4	88.0	101.6	94.6	97.3	94.0	99.4	97.3	96.0	86.5	90.1	92.4	80.2	84.9
05 METALS	96.3	115.4	101.9	91.7	119.2	99.8	91.8	117.2	99.3	85.4	115.1	94.1	95.8	114.0	101.1	87.9	98.8	91.1
06 WOOD, PLASTICS & COMPOSITES	80.3	78.6	79.3	105.2	89.6	96.6	94.9	81.1	87.3	90.4	98.7	95.0	97.1	75.6	85.2	106.1	73.5	88.2
07 THERMAL & MOISTURE PROTECTION	90.6	86.1	88.7	96.6	91.0	94.2	96.2	93.4	95.0	91.8	100.8	95.7	97.5	86.1	92.5	91.9	81.2	87.3
08 OPENINGS	94.4	81.7	91.4	98.6	97.4	98.4	98.7	83.7	95.2	85.7	103.2	89.8	94.5	80.0	91.1	86.9	76.3	84.5
0920 Plaster & Gypsum Board	84.7	78.2	80.3	107.7	89.7	95.6	101.4	81.0	87.7	94.1	98.6	97.1	96.2	74.9	81.9	105.4	72.7	83.4
0950, 0980 Ceilings & Acoustic Treatment	88.5	78.2	81.5	88.9	89.7	89.4	88.9	81.0	83.6	87.4	98.6	95.0	93.3	74.9	80.9	88.3	72.7	77.8
0960 Flooring	90.2	98.6	92.5	98.9	84.5	94.9	95.0	96.9	95.5	90.3	100.8	93.2	97.6	71.5	90.3	120.1	72.2	106.6
0970, 0990 Wall Finishes & Painting/Coating	93.1	81.9	86.4	95.4	71.7	81.4	95.4	94.1	94.6	98.6	107.8	104.0	91.2	81.9	85.7	93.9	75.9	83.2
09 FINISHES	84.0	83.5	83.7	100.0	85.1	92.0	97.7	85.3	91.0	94.8	100.2	97.7	91.5	77.1	83.7	103.8	74.4	87.9
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	93.6	98.6	100.0	94.0	98.7	100.0	78.8	95.3	100.0	82.7	96.2	100.0	93.6	98.6	100.0	79.5	95.4
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	100.0	96.9	98.8	96.5	96.8	96.6	96.5	97.7	97.0	96.6	100.8	98.2	100.0	96.9	98.8	100.1	71.1	88.7
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	97.8	81.4	89.7	103.8	98.5	101.2	98.0	76.8	87.5	101.5	101.2	101.4	103.2	81.4	92.4	92.9	66.1	79.7
MF2018 WEIGHTED AVERAGE	96.1	90.7	93.8	97.3	94.2	96.0	95.3	91.6	93.7	93.2	100.8	96.4	96.4	89.9	93.7	95.1	77.7	87.7
DIVISION	MISSOURI															SIKESTON		
	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
015433 CONTRACTOR EQUIPMENT	104.4	104.4	97.4	97.4	99.6	99.6	110.3	110.3	110.3	100.4	100.4	100.4	99.6	99.6	99.6	99.6	99.6	99.6
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	94.6	98.6	97.3	88.8	84.9	86.1	76.1	88.5	84.7	92.9	94.1	93.8	92.1	89.3	90.2	79.6	89.1	86.2
0310 Concrete Forming & Accessories	97.2	103.5	102.6	86.9	78.4	79.6	87.4	79.3	80.5	91.6	94.0	93.6	89.6	78.2	79.9	88.2	79.4	80.7
0320 Concrete Reinforcing	98.5	111.1	104.6	93.8	83.3	88.7	96.7	76.0	86.7	86.0	93.4	89.6	84.8	110.3	97.1	96.0	76.0	86.4
0330 Cast-In-Place Concrete	97.3	102.6	99.3	93.6	82.2	89.4	72.0	83.5	76.3	90.6	94.7	92.1	94.7	81.3	89.7	77.0	83.5	79.4
03 CONCRETE	93.8	104.9	98.7	106.9	81.8	95.9	81.5	81.4	81.5	82.5	95.6	88.2	95.7	86.1	91.5	85.2	81.5	83.6
04 MASONRY	99.6	103.3	101.9	113.2	84.8	95.8	104.5	74.1	85.8	110.8	85.3	95.2	117.1	81.6	95.3	104.2	74.1	85.7
05 METALS	94.9	112.8	100.2	91.5	101.0	94.3	92.1	97.8	93.7	95.7	115.9	101.6	94.5	112.8	99.9	92.4	97.9	94.0
06 WOOD, PLASTICS & COMPOSITES	100.1	103.8	102.2	82.2	76.5	79.1	81.3	80.0	80.6	88.0	95.6	92.2	81.6	76.7	78.9	82.9	80.0	81.3
07 THERMAL & MOISTURE PROTECTION	91.8	105.2	97.7	102.2	90.8	97.3	100.5	83.0	92.9	90.9	92.9	91.8	96.1	87.8	92.5	100.7	82.1	92.6
08 OPENINGS	96.5	106.0	98.7	104.1	78.8	98.2	105.0	75.2	98.1	94.4	91.1	93.6	99.4	87.0	96.5	105.0	75.2	98.1
0920 Plaster & Gypsum Board	100.9	104.0	103.0	96.3	76.2	82.8	96.6	79.8	85.3	86.9	95.6	92.8	80.5	76.2	77.6	98.5	79.8	85.9
0950, 0980 Ceilings & Acoustic Treatment	90.5	104.0	99.6	87.3	76.2	79.8	88.9	79.8	82.8	88.5	95.6	93.3	88.5	76.2	80.2	88.9	79.8	82.8
0960 Flooring	95.9	101.8	97.6	73.8	96.4	80.2	87.3	84.5	86.5	93.8	96.4	94.5	72.5	72.9	72.6	87.8	84.5	86.9
0970, 0990 Wall Finishes & Painting/Coating	97.2	107.8	103.5	91.3	78.3	83.6	90.6	67.1	76.7	93.1	90.2	91.4	93.1	103.2	99.1	90.6	67.1	76.7
09 FINISHES	98.1	103.6	101.1	97.4	81.1	88.6	96.9	78.4	86.9	85.4	94.0	90.1	82.9	79.1	80.8	97.5	78.7	87.3
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	98.4	99.7	100.0	78.3	95.2	100.0	92.2	98.3	100.0	96.7	99.3	100.0	87.9	97.3	100.0	92.2	98.3
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	100.0	103.4	101.4	96.6	97.1	96.8	96.6	94.9	95.9	96.5	98.6	97.3	96.4	94.9	95.8	96.6	95.0	95.9
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	103.3	101.2	102.2	98.2	76.8	87.6	98.4	98.4	98.4	96.4	79.4	88.0	97.2	101.2	99.2	97.5	98.4	97.9
MF2018 WEIGHTED AVERAGE	97.9	103.8	100.4	98.9	86.5	93.7	95.1	87.7	92.0	94.1	94.3	94.2	96.4	91.5	94.3	95.7	87.8	92.3
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
015433 CONTRACTOR EQUIPMENT	102.8	102.8	101.5	101.5	108.6	108.6	97.9	97.9	97.9	97.7	97.7	97.7	97.7	97.7	97.7	97.7	97.7	97.7
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	94.4	91.4	92.4	96.7	87.4	90.3	94.4	97.8	96.7	91.8	93.5	93.0	97.3	93.3	94.5	101.0	93.3	95.7
0310 Concrete Forming & Accessories	97.7	75.4	78.7	96.3	89.1	90.2	99.5	102.5	102.1	99.3	68.3	72.9	86.5	68.2	70.9	99.2	68.2	72.8
0320 Concrete Reinforcing	82.5	92.9	87.5	97.3	110.4	103.6	86.5	105.2	95.5	98.0	81.8	90.2	106.3	81.7	94.4	98.0	81.8	90.2
0330 Cast-In-Place Concrete	96.3	73.7	87.9	92.2	95.5	93.4	101.3	102.5	101.7	118.7	72.7	101.6	130.6	72.5	109.0	138.1	72.5	113.7
03 CONCRETE	92.1	79.0	86.3	90.3	96.0	92.8	97.1	104.0	100.1	98.3	73.1	87.2	101.9	73.0	89.2	106.9	73.0	92.0
04 MASONRY	89.1	79.9	83.5	95.3	88.7	91.2	91.1	107.1	100.9	125.8	83.8	100.0	120.9	82.7	97.4	125.4	83.8	99.8
05 METALS	100.7	101.7	101.0	91.5	113.8	98.0	97.4	119.0	103.8	107.0	89.6	101.9	101.2	89.4	97.7	104.4	89.5	100.0
06 WOOD, PLASTICS & COMPOSITES	89.4	75.0	81.5	106.1	88.7	96.5	97.6	101.0	99.5	90.1	64.6	76.1	76.8	64.6	70.1	91.4	64.6	76.6
07 THERMAL & MOISTURE PROTECTION	94.6	75.5	86.3	92.2	88.7	90.7	94.3	105.5	99.2	108.3	73.7	93.2	107.8	73.3	92.8	108.5	73.7	93.4
08 OPENINGS	101.7	84.3	97.6	89.9	96.7	91.5	100.3	105.8	101.6	98.6	65.9	91.0	96.9	65.9	89.7	99.8	65.9	91.9
0920 Plaster & Gypsum Board	87.8	74.4	78.8	106.9	88.3	94.4	106.5	101.5	103.1	118.3	64.0	81.8	118.8	64.0	81.9	128.7	64.0	85.2
0950, 0980 Ceilings & Acoustic Treatment	88.5	74.4	79.0	94.8	88.3	90.4	90.5	101.5	97.9	96.6	64.0	74.6	104.1	64.0	77.0	105.7	64.0	77.6
0960 Flooring	92.8	71.5	86.8	99.4	99.0	99.3	98.0	99.1	98.3	88.1	80.8	86.0	85.4	90.9	87.0	91.9	80.8	88.8
0970, 0990 Wall Finishes & Painting/Coating	87.6	99.4	94.6	94.3	107.8	102.3	96.4	106.3	102.9	93.8	91.0	92.2	92.3	67.8	77.8	92.3		

City Cost Indexes

DIVISION	MONTANA																	
	HAVRE			HELENA			KALISPELL			MILES CITY			MISSOULA			WOLF POINT		
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433 CONTRACTOR EQUIPMENT	97.7	97.7		99.9	99.9		97.7	97.7		97.7	97.7		97.7	97.7		97.7	97.7	
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	104.2	93.1	96.6	91.1	96.8	95.0	87.5	93.3	91.5	93.5	93.2	93.3	80.5	93.3	89.3	110.2	93.2	98.4
0310 Concrete Forming & Accessories	79.6	67.2	69.0	100.2	68.3	73.0	89.7	68.3	71.4	97.7	67.3	71.8	89.7	68.4	71.5	90.4	67.3	70.7
0320 Concrete Reinforcing	107.1	78.9	93.5	113.0	81.8	97.9	109.1	85.8	97.8	106.7	78.9	93.3	108.1	85.8	97.3	108.2	78.2	93.7
0330 Cast-in-Place Concrete	140.7	71.2	114.9	102.1	73.3	91.4	113.4	72.5	98.2	124.2	71.3	104.5	96.2	72.6	87.4	139.1	70.2	113.5
03 CONCRETE	109.8	71.6	93.0	94.7	73.3	85.3	91.7	73.7	83.8	98.8	71.7	86.9	80.5	73.8	77.6	113.2	71.2	94.8
04 MASONRY	121.9	80.6	96.5	114.2	82.7	94.8	119.6	82.7	96.9	127.6	80.6	98.7	144.5	82.7	106.5	128.9	80.6	99.2
05 METALS	97.3	88.2	94.6	103.2	88.5	98.9	97.2	90.8	95.3	96.5	88.4	94.1	97.7	91.0	95.7	96.6	88.1	94.1
06 WOOD, PLASTICS & COMPOSITES	68.1	64.6	66.2	93.8	64.7	77.8	80.2	64.6	71.6	88.4	64.6	75.3	80.2	64.6	71.6	79.5	64.6	71.3
07 THERMAL & MOISTURE PROTECTION	108.3	66.2	90.0	103.1	73.9	90.4	107.4	73.6	92.7	107.8	67.7	90.3	106.9	75.6	93.3	108.9	67.5	90.9
08 OPENINGS	97.4	65.2	89.9	96.3	65.9	89.2	97.4	66.8	90.3	96.9	65.2	89.5	96.9	66.8	89.9	96.9	65.1	89.5
0920 Plaster & Gypsum Board	114.1	64.0	80.4	113.5	64.0	80.2	118.8	64.0	81.9	127.8	64.0	84.9	118.8	64.0	81.9	121.8	64.0	82.9
0950, 0980 Ceilings & Acoustic Treatment	104.1	64.0	77.0	107.9	64.0	78.3	104.1	64.0	77.0	101.6	64.0	76.3	104.1	64.0	77.0	101.6	64.0	76.3
0960 Flooring	83.0	90.9	85.3	95.9	90.9	94.5	87.1	90.9	88.2	91.8	90.9	91.6	87.1	90.9	88.2	88.4	90.9	89.1
0970, 0990 Wall Finishes & Painting/Coating	92.3	67.8	77.8	97.6	67.8	79.9	92.3	91.0	91.5	92.3	67.8	77.8	92.3	91.0	91.5	92.3	67.8	77.8
09 FINISHES	92.3	71.3	80.9	100.1	71.8	84.8	92.9	74.3	82.8	95.4	71.3	82.3	92.3	74.3	82.6	95.0	71.3	82.1
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	88.8	97.5	100.0	91.9	98.2	100.0	89.5	97.7	100.0	88.9	97.5	100.0	92.4	98.3	100.0	88.9	97.5
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	96.5	68.9	85.6	100.0	71.2	88.7	96.5	69.4	85.8	96.5	75.2	88.1	100.0	71.2	88.7	96.5	75.2	88.1
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	101.7	69.2	85.7	109.0	70.8	90.2	106.0	68.1	87.3	101.7	74.4	88.3	107.0	70.2	88.9	101.7	74.4	88.3
MF2018 WEIGHTED AVERAGE	100.4	74.8	89.6	100.9	76.7	90.7	98.1	76.2	88.9	99.2	77.0	89.8	98.6	77.1	89.5	101.4	76.9	91.1
DIVISION	NEBRASKA																	
	ALLIANCE			COLUMBUS			GRAND ISLAND			HASTINGS			LINCOLN			MC COOK		
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433 CONTRACTOR EQUIPMENT	95.3	95.3		101.9	101.9		101.9	101.9		101.9	101.9		105.0	105.0		101.9	101.9	
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	98.2	96.2	96.8	101.8	90.6	94.1	106.8	90.7	95.7	105.4	90.6	95.2	94.9	95.7	95.4	101.5	90.6	94.0
0310 Concrete Forming & Accessories	87.0	55.3	60.0	96.5	75.0	78.2	96.1	68.8	72.9	99.3	72.5	76.5	94.4	75.5	78.3	92.3	55.9	61.2
0320 Concrete Reinforcing	107.4	87.4	97.7	100.4	85.9	93.4	99.8	76.1	88.4	99.8	76.1	88.4	97.6	76.4	87.3	100.1	76.3	88.6
0330 Cast-in-Place Concrete	108.1	81.8	98.3	107.3	81.8	97.8	113.6	77.7	100.2	113.6	74.0	98.9	87.2	83.1	85.6	116.9	73.9	100.9
03 CONCRETE	114.3	70.9	95.2	100.2	80.4	91.5	104.9	74.5	91.5	105.1	74.9	91.8	87.5	79.4	83.9	103.7	67.4	87.7
04 MASONRY	106.0	77.4	88.4	111.1	77.4	90.4	104.3	73.8	85.6	112.8	74.0	88.9	93.6	78.2	84.1	101.9	77.4	86.8
05 METALS	99.1	85.2	95.0	91.4	98.0	93.3	93.2	93.7	93.3	94.0	93.7	93.9	95.0	93.3	94.5	93.9	93.8	93.9
06 WOOD, PLASTICS & COMPOSITES	82.6	48.7	64.0	94.3	74.9	83.6	93.4	66.3	78.5	97.2	72.1	83.4	99.0	75.0	85.8	90.7	49.7	68.1
07 THERMAL & MOISTURE PROTECTION	100.7	75.8	89.9	101.6	80.4	92.4	101.8	78.3	91.5	101.8	77.6	91.3	100.1	81.1	91.8	96.0	76.1	87.3
08 OPENINGS	90.8	58.1	83.2	91.3	73.7	87.2	91.3	66.8	85.6	91.3	69.8	86.3	105.4	68.8	96.9	91.2	55.8	83.0
0920 Plaster & Gypsum Board	79.8	47.5	58.1	93.4	74.3	80.6	92.5	65.5	74.3	94.4	71.4	78.9	102.7	74.3	83.6	91.0	48.4	62.4
0950, 0980 Ceilings & Acoustic Treatment	88.6	47.5	60.9	83.4	74.3	77.3	83.4	65.5	71.3	83.4	71.4	75.3	98.3	74.3	82.1	83.9	48.4	60.0
0960 Flooring	91.4	87.3	90.2	84.0	87.3	84.9	83.7	78.9	82.4	85.0	81.3	84.0	96.3	86.6	93.6	90.7	87.3	89.2
0970, 0990 Wall Finishes & Painting/Coating	155.8	51.7	94.2	74.9	60.1	66.1	74.9	62.5	67.6	74.9	60.1	66.1	94.4	79.3	85.5	87.6	45.0	62.4
09 FINISHES	90.8	59.2	73.7	84.9	75.5	79.8	84.9	69.3	75.6	85.6	72.7	78.6	95.6	77.9	86.0	88.4	59.1	72.5
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	83.9	96.4	100.0	83.5	96.3	100.0	89.7	97.7	100.0	83.1	96.2	100.0	91.0	98.0	100.0	84.1	96.5
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	96.7	75.0	88.2	96.6	75.3	88.2	100.1	79.5	92.0	96.6	74.6	87.9	100.0	79.6	92.0	96.5	75.2	88.1
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	93.6	65.6	79.8	97.3	81.4	89.5	95.9	65.7	81.0	95.3	79.4	87.5	109.2	65.7	87.8	95.6	65.7	80.9
MF2018 WEIGHTED AVERAGE	98.7	73.3	87.9	96.0	80.7	89.6	97.4	76.8	88.7	97.1	78.2	89.1	98.3	79.7	90.5	96.3	73.1	86.5
DIVISION	NEVADA																	
	NORFOLK			NORTH PLATTE			OMAHA			VALENTINE			CARSON CITY			ELKO		
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433 CONTRACTOR EQUIPMENT	91.7	91.7		101.9	101.9		94.2	94.2		95.0	95.0		97.9	97.9		94.6	94.6	
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	84.1	89.7	88.0	102.9	90.4	94.3	89.1	93.9	92.4	86.3	95.2	92.4	83.3	97.4	93.0	87.8	91.3	84.0
0310 Concrete Forming & Accessories	83.2	74.1	75.5	94.8	75.2	78.1	93.1	76.7	79.1	83.5	53.1	57.6	106.1	76.3	80.7	111.4	96.3	98.6
0320 Concrete Reinforcing	100.5	66.5	84.1	99.5	76.2	88.3	100.8	76.5	89.0	100.1	66.3	83.7	115.8	116.1	116.0	124.5	114.5	119.7
0330 Cast-in-Place Concrete	107.9	71.3	94.3	116.9	60.6	96.0	91.4	78.6	86.7	103.1	54.0	84.8	98.0	82.2	92.1	95.0	72.4	86.6
03 CONCRETE	98.8	72.4	87.2	103.8	71.4	89.6	89.8	77.8	84.5	101.2	56.9	81.7	101.0	85.3	94.1	98.5	90.8	95.1
04 MASONRY	117.1	77.3	92.7	90.4	76.9	82.1	93.0	80.0	85.0	101.4	76.8	86.3	118.2	68.8	87.8	125.0	67.7	89.8
05 METALS	94.8	80.4	90.6	93.1	93.2	93.2	95.0	83.9	91.7	105.1	79.4	97.5	111.4	94.1	106.3	115.0	93.6	108.7
06 WOOD, PLASTICS & COMPOSITES	78.4	74.4	76.2	92.7	76.9	84.0	93.4	76.6	84.2	77.5	47.4	61.0	93.6	74.4	83.0	104.7	102.3	103.4
07 THERMAL & MOISTURE PROTECTION	101.2	78.3	91.2	95.9	78.4	88.3	96.7	80.8	89.8	96.5	73.9	86.7	118.1	79.1	101.2	114.2	73.6	96.5
08 OPENINGS	92.7	68.7	87.1	90.6	72.1	86.3	99.8	76.8	94.4	92.7	53.4	83.6	101.1	77.6	95.6	102.5	92.6	100.2
0920 Plaster & Gypsum Board	93.2	74.3	80.5	91.0	76.4	81.2	102.9	76.4	85.1	92.5	46.6	61.6	100.8	73.7	82.6	106.9	102.5	103.9
0950, 0980 Ceilings & Acoustic Treatment	97.6	74.3	81.9	83.9	76.4	78.8	101.0	76.4	84.4	100.4	46.6	64.1	96.0	73.7	80.9	94.5	102.5	99.9
0960 Flooring	104.1	87.3	99.4	91.1	78.9	87.7	100.6	87.3	96.9	116.8	87.3	108.5	99.5	67.1	90.4	103.0	67.1	92.9
0970, 0990 Wall Finishes & Painting/Coating	132.5	60.1	89.7	87.6	58.9	70.6	104.2	61.0	78.6	155.3	61.0	99.5	95.8	79.3	86.1	94.2	79.3	85.4
09 FINISHES	101.8	75.2	87.4	88.7	74.8	81.2	100.4	76.9	87.7	109.1	59.3	82.1	96.5	74.0	84.3	94.0	90.4	92.0
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	85.1	96.7	100.0	61.1	91.3	100.0	90.2	97.8</td									

City Cost Indexes

DIVISION	NEVADA						NEW HAMPSHIRE								
	ELY		LAS VEGAS		RENO		CHARLESTON			CLAREMONT		CONCORD			
	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		94.6	94.6		95.7	95.7		95.7	95.7	
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	73.4	92.5	86.6	76.6	95.5	89.7	73.4	92.6	86.7	80.6	96.1	91.3	74.6	96.1	89.5
0310 Concrete Forming & Accessories	104.3	101.6	102.0	105.2	105.6	105.5	100.6	76.3	79.9	86.6	83.1	83.6	92.1	83.2	84.5
0320 Concrete Reinforcing	123.1	114.7	119.0	113.5	125.9	119.5	116.4	124.2	120.1	89.7	88.6	89.1	89.7	88.6	89.1
0330 Cast-in-Place Concrete	102.0	95.2	99.4	98.7	108.2	102.2	107.9	81.1	97.9	84.7	116.1	96.4	77.8	116.1	92.1
03 CONCRETE	107.5	101.2	104.7	102.4	109.5	105.5	106.7	86.3	97.8	90.4	95.8	92.7	82.8	95.8	88.5
04 MASONRY	130.5	74.8	96.3	117.4	106.2	110.5	124.2	68.7	90.1	89.8	99.5	96.8	89.9	99.5	95.8
05 METALS	115.0	96.5	109.5	124.1	103.9	118.2	116.7	97.4	111.1	94.2	92.1	93.5	94.2	92.1	93.6
06 WOOD, PLASTICS & COMPOSITES	94.8	104.4	100.1	92.4	102.3	97.8	88.4	74.3	80.6	86.6	79.4	82.6	92.4	79.4	85.3
07 THERMAL & MOISTURE PROTECTION	114.7	92.2	104.9	129.4	101.9	117.4	114.2	78.3	98.6	107.3	106.5	107.0	107.1	106.5	106.8
08 OPENINGS	102.4	93.8	100.4	101.4	109.6	103.3	100.2	79.2	95.3	96.1	80.6	92.5	97.2	80.6	93.3
0920 Plaster & Gypsum Board	101.2	104.6	103.5	93.9	102.5	99.7	89.0	73.7	78.7	106.1	78.5	87.5	107.0	78.5	87.9
0950, 0980 Ceilings & Acoustic Treatment	94.5	104.6	101.3	101.0	102.5	102.0	97.8	73.7	81.5	101.8	78.5	86.1	101.8	78.5	86.1
0960 Flooring	100.5	67.1	91.1	92.0	104.1	95.4	97.3	67.1	88.8	85.1	113.1	92.9	87.6	113.1	94.7
0970, 0990 Wall Finishes & Painting/Coating	94.2	112.0	104.7	96.8	119.4	110.2	94.2	79.3	85.4	81.8	90.0	86.6	81.8	90.0	86.6
09 FINISHES	92.9	97.0	95.1	90.8	106.4	99.3	90.8	73.9	81.7	90.2	88.5	89.3	90.6	88.5	89.5
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	70.7	93.5	100.0	105.1	101.1	100.0	99.8	100.0	100.0	88.5	97.4	100.0	88.5	97.4
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	98.3	96.2	97.4	100.1	103.0	101.3	100.0	77.1	91.0	96.7	82.2	91.0	96.7	82.2	91.0
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	99.0	93.0	96.0	103.5	107.8	105.6	99.4	88.3	93.9	91.4	75.2	83.4	91.4	75.2	83.4
MF2018 WEIGHTED AVERAGE	103.7	93.2	99.2	105.0	105.1	105.0	103.6	82.6	94.7	94.1	88.4	91.7	93.1	88.4	91.1
NEW HAMPSHIRE													NEW JERSEY		
DIVISION	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
015433 CONTRACTOR EQUIPMENT	95.7	95.7		95.7	95.7		99.0	99.0		95.7	95.7		95.7	95.7	
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	88.0	96.2	93.6	74.7	95.2	88.8	87.8	101.3	97.1	89.5	96.3	94.2	83.3	97.0	92.7
0310 Concrete Forming & Accessories	90.7	83.4	84.5	102.4	77.3	81.0	97.5	95.1	95.5	98.5	94.9	95.4	87.9	94.1	93.2
0320 Concrete Reinforcing	89.7	88.6	89.2	90.4	88.6	89.5	108.5	88.7	98.9	112.0	88.7	100.7	89.7	88.7	89.2
0330 Cast-in-Place Concrete	85.1	116.2	96.7	76.3	107.5	87.9	99.2	118.3	106.3	80.5	117.4	94.3	76.3	117.2	91.5
03 CONCRETE	89.9	95.9	92.6	82.2	90.1	85.7	97.0	101.9	99.2	90.0	101.6	95.1	82.4	101.2	90.7
04 MASONRY	92.5	99.5	96.8	100.9	84.1	90.6	94.4	101.4	98.7	94.4	101.4	98.7	90.2	99.8	96.1
05 METALS	94.8	92.5	94.2	94.9	92.2	94.1	102.0	92.2	99.1	100.5	92.7	98.2	96.4	94.3	95.8
06 WOOD, PLASTICS & COMPOSITES	90.9	79.4	84.6	101.9	79.4	89.5	93.6	93.7	93.7	100.2	93.6	96.6	87.8	93.6	91.0
07 THERMAL & MOISTURE PROTECTION	107.9	106.4	107.2	107.2	99.5	103.8	112.5	109.5	111.2	108.3	108.9	108.6	107.8	108.1	107.9
08 OPENINGS	94.8	84.1	92.3	98.1	80.6	94.0	95.7	93.3	95.2	99.0	91.3	97.2	99.6	81.9	95.5
0920 Plaster & Gypsum Board	106.4	78.5	87.6	120.6	78.5	92.3	99.7	93.1	95.3	115.6	93.1	100.5	106.1	93.1	97.4
0950, 0980 Ceilings & Acoustic Treatment	101.8	78.5	86.1	101.8	78.5	86.1	101.2	93.1	95.8	114.1	93.1	100.0	102.7	93.1	96.3
0960 Flooring	87.2	113.1	94.5	97.9	113.1	102.2	93.8	113.1	99.2	91.0	113.1	97.2	85.2	113.1	93.0
0970, 0990 Wall Finishes & Painting/Coating	81.8	103.4	94.6	81.8	90.0	86.6	95.3	119.0	109.3	81.8	102.2	93.9	81.8	102.2	93.9
09 FINISHES	92.1	89.9	90.9	95.5	84.6	89.6	94.8	100.6	97.9	96.8	98.7	97.8	91.1	98.2	95.0
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	94.7	98.8	100.0	95.6	99.0	100.0	109.7	102.2	100.0	109.4	102.1	100.0	108.7	101.9
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	96.7	82.3	91.0	96.7	74.1	87.8	100.1	87.3	95.1	100.2	87.3	95.1	100.2	86.3	94.7
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	91.4	75.2	83.4	92.2	49.1	71.0	93.9	79.3	86.7	93.2	79.3	86.4	91.7	75.3	83.6
MF2018 WEIGHTED AVERAGE	94.5	89.0	92.2	94.4	80.2	88.4	98.2	94.5	96.6	97.5	93.7	95.9	94.9	92.4	93.8
NEW JERSEY													LONG BRANCH		
DIVISION	CAMDEN			DOVER			ELIZABETH			HACKENSACK			JERSEY CITY		077
	081			078			072			076			073		
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433 CONTRACTOR EQUIPMENT	93.3	93.3		95.7	95.7		95.7	95.7		95.7	95.7		93.3	93.3	
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	89.3	99.3	96.2	103.8	101.4	102.2	108.9	101.4	103.7	104.8	101.4	102.5	95.2	101.4	99.5
0310 Concrete Forming & Accessories	105.0	137.3	132.5	96.4	148.3	140.6	108.0	148.5	142.5	96.4	148.3	140.7	106.6	148.4	141.3
0320 Concrete Reinforcing	106.5	128.5	117.1	75.3	156.5	114.6	75.3	156.5	114.6	75.3	156.5	114.6	97.7	156.5	126.2
0330 Cast-in-Place Concrete	76.1	133.8	97.6	81.3	131.5	100.0	69.8	140.3	96.1	79.4	140.3	102.1	63.4	131.6	88.8
03 CONCRETE	88.2	133.2	108.0	86.1	142.3	110.8	83.3	145.5	110.6	84.5	145.4	111.2	81.0	142.2	107.9
04 MASONRY	94.2	135.0	119.3	91.2	145.6	124.7	107.2	145.6	130.8	95.3	145.6	126.2	85.3	145.6	122.4
05 METALS	104.7	111.0	106.5	96.5	125.1	104.9	98.0	125.3	106.0	96.5	125.1	104.9	102.4	122.2	108.2
06 WOOD, PLASTICS & COMPOSITES	110.1	137.9	125.4	94.9	148.3	124.3	109.7	148.3	131.0	94.9	148.3	124.3	95.8	148.3	124.7
07 THERMAL & MOISTURE PROTECTION	102.0	133.0	115.5	103.7	142.8	120.7	104.0	144.1	121.4	103.5	136.7	117.9	103.2	142.8	120.4
08 OPENINGS	98.4	132.0	106.3	102.0	145.1	112.1	100.4	145.1	110.8	99.8	145.1	110.4	98.5	145.1	109.4
0920 Plaster & Gypsum Board	110.9	138.6	129.6	111.5	149.4	137.0	119.0	149.4	139.5	111.5	149.4	137.0	114.6	149.4	138.0
0950, 0980 Ceilings & Acoustic Treatment	106.3	138.6	128.1	92.3	149.4	130.8	94.1	149.4	131.4	92.3	149.4	130.8	102.2	149.4	134.0
0960 Flooring	93.7	162.5	113.0	83.7	188.8	113.2	88.7	188.8	116.8	83.7	188.8	113.2	84.7	188.8	114.0
0970, 0990 Wall Finishes & Painting/Coating	81.9	141.8	117.4	83.8	148.6	122.1	83.8	148.6	122.1	83.8	148.6	122.1	83.9	148.6	122.2
09 FINISHES	93.7	143.7	120.8	90.0	156.2	125.8	93.4	156.2	127.4	89.9	156.2	125.8	92.4	156.2	127.1
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	114.3	103.2	100.0	131.7	107.1	100.0	131.7	107.1	100.0	131.7	107.1	100.0	131.7	107.1
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	100.0	126.3	110.3	99.7	135.7	113.8	100.0	137.1	114.6	99.7	135.7	113.8	100.0	135.7	114.0
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	98.4	132.1	115.0	96.0	138.5	116.9	96.6	138.5	117.2	96.0	142.3	118.8	100.5	142.3	121.1
MF2018 WEIGHTED AVERAGE	98.0	127.8	110.6	96.4	137.5	113.7	97.5	138.3	114.7	96.1	138.3	114.0	96.5	137.8	114.0
NEW JERSEY													LONG BRANCH		

City Cost Indexes

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	92.9	92.9	98.3	98.3	95.7	95.7	92.9	92.9	95.7	95.7	95.7	97.0	97.0	97.0	97.0	97.0	97.0	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	101.1	100.9	100.9	110.0	106.2	107.4	106.6	101.4	103.0	102.6	100.5	101.2	106.3	101.4	102.9	88.6	105.4	100.2
0310	Concrete Forming & Accessories	108.5	148.0	142.2	100.7	148.7	141.6	98.3	148.3	140.9	102.4	139.1	133.6	99.0	148.5	141.2	103.5	138.8	133.6
0320	Concrete Reinforcing	82.1	156.1	117.9	96.2	156.6	125.4	97.7	156.5	126.2	82.1	156.1	117.9	75.3	156.5	114.6	107.7	116.2	111.8
0330	Cast-in-Place Concrete	97.0	136.9	111.8	89.8	140.9	108.8	80.8	140.2	102.9	97.0	135.8	111.5	67.5	140.3	94.6	95.6	134.4	110.0
03	CONCRETE	104.2	143.8	121.6	93.1	145.7	116.2	88.8	145.3	113.7	103.9	139.4	119.5	80.6	145.5	109.1	97.4	132.1	112.6
04	MASONRY	102.5	140.6	125.9	94.9	145.7	126.1	91.7	145.6	124.9	91.4	135.5	118.5	93.8	145.6	125.6	95.4	135.5	120.0
05	METALS	98.9	121.4	105.5	104.2	124.7	110.3	97.5	125.1	105.6	98.9	121.0	105.4	96.5	125.3	104.9	104.3	108.8	105.6
06	WOOD, PLASTICS & COMPOSITES	115.7	148.3	133.6	97.8	148.4	125.6	97.5	148.3	125.5	107.3	139.3	124.9	98.7	148.3	126.0	101.6	139.4	122.4
07	THERMAL & MOISTURE PROTECTION	102.5	138.2	118.0	105.2	144.7	122.4	103.8	136.7	118.1	102.5	131.3	115.0	104.1	144.1	121.5	102.9	135.2	117.0
08	OPENINGS	91.6	145.1	104.1	100.5	145.1	110.9	105.0	145.1	114.3	93.4	141.0	104.5	106.1	145.1	115.2	96.9	130.0	104.6
0920	Plaster & Gypsum Board	113.0	149.4	137.5	106.2	149.4	135.3	114.6	149.4	138.0	107.9	140.2	129.6	113.7	149.4	137.7	101.6	140.2	127.5
0950, 0980	Ceilings & Acoustic Treatment	96.4	149.4	132.2	103.0	149.4	134.3	102.2	149.4	134.0	96.4	140.2	125.9	92.3	149.4	130.8	101.2	140.2	127.5
0960	Flooring	95.1	188.8	121.4	96.7	188.8	122.6	84.7	188.8	122.0	92.5	162.5	112.2	84.9	188.8	114.1	100.1	176.9	121.7
0970, 0990	Wall Finishes & Painting/Coating	81.9	148.6	121.4	94.1	148.6	126.3	83.8	148.6	122.1	81.9	141.8	117.4	83.8	148.6	122.1	94.9	141.8	122.7
09	FINISHES	93.8	156.2	127.6	97.2	156.7	129.4	92.5	156.2	127.0	92.3	144.7	120.7	91.0	156.2	126.3	97.0	147.3	124.2
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	131.5	107.0	100.0	131.8	107.1	100.0	131.7	107.1	100.0	111.6	102.6	100.0	131.7	107.1	100.0	114.7	103.3
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	99.7	133.8	113.1	100.0	139.2	115.4	100.0	135.5	114.0	99.7	131.1	112.0	99.8	137.1	114.4	100.1	130.8	112.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	94.8	133.7	114.0	105.0	142.3	123.4	100.5	138.5	119.2	94.2	129.9	111.8	96.6	138.5	117.2	102.6	128.7	115.4
MF2018	WEIGHTED AVERAGE	98.7	135.6	114.3	100.3	139.7	117.0	98.0	137.7	114.8	98.1	130.8	111.9	96.4	138.3	114.1	99.7	128.9	112.0
DIVISION	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	93.3	93.3	107.5	107.5	107.5	107.5	96.6	97.5	97.2	97.3	97.5	97.5	107.2	97.5	107.5	107.5	107.5	107.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	92.5	99.4	97.3	91.1	97.5	95.5	109.7	97.5	101.3	96.6	97.5	97.2	97.3	97.5	97.5	107.2	97.5	100.5
0310	Concrete Forming & Accessories	99.2	137.6	131.9	101.0	66.2	71.3	98.6	66.2	71.0	98.6	66.1	70.9	101.1	66.2	71.4	101.1	66.2	71.4
0320	Concrete Reinforcing	81.1	131.2	105.3	99.9	71.5	86.1	116.0	71.5	94.5	117.3	71.4	95.1	109.2	71.5	90.9	104.5	71.5	88.5
0330	Cast-in-Place Concrete	84.6	133.9	103.0	90.5	70.1	82.9	94.8	70.1	85.6	94.7	70.1	85.5	91.3	70.1	83.4	86.0	70.1	80.1
03	CONCRETE	92.2	133.8	110.5	92.9	69.8	82.7	116.7	69.8	96.1	104.3	69.7	89.1	96.4	69.8	84.7	103.3	69.8	88.6
04	MASONRY	92.6	135.5	118.9	106.0	60.5	78.1	108.5	60.5	79.0	108.5	60.5	79.0	113.8	60.5	81.1	101.6	60.5	76.4
05	METALS	98.8	112.6	102.8	108.1	90.6	102.9	106.6	90.6	101.9	106.3	90.5	101.6	105.7	90.6	101.3	104.8	90.6	100.7
06	WOOD, PLASTICS & COMPOSITES	103.7	137.9	122.5	102.1	67.2	82.9	93.5	67.2	79.0	93.5	67.2	79.0	102.2	67.2	82.9	102.2	67.2	82.9
07	THERMAL & MOISTURE PROTECTION	101.9	132.2	115.1	101.0	72.8	88.7	106.3	72.8	79.1	91.7	105.0	72.8	88.9	102.5	72.8	88.9	102.5	72.8
08	OPENINGS	92.9	134.9	102.7	98.5	67.0	91.1	96.5	67.0	89.6	96.6	67.0	89.7	100.8	67.0	92.9	100.8	67.0	93.0
0920	Plaster & Gypsum Board	106.4	138.6	128.1	113.0	66.1	81.5	80.2	66.1	70.7	80.2	66.1	70.7	99.4	66.1	77.0	99.4	66.1	77.0
0950, 0980	Ceilings & Acoustic Treatment	96.4	138.6	124.9	99.8	66.1	77.1	102.7	66.1	78.1	102.7	66.1	78.1	98.6	66.1	76.7	98.6	66.1	76.7
0960	Flooring	91.7	162.5	111.6	88.9	66.8	82.7	97.2	66.8	88.7	97.2	66.8	88.7	104.6	66.8	83.8	90.4	66.8	83.8
0970, 0990	Wall Finishes & Painting/Coating	81.9	141.8	117.4	97.8	52.6	71.1	92.6	52.6	68.9	92.6	52.6	68.9	92.1	52.6	68.7	92.1	52.6	68.7
09	FINISHES	91.1	143.9	119.6	92.3	64.7	77.4	94.2	64.7	78.3	92.9	64.7	77.7	90.7	64.7	76.6	92.1	64.7	77.3
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	114.5	103.2	100.0	85.1	96.7	100.0	85.1	96.7	100.0	85.1	96.7	100.0	85.1	96.7	100.0	85.1	96.7
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	99.7	126.6	110.3	100.3	69.0	88.0	97.9	69.0	86.5	97.9	68.6	86.4	100.2	69.0	88.0	98.1	69.0	86.6
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	94.2	143.3	118.5	87.9	69.5	78.8	90.1	69.5	80.0	87.9	69.5	78.8	85.9	69.5	77.8	85.3	69.5	77.5
MF2018	WEIGHTED AVERAGE	96.3	129.8	110.5	98.6	72.5	87.6	101.6	72.5	89.3	99.0	72.4	87.9	99.0	72.5	87.8	99.0	72.5	87.8
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	83.5	83.5	107.5	107.5	107.5	107.5	110.4	110.4	110.4	107.5	107.5	107.5	107.5	107.5	107.5	107.5	107.5	107.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	97.8	77.5	83.8	97.5	97.1	99.0	97.5	98.0	99.1	102.8	101.6	92.8	97.5	96.1	112.5	77.5	88.3	
0310	Concrete Forming & Accessories	95.4	65.2	69.7	101.1	66.2	71.4	98.6	66.2	71.0	100.0	66.3	71.2	101.1	66.2	71.4	98.8	65.1	70.1
0320	Concrete Reinforcing	113.1	71.3	92.9	106.3	71.5	89.5	117.3	71.5	95.1	99.3	71.5	85.9	108.4	71.5	90.5	101.7	71.3	87.0
0330	Cast-in-Place Concrete	89.5	63.1	79.7	88.8	70.1	81.9	94.7	70.1	85.6	94.3	70.9	85.6	87.0	70.1	80.7	95.4	63.1	83.4
03	CONCRETE	82.1	66.5	75.3	94.0	69.8	83.4	105.3	69.8	87.9	114.1	70.0	82.9	92.9	69.8	82.8	86.1	66.4	77.4
04	MASONRY	104.0	60.2	77.1	101.9	60.5	76.5	119.5	60.5	83.3	95.0	60.6	73.9	101.8	60.5	76.4	98.7	60.2	75.0
05	METALS	105.0	83.0	98.5	104.5	90.6	100.4	107.5	90.6	102.6	101.6	89.6	98.1	104.8	90.6	100.7	104.4	83.0	98.1
06	WOOD, PLASTICS & COMPOSITES	82.9	66.2	73.7	102.2	67.2	82.9	93.5	67.2	79.0	99.0	67.2	81.5	102.2	67.2	82.9	93.5	66.2	78.5
07	THERMAL & MOISTURE PROTECTION	92.2	68.2	81.7	100.8	72.8	88.6	105.2	72.8	91.1	103.5	73.7	90.5	100.8	72.8	88.6	90.1	68.2	80.5
08	OPENINGS	92.0</td																	

City Cost Indexes

DIVISION	NEW MEXICO			NEW YORK			BROOKLYN			BUFFALO									
	TUCUMCARI		ALBANY		BINGHAMTON		BRONX		112		140 - 142								
	884		120 - 122		137 - 139		104		109.4		100.5								
MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL					
015433	CONTRACTOR EQUIPMENT	107.5	107.5	115.6	115.6	117.6	117.6	104.4	104.4	109.4	109.4	100.5	100.5	100.5					
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	96.2	97.5	97.1	80.0	105.1	97.4	94.3	89.3	90.8	97.3	109.7	105.9	97.3	102.3	100.7			
0310	Concrete Forming & Accessories	98.6	66.1	70.9	97.3	107.3	105.8	99.4	93.4	94.3	95.7	189.1	175.3	105.1	189.1	176.7	101.3	117.1	114.7
0320	Concrete Reinforcing	115.0	71.4	93.9	101.3	115.2	108.0	95.8	106.3	100.9	94.8	182.0	136.9	97.2	242.5	167.5	98.9	116.4	107.3
0330	Cast-in-Place Concrete	94.7	70.1	85.5	81.0	116.4	94.2	106.3	106.9	106.5	85.6	172.0	117.8	108.3	170.5	131.5	109.1	123.5	114.4
03	CONCRETE	103.6	69.7	88.7	87.7	112.8	98.7	94.3	102.6	97.9	88.0	181.1	128.9	106.4	189.9	143.1	104.9	118.7	111.0
04	MASONRY	119.9	60.5	83.4	88.0	117.9	106.4	104.3	104.9	104.7	88.8	188.9	150.3	114.8	188.8	160.3	112.6	122.2	118.5
05	METALS	106.3	90.5	101.6	102.2	125.0	108.9	95.0	133.6	106.3	86.4	174.6	112.3	103.1	175.0	124.2	97.0	107.5	100.1
06	WOOD, PLASTICS & COMPOSITES	93.5	67.2	79.0	94.6	104.0	99.8	101.7	90.2	95.4	97.2	188.6	147.5	103.7	188.3	150.3	98.6	115.8	108.1
07	THERMAL & MOISTURE PROTECTION	105.0	72.8	91.0	105.4	110.4	107.6	109.2	94.8	102.9	102.5	168.8	131.3	109.3	168.2	134.9	102.5	111.7	106.5
08	OPENINGS	96.4	67.0	89.5	96.4	103.8	98.1	90.4	93.7	91.2	92.3	197.7	116.9	87.8	197.5	113.4	99.8	111.4	102.5
0920	Plaster & Gypsum Board	80.2	66.1	70.7	97.8	103.9	101.9	109.2	89.7	96.1	102.8	191.0	162.1	103.3	191.0	162.3	105.8	116.1	112.7
0950, 0980	Ceilings & Acoustic Treatment	102.7	66.1	78.1	97.1	103.9	101.7	96.6	89.7	92.0	89.1	191.0	157.8	91.8	191.0	158.7	104.2	116.1	112.2
0960	Flooring	97.2	66.8	88.7	90.9	110.3	96.4	103.1	102.4	102.9	99.9	182.5	123.1	110.2	182.5	130.5	96.3	116.6	102.0
0970, 0990	Wall Finishes & Painting/Coating	92.6	52.6	68.9	95.9	104.4	100.9	89.3	106.3	99.4	106.2	167.4	142.4	116.0	167.4	146.4	96.9	117.8	109.3
09	FINISHES	92.8	64.7	77.6	90.6	107.1	99.5	93.6	95.9	94.8	98.0	186.2	145.7	107.1	186.0	149.8	102.0	117.6	110.5
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	85.1	96.7	100.0	103.8	100.9	100.0	96.6	99.2	100.0	141.5	109.3	100.0	140.8	109.1	100.0	106.5	101.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	97.9	68.6	86.4	100.1	110.3	104.1	100.6	97.0	99.2	100.3	177.9	130.7	99.8	177.9	130.5	100.0	102.4	100.9
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	90.1	69.5	80.0	100.0	108.4	104.1	98.7	101.0	99.8	90.6	184.5	136.9	98.5	184.5	140.9	99.5	105.3	102.4
MF2018	WEIGHTED AVERAGE	99.9	72.4	88.3	96.8	111.2	102.8	97.3	101.5	99.1	93.8	175.3	128.3	101.9	177.3	133.8	100.8	110.3	104.8
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	120.0	120.0	109.4	109.4	109.4	109.4	109.4	112.6	109.4	109.4	111.1	119.1	116.6	115.5	120.6	119.0		
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	97.4	89.6	92.0	121.2	120.5	120.8	121.3	120.6	120.8	71.4	99.6	90.9	111.1	119.1	116.6	115.5	120.6	119.0
0310	Concrete Forming & Accessories	85.0	96.3	94.6	92.2	189.1	174.8	95.9	189.1	175.3	81.5	99.9	97.2	88.8	157.2	147.1	95.9	189.1	175.3
0320	Concrete Reinforcing	98.6	105.3	101.8	97.2	242.5	167.5	98.9	242.5	168.4	96.9	112.7	104.5	97.2	174.4	134.6	97.2	242.5	167.5
0330	Cast-in-Place Concrete	98.8	106.4	101.6	117.2	170.5	137.1	117.2	170.5	137.1	78.1	111.6	90.6	99.5	161.5	122.6	108.3	170.5	131.5
03	CONCRETE	90.9	103.7	96.5	112.8	189.9	146.7	113.2	189.9	146.9	81.2	107.4	92.8	98.2	161.8	126.2	105.8	189.9	142.8
04	MASONRY	101.4	106.7	104.6	118.6	188.8	161.8	112.8	188.8	159.5	93.4	112.6	105.2	109.0	174.4	149.2	117.2	188.8	161.2
05	METALS	95.5	135.8	107.3	103.2	175.0	124.3	103.2	175.0	124.3	95.5	124.5	104.0	104.7	172.4	124.6	103.2	175.0	124.3
06	WOOD, PLASTICS & COMPOSITES	84.1	94.4	89.8	87.1	188.3	142.8	91.7	188.3	144.9	82.7	96.1	90.1	83.7	154.0	122.4	91.7	188.3	144.9
07	THERMAL & MOISTURE PROTECTION	108.9	95.2	102.9	109.2	168.3	134.9	109.3	168.3	134.9	98.6	107.1	102.3	108.9	157.8	130.2	109.1	168.3	134.8
08	OPENINGS	96.7	95.7	96.4	86.6	197.5	112.5	86.6	197.5	112.5	90.0	99.1	92.1	87.0	178.6	108.3	86.6	197.5	112.5
0920	Plaster & Gypsum Board	99.5	94.2	96.0	91.7	191.0	158.5	94.2	191.0	159.3	91.0	96.0	94.4	91.4	155.6	134.6	94.2	191.0	159.3
0950, 0980	Ceilings & Acoustic Treatment	106.0	94.2	98.1	81.2	191.0	155.2	81.2	191.0	155.2	86.4	96.0	92.9	80.3	155.6	131.1	81.2	191.0	155.2
0960	Flooring	87.6	102.4	91.8	105.0	182.5	126.8	106.5	182.5	127.9	82.3	107.7	89.5	104.0	179.7	125.2	106.5	182.5	127.9
0970, 0990	Wall Finishes & Painting/Coating	97.2	93.3	94.9	116.0	167.4	146.4	116.0	167.4	146.4	89.3	104.8	98.2	91.6	167.4	146.4	116.0	167.4	146.4
09	FINISHES	94.2	96.9	95.7	102.4	186.0	147.6	103.2	186.0	148.0	84.0	101.1	93.2	101.0	161.6	133.8	102.7	186.0	147.8
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	97.6	99.5	100.0	140.8	109.1	100.0	96.9	99.3	100.0	132.1	107.1	100.0	140.8	109.1	100.0	140.8	109.1
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.6	95.5	96.2	96.2	177.9	128.3	96.2	177.9	128.3	96.7	109.3	101.6	99.8	161.0	123.8	96.2	177.9	128.3
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	96.4	104.1	100.2	105.3	184.5	144.4	105.3	184.5	144.4	94.3	105.0	99.6	98.0	141.0	119.2	97.0	184.5	140.1
MF2018	WEIGHTED AVERAGE	96.3	102.5	98.9	102.2	177.3	133.9	102.1	177.3	133.9	92.0	107.3	98.5	99.9	157.1	124.1	100.3	177.3	132.8
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	90.6	90.6	109.4	109.4	109.4	109.4	109.4	109.4	109.4	109.4	104.4	104.4	104.4	104.4	104.4	104.4		
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	98.8	89.9	92.6	139.6	115.9	123.2	119.2	120.6	120.2	134.9	115.8	121.7	102.7	105.4	104.5	102.2	105.3	104.3
0310	Concrete Forming & Accessories	85.1	90.1	89.3	82.7	130.7	123.7	100.0	189.1	176.0	89.3	130.8	124.7	86.7	138.8	131.1	100.5	135.3	130.1
0320	Concrete Reinforcing	98.9	111.2	104.8	97.3	160.4	127.8	~9.7	242.5	167.5	96.5	160.4	127.4	93.5	180.8	135.7	93.6	180.6	135.7
0330	Cast-in-Place Concrete	102.4	105.2	103.4	105.5	146.3	120.7	111.8	170.5	133.7	98.7	146.3	116.5	95.6	150.0	115.8	95.6	149.7	115.7
03	CONCRETE	93.9	99.0	96.2	102.4	140.8	119.3	109.0	189.9	144.5	97.3	140.8	116.4	97.2	150.4	120.6	96.4	148.7	119.4
04	MASONRY	110.2	104.6	106.8	108.1	155.4	137.2	111.7	188.8	159.1	100.8	155.4	134.3	94.6	156.4	132.6	94.6	156.4	132.6
05	METALS	93.0	101.9	95.6	104.0	135.9	113.4	103.1	175.0	124.2	104.0	136.0	113.4	86.2	169.8	110.7	86.4	169.0	110.7
06	WOOD, PLASTICS & COMPOSITES	82.9	86.2	84.7	83.9	124.0	106.0	97.8	188.3	147.6	90.4	124.0	108.9	87.6	132.4	112.3	104.5	128.7	117.8
07	THERMAL & MOISTURE PROTECTION	108.5	95.4	102.8	121.5	145.0	131.7	109.2	168.3	134.9	121.1	145.0	131.5	103.4	147.3	122.5	103.5	144.7	121.4
08	OPENINGS	96.5	93.0	95.7	92														

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	
015433	CONTRACTOR EQUIPMENT	104.6	104.6	90.6	90.6	94.5	94.5			109.4	109.4		109.4	109.4		109.4	109.4		
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	106.6	111.9	110.3	100.9	90.8	94.0	109.3	96.7	100.6	135.9	114.8	121.3	114.3	120.6	118.7	112.1	118.6	116.6
0310	Concrete Forming & Accessories	104.3	188.9	176.4	85.0	113.1	108.9	86.8	91.4	90.7	82.7	167.6	155.1	89.0	189.1	174.3	93.2	156.2	146.9
0320	Concrete Reinforcing	100.3	178.3	138.0	97.5	112.0	104.5	101.4	112.0	106.5	97.3	160.0	127.6	98.9	242.5	168.4	99.1	215.6	155.5
0330	Cast-in-Place Concrete	98.9	172.2	126.2	106.0	124.1	112.7	95.5	100.6	97.4	102.2	135.4	114.5	102.9	170.5	128.1	101.2	159.7	123.0
03	CONCRETE	101.6	180.3	136.2	96.2	116.1	105.0	94.3	98.0	95.9	99.7	153.6	123.4	101.5	189.9	140.3	98.7	166.5	128.5
04	MASONRY	102.1	188.8	155.4	117.5	125.1	122.2	88.3	97.4	93.9	100.6	139.5	124.5	106.0	188.8	156.9	114.3	173.3	150.6
05	METALS	97.5	171.0	119.1	95.6	102.4	97.6	99.8	99.5	99.7	104.0	135.6	113.3	103.1	175.0	124.5	105.1	160.6	121.4
06	WOOD, PLASTICS & COMPOSITES	102.0	188.6	149.7	82.8	108.2	96.8	88.8	88.2	88.5	83.9	179.3	136.4	83.8	188.3	141.3	88.7	154.0	124.6
07	Thermal & Moisture Protection	105.2	170.0	133.4	108.6	110.0	109.2	116.0	97.2	107.8	121.4	144.1	131.3	108.8	168.3	134.7	110.0	154.8	129.5
08	OPENINGS	96.0	197.5	119.7	96.5	104.7	98.4	97.4	94.7	96.8	92.1	170.5	110.4	86.6	197.5	112.5	87.0	172.1	106.8
0920	Plaster & Gypsum Board	108.6	191.0	164.0	89.2	108.4	102.1	108.2	87.4	94.2	91.0	181.7	152.0	91.4	191.0	158.4	92.5	155.6	135.0
0950, 0980	Ceilings & Acoustic Treatment	104.5	191.0	162.8	102.7	108.4	106.6	107.3	87.4	93.9	77.5	181.7	147.7	81.2	191.0	155.2	81.1	155.6	131.4
0960	Flooring	101.3	182.5	124.1	90.3	112.1	96.4	104.2	105.1	104.4	98.6	158.6	115.5	104.0	182.5	126.0	105.0	166.9	122.4
0970, 0990	Wall Finishes & Painting/Coating	102.7	167.4	141.0	98.8	111.5	106.3	111.2	95.1	101.7	116.6	123.4	120.6	116.0	167.4	146.4	116.0	167.4	146.4
09	FINISHES	102.9	186.2	148.0	93.3	112.9	103.9	95.0	93.5	94.2	97.7	164.2	133.7	101.3	186.0	147.1	101.5	158.6	132.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	141.5	109.3	100.0	102.7	100.6	100.0	92.7	98.4	100.0	116.5	103.7	100.0	140.8	109.1	100.0	120.1	104.5
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.2	178.3	130.9	96.5	105.1	99.9	96.6	100.3	98.1	96.6	120.3	105.9	99.8	177.9	130.5	100.0	155.9	121.9
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	96.8	184.5	140.0	94.1	98.9	96.4	92.1	91.7	91.9	95.7	121.2	108.3	98.0	184.5	140.6	99.5	134.9	116.9
MF2018	WEIGHTED AVERAGE	99.7	175.2	131.6	97.4	107.5	101.6	97.0	96.6	96.8	99.8	136.8	115.4	100.0	177.3	132.6	100.6	153.5	122.9
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	
015433	CONTRACTOR EQUIPMENT	117.6	117.6	112.6	104.4	104.4	104.4	104.4	104.4	104.4	104.4	104.4	112.6	112.6	112.6	112.6	112.6	112.6	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	88.8	105.1	100.0	81.4	100.1	94.3	107.0	109.7	108.9	99.4	103.7	102.4	93.0	98.5	96.8	71.9	98.1	90.0
0310	Concrete Forming & Accessories	105.8	100.3	101.2	96.4	107.1	105.5	86.1	189.3	174.1	94.4	140.8	133.9	98.5	89.1	90.5	99.5	86.3	88.2
0320	Concrete Reinforcing	101.4	105.0	103.1	95.9	115.1	105.2	94.8	216.0	153.4	93.6	152.0	121.9	96.8	106.1	101.3	96.8	100.3	98.5
0330	Cast-in-Place Concrete	97.8	103.3	99.9	94.4	115.4	102.2	95.6	172.1	124.1	92.7	138.9	109.9	98.7	102.3	100.0	90.3	101.0	94.3
03	CONCRETE	99.5	103.3	101.2	94.9	112.4	102.6	99.1	186.4	137.5	93.8	141.3	114.7	97.6	98.1	97.8	95.8	95.4	95.6
04	MASONRY	93.6	103.4	99.7	90.7	117.9	107.4	100.9	188.9	154.9	94.5	142.2	123.8	97.0	101.0	99.5	88.4	99.4	95.2
05	METALS	104.6	119.3	108.9	99.7	126.1	107.4	84.6	174.8	111.1	84.6	131.9	98.5	98.6	119.8	104.9	96.7	117.5	102.9
06	WOOD, PLASTICS & COMPOSITES	108.4	100.2	103.9	100.1	103.8	102.1	86.2	188.6	142.6	96.9	142.5	122.0	98.2	86.0	91.5	98.2	82.7	89.7
07	Thermal & Moisture Protection	116.4	99.8	109.2	100.1	109.8	104.3	102.9	168.8	131.5	103.4	140.9	119.7	104.0	94.1	99.7	92.7	94.0	93.3
08	OPENINGS	100.7	99.3	100.3	95.3	103.7	97.3	92.3	197.7	116.9	92.4	150.7	106.0	92.4	89.5	91.8	95.2	86.3	93.1
0920	Plaster & Gypsum Board	103.8	100.1	101.3	100.3	103.9	102.7	98.4	191.0	160.7	102.1	143.5	130.0	96.8	85.6	89.3	96.8	82.2	87.0
0950, 0980	Ceilings & Acoustic Treatment	100.4	100.1	100.2	92.8	103.9	100.3	89.1	191.0	157.8	87.5	143.5	125.2	96.6	85.6	89.2	96.6	82.2	86.9
0960	Flooring	90.4	105.0	94.5	89.6	110.3	95.4	95.1	182.5	119.6	95.0	171.6	116.5	92.0	92.3	92.1	90.0	92.4	90.7
0970, 0990	Wall Finishes & Painting/Coating	97.7	98.4	98.1	89.3	104.4	98.2	106.2	167.4	142.4	104.6	126.9	117.8	91.9	98.7	95.9	85.6	98.7	93.4
09	FINISHES	95.7	101.4	98.8	89.2	107.0	98.9	96.7	186.2	145.2	96.3	145.8	123.1	92.4	90.0	91.1	90.8	87.9	89.2
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	98.9	99.7	100.0	103.5	100.8	100.0	141.5	109.3	100.0	114.7	103.3	100.0	95.1	98.9	100.0	89.8	97.7
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	99.9	88.1	95.3	100.2	106.2	102.6	100.3	177.9	130.8	96.8	123.7	107.4	100.3	94.4	98.0	100.3	92.5	97.2
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	99.5	89.9	94.8	88.7	108.4	103.5	90.6	184.5	136.9	94.8	114.6	104.6	98.6	101.0	99.8	96.6	101.0	98.8
MF2018	WEIGHTED AVERAGE	100.3	99.2	99.8	97.0	109.9	102.4	95.6	176.1	129.6	94.1	130.2	109.4	97.8	98.3	98.0	96.0	96.6	96.2
DIVISION	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	
015433	CONTRACTOR EQUIPMENT	112.6	112.6	104.4	104.4	104.4	99.0	99.0	99.0	100.4	100.4	100.4	104.1	104.1	104.1	104.1	104.1	104.1	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	79.5	98.6	92.7	97.1	105.4	102.8	104.5	105.4	105.1	96.4	77.8	83.5	98.6	81.9	87.1	98.5	86.3	90.1
0310	Concrete Forming & Accessories	85.3	93.0	91.9	99.2	149.3	141.9	99.4	149.1	141.8	90.5	61.4	65.7	96.6	61.5	66.6	96.2	61.4	66.5
0320	Concrete Reinforcing	97.5	106.1	101.6	93.6	180.8	135.8	97.3	180.8	137.7	95.4	66.0	81.2	99.6	66.8	83.7	104.4	66.8	86.2
0330	Cast-in-Place Concrete	105.1	104.7	105.0	84.9	150.0	109.1	95.0	150.0	115.4	105.9	71.5	93.1	108.0	71.6	94.4	106.3	71.2	93.2
03	CONCRETE	108.8	100.7	105.3	87.6	155.2	117.3	96.6	155.1	122.3	91.1	67.4	80.7	91.2	67.5	80.8	95.2	67.4	83.0
04	MASONRY	89.7	104.8	99.0	93.9	156.4	132.3	97.1	156.4	133.6	84.9	64.4	72.3	88.6	64.4	73.8	84.3	64.4	72.0
05	METALS	96.8	119.8	103.6	86.1	169.8	110.7	94.1	169.9	116.4	101.2	89.9	97.9	102.1	88.9	98.2	117.9	90.2	109.7
06	WOOD, PLASTICS & COMPOSITES	80.3	89.9	85.6	102.4	146.7	126.8	102.3	146.3	126.5	87.6	59.0	71.9	89.9	59.0	72.9	90.6	59.0	73.2
07	Thermal & Moisture Protection	93.0	97.2	94.8	103.2	148.7	123.0	103.5	149.3	123.4	99.1	63.8	83.8	93.7	64.5	81.0	102.8	63.8	85.8
08	OPENINGS	95.2	93.8	94.8	92.4	176.2	112.0	96.0	176.5	114.8	89.0	59.8	82.2	99.0	60.0	89.9	95.6	60.0	87.3
0920	Plaster & Gypsum Board	87.6	89.6	89.0	105.3	147.8	133.9	108.7	147.4	134.7	102.2	57.8	72.3	98.1	57.8	71.0	89.9	57.8	68.3
0950, 0980	Ceilings & Acoustic Treatment	96.6	89.6	91.9	87.5	147.8	128.2	103.7	147.4	133.2</									

City Cost Indexes

DIVISION	NORTH CAROLINA														NORTH DAKOTA			
	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
015433 CONTRACTOR EQUIPMENT	108.0	108.0	104.1	104.1	99.0	99.0	104.1	104.1	104.1	95.1	85.1	88.2	93.9	84.9	87.7	104.1	104.1	104.1
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	102.7	87.9	92.4	95.6	86.1	89.0	96.1	78.1	83.7	98.3	86.4	90.1	95.1	85.1	88.2	93.9	84.9	87.7
0310 Concrete Forming & Accessories	82.6	63.6	66.4	90.1	60.1	64.5	96.4	61.4	66.6	96.0	61.3	66.5	87.1	61.2	65.0	83.6	59.9	63.4
0320 Concrete Reinforcing	102.3	69.8	86.6	99.1	66.8	83.4	95.8	66.8	81.7	103.2	66.8	85.6	95.4	66.7	81.5	94.9	66.7	81.3
0330 Cast-in-Place Concrete	106.5	71.7	93.5	111.1	69.3	95.5	103.6	71.2	91.5	105.5	71.2	92.7	105.9	71.2	93.0	102.2	69.2	90.0
03 CONCRETE	95.4	69.1	83.8	93.1	66.2	81.3	89.8	67.5	80.0	94.7	67.4	82.7	90.9	67.3	80.5	88.1	66.1	78.4
04 MASONRY	95.4	61.0	74.2	88.3	61.0	71.5	89.4	64.4	74.0	81.8	64.4	71.1	74.6	64.4	68.3	81.2	61.0	68.8
05 METALS	103.5	92.3	100.2	122.2	90.2	112.8	101.8	90.2	98.4	110.0	90.2	104.1	101.3	90.0	98.0	100.0	90.0	97.1
06 WOOD, PLASTICS & COMPOSITES	75.1	63.4	68.7	86.5	59.0	71.4	95.4	59.0	75.4	90.2	59.0	73.1	82.4	59.0	69.6	79.3	59.0	68.2
07 THERMAL & MOISTURE PROTECTION	102.0	62.5	84.8	98.6	62.3	82.8	99.3	63.8	83.9	102.6	63.8	85.7	99.5	63.8	84.0	99.3	62.3	83.2
08 OPENINGS	92.9	63.1	86.0	89.1	60.0	82.3	92.3	60.0	84.8	95.6	60.0	87.3	89.0	60.0	82.3	89.1	60.0	82.3
0920 Plaster & Gypsum Board	84.4	61.7	69.1	105.8	57.8	73.5	107.9	57.8	74.2	91.1	57.8	68.7	102.2	57.8	72.3	102.2	57.8	72.3
0950, 0980 Ceilings & Acoustic Treatment	82.8	61.7	68.5	81.9	57.8	65.7	83.5	57.8	66.2	82.8	57.8	66.0	79.4	57.8	64.9	83.5	57.8	66.2
0960 Flooring	94.1	66.8	86.4	95.1	66.8	87.1	98.0	66.8	89.2	102.0	66.8	92.1	94.8	66.8	86.9	92.2	66.8	85.0
0970, 0990 Wall Finishes & Painting/Coating	104.4	57.1	76.4	102.5	57.1	75.7	102.5	57.1	75.7	104.4	57.1	75.4	102.5	57.1	75.7	102.5	57.1	75.7
09 FINISHES	87.7	63.4	74.6	89.7	60.8	74.0	91.1	61.6	75.2	90.6	61.6	74.9	88.9	61.6	74.1	88.7	60.8	73.6
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	85.4	96.8	100.0	81.4	95.8	100.0	82.5	96.1	100.0	79.8	95.5	100.0	82.5	96.1	100.0	81.3	95.8
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	96.9	58.6	81.9	100.2	59.5	84.2	100.4	60.1	84.6	100.4	61.3	85.0	96.9	60.2	82.5	96.9	58.3	81.7
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	96.2	64.6	80.6	100.6	57.4	79.3	100.3	60.4	80.6	95.7	57.8	77.0	98.6	60.4	79.8	98.4	55.8	77.4
MF2018 WEIGHTED AVERAGE	96.9	68.3	84.8	100.2	66.1	85.8	97.0	66.8	84.2	98.5	67.2	85.3	94.7	67.3	83.1	94.4	65.5	82.2
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	99.0	99.0	106.5	106.5	104.1	104.1	99.0	99.0	99.0	104.1	104.1	104.1	99.9	99.9	99.9	99.9	99.9	99.9
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	97.4	76.3	82.8	98.8	90.8	93.3	100.7	86.3	90.8	97.4	77.6	83.7	98.7	86.4	90.2	99.8	97.8	98.4
0310 Concrete Forming & Accessories	97.0	59.8	65.3	96.9	61.0	66.3	88.5	60.9	64.9	91.8	60.1	64.8	97.9	61.4	66.8	110.6	76.6	81.6
0320 Concrete Reinforcing	94.9	64.3	80.1	105.4	66.8	86.7	102.3	66.8	85.1	96.1	66.8	81.9	103.2	66.8	85.6	92.6	98.3	95.3
0330 Cast-in-Place Concrete	109.6	69.2	94.6	109.3	71.3	95.1	104.2	70.5	91.6	105.5	69.3	92.0	108.1	71.2	94.4	106.3	86.6	98.9
03 CONCRETE	93.9	65.6	81.4	93.9	67.2	82.2	95.9	66.9	83.2	91.1	66.2	80.1	96.0	67.4	83.5	93.3	84.4	89.4
04 MASONRY	77.3	61.0	67.3	80.5	63.1	69.8	74.4	63.1	67.4	75.1	61.0	66.4	82.0	64.4	71.2	105.3	83.4	91.8
05 METALS	99.0	89.1	96.1	102.2	89.1	98.3	102.6	90.2	99.0	100.7	90.2	97.6	107.0	90.2	102.1	95.6	94.2	95.2
06 WOOD, PLASTICS & COMPOSITES	96.1	58.9	75.6	90.9	59.2	73.4	82.0	59.0	69.4	89.2	59.0	72.6	90.2	59.0	73.1	106.6	72.7	88.0
07 THERMAL & MOISTURE PROTECTION	99.3	62.3	83.2	97.2	63.8	82.7	102.5	63.2	85.4	99.1	62.3	83.1	102.6	63.8	85.7	109.3	86.0	99.2
08 OPENINGS	89.0	59.4	82.1	97.6	60.1	88.8	92.2	60.0	84.7	89.1	60.0	82.3	95.6	60.0	87.3	103.7	81.9	98.6
0920 Plaster & Gypsum Board	106.9	57.7	73.8	86.5	57.8	67.2	85.8	57.8	67.0	103.7	57.8	72.8	91.1	57.8	68.7	102.4	72.2	82.1
0950, 0980 Ceilings & Acoustic Treatment	79.4	57.7	64.8	83.5	57.8	66.2	80.4	57.8	65.2	81.9	57.8	65.7	82.8	57.8	66.0	108.5	72.2	84.1
0960 Flooring	98.3	66.8	89.4	96.8	66.8	88.4	97.6	66.8	88.9	95.5	66.8	87.5	102.0	66.8	92.1	86.9	53.7	77.6
0970, 0990 Wall Finishes & Painting/Coating	102.5	57.1	75.7	97.8	57.1	73.7	104.4	57.1	75.4	102.5	57.1	75.7	104.4	57.1	75.4	104.9	59.8	72.5
09 FINISHES	90.6	60.7	74.4	90.0	61.4	74.5	88.6	61.3	73.8	89.6	60.8	74.0	90.6	61.6	74.9	96.1	71.1	82.5
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	81.3	95.8	100.0	82.3	96.1	100.0	82.1	96.0	100.0	81.4	95.8	100.0	82.5	96.1	100.0	94.8	98.8
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	96.9	58.3	81.7	100.0	60.6	84.5	96.9	59.5	82.2	100.4	59.5	84.3	100.4	61.3	85.0	99.9	77.0	90.9
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	101.7	55.8	79.1	99.1	56.3	78.0	98.0	57.4	78.0	101.1	55.8	78.8	95.7	57.8	77.0	98.7	73.4	86.3
MF2018 WEIGHTED AVERAGE	95.5	64.7	82.5	97.4	67.0	84.5	96.0	66.6	83.6	96.0	65.2	83.0	98.2	67.3	85.2	98.9	81.6	91.6
DIVISION	NORTH DAKOTA														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	97.7	97.7	97.7	97.7	97.7	99.9	99.9	99.9	97.7	97.7	97.7	97.7	97.7	97.7	97.7	97.7	97.7	97.7
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	107.5	93.7	98.0	115.7	93.7	100.5	101.3	97.6	98.8	111.5	93.7	99.2	106.5	93.7	97.7	108.9	94.1	98.7
0310 Concrete Forming & Accessories	107.0	71.6	76.8	95.5	71.5	75.1	99.4	72.1	76.1	99.7	71.6	75.7	97.1	71.6	75.4	95.1	71.8	75.2
0320 Concrete Reinforcing	94.8	98.0	96.4	95.7	98.2	96.9	95.7	98.7	97.2	93.4	98.0	95.6	95.4	98.7	97.0	96.6	98.1	97.4
0330 Cast-in-Place Concrete	126.2	81.6	109.6	114.1	81.5	102.0	102.5	85.6	96.2	114.1	81.5	102.0	124.6	81.5	108.6	114.1	81.8	102.1
03 CONCRETE	104.4	80.4	93.8	103.5	80.4	93.3	98.3	82.1	91.2	100.9	80.3	91.8	102.9	80.5	93.1	99.4	80.6	91.1
04 MASONRY	118.0	79.2	94.2	120.1	81.4	96.4	102.7	90.0	94.9	112.1	79.2	91.9	130.9	89.9	105.7	110.1	80.7	92.1
05 METALS	94.7	94.1	94.5	94.6	94.0	94.4	100.2	94.8	98.6	94.6	93.8	94.4	94.6	94.9	94.7	94.9	94.8	94.9
06 WOOD, PLASTICS & COMPOSITES	99.0	67.5	81.7	85.6	67.5	75.7	95.9	67.6	80.4	90.4	67.5	77.8	87.7	67.5	76.6	85.3	67.5	75.5
07 THERMAL & MOISTURE PROTECTION	107.1	82.3	96.3	107.7	83.7	97.2	104.1	87.4	96.8	107.3	83.0	96.7	106.9	85.7	97.7	107.0	83.9	97.0
08 OPENINGS	100.9	79.0	95.8	100.9	79.0	95.8	101.0	79.1	95.9	99.5	79.0	94.7	100.9	79.0	95.8	99.7	79.0	94.8
0920 Plaster & Gypsum Board	118.2	67.0	83.8	109.1	67.0	80.8	101.1	67.0	78.2	110.3	67.0	81.2	110.0	67.0	81.1	109.1	67.0	80.8
0950, 0980 Ceilings & Acoustic Treatment	105.6	67.0	79.6	105.6	67.0	79.6	97.6	67.0	76.3	105.6	67.0	79.6	105.6	67.0	79.6	105.6	67.0	79.6
0960 Flooring	93.8	53.7																

City Cost Indexes

DIVISION	NORTH DAKOTA			OHIO			CINCINNATI																
	WILLISTON			AKRON			ATHENS			CANTON			CHILlicothe			CINCINNATI							
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL					
015433	CONTRACTOR EQUIPMENT		97.7	97.7		88.7	88.7		84.9	84.9		88.7	88.7		95.5	95.5		95.9	95.9				
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION		109.2	91.5	97.0	96.2	94.1	94.8	107.3	85.3	92.1	96.3	93.9	94.7	93.8	94.9	94.6	90.0	98.2	95.7			
0310	Concrete Forming & Accessories		101.7	71.3	75.8	102.8	82.8	85.8	95.3	78.9	81.4	102.8	74.3	78.5	98.0	81.5	84.0	101.5	80.2	83.3			
0320	Concrete Reinforcing		97.5	98.1	97.8	94.7	91.0	92.9	86.9	89.2	88.0	94.7	75.0	85.2	84.0	88.8	86.3	89.1	77.8	83.6			
0330	Cast-in-Place Concrete		114.1	81.4	101.9	102.6	89.0	97.6	111.2	95.8	105.5	103.6	87.2	97.5	100.9	92.4	97.8	96.4	77.5	89.3			
03	CONCRETE		100.8	80.2	91.7	99.8	85.9	93.7	101.0	86.3	94.6	100.3	78.7	90.8	95.6	86.9	91.8	94.7	79.0	87.8			
04	MASONRY		105.1	80.7	90.1	90.9	89.4	90.0	73.6	97.2	88.1	91.5	80.7	84.9	80.2	90.5	86.5	83.0	79.8	81.0			
05	METALS		94.8	93.6	94.4	97.5	80.2	92.4	97.1	80.5	92.3	97.5	73.7	90.5	89.4	89.8	89.5	91.5	81.7	88.6			
06	WOOD, PLASTICS & COMPOSITES		92.1	67.5	78.6	105.9	81.1	92.2	87.4	74.0	80.0	106.2	71.8	87.3	100.3	78.0	88.0	102.3	80.1	90.1			
07	THERMAL & MOISTURE PROTECTION		107.3	83.5	96.9	104.9	91.1	98.9	102.9	91.5	98.0	106.0	87.2	97.8	104.7	88.4	97.6	102.7	80.9	93.2			
08	OPENINGS		101.0	79.0	95.8	107.5	82.7	101.7	96.2	75.8	91.5	101.3	69.8	93.9	88.1	78.0	85.7	98.3	76.4	93.2			
0920	Plaster & Gypsum Board		110.3	67.0	81.2	98.3	80.5	86.3	93.1	73.2	79.7	99.2	71.0	80.2	96.6	77.8	83.9	96.1	79.9	85.2			
0950, 0980	Ceilings & Acoustic Treatment		105.6	67.0	79.6	90.6	80.5	83.8	105.9	73.2	83.8	90.6	71.0	77.4	98.7	77.8	84.6	93.6	79.9	84.3			
0960	Flooring		90.1	53.7	79.9	91.7	83.3	89.3	120.7	75.3	108.0	91.8	74.1	86.8	97.5	75.3	91.3	98.7	78.5	93.0			
0970, 0990	Wall Finishes & Painting/Coating		86.6	56.4	68.7	98.3	90.9	93.9	100.1	89.1	93.6	98.3	73.9	83.9	97.4	89.1	92.5	97.0	71.7	82.0			
09	FINISHES		93.4	66.8	79.0	95.0	83.6	88.8	99.4	78.7	88.2	95.2	73.4	83.4	96.5	80.4	87.8	95.9	79.1	86.8			
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46		100.0	87.2	97.1	100.0	90.3	97.8	100.0	87.9	97.3	100.0	88.4	97.4	100.0	86.8	97.1	100.0	88.4	97.4			
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC		96.6	73.2	87.4	100.0	87.8	95.2	96.5	81.2	90.5	100.0	78.7	91.6	97.0	92.4	95.2	99.9	76.9	90.9			
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.		97.7	68.7	83.4	98.6	81.8	90.4	97.9	89.7	93.9	97.9	85.0	91.5	97.2	89.7	93.5	96.3	74.2	85.4			
MF2018	WEIGHTED AVERAGE		98.4	77.7	89.6	99.4	86.0	93.8	97.1	84.8	91.9	98.9	79.9	90.9	94.3	88.5	91.8	96.1	80.0	89.3			
DIVISION	OHIO			CLEVELAND			COLUMBUS			DAYTON			HAMILTON			LIMA			LORAIN				
	441			430 - 432			453 - 454			450			458			440			440				
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL		
015433	CONTRACTOR EQUIPMENT		92.0	92.0		92.3	92.3		88.9	88.9		95.5	95.5		88.3	88.3		88.7	88.7				
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION		94.9	96.2	95.8	101.8	92.3	95.3	90.0	94.2	92.9	90.0	94.5	93.1	101.1	84.9	89.9	95.5	94.3	94.7			
0310	Concrete Forming & Accessories		102.3	90.2	92.0	98.7	78.1	81.1	99.9	77.2	80.6	99.9	77.4	80.7	95.3	76.3	79.1	102.8	74.6	78.7			
0320	Concrete Reinforcing		95.2	91.4	93.4	99.9	78.7	89.7	89.1	79.1	84.2	89.1	77.2	83.3	86.9	79.3	83.2	94.7	91.3	93.1			
0330	Cast-in-Place Concrete		99.5	97.2	98.6	102.1	80.9	94.2	86.5	80.6	84.3	92.6	80.9	88.3	102.1	89.5	97.4	97.7	91.4	95.4			
03	CONCRETE		100.1	92.4	96.7	98.6	79.2	90.0	87.0	78.6	83.3	89.9	79.1	85.1	93.9	81.5	88.5	97.5	83.1	91.2			
04	MASONRY		96.9	97.9	97.5	91.4	85.2	87.6	79.1	76.4	77.4	79.5	81.2	80.5	98.8	78.1	86.1	87.8	93.1	91.0			
05	METALS		99.1	83.3	94.5	98.1	79.3	92.5	90.9	76.8	86.7	90.9	85.6	89.4	97.2	80.1	92.2	98.1	81.6	93.3			
06	WOOD, PLASTICS & COMPOSITES		99.8	88.5	93.6	98.5	77.7	87.0	104.2	77.1	89.3	103.0	77.1	88.7	87.3	75.1	80.6	105.9	70.1	86.2			
07	THERMAL & MOISTURE PROTECTION		102.0	96.9	99.8	93.6	83.8	89.3	108.8	79.5	96.1	104.8	79.9	94.0	102.4	83.7	94.3	105.9	91.0	99.4			
08	OPENINGS		100.3	86.4	97.0	98.3	74.0	92.7	95.0	74.6	90.3	92.8	74.8	88.6	96.3	73.7	91.0	101.3	76.6	95.5			
0920	Plaster & Gypsum Board		97.9	88.1	91.3	94.1	77.0	82.6	98.1	76.9	83.9	98.1	76.9	83.9	93.1	74.3	80.5	98.3	69.2	78.7			
0950, 0980	Ceilings & Acoustic Treatment		86.3	88.1	87.5	93.5	77.0	82.4	99.6	76.9	84.3	98.7	76.9	84.0	105.9	74.3	84.6	90.6	69.2	76.2			
0960	Flooring		93.1	89.8	92.2	95.1	75.3	89.5	101.2	72.4	93.1	98.5	78.5	92.9	119.8	77.2	107.8	91.8	89.8	91.2			
0970, 0990	Wall Finishes & Painting/Coating		101.2	90.9	95.1	99.5	79.6	87.7	97.4	70.7	81.6	97.4	71.3	82.0	100.2	76.5	86.2	98.3	90.9	93.9			
09	FINISHES		95.3	90.1	92.5	96.0	77.5	85.5	97.7	75.4	85.6	96.7	76.9	86.0	98.7	76.0	86.4	95.0	78.0	85.8			
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46		100.0	96.4	99.2	100.0	88.2	97.4	100.0	85.1	96.7	100.0	85.3	96.7	100.0	84.4	96.5	100.0	90.9	98.0			
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC		100.0	89.9	96.0	100.0	84.1	93.7	100.7	81.2	93.0	100.5	74.9	90.5	96.5	91.7	94.6	100.0	88.4	95.4			
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.		98.3	92.7	95.5	99.9	80.2	90.2	94.9	75.7	88.5	95.2	77.9	88.5	98.2	75.7	87.1	98.0	78.2	88.2			
MF2018	WEIGHTED AVERAGE		99.1	91.6	95.9	98.4	82.0	91.4	94.8	79.2	88.2	94.8	79.5	88.3	97.2	81.7	90.7	98.4	84.7	92.6			
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	MAT.	INST.	TOTAL		
015433	CONTRACTOR EQUIPMENT		88.7	88.7		88.7	88.7		88.9	88.9		92.4	92.4		92.4	92.4		88.7	88.7				
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION		91.7	94.0	93.3	95.7	90.6	92.2	90.3	94.2	93.0	141.5	98.2	111.6	99.8	90.9	93.6	96.1	93.9	94.6			
0310	Concrete Forming & Accessories		92.1	73.5	76.3	96.6	79.4	81.9	99.9	77.1	80.5	97.6	79.0	81.7	100.3	84.9	87.1	102.8	76.6	80.5			
0320	Concrete Reinforcing		86.2	79.0	82.7	92.1	79.0	85.8	89.1	79.1	84.2	89.7	94.9	92.2	99.9	82.9	91.7	94.7	85.2	90.1			
0330	Cast-in-Place Concrete		95.1	87.8	92.3	88.5	88.1	88.3	88.8	80.3	85.6	96.1	89.3	93.6	96.9	90.2	94.4	104.1	87.2	96.3			
03	CONCRETE		92.1	79.3	86.4	85.4	82.2	84.0	88.1	78.5	83.9	89.4	84.9	87.4	93.2	86.4	90.2	99.4	81.5	91.5			
04	MASONRY		89.9	88.9	89.3	92.7	89.9	90.9	79.3	75.9	77.2	80.7	91.1	87.1	97.1	89.8	91.8	94.5	91.1	86.6	88.4		
05	METALS		98.4	76.0	91.8	97.1	78.9	91.7	90.9	76.8	86.7	93.6	81.8	90.1	97.8	85.3	94.2	97.5	77.9	91.8			
06	WOOD, PLASTICS & COMPOSITES		92.8	70.1	80.3	92.8	77.5	84.4	105.6	77.1	89.9	88.1	76.4	81.6	96.9	83.9	89.8	105.9	74.6	88.7			
07	THERMAL & MOISTURE PROTECTION		104.1	88.4	97.3	90.5	88.8	89.8	108.7	92.9	95.9	102.0	87.4	95.7	91.0	91.2	91.1	106.1	88.2	98.3			
08	OPENINGS		102.3	71.0	95.0	91.2	75.1	87.5	93.2	74.6	88.9	91.3	78.4	88.3	93								

City Cost Indexes

DIVISION	OHIO			OKLAHOMA			ENID			GUYMON									
	ZANESVILLE			ARDMORE		CLINTON		DURANT		737		739							
	437 - 438			734		736		747		737		739							
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL				
015433	CONTRACTOR EQUIPMENT	88.7	88.7	80.7	80.7	79.9	79.9	79.9	79.9	79.9	79.9	79.9	79.9	79.9	79.9				
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	98.9	90.5	93.1	96.9	92.6	94.0	98.1	91.2	93.3	93.4	88.6	90.1	100.0	91.2	93.9	102.4	90.5	94.2
0310	Concrete Forming & Accessories	93.7	78.3	80.6	88.0	55.4	60.2	86.8	55.4	60.1	82.9	55.0	59.1	89.9	55.6	60.7	92.6	55.1	60.7
0320	Concrete Reinforcing	91.6	92.6	92.1	79.5	67.7	73.8	80.0	67.7	74.0	88.6	63.6	76.5	79.5	67.7	73.8	80.0	63.3	71.9
0330	Cast-in-Place Concrete	93.2	86.5	90.7	96.6	70.5	86.9	93.4	70.5	84.9	88.6	70.3	81.8	93.4	70.6	84.9	93.4	70.0	84.7
03	CONCRETE	89.2	83.5	86.7	86.7	62.8	76.2	86.2	62.8	75.9	84.1	61.8	74.3	86.6	62.9	76.2	89.4	61.7	77.2
04	MASONRY	90.7	86.6	88.2	95.2	57.0	71.8	119.3	57.0	81.0	88.6	62.1	72.3	101.3	57.0	74.1	97.5	55.4	71.7
05	METALS	98.5	84.2	94.3	97.3	62.2	87.0	97.4	62.2	87.0	92.7	60.6	83.2	98.8	62.4	88.1	97.8	59.3	86.5
06	WOOD, PLASTICS & COMPOSITES	88.2	77.5	82.3	97.4	54.4	73.7	96.5	54.4	73.4	87.8	54.4	69.5	99.7	54.4	74.8	102.9	54.4	76.2
07	THERMAL & MOISTURE PROTECTION	90.6	84.5	88.0	100.7	64.8	85.1	100.8	64.8	85.1	96.4	64.6	82.6	100.9	64.8	85.2	101.3	62.2	84.3
08	OPENINGS	91.2	79.0	88.4	103.7	55.0	92.3	103.7	55.0	92.3	96.0	54.0	86.2	104.9	55.9	93.5	103.8	54.0	92.2
0920	Plaster & Gypsum Board	91.2	77.0	81.7	90.5	53.7	65.8	90.2	53.7	65.7	78.5	53.7	61.8	91.1	53.7	66.0	91.1	53.7	66.0
0950, 0980	Ceilings & Acoustic Treatment	99.5	77.0	84.3	89.1	53.7	65.3	89.1	53.7	65.3	83.0	53.7	63.3	89.1	53.7	65.3	89.1	53.7	65.3
0960	Flooring	92.6	75.3	87.7	82.7	57.3	75.6	81.7	57.3	74.9	89.7	51.7	79.0	83.3	72.9	80.4	84.8	57.3	77.1
0970, 0990	Wall Finishes & Painting/Coating	104.0	89.1	95.2	86.4	44.8	61.8	86.4	44.8	61.8	92.8	44.8	64.4	86.4	44.8	61.8	86.4	42.2	60.3
09	FINISHES	95.4	78.2	86.1	82.7	53.5	66.9	82.5	53.5	66.8	83.2	52.4	66.5	83.2	56.7	68.8	84.0	54.5	68.0
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	83.3	96.3	100.0	79.4	95.4	100.0	79.4	95.4	100.0	79.3	95.4	100.0	79.4	95.4	100.0	79.4	95.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.5	89.8	93.9	96.5	67.5	85.1	96.5	67.5	85.1	96.6	67.4	85.2	100.0	67.5	87.2	96.5	63.6	83.6
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	94.1	89.7	92.0	95.0	71.0	83.2	95.9	71.0	83.7	97.3	69.2	83.4	95.9	71.0	83.7	97.6	65.6	81.8
MF2018	WEIGHTED AVERAGE	94.9	85.7	91.0	95.2	65.6	82.7	96.4	65.5	83.3	93.1	65.1	81.3	97.0	66.0	83.9	96.3	63.3	82.4
DIVISION	OKLAHOMA			OKLAHOMA CITY			PONCA CITY			OKLAHOMA			OKLAHOMA CITY						
	LAWTON			MCALISTER			MIAMI			MUSKOGEE			OKLAHOMA CITY						
	735			745			743			744			730 - 731						
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL				
015433	CONTRACTOR EQUIPMENT	80.7	80.7	79.9	79.9	90.9	90.9	90.9	90.9	90.9	85.6	85.6	79.9	79.9	79.9	79.9	79.9	79.9	79.9
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	96.2	92.7	93.7	86.8	90.5	89.4	88.1	88.1	88.1	88.7	87.9	88.1	94.2	98.0	96.8	93.9	90.9	91.8
0310	Concrete Forming & Accessories	92.5	55.6	61.1	81.1	41.4	47.3	93.2	55.2	60.8	97.3	54.8	61.1	92.8	63.8	68.0	89.0	55.4	60.3
0320	Concrete Reinforcing	79.7	67.7	73.9	88.3	63.3	76.2	86.9	67.7	77.6	87.7	62.8	75.7	87.9	67.8	78.2	87.7	67.7	78.0
0330	Cast-in-Place Concrete	90.3	70.6	83.0	77.7	70.0	74.8	81.4	71.4	77.7	82.4	71.1	78.2	90.3	73.4	84.0	91.0	70.5	83.4
03	CONCRETE	83.0	62.9	74.2	75.3	55.4	66.6	79.7	64.0	72.8	81.2	62.8	73.1	86.1	67.6	78.0	86.1	62.7	75.8
04	MASONRY	97.4	57.0	72.6	106.1	56.9	75.9	91.3	57.1	70.3	108.1	49.2	71.9	99.8	57.4	73.8	84.1	57.0	67.5
05	METALS	102.5	62.3	90.7	92.6	59.4	82.9	92.6	77.0	88.0	94.1	73.9	88.2	95.7	63.7	86.3	92.6	62.1	83.6
06	WOOD, PLASTICS & COMPOSITES	102.0	54.4	75.8	85.5	36.2	58.4	100.0	54.6	75.0	104.3	54.6	76.9	92.5	65.1	77.4	95.6	54.4	72.9
07	THERMAL & MOISTURE PROTECTION	100.7	64.8	85.1	96.0	61.2	80.9	96.5	64.1	82.4	96.8	61.1	81.2	92.1	66.9	81.1	96.6	65.0	82.9
08	OPENINGS	106.6	55.9	94.8	96.0	43.9	83.9	96.0	55.0	86.5	97.2	54.0	87.1	100.0	61.8	91.1	96.0	55.0	86.4
0920	Plaster & Gypsum Board	92.8	53.7	66.5	77.6	35.0	48.9	84.2	53.7	63.7	86.4	53.7	64.4	94.7	64.5	74.4	82.9	53.7	63.3
0950, 0980	Ceilings & Acoustic Treatment	96.4	53.7	67.6	83.0	35.0	50.6	83.0	53.7	63.3	92.7	53.7	66.4	87.4	64.6	72.0	83.0	53.7	63.3
0960	Flooring	85.0	72.9	81.6	88.6	57.3	79.8	95.7	51.7	83.3	98.2	33.2	79.9	86.4	72.9	82.6	92.8	57.3	82.8
0970, 0990	Wall Finishes & Painting/Coating	86.4	44.8	61.8	92.8	42.2	62.9	92.8	42.2	62.9	92.8	42.2	62.9	89.5	44.8	63.1	92.8	44.8	64.4
09	FINISHES	84.9	56.7	69.6	82.2	42.4	60.7	85.1	52.2	67.3	88.1	48.8	66.9	86.3	63.1	73.7	84.9	54.4	68.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	79.4	95.4	100.0	77.4	95.0	100.0	76.3	94.7	100.0	76.3	94.7	100.0	80.9	95.8	100.0	79.4	95.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.0	67.5	87.2	96.6	63.5	83.6	96.6	63.6	83.7	100.1	61.3	84.9	99.9	67.8	87.3	96.6	63.6	83.7
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	97.6	69.2	83.6	95.8	67.0	81.6	97.1	67.0	82.3	95.4	67.2	81.5	103.4	71.1	87.5	95.4	65.6	80.7
MF2018	WEIGHTED AVERAGE	97.3	65.8	84.0	92.4	60.5	78.9	92.7	65.1	81.1	95.0	62.9	81.4	96.4	68.7	84.7	93.1	64.0	80.8
DIVISION	OREGON			OKLAHOMA			OREGON			BEND			EUGENE						
	POTEAU			SHAWNEE			TULSA			WOODWARD			BEND						
	749			748			740 - 741			738			977						
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL				
015433	CONTRACTOR EQUIPMENT	89.7	89.7	79.9	79.9	90.9	90.9	90.9	90.9	90.9	97.3	97.3	97.3	97.3	97.3	97.3	97.3	97.3	97.3
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	74.8	83.8	81.0	96.9	90.9	92.7	94.8	87.2	89.5	98.5	91.2	93.5	105.9	98.5	100.8	98.5	98.5	97.9
0310	Concrete Forming & Accessories	87.0	54.9	59.7	82.8	55.3	59.4	97.4	56.0	62.1	86.9	43.7	50.1	107.5	96.5	98.2	104.2	96.6	97.7
0320	Concrete Reinforcing	88.7	67.7	78.5	87.7	65.4	76.9	88.0	67.7	78.2	79.5	67.7	73.8	91.0	112.8	101.5	94.9	112.8	103.5
0330	Cast-in-Place Concrete	81.4	71.3	77.7	93.9	70.5	85.2	89.7	73.2	83.6	93.4	70.5	84.9	117.6	100.6	111.3	113.9	100.6	108.9
03	CONCRETE	81.9	63.8	73.9	87.7	62.3	76.6	86.2	65.0	76.9	86.5	57.5	73.7	110.5	100.3	106.0	101.3	100.3	100.9
04	MASONRY	91.6	57.1	70.4	107.5	57.0	76.5	92.2	57.1	70.6	90.8	57.0	70.0	105.1	100.6	102.3	102.1	100.6	101.1
05	METALS	92.6	76.7	87.9	92.5	61.3	83.3	97.0	77.1	91.2	97.4	62.1	87.0	108.0	96.0	104.5	108.7	95.9	105.0
06	WOOD, PLASTICS & COMPOSITES	92.4	54.6	71.6	87.7	54.4	69.4	103.5	55.6	77.2	96.6	38.7	64.8	99.6	96.1	97.7	95.4	96.1	95.8
07	THERMAL & MOISTURE PROTECTION	96.6	64.1	82.5	96.6	63.9	82.4	96.8	64.3	82.7	100.9	63.3	84.5	118.3	100.2	110.4	117.4	102.7	111.0
08	OPENINGS	96.0	55.0	86.5	96.0	54.4	86.3	98.9	56.2	88.9	103.7	46.3	90.3	96.9	100.0	97.6	97.2	100.0	97.8
0920	Plaster & Gypsum Board	81.3	53.7	62.8	78.5	53.7	61.8	86.4	54.8	65.1	90.2	37.6	54.8	122.7	95.4	104.6	120.8	95.9	104.0
0950, 0980	Ceilings & Acoustic Treatment	83.0	53.7	63.3	83.0	53.7	63.3	92.7	54.8	67.1	89.1	37.6	5						

City Cost Indexes

DIVISION	OREGON																		
	KLAMATH FALLS			MEDFORD			PENDLETON			PORTLAND			SALEM			VALE			
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	
015433 CONTRACTOR EQUIPMENT		97.3	97.3		97.3	97.3		94.9	94.9		97.3	97.3		99.9	99.9		94.9	94.9	
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	109.8	98.4	102.0	104.0	98.4	100.2	103.0	91.9	95.4	99.1	98.5	98.7	92.6	102.1	99.2	90.6	91.8	91.5	
0310 Concrete Forming & Accessories	100.7	96.3	97.0	99.7	96.3	96.8	101.2	96.6	97.3	105.3	96.8	98.1	105.8	96.8	98.1	107.5	95.3	97.1	
0320 Concrete Reinforcing	91.0	112.7	101.5	92.6	112.7	102.3	90.3	112.8	101.2	95.6	112.8	103.9	102.7	112.8	107.6	88.1	112.5	99.9	
0330 Cast-in-Place Concrete	117.6	97.0	110.0	117.6	100.4	111.2	118.4	97.5	110.7	117.0	100.6	110.9	107.6	101.7	105.4	93.2	97.8	94.9	
03 CONCRETE	113.5	98.9	107.1	107.8	100.1	104.4	93.7	99.3	96.2	103.0	100.4	101.8	98.7	100.7	99.6	77.8	98.8	87.0	
04 MASONRY	119.1	100.6	107.7	99.0	100.6	100.0	109.9	100.6	104.2	104.0	100.6	101.9	108.2	100.6	103.5	107.7	100.6	103.4	
05 METALS	108.0	95.6	104.4	108.3	95.6	104.6	116.3	96.4	110.4	110.1	96.1	106.0	117.1	95.4	110.8	116.2	95.1	110.0	
06 WOOD, PLASTICS & COMPOSITES	90.4	96.1	93.5	89.3	96.1	93.0	92.3	96.2	94.5	96.4	96.1	96.3	90.3	96.3	93.6	100.9	96.2	98.3	
07 THERMAL & MOISTURE PROTECTION	118.5	96.8	109.1	118.1	96.1	108.5	110.7	95.4	104.1	117.3	100.2	109.9	114.1	100.9	108.3	110.1	91.4	102.0	
08 OPENINGS	96.9	100.0	97.6	99.6	100.0	99.7	93.2	100.0	94.8	95.1	100.0	96.3	102.6	100.0	102.0	93.2	89.0	92.2	
0920 Plaster & Gypsum Board	117.1	95.9	102.8	116.5	95.9	102.6	102.4	95.9	98.0	120.3	95.9	103.9	115.4	95.9	102.3	109.0	95.9	100.2	
0950, 0980 Ceilings & Acoustic Treatment	93.0	95.9	95.0	98.5	95.9	96.7	61.9	95.9	84.8	88.5	95.9	93.5	96.0	95.9	95.9	61.9	95.9	84.8	
0960 Flooring	102.8	105.7	103.6	102.2	105.7	103.2	70.8	105.7	80.6	101.9	105.7	102.9	107.4	105.7	106.9	72.9	105.7	82.1	
0970, 0990 Wall Finishes & Painting/Coating	98.6	65.2	78.8	98.6	65.2	78.8	88.3	77.3	81.8	98.4	77.3	85.9	97.3	75.2	84.2	88.3	77.3	81.8	
09 FINISHES	100.3	94.6	97.2	100.4	94.6	97.3	70.4	96.0	84.2	98.2	95.9	97.0	99.7	95.8	97.6	71.0	96.0	84.5	
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	101.9	100.4	100.0	101.9	100.4	100.0	96.5	99.2	100.0	102.1	100.5	100.0	102.4	100.5	100.0	102.2	100.5	
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	96.6	105.2	100.0	100.1	105.2	102.1	98.7	112.0	104.0	100.1	111.5	104.6	100.1	106.9	102.8	98.7	71.1	87.9	
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	100.7	82.6	91.8	104.1	82.6	93.5	92.8	96.8	94.8	100.9	108.7	104.7	109.3	99.8	104.6	92.8	68.1	80.6	
MF2018 WEIGHTED AVERAGE	103.5	97.3	100.9	103.3	97.4	100.8	98.6	100.3	99.3	102.1	102.8	102.4	104.4	100.8	102.9	96.2	87.0	92.3	
DIVISION	PENNSYLVANIA															CHAMBERSBURG			
	ALLENTOWN			ALTOONA			BEDFORD			BRADFORD			BUTLER			CHAMBERSBURG			
	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		112.6	112.6		110.7	110.7		112.6	112.6		112.6	112.6		111.8	111.8		
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	91.7	97.2	95.5	95.1	97.1	96.5	103.6	94.8	97.6	90.5	96.0	94.3	86.3	97.8	94.2	86.3	95.3	92.5	
0310 Concrete Forming & Accessories	97.9	108.2	106.7	83.7	82.6	82.8	82.0	81.2	81.3	85.8	96.5	94.9	85.1	94.1	92.8	88.0	76.8	78.5	
0320 Concrete Reinforcing	96.8	113.3	104.8	93.8	105.7	99.6	93.0	105.7	99.1	95.8	105.8	100.6	94.4	119.3	106.5	94.5	112.2	103.1	
0330 Cast-in-Place Concrete	89.4	99.9	93.3	99.7	86.9	94.9	109.1	85.9	100.5	95.2	90.6	93.5	88.0	96.2	91.0	93.0	93.8	93.3	
03 CONCRETE	92.3	107.0	98.8	87.5	89.5	88.4	102.2	88.5	96.2	94.2	97.0	95.5	79.5	100.3	88.7	97.1	90.5	94.2	
04 MASONRY	92.1	93.1	92.7	95.7	83.4	88.1	107.1	80.2	90.6	93.1	82.0	86.3	97.6	93.0	94.8	93.8	79.1	84.8	
05 METALS	98.9	120.5	105.3	92.9	114.8	99.3	102.2	113.4	105.5	96.7	113.2	101.6	92.6	121.7	101.2	98.3	118.8	104.3	
06 WOOD, PLASTICS & COMPOSITES	97.6	111.5	105.3	76.7	81.8	79.5	79.4	81.7	80.7	82.7	101.2	92.9	78.1	94.1	86.9	84.3	75.6	79.5	
07 THERMAL & MOISTURE PROTECTION	104.0	107.8	105.7	102.7	90.0	97.2	98.3	87.4	93.6	103.8	88.5	97.2	102.2	94.4	98.8	96.1	83.1	90.4	
08 OPENINGS	92.4	107.3	95.9	86.3	85.6	86.1	93.4	85.6	91.6	92.4	95.3	93.1	86.2	99.3	89.3	89.2	81.4	87.4	
0920 Plaster & Gypsum Board	94.9	111.8	106.3	86.3	81.2	82.9	97.5	81.2	86.6	87.1	101.2	96.6	86.3	93.9	91.4	108.9	74.9	86.0	
0950, 0980 Ceilings & Acoustic Treatment	88.5	111.8	104.2	90.9	81.2	84.4	101.1	81.2	87.7	91.0	101.2	97.9	91.8	93.9	93.2	96.0	74.9	81.8	
0960 Flooring	92.0	95.1	92.8	85.3	98.9	89.2	95.0	103.7	97.5	86.2	103.7	91.1	86.3	105.3	91.6	90.5	78.0	87.0	
0970, 0990 Wall Finishes & Painting/Coating	91.9	101.8	97.8	87.2	106.2	98.4	97.6	105.7	102.4	91.9	105.7	100.0	87.2	106.2	98.4	92.0	100.7	97.1	
09 FINISHES	90.6	105.8	98.8	88.2	87.5	87.8	100.6	87.4	93.5	88.4	99.4	94.3	88.1	97.2	93.0	90.8	78.8	84.3	
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	99.6	99.9	100.0	94.5	98.8	100.0	93.2	98.5	100.0	96.1	99.1	100.0	97.3	99.4	100.0	92.7	98.4	
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	100.3	114.5	105.9	99.8	83.6	93.4	96.6	84.4	91.8	96.8	90.6	94.4	96.3	95.4	96.0	96.7	89.7	94.0	
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	98.0	95.8	96.9	88.7	107.7	98.0	94.2	107.7	100.9	92.1	107.7	99.8	89.2	107.7	98.3	92.4	85.8	89.2	
MF2018 WEIGHTED AVERAGE	96.7	105.8	100.6	93.3	92.8	93.1	98.8	92.1	96.0	94.9	97.1	95.8	91.3	100.6	95.2	95.1	89.4	92.7	
DIVISION	PENNSYLVANIA															HAZELTON			
	DOYLESTOWN			DUBOIS			ERIE			GREENSBURG			HARRISBURG			HAZELTON			
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	
015433 CONTRACTOR EQUIPMENT	91.5	91.5		110.7	110.7		112.6	112.6		110.7	110.7		114.7	114.7		112.6	112.6		
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	104.8	85.9	91.7	108.4	95.2	99.3	92.1	97.4	95.7	99.6	97.6	97.6	86.6	100.3	96.1	85.0	97.1	93.3	
0310 Concrete Forming & Accessories	82.9	126.8	120.3	81.6	83.7	83.4	97.2	85.8	87.5	87.8	88.6	88.5	100.5	85.7	87.9	80.6	88.8	87.6	
0320 Concrete Reinforcing	93.6	150.9	121.3	92.3	119.4	105.4	95.8	107.3	101.4	92.3	119.0	105.2	103.4	111.0	107.1	94.0	113.1	103.2	
0330 Cast-in-Place Concrete	84.5	129.7	101.3	105.2	94.1	101.1	86.4	88.7	94.5	101.3	95.7	99.2	91.7	96.9	93.6	84.5	95.6	88.6	
03 CONCRETE	88.0	131.2	107.0	104.4	94.7	100.1	86.4	91.9	88.8	97.2	97.5	97.4	91.9	95.3	93.4	85.0	96.7	90.2	
04 MASONRY	95.4	134.9	119.7	107.8	93.4	98.9	85.0	86.8	86.1	117.5	89.1	100.0	88.8	83.9	85.8	104.7	89.5	95.4	
05 METALS	96.5	123.9	104.5	102.2	118.8	107.1	93.1	115.6	99.7	102.1	119.7	107.3	105.1	117.4	108.7	98.7	119.7	104.8	
06 WOOD, PLASTICS & COMPOSITES	78.5	125.8	104.5	78.3	81.7	80.2	94.0	84.4	88.7	85.3	87.1	86.3	101.8	85.3	92.7	77.1	87.0	82.6	
07 THERMAL & MOISTURE PROTECTION	101.1	131.7	114.4	98.7	92.9	96.1	103.2	88.6	96.8	98.2	92.2	95.6	98.9	100.4	99.6	103.3	100.7	102.2	
08 OPENINGS	94.8	133.2	103.7	93.4	88.7	92.3	86.4	88.0	86.8	93.4	95.5	93.9	100.9	86.5	97.5	93.0	93.3	93.0	
0920 Plaster & Gypsum Board	85.4	126.5	113.0	96.3	81.2	86.2	94.9	83.9	87.5	98.3	88.5	90.5	113.8	84.7	94.2	85.8	86.6	88.6	
0950, 0980 Ceilings & Acoustic Treatment	87.7	126.5	113.8	101.1	81.2	87.7	88.5	83.9	85.4	100.3	86.8	91.2	104.0	84.7	91.0	89.4	86.6	87.5	
0960 Flooring	76.2	139.3	93.9	94.8	103.7	97.3	92.2	98.9	94.1	98.4	78.0	92.7	94.7	90.4	93.5	83.5	89.3	85.1	
0970, 0990 Wall Finishes & Painting/Coating	91.5	143.7	122.4	97.6	106.2	102.7	98.2	92.3	94.7	97.6	106.2	102.7	95.8	84.8	89.3</td				

City Cost Indexes

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		110.7	110.7		110.7	110.7		112.6	112.6		111.8	111.8		112.6	112.6		112.6	112.6		
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION		97.8	95.8	96.4	104.1	96.0	98.5	88.8	97.4	94.7	78.4	95.6	90.3	88.9	97.5	94.8	87.5	97.2	94.2	
0310	Concrete Forming & Accessories		82.6	92.9	91.4	81.6	82.5	82.4	85.1	89.7	89.0	90.0	86.4	86.9	91.7	110.3	107.6	81.5	89.3	88.2	
0320	Concrete Reinforcing		91.7	119.4	105.1	93.0	118.9	105.5	94.4	119.2	106.4	94.1	111.0	102.3	94.0	108.0	100.8	98.4	116.2	107.0	
0330	Cast-in-Place Concrete		99.3	94.4	97.5	110.1	86.7	101.4	91.5	94.7	92.7	79.1	96.7	85.7	91.5	99.2	94.3	89.7	93.0	90.9	
03	CONCRETE		94.7	99.1	96.6	103.2	91.6	98.1	82.1	97.7	88.9	85.2	95.6	89.8	91.4	106.9	98.2	90.1	96.6	93.0	
04	MASONRY		103.8	93.5	97.5	104.7	83.7	91.8	100.1	88.8	93.1	99.6	86.7	91.7	92.1	96.5	94.8	92.0	91.5	91.7	
05	METALS		102.3	119.9	107.4	102.2	117.9	106.8	92.7	120.6	100.9	98.3	118.7	104.3	98.6	119.0	104.6	96.8	120.4	103.7	
06	WOOD, PLASTICS & COMPOSITES		80.1	94.0	87.7	78.3	81.7	80.2	78.1	89.3	84.3	87.4	85.1	86.2	89.1	112.6	102.0	77.8	87.0	82.9	
07	THERMAL & MOISTURE PROTECTION		98.1	94.2	96.4	98.4	88.5	94.1	102.3	92.4	98.0	95.4	101.0	97.8	103.7	111.9	107.3	103.3	91.0	97.9	
08	OPENINGS		93.4	95.4	93.9	93.4	88.7	92.3	86.3	96.7	88.7	89.2	86.4	88.5	92.9	106.6	96.1	89.8	91.9	90.3	
0920	Plaster & Gypsum Board		97.8	93.9	95.2	96.1	81.2	86.1	86.3	89.0	88.1	111.8	84.7	93.6	88.0	112.9	104.7	86.2	86.6	86.5	
0950, 0980	Ceilings & Acoustic Treatment		101.1	93.9	96.2	100.3	81.2	87.5	91.8	89.0	89.9	96.0	84.7	88.4	89.4	112.9	105.2	91.0	86.6	88.1	
0960	Flooring		95.6	103.7	97.8	94.8	78.0	90.1	86.3	103.7	91.2	91.5	95.7	92.7	88.9	94.1	90.4	84.1	103.7	89.6	
0970, 0990	Wall Finishes & Painting/Coating		97.6	106.2	102.7	97.6	102.7	87.2	106.2	98.4	92.0	86.6	88.8	91.9	101.0	97.3	91.9	104.1	99.1		
09	FINISHES		100.4	96.1	98.1	100.3	83.9	91.4	88.3	93.4	91.0	90.9	87.3	88.9	88.8	106.5	98.4	87.4	92.7	90.3	
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46		100.0	96.5	99.2	100.0	94.4	98.8	100.0	96.2	99.1	100.0	95.7	99.0	100.0	102.5	100.6	100.0	96.2	99.2	
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC		96.6	85.4	92.2	96.6	78.9	89.6	96.3	90.7	94.1	96.7	92.7	95.1	96.8	117.6	104.9	96.8	94.8	96.0	
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.		94.8	107.7	101.2	94.8	107.7	101.1	88.7	107.7	98.1	93.7	93.3	93.5	92.9	129.4	110.9	92.1	95.2	93.6	
MF2018	WEIGHTED AVERAGE		97.6	97.7	97.7	98.9	91.9	95.9	91.8	97.9	94.4	93.8	94.5	94.1	94.9	111.6	102.0	93.8	96.8	95.1	
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	MAT.	INST.	TOTAL	
015433	CONTRACTOR EQUIPMENT		112.6	112.6		97.5	97.5		112.6	112.6		99.8	99.8		99.7	99.7		111.8	111.8		
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION		86.7	97.7	94.3	97.3	95.1	95.8	85.2	96.3	92.9	99.8	101.1	100.7	103.7	96.1	98.5	81.3	95.8	91.3	
0310	Concrete Forming & Accessories		85.1	93.6	92.3	83.7	125.3	119.1	85.1	92.7	91.6	99.8	142.4	136.2	97.5	97.5	97.5	82.0	87.7	86.8	
0320	Concrete Reinforcing		93.3	100.2	96.7	95.9	150.8	122.5	94.4	94.9	94.7	100.4	143.1	121.0	93.5	122.9	107.7	93.4	114.1	103.4	
0330	Cast-in-Place Concrete		88.8	94.3	90.8	86.1	127.4	101.5	86.3	94.4	89.3	89.8	135.6	106.8	108.6	101.2	105.8	84.3	96.4	88.8	
03	CONCRETE		79.9	96.2	87.0	88.0	129.7	106.3	78.3	95.0	85.6	99.4	139.1	116.8	103.8	103.1	103.5	88.7	96.7	92.2	
04	MASONRY		97.3	92.6	94.4	108.3	131.2	122.6	96.5	88.7	91.7	100.2	139.7	124.5	100.4	101.4	101.0	93.3	87.6	89.8	
05	METALS		92.7	114.3	99.0	100.3	124.0	107.3	92.7	113.2	98.7	103.8	125.3	110.1	103.7	107.4	104.8	98.6	120.4	105.0	
06	WOOD, PLASTICS & COMPOSITES		78.1	94.1	86.9	76.2	125.7	103.4	78.1	94.1	86.9	99.1	143.5	123.6	99.6	96.7	98.0	77.2	85.1	81.6	
07	THERMAL & MOISTURE PROTECTION		102.2	92.0	97.8	108.7	130.1	118.0	102.1	90.7	97.1	103.4	139.7	119.2	98.6	99.3	98.9	95.6	99.6	97.3	
08	OPENINGS		86.3	91.4	87.5	86.5	133.1	97.4	86.3	94.9	88.3	97.6	144.9	108.6	96.8	102.4	98.1	89.2	93.0	90.1	
0920	Plaster & Gypsum Board		86.3	93.9	91.4	84.5	126.5	112.7	86.3	93.9	91.4	103.0	144.6	131.0	97.5	96.4	96.7	106.4	84.7	91.8	
0950, 0980	Ceilings & Acoustic Treatment		91.8	93.9	93.2	91.1	126.5	114.9	91.8	93.9	93.2	104.2	144.6	131.5	95.2	96.4	96.0	84.7	88.4		
0960	Flooring		86.3	105.3	91.6	86.7	139.3	101.5	86.3	103.7	91.2	97.8	156.2	114.2	103.1	107.3	104.3	87.5	103.7	92.1	
0970, 0990	Wall Finishes & Painting/Coating		87.2	106.2	98.4	89.4	143.7	121.5	87.2	106.2	98.4	97.2	152.6	130.0	100.7	111.3	107.0	92.0	104.1	99.1	
09	FINISHES		88.2	96.9	92.9	85.3	129.5	109.2	88.0	96.1	92.4	98.3	146.5	124.4	102.4	100.3	101.2	89.2	91.3	90.3	
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46		100.0	97.3	99.4	100.0	109.1	102.0	100.0	96.7	99.3	100.0	119.2	104.3	100.0	103.0	100.7	100.0	97.5	99.4	
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC		96.3	96.8	96.5	96.6	130.6	110.0	96.3	94.2	95.5	100.1	141.2	116.3	100.0	99.8	99.9	96.7	95.8	96.3	
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.		89.2	98.2	93.7	91.9	142.0	116.6	90.9	107.7	99.2	98.8	159.0	128.4	97.1	111.3	104.1	92.0	91.3	91.6	
MF2018	WEIGHTED AVERAGE		91.4	97.8	94.1	94.7	128.0	108.8	91.3	97.8	94.0	100.2	138.7	116.5	100.7	102.7	101.5	93.7	96.1	94.7	
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	MAT.	INST.	TOTAL	
015433	CONTRACTOR EQUIPMENT		119.0	119.0		112.6	112.6		111.8	111.8		112.6	112.6		112.6	112.6		110.7	110.7		
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION		101.8	107.7	105.9	92.2	97.2	95.7	82.7	95.7	91.7	86.6	97.3	94.0	92.6	96.7	95.4	98.3	96.5	97.1	
0310	Concrete Forming & Accessories		98.8	86.2	88.0	98.0	86.5	88.3	84.3	82.8	83.0	86.5	90.5	89.9	93.1	84.8	86.0	76.5	93.9	91.4	
0320	Concrete Reinforcing		97.2	148.6	122.1	96.8	116.3	106.2	95.1	105.8	100.3	97.1	116.4	106.4	96.0	112.3	103.9	92.3	119.5	105.5	
0330	Cast-in-Place Concrete		77.2	97.0	84.6	93.4	93.2	93.3	90.0	87.0	88.9	88.0	94.5	90.4	92.2	94.9	93.2	99.3	95.6	97.9	
03	CONCRETE		87.1	102.1	93.7	94.1	95.4	94.7	94.6	89.7	92.5	88.8	97.7	92.7	92.0	94.5	93.1	94.4	100.0	96.4	
04	MASONRY		97.5	91.5	93.8	92.5	93.8	93.3	97.8	83.9	89.3	90.3	96.3	94.0	94.0	93.6	81.0	85.8	119.3	95.4	104.6
05	METALS		100.6	133.0	110.1	100.9	120.5	106.6	96.6</td												

City Cost Indexes

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	110.7	110.7	112.6	112.6		97.5	97.5		112.6	112.6		112.6	112.6		111.8	111.8		
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	98.3	96.8	97.3	94.0	96.6	95.8	103.4	96.1	98.4	84.5	97.2	93.3	83.7	96.8	92.8	82.4	95.6	91.5
0310	Concrete Forming & Accessories	82.8	94.0	92.4	85.2	84.2	84.3	90.0	126.6	121.2	89.1	85.3	85.8	90.1	85.6	86.3	85.1	86.3	86.1
0320	Concrete Reinforcing	92.3	119.5	105.5	95.1	116.1	105.3	95.0	150.8	122.0	95.8	116.3	105.7	95.3	110.9	102.8	96.0	111.0	103.3
0330	Cast-in-Place Concrete	99.3	95.9	98.0	94.4	88.2	92.1	95.4	129.5	108.1	84.5	93.0	87.6	78.0	90.0	82.5	84.7	96.7	89.2
03	CONCRETE	94.8	100.1	97.2	96.9	92.5	95.0	95.8	131.0	111.3	85.8	94.7	89.7	80.2	92.9	85.8	89.8	95.6	92.4
04	MASONRY	103.6	95.5	98.6	98.7	81.4	88.1	102.8	134.9	122.5	105.0	93.5	97.9	85.9	86.1	86.0	94.5	86.7	89.7
05	METALS	101.9	120.6	107.4	96.6	119.7	103.4	100.3	124.0	107.3	96.8	120.4	103.7	98.3	118.1	104.1	100.0	118.6	105.5
06	WOOD, PLASTICS & COMPOSITES	80.2	94.0	87.8	82.1	84.4	83.4	82.8	125.7	106.4	85.9	81.7	83.6	81.9	85.1	83.7	80.7	85.1	83.1
07	THERMAL & MOISTURE PROTECTION	98.1	95.1	96.8	104.1	86.0	96.2	109.1	127.0	116.9	103.3	90.9	97.9	96.1	88.3	92.7	95.6	101.0	98.0
08	OPENINGS	93.3	99.3	94.7	92.4	90.0	91.8	86.5	133.1	97.4	89.8	88.9	89.6	89.3	89.6	89.4	89.2	86.4	88.5
0920	Plaster & Gypsum Board	97.7	93.9	95.1	86.5	83.9	84.8	85.2	126.5	112.9	87.4	81.2	83.2	106.4	84.7	91.8	106.7	84.7	91.9
0950, 0980	Ceilings & Acoustic Treatment	100.3	93.9	96.0	88.5	83.9	85.4	91.1	126.5	114.9	91.0	81.2	84.4	96.0	84.7	88.4	95.1	84.7	88.1
0960	Flooring	95.7	103.7	97.9	85.8	103.7	90.9	89.6	139.3	103.6	87.7	92.9	89.1	87.2	86.8	87.1	88.9	95.7	90.8
0970, 0990	Wall Finishes & Painting/Coating	97.6	110.0	104.9	91.9	104.1	99.1	89.4	143.7	121.5	91.9	101.8	97.8	92.0	101.8	97.8	92.0	84.8	87.7
09	FINISHES	100.3	97.0	98.5	88.1	89.6	88.9	86.7	130.5	110.4	88.4	87.6	88.0	89.7	86.7	88.0	89.5	87.1	88.2
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	97.2	99.4	100.0	96.2	99.2	100.0	115.3	103.4	100.0	94.3	98.7	100.0	95.5	99.0	100.0	95.6	99.0
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.6	93.2	95.2	96.8	87.4	93.1	96.6	132.6	110.7	96.8	96.6	96.7	96.7	92.2	94.9	100.2	92.7	97.3
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	94.2	107.7	100.9	92.1	95.2	93.6	91.7	132.4	111.8	92.9	90.0	91.5	92.8	83.4	88.2	93.7	82.9	88.4
MF2018	WEIGHTED AVERAGE	97.5	100.2	98.6	95.5	92.9	94.4	95.8	127.9	109.3	94.0	95.5	94.7	92.5	92.3	92.4	95.2	93.0	94.3
DIVISION	PUERTO RICO			RHODE ISLAND			PROVIDENCE			AIKEN			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	87.3	87.3		97.9	97.9		100.1	100.1		103.7	103.7		103.7	103.7		103.7	103.7	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	81.4	87.9	85.9	86.3	98.0	94.4	89.4	102.2	98.3	128.3	85.2	98.5	123.4	84.7	96.7	108.2	85.2	92.3
0310	Concrete Forming & Accessories	105.9	21.6	34.0	100.7	124.7	121.1	99.9	124.7	121.0	94.0	64.6	68.9	93.1	38.9	46.9	92.3	64.9	69.0
0320	Concrete Reinforcing	114.9	18.7	68.4	109.7	127.1	118.1	103.7	127.1	115.0	94.3	60.6	78.0	93.4	66.7	80.5	93.2	67.3	80.7
0330	Cast-in-Place Concrete	70.9	32.7	56.6	71.7	118.5	89.1	87.5	119.0	99.2	92.9	66.9	83.2	92.9	66.8	83.2	109.1	67.2	93.5
03	CONCRETE	89.8	26.1	61.8	87.5	122.4	102.9	91.8	122.5	105.3	101.0	66.4	85.8	98.4	55.7	79.7	94.9	67.8	83.0
04	MASONRY	110.0	24.2	57.3	99.2	123.1	113.8	103.4	123.1	115.5	79.9	64.8	70.6	94.9	64.8	76.4	96.4	67.5	78.6
05	METALS	116.8	40.6	94.4	98.8	116.7	104.1	103.2	115.9	106.9	102.6	89.1	98.7	102.7	90.7	99.2	104.6	92.1	100.9
06	WOOD, PLASTICS & COMPOSITES	145.4	20.5	76.6	98.0	124.0	112.3	98.4	124.0	112.5	89.7	66.8	77.1	88.4	32.5	57.6	87.2	66.8	76.0
07	THERMAL & MOISTURE PROTECTION	134.1	27.7	87.8	102.6	123.0	111.5	108.3	123.5	114.9	98.1	64.2	83.4	97.8	56.2	79.7	96.8	66.1	83.5
08	OPENINGS	96.8	19.1	78.7	97.4	124.4	103.7	99.0	124.4	104.9	94.0	62.5	86.7	94.1	44.9	82.6	97.6	65.1	90.0
0920	Plaster & Gypsum Board	76.4	25.2	48.0	91.4	124.3	113.6	104.9	124.3	118.0	83.4	65.8	71.6	87.0	30.5	49.0	88.1	65.8	73.1
0950, 0980	Ceilings & Acoustic Treatment	158.8	19.3	64.7	90.3	124.3	113.2	104.1	124.3	117.7	78.8	65.8	70.1	82.1	30.5	47.3	82.1	65.8	71.1
0960	Flooring	117.8	29.7	93.1	83.8	127.3	96.0	86.4	127.3	97.9	97.5	89.8	95.3	99.0	75.8	92.5	98.6	81.9	93.9
0970, 0990	Wall Finishes & Painting/Coating	90.2	24.6	51.4	85.0	118.9	105.0	90.8	118.9	107.4	95.2	66.0	77.9	95.2	56.9	72.5	95.2	70.0	80.3
09	FINISHES	106.0	23.2	61.2	87.7	125.1	107.9	93.7	125.1	110.7	89.0	69.7	78.5	90.1	46.0	66.2	88.2	68.9	77.8
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	26.6	83.6	100.0	110.2	102.3	100.0	110.3	102.3	100.0	70.3	93.4	100.0	80.1	95.6	100.0	70.3	93.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	88.5	18.8	61.1	100.4	114.8	106.0	100.2	114.8	105.9	96.9	55.2	80.5	96.9	55.6	80.7	100.4	58.4	83.9
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	84.4	25.0	55.2	102.1	95.5	98.9	102.3	95.5	99.0	96.2	61.9	79.3	99.7	30.9	65.8	98.1	58.9	78.8
MF2018	WEIGHTED AVERAGE	98.5	29.8	69.4	97.0	114.7	104.5	99.3	115.0	105.9	97.6	67.1	84.7	98.3	57.5	81.1	98.7	68.2	85.8
DIVISION	COLUMBIA			FLORENCE			GREENVILLE			ROCK HILL			SPARTANBURG			SOUTH DAKOTA			
	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	105.6	105.6		103.7	103.7		103.7	103.7		103.7	103.7		103.7	103.7		97.7	97.7
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	105.9	89.5	94.6	117.6	84.9	95.1	112.6	85.4	93.8	110.0	84.3	92.2	112.4	85.4	93.8	99.2	93.4	95.2
0310	Concrete Forming & Accessories	93.2	64.9	69.1	81.1	64.8	67.2	91.8	64.9	68.8	90.1	64.0	67.9	94.4	64.9	69.2	98.9	75.7	79.1
0320	Concrete Reinforcing	98.3	67.3	83.3	92.8	67.2	80.4	92.8	64.4	79.1	93.5	65.8	80.1	92.8	67.3	80.4	101.0	71.4	86.7
0330	Cast-in-Place Concrete	110.3	67.5	94.4	92.9	67.0	83.2	92.9	67.2	83.3	92.8	66.4	83.0	92.9	67.2	83.3	109.5	78.8	98.1
03	CONCRETE	93.2	67.8	82.1	93.3	67.6	82.0	92.0	67.3	81.2	90.1	66.8	79.9	92.2	67.8	81.5	98.7	76.7	89.1
04	MASONRY	89.9	67.5	76.1	79.9	67.4	72.2	77.9	67.5	71.5	101.6	64.0	78.5	79.9	67.5	72.3	109.4	73.3	87.2
05	METALS	101.6	91.0	98.5	103.5	91.4	99.9	103.5	91.7	100.0	102.7	90.5	99.1	103.5	92.1	100.1	93.8	82.1	90.4
06	WOOD, PLASTICS & COMPOSITES	88.6	66.9	76.7	74.8	66.8	70.4	86.8	66.8	75.8	85.4	66.8	75.2	90.6	66.8	77.5	97.6	74.2	84.7
07	THERMAL & MOISTURE PROTECTION	93.3	66.3	81.5	97.2	66.1	83.7	97.1	66.1	83.6	96.9	59.2	80.5	97.1	66.1	83.6	103.1	77.2	91.8
08	OPENINGS	99.7	65.1	91.7	94.1	65.1	87.3	94.0	64.8	87.2	94.1	63.6	87.0	94.1	65.1	87.3	97.2	62.2	89.0
0920	Plaster & Gypsum Board	88.7	65.8	73.3	78.2	65.8	69.9	82.1	65.8	71.2	81.8	65.8	71.1	84.7	65.8	72.0	110.1	73	

City Cost Indexes

DIVISION	SOUTH DAKOTA												SIOUX FALLS			WATERTOWN			
	MITCHELL			MOBRIDGE			PIERRE			RAPID CITY			SIOUX FALLS			WATERTOWN			
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	
015433	CONTRACTOR EQUIPMENT	97.7	97.7	97.7	97.7	97.7	99.9	99.9	99.9	97.7	97.7	100.9	100.9	100.9	97.7	97.7	97.7		
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	95.8	93.2	94.0	95.7	93.2	94.0	97.2	96.3	96.6	97.5	92.8	94.3	92.5	98.7	96.8	95.6	93.2	94.0
0310	Concrete Forming & Accessories	97.9	44.2	52.1	88.2	44.6	51.0	99.7	45.6	53.6	106.9	56.6	64.0	103.3	78.1	81.8	84.6	74.5	76.0
0320	Concrete Reinforcing	100.4	70.5	86.0	103.0	70.5	87.3	97.8	100.2	99.0	94.4	100.4	97.3	106.6	100.6	103.7	97.6	70.5	84.5
0330	Cast-in-Place Concrete	106.4	52.3	86.3	106.4	77.2	95.6	103.1	77.8	93.7	105.6	77.2	95.0	88.3	78.8	84.7	106.4	77.2	95.5
03	CONCRETE	96.5	53.1	77.4	96.2	62.0	81.2	91.8	67.4	81.1	95.9	72.3	85.5	88.6	82.7	86.0	95.3	75.5	86.6
04	MASONRY	97.8	75.5	84.1	106.5	72.8	85.8	106.5	72.6	85.7	106.0	74.0	86.3	91.1	75.6	81.5	132.0	73.7	96.2
05	METALS	92.9	81.6	89.6	92.9	82.0	89.7	96.3	89.5	94.3	95.5	91.2	94.2	95.3	92.6	94.5	92.9	81.9	89.6
06	WOOD, PLASTICS & COMPOSITES	96.6	33.7	62.0	84.4	33.4	56.4	104.2	34.0	65.6	102.2	48.0	72.3	101.6	76.5	87.8	80.5	74.2	77.0
07	THERMAL & MOISTURE PROTECTION	102.8	72.9	89.8	102.9	75.1	90.8	104.1	72.7	90.4	103.6	78.5	92.7	103.2	83.3	94.6	102.6	76.7	91.3
08	OPENINGS	96.3	39.6	83.1	98.9	39.0	84.9	99.8	58.4	90.2	101.0	66.1	92.9	104.2	81.8	99.0	96.3	61.5	88.2
0920	Plaster & Gypsum Board	109.0	32.2	57.3	102.2	32.0	54.9	108.1	32.5	57.2	109.8	46.9	67.5	103.6	76.1	85.1	100.5	73.9	82.6
0950, 0980	Ceilings & Acoustic Treatment	95.5	32.2	52.8	98.8	32.0	53.7	98.6	32.5	54.0	100.4	46.9	64.3	97.7	76.1	83.1	95.5	73.9	80.9
0960	Flooring	90.7	43.8	77.6	86.5	46.4	75.3	98.2	31.2	79.4	90.5	72.7	85.5	93.9	75.0	88.6	85.2	43.8	73.6
0970, 0990	Wall Finishes & Painting/Coating	89.8	36.6	58.3	89.8	37.5	58.8	97.1	95.6	96.2	89.8	95.6	93.2	100.3	95.6	97.5	89.8	33.4	56.4
09	FINISHES	91.4	41.1	64.2	89.9	41.6	63.7	98.4	45.2	69.6	92.5	61.8	75.9	96.4	79.1	87.1	88.6	64.7	75.7
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	82.0	96.0	100.0	81.9	96.0	100.0	82.3	96.1	100.0	83.5	96.3	100.0	87.0	97.1	100.0	85.8	96.8
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.5	49.0	77.8	96.5	69.0	85.7	100.0	76.8	90.9	100.0	76.8	90.9	99.9	70.2	88.2	96.5	52.1	79.0
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	99.4	63.4	81.7	101.1	39.8	70.9	103.9	47.7	76.2	97.6	47.7	73.0	102.6	63.4	83.3	98.6	63.4	81.2
MF2018	WEIGHTED AVERAGE	96.3	60.9	81.3	96.9	62.9	82.5	99.0	68.5	86.1	98.3	72.0	87.2	97.7	78.4	89.5	97.3	69.0	85.4
DIVISION	TENNESSEE												JOHNSON CITY			KNOXVILLE			
	CHATTANOOGA			COLUMBIA			COOKEVILLE			JACKSON			JOHNSON CITY			KNOXVILLE			
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	
015433	CONTRACTOR EQUIPMENT	104.7	104.7	99.5	99.5	99.5	99.5	99.5	99.5	105.5	105.5	98.8	98.8	98.8	98.8	98.8	98.8	98.8	98.8
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	106.6	93.8	97.8	91.5	84.6	86.7	97.3	81.6	86.5	100.9	94.0	96.2	113.6	81.1	91.2	92.6	83.8	86.5
0310	Concrete Forming & Accessories	95.8	57.3	63.0	80.9	62.4	65.1	81.1	31.9	39.2	87.5	41.0	47.8	82.7	57.5	61.2	94.3	61.7	66.5
0320	Concrete Reinforcing	101.6	65.1	83.9	91.4	65.0	78.6	91.4	64.6	78.4	91.3	67.2	79.7	102.2	61.9	82.7	101.6	61.8	82.3
0330	Cast-in-Place Concrete	97.5	64.1	85.1	92.8	63.8	82.0	105.2	56.7	87.2	102.7	66.0	89.0	78.4	58.0	70.8	91.6	64.0	81.3
03	CONCRETE	93.1	62.8	79.8	92.4	65.1	80.4	102.4	48.7	78.8	93.2	56.5	77.0	102.7	60.2	84.0	90.7	64.2	79.0
04	MASONRY	98.6	56.3	72.6	111.4	55.5	77.0	106.7	39.4	65.3	111.7	44.4	70.4	111.0	43.2	69.3	76.3	50.7	60.6
05	METALS	93.0	88.1	91.6	93.5	88.9	92.1	93.5	87.6	91.8	96.0	89.5	94.1	90.3	86.4	89.2	93.4	86.5	91.4
06	WOOD, PLASTICS & COMPOSITES	106.5	56.3	78.9	67.8	63.4	65.4	68.0	29.5	46.8	82.9	39.7	59.1	78.7	62.6	69.8	93.1	62.6	76.4
07	THERMAL & MOISTURE PROTECTION	99.2	61.7	82.9	95.6	62.9	81.4	96.1	52.6	77.2	98.0	55.5	79.5	95.3	55.6	78.0	92.8	60.8	78.9
08	OPENINGS	102.0	57.5	91.6	91.0	53.3	82.2	91.1	35.5	78.1	97.7	44.3	85.2	98.3	59.5	89.3	95.7	55.2	86.2
0920	Plaster & Gypsum Board	80.0	55.6	63.6	87.4	62.9	70.9	87.4	28.0	47.4	90.0	38.5	55.3	101.0	62.1	74.8	109.1	62.1	77.5
0950, 0980	Ceilings & Acoustic Treatment	97.9	55.6	69.4	75.8	62.9	67.1	75.8	28.0	43.6	83.9	38.5	53.3	93.5	62.1	72.3	94.3	62.1	72.6
0960	Flooring	98.3	55.2	86.2	81.7	53.9	73.9	81.7	50.0	72.8	81.0	54.2	73.5	93.3	43.9	79.4	98.4	49.7	84.7
0970, 0990	Wall Finishes & Painting/Coating	98.0	59.5	75.2	85.0	56.5	68.1	85.0	56.5	68.1	87.0	56.5	68.9	94.9	58.7	73.5	94.9	57.6	72.8
09	FINISHES	94.4	56.6	73.9	86.2	60.1	72.1	86.8	36.2	59.4	86.1	43.4	63.0	98.5	55.3	75.1	91.4	58.9	73.8
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	67.8	92.8	100.0	68.0	92.9	100.0	35.9	85.7	100.0	62.0	91.5	100.0	75.8	94.6	100.0	79.3	95.4
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.1	59.3	84.1	97.8	73.6	88.3	97.8	67.1	85.8	100.1	61.4	84.9	100.0	55.5	82.5	100.0	60.5	84.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	100.8	82.9	92.0	94.0	50.6	72.6	95.5	61.3	78.6	100.5	65.7	83.3	91.5	40.8	66.5	97.0	54.9	76.2
MF2018	WEIGHTED AVERAGE	98.0	68.1	85.3	94.8	66.5	82.8	96.2	56.9	79.6	97.6	61.4	82.3	98.1	58.6	81.4	94.8	63.7	81.6
DIVISION	TEXAS												AMARILLO			AUSTIN			
	MCKENZIE			MEMPHIS			NASHVILLE			ABILENE			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	99.5	99.5	102.0	102.0	102.0	105.5	105.5	105.5	90.9	90.9	93.9	93.9	93.9	93.9	92.5	92.5	92.5	92.5
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	96.9	81.8	86.5	91.1	95.4	94.0	102.8	98.1	99.6	91.9	87.4	88.8	91.3	91.3	91.3	95.5	90.1	91.7
0310	Concrete Forming & Accessories	88.4	34.1	42.1	94.6	64.7	69.1	95.9	68.1	72.2	94.0	59.2	64.3	95.6	51.7	58.2	95.3	53.0	59.3
0320	Concrete Reinforcing	91.5	65.5	78.9	110.9	66.0	89.2	107.1	66.8	87.6	88.5	51.7	70.7	95.3	49.6	73.2	86.8	47.2	67.6
0330	Cast-in-Place Concrete	102.9	57.9	86.2	96.5	76.7	89.1	88.2	69.0	81.1	84.6	64.9	77.3	83.2	65.7	76.7	94.0	65.9	83.5
03	CONCRETE	101.0	50.2	78.7	96.5	70.2	84.9	92.9	69.4	82.6	84.5	60.7	74.1	87.1	57.2	74.0	89.4	57.4	75.4
04	MASONRY	110.5	45.1	70.3	92.6	56.3	70.3	87.7	55.9	68.2	99.9	60.6	75.8	97.6	60.2	74.6	91.7	60.7	72.7
05	METALS	93.5	88.0	91.9	87.2	82.5	85.8	101.6	85.1	96.7	107.1	70.4	96.3	101.9	68.7	92.1	100.7	67.4	90.9
06	WOOD, PLASTICS & COMPOSITES	76.6	31.7	51.9	98.9	65.4	80.4	100.1	70.1	83.6	99.2	60.8	78.1	102.6	51.0	74.2	92.9	52.6	70.7
07	THERMAL & MOISTURE PROTECTION	96.1	53.6	77.6	93.0	66.4	81.4	96.9	65.0	83.0	98.3	63.4	83.1	100.1	62.3	83.6	95.1	63.8	81.5
08	OPENINGS	91.1	37.2	78.5	99.5	61.3	90.6	101.0	67.5	93.2	101.8	56.7	91.2	103.2	50.8	91.0	101.1	49.6	89.1
0920	Plaster & Gypsum Board	90.9	30.3	50.1	90.9	64.5	73.1	95.9	69.3	78.0	88.2	60.1	69.3	100.7	50.0	66.6	88.9	51.6	63.8
0950, 0980	Ceilings & Acoustic Treatment	75.8	30.3	45.1	90.8	64.5	73.0	94.1	69.3	77.4	99.2	60.1	72.9	100.7	50.0	66.5	93.3	51.6	65.2
0960	Flooring	84.5	53.9	75.9	97.8	55.2	85.9	97.1	57.5	86.0	93.2	67.6	86.0	93.7	63.8	85.3	94.1	63.8	85.6
0970, 0990	Wall Finishes & Painting/Coating																		

City Cost Indexes

DIVISION	TEXAS																	
	BEAUMONT			BROWNSWOOD			BRYAN			CHILDRESS			CORPUS CHRISTI			DALLAS		
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433 CONTRACTOR EQUIPMENT	95.3	95.3	95.3	90.9	90.9	90.9	95.3	95.3	95.3	90.9	90.9	90.9	100.6	100.6	100.6	106.9	106.9	106.9
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	90.6	91.8	91.4	101.3	87.3	91.7	81.5	91.9	88.7	101.8	85.8	90.8	144.2	82.8	101.8	106.0	97.6	100.2
0310 Concrete Forming & Accessories	102.3	54.6	61.7	97.6	58.7	64.4	82.1	58.2	61.7	92.6	58.6	63.6	98.4	52.2	59.0	95.0	62.3	67.1
0320 Concrete Reinforcing	85.7	62.0	74.2	81.9	51.1	67.0	87.9	51.2	70.2	88.7	51.0	70.5	79.8	50.9	65.8	91.4	52.3	72.5
0330 Cast-in-Place Concrete	90.7	65.2	81.2	96.8	58.6	82.6	72.6	59.6	67.8	86.7	58.6	76.3	114.1	67.1	96.6	92.6	71.4	84.7
03 CONCRETE	91.0	60.7	77.7	90.3	58.2	76.2	75.8	58.5	68.2	93.4	58.2	77.9	95.2	59.1	79.4	93.3	65.3	81.0
04 MASONRY	102.9	61.7	77.6	122.8	60.6	84.6	143.3	60.6	92.5	103.5	60.2	76.9	81.4	60.7	68.7	99.5	60.2	75.3
05 METALS	99.4	76.2	92.6	102.6	69.8	92.9	99.5	72.1	91.4	104.4	69.6	94.2	97.3	84.4	93.5	101.7	82.6	96.1
06 WOOD, PLASTICS & COMPOSITES	113.6	54.1	80.9	105.8	60.8	81.0	78.6	59.3	68.0	98.6	60.8	77.8	115.6	51.5	80.3	100.8	63.6	80.3
07 THERMAL & MOISTURE PROTECTION	92.8	64.3	80.4	92.0	61.9	78.9	85.2	63.8	75.9	99.0	60.4	82.2	97.7	62.2	82.2	87.3	67.2	78.6
08 OPENINGS	95.0	55.0	85.6	100.4	56.6	90.2	95.7	56.0	86.4	96.1	56.6	86.9	101.3	50.0	89.4	96.5	59.5	87.9
0920 Plaster & Gypsum Board	101.0	53.2	68.9	82.6	60.1	67.5	88.2	58.7	68.3	87.6	60.1	69.1	96.5	50.5	65.5	92.7	62.5	72.4
0950, 0980 Ceilings & Acoustic Treatment	105.3	53.2	70.2	86.6	60.1	68.7	96.7	58.7	71.1	96.8	60.1	72.1	98.8	50.5	66.2	102.4	62.5	75.5
0960 Flooring	116.9	74.6	105.0	75.7	54.6	69.8	86.7	67.0	81.1	91.6	54.6	81.2	107.4	67.7	96.3	94.2	69.4	87.2
0970, 0990 Wall Finishes & Painting/Coating	94.9	53.9	70.6	92.8	51.7	68.4	92.2	57.4	71.6	92.8	51.7	68.5	110.1	44.2	71.1	96.1	54.8	71.6
09 FINISHES	98.0	57.8	76.2	77.6	57.4	66.7	85.4	59.4	71.3	86.2	57.4	70.6	101.9	53.8	75.9	97.9	62.7	78.8
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	77.8	95.0	100.0	73.4	94.1	100.0	77.0	94.9	100.0	73.4	94.1	100.0	77.8	95.0	100.0	82.5	96.1
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	100.0	63.0	85.5	96.5	49.5	78.0	96.5	62.4	83.1	96.6	51.7	79.0	100.0	48.7	79.9	99.9	62.3	85.1
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	100.1	63.4	82.0	98.6	46.1	72.7	97.8	63.4	80.8	97.9	55.8	77.1	94.0	63.4	78.9	95.2	63.2	79.4
MF2018 WEIGHTED AVERAGE	97.9	65.5	84.2	97.4	58.7	81.1	95.2	64.9	82.4	97.6	60.3	81.8	98.9	61.4	83.1	98.2	68.0	85.4
DIVISION	TEXAS																	
	DEL RIO			DENTON			EASTLAND			EL PASO			FORT WORTH			GALVESTON		
	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	89.9	100.2	100.2	100.2	90.9	90.9	90.9	93.9	93.9	93.9	93.9	93.9	93.9	93.9	93.9	107.9
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	122.2	85.5	96.9	101.4	79.7	86.4	104.0	85.5	91.2	89.7	92.7	91.8	97.4	92.7	94.2	108.4	90.6	96.1
0310 Concrete Forming & Accessories	95.1	51.0	57.5	105.0	58.8	65.7	98.4	58.6	64.4	95.6	56.7	62.5	98.2	59.5	65.2	90.9	55.8	61.0
0320 Concrete Reinforcing	80.4	47.6	64.5	83.2	51.1	67.7	82.1	51.1	67.1	94.2	51.1	73.4	88.1	50.9	70.1	87.5	59.7	74.0
0330 Cast-in-Place Concrete	122.9	58.4	98.9	74.9	59.7	69.2	102.3	58.5	86.0	73.9	68.0	71.7	89.3	65.9	80.6	96.4	60.6	83.1
03 CONCRETE	115.8	54.0	88.6	70.6	59.7	65.8	94.8	58.1	78.7	82.7	60.5	72.9	86.1	61.0	75.1	92.1	60.3	78.1
04 MASONRY	95.4	60.5	74.0	131.0	59.3	86.9	92.7	60.6	73.0	91.6	62.7	73.8	92.5	59.3	72.1	99.0	60.7	75.5
05 METALS	97.2	67.2	88.4	102.1	84.9	97.1	102.4	69.6	92.7	102.1	69.4	92.5	104.3	69.5	94.1	101.2	91.4	98.3
06 WOOD, PLASTICS & COMPOSITES	96.1	50.4	71.0	117.8	60.9	86.5	113.0	60.8	84.3	90.2	57.1	72.0	99.6	60.9	78.3	95.3	55.9	73.6
07 THERMAL & MOISTURE PROTECTION	94.7	62.0	80.5	90.0	62.4	78.0	92.4	61.9	79.1	91.9	64.4	80.0	89.7	64.4	78.7	84.6	64.4	75.8
08 OPENINGS	96.6	47.8	85.2	118.7	56.2	104.2	70.6	56.6	67.4	96.3	52.8	86.2	101.2	56.6	90.8	99.7	56.0	89.5
0920 Plaster & Gypsum Board	93.3	49.5	63.8	87.3	60.1	69.0	82.6	60.1	67.5	97.3	56.2	69.6	89.8	60.1	69.8	94.8	55.0	68.0
0950, 0980 Ceilings & Acoustic Treatment	95.3	49.5	64.4	90.7	60.1	70.1	86.6	60.1	68.7	94.2	56.2	68.6	92.7	60.1	70.7	100.8	55.0	69.9
0960 Flooring	91.9	54.6	81.4	71.9	54.6	67.1	95.9	54.6	84.3	97.3	69.7	89.5	94.5	64.5	86.0	102.4	67.0	92.5
0970, 0990 Wall Finishes & Painting/Coating	97.8	42.6	65.1	103.3	48.9	71.1	94.2	51.7	69.0	98.6	49.6	69.6	101.2	51.8	72.0	104.6	53.7	74.5
09 FINISHES	94.5	50.3	70.6	76.3	57.2	66.0	84.1	57.4	69.6	92.3	58.1	73.8	89.6	59.5	73.3	95.4	56.9	74.6
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	73.6	94.1	100.0	79.2	95.4	100.0	71.7	93.7	100.0	76.6	94.8	100.0	79.2	95.4	100.0	78.3	95.2
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	96.5	59.4	81.9	96.5	55.8	80.5	96.5	49.5	78.0	99.8	65.3	86.3	99.9	55.4	82.4	96.5	62.5	83.2
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	95.9	59.8	78.1	101.0	58.7	80.1	98.5	58.6	78.8	97.5	50.5	74.3	100.2	58.6	79.7	99.6	63.5	81.8
MF2018 WEIGHTED AVERAGE	97.7	60.4	83.1	97.3	62.9	82.7	94.2	60.3	79.8	95.9	63.6	82.3	97.6	62.9	82.9	97.7	66.5	84.5
DIVISION	TEXAS																	
	GIDDINGS			GREENVILLE			HOUSTON			HUNTSVILLE			LAREDO			LONGVIEW		
	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	89.9	100.4	100.4	100.4	103.3	103.3	95.3	95.3	95.3	89.9	89.9	89.9	91.8	91.8	91.8	
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	106.8	85.8	92.3	96.4	82.4	86.7	107.7	95.5	99.3	96.8	91.6	93.2	100.2	86.2	90.5	93.7	88.6	90.2
0310 Concrete Forming & Accessories	92.6	51.1	57.3	86.9	57.1	61.5	96.0	58.9	64.4	89.2	54.1	59.2	95.1	52.1	58.5	82.9	58.8	62.3
0320 Concrete Reinforcing	80.9	48.4	65.2	91.9	51.1	72.2	87.3	52.2	70.3	88.2	51.1	70.3	80.4	50.9	66.1	90.9	50.7	71.5
0330 Cast-in-Place Concrete	104.1	58.7	87.2	92.1	59.6	80.0	89.6	68.9	81.9	99.9	59.5	84.9	87.8	65.0	79.3	107.1	58.5	89.0
03 CONCRETE	92.6	54.3	75.8	86.7	58.7	74.4	91.4	62.5	78.7	98.7	56.6	80.2	87.3	57.4	74.2	102.7	58.1	83.1
04 MASONRY	102.2	60.6	76.7	158.6	59.3	97.5	98.0	63.1	76.6	141.3	60.6	91.7	88.9	60.6	71.5	154.2	59.2	95.8
05 METALS	96.7	68.2	88.4	99.2	83.2	94.5	103.9	77.3	96.1	99.4	71.8	91.3	99.6	69.4	90.7	91.8	68.4	84.9
06 WOOD, PLASTICS & COMPOSITES	95.3	50.4	70.6	87.2	58.4	71.4	100.6	59.2	77.8	88.1	54.1	69.4	96.1	51.4	71.5	81.2	60.8	70.0
07 THERMAL & MOISTURE PROTECTION	95.0	62.7	81.0	87.3	61.5	76.1	86.3	68.5	78.5	86.5	63.2	76.4	93.8	63.0	80.4	89.1	60.9	76.8
08 OPENINGS	95.8	48.7	84.8	92.2	55.3	83.6	106.6	56.4	94.9	95.7	52.5	85.6	97.6	49.8	85.8	83.4	56.2	77.0
0920 Plaster & Gypsum Board	92.4	49.5	63.5	82.8	57.5	65.8	94.0	58.0	69.8	92.3	53.2	66.0	94.1	50.5	64.7	81.7	60.1	67.2
0950, 0980 Ceilings & Acoustic Treatment	95.3	49.5	64.4	98.1	57.5	70.7	97.9	58.0	71.0	96.7	53.2	67.4	98.6	50.5	66.1	93.2	60.1	70.9
0960 Flooring	91.7	54.6	81.2	87.7	54.6	78.4	103.5	71.2	94.4	91.3	54.6	81.0	91.8	63.8	83.9	93.7	54.6	82.7
0970, 0990 Wall Finishes & Painting/Coating	97.8	44.2	66.1	90.4	51.7	67.5	102.1	58.6	76.3	92.2	57.4	71.6	97.8	44.2	66.1	82.1	48.9	62.4
09 FINISHES	93.1	50.5	70.0	92.3	56.1	72.7	102.7	60.8	80.1	88.3	54.1	69.8	93.4	52.9	71.5	98.1	57.2	76.0

City Cost Indexes

DIVISION		TEXAS																	
		LUBBOCK			LUKFIN			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	102.9	102.9		91.8	91.8		100.7	100.7		100.4	100.4		102.9	102.9		90.9	90.9	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	115.0	86.7	95.5	88.6	90.0	89.5	149.0	82.9	103.3	92.8	82.4	85.6	117.7	85.8	95.6	92.1	88.1	89.3
0310	Concrete Forming & Accessories	92.9	53.0	58.9	85.9	54.1	58.8	99.1	51.2	58.3	86.0	57.1	61.4	96.4	59.1	64.6	93.9	59.2	64.3
0320	Concrete Reinforcing	89.7	51.8	71.4	92.6	66.7	80.1	80.0	50.9	65.9	91.9	51.1	72.2	90.7	51.7	71.8	88.5	51.6	70.7
0330	Cast-in-Place Concrete	84.7	68.2	78.6	95.8	58.3	81.8	124.0	59.7	100.1	86.3	59.6	76.4	90.0	65.9	81.1	84.6	64.9	77.3
03	CONCRETE	83.1	60.1	73.0	95.1	58.6	79.0	102.8	56.2	82.3	82.1	58.8	71.9	87.1	62.1	76.1	84.5	60.7	74.1
04	MASONRY	99.2	61.0	75.7	117.3	60.5	82.4	95.1	60.7	74.0	170.8	59.3	102.3	116.2	60.2	81.8	99.9	60.2	75.5
05	METALS	110.9	85.8	103.5	99.4	73.3	91.7	97.1	84.2	93.3	99.2	83.3	94.5	109.2	85.4	102.2	106.4	70.4	95.8
06	WOOD, PLASTICS & COMPOSITES	98.6	52.1	73.0	88.6	54.2	69.6	114.3	50.5	79.2	86.1	58.4	70.9	103.0	60.9	79.8	99.2	60.8	78.1
07	THERMAL & MOISTURE PROTECTION	88.2	63.5	77.5	88.8	60.0	76.3	97.6	62.9	82.5	87.1	61.5	76.0	88.5	63.3	77.5	98.3	62.7	82.8
08	OPENINGS	108.6	52.4	95.5	63.3	56.6	61.7	100.4	48.6	88.3	92.2	55.3	83.6	110.0	56.7	97.6	101.8	56.7	91.2
0920	Plaster & Gypsum Board	88.4	51.1	63.3	80.6	53.2	62.2	97.5	49.5	65.2	82.8	57.5	65.8	90.0	60.1	69.9	88.2	60.1	69.3
0950, 0980	Ceilings & Acoustic Treatment	100.0	51.1	67.0	88.3	53.2	64.7	98.6	49.5	65.5	98.1	57.5	70.7	97.6	60.1	72.3	99.2	60.1	72.9
0960	Flooring	87.5	69.0	82.3	126.2	54.6	106.1	106.9	72.8	97.3	87.2	54.6	78.1	88.6	63.8	81.7	93.2	63.8	84.9
0970, 0990	Wall Finishes & Painting/Coating	103.4	53.7	74.0	82.1	51.7	64.1	110.1	42.6	70.2	90.4	51.7	67.5	103.4	51.7	72.8	92.8	51.7	68.5
09	FINISHES	88.5	55.5	70.6	106.5	53.9	78.0	102.4	54.1	76.3	91.9	56.1	72.5	89.0	59.4	72.9	86.1	59.3	71.6
COVERS	DIVS: 10 - 14, 25, 28, 41, 43, 44, 46	100.0	78.3	95.2	100.0	70.1	93.3	100.0	75.8	94.6	100.0	79.1	95.3	100.0	73.8	94.1	100.0	73.5	94.1
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	99.7	53.1	81.4	96.4	58.1	81.4	96.5	48.7	77.7	96.5	60.2	82.2	96.1	47.4	77.0	100.1	52.5	81.4
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	96.7	60.1	78.6	93.9	61.4	77.8	93.8	31.6	63.1	92.2	58.7	75.6	96.7	58.9	78.1	98.0	58.9	78.7
MF2018	WEIGHTED AVERAGE	99.2	62.9	83.9	94.7	62.6	81.1	99.7	56.5	81.4	97.2	63.5	82.9	99.7	62.2	83.8	97.7	61.8	82.6
DIVISION		TEXAS												TYLER					
		PALESTINE			SAN ANGELO			SAN ANTONIO			TEMPLE			TEXARKANA			757		
		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	91.8	91.8		90.9	90.9		94.1	94.1		90.9	90.9		91.8	91.8		91.8	91.8	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	94.2	88.8	90.5	97.8	87.7	90.8	101.5	93.7	96.1	86.7	87.6	87.3	83.4	91.1	88.7	92.9	88.7	90.0
0310	Concrete Forming & Accessories	77.5	58.8	61.5	97.9	51.4	58.3	94.7	52.6	58.8	101.2	51.2	58.5	93.0	59.4	64.3	87.6	58.9	63.1
0320	Concrete Reinforcing	90.2	51.0	71.3	81.8	51.6	67.2	89.6	47.7	69.3	82.0	50.8	66.9	90.1	50.8	71.1	90.9	50.8	71.5
0330	Cast-in-Place Concrete	87.5	58.5	76.7	91.4	64.9	81.5	85.7	68.3	79.2	74.9	58.6	68.8	88.2	64.9	79.5	105.2	58.6	87.8
03	CONCRETE	97.1	58.1	80.0	86.1	57.2	73.4	88.0	58.0	74.8	73.4	54.7	65.2	88.0	60.6	75.9	102.3	58.2	82.9
04	MASONRY	111.9	59.2	79.5	119.4	60.6	83.3	89.7	60.8	71.9	130.1	60.6	87.4	175.3	59.2	103.9	164.4	59.2	99.7
05	METALS	99.1	68.5	90.1	102.7	70.3	93.2	102.0	65.4	91.3	102.4	69.2	92.7	91.7	69.0	85.0	99.0	68.5	90.1
06	WOOD, PLASTICS & COMPOSITES	79.3	60.8	69.1	106.1	50.4	75.5	98.1	51.7	72.5	115.7	50.4	79.8	93.7	60.8	75.6	90.3	60.8	74.1
07	THERMAL & MOISTURE PROTECTION	89.4	61.8	77.4	91.8	62.6	79.1	86.8	65.6	77.5	91.3	61.7	78.4	88.6	63.0	77.5	89.2	61.8	77.3
08	OPENINGS	63.3	56.6	61.7	100.5	51.0	88.9	102.1	49.5	89.8	67.3	50.8	63.4	83.3	56.5	77.1	63.2	56.5	61.7
0920	Plaster & Gypsum Board	79.0	60.1	66.3	82.6	49.5	60.3	93.3	50.5	64.5	82.6	49.5	60.3	86.8	60.1	68.8	80.6	60.1	66.8
0950, 0980	Ceilings & Acoustic Treatment	88.3	60.1	69.3	86.6	49.5	61.6	95.2	50.5	65.1	86.6	49.5	61.6	93.2	60.1	70.9	88.3	60.1	69.3
0960	Flooring	116.4	54.6	99.0	75.8	54.6	69.9	101.2	67.7	91.8	97.5	54.6	85.4	102.7	63.8	91.7	128.7	54.6	107.8
0970, 0990	Wall Finishes & Painting/Coating	82.1	51.7	64.1	92.8	51.7	68.4	99.4	44.2	66.7	94.2	44.2	64.6	82.1	51.7	64.1	82.1	51.7	64.1
09	FINISHES	104.0	57.5	78.8	77.4	51.3	63.3	104.2	54.0	77.0	83.3	50.5	65.5	100.9	59.3	78.4	107.5	57.5	80.4
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	73.5	94.1	100.0	76.0	94.7	100.0	78.0	95.1	100.0	72.3	93.8	100.0	79.1	95.3	100.0	79.0	95.3
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.4	56.7	80.8	96.5	52.2	79.1	100.0	59.8	84.2	96.5	53.2	79.5	96.4	55.5	80.3	96.4	58.2	81.4
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	90.1	48.4	69.5	102.8	54.6	79.1	97.5	59.8	78.9	99.8	52.0	76.2	93.7	54.5	74.4	92.6	53.7	73.4
MF2018	WEIGHTED AVERAGE	94.2	60.4	79.9	97.1	59.4	81.2	98.3	62.3	83.1	92.5	58.5	78.2	96.7	62.0	82.1	97.8	61.6	82.5
DIVISION		UTAH												LOGAN					
		VICTORIA			WACO			WAXAHACHIE			WHARTON			WICHITA FALLS			843		
		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	106.6	106.6		90.9	90.9		100.4	100.4		107.9	107.9		90.9	90.9		93.9	93.9	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	113.4	88.0	95.8	95.1	88.0	90.2	94.7	82.5	86.3	118.7	90.0	98.9	95.8	88.1	90.5	99.8	89.6	92.7
0310	Concrete Forming & Accessories	90.6	51.3	57.1	99.8	59.2	65.2	86.0	59.0	63.0	85.7	53.1	57.9	99.8	59.2	65.2	103.5	67.2	72.6
0320	Concrete Reinforcing	84.0	50.9	68.0	81.6	47.2	65.0	91.9	51.1	72.2	87.4	50.9	69.7	81.6	51.7	67.1	108.0	84.4	96.6
0330	Cast-in-Place Concrete	108.3	60.5	90.5	81.0	64.9	75.0	91.1	59.8	79.5	111.3	59.5	92.0	86.5	65.0	78.5	86.4	74.3	81.9
03	CONCRETE	99.7	56.7	80.8	79.6	60.0	71.0	85.8	59.7	74.3	103.8	57.1	83.3	82.2	60.8	72.8	105.4	73.2	91.2
04	MASONRY	116.9	60.7	82.4	90.9	60.6	72.3	159.2	59.3	97.8	100.3	60.6	75.9	91.4	60.1	72.2	109.5	60.5	79.4
05	METALS	99.4	87.8	96.0	104.8	68.4	94.1	99.2	83.6	94.6	101.2	87.4	97.1	104.7	70.4	94.6	109.5	82.5	101.5
06	WOOD, PLASTICS & COMPOSITES	98.4	50.5	72.1	113.9	60.8	84.7	86.1	61.0	72.3	88.4	52.7	68.8	113.9	60.8	84.7	85.9	67.1	75.5
07	THERMAL & MOISTURE PROTECTION	88.0	61.1	76.3	92.2	63.7	79.8	87.2	61.6	76.1	85.0	63.7	75.7	92.2	62.9	79.5	103.0	68.8	88.1
08	OPENINGS	99.5	51.1	88.2	78.4	55.6	73.1	92.2	56.7	83.9	99.7	52.3	88.6	78.4	56.7	73.4	92.2	66.1	86.1
0920	Plaster & Gypsum Board	90.9	49.5	63.0	82.7	60.1	67.5	83.2	60.1	67.7	90.4	51.7	64.4	82.7					

City Cost Indexes

DIVISION	UTAH												VERMONT						
	OGDEN			PRICE			PROVO			SALT LAKE CITY			BELLOWS FALLS			BENNINGTON			
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	
015433	CONTRACTOR EQUIPMENT		93.9	93.9		92.9	92.9		92.9	92.9		93.8	93.8		95.7	95.7		95.7	95.7
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	87.3	89.6	88.9	97.1	87.4	90.4	95.9	88.0	90.5	87.0	89.5	88.7	86.8	96.1	93.3	86.2	96.1	93.1
0310	Concrete Forming & Accessories	103.5	67.2	72.6	106.0	64.2	70.4	105.3	67.2	72.9	105.8	67.2	72.9	96.5	101.7	100.9	94.0	101.6	100.4
0320	Concrete Reinforcing	107.6	84.4	96.4	115.8	84.0	100.4	116.8	84.4	101.1	110.0	84.4	97.6	85.1	86.3	85.1	86.3	85.6	
0330	Cast-in-Place Concrete	87.7	74.3	82.7	86.5	71.6	80.9	86.5	74.3	81.9	95.8	74.3	87.8	89.6	115.9	99.4	89.6	115.8	99.4
03	CONCRETE	94.4	73.2	85.1	106.6	70.8	90.8	104.9	73.2	91.0	114.2	73.2	96.2	88.7	103.7	95.3	88.5	103.6	95.2
04	MASONRY	104.0	60.5	77.3	115.1	65.1	84.4	115.3	60.5	81.6	118.1	60.5	82.7	96.3	86.2	90.1	105.1	86.2	93.5
05	METALS	110.0	82.5	101.9	106.5	82.5	99.5	107.5	82.5	100.1	113.7	82.5	104.5	95.2	91.1	94.0	95.1	90.9	93.9
06	WOOD, PLASTICS & COMPOSITES	85.9	67.1	75.5	89.2	64.0	75.3	87.5	67.1	76.3	87.8	67.1	76.4	102.8	106.8	105.0	100.1	106.8	103.8
07	THERMAL & MOISTURE PROTECTION	101.8	68.8	87.4	104.8	68.3	88.9	104.9	68.8	89.2	110.0	68.8	92.1	100.9	89.1	95.8	100.9	89.1	95.8
08	OPENINGS	92.2	66.1	86.1	96.1	76.3	91.5	96.1	66.1	89.1	94.1	66.1	87.5	100.1	97.5	99.5	100.1	97.5	99.5
0920	Plaster & Gypsum Board	80.6	66.2	70.9	83.4	63.1	69.8	81.2	66.2	71.1	90.9	66.2	74.3	108.9	106.7	107.4	107.9	106.7	107.1
0950, 0980	Ceilings & Acoustic Treatment	104.3	66.2	78.7	104.3	63.1	76.5	104.3	66.2	78.7	97.1	66.2	76.3	97.2	106.7	103.6	97.2	106.7	103.6
0960	Flooring	95.2	60.5	85.4	98.4	56.1	86.5	98.2	60.5	87.6	99.0	60.5	88.1	92.0	98.9	94.0	91.2	98.9	93.4
0970, 0990	Wall Finishes & Painting/Coating	92.6	60.7	73.7	92.6	60.7	73.7	92.6	60.7	73.7	95.7	60.7	75.0	86.4	101.5	95.3	86.4	101.5	95.3
09	FINISHES	92.0	64.9	77.3	95.0	61.7	77.0	94.5	64.9	78.5	93.7	64.9	78.1	90.6	101.8	96.7	90.3	101.8	96.5
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	84.4	96.5	100.0	81.6	95.9	100.0	84.4	96.5	100.0	84.4	96.5	100.0	91.8	98.2	100.0	91.7	98.2
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.0	69.2	87.9	98.1	63.2	84.4	100.0	69.2	87.9	100.1	69.2	88.0	96.7	87.6	93.1	96.7	87.6	93.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	95.5	71.3	83.6	100.2	68.8	84.7	95.7	68.6	82.3	98.1	71.3	84.9	108.3	79.5	94.1	108.3	54.5	81.8
MF2018	WEIGHTED AVERAGE	98.8	71.7	87.4	101.4	70.0	88.1	101.2	71.2	88.5	103.5	71.7	90.1	96.7	92.1	94.8	97.0	88.6	93.4
DIVISION	VERMONT												ST. JOHNSBURY						
	BRATTLEBORO			BURLINGTON			GUILDFIELD			MONTPELIER			RUTLAND			ST. JOHNSBURY			
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	
015433	CONTRACTOR EQUIPMENT	95.7	95.7		99.0	99.0		95.7	95.7		99.0	99.0		95.7	95.7		95.7	95.7	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	87.8	96.1	93.5	92.6	101.0	98.4	85.8	91.9	90.0	89.7	100.8	97.3	90.4	96.1	94.3	85.9	95.2	92.3
0310	Concrete Forming & Accessories	96.7	101.7	101.0	99.4	80.2	83.0	94.6	95.1	95.1	97.3	101.3	100.7	97.0	80.0	82.5	93.5	95.6	95.2
0320	Concrete Reinforcing	84.1	86.3	85.2	107.3	86.2	97.1	85.8	86.1	86.0	101.6	86.2	94.2	106.4	86.1	96.6	84.1	86.2	85.1
0330	Cast-in-Place Concrete	92.5	115.9	101.2	109.6	116.7	112.2	86.9	107.2	94.4	104.5	116.7	109.0	87.8	115.6	98.2	86.9	107.3	94.5
03	CONCRETE	90.7	103.7	96.4	101.7	94.2	98.4	86.2	97.7	91.3	98.5	103.7	100.8	91.4	93.8	92.5	85.9	97.9	91.2
04	MASONRY	104.6	86.2	93.3	103.9	86.4	93.1	104.8	71.5	84.4	101.4	86.4	92.2	87.2	86.3	86.7	131.1	71.5	94.5
05	METALS	95.1	91.1	93.9	102.8	89.8	99.0	95.2	90.0	93.7	101.2	89.9	97.9	101.1	90.3	97.9	95.2	90.4	93.8
06	WOOD, PLASTICS & COMPOSITES	103.1	106.8	105.1	99.2	78.5	87.8	99.0	106.8	103.3	96.0	106.9	102.0	103.2	78.3	98.5	94.1	106.8	101.0
07	THERMAL & MOISTURE PROTECTION	101.0	89.1	95.8	107.4	86.6	98.3	100.7	82.4	92.8	109.4	89.7	100.8	101.1	86.1	94.6	100.6	82.4	92.7
08	OPENINGS	100.1	97.8	99.6	102.6	78.4	96.9	100.1	94.0	98.7	103.1	94.1	101.0	103.2	78.3	97.4	100.1	94.0	98.7
0920	Plaster & Gypsum Board	108.9	106.7	107.4	109.9	77.4	88.1	114.5	106.7	109.2	110.4	106.7	107.9	109.4	77.4	87.9	115.8	106.7	109.6
0950, 0980	Ceilings & Acoustic Treatment	97.2	106.7	103.6	103.9	77.4	86.0	97.2	106.7	103.6	104.9	106.7	106.1	103.2	77.4	85.8	97.2	106.7	103.6
0960	Flooring	92.2	98.9	94.1	101.8	98.9	101.0	95.0	98.9	96.1	98.5	98.9	98.6	92.0	98.9	94.0	98.3	98.9	98.5
0970, 0990	Wall Finishes & Painting/Coating	86.4	101.5	95.3	98.0	88.3	92.3	86.4	88.3	87.5	97.8	88.3	92.2	86.4	88.3	87.5	86.4	88.3	87.5
09	FINISHES	90.8	101.8	96.8	99.1	83.8	90.8	92.2	96.7	94.6	97.9	100.6	99.4	92.0	83.7	87.5	93.3	96.7	95.2
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	91.8	98.2	100.0	89.1	97.6	100.0	86.7	97.0	100.0	92.2	98.3	100.0	88.6	97.5	100.0	86.8	97.0
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.7	87.5	93.1	100.0	68.3	87.6	96.7	60.5	82.5	96.5	68.3	85.4	100.2	68.2	87.7	96.7	60.5	82.5
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	108.3	79.5	94.1	107.6	53.6	81.0	108.3	54.5	81.8	108.1	53.6	81.3	108.4	53.6	81.4	108.3	54.5	81.8
MF2018	WEIGHTED AVERAGE	97.4	92.1	95.2	101.9	79.8	92.5	96.8	79.0	89.3	100.2	84.4	93.5	98.9	79.4	90.7	98.1	79.3	90.2
DIVISION	VERMONT												VIRGINIA						
	WHITE RIVER JCT.			ALEXANDRIA			ARLINGTON			BRISTOL			CHARLOTTESVILLE			CULPEPER			
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	
015433	CONTRACTOR EQUIPMENT	95.7	95.7		105.3	105.3		104.1	104.1		104.1	104.1		108.1	108.1		104.1	104.1	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	90.3	95.2	93.7	113.7	89.0	96.7	123.9	87.0	98.5	108.2	86.0	92.8	112.7	88.3	95.9	111.4	86.5	94.2
0310	Concrete Forming & Accessories	91.4	96.1	95.4	91.5	71.9	74.8	90.5	71.6	74.4	86.6	64.1	67.5	85.1	61.7	65.2	82.4	71.0	72.7
0320	Concrete Reinforcing	85.1	86.2	85.6	86.6	85.0	85.9	97.8	85.1	91.6	97.7	83.7	94.0	97.1	73.0	85.4	97.8	84.9	91.6
0330	Cast-in-Place Concrete	92.5	108.1	98.3	108.1	77.7	96.8	105.2	77.2	94.8	104.8	44.5	82.3	109.0	75.5	96.5	107.7	74.4	95.3
03	CONCRETE	92.6	98.4	95.2	99.9	77.7	90.1	104.5	77.4	92.6	100.8	62.4	83.9	101.3	70.2	87.7	98.4	76.0	88.6
04	MASONRY	117.2	72.9	90.0	89.8	73.7	79.9	102.3	72.6	84.0	92.3	45.4	63.5	116.9	55.3	79.0	105.1	70.8	84.1
05	METALS	95.2	90.4	93.8	106.0	100.8	104.5	104.6	101.8	103.8	103.4	97.8	101.8	103.7	95.8	101.4	103.7	99.6	102.5
06	WOOD, PLASTICS & COMPOSITES	97.1	106.8	102.4	91.0	70.1	79.5	87.5	70.1	78.0	80.2	69.8	74.5	78.7	59.8	68.3	77.4	70.1	73.4
07	THERMAL & MOISTURE PROTECTION	101.1	83.0	93.2	102.5	81.1	93.2	104.6	80.5	94.1	103.9	58.8	84.3	103.5	69.7	88.8	103.7	78.9	92.9
08	OPENINGS	100.1	94.0	98.7	95.4	74.3	90.5	93.7	74.3	89.2	96.4	67.9	89.7	94.8	65.7	88.0	95.1	73.8	90.1
0920	Plaster & Gypsum Board	106.6	106.7	106.7	98.0	69.2	78.6	94.8	69.2	77.6	91.1	68.9	76.2	91.1	57.9	68.8	91.3	69.2	76.4
0950, 0980	Ceilings & Acoustic Treatment	97.2	106.7	103.6	92.4	69.2	76.8	90.8	69.2	76.2	90.0	68.9	75.8	90.0	57.9	68.4	90.8	69.2	76.2
0960	Flooring	90.2	98.9	92.6	97.1	77.4	91.5	95.6	75.7	90.0	92.3	55.7	82.0	90.8	55.7	80.9	90.8	74.4	86.2
0970, 0990	Wall Fin																		

City Cost Indexes

DIVISION	VIRGINIA												LYNCHBURG												
	FAIRFAX			FARMVILLE			FREDERICKSBURG			GRUNDY			HARRISONBURG			228			245						
	220 - 221			239			224 - 225			246			228			228			245						
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	
015433	CONTRACTOR EQUIPMENT	104.1	104.1	108.1	108.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	122.4	86.7	97.8	108.5	87.3	93.9	110.9	86.4	93.9	106.0	85.3	91.7	119.3	85.0	95.6	106.8	86.7	92.9	106.8	86.7	92.9	106.8	86.7	92.9
0310	Concrete Forming & Accessories	85.1	63.8	67.0	98.9	60.3	66.0	85.1	65.4	68.3	89.6	38.2	45.8	81.4	56.6	60.2	86.6	70.5	72.9	86.6	70.5	72.9	86.6	70.5	72.9
0320	Concrete Reinforcing	97.8	90.3	94.2	92.9	67.9	80.8	98.5	80.1	89.6	96.4	44.1	71.1	97.8	57.3	78.2	97.1	84.5	91.0	97.1	84.5	91.0	97.1	84.5	91.0
0330	Cast-in-Place Concrete	105.2	78.5	95.2	106.8	83.9	98.3	106.8	74.2	94.7	104.8	50.9	84.7	105.2	52.6	85.6	104.8	74.3	93.4	104.8	74.3	93.4	104.8	74.3	93.4
03	CONCRETE	104.2	75.2	91.5	101.8	71.5	88.5	98.1	72.7	86.9	99.3	45.8	75.8	102.0	57.1	82.3	99.2	75.8	88.9	99.2	75.8	88.9	99.2	75.8	88.9
04	MASONRY	102.2	73.6	84.6	101.8	50.0	69.9	104.0	66.7	81.1	94.9	55.4	70.6	101.4	57.9	74.6	109.3	63.9	81.4	109.3	63.9	81.4	109.3	63.9	81.4
05	METALS	103.8	102.5	103.4	101.3	90.8	98.2	103.8	98.0	102.1	103.4	75.2	95.1	103.7	87.2	98.9	103.6	99.8	102.5	103.6	99.8	102.5	103.6	99.8	102.5
06	WOOD, PLASTICS & COMPOSITES	80.2	59.2	68.6	93.0	59.8	74.7	80.2	64.6	71.6	83.1	30.6	54.2	76.3	59.2	66.9	80.2	71.5	75.4	80.2	71.5	75.4	80.2	71.5	75.4
07	THERMAL & MOISTURE PROTECTION	104.4	79.9	93.7	105.2	69.4	89.6	103.7	76.3	91.8	103.9	57.3	83.6	104.1	69.6	89.1	103.7	70.4	89.2	103.7	70.4	89.2	103.7	70.4	89.2
08	OPENINGS	93.7	69.6	88.0	94.3	54.9	85.1	94.8	68.5	88.7	96.4	30.1	80.9	95.0	57.0	86.2	95.0	68.8	88.9	95.0	68.8	88.9	95.0	68.8	88.9
0920	Plaster & Gypsum Board	91.3	57.9	68.9	103.1	57.9	72.7	91.3	63.6	72.7	91.1	28.5	49.0	91.1	57.9	68.8	91.1	70.7	77.4	91.1	70.7	77.4	91.1	70.7	77.4
0950, 0980	Ceilings & Acoustic Treatment	90.8	57.9	68.6	86.5	57.9	67.2	90.8	63.6	72.4	90.0	28.5	48.6	90.0	57.9	68.4	90.0	70.7	77.0	90.0	70.7	77.0	90.0	70.7	77.0
0960	Flooring	92.5	76.7	88.1	95.6	50.5	82.9	92.5	72.4	86.9	93.5	28.2	75.2	90.6	74.4	86.1	92.3	65.4	84.7	92.3	65.4	84.7	92.3	65.4	84.7
0970, 0990	Wall Finishes & Painting/Coating	115.8	73.6	90.8	99.6	57.2	74.5	115.8	57.0	81.0	102.1	31.2	60.2	115.8	48.3	75.9	102.1	55.3	74.4	102.1	55.3	74.4	102.1	55.3	74.4
09	FINISHES	92.4	65.7	77.9	90.6	57.7	72.8	91.3	65.0	77.1	90.7	33.9	60.0	91.3	58.9	73.7	90.4	67.8	78.2	90.4	67.8	78.2	90.4	67.8	78.2
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	84.2	96.5	100.0	77.1	94.9	100.0	78.3	95.2	100.0	73.6	94.1	100.0	62.8	91.7	100.0	78.8	95.3	100.0	78.8	95.3	100.0	78.8	95.3
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.8	88.1	93.4	96.9	52.0	79.3	96.8	79.9	90.2	96.8	65.7	84.6	96.8	65.4	84.5	96.8	69.5	86.1	96.8	69.5	86.1	96.8	69.5	86.1
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	97.3	101.1	99.1	91.2	68.3	79.9	94.5	91.8	93.2	96.2	68.3	82.5	96.4	86.4	91.5	97.2	67.8	82.7	97.2	67.8	82.7	97.2	67.8	82.7
MF2018	WEIGHTED AVERAGE	99.5	83.6	92.8	97.9	65.3	84.1	98.3	78.7	90.0	98.1	58.8	81.5	99.0	68.8	86.3	98.7	73.8	88.2	98.7	73.8	88.2	98.7	73.8	88.2
DIVISION	VIRGINIA												LYNCHBURG												
	NEWPORT NEWS			NORFOLK			PETERSBURG			PORTSMOUTH			PULASKI			243			230 - 232						
	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	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	
015433	CONTRACTOR EQUIPMENT	108.2	108.2	110.2	110.2	108.1	108.1	108.0	108.0	108.0	108.0	108.0	108.0	108.0	108.0	108.0	108.0	108.0	108.0	108.0	108.0	109.6	109.6	109.6	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	107.6	88.4	94.3	106.9	93.8	97.9	111.1	88.4	95.4	106.2	88.2	93.8	105.4	85.7	91.8	103.4	92.8	96.1	103.4	92.8	96.1	103.4	92.8	96.1
0310	Concrete Forming & Accessories	98.1	61.1	66.6	103.6	61.2	67.5	91.8	61.8	66.2	87.8	61.3	65.2	89.6	40.4	47.7	94.2	61.9	66.7	94.2	61.9	66.7	94.2	61.9	66.7
0320	Concrete Reinforcing	92.8	66.2	79.9	101.2	66.2	84.3	92.4	73.6	83.3	92.4	66.2	79.7	96.4	83.8	90.3	102.1	73.6	88.3	102.1	73.6	88.3	102.1	73.6	88.3
0330	Cast-in-Place Concrete	103.8	64.5	89.2	111.0	76.1	98.0	110.2	76.6	97.7	102.8	65.6	89.0	104.8	82.4	95.6	95.3	76.6	88.4	95.3	76.6	88.4	95.3	76.6	88.4
03	CONCRETE	98.9	65.0	84.0	102.1	69.0	87.6	104.5	70.8	89.7	97.7	65.5	83.6	99.3	64.7	84.1	94.5	70.7	84.0	94.5	70.7	84.0	94.5	70.7	84.0
04	MASONRY	97.3	55.0	71.3	97.1	55.0	71.3	110.2	54.6	82.2	103.0	55.6	73.9	87.9	54.3	67.3	93.3	64.7	75.7	93.3	64.7	75.7	93.3	64.7	75.7
05	METALS	103.8	93.1	100.6	105.3	91.8	101.3	101.4	96.7	100.0	102.7	93.1	99.9	103.5	96.0	101.3	105.9	95.3	102.8	105.9	95.3	102.8	105.9	95.3	102.8
06	WOOD, PLASTICS & COMPOSITES	91.8	59.8	74.2	99.3	59.7	77.5	83.2	59.5	70.2	79.6	59.8	68.7	83.1	32.0	55.0	93.7	59.7	75.0	93.7	59.7	75.0	93.7	59.7	75.0
07	THERMAL & MOISTURE PROTECTION	105.1	67.7	88.9	104.4	70.0	89.5	89.5	105.1	90.9	105.1	90.5	99.0	103.9	66.6	87.6	101.0	72.9	88.8	101.0	72.9	88.8	101.0	72.9	88.8
08	OPENINGS	94.6	60.1	86.6	109.0	85.5	100.2	105.2	63.9	89.8	82.3	82.9	82.5	102.6	109.4	105.1	95.3	109.8	100.7	109.8	100.7	109.8	100.7	109.8	100.7
0920	Plaster & Gypsum Board	98.0	70.7	79.6	91.1	57.9	68.8	91.3	63.8	72.8	154.4	57.3	89.1	112.7	104.9	107.5	106.5	104.9	105.4	106.5	104.9	105.4	106.5	104.9	105.4
0950, 0980	Ceilings & Acoustic Treatment	92.4	70.7	77.8	90.0	57.9	68.4	90.8	63.8	72.6	103.8	57.3	72.4	101.2	104.9	103.7	98.7	104.9	102.9	98.7	104.9	102.9	98.7	104.9	102.9
0960	Flooring	97.1	67.3	88.7	93.1	33.1	76.2	92.0	74.4	87.1	85.4	77.5	83.2	109.9	96.0	106.0	97.6	96.0	107.8	97.6	96.0	107.8	97.6	96.0	107.8
0970, 0990	Wall Finishes & Painting/Coating	102.1	55.3	74.4	102.1	30.7	59.8	115.8	77.6	93.2	84.4	72.1	77.2	97.6	95.2	96.2	99.6	93.1	95.8	99.6	93.1	95.8	99.6	93.1	95.8
09	FINISHES	92.7	68.5	79.6	90.6	52.6	70.0	91.8	68.3	79.1	108.2	65.8	85.2	105.4	101.6	103.4	94.9	101.5	98.5	94.9	101.5	98.5	94.9	101.5	98.5
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	79.2	95.4	100.0	78.2	95.1	100.0	82.7	96.1	100.0	89.3	97.6	100.0	103.7	100.8	100.0	99.9	100.0	100.0	99.9	100.0	100.0	99.9	100.0
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.4	67.9	87.6	96.8	59.3	82.1	96.8	81.4	90.8	96.7	80.6	90.4	100.0	105.2	102.0	99.9	100.6	100.2	99.9	100.6	100.2	99.9	100.6	100.2
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	96.2	60.8	78.8	95.2	68.4	82.0	94.9	91.8	93.4	89.4	95.6	92.5	107.0	104.1	105.6	105.4	97.7	101.6	104.0	101.8	103.1	104.0	101.8	103.1
MF2018	WEIGHTED AVERAGE	100.1	73.6	88.9	98.6	67.9	85.6	98.9	79.5	90.7	99.1	81.9	91.8	105.1	104.0	104.6	104.0	101.8	103.1	104.0	101.8	103.1	104.0	101.8	103.1

City Cost Indexes

DIVISION	WASHINGTON																	
	RICHLAND			SEATTLE			SPOKANE			TACOMA			VANCOUVER			WENATCHEE		
	993	980 - 981, 987	990 - 992	980 - 981, 987	990 - 992	980 - 981, 987	990 - 992	980 - 981, 987	990 - 992	980 - 981, 987	990 - 992	980 - 981, 987	990 - 992	980 - 981, 987	990 - 992	980 - 981, 987		
	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		102.4	102.4		90.2	90.2		99.3	99.3		95.8	95.8		99.3	99.3	
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	100.3	86.3	90.6	97.8	108.9	105.5	99.7	86.3	90.4	95.2	105.1	102.1	105.2	93.1	96.8	104.0	102.8	103.2
0310 Concrete Forming & Accessories	107.1	80.0	84.0	107.4	109.5	109.2	112.0	79.5	84.3	102.3	104.1	103.9	102.7	95.7	96.7	104.0	76.5	80.5
0320 Concrete Reinforcing	103.9	95.4	99.8	109.2	117.3	113.1	104.6	95.3	100.1	107.8	114.3	110.9	108.8	114.8	111.7	108.8	95.9	102.5
0330 Cast-in-Place Concrete	82.5	84.4	83.2	105.9	113.9	108.9	85.7	84.2	85.2	105.5	108.8	106.7	117.8	99.9	111.2	107.7	90.8	101.4
03 CONCRETE	87.2	84.2	85.9	102.8	111.8	106.7	89.2	83.9	86.8	97.0	106.9	101.4	107.2	100.2	104.1	105.3	84.9	96.3
04 MASONRY	98.8	83.7	89.5	123.5	107.2	113.5	99.4	83.7	89.7	117.6	100.2	106.9	118.8	105.5	110.6	120.9	94.1	104.4
05 METALS	93.2	87.1	91.4	116.1	101.9	111.9	95.4	86.6	92.8	118.7	96.5	112.2	116.0	99.3	111.1	116.0	87.3	107.6
06 WOOD, PLASTICS & COMPOSITES	104.6	77.9	89.9	103.4	108.7	106.3	113.5	77.9	93.9	97.1	104.7	101.2	89.5	94.9	92.5	98.7	73.3	84.8
07 THERMAL & MOISTURE PROTECTION	161.1	84.4	127.7	111.6	110.8	111.3	157.4	84.7	125.8	112.1	102.1	107.8	111.8	101.6	107.4	111.6	88.3	101.5
08 OPENINGS	114.4	74.7	105.2	106.1	110.7	107.2	115.0	74.7	105.6	106.7	104.7	106.2	102.8	101.5	102.5	106.2	73.0	98.5
0920 Plaster & Gypsum Board	154.4	77.2	102.5	111.2	109.1	109.8	144.2	77.2	99.1	110.6	104.9	106.8	109.0	95.2	99.7	113.9	72.7	86.2
0950, 0980 Ceilings & Acoustic Treatment	109.2	77.2	87.6	106.6	109.1	108.3	105.6	77.2	86.4	104.5	104.9	104.8	102.4	95.2	97.5	72.7	80.9	
0960 Flooring	85.7	77.5	83.4	109.5	103.4	107.8	84.8	77.5	82.7	102.2	96.0	100.5	107.4	107.1	107.3	105.3	77.5	97.5
0970, 0990 Wall Finishes & Painting/Coating	84.4	75.1	78.9	107.1	95.8	100.4	84.6	76.4	79.8	97.6	93.1	95.0	100.3	79.9	88.2	97.6	70.9	81.8
09 FINISHES	109.5	78.1	92.5	108.9	106.4	107.6	107.3	78.2	91.6	103.6	101.4	102.4	101.3	95.6	98.3	104.7	74.9	88.5
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	92.2	98.3	100.0	105.2	101.2	100.0	92.2	98.3	100.0	99.6	99.9	100.0	101.5	100.3	100.0	91.2	98.0
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	100.3	108.6	103.6	99.9	123.0	109.0	100.3	83.7	93.8	100.0	100.6	100.2	100.0	110.7	104.2	96.5	92.0	94.7
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	87.2	92.8	90.0	106.2	118.9	112.5	85.4	77.1	81.3	106.8	97.7	102.3	113.1	107.3	110.2	107.7	94.5	101.2
MF2018 WEIGHTED AVERAGE	99.8	90.0	95.6	106.3	112.5	108.9	100.1	82.4	92.6	105.4	101.3	103.7	106.6	102.8	105.0	105.6	88.7	98.5
DIVISION	WEST VIRGINIA																	
	YAKIMA			BECKLEY			BLUEFIELD			BUCKHANNON			CHARLESTON			CLARKSBURG		
	989	258 - 259	247 - 248	247 - 248	247 - 248	247 - 248	262	262	262	262	262	262	250 - 253	250 - 253	250 - 253	263 - 264	263 - 264	263 - 264
	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		104.1	104.1		104.1	104.1		104.1	104.1		106.8	106.8		104.1	104.1	
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	97.6	103.8	101.9	100.8	87.4	91.6	99.9	87.4	91.3	106.0	87.4	93.1	100.4	93.0	95.3	106.8	87.4	93.4
0310 Concrete Forming & Accessories	102.9	99.2	99.8	85.0	87.1	86.8	86.6	87.1	87.0	86.1	83.7	84.0	96.0	88.6	89.7	83.6	83.8	83.7
0320 Concrete Reinforcing	108.3	95.4	102.1	98.0	87.7	93.1	96.0	82.5	89.5	96.7	82.4	89.8	106.1	87.8	97.2	96.7	95.3	96.0
0330 Cast-in-Place Concrete	112.7	83.0	101.7	99.2	92.5	96.7	102.5	92.5	98.8	102.1	92.0	98.4	95.9	96.6	96.2	111.9	87.6	102.9
03 CONCRETE	101.8	92.4	97.7	91.8	90.2	91.1	95.1	89.3	92.6	98.2	87.5	93.5	90.7	92.2	91.4	102.2	88.2	96.1
04 MASONRY	110.3	81.0	92.3	91.0	89.0	89.8	89.5	89.0	89.2	100.6	85.8	91.5	88.4	90.7	89.8	104.1	85.8	92.9
05 METALS	116.7	87.3	108.0	98.2	103.3	99.7	103.6	101.5	103.0	103.8	101.6	103.2	96.8	102.5	98.5	103.8	106.0	104.5
06 WOOD, PLASTICS & COMPOSITES	97.4	104.7	101.4	80.2	87.4	84.2	82.1	87.4	85.0	81.4	83.0	82.3	89.3	88.2	88.7	78.0	83.0	80.8
07 THERMAL & MOISTURE PROTECTION	112.3	86.1	100.9	105.0	86.5	96.9	103.6	86.5	96.1	104.0	86.6	96.4	101.2	88.1	95.5	103.8	86.3	96.2
08 OPENINGS	106.2	100.5	104.9	94.5	83.0	91.8	96.9	81.8	93.4	96.9	79.4	92.8	94.9	83.4	92.2	96.9	82.1	93.4
0920 Plaster & Gypsum Board	110.4	104.9	106.7	93.5	87.0	89.1	90.2	87.0	88.0	90.8	82.5	85.2	98.7	87.6	91.2	88.6	82.5	84.5
0950, 0980 Ceilings & Acoustic Treatment	99.6	104.9	103.2	78.1	87.0	84.1	87.5	87.0	87.2	90.0	82.5	84.9	89.6	87.6	88.2	90.0	82.5	84.9
0960 Flooring	103.2	77.5	96.0	91.0	98.9	93.2	90.1	98.9	92.6	89.8	95.2	91.3	97.1	98.9	97.6	88.8	95.2	90.6
0970, 0990 Wall Finishes & Painting/Coating	97.6	76.4	85.1	89.3	92.1	91.0	102.1	89.8	94.8	102.1	88.0	93.7	88.6	91.9	90.5	102.1	88.0	93.7
09 FINISHES	103.1	93.3	97.8	86.3	90.2	88.4	88.7	89.9	89.4	89.7	86.1	87.8	92.8	91.0	91.9	89.0	86.1	87.4
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	96.1	99.1	100.0	90.3	97.8	100.0	90.3	97.8	100.0	90.6	97.9	100.0	92.5	98.3	100.0	90.6	97.9
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	100.0	107.4	102.9	97.1	80.3	90.5	96.8	84.0	91.8	96.8	89.7	94.0	100.1	81.4	92.8	96.8	89.8	94.1
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	109.9	92.9	101.5	92.9	84.1	88.6	95.2	84.1	89.8	95.2	84.1	89.3	93.0	98.0	87.1	92.6	96.6	89.3
MF2018 WEIGHTED AVERAGE	105.6	95.4	101.3	95.2	87.7	92.0	97.0	88.1	93.2	98.3	88.8	94.3	96.5	89.4	93.5	89.9	85.9	94.9
DIVISION	WEST VIRGINIA																	
	GASSAWAY			HUNTINGTON			LEWISBURG			MARTINSBURG			MORGANTOWN			PARKERSBURG		
	266	255 - 257	249	249	249	249	254	254	254	265	265	265	265	265	265	261	261	261
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL
015433 CONTRACTOR EQUIPMENT	104.1	104.1		104.1	104.1		104.1	104.1		104.1	104.1		104.1	104.1		104.1	104.1	
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	103.5	87.4	92.4	105.4	88.5	93.7	115.5	87.4	96.1	104.7	88.0	93.2	100.9	88.2	92.1	109.3	88.4	94.9
0310 Concrete Forming & Accessories	85.5	86.9	86.7	96.0	89.3	90.3	83.9	86.6	86.2	85.0	79.5	80.3	83.9	83.8	83.9	88.0	86.0	86.3
0320 Concrete Reinforcing	96.7	91.6	94.2	99.5	93.1	96.4	96.7	82.4	89.8	98.0	95.1	96.6	96.7	95.3	96.0	82.3	89.4	97.0
0330 Cast-in-Place Concrete	106.9	94.0	102.1	108.2	94.0	102.9	102.5	92.3	98.7	104.0	88.3	98.1	102.1	92.0	98.4	104.4	89.0	98.7
03 CONCRETE	98.6	91.3	95.4	96.8	92.6	95.0	105.1	89.0	98.0	95.3	86.5	91.4	94.9	89.8	92.7	100.3	87.5	94.7
04 MASONRY	105.0	87.9	94.5	91.7	93.4	92.7	94.3	89.0	91.1	93.1	83.9	87.5	122.6	85.8	100.0	80.1	85.2	83.2
05 METALS	103.8	104.8	104.1	100.6	105.7	102.1	103.7	101.0	102.9	98.6	104.4	100.3	103.9	106.0	104.5	104.5	101.4	103.6
06 WOOD, PLASTICS & COMPOSITES	80.4	87.4	84.3	90.8	88.7	89.6	78.3	87.4	83.3	80.2	78.6	79.3	78.3	83.0	80.9	81.5	85.6	83.8
07 THERMAL & MOISTURE PROTECTION	103.6	87.9	96.8	105.2	88.4	97.9	104.6	86.4	96.7	105.3	80.8	94.6	103.7	86.6	96.2	103.9	86.7	96.4
08 OPENINGS	95.2	83.9	92.6	93.7	84.8	91.7	96.9	81.8	93.4	96.2	73.8	91.0	98.0	82.1	94.3	95.8	80.4	92.2
0920 Plaster & Gypsum Board	89.9	87.0	87.9	99.5	88.3	91.9	88.6	87.0	87.5	93.5	77.9	83.0	88.6	82.5	84.5	91.1	85.1	87.1
0950, 0980 Ceilings & Acoustic Treatment	90.0	87.0	88.0	78.1	88.													

City Cost Indexes

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	MAT.	INST.	TOTAL	
015433	CONTRACTOR EQUIPMENT	104.1	104.1	104.1	104.1	104.1	104.1	104.1	104.1	99.0	99.0	99.0	99.9	99.9	99.9	99.9	99.9	99.9	97.7	97.7	97.7	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	100.2	88.3	92.0	103.0	88.3	92.9	109.9	88.2	94.9	97.1	101.7	100.3	96.0	99.0	98.1	99.5	95.3	96.6			
0310	Concrete Forming & Accessories	87.0	86.4	86.5	83.3	86.8	86.3	89.7	83.8	84.7	99.8	96.2	96.7	98.5	94.7	95.3	108.2	97.5	99.1			
0320	Concrete Reinforcing	96.0	91.4	93.8	96.7	95.4	96.1	95.5	95.3	95.4	95.0	137.1	115.4	94.2	114.2	103.9	92.3	109.4	100.5			
0330	Cast-in-Place Concrete	102.1	91.8	98.3	106.9	83.5	98.2	104.4	92.0	99.8	105.8	100.2	103.7	99.9	94.8	98.0	103.3	99.9	102.1			
03	CONCRETE	95.0	90.2	92.9	98.4	88.2	93.9	100.3	89.8	95.7	96.7	104.7	100.2	93.1	98.4	95.4	96.2	100.6	98.2			
04	MASONRY	96.1	85.8	89.8	94.7	87.9	90.5	103.4	85.7	92.5	99.3	100.3	99.9	91.4	96.1	94.3	122.7	97.8	107.4			
05	METALS	103.9	104.1	104.0	104.0	105.9	104.5	104.7	106.1	105.1	98.6	112.0	102.5	93.8	105.8	97.3	96.4	104.2	98.7			
06	WOOD, PLASTICS & COMPOSITES	82.3	87.4	85.1	77.5	87.4	82.9	83.1	83.0	83.1	96.9	94.1	95.4	100.6	94.2	97.1	107.8	97.2	101.9			
07	THERMAL & MOISTURE PROTECTION	103.7	82.5	94.5	103.8	83.8	95.1	104.1	86.7	96.6	105.4	93.4	100.2	104.0	94.6	99.9	106.1	97.4	102.3			
08	OPENINGS	98.1	83.6	94.7	98.0	84.5	94.8	96.6	82.1	93.2	98.1	108.3	100.5	103.1	99.3	102.2	99.1	101.2	99.6			
0920	Plaster & Gypsum Board	90.8	87.0	88.2	88.3	87.0	87.4	91.1	82.5	85.3	91.6	94.5	93.5	105.5	94.5	98.1	103.3	97.5	99.4			
0950, 0980	Ceilings & Acoustic Treatment	90.0	87.0	88.0	90.0	87.0	88.0	90.0	82.5	84.9	84.4	94.5	91.2	90.9	94.5	93.3	83.6	97.5	93.0			
0960	Flooring	90.6	95.2	91.9	88.7	98.9	91.6	93.5	95.2	94.0	94.8	118.5	101.4	80.5	106.5	87.8	96.0	114.8	101.3			
0970, 0990	Wall Finishes & Painting/Coating	102.1	88.0	93.7	102.1	88.0	93.7	102.1	88.0	93.7	95.0	103.6	100.1	100.3	83.3	76.4	92.0	80.0	84.9			
09	FINISHES	89.4	88.7	89.0	88.7	89.5	89.1	90.9	86.1	88.3	92.3	100.7	96.9	87.3	94.9	91.4	91.4	99.1	95.6			
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	55.0	90.0	100.0	91.0	98.0	100.0	84.4	96.5	100.0	98.6	99.7	100.0	94.1	98.7	100.0	95.7	99.0			
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	96.8	83.7	91.7	96.8	83.6	91.6	100.4	89.8	96.2	99.8	95.5	98.1	100.0	88.2	95.4	100.2	83.4	93.6			
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	99.7	76.9	88.4	99.0	76.9	88.1	94.1	89.3	91.7	100.6	84.3	92.5	104.3	84.4	94.5	99.0	81.2	90.2			
MF2018	WEIGHTED AVERAGE	98.0	85.9	92.9	98.3	87.2	93.6	99.6	89.6	95.4	98.6	98.9	98.7	97.5	94.1	96.1	99.4	93.4	96.9			
DIVISION	WISCONSIN										NEW RICHMOND											
	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	MAT.	INST.	TOTAL	
015433	CONTRACTOR EQUIPMENT	97.1	97.1	99.9	99.9	99.9	99.0	99.0	99.0	101.4	101.4	90.2	90.2	100.2	100.2	100.2	100.2	100.2	100.2	100.2	100.2	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	103.0	98.4	99.9	89.8	99.0	96.1	96.0	101.1	99.5	94.7	105.3	102.0	93.6	96.0	95.2	93.3	99.6	97.7			
0310	Concrete Forming & Accessories	108.7	106.1	106.5	85.2	94.5	93.2	99.1	95.2	95.7	103.8	95.8	97.0	102.9	113.9	112.3	93.6	92.5	92.6			
0320	Concrete Reinforcing	94.8	110.5	102.4	93.9	106.2	99.8	96.3	106.2	101.1	97.8	106.4	101.9	99.9	115.1	107.2	91.3	114.1	102.3			
0330	Cast-in-Place Concrete	115.2	102.7	110.5	89.8	96.5	92.3	105.2	99.7	103.2	101.4	100.3	101.0	93.9	112.1	100.7	104.0	102.7	103.5			
03	CONCRETE	101.5	105.5	103.3	84.6	97.5	90.3	96.4	98.8	97.4	96.3	99.2	97.6	94.5	112.5	102.4	90.8	100.1	94.9			
04	MASONRY	97.1	108.0	103.8	90.5	96.1	93.9	99.4	100.1	99.9	97.4	99.1	98.5	102.3	117.2	111.4	117.9	98.4	105.9			
05	METALS	99.6	103.3	100.7	93.7	102.8	96.4	96.0	100.3	97.3	102.8	100.4	102.1	97.5	97.5	97.5	94.1	105.4	97.4			
06	WOOD, PLASTICS & COMPOSITES	103.9	105.7	104.9	85.2	94.2	90.2	96.1	94.1	95.0	99.4	94.3	96.6	101.2	112.3	107.3	89.5	90.2	89.9			
07	THERMAL & MOISTURE PROTECTION	105.5	104.0	104.9	103.4	93.5	99.1	105.2	93.7	100.2	106.3	100.5	103.7	104.8	117.2	108.2	104.9	100.2	102.9			
08	OPENINGS	92.5	105.4	95.5	103.1	92.0	100.5	94.0	91.9	93.5	101.6	98.9	100.9	103.0	111.5	105.0	88.6	90.3	89.0			
0920	Plaster & Gypsum Board	80.2	106.4	97.8	100.9	94.5	96.6	90.9	94.5	93.3	101.7	94.5	96.8	96.4	112.6	107.3	91.7	90.5	90.9			
0950, 0980	Ceilings & Acoustic Treatment	84.4	106.4	99.2	90.0	94.5	93.0	81.1	94.5	90.1	86.5	94.5	91.9	93.1	112.6	106.3	57.1	90.5	79.6			
0960	Flooring	112.8	114.8	113.4	74.7	111.6	85.1	94.4	111.0	99.0	94.3	111.0	99.0	101.7	118.6	106.4	89.7	114.5	96.7			
0970, 0990	Wall Finishes & Painting/Coating	106.4	118.7	113.7	83.3	81.7	82.4	95.0	97.7	96.6	94.9	103.6	100.0	104.5	124.3	116.3	95.0	81.7	87.1			
09	FINISHES	97.1	109.4	103.7	84.4	96.5	90.9	91.4	98.4	95.2	93.7	99.3	96.7	99.5	116.1	108.5	82.5	95.2	89.4			
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	97.3	99.4	92.8	98.4	100.0	84.2	96.5	100.0	96.8	99.3	100.0	94.1	102.2	100.0	102.6	102.2	100.0	95.1	98.9	
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC	100.0	95.9	98.4	100.0	88.1	95.3	96.3	89.2	93.5	99.8	95.3	98.0	99.8	107.0	102.6	96.0	89.0	93.2			
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.	100.9	97.1	99.0	104.6	84.4	94.7	100.1	102.6	104.3	106.0	98.1	99.8	95.6	119.7	104.3	102.4	84.9	93.7			
MF2018	WEIGHTED AVERAGE	99.4	102.0	100.5	95.9	93.5	94.9	96.7	94.3	95.7	99.7	98.1	99.0	99.2	107.9	102.9	95.4	94.6	95.0			
DIVISION	WISCONSIN										WAUSAU											
	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	MAT.	INST.	TOTAL	
015433	CONTRACTOR EQUIPMENT	97.7	97.7	99.0	99.0	99.0	99.0	97.7	97.7	97.7	100.2	100.2	100.2	97.7	97.7	97.7	100.2	100.2	100.2	97.7	97.7	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION	91.0	95.3	94.0	86.9	100.9	96.6	96.9	102.1	100.5	103.2	95.3	97.7	90.1	99.3	96.5	86.9	95.8	93.0			
0310	Concrete Forming & Accessories	90.7	94.7	94.1	91.3	95.7	95.1	100.1	106.1	105.2	88.3	94.6	93.7	91.6	88.6	89.0	90.1	97.4	96.3			
0320	Concrete Reinforcing	92.4	109.3	100.6	96.4	106.4	101.2	95.0	110.5	102.5	92.6	106.4	99.3	91.3	110.2	100.4	92.6	106.2	99.2			
0330	Cast-in-Place Concrete	95.8	98.0	96.6	90.3	98.3	93.3	103.8	102.5	103.3	108.6	97.9	104.6	98.0	98.3	98.1	89.3	92.4	90.5			
03	CONCRETE	86.2	98.6	91.7	84.2	98.7	90.6	95.8	105.4	1												

City Cost Indexes

DIVISION	WYOMING																	
	CASPER			CHEYENNE			NEWCASTLE			RAWLINS			RIVERTON			ROCK SPRINGS		
	826	820	827	820	823	825	829	831	825	827	829	831	825	827	829	831		
015433 CONTRACTOR EQUIPMENT	97.3	97.3	94.6	94.6	94.6	94.6	94.6	94.6	94.6	94.6	94.6	94.6	94.6	94.6	94.6	94.6		
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	97.8	94.7	95.7	91.6	90.1	90.6	83.6	89.3	87.6	97.5	89.3	91.9	91.1	89.3	89.8	87.4	89.5	88.9
0310 Concrete Forming & Accessories	101.3	53.6	60.6	102.5	64.6	70.2	93.7	70.5	74.0	97.6	70.8	74.7	92.7	60.3	65.0	99.7	64.7	69.9
0320 Concrete Reinforcing	111.1	83.4	97.7	106.4	83.4	95.3	114.5	83.2	99.3	114.2	83.2	99.7	115.2	83.2	99.7	115.2	81.6	99.0
0330 Cast-in-Place Concrete	103.8	77.8	94.1	97.9	77.4	90.3	99.0	72.8	89.2	99.0	72.9	89.3	99.0	72.8	89.2	99.0	75.0	90.0
03 CONCRETE	103.3	67.9	87.7	100.9	72.8	88.6	101.1	73.8	89.1	116.0	74.0	97.5	110.1	69.2	92.1	101.6	71.7	88.4
04 MASONRY	102.0	64.6	79.0	105.3	65.2	80.7	102.2	59.3	75.8	102.2	59.3	75.8	102.2	59.3	75.8	164.5	61.8	101.4
05 METALS	102.8	80.1	96.1	105.3	80.8	98.1	101.4	79.9	95.1	101.5	80.1	95.2	101.6	79.9	95.2	102.3	79.5	95.6
06 WOOD, PLASTICS & COMPOSITES	95.2	47.8	69.1	91.8	62.6	75.7	82.4	72.7	77.1	86.2	72.7	78.8	81.4	58.7	68.9	91.3	62.6	75.5
07 THERMAL & MOISTURE PROTECTION	112.7	65.9	92.3	107.2	68.0	90.2	108.8	63.9	89.3	110.3	74.9	94.9	109.7	67.7	91.4	108.9	69.5	91.8
08 OPENINGS	109.3	59.4	97.7	107.2	67.7	98.0	111.4	72.3	102.3	111.1	72.3	102.0	111.3	64.6	100.4	111.8	66.5	101.2
0920 Plaster & Gypsum Board	101.7	46.2	64.4	90.6	61.7	71.2	87.6	72.0	77.1	87.9	72.0	77.2	87.6	57.7	67.5	100.2	61.7	74.3
0950, 0980 Ceilings & Acoustic Treatment	105.3	46.2	65.5	98.5	61.7	73.7	100.3	72.0	81.2	100.3	72.0	81.2	100.3	57.7	71.6	100.3	61.7	74.3
0960 Flooring	102.2	73.8	94.2	100.3	73.8	92.8	94.2	44.5	80.2	97.0	44.5	82.3	93.6	60.3	84.2	99.3	59.9	88.3
0970, 0990 Wall Finishes & Painting/Coating	95.7	58.7	73.8	97.9	58.7	74.7	94.6	60.5	74.4	94.6	60.5	74.4	94.6	60.5	74.4	94.6	60.5	74.4
09 FINISHES	99.6	56.3	76.2	96.3	65.1	79.4	91.4	64.6	76.9	93.6	64.6	77.9	92.0	59.5	74.4	94.6	62.7	77.3
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	92.5	98.3	100.0	87.4	97.2	100.0	91.8	98.2	100.0	91.8	98.2	100.0	77.3	94.9	100.0	86.9	97.1
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	100.0	70.5	88.4	100.1	73.3	89.6	98.2	71.8	87.8	98.2	71.9	87.8	98.2	71.8	87.8	100.0	73.9	88.8
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	94.1	60.3	77.5	95.2	69.0	82.3	94.0	62.3	78.4	94.0	62.3	78.4	94.0	59.1	76.8	92.5	66.0	79.4
MF2018 WEIGHTED AVERAGE	101.5	68.9	87.7	101.1	72.7	89.1	99.6	71.1	87.5	102.0	71.5	89.1	101.0	68.6	87.3	103.4	71.4	89.9
DIVISION	WYOMING												CANADA					
	SHERIDAN			WHEATLAND			WORLND			YELLOWSTONE NAT'L PA			BARRIE, ONTARIO			BATHURST, NEW BRUNSWICK		
	828	822	824	822	824	821	824	821	821	824	821	821	824	821	821	824	821	
015433 CONTRACTOR EQUIPMENT	94.6	94.6	94.6	94.6	94.6	94.6	94.6	94.6	94.6	94.6	94.6	94.6	100.1	100.1	99.7	99.7	99.7	
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	91.5	90.1	90.5	88.1	89.3	88.9	85.5	89.3	88.1	85.6	89.3	88.1	117.0	94.7	101.6	105.1	90.6	95.1
0310 Concrete Forming & Accessories	100.5	61.6	67.4	95.4	48.4	55.3	95.5	61.1	66.1	95.5	61.1	66.2	125.6	82.3	88.7	106.1	57.8	64.9
0320 Concrete Reinforcing	115.2	83.2	99.7	114.5	82.6	99.1	115.2	83.2	99.7	117.2	82.3	100.3	175.2	86.9	132.5	140.5	57.5	100.4
0330 Cast-in-Place Concrete	102.3	77.4	93.1	103.3	72.7	91.9	99.0	72.7	89.2	99.0	72.8	89.2	157.7	82.1	129.6	114.0	56.2	92.5
03 CONCRETE	109.9	71.4	93.0	106.3	63.7	87.6	101.3	69.5	87.3	101.6	69.4	87.4	138.9	83.5	114.5	110.3	58.3	87.4
04 MASONRY	102.5	62.0	77.6	102.6	51.2	71.0	102.2	59.3	75.8	102.2	59.3	75.8	155.6	89.3	118.7	159.8	57.4	96.9
05 METALS	105.1	80.5	97.8	101.4	79.1	94.8	101.6	79.8	95.2	102.2	79.1	95.4	111.1	91.5	105.3	114.1	73.6	102.2
06 WOOD, PLASTICS & COMPOSITES	93.3	58.7	74.3	84.2	43.0	61.5	84.3	60.0	70.9	84.3	60.0	70.9	116.5	80.8	96.9	97.5	57.9	75.7
07 THERMAL & MOISTURE PROTECTION	110.1	66.7	91.2	109.1	58.1	86.9	108.9	64.8	89.7	108.3	64.8	89.4	115.3	86.1	102.6	111.8	58.4	88.6
08 OPENINGS	112.0	64.6	101.0	110.0	55.9	97.4	111.6	65.3	100.8	104.5	64.8	95.2	90.5	80.9	88.3	84.0	51.2	76.3
0920 Plaster & Gypsum Board	111.2	57.7	75.2	87.6	41.5	56.6	87.6	58.9	68.3	87.8	58.9	68.4	153.5	80.3	104.3	124.2	56.7	78.8
0950, 0980 Ceilings & Acoustic Treatment	103.9	57.7	72.7	100.3	41.5	60.6	100.3	58.9	72.4	101.1	58.9	72.7	94.3	80.3	84.9	116.8	56.7	76.3
0960 Flooring	97.9	60.3	87.4	95.6	43.8	81.0	95.6	44.5	81.3	95.6	44.5	81.3	119.3	87.3	110.3	99.6	41.5	83.3
0970, 0990 Wall Finishes & Painting/Coating	96.8	58.7	74.2	94.6	58.4	73.2	94.6	60.5	74.4	94.6	60.5	74.4	105.6	83.8	92.7	111.3	47.9	73.8
09 FINISHES	99.2	60.4	78.2	92.1	46.7	67.5	91.8	57.1	73.0	92.0	57.2	73.2	111.3	83.5	96.2	107.7	53.8	78.5
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	100.0	93.4	98.5	100.0	81.4	95.9	100.0	76.1	94.7	100.0	76.2	94.7	139.2	65.0	122.7	131.1	57.9	114.8
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	98.2	73.3	88.4	98.2	71.8	87.8	98.2	71.8	87.8	98.2	71.8	87.8	103.7	93.5	99.7	103.8	64.8	88.5
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	96.1	59.1	77.9	94.0	76.6	85.4	94.0	76.6	85.4	93.1	86.1	89.7	117.0	82.9	100.2	113.5	55.9	85.1
MF2018 WEIGHTED AVERAGE	102.5	70.2	88.8	100.3	67.1	86.2	99.7	70.7	87.5	99.0	71.9	87.6	116.5	87.1	104.1	110.7	62.3	90.2
DIVISION	CANADA												CHARLESBOURG, QUEBEC					
	BRANDON, MANITOBA			BRANTFORD, ONTARIO			BRIDGEWATER, NOVA SCOTIA			CALGARY, ALBERTA			CAP-DE-LA-MADELEINE, QUEBEC					
	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL	MAT.	INST.	TOTAL			
015433 CONTRACTOR EQUIPMENT	101.5	101.5	99.7	99.7	99.4	99.4	99.4	99.4	99.4	127.1	127.1	127.1	100.2	100.2	100.2			
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	126.4	92.9	103.3	116.9	94.8	101.6	101.1	92.3	95.0	125.5	118.4	120.6	96.9	93.7	94.7	96.9	93.7	94.7
0310 Concrete Forming & Accessories	145.4	66.1	77.8	127.2	89.1	94.7	99.7	67.9	72.6	125.0	94.9	99.3	132.9	79.2	87.1	132.9	79.2	87.1
0320 Concrete Reinforcing	170.2	54.5	114.3	163.7	85.6	125.9	139.3	47.6	95.0	136.4	82.0	110.1	139.3	72.4	107.0	139.3	72.4	107.0
0330 Cast-in-Place Concrete	109.4	70.2	94.8	130.7	101.8	119.9	134.3	66.9	109.2	136.4	104.3	124.4	105.5	87.5	98.8	105.5	87.5	98.8
03 CONCRETE	118.1	66.6	95.5	121.8	93.2	109.3	120.1	65.1	95.9	126.3	96.8	113.3	107.5	81.5	96.1	107.5	81.5	96.1
04 MASONRY	212.8	60.7	119.3	166.1	93.4	121.4	161.8	65.6	102.6	212.4	89.8	137.1	162.4	76.3	109.5	162.4	76.3	109.5
05 METALS	127.2	78.2	112.8	112.3	92.0	106.3	111.6	76.0	101.1	131.0	102.4	122.6	110.7	85.0	103.1	110.7	85.0	103.1
06 WOOD, PLASTICS & COMPOSITES	150.5	66.8	104.4	120.3	87.7	102.4	89.6	67.4	77.4	102.6	94.4	98.1	131.6	79.0	102.7	131.6	79.0	102.7
07 THERMAL & MOISTURE PROTECTION	128.4	68.7	102.4	121.6	91.4	108.5	116.1	67.6	95.0	132.0	98.0	117.2	114.8	84.1	101.5	114.8	84.1	101.5
08 OPENINGS	100.3	59.9	90.8	87.7	86.6	87.5	82.4	61.3	77.5	83.7	82.6	89.1	72.3	85.2	89.1	72.3	85.2	89.1
0920 Plaster & Gypsum Board	115.4	65.6	81.9	115.8	87.4	96.7	124.3	66.5	85.4	126.4	93.3	104.1	147.6	78.4	101.0	147.6	78.4	101.0
0950, 0980 Ceilings & Acoustic Treatment	123.8	65.6	84.6	103.5	87.4	92.7	103.5	66.5	78.6	149.2	93.3	111.5	130.5	78.4	86.6	103.5	78.4	86.6
0960 Flooring	131.2	61.9	111.7	113.6	87.3	106.2	95.7	58.9	85.4	118.1	84.8	108.7	113.6	86.0	105.8	113.6	86.0	105.8
0970, 0990 Wall Finishes & Painting/Coating	117.9	54.1	80.1	110.3	92.0	99.5	110.3	59.3	80.1	113.7	106.4	109.4	110.3	83.6	94.5	110.3	83.6	94.5
09 FINISHES	122.9	64.3	91.2	108.7	89.3													

City Cost Indexes

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			
015433 CONTRACTOR EQUIPMENT	116.8	116.8	100.3	100.3	100.0	100.0	99.7	99.7	99.7	99.7	99.7	99.7	98.9	98.9	98.9			
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	134.6	101.5	111.7	102.0	93.6	96.2	130.4	90.5	102.8	115.1	94.3	100.7	101.0	90.6	93.8	117.9	92.0	100.0
0310 Concrete Forming & Accessories	123.7	53.1	63.5	134.9	89.8	96.4	121.9	75.6	82.4	125.0	82.4	88.7	105.9	58.0	65.1	111.8	67.8	74.3
0320 Concrete Reinforcing	156.7	46.6	103.5	106.0	94.5	100.4	156.0	48.8	104.2	163.7	85.3	125.8	142.5	57.6	101.4	163.2	47.6	107.3
0330 Cast-in-Place Concrete	152.1	57.6	116.9	107.4	94.7	102.7	127.3	63.6	103.6	117.5	92.8	108.3	110.5	56.3	90.3	122.9	66.8	102.0
03 CONCRETE	136.8	55.4	101.0	101.6	92.4	97.6	149.1	67.5	113.3	115.7	87.0	103.1	113.1	58.4	89.0	131.9	65.0	102.5
04 MASONRY	187.9	54.9	106.2	161.9	89.8	117.6	208.6	74.3	126.1	165.0	85.6	116.2	163.3	57.4	98.3	222.6	65.6	126.1
05 METALS	136.4	79.6	119.8	113.9	91.9	107.4	127.7	75.2	112.2	112.1	90.7	105.8	105.6	73.7	96.2	128.1	75.7	112.7
06 WOOD, PLASTICS & COMPOSITES	104.3	52.5	75.8	131.8	90.3	108.9	128.1	81.4	102.4	118.5	81.6	98.2	95.8	57.9	74.9	115.9	67.4	89.2
07 THERMAL & MOISTURE PROTECTION	137.8	57.4	102.8	112.3	96.4	105.4	133.0	65.9	103.8	121.4	86.2	106.1	121.0	58.4	93.8	130.1	67.6	102.9
08 OPENINGS	85.7	45.8	76.4	87.8	76.3	85.2	106.3	66.6	97.0	89.1	80.6	87.1	85.5	51.2	77.5	91.3	61.3	84.3
0920 Plaster & Gypsum Board	126.3	50.5	75.3	143.9	89.9	107.6	151.2	80.9	103.9	174.9	81.1	111.8	129.5	56.7	80.5	146.6	66.5	92.7
0950, 0980 Ceilings & Acoustic Treatment	128.9	50.5	76.1	116.0	89.9	98.4	124.6	80.9	95.1	107.6	81.1	89.8	106.6	56.7	72.9	131.1	66.5	87.5
0960 Flooring	115.1	55.3	98.3	115.7	86.0	107.3	112.8	49.5	95.0	113.6	86.0	105.8	101.9	63.4	91.1	107.6	58.9	93.9
0970, 0990 Wall Finishes & Painting/Coating	117.3	39.9	71.5	111.3	104.1	107.1	117.8	56.5	81.5	110.3	85.7	95.7	113.8	47.9	74.8	117.8	59.3	83.2
09 FINISHES	119.8	52.3	83.3	114.6	91.6	102.1	122.6	70.2	94.2	117.3	83.6	99.0	108.4	58.2	81.2	120.3	65.5	90.7
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	131.1	58.4	114.9	131.1	81.5	120.1	131.1	60.6	115.4	131.1	64.6	116.3	131.1	57.8	114.8	131.1	60.8	115.5
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	104.1	59.0	86.4	103.8	81.0	94.9	104.0	65.9	89.0	104.2	94.3	100.3	103.9	64.8	88.5	104.0	79.5	94.4
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	110.0	47.5	79.2	109.9	84.1	97.2	110.9	51.5	81.6	111.6	83.4	97.7	113.9	52.8	83.8	115.0	58.7	87.2
MF2018 WEIGHTED AVERAGE	121.3	60.2	95.5	110.4	87.6	100.7	124.7	68.4	100.9	113.1	87.3	102.2	110.2	62.5	90.0	121.5	70.2	99.8
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			
015433 CONTRACTOR EQUIPMENT	129.1	129.1	101.9	101.9	101.9	113.9	100.2	100.2	100.2	100.2	100.2	100.2	115.6	115.6	115.6			
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	125.1	121.8	122.8	121.7	95.4	103.5	116.0	100.8	105.5	96.7	93.7	94.6	97.2	93.7	94.8	102.8	103.6	103.4
0310 Concrete Forming & Accessories	128.3	94.9	99.8	125.0	87.5	93.1	126.9	58.6	68.7	132.9	79.1	87.0	132.9	79.0	87.0	124.1	87.7	93.0
0320 Concrete Reinforcing	136.0	82.0	109.9	151.5	81.9	117.8	141.0	57.8	100.8	147.4	72.4	111.1	147.4	72.4	111.1	156.3	77.9	118.3
0330 Cast-in-Place Concrete	145.8	104.3	130.4	173.5	98.2	145.5	112.7	57.5	92.1	104.0	87.5	97.9	104.0	87.5	99.4	85.1	94.0	94.0
03 CONCRETE	130.8	96.8	115.9	139.8	90.6	118.2	116.9	59.7	91.8	107.9	81.4	96.2	109.5	81.4	97.1	111.9	86.1	100.6
04 MASONRY	212.7	89.8	137.2	206.1	86.3	132.5	189.1	58.8	109.0	162.3	76.3	109.5	162.6	76.3	109.6	185.4	86.4	124.6
05 METALS	134.6	102.4	125.1	139.8	90.9	125.5	136.6	83.3	121.0	110.7	84.8	103.1	110.9	84.8	103.2	136.3	99.2	125.4
06 WOOD, PLASTICS & COMPOSITES	101.6	94.4	97.6	114.5	86.7	99.2	106.5	58.2	79.9	131.6	79.0	102.7	131.6	79.0	102.7	103.7	87.8	95.0
07 THERMAL & MOISTURE PROTECTION	143.5	98.0	123.7	129.8	92.6	113.6	137.4	59.4	103.5	114.8	84.1	101.5	114.8	84.2	100.8	137.4	88.7	116.2
08 OPENINGS	80.9	83.7	81.5	89.1	79.5	86.9	88.0	50.3	79.2	89.1	67.9	84.2	89.1	67.9	84.2	88.9	79.2	86.7
0920 Plaster & Gypsum Board	129.8	93.3	105.2	116.6	86.1	96.1	130.3	56.7	80.8	114.4	78.4	90.2	114.4	78.4	90.2	117.8	87.1	97.1
0950, 0980 Ceilings & Acoustic Treatment	144.5	93.3	110.0	112.5	86.1	94.7	137.2	56.7	82.9	103.5	78.4	86.6	103.5	78.4	86.6	139.8	87.1	104.2
0960 Flooring	121.8	84.8	111.4	113.6	84.8	105.5	115.6	66.2	101.7	113.6	86.0	105.8	113.6	86.0	105.8	109.5	81.5	101.6
0970, 0990 Wall Finishes & Painting/Coating	115.6	107.4	110.8	110.4	88.3	97.3	118.8	61.1	84.6	110.3	83.6	94.5	110.3	83.6	94.5	118.4	90.9	102.1
09 FINISHES	123.6	94.9	108.0	118.8	87.4	98.6	125.1	60.4	90.1	107.8	81.2	93.4	107.8	81.2	93.4	117.7	87.5	101.3
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	131.1	93.5	122.8	131.1	90.1	122.0	131.1	58.5	115.0	131.1	75.6	118.8	131.1	75.6	118.8	131.1	68.9	117.3
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	104.9	90.4	99.2	104.2	93.2	99.9	104.2	73.7	92.2	104.2	84.2	96.3	103.8	84.2	96.1	104.9	82.3	96.0
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	115.0	93.9	104.6	105.4	77.5	91.7	112.2	69.7	91.2	110.2	65.2	88.0	110.9	65.2	88.4	113.3	90.6	102.1
MF2018 WEIGHTED AVERAGE	121.8	95.9	110.9	121.9	88.4	107.7	119.3	69.0	98.0	110.3	79.8	97.4	110.5	79.7	97.5	117.9	88.0	105.2
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			
015433 CONTRACTOR EQUIPMENT	115.5	115.5	100.2	100.2	100.2	100.2	100.2	100.2	100.2	103.3	103.3	103.3	101.9	101.9	101.6	101.6		
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	105.8	107.0	106.6	96.7	93.7	94.6	97.3	93.7	94.8	120.1	97.1	104.3	115.1	98.0	103.3	94.2	99.8	98.0
0310 Concrete Forming & Accessories	130.0	94.7	99.9	132.9	79.1	87.0	132.9	79.2	87.1	124.3	82.3	88.5	125.1	82.5	88.7	117.3	88.0	92.3
0320 Concrete Reinforcing	136.9	103.3	120.7	147.4	72.4	111.1	139.3	72.4	107.0	109.3	75.8	93.1	163.7	85.3	125.8	96.4	103.1	99.6
0330 Cast-in-Place Concrete	107.6	102.1	105.6	104.0	87.5	97.9	108.4	87.5	97.9	117.5	91.8	93.1	117.5	92.8	108.3	111.7	97.2	106.3
03 CONCRETE	110.2	99.3	105.4	107.9	81.4	96.2	108.8	81.5	96.8	117.2	85.0	103.0	117.5	87.0	104.1	97.1	94.1	95.8
04 MASONRY	173.2	100.5	128.5	162.3	76.3	109.5	162.7	76.3	109.6	169.4	84.0	116.9	171.9	85.7	118.9	142.2	98.6	115.4
05 METALS	134.7	106.4	126.4	110.9	84.8	103.2	110.9	85.0	103.3	112.8	87.1	105.3	113.5	90.7	106.8	124.1	98.0	116.5
06 WOOD, PLASTICS & COMPOSITES	111.4	94.0	101.8	131.6	79.0	102.7	131.6	79.0	102.7	102.2	80.7	90.3	118.5	81.7	98.3	110.3	85.9	96.9
07 THERMAL & MOISTURE PROTECTION	134.0	101.5	119.8	114.8	84.1	101.5	114.8	84.1	101.5	131.2	81.7	109.7	121.4	87.3	106.6	116.4	98.4	108.5
08 OPENINGS	85.3	93.2	87.1	89.1	67.9	84.2	89.1	72.3	85.2	86.1	78.5	84.3	89.1	80.3	87.1	80.0	87.1	81.7
0920 Plaster & Gypsum Board	131.0	93.1	105.5	114.4	78.4	90.2	147.6	78.4	101.0	101.1	79.8	86.8	177.6	81.2	112.8	107.2	85.6	92.6
0950, 0980 Ceilings & Acoustic Treatment	139.9	93.1	108.4	103.5	78.4	86.6	103.5	78.4	86.6	103.5	79.8	87.5	119.0	81.2	93.5	107.9	85.6	92.9
0960 Flooring	115.3	95.0	109.6	113.6	86.0	105.8	113.6	86.0	105.8	112.5	49.2	94.7	113.6	86.0	105.8	101.3	95.1	99.6
0970, 0990 Wall Finishes & Painting/Coating	113.0	104.1	107.8	110.3	83.6	94.5	110.3	83.6	94.5	110.3</								

City Cost Indexes

DIVISION	CANADA												MONCTON, NEW BRUNSWICK					
	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	100.2	100.2		101.9	101.9		101.9	101.9		116.7	116.7		101.9	101.9		99.7	99.7	
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	97.2	93.9	94.9	114.5	96.0	101.7	114.5	95.4	101.3	103.5	106.8	105.8	113.2	95.5	101.0	104.5	92.5	96.2
0310 Concrete Forming & Accessories	133.2	81.1	88.8	126.4	87.6	93.3	124.6	78.3	85.1	129.1	89.1	95.0	126.4	78.2	85.3	106.1	66.1	72.0
0320 Concrete Reinforcing	147.4	74.4	112.1	151.5	81.9	117.8	151.5	81.8	117.8	126.7	102.1	114.8	151.5	81.8	117.8	140.5	69.8	106.3
0330 Cast-in-Place Concrete	107.5	89.4	100.7	130.1	98.2	118.2	120.7	94.6	111.0	120.2	100.8	113.0	120.7	94.6	111.0	109.8	68.0	94.3
03 CONCRETE	109.5	83.4	98.0	120.0	90.6	107.1	115.5	85.2	102.2	114.6	96.2	106.5	115.7	85.2	102.3	108.4	68.5	90.9
04 MASONRY	162.6	78.4	110.8	180.1	86.3	122.4	161.6	80.1	111.6	183.8	99.5	132.0	161.6	80.1	111.6	159.4	74.6	107.3
05 METALS	110.7	85.9	103.5	134.1	91.0	121.5	112.8	90.8	106.4	134.7	106.8	126.5	113.0	90.8	106.5	114.1	86.8	106.1
06 WOOD, PLASTICS & COMPOSITES	131.7	81.1	103.9	118.0	86.7	100.8	114.5	77.4	94.1	114.8	86.8	99.4	118.0	77.4	95.7	97.5	65.0	79.6
07 THERMAL & MOISTURE PROTECTION	115.4	86.0	102.6	127.1	92.6	112.1	123.5	88.2	108.1	129.9	99.0	116.5	130.5	88.2	112.1	116.6	72.4	97.4
08 OPENINGS	89.1	69.8	84.6	89.1	79.5	86.9	89.1	74.4	85.7	81.6	87.9	83.1	89.1	74.4	85.7	84.0	61.9	78.8
0920 Plaster & Gypsum Board	114.7	80.5	91.7	106.4	86.1	92.7	102.1	76.6	84.9	134.4	85.8	101.7	104.3	76.6	85.6	124.2	64.1	83.7
0950, 0980 Ceilings & Acoustic Treatment	103.5	80.5	88.0	112.5	86.1	94.7	103.5	76.6	85.3	138.5	85.8	102.9	103.5	76.6	85.3	116.8	64.1	81.2
0960 Flooring	113.6	88.4	106.5	113.6	84.8	105.5	113.6	84.8	105.5	109.9	95.1	105.7	113.6	84.8	105.5	99.6	65.6	90.1
0970, 0990 Wall Finishes & Painting/Coating	110.3	85.9	95.8	110.2	96.4	102.1	110.4	75.1	89.5	113.5	100.5	105.8	110.2	75.1	89.4	111.3	83.6	94.9
09 FINISHES	107.8	83.3	94.5	109.6	88.3	98.0	107.4	78.9	92.0	121.5	91.0	105.0	107.5	78.9	92.0	107.7	67.5	86.0
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	131.1	77.5	119.2	131.1	89.2	121.8	131.1	87.1	121.3	131.1	91.6	122.3	131.1	86.1	121.1	131.1	61.0	115.5
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	104.3	86.5	97.3	104.1	90.1	98.6	104.2	90.0	98.6	105.1	89.2	98.8	103.8	86.8	97.2	103.8	73.7	92.0
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	110.9	67.0	89.3	107.1	77.5	92.5	104.6	77.5	91.2	103.5	102.0	102.8	104.6	77.5	91.2	117.3	88.5	103.1
MF2018 WEIGHTED AVERAGE	110.7	81.6	98.4	117.0	87.9	104.7	111.5	84.7	100.2	116.3	96.5	108.0	111.7	84.0	100.0	110.9	76.0	96.2
DIVISION	CANADA												MONCTON, NEW BRUNSWICK					
	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	117.7	117.7		98.3	98.3		98.9	98.9		99.7	99.7		99.3	99.3		101.6	101.6	
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	113.0	105.5	107.8	114.4	90.0	97.5	111.9	92.0	98.1	105.1	90.6	95.1	126.8	93.6	103.9	104.6	99.6	101.2
0310 Concrete Forming & Accessories	130.9	90.4	96.4	109.6	54.6	62.7	111.8	67.8	74.3	106.1	58.0	65.1	146.2	80.0	89.8	122.8	91.3	96.0
0320 Concrete Reinforcing	126.8	94.6	111.3	106.9	61.4	84.9	156.0	47.6	103.6	140.5	57.6	100.4	184.7	84.8	136.4	152.7	103.7	129.0
0330 Cast-in-Place Concrete	124.4	97.4	114.3	117.1	63.7	97.2	122.9	66.8	102.0	114.0	56.3	92.6	118.4	80.1	104.1	129.2	104.6	120.7
03 CONCRETE	116.7	94.3	106.8	101.4	60.0	83.2	131.0	65.0	102.0	110.3	58.4	87.5	132.7	81.4	110.2	118.3	98.8	109.8
04 MASONRY	178.8	89.8	124.1	160.3	56.4	96.4	208.2	65.6	120.5	159.8	57.4	96.9	214.4	81.9	133.0	145.1	101.9	118.6
05 METALS	144.3	102.2	131.9	109.6	75.0	99.4	125.6	75.7	111.0	114.1	73.8	102.3	126.5	90.2	115.8	114.2	98.6	109.6
06 WOOD, PLASTICS & COMPOSITES	111.3	90.8	100.0	99.4	53.2	74.0	115.9	67.4	89.2	97.5	57.9	75.7	153.5	80.2	113.2	117.6	89.4	102.1
07 THERMAL & MOISTURE PROTECTION	125.9	97.2	113.4	114.1	60.1	90.6	130.1	67.6	102.9	116.6	58.4	91.3	136.4	82.7	113.0	117.3	104.1	111.6
08 OPENINGS	87.4	78.7	85.4	85.3	51.4	77.4	91.3	61.3	84.3	84.0	51.2	76.3	98.6	78.2	93.8	85.0	90.2	86.2
0920 Plaster & Gypsum Board	126.2	89.9	101.8	98.2	51.9	67.1	145.0	66.5	92.2	124.2	56.7	78.8	140.6	79.8	99.7	110.7	89.2	96.2
0950, 0980 Ceilings & Acoustic Treatment	146.1	89.9	108.2	103.5	51.9	68.7	123.8	66.5	85.2	116.8	56.7	76.3	123.8	79.8	94.1	103.9	89.2	94.0
0960 Flooring	112.4	90.5	106.2	103.6	53.7	89.6	107.6	58.9	93.9	99.6	63.4	89.5	131.2	86.0	118.5	104.2	97.6	102.4
0970, 0990 Wall Finishes & Painting/Coating	115.0	104.1	108.5	110.3	61.0	81.1	117.8	59.3	83.2	111.3	47.9	73.8	117.8	85.0	98.4	104.4	108.1	106.6
09 FINISHES	121.6	92.8	106.0	103.7	54.8	77.2	118.7	65.5	89.9	107.7	58.2	80.9	125.9	81.9	102.1	103.2	93.7	98.1
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	131.1	82.8	120.4	131.1	57.5	114.7	131.1	60.8	115.5	131.1	57.9	114.8	131.1	63.4	116.0	131.1	90.4	122.0
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	105.1	81.2	95.7	104.2	70.3	90.9	104.0	79.5	94.4	103.8	64.8	88.5	104.0	92.4	99.4	104.2	91.9	99.3
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	107.9	84.1	96.2	113.4	56.3	85.3	111.3	58.7	85.4	112.9	55.9	84.8	112.6	83.3	98.1	110.6	103.8	107.3
MF2018 WEIGHTED AVERAGE	119.1	90.1	106.9	109.0	63.9	89.9	119.6	70.2	98.7	110.7	62.9	90.5	122.5	85.2	106.8	110.8	97.2	105.0
DIVISION	CANADA												PRINCE ALBERT, SASKATCHEWAN					
	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	117.8	117.8		100.1	100.1		99.7	99.7		101.9	101.9		98.3	98.3		103.3	103.3	
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	107.0	107.2	107.1	117.0	94.6	101.5	116.9	94.2	101.3	115.4	93.2	100.1	110.2	90.1	96.3	123.4	97.1	105.3
0310 Concrete Forming & Accessories	124.8	88.4	93.7	125.6	78.7	85.6	127.2	81.0	87.8	126.6	65.7	74.7	109.6	54.4	62.5	115.1	77.5	83.0
0320 Concrete Reinforcing	137.0	102.0	120.1	175.2	86.9	132.5	163.7	85.3	125.8	151.5	54.5	104.6	111.7	61.4	87.3	109.3	75.8	93.1
0330 Cast-in-Place Concrete	122.3	103.0	115.1	157.7	76.6	127.5	130.7	81.8	112.5	120.7	69.8	101.8	106.2	63.6	90.3	117.6	91.8	108.0
03 CONCRETE	116.6	96.7	107.9	138.9	79.9	113.0	121.8	82.5	104.6	109.5	66.2	90.5	96.9	59.9	80.7	127.5	82.8	107.9
04 MASONRY	173.2	99.4	127.8	165.6	87.1	117.3	166.1	88.0	118.1	164.8	59.7	100.2	159.5	56.4	96.1	171.4	84.0	117.7
05 METALS	135.5	108.9	127.7	111.1	91.3	105.3	112.3	90.8	106.0	113.0	78.4	102.8	109.7	44.9	112.8	127.2	87.5	105.3
06 WOOD, PLASTICS & COMPOSITES	108.4	85.7	95.9	116.5	77.3	94.9	120.3	79.0	97.6	118.0	66.8	89.8	99.4	53.2	74.0	102.2	74.1	86.7
07 THERMAL & MOISTURE PROTECTION	137.3	99.7	121.0	115.3	83.5	101.5	121.6	88.0	107.0	114.6	68.2	94.4	114.0	59.0	90.1	124.5	81.0	105.6
08 OPENINGS	90.3	87.5	89.7	90.5	77.6	87.5	87.7	79.9	85.9	89.1	59.9	82.3	84.3	51.4	76.6	86.1	74.9	83.5
0920 Plaster & Gypsum Board	129.1	84.6	99.1	153.5	76.7	101.8	115.8	78.5	90.7	104.0	65.6	78.2	98.2	51.9	67.1	101.1	73.0	82.2
0950, 0980 Ceilings & Acoustic Treatment	142.3	84.6	103.4	94.3	76.7	82.4	103.5	78.5	86.7	103.5	65.6	78.0	103.5	51.9	68.7	103.5	73.0	83.0
0960 Flooring	108.3	90.6	103.4	119.3	87.3	110.3	113.6	86.0										

City Cost Indexes

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	117.4	117.4	101.9	101.9	128.3	128.3	100.2	100.2	100.2	100.2	100.2	100.2	100.2	100.2	100.2	100.2	100.2	
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	114.1	104.7	107.6	113.2	95.5	101.0	126.4	119.6	121.7	97.0	93.6	94.6	96.7	93.7	94.6	97.2	93.7	94.8
0310 Concrete Forming & Accessories	127.4	90.5	95.9	139.7	78.2	87.3	131.0	91.5	97.4	132.9	89.8	96.2	132.9	79.1	87.0	132.9	79.1	87.0
0320 Concrete Reinforcing	124.2	94.6	109.9	151.5	81.8	117.8	123.8	88.8	106.9	105.1	94.5	100.0	147.4	72.4	111.1	147.4	72.4	111.1
0330 Cast-in-Place Concrete	131.6	97.0	118.7	120.7	94.6	111.0	153.8	97.7	132.9	109.4	94.7	103.9	104.0	87.5	97.9	107.5	87.5	100.0
03 CONCRETE	119.4	94.3	108.4	116.5	85.2	102.7	131.3	94.0	114.9	105.0	92.4	99.5	107.9	81.4	96.2	109.5	81.4	97.1
04 MASONRY	173.6	89.8	122.1	161.6	80.1	111.6	205.2	86.7	132.4	162.1	89.8	117.6	162.3	76.3	109.5	162.6	76.3	109.6
05 METALS	138.0	103.3	127.8	113.0	90.8	106.5	139.1	101.4	128.0	110.4	91.8	104.9	110.9	84.8	103.2	110.9	84.8	103.2
06 WOOD, PLASTICS & COMPOSITES	114.2	90.7	101.3	118.0	77.4	95.7	108.0	92.2	99.3	131.6	90.3	108.9	131.6	79.0	102.7	131.6	79.0	102.7
07 THERMAL & MOISTURE PROTECTION	125.1	97.2	112.9	141.4	88.2	118.3	143.8	86.6	118.9	114.8	96.4	106.8	114.8	84.1	101.5	115.2	84.1	101.7
08 OPENINGS	88.4	86.0	87.8	89.1	74.4	85.7	87.9	79.8	86.1	88.7	76.3	85.8	89.1	67.9	84.2	89.1	67.9	84.2
0920 Plaster & Gypsum Board	128.5	89.9	102.6	104.3	76.6	85.6	140.8	91.2	107.4	147.4	89.9	108.7	114.2	78.4	90.1	114.2	78.4	90.1
0950, 0980 Ceilings & Acoustic Treatment	131.7	89.9	103.5	103.5	76.6	85.3	154.3	91.2	111.7	102.7	89.9	94.1	102.7	78.4	86.3	102.7	78.4	86.3
0960 Flooring	108.9	90.5	103.8	116.0	84.8	107.2	123.6	95.1	115.6	114.8	86.0	106.7	113.6	86.0	105.8	113.6	86.0	105.8
0970, 0990 Wall Finishes & Painting/Coating	120.8	104.1	111.0	110.2	75.1	89.4	118.0	89.0	100.9	113.4	104.1	107.9	110.3	83.6	94.5	110.3	83.6	94.5
09 FINISHES	117.4	92.7	104.0	108.2	78.9	92.4	130.9	92.9	110.3	112.6	91.6	101.2	107.6	81.2	93.3	107.6	81.2	93.3
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	131.1	82.5	120.3	131.1	86.1	121.1	131.1	70.9	117.7	131.1	81.5	120.1	131.1	75.6	118.8	131.1	75.6	118.8
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	105.1	81.2	95.7	103.8	86.8	97.2	104.8	86.9	97.8	103.8	81.0	94.9	103.8	84.2	96.1	100.5	84.2	94.1
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	114.7	84.1	99.6	104.6	77.5	91.2	110.8	91.5	101.3	110.9	84.1	97.7	110.9	65.2	88.4	111.5	65.2	88.7
MF2018 WEIGHTED AVERAGE	118.7	90.4	106.7	112.1	84.0	100.2	123.1	92.4	110.2	110.2	87.6	100.6	110.3	79.8	97.4	109.8	79.8	97.1
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	99.7	99.7	99.7	99.7	99.7	99.7	98.4	98.4	98.4	99.7	99.7	99.7	100.2	100.2	100.2	100.2	100.2	100.2
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	105.2	92.5	96.4	115.5	94.3	100.9	112.7	92.8	98.9	105.6	93.9	97.5	97.2	93.7	94.8	97.3	93.7	94.8
0310 Concrete Forming & Accessories	126.2	63.4	72.7	125.9	87.6	93.3	109.7	90.7	93.5	115.1	86.2	90.5	132.9	79.1	87.0	132.9	79.2	87.1
0320 Concrete Reinforcing	140.5	69.8	106.3	116.5	86.7	102.1	114.2	88.7	101.9	105.1	85.4	95.6	147.4	72.4	111.1	139.3	72.4	107.0
0330 Cast-in-Place Concrete	112.4	68.0	95.9	120.6	94.2	110.8	113.5	93.1	105.9	108.3	80.5	98.0	107.5	87.5	100.0	108.4	87.5	100.6
03 CONCRETE	110.9	67.3	91.7	111.1	90.0	101.8	101.3	91.2	96.9	97.4	84.7	91.8	109.5	81.4	97.1	108.8	81.5	96.8
04 MASONRY	180.8	74.4	115.4	177.6	90.5	124.1	172.1	86.6	119.5	162.9	90.1	118.2	162.6	76.3	109.6	162.7	76.3	109.6
05 METALS	114.0	86.8	106.0	112.3	91.2	106.1	106.5	88.6	101.2	111.5	95.2	106.7	110.7	84.8	103.1	110.9	85.0	103.3
06 WOOD, PLASTICS & COMPOSITES	120.7	61.4	88.0	119.4	86.7	101.4	96.0	91.3	93.4	106.5	87.9	96.3	131.6	79.0	102.7	131.6	79.0	102.7
07 THERMAL & MOISTURE PROTECTION	116.9	72.2	97.5	121.7	91.5	108.6	117.0	84.7	103.0	120.4	87.3	106.0	114.8	84.1	101.5	114.8	84.1	101.5
08 OPENINGS	83.9	58.9	78.0	90.5	83.5	88.8	88.5	79.4	83.9	82.4	86.1	89.1	67.9	84.2	89.1	72.3	85.2	85.2
0920 Plaster & Gypsum Board	137.9	60.3	85.7	143.2	86.4	105.0	151.6	91.2	99.1	107.1	87.6	94.0	114.2	78.4	90.1	147.4	78.4	101.0
0950, 0980 Ceilings & Acoustic Treatment	121.7	60.3	80.3	109.2	86.4	93.9	124.5	91.2	102.0	103.5	87.6	92.8	102.7	78.4	86.3	102.7	78.4	86.3
0960 Flooring	111.4	65.6	98.5	113.6	94.1	108.1	106.5	95.1	103.3	106.5	92.1	102.4	113.6	86.0	105.8	113.6	86.0	105.8
0970, 0990 Wall Finishes & Painting/Coating	113.3	83.6	94.9	110.3	98.5	103.3	113.8	89.0	99.2	110.3	91.3	99.1	110.3	83.6	94.5	110.3	83.6	94.5
09 FINISHES	114.0	65.4	87.7	113.5	90.2	109.0	112.1	92.3	101.4	104.7	88.2	95.8	107.6	81.2	93.3	112.0	81.2	95.3
COVERS DIVS. 10 - 14, 25, 28, 41, 43, 44, 46	131.1	61.0	115.5	131.1	66.1	116.6	131.1	69.3	117.4	131.1	87.9	121.5	131.1	75.6	118.8	131.1	75.6	118.8
21, 22, 23 FIRE SUPPRESSION, PLUMBING & HVAC	103.8	75.1	92.6	103.8	101.5	102.9	104.4	86.7	97.5	103.8	90.5	98.6	104.2	84.2	96.3	103.8	84.2	96.1
26, 27, 3370 ELECTRICAL, COMMUNICATIONS & UTIL.	119.9	88.5	104.4	114.7	85.0	100.0	114.6	91.4	103.2	113.2	83.3	98.5	110.9	65.2	88.4	110.9	65.2	88.4
MF2018 WEIGHTED AVERAGE	113.2	75.7	97.3	113.2	91.3	103.9	109.9	88.5	100.9	108.6	88.7	100.2	110.6	79.8	97.6	110.8	80.0	97.8
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	99.5	99.5	99.5	100.2	100.2	100.2	123.4	123.4	123.4	99.5	99.5	99.5	98.8	98.8	98.8	98.9	98.9	98.9
0241, 31 - 34 SITE & INFRASTRUCTURE, DEMOLITION	94.2	96.1	95.6	96.7	93.7	94.6	115.4	111.8	112.9	94.4	95.7	95.3	121.8	89.4	99.5	108.0	92.0	96.9
0310 Concrete Forming & Accessories	115.3	93.8	97.0	132.9	79.1	87.0	125.3	85.2	91.1	111.0	88.9	92.1	112.0	52.5	61.3	111.8	67.8	74.3
0320 Concrete Reinforcing	97.2	103.2	100.1	147.4	72.4	111.1	172.1	82.4	128.7	98.0	101.4	99.7	154.0	46.5	102.0	156.0	47.6	103.6
0330 Cast-in-Place Concrete	106.7	98.7	103.7	104.0	87.5	97.9	137.1	98.5	122.8	107.6	95.3	103.0	116.7	54.7	93.6	139.8	66.8	84.4
03 CONCRETE	94.8	97.2	95.8	107.9	81.4	96.2	132.7	90.3	114.1	95.0	93.5	94.3	139.1	53.4	101.5	118.1	65.0	94.8
04 MASONRY	141.8	100.8	116.6	162.3	76.3	109.5	200.1	89.9	132.4	141.9	94.9	113.0	207.4	54.8	113.7	205.8	55.6	119.6
05 METALS	114.2	97.9	109.4	110.9	84.8	103.2	137.9	99.1	126.5	113.6	97.1	108.8	125.6	69.2	109.1	125.6	75.7	111.0
06 WOOD, PLASTICS & COMPOSITES	107.8	93.2	99.8	131.6	79.0	102.7	106.9	83.4	94.0	103.5	87.9	94.9	116.4	51.9	80.9	115.9	67.4	89.2
07 THERMAL & MOISTURE PROTECTION	116.4	102.0	110.1	114.8	84.1	101.5	140.2	94.7	120.4	115.7	96.3	107.3	129.4	57.3	98.0	130.1	67.6	102.9
08 OPENINGS	79.5	91.4	82.3	89.1	67.9	84.2	85.4	74.3	82.8	80.2	86.7	81.7	102.5	45.4	89.2	91.3	61.3	84.3
0920 Plaster & Gypsum Board	100.8	93.1	95.6	114.2	78.4	90.1	150.0	82.1	104.3	100.0	87.6	91.7	145.9	50.5	81.8	145.0	66.5	92.2
0950, 0980 Ceilings & Acoustic Treatment	103.9	93.1	96.6	102.7	78.4	86.3	143.7	82.1	102.2	98.2	87.6	91.0	123.8	50.5	74.4	123.8	66.5	85.2
0960 Flooring	100.2	91.9	97.8	113.6	86.0	105.8	116.8	52.2	98.7	98.3	92.1	96.6	107.6	55.3				

City Cost Indexes

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		99.5	99.5		99.7	99.7		117.5	117.5		99.7	99.7		99.4	99.4		135.3	135.3	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION		98.8	96.0	96.9	116.9	93.9	101.0	108.4	107.7	107.9	108.2	93.4	97.9	101.3	92.3	95.1	117.0	122.8	121.0
0310	Concrete Forming & Accessories		122.8	92.5	97.0	127.2	80.0	87.0	128.7	102.5	106.3	153.7	79.1	90.1	99.7	67.9	72.6	131.0	91.6	97.4
0320	Concrete Reinforcing		86.9	102.6	94.5	163.7	84.8	125.6	136.9	103.9	120.9	156.0	72.4	115.6	139.3	47.6	95.0	132.5	95.2	114.5
0330	Cast-in-Place Concrete		117.5	98.0	110.2	130.7	80.2	111.9	108.4	113.7	110.4	98.2	87.4	94.2	135.7	66.9	110.1	123.5	90.6	111.3
03	CONCRETE		101.9	96.2	99.4	121.8	81.5	104.1	110.5	107.1	109.0	120.3	81.4	103.2	120.8	65.1	96.3	119.7	93.0	108.0
04	MASONRY		142.4	100.5	116.7	166.1	81.9	114.4	173.3	108.7	133.6	209.8	76.3	127.8	161.9	65.6	102.7	165.3	85.6	116.3
05	METALS		114.2	97.0	109.1	112.3	90.4	105.9	135.3	109.4	127.7	124.9	84.7	113.1	111.6	76.0	101.1	133.5	109.8	126.6
06	WOOD, PLASTICS & COMPOSITES		117.6	91.3	103.1	120.3	80.3	98.3	114.8	100.5	107.0	168.2	79.0	119.1	89.6	67.4	77.4	110.3	91.0	99.7
07	THERMAL & MOISTURE PROTECTION		116.6	99.3	109.1	121.6	82.7	104.7	135.6	109.4	124.2	128.6	84.1	109.2	116.1	67.6	95.0	141.7	88.6	118.6
08	OPENINGS		78.9	89.8	81.4	87.7	78.2	85.5	83.9	98.9	87.4	100.3	72.3	93.7	82.4	61.3	77.5	84.5	88.7	85.5
0920	Plaster & Gypsum Board		128.0	91.2	103.2	115.8	79.8	91.6	129.1	99.9	109.5	174.3	78.4	109.8	124.3	66.5	85.4	127.2	89.7	102.0
0950, 0980	Ceilings & Acoustic Treatment		98.2	91.2	93.4	103.5	79.8	87.5	139.9	99.9	112.9	122.2	78.4	92.6	103.5	66.5	78.6	151.0	89.7	109.7
0960	Flooring		104.2	98.5	102.6	113.6	86.0	105.8	109.1	100.8	106.8	131.2	86.0	118.5	95.7	58.9	85.4	124.7	88.5	114.6
0970, 0990	Wall Finishes & Painting/Coating		104.4	96.2	99.5	110.3	85.0	95.3	109.8	108.1	108.8	117.8	83.6	97.6	110.3	59.3	80.1	113.7	100.3	105.8
09	FINISHES		104.1	93.9	98.6	108.7	81.9	94.2	117.8	102.8	109.7	129.3	81.1	103.2	103.8	65.5	83.1	128.0	92.1	108.6
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46		131.1	69.7	117.4	131.1	63.4	116.0	131.1	95.4	123.2	131.1	75.6	118.8	131.1	60.8	115.5	131.1	90.8	122.1
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC		104.2	91.2	99.1	103.8	92.4	99.3	105.1	99.6	103.0	104.0	84.2	96.2	103.8	79.5	94.3	105.2	87.4	98.2
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.		109.6	101.2	105.4	113.2	83.3	98.5	106.8	103.8	105.3	111.6	65.2	88.8	110.5	58.7	85.0	108.7	78.6	93.9
MF2018	WEIGHTED AVERAGE		107.8	95.0	102.4	113.3	85.3	101.4	116.0	104.2	111.0	120.2	79.9	103.2	110.8	70.3	93.7	117.9	92.4	107.2
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		106.3	106.3		132.8	132.8		99.5	99.5		125.5	125.5		98.9	98.9		130.7	130.7	
0241, 31 - 34	SITE & INFRASTRUCTURE, DEMOLITION		124.3	101.3	108.4	135.7	119.6	124.6	90.8	96.0	94.4	113.7	115.3	114.8	111.7	92.0	98.1	146.3	123.6	130.6
0310	Concrete Forming & Accessories		114.9	88.9	92.7	135.0	56.7	68.2	122.8	90.6	95.3	130.4	65.4	75.0	111.8	67.8	74.3	137.3	75.8	84.8
0320	Concrete Reinforcing		117.7	95.0	103.6	167.7	63.3	117.2	95.2	101.9	98.5	127.3	61.0	95.3	156.0	47.6	103.6	138.6	65.8	103.4
0330	Cast-in-Place Concrete		117.6	87.0	106.2	152.4	71.2	122.2	109.3	99.7	105.7	143.6	72.0	116.9	121.6	66.8	102.1	174.9	87.6	142.4
03	CONCRETE		129.4	89.5	111.9	144.0	64.8	109.1	96.2	95.9	96.0	127.0	68.4	101.3	130.4	65.0	101.7	150.7	79.5	119.4
04	MASONRY		175.0	85.5	120.0	246.5	58.1	130.7	141.9	100.1	116.3	194.6	65.3	115.2	208.1	65.6	120.5	234.9	68.9	132.9
05	METALS		107.7	92.2	103.2	145.1	90.5	129.1	114.2	97.3	109.2	141.6	88.0	125.8	125.6	75.7	111.0	140.5	92.7	126.4
06	WOOD, PLASTICS & COMPOSITES		100.0	88.3	93.6	121.3	55.3	85.0	117.6	89.0	101.9	107.7	66.0	84.8	115.9	67.4	89.2	130.1	77.1	100.9
07	THERMAL & MOISTURE PROTECTION		126.9	86.3	109.2	145.8	63.3	109.9	116.4	99.1	108.9	136.1	70.3	107.5	130.1	67.6	102.9	143.7	78.8	115.5
08	OPENINGS		86.8	82.9	85.9	99.5	53.0	88.6	78.7	88.9	81.1	87.5	59.7	81.0	91.3	61.3	84.3	93.9	65.5	87.3
0920	Plaster & Gypsum Board		109.1	87.7	94.7	178.3	53.0	94.0	111.4	88.8	96.2	133.0	64.2	86.7	145.0	66.5	92.2	192.2	75.5	113.7
0950, 0980	Ceilings & Acoustic Treatment		105.8	87.7	93.6	169.3	53.0	90.9	98.2	88.8	91.8	145.3	64.2	90.6	123.8	66.5	85.2	169.0	75.5	105.9
0960	Flooring		112.0	67.4	99.5	122.4	55.2	103.5	104.2	95.9	101.9	115.9	68.5	102.6	107.6	58.9	93.9	121.9	82.9	111.0
0970, 0990	Wall Finishes & Painting/Coating		113.8	100.3	105.8	120.7	53.1	80.7	104.4	97.1	100.1	113.9	53.5	78.1	117.8	59.3	83.2	123.3	75.9	95.2
09	FINISHES		110.7	86.8	97.8	143.7	55.8	96.1	101.6	92.1	96.5	126.9	65.0	93.4	118.7	65.5	89.9	147.5	76.6	109.1
COVERS	DIVS. 10 - 14, 25, 28, 41, 43, 44, 46		131.1	65.8	116.6	131.1	60.6	115.4	131.1	69.2	117.3	131.1	63.8	116.1	131.1	60.8	115.5	131.1	63.9	116.1
21, 22, 23	FIRE SUPPRESSION, PLUMBING & HVAC		103.9	88.7	97.9	104.3	71.6	91.5	104.2	90.7	98.9	105.2	64.6	89.2	104.0	79.5	94.4	104.8	88.5	98.4
26, 27, 3370	ELECTRICAL, COMMUNICATIONS & UTIL.		112.8	82.1	97.7	130.5	57.1	94.3	114.5	100.4	107.6	113.1	63.4	88.6	111.3	58.7	85.4	125.8	77.4	102.0
MF2018	WEIGHTED AVERAGE		114.1	87.6	102.9	132.2	69.2	105.6	107.1	94.4	101.8	122.0	71.2	100.5	119.5	70.2	98.7	131.4	83.2	111.0

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

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	97.4	71.8	86.6
354	Tuscaloosa	97.1	71.4	86.3
355	Jasper	97.8	69.8	86.0
356	Decatur	97.1	69.2	85.3
357-358	Huntsville	97.1	71.7	86.4
359	Gadsden	97.3	70.2	85.9
360-361	Montgomery	96.3	73.1	86.5
362	Aniston	95.9	67.7	84.0
363	Dothan	96.2	72.7	86.3
364	Evergreen	95.8	68.3	84.2
365-366	Mobile	96.7	68.7	84.9
367	Selma	95.9	72.5	86.0
368	Phenix City	96.8	70.8	85.8
369	Butler	96.1	70.6	85.3
ALASKA				
995-996	Anchorage	118.5	113.1	116.2
997	Fairbanks	118.8	113.0	116.3
998	Juneau	116.8	113.1	115.2
999	Ketchikan	128.4	113.4	122.1
ARIZONA				
850-853	Phoenix	100.6	72.3	88.6
851-852	Mesa/Tempe	98.7	71.5	87.2
855	Globe	99.5	71.4	87.6
856-857	Tucson	97.7	70.2	86.1
859	Show Low	99.7	71.5	87.8
860	Flagstaff	102.4	70.5	88.9
863	Prescott	99.9	71.3	87.8
864	Kingman	98.3	70.4	86.5
865	Chambers	98.3	71.8	87.1
ARKANSAS				
716	Pine Bluff	96.0	63.6	82.3
717	Camden	94.0	64.7	81.6
718	Texarkana	94.8	63.3	81.5
719	Hot Springs	93.5	64.4	81.2
720-722	Little Rock	94.5	65.4	82.2
723	West Memphis	93.3	69.8	83.3
724	Jonesboro	93.8	66.6	82.3
725	Batesville	91.6	63.6	79.8
726	Harrison	92.9	62.8	80.2
727	Fayetteville	90.5	64.1	79.3
728	Russellville	91.7	63.1	79.6
729	Fort Smith	94.1	62.6	80.8
CALIFORNIA				
900-902	Los Angeles	98.5	129.8	111.7
903-905	Inglewood	93.8	128.8	108.6
906-908	Long Beach	95.4	128.8	109.5
910-912	Pasadena	94.8	128.6	109.1
913-916	Van Nuys	97.8	128.6	110.8
917-918	Alhambra	96.7	128.6	110.2
919-921	San Diego	99.7	121.7	109.0
922	Palm Springs	97.4	125.3	109.2
923-924	San Bernardino	95.0	126.3	108.2
925	Riverside	99.3	126.6	110.8
926-927	Santa Ana	97.0	126.3	109.4
928	Anaheim	99.3	126.6	110.9
930	Oxnard	98.0	126.7	110.1
931	Santa Barbara	97.2	126.1	109.4
932-933	Bakersfield	98.9	124.6	109.8
934	San Luis Obispo	98.2	125.8	109.9
935	Mojave	95.4	124.4	107.7
936-938	Fresno	98.5	129.4	111.5
939	Salinas	99.1	137.2	115.2
940-941	San Francisco	107.4	158.4	129.0
942,956-958	Sacramento	100.8	133.0	114.4
943	Palo Alto	99.2	153.8	122.3
944	San Mateo	101.5	152.0	122.9
945	Vallejo	100.2	141.6	117.7
946	Oakland	103.4	152.0	123.9
947	Berkeley	103.0	151.9	123.7
948	Richmond	102.4	146.2	120.9
949	San Rafael	104.5	149.1	123.4
950	Santa Cruz	104.6	137.5	118.5

STATE/ZIP	CITY	MAT.	INST.	TOTAL
CALIFORNIA (CONT'D)				
951	San Jose	102.6	153.5	124.2
952	Stockton	100.7	131.3	113.7
953	Modesto	100.6	130.6	113.3
954	Santa Rosa	101.2	148.4	121.2
955	Eureka	102.5	134.1	115.9
959	Marysville	101.7	131.3	114.2
960	Redding	107.6	131.5	117.7
961	Susanville	107.3	131.6	117.5
COLORADO				
800-802	Denver	103.0	75.4	91.3
803	Boulder	98.7	77.0	89.6
804	Golden	100.9	74.7	89.8
805	Fort Collins	102.2	73.5	90.1
806	Greeley	99.3	73.4	88.4
807	Fort Morgan	99.3	73.5	88.4
808-809	Colorado Springs	101.2	71.5	88.6
810	Pueblo	101.8	70.0	88.3
811	Alamosa	103.6	70.3	89.5
812	Salida	103.1	70.9	89.5
813	Durango	103.9	65.6	87.8
814	Monrose	102.6	65.8	87.1
815	Grand Junction	105.7	70.5	90.8
816	Glenwood Springs	103.9	66.8	88.2
CONNECTICUT				
060	New Britain	98.1	116.7	106.0
061	Hartford	99.6	118.0	107.3
062	Willimantic	98.7	117.1	106.5
063	New London	95.2	117.2	104.5
064	Meriden	97.2	117.0	105.6
065	New Haven	99.9	117.0	107.1
066	Bridgeport	99.3	117.0	106.8
067	Waterbury	98.9	117.2	106.6
068	Norwalk	98.8	116.7	106.4
069	Stamford	99.0	123.2	109.2
D.C.				
200-205	Washington	101.1	87.5	95.4
DELAWARE				
197	Newark	98.3	109.7	103.1
198	Wilmington	97.9	109.7	102.9
199	Dover	99.0	109.6	103.5
FLORIDA				
320,322	Jacksonville	96.9	66.6	84.1
321	Daytona Beach	97.2	69.5	85.5
323	Tallahassee	98.2	67.7	85.3
324	Panama City	98.6	68.3	85.8
325	Pensacola	101.2	65.8	86.2
326,344	Gainesville	98.8	65.8	84.8
327-328,347	Orlando	99.0	66.6	85.3
329	Melbourne	100.1	70.3	87.5
330-332,340	Miami	96.7	68.0	84.6
333	Fort Lauderdale	96.1	66.4	83.6
334,349	West Palm Beach	95.1	64.1	82.0
335-336,346	Tampa	97.6	68.4	85.3
337	St. Petersburg	99.7	66.8	85.8
338	Lakeland	97.1	67.6	84.6
339,341	Fort Myers	96.5	67.7	84.3
342	Sarasota	98.8	67.0	85.4
GEORGIA				
300-303,399	Atlanta	98.2	75.0	88.4
304	Statesboro	97.8	69.7	85.9
305	Gainesville	96.2	65.6	83.2
306	Athens	95.6	66.9	83.5
307	Dalton	97.5	71.4	86.5
308-309	Augusta	96.0	73.9	86.6
310-312	Macon	95.2	73.1	85.8
313-314	Savannah	97.3	72.7	86.9
315	Waycross	96.8	70.0	85.5
316	Valdosta	96.7	66.2	83.8
317,398	Albany	96.5	71.9	86.1
318-319	Columbus	96.5	72.2	86.2

Location Factors - Commercial

STATE/ZIP	CITY	MAT.	INST.	TOTAL
HAWAII				
967	Hilo	114.8	118.4	116.3
968	Honolulu	119.1	118.5	118.9
STATES & POSS.				
969	Guam	137.1	51.4	100.9
IDAHO				
832	Pocatello	102.0	78.4	92.0
833	Twin Falls	103.2	76.8	92.1
834	Idaho Falls	100.5	79.9	91.8
835	Lewiston	108.2	83.5	97.8
836-837	Boise	101.0	79.9	92.1
838	Coeur d'Alene	108.1	84.4	98.1
ILLINOIS				
600-603	North Suburban	98.3	142.9	117.1
604	Joliet	98.3	138.8	115.4
605	South Suburban	98.3	142.8	117.1
606-608	Chicago	100.1	145.6	119.3
609	Kankakee	95.0	134.9	111.9
610-611	Rockford	96.6	125.5	108.8
612	Rock Island	94.6	99.5	96.7
613	La Salle	95.9	127.0	109.0
614	Galesburg	95.7	108.5	101.1
615-616	Peoria	97.6	108.8	102.3
617	Bloomington	95.0	109.5	101.1
618-619	Champaign	98.5	110.5	103.6
620-622	East St. Louis	93.8	110.4	100.9
623	Quincy	95.7	104.2	99.3
624	Effingham	95.1	109.1	101.0
625	Decatur	96.6	110.1	102.3
626-627	Springfield	97.5	108.3	102.1
628	Centralia	92.8	111.2	100.5
629	Carbondale	92.5	109.6	99.7
INDIANA				
460	Anderson	96.0	79.8	89.1
461-462	Indianapolis	98.7	83.2	92.1
463-464	Gary	97.5	108.1	102.0
465-466	South Bend	98.4	81.8	91.4
467-468	Fort Wayne	96.6	76.3	88.0
469	Kokomo	94.2	81.1	88.6
470	Lawrenceburg	92.5	79.6	87.0
471	New Albany	93.9	77.3	86.9
472	Columbus	96.1	80.5	89.5
473	Muncie	96.2	78.2	88.6
474	Bloomington	97.8	81.1	90.7
475	Washington	94.6	84.8	90.4
476-477	Evansville	95.5	82.7	90.1
478	Terre Haute	96.2	81.7	90.1
479	Lafayette	95.8	78.1	88.3
IOWA				
500-503,509	Des Moines	97.2	90.2	94.3
504	Mason City	95.3	74.0	86.3
505	Fort Dodge	95.5	73.7	86.3
506-507	Waterloo	96.8	77.4	88.6
508	Creston	95.7	84.2	90.8
510-511	Sioux City	97.7	81.5	90.9
512	Sibley	96.8	62.4	82.3
513	Spencer	98.2	62.3	83.0
514	Carroll	95.5	82.4	89.9
515	Council Bluffs	98.9	79.2	90.6
516	Shenandoah	96.1	81.9	90.1
520	Dubuque	97.2	79.9	89.9
521	Decorah	96.4	73.7	86.8
522-524	Cedar Rapids	98.0	83.7	92.0
525	Ottumwa	96.3	78.7	88.9
526	Burlington	95.7	84.3	90.9
527-528	Davenport	97.1	94.5	96.0
KANSAS				
660-662	Kansas City	97.3	98.6	97.8
664-666	Topeka	98.6	76.5	89.3
667	Fort Scott	96.0	77.1	88.0
668	Emporia	96.1	76.5	87.8
669	Belleville	97.9	70.7	86.4
670-672	Wichita	97.0	72.6	86.7
673	Independence	97.2	76.0	88.2
674	Salina	97.2	73.5	87.2
675	Hutchinson	92.5	71.9	83.8
676	Hays	96.5	72.0	86.1
677	Colby	97.3	74.0	87.4

STATE/ZIP	CITY	MAT.	INST.	TOTAL
KANSAS (CONT'D)				
678	Dodge City	98.6	73.3	87.9
679	Liberal	96.5	71.7	86.0
KENTUCKY				
400-402	Louisville	93.9	79.6	87.8
403-405	Lexington	93.1	78.1	86.7
406	Frankfort	95.4	80.3	89.0
407-409	Corbin	90.8	78.0	85.4
410	Covington	94.3	77.8	87.3
411-412	Ashland	93.2	89.7	91.7
413-414	Campton	94.4	78.0	87.5
415-416	Pikeville	95.8	85.4	91.4
417-418	Hazard	93.8	78.7	87.4
420	Paducah	92.4	83.2	88.6
421-422	Bowling Green	94.6	77.2	87.3
423	Owensboro	94.7	81.0	88.9
424	Henderson	92.2	81.9	87.8
425-426	Somerset	91.6	79.5	86.5
427	Elizabethtown	91.3	75.6	84.7
LOUISIANA				
700-701	New Orleans	99.0	68.5	86.1
703	Thibodaux	96.0	67.0	83.8
704	Hammond	93.7	64.4	81.3
705	Lafayette	95.4	67.9	83.8
706	Lake Charles	95.6	68.2	84.1
707-708	Baton Rouge	96.6	69.3	85.1
710-711	Shreveport	97.1	66.3	84.1
712	Monroe	95.8	64.4	82.5
713-714	Alexandria	95.9	65.6	83.1
MAINE				
039	Kittery	92.6	87.0	90.2
040-041	Portland	99.6	85.4	93.6
042	Lewiston	97.5	84.9	92.2
043	Augusta	100.4	85.6	94.2
044	Bangor	97.1	83.9	91.5
045	Bath	95.9	85.4	91.4
046	Machias	95.4	85.3	91.1
047	Houlton	95.6	85.2	91.2
048	Rockland	94.6	85.4	90.7
049	Waterville	96.0	85.2	91.4
MARYLAND				
206	Waldorf	97.3	86.6	92.8
207-208	College Park	97.3	87.7	93.2
209	Silver Spring	96.5	86.7	92.4
210-212	Baltimore	101.8	83.2	93.9
214	Annapolis	100.4	86.3	94.4
215	Cumberland	96.9	83.8	91.4
216	Easton	98.6	74.8	88.5
217	Hagerstown	97.4	85.3	92.3
218	Salisbury	99.0	66.9	85.4
219	Elkton	95.9	86.2	91.8
MASSACHUSETTS				
010-011	Springfield	98.2	108.5	102.5
012	Pittsfield	97.7	102.6	99.7
013	Greenfield	95.9	109.0	101.4
014	Fitchburg	94.6	116.2	103.7
015-016	Worcester	98.1	117.0	106.1
017	Framingham	94.0	124.2	106.8
018	Lowell	97.5	123.8	108.6
019	Lawrence	98.4	124.2	109.3
020-022, 024	Boston	101.9	134.0	115.5
023	Brockton	98.5	116.7	106.2
025	Buzzards Bay	93.2	115.2	102.5
026	Hyannis	95.7	115.0	103.8
027	New Bedford	97.7	115.2	105.1
MICHIGAN				
480,483	Royal Oak	95.1	100.3	97.3
481	Ann Arbor	97.1	99.8	98.2
482	Detroit	100.7	102.0	101.3
484-485	Flint	96.8	88.6	93.3
486	Saginaw	96.5	85.1	91.7
487	Bay City	96.6	85.3	91.8
488-489	Lansing	98.0	86.8	93.3
490	Battle Creek	95.5	80.4	89.1
491	Kalamazoo	95.8	78.6	88.6
492	Jackson	94.0	90.7	92.6
493,495	Grand Rapids	97.9	79.9	90.3
494	Muskegon	94.3	80.0	88.3

Location Factors - Commercial

STATE/ZIP	CITY	MAT.	INST.	TOTAL
MICHIGAN (CONT'D)				
496	Traverse City	93.4	77.7	86.8
497	Gaylord	94.5	80.6	88.6
498-499	Iron Mountain	96.5	81.7	90.2
MINNESOTA				
550-551	Saint Paul	99.0	117.6	106.9
553-555	Minneapolis	100.7	114.1	106.3
556-558	Duluth	98.6	101.3	99.7
559	Rochester	98.3	98.7	98.5
560	Mankato	95.7	98.5	96.9
561	Windom	94.3	91.2	93.0
562	Willmar	94.0	98.0	95.7
563	St. Cloud	95.1	114.2	103.2
564	Brainerd	95.6	98.6	96.8
565	Detroit Lakes	97.4	92.4	95.3
566	Bemidji	96.7	95.4	96.1
567	Thief River Falls	96.3	89.3	93.3
MISSISSIPPI				
386	Clarksdale	95.3	55.2	78.4
387	Greenville	98.7	65.5	84.7
388	Tupelo	96.6	59.0	80.7
389	Greenwood	96.6	55.5	79.2
390-392	Jackson	97.3	65.6	83.9
393	Meridian	94.6	64.5	81.9
394	Laurel	96.1	57.8	79.9
395	Biloxi	96.2	63.9	82.6
396	McComb	94.4	55.8	78.0
397	Columbus	95.9	59.1	80.4
MISSOURI				
630-631	St. Louis	98.8	104.5	101.2
633	Bowling Green	96.4	95.5	96.0
634	Hannibal	95.3	91.6	93.7
635	Kirksville	98.9	86.5	93.7
636	Flat River	97.3	94.2	96.0
637	Cape Girardeau	97.0	91.2	94.5
638	Sikeston	95.7	87.8	92.3
639	Poplar Bluff	95.1	87.7	92.0
640-641	Kansas City	97.9	103.8	100.4
644-645	St. Joseph	96.1	90.9	93.9
646	Chillicothe	93.7	93.8	93.7
647	Harrisonville	93.2	100.8	96.4
648	Joplin	95.1	77.7	87.7
650-651	Jefferson City	96.4	89.9	93.7
652	Columbia	96.1	90.7	93.8
653	Sedalia	96.4	91.5	94.3
654-655	Rolla	94.1	94.3	94.2
656-658	Springfield	97.6	79.0	89.7
MONTANA				
590-591	Billings	101.6	78.4	91.8
592	Wolf Point	101.4	76.9	91.1
593	Miles City	99.2	77.0	89.8
594	Great Falls	102.9	76.6	91.8
595	Havre	100.4	74.8	89.6
596	Helena	100.9	76.7	90.7
597	Bute	101.5	76.5	90.9
598	Missoula	98.6	77.1	89.5
599	Kalispell	98.1	76.2	88.9
NEBRASKA				
680-681	Omaha	97.6	81.5	90.8
683-685	Lincoln	98.3	79.7	90.5
686	Columbus	96.0	80.7	89.6
687	Norfolk	97.4	77.5	89.0
688	Grand Island	97.4	76.8	88.7
689	Hastings	97.1	78.2	89.1
690	McCook	96.3	73.1	86.5
691	North Platte	96.3	75.6	87.6
692	Valentine	98.6	69.2	86.2
693	Alliance	98.7	73.3	87.9
NEVADA				
889-891	Las Vegas	105.0	105.1	105.0
893	Ely	103.7	93.2	99.2
894-895	Reno	103.6	82.6	94.7
897	Carson City	102.9	82.5	94.3
898	Elko	102.3	85.2	95.0
NEW HAMPSHIRE				
030	Nashua	97.5	93.7	95.9
031	Manchester	98.2	94.5	96.6

STATE/ZIP	CITY	MAT.	INST.	TOTAL
NEW HAMPSHIRE (CONT'D)				
032-033	Concord	98.0	93.2	96.0
034	Keene	94.5	89.0	92.2
035	Littleton	94.4	80.2	88.4
036	Charleston	94.1	88.4	91.7
037	Claremont	93.1	88.4	91.1
038	Portsmouth	94.9	92.4	93.8
NEW JERSEY				
070-071	Newark	100.3	139.7	117.0
072	Elizabeth	97.5	138.3	114.7
073	Jersey City	96.5	137.8	114.0
074-075	Paterson	98.0	137.7	114.8
076	Hackensack	96.1	138.3	114.0
077	Long Branch	95.8	130.9	110.7
078	Dover	96.4	137.5	113.7
079	Summit	96.4	138.3	114.1
080-083	Vineland	96.3	129.8	110.5
081	Camden	98.0	127.8	110.6
082,084	Atlantic City	96.8	133.2	112.2
085-086	Trenton	99.7	128.9	112.0
087	Point Pleasant	98.1	130.8	111.9
088-089	New Brunswick	98.7	135.6	114.3
NEW MEXICO				
870-872	Albuquerque	98.6	72.5	87.6
873	Gallup	99.0	72.5	87.8
874	Farmington	99.0	72.5	87.8
875	Santa Fe	99.0	72.9	88.0
877	Las Vegas	97.2	72.5	86.8
878	Socorro	96.8	72.5	86.6
879	Truth/Consequences	96.6	69.4	85.1
880	Las Cruces	96.9	71.4	86.1
881	Clovis	99.3	72.4	87.9
882	Roswell	100.8	72.5	88.9
883	Carrizozo	101.6	72.5	89.3
884	Tucumcari	99.9	72.4	88.3
NEW YORK				
100-102	New York	99.7	175.2	131.6
103	Staten Island	95.6	176.1	129.6
104	Bronx	93.8	175.3	128.3
105	Mount Vernon	94.1	150.6	118.0
106	White Plains	93.8	152.8	118.8
107	Yonkers	97.9	153.0	121.2
108	New Rochelle	94.4	144.8	115.7
109	Suffern	94.1	130.2	109.4
110	Queens	100.0	177.3	132.6
111	Long Island City	101.6	177.3	133.6
112	Brooklyn	101.9	177.3	133.8
113	Flushing	102.1	177.3	133.9
114	Jamaica	100.3	177.3	132.8
115,117,118	Hicksville	99.9	157.1	124.1
116	Far Rockaway	102.2	177.3	133.9
119	Riverhead	100.6	153.5	122.9
120-122	Albany	96.8	111.2	102.8
123	Schenectady	97.0	109.9	102.4
124	Kingston	100.6	133.8	114.6
125-126	Poughkeepsie	99.8	136.8	115.4
127	Monticello	99.1	134.6	114.1
128	Glens Falls	92.0	107.3	98.5
129	Plattsburgh	97.0	96.6	96.8
130-132	Syracuse	97.8	98.3	98.0
133-135	Utica	96.0	96.6	96.2
136	Watertown	97.7	96.8	97.4
137-139	Binghamton	97.3	101.5	99.1
140-142	Buffalo	100.8	110.3	104.8
143	Niagara Falls	97.4	107.5	101.6
144-146	Rochester	100.3	99.2	99.8
147	Jamestown	96.4	96.0	96.3
148-149	Elmira	96.3	102.5	98.9
NORTH CAROLINA				
270,272-274	Greensboro	98.5	67.2	85.3
271	Winston-Salem	98.2	67.3	85.2
275-276	Raleigh	97.4	67.0	84.5
277	Durham	100.1	67.2	86.2
278	Rocky Mount	96.0	66.6	83.6
279	Elizabeth City	96.9	68.3	84.8
280	Gaston	97.0	66.8	84.2
281-282	Charlotte	97.4	67.6	84.8
283	Fayetteville	100.2	66.1	85.8
284	Wilmington	96.0	65.2	83.0
285	Kinston	94.4	65.5	82.2

Location Factors - Commercial

STATE/ZIP	CITY	MAT.	INST.	TOTAL
NORTH CAROLINA (CONT'D)				
286	Hickory	94.7	67.3	83.1
287-288	Asheville	96.4	66.6	83.8
289	Murphy	95.5	64.7	82.5
NORTH DAKOTA				
580-581	Fargo	99.7	80.3	91.5
582	Grand Forks	99.4	77.6	90.2
583	Devils Lake	99.2	78.8	90.6
584	Jamesstown	99.2	78.8	90.6
585	Bismarck	98.9	81.6	91.6
586	Dickinson	99.9	77.9	90.6
587	Minot	99.3	78.6	90.5
588	Williston	98.4	77.7	89.6
OHIO				
430-432	Columbus	98.4	82.0	91.4
433	Marion	94.3	86.7	91.1
434-436	Toledo	97.6	91.2	94.9
437-438	Zanesville	94.9	85.7	91.0
439	Steubenville	96.1	90.0	93.5
440	Lorain	98.4	84.7	92.6
441	Cleveland	99.1	91.6	95.9
442-443	Akron	99.4	86.0	93.8
444-445	Youngstown	98.7	81.9	91.6
446-447	Canton	98.9	79.9	90.9
448-449	Mansfield	96.4	84.2	91.3
450	Hamilton	94.8	79.5	88.3
451-452	Cincinnati	96.1	80.0	89.3
453-454	Dayton	94.8	79.2	88.2
455	Springfield	94.8	79.7	88.4
456	Chillicothe	94.3	88.5	91.8
457	Athens	97.1	84.8	91.9
458	Lima	97.2	81.7	90.7
OKLAHOMA				
730-731	Oklahoma City	96.4	68.7	84.7
734	Ardmore	95.2	65.6	82.7
735	Lawton	97.3	65.8	84.0
736	Clinton	96.4	65.5	83.3
737	Enid	97.0	66.0	83.9
738	Woodward	95.3	62.9	81.6
739	Guymon	96.3	63.3	82.4
740-741	Tulsa	95.9	65.8	83.2
743	Miami	92.7	65.1	81.1
744	Muskogee	95.0	62.9	81.4
745	McAlester	92.4	60.5	78.9
746	Ponca City	93.1	64.0	80.8
747	Durant	93.1	65.1	81.3
748	Shawnee	94.5	65.2	82.2
749	Poteau	92.3	64.9	80.7
OREGON				
970-972	Portland	102.1	102.8	102.4
973	Salem	104.4	100.8	102.9
974	Eugene	101.7	98.7	100.5
975	Medford	103.3	97.4	100.8
976	Klamath Falls	103.5	97.3	100.9
977	Bend	102.6	100.2	101.6
978	Pendleton	98.6	100.3	99.3
979	Vale	96.2	87.0	92.3
PENNSYLVANIA				
150-152	Pittsburgh	100.7	102.7	101.5
153	Washington	97.5	100.2	98.6
154	Uniontown	97.8	99.8	98.6
155	Bedford	98.8	92.1	96.0
156	Greensburg	98.7	96.3	97.7
157	Indiana	97.6	97.7	97.7
158	Dubois	99.3	96.0	97.9
159	Johnstown	98.9	91.9	95.9
160	Butler	91.3	100.6	95.2
161	New Castle	91.4	97.8	94.1
162	Kittanning	91.8	97.9	94.4
163	Oil City	91.3	97.8	94.0
164-165	Erie	93.2	93.9	93.5
166	Altoona	93.3	92.8	93.1
167	Bradford	94.9	97.1	95.8
168	State College	94.5	94.6	94.5
169	Wellsboro	95.5	92.9	94.4
170-171	Harrisburg	98.7	93.0	96.3
172	Chambersburg	95.1	89.4	92.7
173-174	York	95.2	93.0	94.3
175-176	Lancaster	93.8	94.5	94.1

STATE/ZIP	CITY	MAT.	INST.	TOTAL
PENNSYLVANIA (CONT'D)				
177	Williamsport	92.5	92.3	92.4
178	Sunbury	94.6	92.7	93.8
179	Pottsville	93.7	96.1	94.7
180	Lehigh Valley	94.9	111.6	102.0
181	Allentown	96.7	105.8	100.6
182	Hazleton	94.4	95.9	95.0
183	Stroudsburg	94.3	104.7	98.7
184-185	Scranton	97.4	96.5	97.1
186-187	Wilkes-Barre	94.0	95.5	94.7
188	Montrose	93.8	96.8	95.1
189	Doylestown	94.0	127.1	108.0
190-191	Philadelphia	100.2	138.7	116.5
193	Westchester	95.8	127.9	109.3
194	Norristown	94.7	128.0	108.8
195-196	Reading	96.5	101.5	98.6
PUERTO RICO				
009	San Juan	98.5	29.8	69.4
RHODE ISLAND				
028	Newport	97.0	114.7	104.5
029	Providence	99.3	115.0	105.9
SOUTH CAROLINA				
290-292	Columbia	97.6	68.9	85.5
293	Spartanburg	97.2	68.3	85.0
294	Charleston	98.7	68.2	85.8
295	Florence	96.9	68.6	84.9
296	Greenville	97.0	68.2	84.8
297	Rock Hill	96.7	66.4	83.9
298	Aiken	97.6	67.1	84.7
299	Beaufort	98.3	57.5	81.1
SOUTH DAKOTA				
570-571	Sioux Falls	97.7	78.4	89.5
572	Watertown	97.3	69.0	85.4
573	Mitchell	96.3	60.9	81.3
574	Aberdeen	98.6	70.1	86.5
575	Pierre	99.0	68.5	86.1
576	Mobridge	96.9	62.9	82.5
577	Rapid City	98.3	72.0	87.2
TENNESSEE				
370-372	Nashville	98.0	71.8	86.9
373-374	Chattanooga	98.0	68.1	85.3
375-380-381	Memphis	96.6	69.8	85.3
376	Johnson City	98.1	58.6	81.4
377-379	Knoxville	94.8	63.7	81.6
382	McKenzie	96.3	55.1	78.9
383	Jackson	97.6	61.4	82.3
384	Columbia	94.8	66.5	82.8
385	Cookeville	96.2	56.9	79.6
TEXAS				
750	McKinney	97.2	63.5	82.9
751	Waxahachie	97.2	63.5	83.0
752-753	Dallas	98.2	68.0	85.4
754	Greenville	97.4	62.9	82.8
755	Texarkana	96.7	62.0	82.1
756	Longview	97.5	61.0	82.1
757	Tyler	97.8	61.6	82.5
758	Palestine	94.2	60.4	79.9
759	Lufkin	94.7	62.6	81.1
760-761	Fort Worth	97.6	62.9	82.9
762	Denton	97.3	62.9	82.7
763	Wichita Falls	95.0	61.6	80.9
764	Eastland	94.2	60.3	79.8
765	Temple	92.5	58.5	78.2
766-767	Waco	94.4	62.4	80.9
768	Brownwood	97.4	58.7	81.1
769	San Angelo	97.1	59.4	81.2
770-772	Houston	100.4	68.2	86.8
773	Huntsville	98.7	62.8	83.6
774	Wharton	99.8	64.3	84.8
775	Galveston	97.7	66.5	84.5
776-777	Beaumont	97.9	65.5	84.2
778	Bryan	95.2	64.9	82.4
779	Victoria	99.7	62.9	84.2
780	Laredo	96.4	61.1	81.5
781-782	San Antonio	98.3	62.3	83.1
783-784	Corpus Christi	98.9	61.4	83.1
785	McAllen	99.7	56.5	81.4
786-787	Austin	97.2	61.4	82.1

Location Factors - Commercial

STATE/ZIP	CITY	MAT.	INST.	TOTAL	STATE/ZIP	CITY	MAT.	INST.	TOTAL					
TEXAS (CONT'D)														
788	Del Rio	99.7	60.4	83.1	538	Lancaster	96.7	94.3	95.7					
789	Giddings	96.1	60.4	81.0	539	Portage	95.2	98.0	96.4					
790-791	Amarillo	98.2	60.0	82.1	540	New Richmond	95.4	94.6	95.0					
792	Childress	97.6	60.3	81.8	541-543	Green Bay	99.4	93.4	96.9					
793-794	Lubbock	99.2	62.9	83.9	544	Wausau	94.7	93.4	94.2					
795-796	Abilene	97.8	61.4	82.4	545	Rhinelander	97.9	92.2	95.5					
797	Midland	99.7	62.2	83.8	546	La Crosse	95.9	93.5	94.9					
798-799,885	El Paso	95.9	63.6	82.3	547	Eau Claire	97.5	94.1	96.1					
UTAH														
840-841	Salt Lake City	103.5	71.7	90.1	548	Superior	95.1	96.5	95.7					
842,844	Ogden	98.8	71.7	87.4	549	Oshkosh	95.4	91.9	93.9					
843	Logan	100.9	71.7	88.5	WYOMING									
845	Price	101.4	70.0	88.1	820	Cheyenne	101.1	72.7	89.1					
846-847	Provo	101.2	71.2	88.5	821	Yellowstone Nat'l Park	99.0	71.9	87.6					
VERMONT														
050	White River Jct.	98.2	79.8	90.4	822	Wheatland	100.3	67.1	86.2					
051	Bellows Falls	96.7	92.1	94.8	823	Rawlins	102.0	71.5	89.1					
052	Bennington	97.0	88.6	93.4	824	Worland	99.7	70.7	87.5					
053	Brattleboro	97.4	92.1	95.2	825	Riverton	101.0	68.6	87.3					
054	Burlington	101.9	79.8	92.5	826	Casper	101.5	68.9	87.7					
056	Montpelier	100.2	84.4	93.5	827	Newcastle	99.6	71.1	87.5					
057	Rutland	98.9	79.4	90.7	828	Sheridan	102.5	70.2	88.8					
058	St. Johnsbury	98.1	79.3	90.2	829-831	Rock Springs	103.4	71.4	89.9					
059	Guildhall	96.8	79.0	89.3	CANADIAN FACTORS (reflect Canadian currency)									
VIRGINIA														
220-221	Fairfax	99.5	83.6	92.8	ALBERTA									
222	Arlington	100.4	84.2	93.6	Calgary	119.7	95.6	109.5						
223	Alexandria	99.6	84.8	93.3	Edmonton	121.8	95.9	110.9						
224-225	Fredericksburg	98.3	78.7	90.0	Fort McMurray	121.9	88.4	107.7						
226	Winchester	98.9	79.5	90.7	Lethbridge	117.0	87.9	104.7						
227	Culpeper	98.7	83.0	92.1	Lloydminster	111.5	84.7	100.2						
228	Harrisonburg	99.0	68.8	86.3	Medicine Hat	111.7	84.0	100.0						
229	Charlottesville	99.4	71.0	87.4	Red Deer	112.1	84.0	100.2						
230-232	Richmond	99.2	72.8	88.1	BRITISH COLUMBIA									
233-235	Norfolk	99.9	68.7	86.7	Kamloops	113.0	83.5	100.5						
236	Newport News	98.8	68.3	85.9	Prince George	114.0	82.8	100.8						
237	Portsmouth	98.3	67.8	85.4	Vancouver	117.9	92.4	107.2						
238	Petersburg	98.7	72.6	87.7	Victoria	114.1	87.6	102.9						
239	Farmville	97.9	65.3	84.1	MANITOBA									
240-241	Roanoke	100.1	73.6	88.9	Brandon	120.6	70.5	99.4						
242	Bristol	98.2	59.3	81.8	Portage la Prairie	111.6	69.1	93.6						
243	Pulaski	97.8	67.1	84.8	Winnipeg	122.0	71.2	100.5						
244	Staunton	98.6	67.9	85.6	NEW BRUNSWICK									
245	Lynchburg	98.7	73.8	88.2	Bathurst	110.7	62.3	90.2						
246	Grundy	98.1	58.8	81.5	Dalhousie	110.2	62.5	90.0						
WASHINGTON														
980-981,987	Seattle	106.3	112.5	108.9	Fredericton	119.3	69.0	98.0						
982	Everett	105.1	104.0	104.6	Moncton	110.9	76.0	96.2						
983-984	Tacoma	105.4	101.3	103.7	Newcastle	110.7	62.9	90.5						
985	Olympia	104.0	101.8	103.1	Saint John	113.2	75.7	97.3						
986	Vancouver	106.6	102.8	105.0	NEWFOUNDLAND									
988	Wenatchee	105.6	88.7	98.5	Corner Brook	124.7	68.4	100.9						
989	Yakima	105.6	95.4	101.3	St. John's	122.6	87.4	107.7						
990-992	Spokane	100.1	82.4	92.6	NORTHWEST TERRITORIES									
993	Richland	99.8	90.0	95.6	Yellowknife	131.4	83.2	111.0						
994	Clarkston	99.1	81.9	91.8	NOVA SCOTIA									
WEST VIRGINIA														
247-248	Bluefield	97.0	88.1	93.2	Bridgewater	111.3	70.3	94.0						
249	Lewisburg	98.7	86.1	93.4	Dartmouth	121.5	70.2	99.8						
250-253	Charleston	96.5	89.4	93.5	Halifax	117.9	88.0	105.2						
254	Martinsburg	96.7	84.1	91.4	New Glasgow	119.6	70.2	98.7						
255-257	Huntington	97.8	92.2	95.4	Sydney	117.8	70.2	97.7						
258-259	Beckley	95.2	87.7	92.0	Truro	110.8	70.3	93.7						
260	Wheeling	99.6	89.6	95.4	Yarmouth	119.5	70.2	98.7						
261	Parkersburg	98.6	88.6	94.4	ONTARIO									
262	Buckhannon	98.3	88.8	94.3	Barrie	116.5	87.1	104.1						
263-264	Clarksburg	98.9	89.5	94.9	Brantford	113.1	90.7	103.6						
265	Morgantown	98.8	89.6	94.9	Cornwall	113.1	87.3	102.2						
266	Gassaway	98.3	89.0	94.3	Hamilton	116.3	98.8	108.9						
267	Romney	98.3	87.2	93.6	Kingston	114.1	87.4	102.8						
268	Petersburg	98.0	85.9	92.9	Kitchener	108.6	94.6	102.7						
WISCONSIN														
530,532	Milwaukee	99.2	107.9	102.9	London	116.3	96.5	108.0						
531	Kenosha	99.4	102.0	100.5	North Bay	122.5	85.2	106.8						
534	Racine	98.7	102.3	100.2	Oshawa	110.8	97.2	105.0						
535	Beloit	98.6	98.9	98.7	Ottawa	117.5	96.8	108.7						
537	Madison	99.7	98.1	99.0	Owen Sound	116.7	85.4	103.4						
					Peterborough	113.1	87.1	102.1						
					Sarnia	113.2	91.3	103.9						

Location Factors - Commercial

STATE/ZIP	CITY	MAT.	INST.	TOTAL
ONTARIO (CONT'D)	Sault Ste. Marie	108.6	88.7	100.2
	St. Catharines	106.6	95.6	101.9
	Sudbury	106.1	93.6	100.8
	Thunder Bay	107.8	95.0	102.4
	Timmins	113.3	85.3	101.4
	Toronto	116.0	104.2	111.0
	Windsor	107.1	94.4	101.8
PRINCE EDWARD ISLAND				
	Charlottetown	121.3	60.2	95.5
	Summerside	121.9	57.9	94.9
QUEBEC				
	Cap-de-la-Madeleine	110.6	80.0	97.7
	Charlesbourg	110.6	80.0	97.7
	Chicoutimi	110.4	87.6	100.7
	Gatineau	110.3	79.8	97.4
	Granby	110.5	79.7	97.5
	Hull	110.5	79.8	97.5
	Joliette	110.8	80.0	97.8
	Laval	110.7	81.6	98.4
	Montreal	119.1	90.1	106.9
	Quebec City	118.7	90.4	106.7
	Rimouski	110.2	87.6	100.6
	Rouyn-Noranda	110.3	79.8	97.4
	Saint-Hyacinthe	109.8	79.8	97.1
	Sherbrooke	110.6	79.8	97.6
	Sorel	110.8	80.0	97.8
	Saint-Jerome	110.4	79.8	97.4
	Trois-Rivieres	120.2	79.9	103.2
SASKATCHEWAN				
	Moose Jaw	109.0	63.9	89.9
	Prince Albert	108.2	62.2	88.8
	Regina	123.1	92.4	110.2
	Saskatoon	109.9	88.5	100.9
YUKON				
	Whitehorse	132.2	69.2	105.6

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.

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}
Force	Gallons (U.S. liquid) ^b	x	3.785	= Liters ^{c, d}
	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
Pressure, Stress, Strength (Force per unit area)	Kips	x	453.6	= Kilograms force ^d
	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
Flow	Pounds force per square foot	x	4.882	= Kilograms force per square meter ^d
	Cubic feet per minute	x	0.4719	= Liters per second
	Gallons per minute	x	0.0631	= Liters per second
Bending Moment Or Torque	Gallons per hour	x	1.05	= Milliliters per second
	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

^aThe factor given is exact

^bOne U.S. gallon = 0.8327 Canadian gallon

^c1 liter = 1000 milliliters = 1000 cubic centimeters

1 cubic decimeter = 0.001 cubic meter

^dMetric but not SI unit

^eCalled "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

General Requirements**R0111 Summary of Work****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.

General Requirements**R0121 Allowances****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.

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

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	4.85
Connecticut	6.35	Maine	5.5	New York	4	Vermont	6
Delaware	0	Maryland	6	North Carolina	4.75	Virginia	4.3
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	5.06 %

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	14.975
Saskatchewan	6	0	5	0
Yukon	0	0	5	0

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 6.0% 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 2020 is estimated at time of publication to be 7.65% of wages up to \$137,100.

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	6.93	Montana	6.30	Rhode Island	9.49
Alaska	5.4	Indiana	7.4	Nebraska	5.4	South Carolina	5.46
Arizona	12.76	Iowa	7.5	Nevada	5.4	South Dakota	9.35
Arkansas	14.3	Kansas	7.6	New Hampshire	7.5	Tennessee	10.0
California	6.2	Kentucky	9.3	New Jersey	5.8	Texas	6.5
Colorado	8.15	Louisiana	6.2	New Mexico	5.4	Utah	7.1
Connecticut	6.8	Maine	5.46	New York	9.1	Vermont	7.7
Delaware	8.20	Maryland	7.50	North Carolina	5.76	Virginia	6.21
District of Columbia	7	Massachusetts	12.65	North Dakota	10.74	Washington	7.73
Florida	5.4	Michigan	10.3	Ohio	9	West Virginia	8.5
Georgia	5.4	Minnesota	9.1	Oklahoma	5.5	Wisconsin	12.0
Hawaii	5.6	Mississippi	5.6	Oregon	5.4	Wyoming	8.8
Idaho	5.4	Missouri	8.37	Pennsylvania	11.03	Median	7.40%

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

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.

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.

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

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.

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.	2.3 % to 16.9%	9.6%	4.8%	4.9%	4.5%	0.46%	0.47%	0.43%
Piles & Foundations	3.3 to 28.0	15.7	7.1	5.2	8.7	1.11	0.82	1.37
Concrete	3.1 to 25.8	14.4	5.0	14.8	3.7	0.72	2.13	0.53
Masonry	3.3 to 52.1	27.7	6.9	7.5	1.9	1.91	2.08	0.53
Structural Steel	4.4 to 31.8	18.1	10.7	3.9	17.6	1.94	0.71	3.19
Miscellaneous & Ornamental Metals	2.9 to 21.4	12.2	2.8	4.0	3.6	0.34	0.49	0.44
Carpentry & Millwork	3.4 to 29.1	16.2	3.7	4.0	0.5	0.60	0.65	0.08
Metal or Composition Siding	4.8 to 124.6	64.7	2.3	0.3	4.3	1.49	0.19	2.78
Roofing	4.8 to 110.4	57.6	2.3	2.6	3.1	1.32	1.50	1.79
Doors & Hardware	3.1 to 29.1	16.1	0.9	1.4	0.4	0.14	0.23	0.06
Sash & Glazing	3.9 to 21.6	12.8	3.5	4.0	1.0	0.45	0.51	0.13
Lath & Plaster	2.7 to 30.1	16.4	3.3	6.9	0.8	0.54	1.13	0.13
Tile, Marble & Floors	2.0 to 19.0	10.5	2.6	3.0	0.5	0.27	0.32	0.05
Acoustical Ceilings	1.7 to 29.7	15.7	2.4	0.2	0.3	0.38	0.03	0.05
Painting	3.3 to 37.4	20.3	1.5	1.6	1.6	0.30	0.32	0.32
Interior Partitions	3.4 to 29.1	16.2	3.9	4.3	4.4	0.63	0.70	0.71
Miscellaneous Items	1.9 to 97.7	10.3	5.2	3.7	9.7	0.54	0.38	1.00
Elevators	1.3 to 9.0	5.1	2.1	1.1	2.2	0.11	0.06	0.11
Sprinklers	1.8 to 14.6	8.2	0.5	—	2.0	0.04	—	0.16
Plumbing	1.4 to 13.3	7.4	4.9	7.2	5.2	0.36	0.53	0.38
Heat., Vent., Air Conditioning	2.8 to 15.8	9.3	13.5	11.0	12.9	1.26	1.02	1.20
Electrical	1.7 to 10.7	6.2	10.1	8.4	11.1	0.63	0.52	0.69
Total	1.3 % to 124.6%	—	100.0%	100.0%	100.0%	15.54%	14.79%	16.13%

Overall Weighted Average 15.49%

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 9.9%.

State	Weighted Average	Factor	State	Weighted Average	Factor	State	Weighted Average	Factor
Alabama	12.4%	126	Kentucky	10.5%	108	North Dakota	6.4%	65
Alaska	8.6	88	Louisiana	17.5	178	Ohio	5.5	56
Arizona	7.7	79	Maine	8.0	81	Oklahoma	7.4	76
Arkansas	5.1	52	Maryland	9.7	99	Oregon	7.5	76
California	19.6	200	Massachusetts	8.8	90	Pennsylvania	17.2	175
Colorado	6.2	63	Michigan	6.3	64	Rhode Island	10.0	102
Connecticut	12.4	126	Minnesota	13.4	137	South Carolina	16.2	165
Delaware	11.8	120	Mississippi	9.2	94	South Dakota	7.6	77
District of Columbia	7.7	78	Missouri	12.0	122	Tennessee	6.0	61
Florida	8.4	86	Montana	7.1	73	Texas	4.9	50
Georgia	30.0	307	Nebraska	11.7	120	Utah	5.7	58
Hawaii	8.4	86	Nevada	7.6	77	Vermont	8.9	91
Idaho	7.8	79	New Hampshire	8.8	90	Virginia	6.7	69
Illinois	17.5	179	New Jersey	14.2	145	Washington	7.3	75
Indiana	3.1	32	New Mexico	13.0	132	West Virginia	4.2	42
Iowa	9.9	101	New York	15.6	159	Wisconsin	11.2	115
Kansas	5.6	57	North Carolina	11.6	119	Wyoming	4.8	49

Weighted Average for U.S. is 9.9% of payroll = 100%

The weighted average skilled worker rate for 35 trades is 9.8%. 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 9.8% = 4.66% 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.

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	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

General Requirements**R0151 Temporary Utilities****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%.

Description of Component	Number of Pieces for	
	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.

Item	Number of Pieces for	
	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.

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.		170 H.P.
60 ton	25,000 ft-lb.		300 H.P.
100 ton		to 32,000 ft-lb.	
		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

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 personnel.
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 with 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 contaminant levels 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 surfaces.
11. Post abatement inspection by industrial hygienist to verify plan compliance.
12. Provide a certificate from a licensed industrial hygienist attesting that contaminant levels are within acceptable standards before returning area to regular use.

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 polyform 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 polyform. 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.

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

polyform 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.

2 x 4's at 12" to 32" O.C. Walers are generally 2 - 2 x 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 polyform.

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

$$\frac{(1st \text{ Use} + Reuse)}{2} = \text{avg. cost}/2 \text{ uses}$$

3 Uses

$$\frac{(1st \text{ Use} + 2 \text{ Reuses})}{3} = \text{avg. cost}/3 \text{ uses}$$

4 Uses

$$\frac{(1st \text{ use} + 3 \text{ Reuses})}{4} = \text{avg. cost}/4 \text{ uses}$$

R031113-60 Formwork Labor-Hours

Item	Hours Required				Total Hours	Multiple Use		
	Unit	Fabricate	Erect & Strip	Clean & Move	1 Use	2 Use	3 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 3/8" rib lath or slab form				1.0 0.9	1.0 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				
16"				22.9				
20"				23.7				
24"				24.6				
30"				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 2' chords		8.0	9.5	2.0	19.5	16.0	14.8	14.3
Prefabricated modular, to 8' high		7.0	8.0	1.5	16.5	13.5	12.5	12.0
Steel, to 8' high		—	4.3	1.0	5.3	5.3	5.3	5.3
8" to 16" high		—	6.8	1.2	8.0	8.0	8.0	8.0
Steel framed plywood to 8' high		—	9.1	1.5	10.6	10.3	10.2	10.2
8" to 16" high		—	6.8	1.2	8.0	7.5	7.3	7.2
		—	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

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 roddmen 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		lbs	kg
				in.	cm	in.	cm		
Rolls	6 x 6 — W1.4 x W1.4	6 x 6 — 10 x 10	1	.028	.071	.028	.071	21	9.53
	6 x 6 — W2.0 x W2.0	6 x 6 — 8 x 8		.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		.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	2	.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		.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

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
	100	20	.62	1.03	2.34		45	102	
		25	.77	1.03	2.99		36	105	
		30	.95	1.03	4.09		29	116	
Flat Slab (two way with drop panels)	50	20	.64	1.03	2.83		43	119	
		25	.79	1.03	3.88		35	133	
		30	.96	1.03	4.66		29	131	
	100	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	
Two Way Beam & Slab	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	
	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
Columns (spirally reinforced)	12" diameter	34.5 L.F. 34.5	190 lbs. 190	#4 to #11 #14 & #18	165 lbs. —
	14"	25 25	170 170	#4 to #11 #14 & #18	150 800
	16"	19 19	160 160	#4 to #11 #14 & #18	160 605
	18"	15 15	150 150	#4 to #11 #14 & #18	160 480
	20"	12 12	130 130	#4 to #11 #14 & #18	155 385
	22"	10 10	125 125	#4 to #11 #14 & #18	165 320
	24"	9 9	120 120	#4 to #11 #14 & #18	195 290
	26"	7.3 7.3	100 100	#4 to #11 #14 & #18	200 235
	28"	6.3 6.3	95 95	#4 to #11 #14 & #18	175 200
	30"	5.5 5.5	90 90	#4 to #11 #14 & #18	180 175
	32"	4.8 4.8	85 85	#4 to #11 #14 & #18	185 155
	34"	4.3 4.3	80 80	#4 to #11 #14 & #18	180 170
	36"	3.8 3.8	75 75	#4 to #11 #14 & #18	165 155
	40"	3.0 3.0	70 70	#4 to #11 #14 & #18	165 145

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
	Gravity, with Vertical Face	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
		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	

Beams	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.
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 $4/2 \times .57 = 1.14$ tons.

1 bag cement = 94#

1 C.Y. sand or crushed gravel = 2700#

1 C.Y. crushed stone = 2575#

4 bags = 1 barrel

1 ton sand or crushed gravel = 20 C.F.

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.

**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/cm ² *
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.)									
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	100.75	7.28	8.46	81.25	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	116.25	8.40	9.76	93.75	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	131.75	9.52	11.06	106.25	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	147.25	10.64	12.36	118.75	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.

R033105-70 Placing Ready-Mixed Concrete

For ground pours allow for 5% waste when figuring quantities.

Prices in 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

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.

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.

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

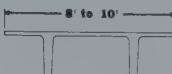
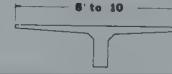
The second CPAA defined category is reflective clarity and sheen, the polishing of a concrete surface with the minimum number of bonded abrasives as indicated to achieve one of the following levels:

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
	Roof	4" 6" 8" 10" 12"	Roof Floor	40 for Roof 100 for Floor
Single Tee 	Roof	28" 32" 36" 48"	40 80 100 120	40
	AASHTO Girder 	Type 4 5 6	100 110 125	Highway
	Box Beam 	15" 27" 33"	40 to 100	Highway

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.

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	
	Strand		Bars		Strand	
Type Steel	0.5"		3/4"	1-3/8"	0.5"	0.6"
Diameter	4	12	1	1	1	1
Number	100	300	42	143	25	35
Force in Kips						
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 Non-bonded	0.038	0.020	0.020	0.015	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 x 6 or 10 x 10 welded wire mesh.

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.

Masonry**R0405 Common Work Results for Masonry****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	Mortar Type	Allowable Proportions by Volume				Compressive Strength @ 28 days
		Portland Cement	Masonry Cement	Hydrated Lime	Masonry Sand	
Plain Masonry	M	1	1	—	6	
		1	—	1/4	3	2500 psi
	S	1/2	1	—	4	
		1	—	1/4 to 1/2	4	1800 psi
	N	—	1	—	3	
		1	—	1/2 to 1-1/4	6	750 psi
Reinforced Masonry	O	—	1	—	3	
		1	—	1-1/4 to 2-1/2	9	350 psi
	K	1	—	2-1/2 to 4	12	75 psi
	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' x 3' x 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		
Type Brick	Number of Brick per S.F. of Wall - Single Wythe with 3/8" Joints			C.F. of Mortar per M Bricks, Waste Included		Bond Type	Description	Factor
	Nominal Size (incl. mortar)	Modular Coursing	Number of Brick per S.F.	3/8" Joint	1/2" Joint			
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.			Blocks per 100 S.F.	Mortar per M block, waste included	
	Standard	Lightweight	Partitions		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

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Brick Construction 10:

Dimensioning and Estimating Brick Masonry. Reston (VA): BIA. Table 1
Modular Brick Sizes and Table 4 Quantity Estimates for Brick Masonry.

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.

Metals**R0505 Common Work Results for Metals****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		to 10			10
Parking garage	4	Various	80	8.5	Office	20	Various	80	18
Domes (Schwedler)*	1	200'	30	10		30			26
		300'		15		over 50			35

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 adherent 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 A529	36	All structural shape groups, and plates & bars up through 8" thick
		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.

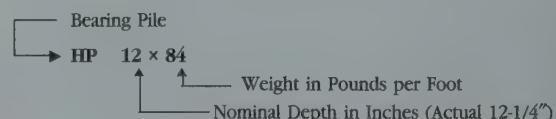
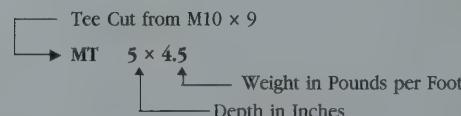
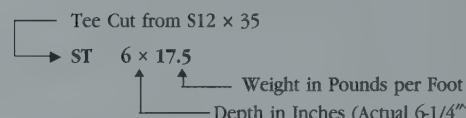
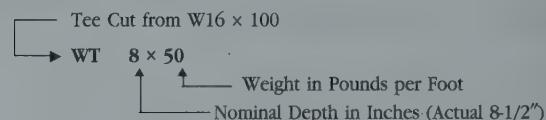
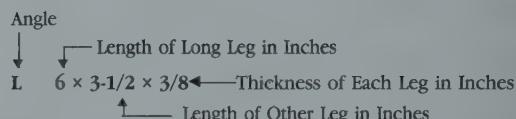
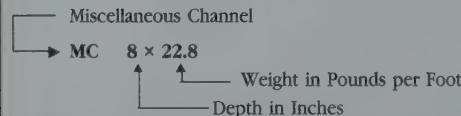
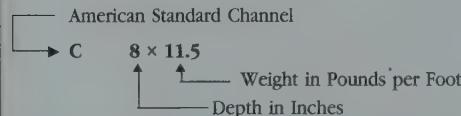
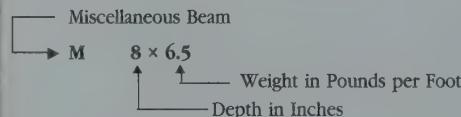
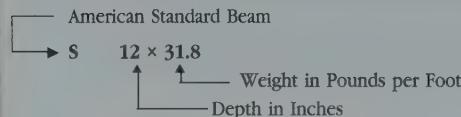
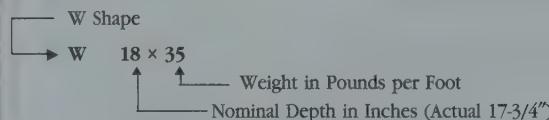
The per ton erection and fabricating costs of the high strength steels will be higher than for A992 since the same number of pieces, but less weight, will be installed.

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 Shape Parallel flange surfaces		Miscellaneous Channel Infrequently rolled by some producers
	American Standard Beam (I Beam) Sloped inner flange		Angle Equal or unequal legs, constant thickness
	Miscellaneous Beams Cannot be classified as W, HP or S; infrequently rolled by some producers		Structural Tee Cut from W, M or S on center of web
	American Standard Channel Sloped inner flange		Bearing Pile Parallel flanges and equal flange and web thickness

Common drawing designations follow:



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	LF.
W8 x 67	.057	LF.
W10 x 45	.054	LF.
W10 x 112	.058	LF.
W12 x 50	.054	LF.
W12 x 190	.061	LF.
W14 x 74	.057	LF.
W14 x 176	.061	LF.

Table B				
Description	Labor-Hours	Unit	Labor-Hours	Unit
Beams, W Shape				
W6 x 9	.949	Ea.	.093	LF.
W10 x 22	1.037	Ea.	.085	LF.
W12 x 26	1.037	Ea.	.064	LF.
W14 x 34	1.333	Ea.	.069	LF.
W16 x 31	1.333	Ea.	.062	LF.
W18 x 50	2.162	Ea.	.088	LF.
W21 x 62	2.222	Ea.	.077	LF.
W24 x 76	2.353	Ea.	.072	LF.
W27 x 94	2.581	Ea.	.067	LF.
W30 x 108	2.857	Ea.	.067	LF.
W33 x 130	3.200	Ea.	.071	LF.
W36 x 300	3.810	Ea.	.077	LF.

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.

R051293-80 Dimensions and Weights of Sheet Steel

Gauge No.	Approximate Thickness				Weight		
	Inches (in fractions)	Inches (in decimal parts)		Millimeters			
	Wrought Iron	Wrought Iron	Steel	Steel	per S.F. in Ounces	per S.F. in Lbs.	per Square Meter in Kg.
0000000	.5	.4782	12.146	320	20.000	97.650	
000000	.46875	.4484	11.389	300	18.750	91.550	
00000	.4375	.4185	10.630	280	17.500	85.440	
00000	.40625	.3886	9.870	260	16.250	79.330	
000	.375	.3587	9.111	240	15.000	73.240	
00	.34375	.3288	8.352	220	13.750	67.130	
0	.3125	.2989	7.592	200	12.500	61.030	
1	.28125	.2690	6.833	180	11.250	54.930	
2	.265625	.2541	6.454	170	10.625	51.880	
3	.25	.2391	6.073	160	10.000	48.820	
4	.234375	.2242	5.695	150	9.375	45.770	
5	.21875	.2092	5.314	140	8.750	42.720	
6	.203125	.1943	4.935	130	8.125	39.670	
7	.1875	.1793	4.554	120	7.500	36.320	
8	.171875	.1644	4.176	110	6.875	33.570	
9	.15625	.1495	3.797	100	6.250	30.520	
10	.140625	.1345	3.416	90	5.625	27.460	
11	.125	.1196	3.038	80	5.000	24.410	
12	.109375	.1046	2.657	70	4.375	21.360	
13	.09375	.0897	2.278	60	3.750	18.310	
14	.078125	.0747	1.897	50	3.125	15.260	
15	.0713125	.0673	1.709	45	2.813	13.730	
16	.0625	.0598	1.519	40	2.500	12.210	
17	.05625	.0538	1.367	36	2.250	10.990	
18	.05	.0478	1.214	32	2.000	9.765	
19	.04375	.0418	1.062	28	1.750	8.544	
20	.0375	.0359	.912	24	1.500	7.324	
21	.034375	.0329	.836	22	1.375	6.713	
22	.03125	.0299	.759	20	1.250	6.103	
23	.028125	.0269	.683	18	1.125	5.490	
24	.025	.0239	.607	16	1.000	4.882	
25	.021875	.0209	.531	14	.875	4.272	
26	.01875	.0179	.455	12	.750	3.662	
27	.0171875	.0164	.417	11	.688	3.357	
28	.015625	.0149	.378	10	.625	3.052	

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.

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.

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	Full Flush	20	0.032	0.8
		2	Seamless			
II	Heavy Duty	1	Full Flush	18	0.042	1.0
		2	Seamless			
III	Extra Heavy Duty	1	Full Flush	16	0.053	1.3
		2	Seamless			
		3	*Stile & Rail			
IV	Maximum Duty	1	Full Flush	14	0.067	1.6
		2	Seamless			

*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.

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

Openings

R0881 Glass Glazing

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.

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 Quantities for 100 S.Y.	2 Coat, 5/8" Thick		3 Coat, 3/4" Thick		
	Base	Finish	Scratch	Brown	Finish
	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 Quantities for 100 S.Y.	2 Coat, 5/8" Thick		3 Coat, 3/4" Thick		
	Base	Finish	Scratch	Brown	Finish
	1,250 lb.	7.8 bags	1,450 lb.	800 lb.	3.3 bags
Gypsum plaster			340 lb.		340 lb.
Vermiculite or perlite			170 lb.		170 lb.
Finish hydrated lime					
Gauging plaster					

Stucco-Three-Coat System Quantities for 100 S.Y.	On Wood Frame		On Masonry	
	Portland cement	Sand	Hydrated lime	Hydrated lime
	29 bags		21 bags	
	2.6 C.Y.		2.0 C.Y.	
	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 habituated 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.

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 fil, 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' x 2' panels require 1.00 L.F. divider strip per S.F.

3' x 3' panels require 0.67 L.F. divider strip per S.F.

4' x 4' panels require 0.50 L.F. divider strip per S.F.

5' x 5' panels require 0.40 L.F. divider strip per S.F.

6' x 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.

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

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%

Special Construction

R1334 Fabricated Engineered Structures

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.

A. Base Unit	Passenger		Freight		Hospital	
	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:

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.

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.

Plumbing**R2201 Operation & Maintenance of Plumbing****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.

Plumbing**R2211 Facility Water Distribution****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

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:

$$\frac{(\text{L.F. Raceway} \times \text{No. of Conductors}) \times 1.10}{100} = \text{C.L.F.}$$

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

Amperes	Minimum Wire Sizes								
	Copper		Aluminum		Amperes	Copper		Aluminum	
	THW THWN or XHHW	THHN XHHW *	THW XHHW	THHN XHHW *		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:

- Size #14 to 4/0 is in AWG units (American Wire Gauge).
- Size 250 to 750 is in kcmil units (Thousand Circular Mils).
- Use next higher ampere value if exact value is not listed in table.
- For loads that operate continuously increase ampere value by 25% to obtain proper wire size.
- 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																								4"		
	1/2"			3/4"			1"			1-1/4"			1-1/2"			2"			2-1/2"			3"			3-1/2"		
TW	THW	THWN	TW	THW	THWN	TW	THW	THWN	TW	THW	THWN	TW	THW	THWN	TW	THW	THWN	TW	THW	THWN	TW	THW	THWN	TW	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		1	2		3	3	4	5	6	7	8	9
400									1	1		1		1	1		1	1		2	3	4	5	5	6	7	8
500									1	1		1		1	1		1	1		1	2	3	4	4	5	6	7
600										1		1		1	1		1	1		1	1	3	3	4	4	5	5
700											1	1		1	1		1	1		1	1	2	3	3	4	4	5
750	↓											1	1		1	1		1	1		1	1	2	2	3	3	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.

Number of B.C.Y. per truck = 1.5 C.Y. bucket \times 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
<hr/> 23 minute cycle		

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

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

Fleet Haul Production per day in B.C.Y.

$$4 \text{ trucks} \times \frac{50 \text{ min. hour}}{23 \text{ min. haul cycle}} \times 8 \text{ hrs.} \times 10.2 \text{ B.C.Y.}$$

$$= 4 \times 2.2 \times 8 \times 10.2 = 718 \text{ B.C.Y./day}$$

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.

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
	Common earth	2800	30	145	200	250	295	335	375	425
Drag Line Optimum Cut (Ft.)	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)
	Moist loam, sandy clay	3400	40	130	180	220	250	290	325	385
	Sand and gravel	3100	18	130	175	210	245	280	315	375
Loading Tractors	Common earth	2800	30	110	160	190	220	250	280	310
	Clay, hard, dense	3000	33	90	130	160	190	225	250	280
				(8.0)	(9.0)	(9.9)	(10.5)	(11.0)	(11.5)	(12.0)
	Rock, well-blasted	4000	50	180	245	380	520	100	130	180
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.										
260 340 510 690 135 180 250										
245 320 480 650 130 170 235										
230 300 460 620 120 155 220										
200 270 415 560 110 145 200										
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. Header pipe, 8" diameter Discharge pipe, 8" diameter 8" valves Combination jetting & wellpoint pump (standby) Wellpoint pump, 8" diameter Transportation to and from site Fuel for 30 days x 60 gal./day Lubricants for 30 days x 16 lbs./day Sand for points	40 Each 200 L.F. 100 L.F. 3 Each 1 Each 1 Each 1 Day 1800 Gallons 480 Lbs. 40 C.Y.
Labor	Technician to supervise installation Labor for installation and removal of system 4 Operators straight time 40 hrs./wk. for 4.33 wks. 4 Operators overtime 2 hrs./wk. for 4.33 wks.	1 Week 300 Labor-hours 693 Hrs. 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.

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.

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
Hardpan		
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.

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.

Transportation

R3472 Railway Construction

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

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	96.25	105.6	111.1
	10	100	95	90	85	92.50	110.0	120.0
	11	95	90	75	65	81.25	113.6	127.3
	12	90	85	70	60	76.25	116.7	133.3
6	8	100	100	95	90	96.25	108.3	116.7
	9	100	95	90	85	92.50	113.0	125.9
	10	95	90	85	80	87.50	116.7	133.3
	11	95	85	70	65	78.75	119.7	139.4
	12	90	80	65	60	73.75	122.2	144.4
7	8	100	95	85	75	88.75	114.3	128.6
	9	95	90	80	70	83.75	118.3	136.5
	10	90	85	75	65	78.75	121.4	142.9
	11	85	80	65	60	72.50	124.0	148.1
	12	85	75	60	55	68.75	126.2	152.4

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:

$$0.875 \times 60 = 52.5$$

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.

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.

Back by customer demand!

You asked and we listened. For customer convenience and estimating ease, we have made the 2020 Project Costs available for download at RSMeans.com/2020books. You will also find sample estimates, an RSMeans data overview video, and a book registration form to receive quarterly data updates throughout 2020.

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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50 17 | Project Costs

50 17 00 Project Costs		UNIT	UNIT COSTS			% OF TOTAL		
			1/4	MEDIAN	3/4	1/4	MEDIAN	3/4
01	0000 Auto Sales with Repair	S.F.						
	0100 Architectural		106	119	128	58%	64%	67%
	0200 Plumbing		8.90	9.30	12.40	4.84%	5.20%	6.80%
	0300 Mechanical		11.90	15.95	17.60	6.40%	8.70%	10.15%
	0400 Electrical		18.30	22.50	28.50	9.05%	11.70%	15.90%
02	0500 Total Project Costs		178	186	191			
	0000 Banking Institutions	S.F.						
	0100 Architectural		160	197	239	59%	65%	69%
	0200 Plumbing		6.45	9	12.50	2.12%	3.39%	4.19%
	0300 Mechanical		12.80	17.70	21	4.41%	5.10%	10.75%
03	0400 Electrical		31.50	38	58	10.45%	13.05%	15.90%
	0500 Total Project Costs		266	299	370			
	0000 Court House	S.F.						
	0100 Architectural		84.50	166	166	54.50%	58.50%	58.50%
	0200 Plumbing		3.19	3.19	3.19	2.07%	2.07%	2.07%
	0300 Mechanical		19.95	19.95	19.95	12.95%	12.95%	12.95%
	0400 Electrical		25.50	25.50	25.50	16.60%	16.60%	16.60%
04	0500 Total Project Costs		154	284	284			
	0000 Data Centers	S.F.						
	0100 Architectural		191	191	191	68%	68%	68%
	0200 Plumbing		10.45	10.45	10.45	3.71%	3.71%	3.71%
	0300 Mechanical		26.50	26.50	26.50	9.45%	9.45%	9.45%
05	0400 Electrical		25.50	25.50	25.50	9%	9%	9%
	0500 Total Project Costs		281	281	281			
	0000 Detention Centers	S.F.						
	0100 Architectural		177	187	198	52%	53%	60.50%
	0200 Plumbing		18.65	22.50	27.50	5.15%	7.10%	7.25%
	0300 Mechanical		23.50	34	40.50	7.55%	9.50%	13.80%
	0400 Electrical		39	46	60	10.90%	14.85%	17.95%
06	0500 Total Project Costs		299	315	370			
	0000 Fire Stations	S.F.						
	0100 Architectural		100	129	187	49%	54.50%	61.50%
	0200 Plumbing		10.75	13.95	16.95	4.67%	5.60%	6.30%
	0300 Mechanical		14.95	21	29.50	6.10%	8.45%	10.20%
07	0400 Electrical		23	29.50	35.50	10.75%	12.75%	14.95%
	0500 Total Project Costs		210	238	320			
	0000 Gymnasium	S.F.						
	0100 Architectural		88.50	116	116	57%	64.50%	64.50%
	0200 Plumbing		2.17	7.10	7.10	1.58%	3.48%	3.48%
	0300 Mechanical		3.32	30	30	2.42%	14.65%	14.65%
	0400 Electrical		10.90	21	21	7.95%	10.35%	10.35%
08	0500 Total Project Costs		137	204	204			
	0000 Hospitals	S.F.						
	0100 Architectural		107	176	191	43%	47.50%	48%
	0200 Plumbing		7.85	15.05	32.50	6%	7.45%	7.65%
	0300 Mechanical		52	58.50	76.50	14.20%	17.95%	23.50%
09	0400 Electrical		23.50	47.50	61.50	10.95%	13.75%	16.85%
	0500 Total Project Costs		250	375	405			
	0000 Industrial Buildings	S.F.						
	0100 Architectural		45	71.50	232	46%	54%	56.50%
	0200 Plumbing		1.74	6.55	13.25	2%	3.06%	6.30%
	0300 Mechanical		4.81	9.15	43.50	4.77%	5.55%	14.80%
	0400 Electrical		7.35	8.40	70	7.85%	13.55%	16.20%
10	0500 Total Project Costs		80	104	430			
	0000 Medical Clinics & Offices	S.F.						
	0100 Architectural		89.50	121	161	48.50%	55.50%	62.50%
	0200 Plumbing		8.90	13.15	21	4.47%	6.60%	8.65%
	0300 Mechanical		13.95	22.50	44	7.80%	10.95%	16.10%
	0400 Electrical		20	27	37.50	9.70%	11.65%	14.05%
	0500 Total Project Costs		166	217	292			

50 17 | Project Costs

	50 17 00 Project Costs	UNIT	UNIT COSTS			% OF TOTAL		
			1/4	MEDIAN	3/4	1/4	MEDIAN	3/4
11	0000 Mixed Use	S.F.	91.50	129	211	48.50%	57%	62.50%
	0100 Architectural		6.15	9.35	11.80	3.23%	3.44%	4.18%
	0200 Plumbing		16.40	24.50	47.50	6.10%	13.75%	18.85%
	0300 Mechanical		16	26.50	41.50	8.30%	11.40%	14%
	0400 Electrical		189	216	345			
	0500 Total Project Costs							
12	0000 Multi-Family Housing	S.F.	76	114	170	56.50%	62%	66.50%
	0100 Architectural		6.55	11.55	15.05	5.30%	6.85%	8%
	0200 Plumbing		7	9.45	27	4.92%	6.90%	10.40%
	0300 Mechanical		9.90	15.45	19.85	6.20%	7.90%	10.25%
	0400 Electrical		111	208	271			
	0500 Total Project Costs							
13	0000 Nursing Home & Assisted Living	S.F.	71.50	94	118	51.50%	55.50%	63.50%
	0100 Architectural		7.75	11.60	12.80	6.25%	7.40%	8.80%
	0200 Plumbing		6.35	9.35	18.30	4.04%	6.70%	9.55%
	0300 Mechanical		10.50	16.55	23	7%	10.75%	13.10%
	0400 Electrical		122	160	192			
	0500 Total Project Costs							
14	0000 Office Buildings	S.F.	94.50	129	177	56%	61%	69%
	0100 Architectural		5.10	8	15.05	2.65%	3.56%	5.85%
	0200 Plumbing		11	17	26	5.60%	8.20%	11.10%
	0300 Mechanical		12.75	21.50	34	7.75%	10%	12.70%
	0400 Electrical		161	200	282			
	0500 Total Project Costs							
15	0000 Parking Garage	S.F.	31.50	38.50	40.50	70%	79%	88%
	0100 Architectural		1.04	1.09	2.04	2.05%	2.70%	2.83%
	0200 Plumbing		.81	1.24	4.72	2.11%	3.62%	3.81%
	0300 Mechanical		2.78	3.05	6.35	5.30%	6.35%	7.95%
	0400 Electrical		38.50	47	51			
	0500 Total Project Costs							
16	0000 Parking Garage/Mixed Use	S.F.	103	112	114	61%	62%	65.50%
	0100 Architectural		3.30	4.32	6.60	2.47%	2.72%	3.66%
	0200 Plumbing		14.10	15.85	23	7.80%	13.10%	13.60%
	0300 Mechanical		14.75	21	22	8.20%	12.65%	18.15%
	0400 Electrical		168	175	181			
	0500 Total Project Costs							
17	0000 Police Stations	S.F.	116	130	164	49%	56.50%	61%
	0100 Architectural		15.30	18.40	18.50	5.05%	5.55%	9.05%
	0200 Plumbing		34.50	48.50	50.50	13%	14.55%	16.55%
	0300 Mechanical		26	28.50	30.50	9.15%	12.10%	14%
	0400 Electrical		217	267	305			
	0500 Total Project Costs							
18	0000 Police/Fire	S.F.	113	113	345	55.50%	66%	68%
	0100 Architectural		9.05	9.35	34.50	5.45%	5.50%	5.55%
	0200 Plumbing		13.85	22	79	8.35%	12.70%	12.80%
	0300 Mechanical		15.75	20	90.50	9.50%	11.75%	14.55%
	0400 Electrical		166	171	625			
	0500 Total Project Costs							
19	0000 Public Assembly Buildings	S.F.	115	159	238	57.50%	61.50%	66%
	0100 Architectural		6.10	8.90	13.40	2.60%	3.36%	4.79%
	0200 Plumbing		12.85	23	35.50	6.55%	8.95%	12.45%
	0300 Mechanical		19	26	41	8.60%	10.75%	13%
	0400 Electrical		185	253	375			
	0500 Total Project Costs							
20	0000 Recreational	S.F.	106	168	236	53.50%	60%	66%
	0100 Architectural		7.80	14.75	21.50	3.08%	5%	6.85%
	0200 Plumbing		13.15	20	31.50	5.15%	6.95%	11.70%
	0300 Mechanical		15.20	26.50	39.50	7.35%	8.95%	10.75%
	0400 Electrical		168	281	445			
	0500 Total Project Costs							

50 17 | Project Costs

	50 17 00 Project Costs	UNIT	UNIT COSTS			% OF TOTAL		
			1/4	MEDIAN	3/4	1/4	MEDIAN	3/4
21	0000 Restaurants	S.F.						
	0100 Architectural		126	193	248	59%	60%	63.50%
	0200 Plumbing		13.80	31.50	40	7.35%	7.75%	8.95%
	0300 Mechanical		14.85	17.55	37	6.50%	8.15%	11.15%
	0400 Electrical		14.80	24	48.50	7.10%	10.30%	11.60%
22	0500 Total Project Costs		208	305	415			
	0000 Retail	S.F.						
	0100 Architectural		56	86	127	60%	62%	64.50%
	0200 Plumbing		7	9.25	12.10	5.05%	6.70%	9%
	0300 Mechanical		6.55	9.25	17.05	5.70%	6.20%	10.20%
23	0400 Electrical	S.F.	10.45	18.95	31.50	8.05%	11.25%	12.45%
	0500 Total Project Costs		85.50	114	186			
	0000 Schools							
	0100 Architectural		97	125	164	52.50%	56%	61%
	0200 Plumbing		7.75	10.60	16.05	3.85%	4.82%	7.25%
24	0300 Mechanical	S.F.	18.90	26.50	38.50	9.50%	12.35%	15.10%
	0400 Electrical		17.85	25	32.50	9.45%	11.45%	13.30%
	0500 Total Project Costs		169	227	300			
	0000 University, College & Private School Classroom & Admin Buildings							
	0100 Architectural		124	153	192	50.50%	55%	59.50%
25	0200 Plumbing	S.F.	7.05	10.95	15.45	2.74%	4.30%	6.35%
	0300 Mechanical		26.50	38.50	46	10.10%	12.15%	14.70%
	0400 Electrical		19.95	28	34	7.65%	9.50%	11.55%
	0500 Total Project Costs		205	284	375			
	0000 University, College & Private School Dormitories							
26	0100 Architectural	S.F.	81	142	151	54.50%	65%	68.50%
	0200 Plumbing		10.70	15.10	22.50	6.45%	7.30%	9.15%
	0300 Mechanical		4.79	20.50	32.50	4.13%	9%	12.05%
	0400 Electrical		5.70	19.75	30	4.75%	7.35%	12.30%
	0500 Total Project Costs		119	227	268			
27	0000 University, College & Private School Science, Eng. & Lab Buildings	S.F.						
	0100 Architectural		143	164	193	50.50%	56.50%	58%
	0200 Plumbing		9.60	15.15	26.50	3.29%	3.95%	8.40%
	0300 Mechanical		43.50	68.50	70	12.75%	19.40%	23.50%
	0400 Electrical		29	33.50	38.50	9%	11.55%	13.15%
28	0500 Total Project Costs		290	315	365			
	0000 University, College & Private School Student Union Buildings	S.F.						
	0100 Architectural		110	289	289	54.50%	54.50%	59.50%
	0200 Plumbing		16.65	16.65	25	3.13%	4.27%	11.45%
	0300 Mechanical		31.50	51	51	9.60%	9.60%	14.55%
28	0400 Electrical		27.50	48	48	9.05%	12.80%	13.15%
	0500 Total Project Costs		217	530	530			
	0000 Warehouses							
	0100 Architectural		47	73.50	174	61.50%	67.50%	72%
	0200 Plumbing		2.45	5.25	10.10	2.82%	3.72%	5%
28	0300 Mechanical	S.F.	2.91	16.55	26	4.56%	8.20%	10.70%
	0400 Electrical		5.30	19.85	33	7.50%	10.10%	18.30%
	0500 Total Project Costs		70.50	125	243			

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.

Example: Determine the cost per S.F. for a 152,600 S.F.

Multi-family housing.

$$\text{Proposed building area} = 152,600 \text{ S.F.} = 2.00$$

Typical size from below = 76,300 S.F.

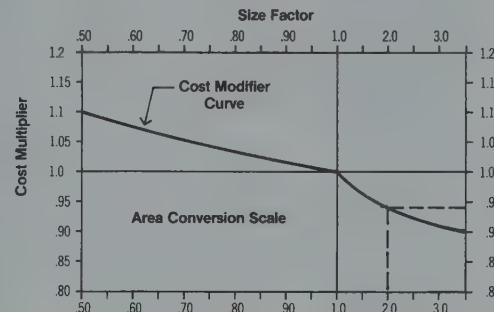
Enter Area Conversion Scale at 2.0, intersect curve, read horizontally the appropriate cost multiplier of .94. Size adjusted cost becomes $.94 \times \$208.00 = \195.52 based on national average costs.

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

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.



System	Median Cost (Total Project Costs)	Typical Size (Gross S.F. (Median of Projects))	Typical Range (Low - High) (Projects)
Auto Sales with Repair	\$186.00	24,900	4,700 - 29,300
Banking Institutions	299.00	9,300	3,300 - 38,100
Court House	284.00	47,600	24,700 - 70,500
Data Centers	281.00	14,400	14,400 - 14,400
Detention Centers	315.00	37,800	12,300 - 183,300
Fire Stations	238.00	13,100	6,300 - 49,600
Gymnasium	204.00	52,400	22,800 - 82,000
Hospitals	375.00	87,100	22,400 - 410,300
Industrial Buildings	104.00	22,100	5,100 - 200,600
Medical Clinics & Offices	217.00	20,900	2,300 - 327,000
Mixed Use	216.00	28,500	7,200 - 188,900
Multi-Family Housing	208.00	49,900	2,500 - 1,161,500
Nursing Home & Assisted Living	160.00	38,200	1,500 - 242,600
Office Buildings	200.00	20,500	1,100 - 930,000
Parking Garage	47.00	151,800	99,900 - 287,000
Parking Garage/Mixed Use	175.00	254,200	5,300 - 318,000
Police Stations	267.00	28,500	15,400 - 88,600
Police/Fire	171.00	44,300	8,600 - 50,300
Public Assembly Buildings	253.00	21,000	2,200 - 235,300
Recreational	281.00	28,800	1,000 - 223,800
Restaurants	305.00	6,000	4,000 - 42,000
Retail	114.00	28,700	5,200 - 84,300
Schools	227.00	70,600	1,300 - 410,800
University, College & Private School Classroom & Admin Buildings	284.00	48,300	9,400 - 196,200
University, College & Private School Dormitories	227.00	28,900	1,500 - 126,900
University, College & Private School Science, Eng. & Lab Buildings	315.00	39,800	5,300 - 117,600
University, College & Private School Student Union Buildings	530.00	48,700	42,100 - 50,000
Warehouses	125.00	10,400	600 - 303,800

Abbreviations

A	Area Square Feet; Ampere	Brk., brk	Brick	Csc	Cosecant
AAFES	Army and Air Force Exchange Service	brkt	Bracket	C.S.F.	Hundred Square Feet
ABS	Acrylonitrile Butadiene Stryrene; Asbestos Bonded Steel	Brs.	Brass	CSI	Construction Specifications Institute
A.C., AC	Alternating Current; Air-Conditioning; Asbestos Cement; Plywood Grade A & C	Brz.	Bronze	CT	Current Transformer
ACI	American Concrete Institute	Bsn.	Basin	CTS	Copper Tube Size
ACR	Air Conditioning Refrigeration	Btr.	Better	Cu	Copper, Cubic
ADA	Americans with Disabilities Act	BTU	British Thermal Unit	Cu. Ft.	Cubic Foot
AD	Plywood, Grade A & D	BTUH	BTU per Hour	cw	Continuous Wave
Addit.	Additional	Bu.	Bushels	C.W.	Cool White; Cold Water
Adh.	Adhesive	BUR	Built-up Roofing	Cwt.	100 Pounds
Adj.	Adjustable	BX	Interlocked Armored Cable	C.W.X.	Cool White Deluxe
af	Audio-frequency	°C	Degree Centigrade	C.Y.	Cubic Yard (27 cubic feet)
AFFF	Aqueous Film Forming Foam	C	Conductivity, Copper Sweat	C.Y./Hr.	Cubic Yard per Hour
AFUE	Annual Fuel Utilization Efficiency	C/C	Hundred; Centigrade	Cyl.	Cylinder
AGA	American Gas Association	C-C	Center to Center; Cedar on Cedar	d	Penny (nail size)
Agg.	Aggregate	Cab	Cabinet	D	Deep; Depth; Discharge
A.H., Ah	Ampere Hours	Cair.	Air Tool Laborer	Dis., Disch.	Discharge
A hr.	Ampere-hour	Cal.	Caliper	Db	Decibel
A.H.U., AHU	Air Handling Unit	Calc	Calculated	Dbl.	Double
A.I.A.	American Institute of Architects	Cap.	Capacity	DC	Direct Current
AIC	Ampere Interrupting Capacity	Carp.	Carpenter	DDC	Direct Digital Control
Allow.	Allowance	C.B.	Circuit Breaker	Demob.	Demobilization
alt., alt.	Alternate	C.C.A.	Chromate Copper Arsenate	d.f.t.	Dry Film Thickness
Alum.	Aluminum	C.C.F.	Hundred Cubic Feet	d.f.u.	Drainage Fixture Units
a.m.	Ante Meridiem	cd	Candela	D.H.	Double Hung
Amp.	Ampere	cd/sf	Candela per Square Foot	DHW	Domestic Hot Water
Anod.	Anodized	CD	Grade of Plywood Face & Back	DI	Ductile Iron
ANSI	American National Standards Institute	CDX	Plywood, Grade C & D, exterior	Diag.	Diagonal
APA	American Plywood Association	Cefi.	glue	Diam., Dia	Diameter
Approx.	Approximate	Cem.	Cement Finisher	Distrib.	Distribution
Apt.	Apartment	CF	Cement	Div.	Division
Asb.	Asbestos	C.F.	Hundred Feet	Dk.	Deck
A.S.B.C.	American Standard Building Code	CFM	Cubic Feet	D.L.	Dead Load; Diesel
Asbe.	Asbestos Worker	CFRP	Cubic Feet per Minute	DLH	Deep Long Span Bar Joist
ASCE	American Society of Civil Engineers	c.g.	Carbon Fiber Reinforced Plastic	dlx	Deluxe
A.S.H.R.A.E.	American Society of Heating, Refrig. & AC Engineers	CHW	Center of Gravity	Do.	Ditto
ASME	American Society of Mechanical Engineers	C.I., CI	Chilled Water;	DOP	Diocyl Phthalate Penetration Test (Air Filters)
ASTM	American Society for Testing and Materials	C.I.P., CIP	Commercial Hot Water	Dp., dp	Depth
Attachmt.	Attachment	Circ.	Cast Iron	D.P.S.T.	Double Pole, Single Throw
Avg., Ave.	Average	C.L.	Cast in Place	Dr.	Drive
AWG	American Wire Gauge	CL	Circuit	DR	Dimension Ratio
AWWA	American Water Works Assoc.	Clab.	Carload Lot	Drink.	Drinking
Bbl.	Barrel	Clam	Chain Link	D.S.	Double Strength
B&B, BB	Grade B and Better; Balled & Burlapped	C.L.F.	Common Laborer	D.S.A.	Double Strength A Grade
B&S	Bell and Spigot	CLF	Common Maintenance Laborer	D.S.B.	Double Strength B Grade
B.&W.	Black and White	CLP	Hundred Linear Feet	Dty.	Duty
b.c.c.	Body-centered Cubic	cm	Current Limiting Fuse	DWV	Drain Waste Vent
B.C.Y.	Bank Cubic Yards	CMP	Cross Linked Polyethylene	DX	Deluxe White, Direct Expansion
BE	Bevel End	CMU	Centimeter	dyn	Dyne
B.F.	Board Feet	CN	Corr. Metal Pipe	e	Eccentricity
Bg. cem.	Bag of Cement	Col.	Concrete Masonry Unit	E	Equipment Only; East; Emissivity
BHP	Boiler Horsepower; Brake Horsepower	CO ₂	Change Notice	Ea.	Each
B.I.	Black Iron	Comb.	Column	EB	Encased Burial
bidir.	bidirectional	comm.	Carbon Dioxide	Econ.	Economy
Bit., Bitum.	Bituminous	Compr.	Combination	E.C.Y.	Embankment Cubic Yards
Bit., Conc.	Bituminous Concrete	Conc.	Commercial, Communication	EDP	Electronic Data Processing
Bk.	Backed	Cont., cont	Compressor	EIFS	Exterior Insulation Finish System
Bkrs.	Breakers	Corkbd.	Concrete	E.D.R.	Equiv. Direct Radiation
Bldg., bldg.	Building	Corr.	Continuous; Continued, Container	Eq.	Equation
Blk.	Block	Cos	Cork Board	EL	Elevation
Bm.	Beam	Cot	Corrugated	Elec.	Electrician; Electrical
Boil.	Boilermaker	Cov.	Cosine	Elev.	Elevator; Elevating
bpm	Blows per Minute	C/P	Cotangent	EMT	Electrical Metallic Conduit;
BR	Bedroom	CPA	Cover	Eng.	Thin Wall Conduit
Brg., brng.	Bearing	Cplg.	Cedar on Paneling	EPDM	Engine, Engineered
Brhe.	Bricklayer Helper	CPM	Control Point Adjustment	EPS	Ethylene Propylene Diene Monomer
Bric.	Bricklayer	CPVC	Coupling	Eqhv.	Expanded Polystyrene
		C.P.	Critical Path Method	Eqlt.	Equip. Oper., Heavy
		CRC	Chlorinated Polyvinyl Chloride	Eqmd.	Equip. Oper., Light
		Creos.	Hundred Pair	Eqmm.	Equip. Oper., Medium
		Crpt.	Cold Rolled Channel	Eqol.	Equip. Oper., Master Mechanic
		CRT	Creosote	Equip.	Equip. Oper., Oilers
		CS	Carpet & Linoleum Layer	ERW	Equipment
			Cathode-ray Tube		Electric Resistance Welded
			Carbon Steel, Constant		
			Shear Bar Joist		

Abbreviations

E.S.	Energy Saver	H	High Henry	Lath.	Lather
Est.	Estimated	HC	High Capacity	Lav.	Lavatory
esu	Electrostatic Units	H.D., HID	Heavy Duty; High Density	lb.; #	Pound
E.W.	Each Way	H.D.O.	High Density Overlaid	L.B., LB	Load Bearing; L Conduit Body
FWT	Entering Water Temperature	HDPE	High Density Polyethylene Plastic	L. & E.	Labor & Equipment
Excav.	Excavation	Hdr.	Header	lb./hr.	Pounds per Hour
excl.	Excluding	Hdwe.	Hardware	lb./L.F.	Pounds per Linear Foot
Exp., exp	Expansion, Exposure	H.I.D., HID	High Intensity Discharge	lbf/sq.in.	Pound-force per Square Inch
Ext., ext	Exterior; Extension	Help.	Helper Average	L.C.L.	Less than Carload Lot
Extru.	Extrusion	HEPA	High Efficiency Particulate Air	L.C.Y.	Loose Cubic Yard
f.	Fiber Stress		Filter	ld.	Lead
F	Fahrenheit; Female; Fill	Hg	Mercury	LE	Lead Equivalent
Fab., fab	Fabricated; Fabric	HIC	High Interrupting Capacity	LED	Light Emitting Diode
FBGS	Fiberglass	HM	Hollow Metal	LF	Linear Foot
FC.	Footcandles	HMWPE	High Molecular Weight	LF Hdr	Linear Feet of Header
f.c.c.	Face-centered Cubic	HO	Polyethylene	LF Nose	Linear Foot of Stair Nosing
f.c.	Compressive Stress in Concrete;	Horiz.	High Output	LF Rsr	Linear Foot of Stair Riser
	Extreme Compressive Stress	H.P., HP	Horizontal	Ig.	Long; Length; Large
FE	Front End	H.P.F	Horsepower; High Pressure	L & H	Light and Heat
FEP	Fluorinated Ethylene Propylene (Teflon)	Hr.	High Power Factor	LH	Long Span Bar Joist
FG.	Flat Grain	Hrs./Day	Hour	L.H.	Labor Hours
F.H.A.	Federal Housing Administration	HSC	Hours per Day	LL., LL	Live Load
Fig.	Figure	Ht.	High Short Circuit	L.L.D.	Lamp Lumen Depreciation
Fin.	Finished	Htg.	Height	lm	Lumen
FIPS	Female Iron Pipe Size	Htrs.	Heating	lm/sf	Lumen per Square Foot
Fixt.	Fixture	HVAC	Heaters	lm/W	Lumen per Watt
FJP	Finger jointed and primed	Hvy.	Heating, Ventilation & Air-Conditioning	LOA	Length Over All
Fl. Oz.	Fluid Ounces	HW	Heavy	log	Logarithm
Flr.	Floor	Hyd.; Hydr.	Hot Water	L-O-L	Lateralølet
Flrs.	Floors	Hz	Hydraulic	long.	Longitude
FM	Frequency Modulation;	I.	Hertz (cycles)	L.P., LP	Liquefied Petroleum; Low Pressure
	Factory Mutual	IBC	Moment of Inertia	L.P.F	Low Power Factor
Fmg.	Framing	I.C.	International Building Code	LR	Long Radius
FM/UL	Factory Mutual/Underwriters Labs	ID	Interrupting Capacity	L.S.	Lump Sum
Fdn.	Foundation	ID	Inside Diameter	lt.	Light
FNPT	Female National Pipe Thread	I.E.	Inside Dimension; Identification	lt. Ga.	Light Gauge
Fori.	Foreman, Inside	I.M.C.	Inside Frosted	L.T.L.	Less than Truckload Lot
Foro.	Foreman, Outside	In.	Intermediate Metal Conduit	lt. Wt.	Lightweight
Fount.	Fountain	Incan.	Inch	L.V.	Low Voltage
fpm	Feet per Minute	Incl.	Incandescent	M	Thousand; Material; Male;
FPT	Female Pipe Thread	Int.	Included; Including	M ² CA	Light Wall Copper Tubing
Fr.	Frame	Inst.	Interior	m/hr.; M.H.	Meters Squared Contact Area
FR.	Fire Rating	Insul., insul	Installation	mA	Man-hour
FRK	Foil Reinforced Kraft	I.P.	Insulation/Insulated	Mach.	Millampere
FSK	Foil/Scrim/Kraft	I.P.S., IPS	Iron Pipe	Mag. Str.	Machine
FRP	Fiberglass Reinforced Plastic	IPT	Iron Pipe Size	Maint.	Magnetic Starter
FS	Forged Steel	I.W.	Iron Pipe Threaded	Marb.	Maintenance
FSC	Cast Body; Cast Switch Box	J	Indirect Waste	Mat.; Mat'l.	Marble Setter
Ft., ft	Foot; Feet	J.I.C.	Joule	Max.	Material
Ftng.	Fitting	K	Joint Industrial Council	MBF	Maximum
Ftg.	Footing	K.A.H.	Thousand; Thousand Pounds;	MBH	Thousand Board Feet
Ft lb.	Foot Pound	kcmil	Heavy Wall Copper Tubing, Kelvin	MC	Thousand BTU's per hr
Furn.	Furniture	KD	Thousand Amp. Hours	MCC	Metal Clad Cable
FVNR	Full Voltage Non-Reversing	K.D.A.T.	Thousand Circular Mils	M.C.F	Motor Control Center
FVR	Full Voltage Reversing	kg	Knock Down	MCFM	Thousand Cubic Feet
FXM	Female by Male	kG	Kiln Dried After Treatment	M.C.M.	Thousand Cubic Feet per Minute
Fy.	Minimum Yield Stress of Steel	kHz	Kilogram	MCP	Thousand Circular Mils
g	Gram	kip	Kilogram Force	MD	Motor Circuit Protector
G	Gauss	kip	Kilohertz	M.D.O.	Medium Duty
Ga.	Gauge	kW	1000 Pounds	Med.	Medium-density fibreboard
Gal., gal.	Gallon	KJ	Kilojoule	MF	Medium Density Overlaid
Galv., galv.	Galvanized	K.L.	Effective Length Factor	M.F.B.M.	Medium
GC/MS	Gas Chromatograph/Mass Spectrometer	K.L.F.	Kips per Linear Foot	Mfg.	Thousands
Gen.	General	Km	Kilometer	Mfrs.	Feet
GFI	Ground Fault Interrupter	KO	Knock Out	mg	Manufacturers
GFRC	Glass Fiber Reinforced Concrete	K.S.F	Kips per Square Foot	MGD	Milligram
Glaz.	Glazier	K.S.I.	Kips per Square Inch	MGPH	Million Gallons per Day
GPD	Gallons per Day	kV	Kilovolt	MH, M.H.	Million Gallons per Hour
gpf	Gallon per Flush	kVA	Kilovolt Ampere	MHz	Manhole; Metal Halide; Man-Hour
GPH	Gallons per Hour	kVAR	Kilovar (Reactance)	Mi.	Megahertz
gpm, GPM	Gallons per Minute	KW	Kilowatt	MI	Mile
GR	Grade	KWh	Kilowatt-hour	MIPS	Malleable Iron; Mineral Insulated
Gran.	Granular	L	Labor Only; Length; Long;	mj	Male Iron Pipe Size
Grnd.	Ground		Medium Wall Copper Tubing	m	Mechanical Joint
GVW	Gross Vehicle Weight	Lab.	Labor	mm	Meter
GWB	Gypsum Wall Board	lat	Latitude	Mill.	Millimeter
				Min., min.	Millwright
					Minimum, Minute

Abbreviations

Misc.	Miscellaneous	PCM	Phase Contrast Microscopy	SBS	Styrene Butadiene Styrene
ml	Milliliter; Mainline	PDCA	Painting and Decorating	SC	Screw Cover
M.L.F.	Thousand Linear Feet	P.E., PE	Contractors of America	SCFM	Standard Cubic Feet per Minute
Mo.	Month	P.E.C.I.	Professional Engineer;	Scaf.	Scaffold
Mobil.	Mobilization	Perf.	Porcelain Enamel;	Sch., Sched.	Schedule
Mog.	Mogul Base	PEX	Polyethylene; Plain End	S.C.R.	Modular Brick
MPH	Miles per Hour	Ph.	Porcelain Enamel on Cast Iron	S.D.	Sound Deadening
MPT	Male Pipe Thread	PI.	Perforated	SDR	Standard Dimension Ratio
MRGWB	Moisture Resistant Gypsum	Pile.	Cross Linked Polyethylene	S.E.	Surfaced Edge
	Wallboard	Pkg.	Phase	Sel.	Select
MRT	Mile Round Trip	Pl.	Pressure Injected	SER, SEU	Service Entrance Cable
ms	Millisecond	Plah.	Pile Driver	S.F.	Square Foot
M.S.F.	Thousand Square Feet	Plas.	Package	S.E.C.A.	Square Foot Contact Area
Mstz.	Mosaic & Terrazzo Worker	Plf.	Plate	S.F. Flr.	Square Foot of Floor
M.S.Y.	Thousand Square Yards	Pluh.	Plasterer Helper	S.E.G.	Square Foot of Ground
Mtd., mtd., mtd	Mounted	Plum.	Plasterer	S.F. Hor.	Square Foot Horizontal
Mthe.	Mosaic & Terrazzo Helper	Ply.	Pounds Per Linear Foot	SFR	Square Feet of Radiation
Mtng.	Mounting	p.m.	Plumber Helper	S.F. Shlf.	Square Foot of Shelf
Mult.	Multi; Multiply	Pntd.	Plumber	S4S	Surface 4 Sides
MUTCD	Manual on Uniform Traffic Control Devices	Pord.	Plywood	Shee.	Sheet Metal Worker
M.V.A.	Million Volt Amperes	pp	Post Meriditem	Sin.	Sine
M.V.A.R.	Million Volt Amperes Reactance	PP, PPL	Painted	Skwk.	Skilled Worker
MV	Megavolt	PPM.	Painter, Ordinary	SL	Saran Lined
MW	Megawatt	Pr.	Pages	S.L.	Slimline
MXM	Male by Male	P.E.S.B.	Polypropylene	Sldr.	Solder
MYD	Thousand Yards	Prefab.	Parts per Million	SLH	Super Long Span Bar Joist
N	Natural; North	Prefin.	Pair	S.N.	Solid Neutral
nA	Nanoampere	Prop.	Pre-engineered Steel Building	SO	Stranded with oil resistant inside insulation
NA	Not Available; Not Applicable	PSF psf	Prefabricated	S-O-L	Socketlet
N.B.C.	National Building Code	PSI, psi	Prefinished	sp	Standpipe
NC	Normally Closed	PSIG	Propelled	S.P.	Static Pressure; Single Pole; Self-Propelled
NEMA	National Electrical Manufacturers Assoc.	PSP	Pounds per Square Foot	Spri.	Sprinkler Installer
NEHB	Bolted Circuit Breaker to 600V.	Pspr.	Pounds per Square Inch	spwg	Static Pressure Water Gauge
NFPA	National Fire Protection Association	Psst.	Pounds per Square Inch Gauge	SP.D.T.	Single Pole, Double Throw
NLB	Non-Load-Bearing	PT.	Plastic Sewer Pipe	SPF	Spruce Pine Fir; Sprayed Polyurethane Foam
NM	Non-Metallic Cable	P. & T.	Painter, Spray	S.P.S.T.	Single Pole, Single Throw
nm	Nanometer	Ptd.	Painter, Structural Steel	SPT	Standard Pipe Thread
No.	Number	Ptns.	Potential Transformer	Sq.	Square; 100 Square Feet
NO	Normally Open	Pu	Pressure & Temperature	Sq. Hd.	Square Head
N.O.C.	Not Otherwise Classified	PVC	Painted	Sq. In.	Square Inch
Nose.	Nosing	Pvmt.	Partitions	S.S.	Single Strength; Stainless Steel
NPT	National Pipe Thread	PRV	Ultimate Load	S.S.B.	Single Strength B Grade
NQOD	Combination Plug-on/Bolt on	Pwr.	Polyvinyl Chloride	sst, ss	Stainless Steel
	Circuit Breaker to 240V.	Q	Pavement	Sswk.	Structural Steel Worker
N.R.C., NRC	Noise Reduction Coefficient/ Nuclear Regulator Commission	Qt.	Pressure Relief Valve	St., Stl.	Structural Steel Welder
N.R.S.	Non Rising Stem	Quan., Qty.	Power	STC	Steel
ns	Nanosecond	Q.C.	Quantity Heat Flow	SPT	Sound Transmission Coefficient
NTP	Notice to Proceed	r	Quart	Std.	Standard
nW	Nanowatt	R	Quantity	Stg.	Staging
OB	Opposing Blade	R.C.P.	Quick Coupling	STK	Select Tight Knot
OC	On Center	Rect.	Radius of Gyration	STP	Standard Temperature & Pressure
OD	Outside Diameter	recpt.	Receptacle	Stpi.	Steamfitter, Pipefitter
O.D.	Outside Dimension	Reg.	Regular	Str.	Strength; Starter; Straight
ODS	Overhead Distribution System	Reinf.	Reinforced	Strd.	Stranded
O.G.	Ogee	Req'd.	Required	Struct.	Structural
O.H.	Overhead	Res.	Resistant	Sty.	Story
O&P	Overhead and Profit	Resi.	Residential	Subj.	Subject
Oper.	Operator	RF	Radio Frequency	Subs.	Subcontractors
Opng.	Opening	RFID	Radio-frequency Identification	Surf.	Surface
Orna.	Ornamental	Rgh.	Rough	Sw.	Switch
OSB	Oriented Strand Board	RGS	Rigid Galvanized Steel	Swbd.	Switchboard
OS&Y	Outside Screw and Yoke	RHW	Rubber, Heat & Water Resistant;	S.Y.	Square Yard
OSHA	Occupational Safety and Health Act	rms	Residential Hot Water	Syn.	Synthetic
Ovhd.	Overhead	Rnd.	Root Mean Square	S.Y.P.	Southern Yellow Pine
OWG	Oil, Water or Gas	Rodm.	Round	Sys.	System
Oz.	Ounce	Rofc.	Rodman	t.	Thickness
P.	Pole; Applied Load; Projection	Rofp.	Roofer, Composition	T	Temperature; Ton
p.	Page	Rohe.	Roofer, Precast	Tan	Tangent
Pape.	Paperhanger	Rots.	Roofer Helpers (Composition)	T.C.	Terra Cotta
PA.P.R.	Powered Air Purifying Respirator	R.O.W.	Roofer Tile & Slate	T & C	Threaded and Coupled
PAR	Parabolic Reflector	RPM	Right of Way	T.D.	Temperature Difference
PB., PB	Push Button	R.S.	Revolutions per Minute	TDD	Telecommunications Device for the Deaf
Pc., Pcs.	Piece, Pieces	Rsr	Rapid Start	T.E.M.	Transmission Electron Microscopy
P.C.	Portland Cement; Power Connector	RT	Riser	temp	Temperature, Tempered, Temporary
P.C.F.	Pounds per Cubic Foot	S.	Round Trip	TFFN	Nylon Jacketed Wire
			Suction; Single Entrance; South		

Abbreviations

TFE	Tetrafluoroethylene (Teflon)	U.L., UL	Underwriters Laboratory	w/	With
T. & G.	Tongue & Groove;	Uld.	Unloading	W.C., WC	Water Column; Water Closet
	Tar & Gravel	Unfin.	Unfinished	W.F.	Wide Flange
Th., Thk.	Thick	UPS	Uninterruptible Power Supply	W.G.	Water Gauge
Thn.	Thin	URD	Underground Residential	Wldg.	Welding
Thrded	Threaded		Distribution	W. Mile	Wire Mile
Tilf.	Tile Layer, Floor	US	United States	W-O-L	Weldolet
Tilh.	Tile Layer, Helper	USGBC	U.S. Green Building Council	W.R.	Water Resistant
THHN	Nylon Jacketed Wire	USP	United States Primed	Wrck.	Wrecker
THW	Insulated Strand Wire	UTMCD	Uniform Traffic Manual For Control	WSFU	Water Supply Fixture Unit
THWN	Nylon Jacketed Wire		Devices	W.S.P.	Water, Steam, Petroleum
TL., TL	Truckload	UTP	Unshielded Twisted Pair	WT., Wt.	Weight
T.M.	Track Mounted	V	Volt	WWF	Welded Wire Fabric
Tot.	Total	VA	Volt Amperes	XFER	Transfer
TO-L	Threadolet	VAT	Vinyl Asbestos Tile	XFMR	Transformer
tmpd	Tempered	V.C.T.	Vinyl Composition Tile	XHD	Extra Heavy Duty
TPO	Thermoplastic Polyolefin	VAV	Variable Air Volume	XHHW	Cross-Linked Polyethylene Wire
T.S.	Trigger Start	VC	Veneer Core	XLPE	Insulation
Tr.	Trade	VDC	Volts Direct Current	XLP	Cross-linked Polyethylene
Transf.	Transformer	Vent.	Ventilation	Xport	Transport
Trhv.	Truck Driver, Heavy	Vert.	Vertical	Y	Wye
Trlr	Trailer	V.F.	Vinyl Faced	yd	Yard
Trlt.	Truck Driver, Light	V.G.	Vertical Grain	yr	Year
TTY	Teletypewriter	VHF	Very High Frequency	Δ	Delta
TV	Television	VHO	Very High Output	%	Percent
T.W.	Thermoplastic Water Resistant	Vib.	Vibrating	~	Approximately
	Wire	VLF	Vertical Linear Foot	Ø	Phase; diameter
UCI	Uniform Construction Index	VOC	Volatile Organic Compound	@	At
UF	Underground Feeder	Vol.	Volume	#	Pound; Number
UGND	Underground Feeder	VRP	Vinyl Reinforced Polyester	<	Less Than
UHF	Ultra High Frequency	W	Wire; Watt; Wide; West	>	Greater Than
U.I.	United Inch			Z	Zone

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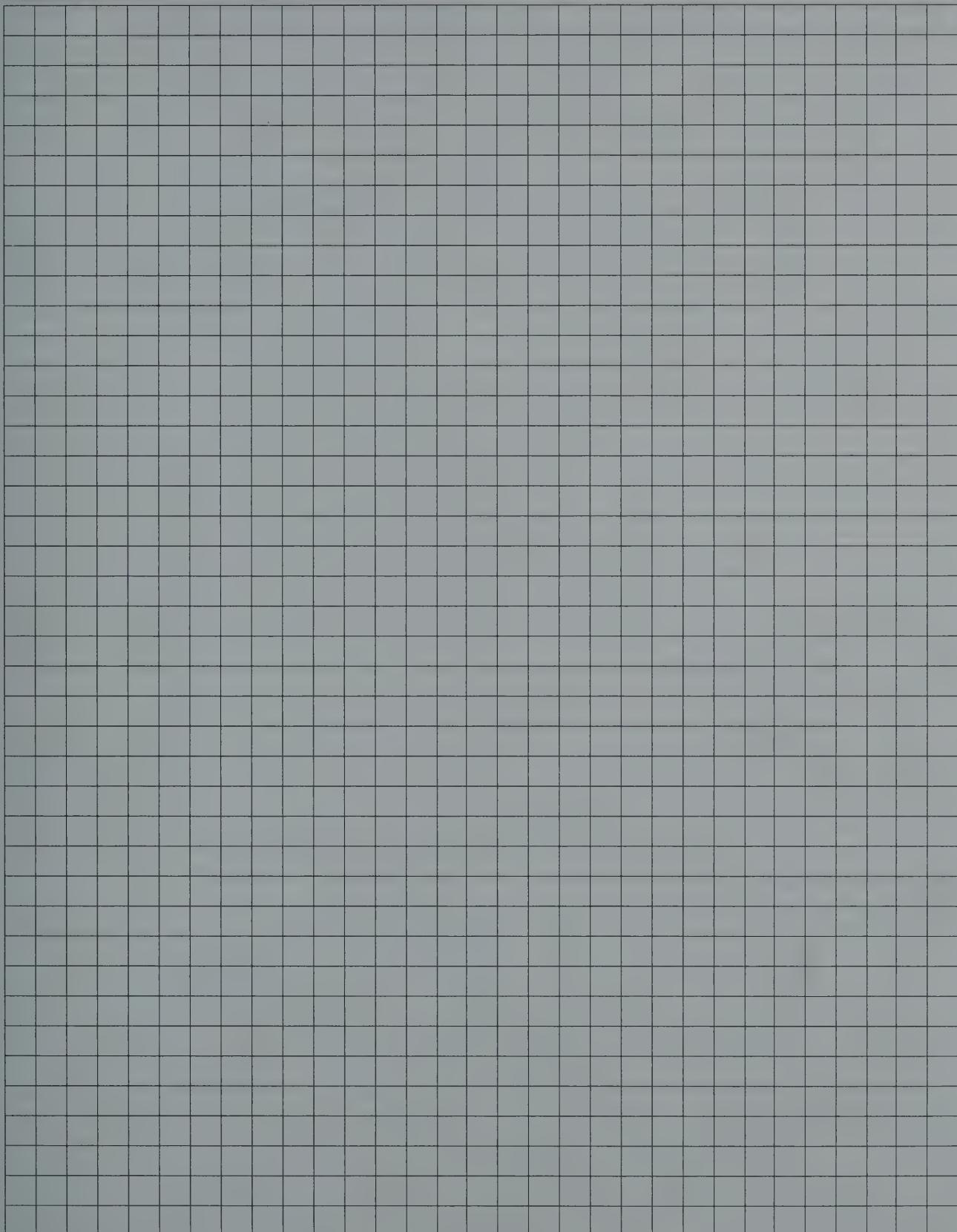
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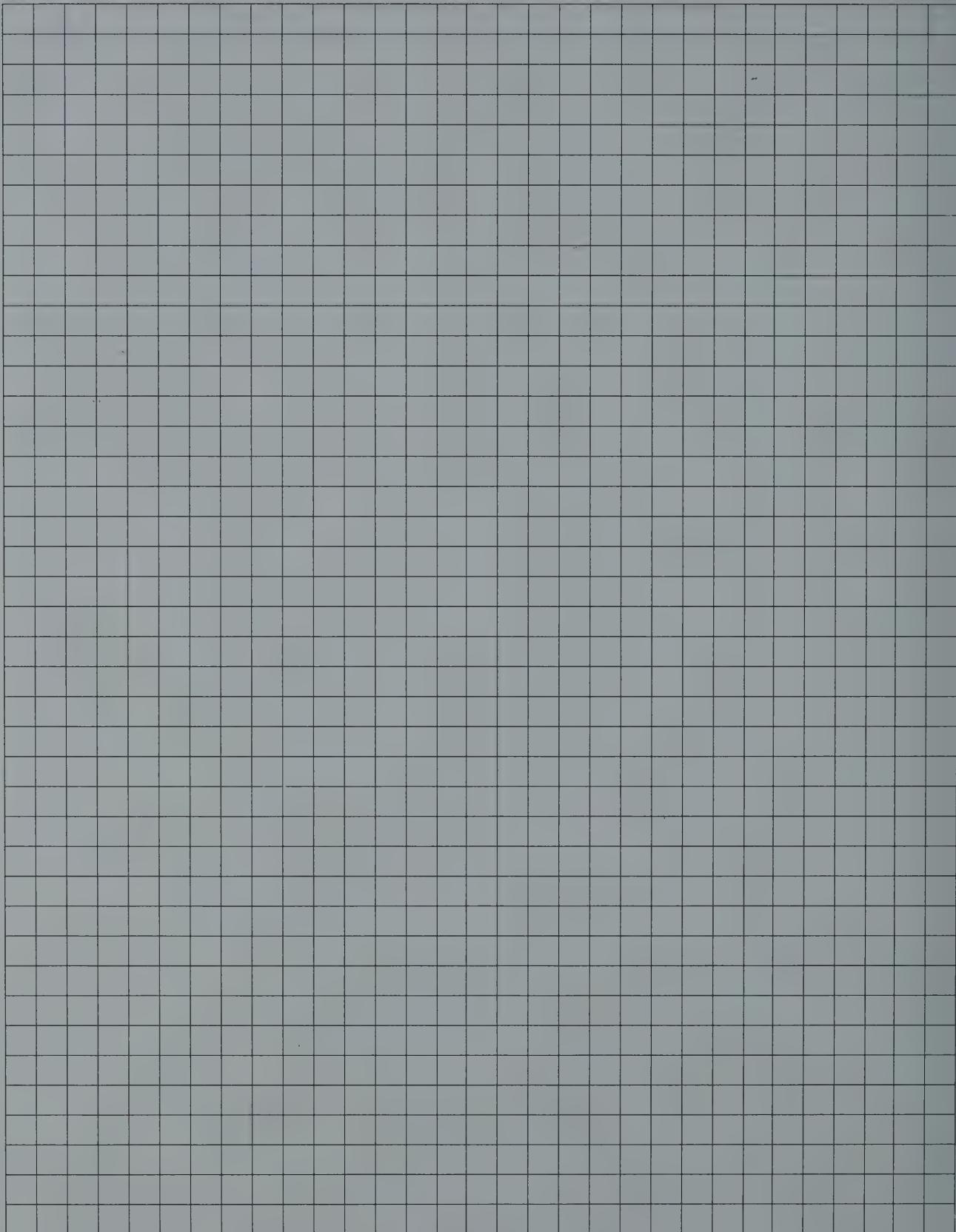
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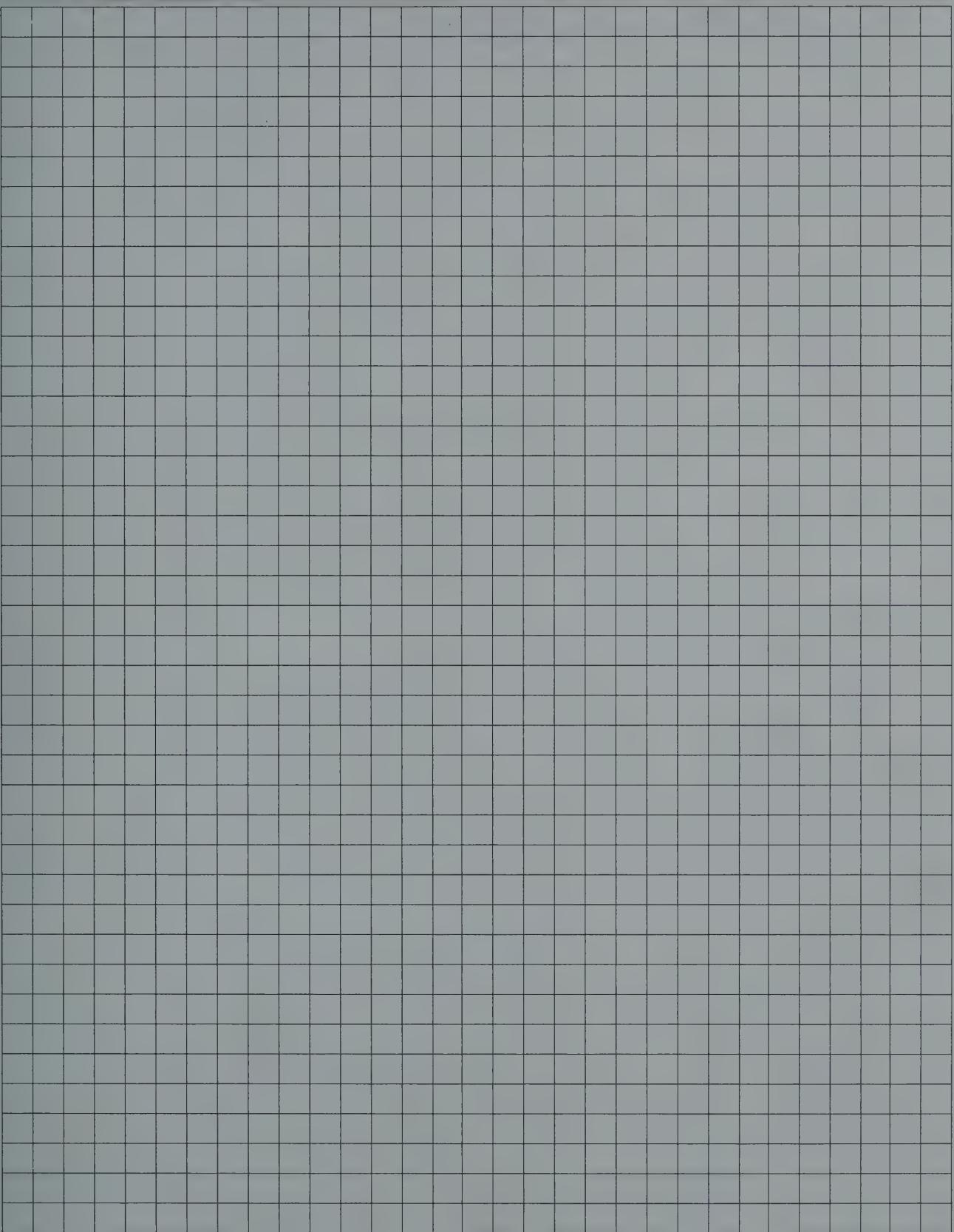
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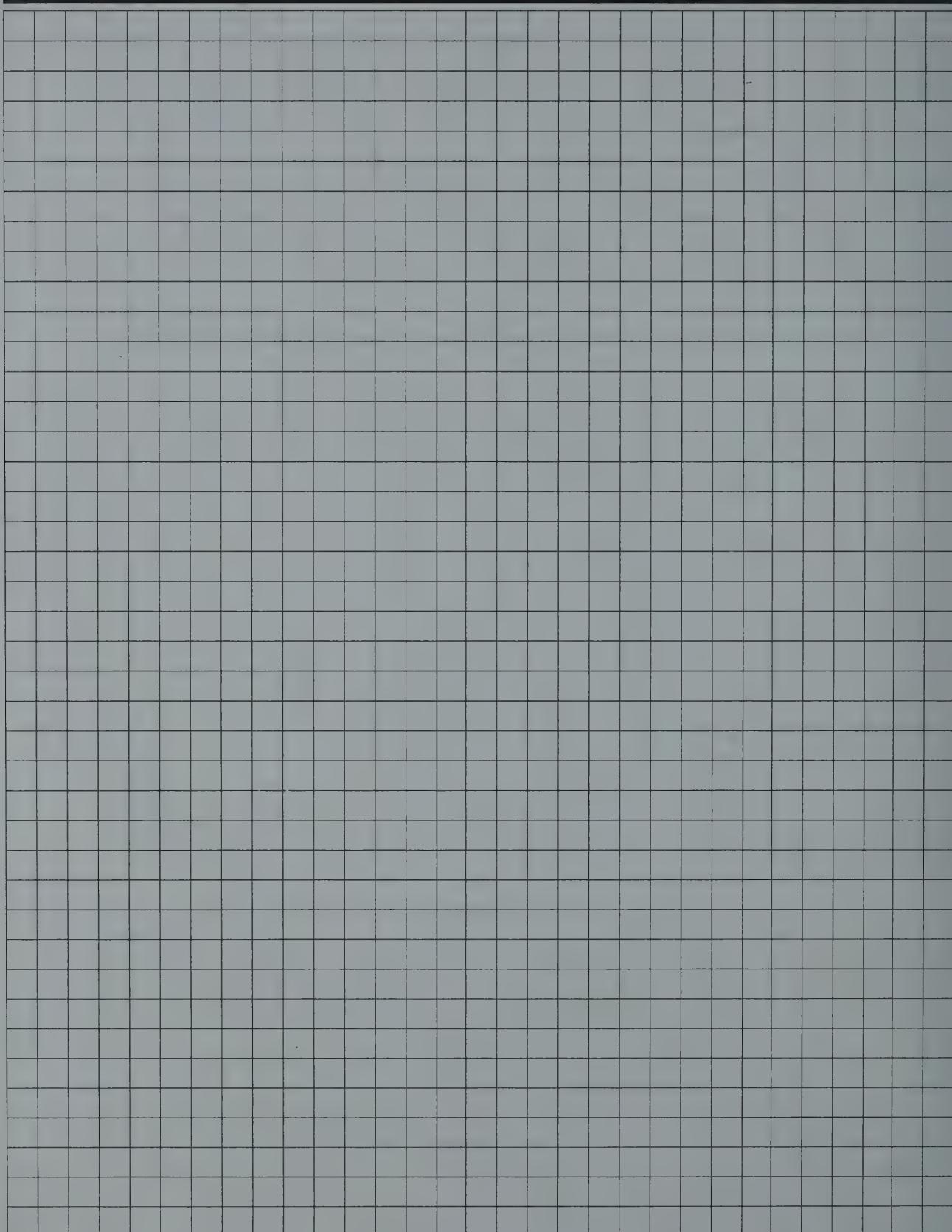
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RSMeans Data Online
Training

Unit prices according to the latest MasterFormat®

Cost Data Selection Guide

The following table provides definitive information on the content of each cost data publication. The number of lines of data provided in each unit price or assemblies division, as well as the number of crews, is listed for each data set. The presence of other elements such as reference tables, square foot models, equipment rental costs, historical cost indexes, and city cost indexes, is also indicated. You can use the table to help select the RSMeans data set that has quantity and type of information you most need in your work.

Unit Cost visions	Building Construction	Mechanical	Electrical	Commercial Renovation	Square Foot	Site Work Landsc.	Green Building	Interior	Concrete Masonry	Open Shop	Heavy Construction	Light Commercial	Facilities Construction	Plumbing	Residential
1	609	444	465	564	0	533	198	365	495	608	550	310	1078	450	217
2	754	278	87	710	0	970	181	397	219	753	737	479	1197	285	274
3	1745	341	232	1265	0	1537	1043	355	2274	1745	1930	538	2028	317	445
4	960	22	0	920	0	724	180	613	1158	928	614	532	1175	0	446
5	1890	158	155	1094	0	853	1788	1107	729	1890	1026	980	1907	204	746
6	2462	18	18	2121	0	110	589	1544	281	2458	123	2151	2135	22	2671
7	1593	215	128	1633	0	580	761	532	523	1590	26	1326	1693	227	1046
8	2140	80	3	2733	0	255	1138	1813	105	2142	0	2328	2966	0	1552
9	2125	86	45	1943	0	313	464	2216	424	2062	15	1779	2379	54	1544
10	1088	17	10	684	0	232	32	898	136	1088	34	588	1179	237	224
11	1096	199	166	540	0	135	56	924	29	1063	0	230	1116	162	108
12	539	0	2	297	0	219	147	1546	14	506	0	272	1565	23	216
13	740	149	157	252	0	365	124	250	77	716	266	109	756	115	103
14	273	36	0	223	0	0	0	257	0	273	0	12	293	16	6
21	127	0	41	37	0	0	0	293	0	127	0	121	665	685	259
22	1165	7543	160	1226	0	2010	1061	849	20	1154	2109	875	7505	9400	719
23	1170	6906	546	940	0	157	865	775	38	1153	98	887	5143	1919	486
25	0	0	14	14	0	0	0	0	0	0	0	0	0	0	0
26	1513	491	10465	1293	0	860	646	1159	55	1439	649	1361	10246	399	636
27	95	0	448	102	0	0	0	71	0	95	39	67	389	0	56
28	143	79	223	124	0	0	28	97	0	127	0	70	209	57	41
31	1511	733	610	807	0	3263	286	7	1216	1456	3280	607	1568	660	616
32	896	49	8	937	0	4523	408	417	361	867	1941	486	1800	140	533
33	1255	1088	565	260	0	3078	33	0	241	532	3213	135	1726	2101	161
34	107	0	47	4	0	190	0	0	31	62	221	0	136	0	0
35	18	0	0	0	0	327	0	0	0	18	442	0	84	0	0
41	63	0	0	34	0	8	0	22	0	62	31	0	69	14	0
44	75	79	0	0	0	0	0	0	0	0	0	0	75	75	0
46	23	16	0	0	0	274	261	0	0	23	264	0	33	33	0
48	8	0	36	2	0	0	21	0	0	8	15	8	21	0	8
Totals	26183	19027	14631	20759	0	21516	10310	16507	8426	24945	17623	16251	51136	17595	13113

Assemb Div	Building Construction	Mechanical	Electrical	Commercial Renovation	Square Foot	Site Work Landscape	Assem blies	Green Building	Interior	Concrete Masonry	Heavy Construction	Light Commercial	Facilities Construction	Plumbing	Asm Div	Residential
A		15	0	188	164	577	598	0	0	536	571	154	24	0	1	378
B		0	0	848	2554	0	5661	56	329	1976	368	2094	174	0	2	211
C		0	0	647	954	0	1334	0	1641	146	0	844	251	0	3	591
D		1057	941	712	1858	72	2538	330	824	0	0	1345	1104	1088	4	851
E		0	0	85	261	0	301	0	5	0	0	258	5	0	5	391
F		0	0	0	114	0	143	0	0	0	0	114	0	0	6	357
G		527	447	318	312	3378	792	0	0	535	1349	205	293	677	7	307
														8	760	
														9	80	
Totals		1599	1388	2798	6217	4027	11367	386	2799	3193	2288	5014	1851	1765	0	3926

Reference Section	Building Construction Costs	Mechanical	Electrical	Commercial Renovation	Square Foot	Site Work Landscape	Assem blies	Green Building	Interior	Concrete Masonry	Open Shop	Heavy Construction	Light Commercial	Facilities Construction	Plumbing	Resi. Div
Reference Tables	yes	yes	yes	yes	no	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes
Models					111			25				50				28
Crews	582	582	582	561		582		582	582	560	582	560	561	582	560	
Equipment Rental Costs	yes	yes	yes	yes		yes		yes	yes	yes	yes	yes	yes	yes	yes	yes
Historical Cost Indexes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	no
City Cost Indexes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes	yes

2020 Seminar Schedule

877.620.6245

Note: call for exact dates, locations, and details as some cities are subject to change.

Location	Dates
Seattle, WA	January and August
Dallas/Ft. Worth, TX	January
Austin, TX	February
Jacksonville, FL	February
Anchorage, AK	March and September
Las Vegas, NV	March
Washington, D.C.	April and September
Charleston, SC	April
Toronto	May
Denver, CO	May

Location	Dates
San Francisco, CA	June
Bethesda, MD	June
Dallas, TX	September
Raleigh, NC	October
Baltimore, MD	November
Orlando, FL	November
San Diego, CA	December
San Antonio, TX	December

Gordian also offers a suite of online RSMeans data self-paced offerings.
Check our website at RSMeans.com/products/training.aspx for more information.

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 Means 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.

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.

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
- Developing pricing using various sources; how subcontractor pricing fits in
- 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.

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 modeling.

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, take-off, and pricing

Who should attend: corporate and government estimators, planners, facility managers, and others who need to produce accurate project estimates.

Practical Project Management for Construction Professionals

In this two-day course, acquire the essential knowledge and develop the skills to effectively and efficiently execute the day-to-day responsibilities of the construction project manager.

Some of what you'll learn:

General conditions of the construction contract

Contract modifications: change orders and construction change directives

Negotiations with subcontractors and vendors

Effective writing: notification and communications

Dispute resolution: claims and liens

Who should attend: architects, engineers, owners' representatives, and project managers.

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
- Auditing and value engineering facilities
- 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.

Life Cycle Cost Estimating for Facilities Asset Managers

Life Cycle Cost Estimating will take the attendee through choosing the correct RSMeans database to use and then correctly applying RSMeans data to their specific life cycle application. Conceptual estimating through RSMeans' new building models, conceptual estimating of major existing building projects through RSMeans' renovation models, pricing specific renovation elements, estimating repair, replacement and preventive maintenance costs today and forward up to 30 years will be covered.

Some of what you'll learn:

- Cost implications of managing assets
- Planning projects and initial & life cycle costs
- How to use RSMeans data online

Who should attend: facilities owners and managers and anyone involved in the financial side of the decision making process in the planning, design, procurement, and operation of facilities real assets.

Please bring a laptop with ability to access the internet.

Building Systems and the Construction Process

This one-day course was written to assist novices and those outside the industry in obtaining a solid understanding of the construction process - from both a building systems and construction administration approach.

Some of what you'll learn:

Various systems used and how components come together to create a building

Start with foundation and end with the physical systems of the structure such as HVAC and Electrical

Focus on the process from start of design through project closeout

This training session requires you to bring a laptop computer to class.

Who should attend: building professionals or novices to help make the transition to the construction industry; suited for anyone responsible for providing high level oversight on construction projects.

Training for our Online Estimating Solution

Construction estimating is vital to the decision-making process at each stage of every project. Our online solution works the way you do. It's systematic, flexible and intuitive. In this one-day class 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!

Site Work Estimating with RSMeans data

This one-day program focuses directly on site work costs. Accurately scoping, quantifying, and pricing site preparation, underground utility work, and improvements to exterior site elements are often the most difficult estimating tasks on any project. Some of what you'll learn:

- Evaluation of site work and understanding site scope including: site clearing, grading, excavation, disposal and trucking of materials, backfill and compaction, underground utilities, paving, sidewalks, and seeding & planting.
- Unit price site work estimates—Correct use of RSMeans site work cost data to develop a cost estimate.
- Using and modifying assemblies—Save valuable time when estimating site work activities using custom assemblies.

Who should attend: Engineers, contractors, estimators, project managers, owner's representatives, and others who are concerned with the proper preparation and/or evaluation of site work estimates.

Please bring a laptop with ability to access the internet.

Registration Information

Register early to save up to \$100!!!

Register 45+ days before the date of a class and save \$50 off each class. This savings cannot be combined with any other promotion or discounting of the regular price of classes!

How to register

By Phone

Register by phone at 877.620.6245

Online

Register online at

RSMeans.com/products/seminars.aspx

Note: Purchase Orders or Credits Cards are required to register.

Two-day seminar registration fee - \$1,200*.

One-Day Construction Cost Estimating or Building Systems and the Construction Process - \$765*.

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.

CANCELLATION POLICY:

If you are unable to attend a seminar, substitutions may be made at any time before the session starts by notifying the seminar registrar at 781.422.5115 or your sales representative.

If you cancel twenty-one (21) days or more prior to the seminar, there will be no penalty and your registration fees will be refunded. These cancellations must be received by the seminar registrar or your sales representative and will be confirmed to be eligible for cancellation.

If you cancel fewer than twenty-one (21) days prior to the seminar, you will forfeit the registration fee.

In the unfortunate event of an RSMeans cancellation, RSMeans will work with you to reschedule your attendance in the same seminar at a later date or will fully refund your registration fee. RSMeans cannot be responsible for any non-refundable travel expenses incurred by you or another as a result of your registration, attendance at, or cancellation of an RSMeans seminar.

Any on-demand training modules are not eligible for cancellation, substitution, transfer, return or refund.

Training for our CD Estimating Solution

This one-day 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 you to bring a laptop computer to class.

When you register for this course you will receive an outline for your laptop requirements.

Also offered as a self-paced or on-site training program!

Facilities Estimating Using the CD

This two-day class combines hands-on skill-building with best estimating practices and real-life problems. You will learn key concepts, tips, pointers, and guidelines to save time and avoid cost oversights and errors.

Some of what you'll learn:

- Estimating process concepts
- Customizing and adapting RSMeans cost data
- Establishing scope of work to account for all known variables
- Budget estimating: when, why, and how
- Site visits: what to look for and what you can't afford to overlook
- How to estimate repair and remodeling variables

This training session requires you to bring a laptop computer to class.

Who should attend: facility managers, architects, engineers, contractors, facility tradespeople, planners, project managers, and anyone involved with JOC, SABRE or IDIQ.

AACE approved courses

Many seminars described and offered here have been approved for 14 hours (1.1 recertification credits) of credit by the AACE International Certification Board toward meeting the continuing education requirements for recertification as a Certified Cost Engineer/Certified Cost Consultant.

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.

***Note: Pricing subject to change.**

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.

Abbr.	Trade	Base Rate Incl. Fringes		Work-ers' Comp. Ins.	Average Fixed Over-head	Over-head	Profit	Total Overhead & Profit		Rate with O & P	
		Hourly	Daily					%	Amount	Hourly	Daily
Skwk	Skilled Workers Average (35 trades)	\$54.85	\$438.80	9.8%	18.5%	13.0%	10%	51.3%	\$28.10	\$ 82.95	\$ 663.60
	Helpers Average (5 trades)	39.95	319.60	13.1		11.0		52.6	21.00	60.95	487.60
	Foreman Average, Inside (\$50 over trade)	55.35	442.80	9.8		13.0		51.3	28.40	83.75	670.00
	Foreman Average, Outside (\$200 over trade)	56.85	454.80	9.8		13.0		51.3	29.15	86.00	688.00
Clab	Common Building Laborers	42.10	336.80	10.8		11.0		50.3	21.15	63.25	506.00
Asbe	Asbestos/Insulation Workers/Pipe Coverers	58.65	469.20	9.0		16.0		53.5	31.40	90.05	720.40
Boil	Boilermakers	66.05	528.40	5.4		16.0		49.9	32.95	99.00	792.00
Bric	Bricklayers	52.05	416.40	12.1		11.0		51.6	26.85	78.90	631.20
Brhe	Bricklayer Helpers	41.75	334.00	12.1		11.0		51.6	21.55	63.30	506.40
Carp	Carpenters	53.15	425.20	10.8		11.0		50.3	26.70	79.85	638.80
Cefi	Cement Finishers	49.95	399.60	7.6		11.0		47.1	23.50	73.45	587.60
Elec	Electricians	61.35	490.80	4.4		16.0		48.9	30.00	91.35	730.80
Elev	Elevator Constructors	85.55	684.40	3.9		16.0		48.4	41.45	127.00	1016.00
Eghv	Equipment Operators, Crane or Shovel	59.20	473.60	7.0		14.0		49.5	29.30	88.50	708.00
Egmd	Equipment Operators, Medium Equipment	56.75	454.00	7.0		14.0		49.5	28.10	84.85	678.80
Eqlt	Equipment Operators, Light Equipment	53.00	424.00	7.0		14.0		49.5	26.20	79.20	633.60
Eqlp	Equipment Operators, Oilers	50.55	404.40	7.0		14.0		49.5	25.00	75.55	604.40
Egmm	Equipment Operators, Master Mechanics	59.15	473.20	7.0		14.0		49.5	29.25	88.40	707.20
Glaz	Glaziers	51.00	408.00	10.3		11.0		49.8	25.40	76.40	611.20
Lath	Lathers	52.05	416.40	7.1		11.0		46.6	24.25	76.30	610.40
Marb	Marble Setters	50.90	407.20	12.1		11.0		51.6	26.25	77.15	617.20
Mill	Millwrights	55.90	447.20	5.4		11.0		44.9	25.10	81.00	648.00
Mstz	Mosaic & Terrazzo Workers	49.40	395.20	7.2		11.0		46.7	23.05	72.45	579.60
Pord	Painters, Ordinary	44.40	355.20	9.3		11.0		48.8	21.65	66.05	528.40
Psst	Painters, Structural Steel	45.85	366.80	22.8		11.0		62.3	28.60	74.45	595.60
Pape	Paper Hangers	44.55	356.40	9.3		11.0		48.8	21.75	66.30	530.40
Pile	Pile Drivers	54.20	433.60	10.9		16.0		55.4	30.00	84.20	673.60
Plas	Plasterers	48.60	388.80	9.7		11.0		49.2	23.95	72.55	580.40
Plah	Plasterer Helpers	42.40	339.20	9.7		11.0		49.2	20.90	63.30	506.40
Plum	Plumbers	64.45	515.60	5.2		16.0		49.7	32.00	96.45	771.60
Rodm	Rodmen (Reinforcing)	56.40	451.20	8.1		14.0		50.6	28.50	84.90	679.20
Rofc	Roofers, Composition	46.20	369.60	25.5		11.0		65.0	30.05	76.25	610.00
Rots	Roofers, Tile & Slate	46.25	370.00	25.5		11.0		65.0	30.05	76.30	610.40
Rohe	Roofers, Helpers (Composition)	34.60	276.80	25.5		11.0		65.0	22.50	57.10	456.80
Shee	Sheet Metal Workers	62.30	498.40	7.2		16.0		51.7	32.20	94.50	756.00
Spri	Sprinkler Installers	63.25	506.00	5.4		16.0		49.9	31.55	94.80	758.40
Stpi	Steamfitters or Pipefitters	65.55	524.40	5.2		16.0		49.7	32.55	98.10	784.80
Ston	Stone Masons	51.75	414.00	12.1		11.0		51.6	26.70	78.45	627.60
Sswk	Structural Steel Workers	57.65	461.20	14.4		14.0		56.9	32.80	90.45	723.60
Tiff	Tile Layers	49.50	396.00	7.2		11.0		46.7	23.10	72.60	580.80
Tihs	Tile Layers Helpers	38.80	310.40	7.2		11.0		46.7	18.10	56.90	455.20
Trlt	Truck Drivers, Light	47.25	378.00	10.4		11.0		49.9	23.55	70.80	566.40
Trhv	Truck Drivers, Heavy	48.95	391.60	10.4		11.0		49.9	24.40	73.35	586.80
Sswl	Welders, Structural Steel	57.45	459.60	14.4		14.0		56.9	32.65	90.10	720.80
Wrck	*Wrecking	42.10	336.80	14.5		11.0		54.0	22.70	64.80	518.40

*Not included in averages

Building Construction Costs with RSMeans data

2020 Building Construction Costs

with RSMeans data

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A comprehensive collection of commercial new construction costs, the 78th 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 2020 cost guide features

- NEW! Data now organized in MasterFormat® 2018. See comparison table for more details!
- New line items for Temporary Infectious Control Partitions in Division 1
- New line items for Lock Out/Tag Out devices in Division 1
- Enhancements to the painting section with new line items for cutting in before rolling or spraying

Unit Prices (organized in MasterFormat® 2018)

1 General Requirements	9 Finishes	26 Electrical	41 Material Processing & Handling Equipment
2 Existing Conditions	10 Specialties	27 Communications	44 Pollution & Waste Control Equipment
3 Concrete	11 Equipment	28 Electronic Safety & Security	46 Water & Wastewater Equipment
4 Masonry	12 Furnishings	31 Earthwork	
5 Metals	13 Special Construction	32 Exterior Improvements	
6 Wood, Plastics & Composites	14 Conveying Equipment	33 Utilities	
7 Thermal & Moisture Protection	21 Fire Suppression	34 Transportation	
8 Openings	22 Plumbing	35 Waterway & Marine	
	23 Heating, Ventilating & Air Conditioning		

41 Material Processing & Handling Equipment
44 Pollution & Waste Control Equipment
46 Water & Wastewater Equipment

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