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Los Jardines de la Paz | Project B6553.003

Buildings G, H & I Partial Siding Rehabilitation | 5530 NE 60th Ave, Portland, OR

To Housing Development Center
c/o Mary Bradshaw
847 NE 19th Ave, Ste 150
Portland, OR, 97232

Submitted 6/30/2014 by
RDH Building Sciences Inc.
308 SW 1st Avenue #300
Portland, OR 97204

SECTION 00 01 07 - SEALS PAGE

Los Jardines de la Paz
Buildings G, H & I Partial Siding Rehabilitation

CLIENT

Housing Development Center
c/o Mary Bradshaw
847 NE 19th Ave, Ste 150
Portland, OR 97232

CONSULTANT/ARCHITECT OF RECORD

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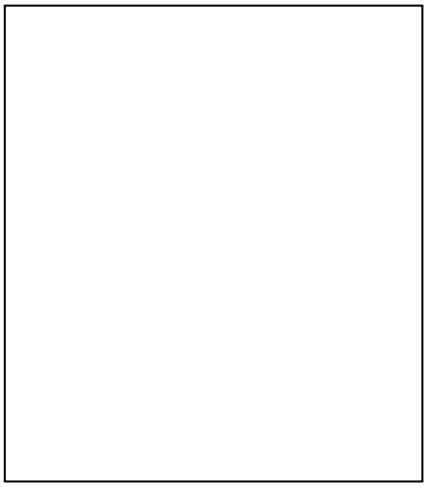

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END OF SECTION

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SECTION 01 00 00 – GENERAL REQUIREMENTS

PART 1 - GENERAL

1.1 SUMMARY OF WORK

A. General:

1. Title and description of work:

a. The Los Jardines de la Paz Buildings G, H & I Partial Siding Rehabilitation.
b. To rehabilitate the siding, trim, flashings and windows at the south-facing elevations of Buildings G and H and the west-facing elevation of Building I.

2. Contract method: Negotiated Contract

3. Owner's occupancy: Fully Occupied

4. Refer to Section 01 10 00 – Summary of Work for an expanded summary of Work covered by these Contract Documents.

1.2 PROJECT COORDINATION

A. Coordinate progress of the Work, progress schedules, submittals, use of site, and construction facilities and controls.

B. Maintain at the job site, one copy of each of the following:

1. Contract Drawings, attachments and specifications;

2. Project manual;

3. Addenda;

4. Reviewed Shop Drawings;

5. Change Orders;

6. Other Modifications to Contract;

7. RFI's, ASI's and other documents showing minor changes in the work.

8. Field Test Reports;

9. Manufacturer's installation and application instructions;

10. Standards of Workmanship;

11. OSHA approved safety program and MSDS sheets.

1.3 MOLD AND WORKER SAFETY

A. The subject building has been experiencing water ingress problems and, typical of such buildings, likely contains various molds that workers may be exposed to. Contractors involved in the demolition and removal of the existing assemblies or in work that may expose workers to mold are required to consider the potential health risks and protect their workers, building residents, and the public.

B. A safe workplace is mandated by law in the United States under various legislative frameworks. Without proper protection, workers can be exposed to high concentrations of mold. It is of paramount importance to have an operating procedure that will protect the health and safety of workers that may be exposed to possible fungal contamination in buildings.

C. The mycotoxins from toxic molds can enter the body via ingestion, inhalation or contact with the skin. Therefore, protecting workers during the remediation work requires that protective measures be taken to protect against all possible routes of exposure.

D. During remediation workers should be protected with:

1. An OSHA approved half face respirator with a HEPA (High Efficiency Particulate Arresting) filter cartridge. The respirator must be individually fit tested;

2. Goggles with good peripheral vision;

3. Approved safety footwear and appropriate safety equipment for use during demolition;

4. A double layer set of gloves, the inner layer being latex or natural rubber, and the outer layer being work gloves of leather;

5. A washable or disposable cover suit with full headgear and foot covering;

6. Depending on the size and location of the cleanup ventilation and filtration of the workspace may also be required;

E. In addition to the above requirements, during the cleanup phase of a remediation project, workers should be provided with the following protective equipment:

1. Arm length gloves approved for use with chlorine bleach;

2. A disposable full coverage suit that resists bleed through of chlorine bleach (a Tyvek suit or equivalent is acceptable);

3. Rubber boots;

4. An OSHA approved full face respirator fitted with an OSHA acid gas cartridge

F. Workers who have respiratory deficiencies or immune system suppression should not be involved in remediation work that exposes them to mold. Exposure to mold can be a

problem for some workers, particularly those with asthma and problems with their lungs. In some workers, exposure to mold may be dangerous, even with the proper protective equipment. As a condition of employment on remediation work involving exposure to mold, contractors must ensure that works do not suffer from:

a. Asthma or other respiratory diseases such as emphysema;
b. Allergy to molds;
c. Present or recent infection with a virus or bacteria, or lung infection such as bronchitis or pneumonia;
d. Hay fever, Allergic eye diseases, eczema;
e. Any condition that weakens one's ability to fight off infections – for example, HIV, some forms of cancer, or chronic disorders.

1.4 CUTTING AND PATCHING

A. Inspection

1. Inspect existing conditions, including elements subject to damage or movement during cutting and patching.

2. After uncovering, inspect conditions affecting performance of work.

3. To begin cutting or patching work means to accept existing conditions.

B. Execution

1. Perform cutting, fitting, and patching to complete the Work.

2. Remove and replace defective and non-conforming work.

3. Provide openings in non-structural elements of Work for penetrations of mechanical and electrical work. .

4. Perform work to avoid damage to other work.

5. Prepare proper surfaces to receive patching and finishing.

6. Cut rigid materials using power saw or core drill. Pneumatic or impact tools not allowed.

7. Restore work with new products in accordance with Contract Documents.

8. Fit work airtight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

9. At penetration of fire-rated wall, ceiling, or floor construction, completely seal voids with fire-rated material, full thickness of construction element to satisfy applicable standards.

10. Refinish surfaces to match adjacent finishes; for continuous surfaces refinish to nearest intersection; for an assembly, refinish entire unit.

1.5 PROJECT MEETINGS

A. Administrative

1. Schedule and administer project progress meetings every week**.**

2. Distribute written notice of each meeting four days in advance of meeting date to Consultant & Owner.

3. Provide physical space and make arrangements for meetings.

4. Housing Development Center (HDC) will record minutes of meetings. HDC shall:

   a. Include significant proceedings and decisions.
   b. Reproduce and distribute copies of minutes within 72 hours after each meeting and transmit to meeting participants, Consultant & Owner.

1.6 SUBMITTALS

A. Administrative

1. Submit to Consultant submittals listed for review in accordance with schedule so as to not cause delay in the Work.

2. Work affected by submittal shall not proceed until review is complete.

3. Review submittals prior to submission to Consultant. This review represents that necessary requirements have been determined and verified, or will be, and that each submittal has been checked and coordinated with requirements of the Work and Contract Documents.

4. Verify field measurements and affected adjacent Work is coordinated.

B. Shop Drawings and Product Data

1. Refer to Section 01 30 00 – Administrative Requirements.

C. Samples

1. Submit for review, samples in duplicate as requested in respective specification Sections.

2. Supply samples to the project site office and make available for Consultant review.

D. Record Drawings

1. After award of Contract, the Contractor must request that the Consultant provide an additional set of drawings for the purpose of maintaining record drawings. Accurately and neatly record deviations from Contract Documents caused by site conditions and changes ordered by Consultant.

2. Record locations of concealed components of mechanical and electrical services.

3. Identify drawings as "Project Record Copy". Maintain in new condition, update regularity and make available for review on site by Consultant.

4. On completion of Work and prior to final review, submit record documents to Consultant.

1.7 SCHEDULES

A. Schedules Required:

1. Construction Progress Schedule.

2. Schedule of Values of the Work.

3. Submittal Schedule for Shop Drawings, Product Data and Samples.

B. Format of Construction Progress Schedule:

1. Prepare schedules in form of a Gantt chart or horizontal bar chart.

2. Provide separate bar for each trade or operation.

3. Project schedule shall clearly define the critical path tasks.

4. Provide horizontal time scale identifying first work day of each week.

5. Format for listings: Chronological order of start of each item of work.

6. Three week schedule window to be updated bi-weekly.

C. Submission

1. Submit final construction progress schedule, values of work schedule, and submittals schedule for acceptance a minimum of 14 days prior to submitting the first application for payment.

2. Submit 2 copies to be retained by Consultant.

3. Include value of total contract for each phase and component of the work described in the project schedule.

4. Consultant will review schedule and return reviewed copy within 7 days after receipt.

5. Resubmit finalized schedule within 7 days after return of reviewed copy.

1.8 QUALITY CONTROL

A. Inspection

1. Refer to Section 01 40 00 – Quality Requirements.

B. Municipal Inspection

1. Arrange for and coordinate required municipal inspections.

1.9 CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

A. Refer to Section 01 50 00 – Temporary Facilities and Controls for information not contained in this Section.

B. Safety

1. Contractor has full responsibility for compliance with Occupational Safety and Health Administration (OSHA) requirements.

2. Provide temporary safety measures to close off hazardous areas and protect occupants.

C. Fire Safety

1. Contractor is responsible for maintaining access to fire exits and egress paths during construction.

a. Comply with all City of Portland requirements for maintaining access to fire exits and egress paths.

D. Installation/Removal

1. Provide construction facilities and temporary controls in order to execute work expeditiously.

2. Remove from site all such work after use.

E. Site Office and storage

1. Provide a temporary trailer for use as site office and for material storage by the contractor. Contractor will be responsible for power, telephone and heat/ventilation for the site office.

2. Office must have desk and plan space for the use of the Contractor and for, from time to time, the Consultant.

F. Weather Enclosures

1. Close off floor areas where walls are not finished; seal off other openings.

2. Erect weather protection as required to protect the building and the work from the weather and to maintain environmental conditions, including temperature, to allow for the continuation of work through the fall and winter as necessary.

3. Include temporary heat and supervision as required to maintain schedule.

G. Roofing Protection

1. Unfinished roofing work is to be fully covered by tarpaulins or plastic sheeting which is properly secured

2. Roofing material should not be left unsecured at the job site where it may be dislodge by wind.

3. Drainage points to be cleared of construction debris or excess tar when work is complete.

H. Dust Tight Screens

1. Provide dust tight screens or partitions to localize dust generating activities, and for protection of occupants, workers, and finished areas inside the units.

2. Maintain and relocate protection until such Work is complete.

3. Ensure that dust screens or partitions are erected and maintained inside all units while work inside the unit is undertaken.

I. Interior Unit Protection

1. Undertake a pre-construction survey of each unit interior prior to undertaking any work. Record all observations in writing or by photographic or video record and notify the Consultant in writing of any pre-existing conditions prior to commencing work. Any claims for damage that was not identified in the pre-construction survey or that cannot be shown to have pre-existed prior to the work commencing will be borne by the Contractor.

2. The occupant will be responsible for the removal of all items within the region identified by the Contractor where the dust screen will be erected with the exception of major furniture and appliances. The Contractor will be responsible for moving a reasonable number of furniture and appliance items to an acceptable area outside the dust screen region. The region that the dust screen will enclose must be identified in the notice prepared by the Contractor and issued to each tenant.

3. All workpersons are to wear clean footwear only used for interior work or to wear clean footwear guards at all times while working inside.

4. No footwear worn outside the unit shall be used inside the unit without being inspected for dirt and water and, if acceptable, protected by footwear guards.

5. All traffic paths through the unit outside the dust enclosure shall be protected by canvas drop cloths and protection of the floors must be maintained at all times. Remove the traffic paths at the end of each working day and leave the region of the unit outside the dust enclosure clean and suitable for occupancy.

6. All floor regions within the dust enclosure must have canvas drop cloths or an acceptable alternative placed over all flooring and secured in a non-destructive manner to ensure service during all work.

7. Clean all affected surfaces within the dust screen at the completion of the work.

8. All efforts must be made to complete all interior work as quickly and efficiently as possible with a minimum of disruption to the occupants.

J. Site Storage/Loading

1. Confine the Work and operations of employees to the limits indicated by Contract Documents. Do not unreasonably encumber premises with Products.

2. Do not load, or permit to be loaded, any part of the Work with a weight or force that will endanger the Work or the existing building.

K. Sanitary Facilities

1. Provide sufficient sanitary facilities for workers in accordance with local health authorities

2. Maintain in clean condition.

3. Workpersons are not allowed to use facilities within the buildings and any workers urinating in locations other than sanitary facilities are to be dismissed.

4. Sanitary facilities to be secured within hoarding and locked at the end of each working day to prevent vandalism.

L. Water Supply

1. Owner will provide a continuous supply of potable water for construction use.

   a. Use of hose bibs on buildings is permitted.

M. Temporary Power

1. Provide and pay for temporary power distribution required during construction for temporary lighting and operating of power tools as necessary.

   a. Hacienda will inform the contractor of areas where power may be drawn during construction at no cost to the contractor.

2. Do not utilize exterior electrical outlets other than those allowed by Hacienda, or outlets within suites.

N. Temporary Telephone

1. Provide and pay for temporary telephones necessary for own use.

2. Provide and pay for temporary photocopier machine for own use and use of the Consultant.

3. Site Superintendent to carry a cellular phone or site radio at all times.

O. Equipment/Tool/Materials Storage

1. Provide and maintain, in clean and orderly condition, lockable weatherproof sheds for storage of tools, equipment and materials.

2. Locate materials not required to be stored in weatherproof sheds on site in manner to cause least interference with work activities.

3. Note that there will be only limited space on site for storage of equipment and materials.

P. Project Cleanliness

1. Maintain the Work in tidy condition, free from accumulation of waste products and debris.

2. Remove waste material and debris from site and deposit in contractor's waste container at end of each working day.

3. Provide and pay for all disposal.

4. Clean interior areas prior to start of finish work, maintain areas free of dust and other contaminants during finishing operations.

5. Clean the exterior of windows immediately following removal and replacement or after undertaking any work that affects those surfaces.

   a. Resident is responsible for cleaning window interiors.

6. Clean the outside of all windows immediately after the completion of the exterior work.

Q. Lawn and Landscaping

1. Protect the lawn and landscaping from the accumulation of waste products and debris.

2. Provide new lawn and landscaping in areas damaged by construction activities at the end of the job.

R. Standards of Conduct

1. Workpersons shall refrain from loud, raucous behavior and the use of foul language while on or near the site.

2. Workpersons shall refrain from playing radios in the area of Work.

3. No alcohol consumption is allowed on site.

4. Workpersons shall at all times maintain a safe environment for the occupants of the buildings.

S. Emergency Contact

1. Provide a 24 hour emergency contact telephone number in the event that an emergency arises as a result of the work being undertaken.

2. Ensure that emergency service has a maximum response time of 2 hours and can accommodate all conditions that may arise from the work including water damage, hoarding, security, mechanical failure, electrical failure, gas service interruption, utility interruption, broken glass and any other related failure.

T. Security

1. The security of the building occupants is of paramount importance. The contractor shall take all reasonable measure to prevent unauthorized access to the site.

1.10 MATERIAL AND EQUIPMENT

A. Product and Material Quality

1. Products, materials, equipment and articles (referred to as Products throughout specifications) incorporated in Work shall be new, not damaged or defective, and of best quality (compatible with specifications) for purpose intended. If requested, furnish evidence as to type, source and quality of Products provided.

2. Defective Products will be rejected, regardless of previous review. Review does not relieve responsibility, but is precaution against oversight or error. Remove and replace defective Products at own expense and be responsible for delays and expenses caused by rejection.

3. Should any dispute arise as to quality or fitness of products, decision rests solely with Consultant based upon requirements of Contract Documents.

4. Contractor shall provide all warranties for materials and installation as described in the Specifications.

B. Storage, Handling and Protection

1. Handle and store Products in manner to prevent damage, deterioration or soiling and in accordance with manufacturer's instructions when applicable.

2. Store packaged or bundled Products in original and undamaged condition with manufacturer's seals and labels intact.

3. Store products subject to damage from weather in weatherproof enclosures.

C. Manufacturer's Instructions

1. Unless otherwise indicated in specifications install or erect Products in accordance with manufacturer's instructions. Do not rely on labels or enclosures provided with Products. Obtain written instructions directly from manufacturers.

2. Notify Consultant in writing, of conflicts between specifications and manufacturer's instructions, so that Consultant may establish course of action.

3. Improper installation of erection of Products, due to failure in complying with these requirements, authorizes Consultant to require removal and reinstallation at no increase in Contract Price.

D. Workmanship

1. Workmanship shall be best quality, executed by workers experienced and skilled in respective duties for which they are employed. Immediately notify Consultant if required Work is such as to make it impractical to produce required results.

2. Do not employ any unfit person or anyone unskilled in their required duties.

3. Decisions as to quality or fitness of workmanship in cases of dispute rest solely with Consultant, whose decision is final.

E. Concealment

1. In finished areas, conceal pipes, ducts and wiring in floors, walls and ceilings, except where indicated otherwise.

2. Before installation, inform Consultant if there is a contradictory situation. Install as directed by Consultant.

1.11 PROJECT CLOSEOUT

A. Refer to Section 01 70 00 – Execution and Close Out Requirements.

B. Systems Demonstration

1. Prior to final inspection, demonstrate operation of each system to Consultant.

2. Instruct personnel in operation, adjustment, and maintenance of equipment and systems, using provided operation and maintenance data as basis for instruction.

C. Documents

1. Collect reviewed submittals and assemble documents executed by Subcontractors, suppliers, and manufacturers.

2. Submit material prior to final Application for Payment.

3. Submit operation and maintenance data, record (as-built) drawings.

4. Provide warranties fully executed.

5. Submit a final statement of accounting giving total adjusted Contract Price, previous payments, and monies remaining due.

D. Inspection/Takeover Procedures

1. Prior to application for Certificate of Substantial Completion, carefully inspect the Work and ensure it is complete, that major and minor construction deficiencies are complete, defects are corrected and building is clean and in condition for occupancy. Notify Consultant in writing, of satisfactory completion of the Work and request an inspection.

2. During Consultant inspection, a list of deficiencies and defects will be tabulated. Correct same in timely manner.

3. When Consultant considers deficiencies and defects have been corrected and it appears requirements of Contract have been performed, make application for Certificate of Substantial Completion. Refer to General Conditions for specifics to application.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

PORTLAND FIRE & RESCUE

Dan Saltzman, Commissioner
Nate Takara, Fire Marshal
Prevention Division
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Portland, OR 97202
(503) 823-3770
Fax (503) 823-3969

FIRE SAFETY CONSTRUCTION REQURIEMENTS FOR FOUR OR FIVE STORY WOOD FRAME STRUCTURES

PUROPSE:
To provide guidelines for the development of a required prefire protection plan.

SCOPE:
The provisions of these guidelines shall apply to activities occurring during all phases of construction of four and five story wood frame structures. The suggested elements contained in this document are not to be considered all-inclusive but are to be used as a starting point in developing a prefire protection plan.

REFERENCES:
Oregon Fire Code Chapter 14, Fire Safety During Construction and Demolition

PROCEDURES:
The intent of the prefire protection plan is to specify measures and practices to be incorporated to minimize the potential for the occurrence and spread of fires, and to facilitate firefighting efforts during building construction. An approved prefire protection plan is a condition of the building permit and shall be maintained on site at all times during construction of the project.

The objectives of the prefire protection plan shall focus on:

- ☐ Controlling the sources of ignition.
- ☐ Controlling the spread of fire both within the structure under construction and any adjacent exposures in close proximity.
- ☐ Efforts to maintain the structural stability of the wood framing in the event of a fire.

GENERAL PROVISIONS TO INCLUDE:

- ☐ Designating a person to be the point of contact between the City and the contractors who will oversee the administration of the prefire protection plan.
- ☐ Providing site security against unlawful trespassing. This shall include perimeter fencing and an on-site presence at all times. Responsibilities and resources available for on-site security shall be detailed.
- ☐ Identifying general precautions to be taken to prevent fires such as methods of controlling on-site smoking, waste disposal, cutting and welding operations, use of portable heaters, storage and use of flammable and combustible liquids and other work that may be a fire hazard.

- ☐ Providing a temporary or permanent water supply of sufficient volume, duration, and pressure to properly operate firefighting equipment. This water supply shall be available prior to beginning combustible framing.
- ☐ Ensuring that the installation of automatic sprinkler piping and heads will closely follow the construction phases and be placed in service as soon as practical following the completion of framing of each floor. Sprinkler system activation may be by means of a manually activated valve until the building envelope is substantially completed and freezing weather is no longer anticipated.
- ☐ Ensuring that fire walls and exit enclosures will be given construction priority which should include the installation of fire doors and automatic closing devices as soon as practical.
- ☐ Providing fire apparatus access roads capable of accommodating fire department operations.
- ☐ Providing standpipes in each stair enclosure once the project framing reaches the second floor. Standpipes are to be maintained per code as construction progresses in such a manner that they are always ready for fire protection use. Standpipes shall also be interconnected and provided with a FDC outside the perimeter fencing.
- ☐ Providing compartmentalization and methods of maintaining said compartments.
- ☐ Identifying the methods employed to manage the connections of framing elements as the building progresses floor to floor.

SECTION 01 10 00 – SCOPE OF WORK

PART 1 - GENERAL

1.1 PROJECT INFORMATION

A. Project Title: Los Jardines de la Paz, Buildings G, H, & I Partial Siding Rehabilitation

1. Construction Type: V-1 Hour

2. Occupancy: R-2

B. Project Location:

1. 5530 NE Killingsworth St., Portland, OR 97218
   a. Buildings G, H and I

C. Owner: Hacienda CDC

1. Contact: David Ruelas, 503-961-6417

2. Backup Contact: Catherine Kes, 503-961-6415;

D. Owner' Representative: Housing Development Center

1. Contact: Mary Bradshaw, 503-528-5192.

2. Backup Contact: Brian Sweeney, 503-335-3668.

E. Property Manager: Cascade Management

1. Contact: Susan Hunter, 503-682-7788.

F. Engineer / Architect: RDH Building Sciences Inc.

1. Contact: Erik Lawrence, 308 SW First Ave., #300, Portland, OR 97204, PH 503-243-6222, FAX 503-243-5052.

G. Instruments of Service entitled **"Permit Set"** were prepared for the Project by RDH Building Sciences, Inc., 308 SW First Ave., #300, Portland, OR 97204.

H. Work will be constructed under a single prime contract.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

A. The scope of work described herein represents a targeted rehabilitation of siding and balcony interfaces at Building G, H and I of Los Jardines de la Paz. It does not address all of the potential deficiencies or long-term needs of the building.

1.3 WORK RESTRICTIONS

A. General: Comply with restrictions on construction operations required by authorities having jurisdiction.

1. Comply with limitations on use of public streets and other requirements of authorities having jurisdiction.

B. On-Site Work Hours: Limit work in the existing buildings to normal business working hours of 8 a.m. to 5 p.m., Monday through Friday, except as otherwise indicated.

1. Early Morning Hours: Early morning hours may be allowed within local jurisdiction limits with special permission. Contractor shall coordinate with the Owner and Property Manager.

C. Smoking is not permitted within the building, property, or within 25 feet (8 m) of entrances, operable windows, or outdoor air intakes.

1.4 CONTRACTOR MANAGEMENT SCOPE

A. Start-Up

1. Submit project schedules at project start-up for Architect and Owner's Representative review and approval.

2. Project schedule shall clearly define the critical path tasks.

B. General

1. Supply for distribution a minimum of every 2 weeks a written description of the project status and specific information about the work that will affect the Owners. This is often called a "2-Week Look Ahead Schedule". Communicate with Owner's representative and Architect with respect to all work impacting the building occupant's use of the site and building.

2. Prepare for, administer, and attend project progress meetings every two weeks. At each progress meeting, contractor should present updated project schedule, resolution of prior-noted deficiencies or follow-up requirements, and any cost change implications identified during the work.

a. Prepare minutes that record the content of the meeting. Send minutes to the Architect for review within 1 work-day of the meeting. Architect will review, edit, and return minutes to Contractor within 2 work-days of the meeting. Distribute final copy of meeting minutes to Architect and Owner's Representative within 3 work-days of meeting.

3. Supply (place, relocate, remove) and maintain suitable, pump jacks, ladders and other necessary means to access the work safely for all trades and the Architect.

4. Plan, arrange and provide safe access to the work for Architect review.

5. Provide the repairs as described below:

   a. Provide all demolition and new work listed in Part 3.
   b. Provide protection of all materials necessary to place, move, maintain and access the work areas or equipment.
   c. Conduct pre-construction documentation review of existing conditions for future reference as required.

      1) Take daily photos that show the general condition of the buildings and progress to date on the project.

6. Obtain and pay for all necessary permits for the project as required by local jurisdiction, including but not limited to: sidewalk access or restriction, parking restriction, hoarding, access equipment and other maintenance or repair activities.

7. Provide own tools, labor, and equipment to perform work.

C. Owner Occupancy

1. Owner will occupy the premises during entire construction period, with the exception of areas under construction. Take care to ensure minimal disruption to residents. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's operations. Maintain existing exits unless otherwise indicated.

2. Maintain access to existing walkways, corridors, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and authorities having jurisdiction.

3. The Work includes work on the entry stairs, which provide the primary entry and egress routes for units. Provide all necessary coordination with owners to ensure continued access. If temporary stairs or other facilities are needed, the contractor shall coordinate all aspects of this effort, including all permitting with the local jurisdiction authorities.

D. Quality Assurance

1. Do not apply building materials during precipitation or in the event there is a probability of precipitation during application. Take adequate precautions to ensure that materials, building exteriors, and building interiors are protected from possible moisture damage or contamination.

E. Coordinating Work

1. To the greatest extent practical, work on each building should be combined to assure shortest period of disruption for occupants.

2. All Work must be coordinated through the Property Manager.

F. Staging

1. Coordinate access for materials storage and staging with the Property Manager.

G. Safety

1. Notify Architect of their need to attend or participate in any safety program or other pre-construction training prior to start of work.

H. Inspection and Scope Variation

1. Review all areas made part of the work of these Sections prior to the commencement of work. Note areas where site conditions differ from the Drawings and immediately notify the Architect.

2. Make adjustments in the construction schedule as necessary to provide time to resolve unforeseen site conditions.

   a. Notify the Architect and Owner's Representative prior to making schedule adjustments.

3. The scope of work defined in this Document should be considered a base of reference for the Contractor. Additional work may become apparent or necessary as work continues on site. The Contractor is expected to notify the Architect if any conditions change or arise on site that would cause this Scope of Work to change.

   a. After notification by the Contractor, the Architect will make a site visit within 1 work-day to determine whether a Scope of Work should be added to this Document or the Drawings.

I. Site Clean-up

1. Provide dumpsters on site for debris removal.

2. Clean site of all tools, equipment, and products on a daily basis. Ensure that no debris is left in any location around site or anywhere on adjacent properties.

3. Repair any damage to finishes that has occurred as a result of the work.

4. Clean and remove all protective plastic from metal flashings;

5. Clean other assemblies adjacent to work;

6. Remove residual debris or material that results from spillage associated with work.

7. No loose trash or other debris shall be left behind at the end of the work day.

J. Landscaping

1. Protect landscaping from the accumulation of waste products and debris.

2. At the end of the job, provide new landscaping in areas damaged by construction activities.

1.5 CONTRACTOR USE OF PREMESIS

A. General:

1. During construction period Contractor to have full use of premises for construction operations, including use of site.

2. Contractor's use of premises is limited only for Owner's right to perform work or to retain other contractors on portions of Project.

B. Use of Site:

1. Confine operations of work to areas within contract limits indicated. Do not disturb portions of site beyond areas in which Work is indicated.

2. Allow for Owner occupancy and use by public, if applicable.

3. Keep in-use driveways and entrances serving premises clear and available to Owners, Owner's employees, and emergency vehicles at all times.

C. Use of Existing Building:

1. Provide all necessary weather protection and weather enclosures to maintain existing building in a weather-tight condition throughout construction period.

2. Repair damage caused by construction operations.

3. Take precautions necessary to protect buildings and their occupants during construction period.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 GENERAL

A. This Scope of Work serves as a general description of the design intent relative to the enclosure rehabilitation projects at the addresses listed in Part 1. It is not intended to replace either the Drawings or the Technical Specifications, which take precedent to anything described herein.

B. Information contained in the scope of work below is considered descriptive in nature, and is not intended to prescribe on means and methods of construction.

3.2 DEMOLITION AND PARTIAL REPLACEMENT

A. General

1. Reference Section 02 41 00 of the Specifications for information on Demolition.

2. Dispose of removed materials in a safe and legal manner.

B. Siding

1. Remove existing exterior wall materials to provide access for the new work of other sections of the Specification.

   a. Extend removal of materials to the areas shown in the Drawings.
   b. Materials to be removed include, but are not limited to, existing siding, water-resistive barrier, sealants, and wood trim and fascia, metal and membrane flashings.
   c. Leave existing sheathing exposed and walls ready to receive new work.
   d. Provide and maintain temporary building lettering and street numbering while work is in progress. Meet City of Portland fire department requirements.

2. Remove damaged sheathing, framing and insulation.

   a. Remove sheathing and framing as required to ensure remaining sheathing and framing are free of organic growth and damaged caused by water infiltration.
   b. Remove wet or damaged batt insulation as directed by the Architect.
   c. Costs for removal of sheathing, framing and insulation will be tracked within the Sheathing, Framing and Insulation Allowance described in Section 01 21 00.

C. Windows and Doors

1. In conjunction with work at exterior walls, remove and dispose of windows and doors in the areas of Work, as shown on the Drawings.

D. Plumbing

1. Remove plumbing to provide access for Work.

2. Remove exterior materials as necessary to provide access for relocation of existing hose bibs.

E. Electrical

1. Remove and store for reinstallation existing light fixtures, electrical outlet covers, signage, and other items on the exterior of buildings that may be affected by the work.

   a. Photograph item locations to match original placement and height.

F. Exterior handrails and trellises

1. Remove second floor railings and posts as directed in the drawings.

2. Remove all first floor railings, gates, and trim as directed in the drawings at the south elevation of Building G.

3. Remove ground floor trellises as shown in the Drawings.

a. Partially remove first floor posts where shown in the Drawings.

G. Balconies

1. Remove existing sealant joints at horizontal concrete surfaces.

H. Roofs

1. Remove roofing materials as required to provide access for new tie-ins as shown in the Drawings.

2. Remove existing roof fascias in areas of work.

3. Remove and dispose of existing gutters, downspouts, and leader boxes in the Areas of Work.

I. Soffits

1. Remove existing soffit materials as directed in the Drawings.

J. Interior Finishes

1. Partially remove interior window stools and drywall surrounds as need and shown in the Drawings to provide access for new window flashing installation.

3.3 SIDING REHABILITATION

A. General

1. Provide new batt insulation and exterior plywood sheathing and/or gypsum sheathing to match existing where removed.
   a. Reference Section 06 10 00 for information on replacing wood sheathing and framing.
   b. Reference Section 06 16 53 for information on replacing moisture-resistant gypsum sheathing.
   c. Reference Section 07 21 00 for information on replacing insulation.
   d. Final decision of sheathing, framing and insulation to be replaced lies with the Architect.
   e. Costs for replacement of sheathing, framing and insulation will be tracked within the Sheathing, Framing and Insulation Allowance described in Section 01 21 00.

2. Provide new spunbonded polyolefin weather resistive barrier (WRB) membrane over existing and newly installed sheathing. Membrane should be vapor permeable. Provide flexible sheet membrane at dissimilar material transitions and directional changes (e.g. sheet metal flashings, outside and inside corners, etc.).

3. Provide new pre-finished galvanized sheet metal flashings or stainless steel flashings as shown in the Drawings at:
   a. Floor-lines (as shown in the drawings)
   b. Balcony attachments

c. Window and door heads
d. Base of wall transitions
e. Base of framed wall at existing concrete and CMU
f. Wall penetrations
g. Roof edge flashings
h. Other similar areas

4. Provide self-adhered sheet membrane flashings at:

a. Balcony attachments
b. Four sides of window and door rough openings (foil-faced membrane)
c. All penetrations through the WRB
d. Floor-line flashings (as shown in the drawings)
e. Window and door flashings
f. Base of wall transition flashings
g. Under metal flashings (as shown in the drawings)
h. Other similar areas

5. Provide new rainscreen furring strips over WRB.

B. Windows and Doors

1. Provide new vinyl windows in areas of work to match exiting color.

2. Provide new interior silicone sealant and backer rod between new windows and rough-opening flashing.

3. Provide new exterior silicone sealant and backer rod between window and adjacent cladding / trim materials.

C. Plumbing

1. Existing hose bibs to be left in place and detailed per the Drawings.

2. Provide any miscellaneous plumbing needed for the project.

D. Electrical

1. Relocate existing exterior electrical conduit to areas within insulation cavity of wall.

2. Extend and adjust J-boxes for all electrical items where depth of new wall assembly differs from existing wall assembly.

3. Install new electrical boxes where existing electrical boxes cannot be coordinated with rainscreen siding.

4. Provide tamper and weather resistant GFCI receptacles with weather resistive covers.

5. Provide Quickflash flashing boots and other details as shown in the Drawings for waterproofing conduit and other penetrations through the weather barrier.

6. Electrical, telephone, cable TV and other utilities to remain in service during construction. Temporarily reroute utility wiring as needed for the siding installation.

E. Exterior Handrails

1. Provide new standoff hand-rail attachments integrated with the weather barrier membrane.

2. Provide new pre-finished metal railings, gates, and associated accessories at areas shown in the Drawings.

3. Provide new prefinished metal flashings over partially removed posts as shown in the Drawings.

F. Balconies

1. See section 3.4 below.

G. Roofs, Gutters and Downspouts

1. Provide new roof framing, sheathing, water-resistive barrier, shingles, metal and membrane flashings, sealant, and other materials as shown in the Drawings in areas of expanded roofs over existing balconies.

2. Provide new roofing materials, roof flashings, trim, gutters, and downspouts as directed in the Drawings.

a. Provide new gutters, downspouts, and leader boxes in the Areas of Work.

H. Soffits

1. Provide new soffits as shown in the Drawings

I. Interior Finishes

1. Provide new interior finishes as shown in the Drawings.

2. Provide new blinds at all windows replaced as part of the Work.

J. Sealants - General

1. Provide ½ inch gaps to accommodate sealant joints unless otherwise noted on drawings.

3.4 BALCONY REHABILITATION

A. Provide non-shrink grout patching at areas of removed wood posts as directed in the Drawings.

B. Provide new traffic coating at horizontal and vertical concrete surfaces as shown in the Drawings.

1. Extend new traffic coating to existing soft-joint as shown in the Drawings.

2. Provide new sealant at horizontal concrete surfaces as shown in the Drawings.

C. Provide new membrane and metal flashings, sealant, self-adhered membrane flashings, and other materials as shown in the Drawings at balcony wall interfaces.

END OF SECTION

SECTION 01 20 00 – PRICE AND PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Procedures for preparation and submittal of applications for progress payments.

B. Documentation of changes in Contract Sum and Contract Time.

C. Change procedures.

D. Correlation of Contractor Submittals based on changes.

1.2 RELATED SECTIONS

A. The Contract between the Owner and the Contractor may have provisions that take precedent over the information included in this section.

B. Section 01 21 00 – Allowances: Payment procedures relating to allowances.

C. Section 01 30 00 – Administrative Requirements: Request for Information (RFI).

1.3 DEFINITIONS

A. Architect's Supplemental Instructions (ASI):

1. Consultant written order of instruction to Contractor, signed by Consultant, which authorizes minor changes in Work that do not change Contract Sum or Contract Time.

B. Proposal Request (PR):

1. Initiated by Consultant: Written request by Consultant to Contractor to quote change to contract Sum and/or Contract Time for proposed change to Contract Documents.

2. Initiated by Contractor: Written request by Contractor to Consultant proposing change to Contract Documents accompanied with quotation for change to Contract Sum and/or Contract Time.

C. Construction Change Directive (CCD):

1. Written order prepared by Consultant, signed by Owner and Consultant, Directing Contractor to proceed with change to Contract Documents which affect Contract

Sum and/or Contract Time, for subsequent inclusion in a Change Order after change to Contract Sum and/or Contract Time has been determined.

D. Change Order (CO)

1. Prepared by Consultant and signed by Owner, Contractor, and Consultant stating their agreement to a change to Contract Documents and adjustments to Contract Sum and/or Contract Time.

1.4 SCHEDULE OF VALUES

A. Submit a printed schedule on AIA Form G703 – Application and Certificate for Payment Continuation Sheet.

1. Contractor's standard form or electronic media printout will be considered in lieu of AIA Form G703. Format should be consistent with AIA Form G703.

B. Submit Schedule of Values within 15 day after date of Owner-Contractor Agreement.

C. Correlate line items in Schedule of Values with other required administrative schedules and forms, including:

1. Contractor's Construction Schedule.

2. Application for Payment forms, including Continuation Sheets.

3. List of Subcontractors, principle suppliers, and fabricators.

4. Schedule of allowances.

5. Schedule of alternates.

6. List of products.

D. Format: Use the Table of Contents of this Project Manual. Identify each line item with number and title of the Specification Section. Identify site mobilization.

1. Identification: Include following Project identification on Schedule of Values:

a. Project name and address
b. Name of Consultant
c. Project number
d. Contractor's name and address
e. Dates of submittals

2. Arrange Schedule of Values in tabular form with separate columns to indicate following for each item listed.

a. Related Specification Section or Division.
b. Description of Work.
c. Name of subcontractor.
d. Name of manufacturer or fabricator.
e. Name of supplier.

f. Change Order (numbers) that affect value.
g. Dollar value; Percentage of Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.

3. Provide a breakdown of Contract Sum in sufficient detail to facilitate continued evaluation of Application for Payment and progress reports.

4. Provide a separate line item for each part of Work where Applications for Payment may include materials or equipment, purchased or fabricated and stored, but not yet installed.

5. Update and resubmit Schedule of Values prior to next Applications for Payment when Change Orders or Construction Change Directives result in a change in Contract Sum.

E. Include in each line item, the amount of Allowances specified in this section.

F. Include separately from each line item, a direct proportional amount of Contractor's overhead and profit.

G. Revise schedule to list approved Change Orders, with each Application for Payment.

1.5 APPLICATIONS FOR PROGRESS PAYMENTS

A. Payment Period: Submit at intervals stipulated in the Agreement.

B. Present required information in typewritten form.

C. Forms: AIA G702 Application and Certificate for Payment and AIA G703 – Application and Certificate for Payment Continuation Sheet.

1. Contractor's standard form or electronic media printout will be considered in lieu of AIA Forms G702 and G703. Format should be consistent with AIA Forms G702 and G703.

D. For each item, provide a column for listing each of the following:

1. Item Number.

2. Description of work.

3. Scheduled Values.

4. Previous Applications.

5. Work in Place and Stored Materials under this Application.

6. Authorized Change Order.

7. Total Completed and Stored to Date of Application.

8. Percentage of Completion.

9. Digital Photos of work to date.

10. Balance to Finish.

11. Retainage.

E. Initial Application for Payment:

1. Administrative actions and submittals that must precede or coincide with this application include following:

a. List of subcontractors.
b. List of principal suppliers and fabricators.
c. Schedule of Values.
d. Contractor's Construction Schedule.
e. List of Contractor's staff assignments.
f. List of Contractor's principal Consultants.
g. Copies of building permits.
h. Initial progress report.
i. Report of preconstruction meeting.
j. Certificates of insurance and insurance policies.
k. Performance and payment bonds.
l. Data needed to acquire Owner's insurance.

F. Application for Payment at Substantial Completion: Following issuance of Certificate of Substantial Completion, submit an Application for Payment.

1. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designed portions of Work.

2. Administrative actions and submittals that must precede or coincide with this application include following:

a. Occupancy permits and similar approvals.
b. Warranties (guarantees) and maintenance agreements.
c. Test/adjust/balance records.
d. Maintenance instructions.
e. Final cleaning.
f. Application for reduction of retainage and consent of surety.
g. Advice on shifting insurance coverage.
h. List of incomplete Work recognized as exceptions to Consultant's Certificate.

G. Final Payment Application:

1. Administrative actions and submittals that much precede or coincide with this application include following:

a. Completion of Project closeout requirements.
b. Completion of items specified for completion after Substantial Completion.
c. Ensure that unsettled claims will be settled.
d. Ensure that incomplete Work is not accepted and will be completed without undue delay.
e. Transmittal of required Project construction records to Owner.
f. Proof that taxes, fees, and similar obligations were paid.

g. Removal of temporary facilities and services.
h. Removal of surplus materials, rubbish, and similar elements.

H. Execute certification by signature of authorized officer.

1. Complete every item of form. Include notarization and execution by a person authorized to sign legal documents on behalf of Contractor. Consultant will return incomplete applications without action.

a. Match entries with data on Schedules of Values.
b. Include amounts of Change Orders and Construction Change Directives issued prior to last day of construction period covered by application.

I. Include the following with the application:

1. Transmittal letter as specified for Submittals in Section 01 30 00 – Administrative Requirements.

2. Construction progress schedule, revised and current as specified in Section 01 30 00 – Administrative Requirements.

3. Current construction photographs specified in Section 01 30 00 – Administrative Requirements.

4. Partial release of liens from major Subcontractors and vendors.

5. Affidavits attesting to off-site stored products.

J. When Consultant requires substantiating information, submit data justifying dollar amounts in question. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.

1.6 MODIFICATION PROCEDURES

A. Submit name of the individual authorized to receive change documents and who will be responsible for information others in Contractor's employ or Subcontractors of changes to the Work.

B. Consultant will advise of minor changes in the Work not involving an adjustment to Contract Sum or Contract Time as authorized by the Conditions of the Contract by issuing Architect's supplemental instructions (ASI) on AIA Form G710 other similar form designed by Consultant.

C. Architect's Supplement Instructions (ASI).

1. Architect's Supplemental Instructions may include supplementary or revised Drawings.

D. Construction Change Directive (CCD): Consultant may issue a directive, on AIA Form G714 Construction Change Directive or other similar form designed by Consultant, signed by Owner, instructing Contractor to proceed with a change in the Work, for subsequent inclusion in a change order.

1. The document will describe changes in the Work, and will designate method of determining any change in Contract Sum or Contract Time.

2. Construction Change Directive may include supplementary or revised Drawings and/or Specifications to describe change to the Contract Documents.

3. Promptly execute the change in Work.

4. Both Owner and Consultant will sign and date a Construction Change Directive that directs the Contractor to Proceed with Change to the Contract Documents prior to Determination of cost and/or time.

    a. Contractor shall submit to Consultant itemed change to Contract Sum and/or Contract Time within 10 working days when possible, and no more than 30 calendar days.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION (NOT USED)

END OF SECTION

SECTION 01 21 00 – ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements governing allowances.

1. Certain items are specified in the Contract Documents by allowances. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when direction will be provided to the Contractor. If necessary, additional requirements will be issued by Change Order.

B. Types of allowances include the following:

1. Lump-sum allowances.
2. Unit-cost allowances.
3. Quantity allowances.
4. Contingency allowances.
5. Testing and inspecting allowances.

C. Related Sections:

1. Divisions 02 through 49 Sections for items of Work covered by Allowances.

1.3 SUBMITTALS

A. See Section 01 30 00 – Administrative Requirements, for submittal procedures.

B. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.

C. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

D. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance.

E. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.4 COORDINATION

A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

1.5 LUMP SUM, UNIT COST AND QUANTITY ALLOWANCES

A. Allowance shall include cost to Contractor of specific products and materials ordered by Owner or selected by Architect under allowance and shall include freight and delivery to Project site.

B. Unless otherwise indicated, Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials ordered by Owner or selected by Architect under allowance shall be included as part of the Contract Sum and not part of the allowance.

C. Unused Materials: Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.

1. If requested by Architect, retain and prepare unused material for storage by Owner. Deliver unused material to Owner's storage space as directed.

1.6 CONTINGENCY ALLOWANCES

A. Use the contingency allowance only as directed by Architect for Owner's purposes and only by Change Orders that indicate amounts to be charged to the allowance.

B. Contractor's overhead, profit and related costs for products and equipment ordered by Owner under the contingency allowance are included in the allowance and are not part of the Contract Sum. These costs include delivery, installation, insurance, equipment rental, and similar costs.

C. Change Orders authorizing use of funds from the contingency allowance will include Contractor's related costs and reasonable overhead and profit margins.

D. At Project closeout, credit unused amounts remaining in the contingency allowance to Owner by Change Order.

1.7 TESTING AND INSPECTING ALLOWANCES

A. Testing and inspecting allowances include the cost of engaging testing agencies, actual tests and inspections, and reporting results.

B. The allowance does not include incidental labor required to assist the testing agency or costs for retesting if previous tests and inspections result in failure. The cost for incidental labor to assist the testing agency shall be included in the Contract Sum.

C. Costs of services not required by the Contract Documents are not included in the allowance.

D. At Project closeout, credit unused amounts remaining in the testing and inspecting allowance to Owner by Change Order.

1.8 ADJUSTMENT OF ALLOWANCES

A. Allowance Adjustment: To adjust allowance amounts, prepare a Change Order proposal based on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place where applicable. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.

1. Include installation costs in purchase amount only where indicated as part of the allowance.
2. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other margins claimed.
3. Submit substantiation of a change in scope of work, if any, claimed in Change Orders related to unit-cost allowances.
4. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.

B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the purchase order amount or Contractor's handling, labor, installation, overhead, and profit.

1. Do not include Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of work has changed from what could have been foreseen from information in the Contract Documents.
2. No change to Contractor's indirect expense is permitted for selection of higher- or lower-priced materials or systems of the same scope and nature as originally indicated.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine products covered by an allowance promptly on delivery for damage or defects. Return damaged or defective products to manufacturer for replacement.

3.2 PREPARATION

A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

A. Allowance No. 1: Sheathing, Framing and Insulation Allowance

1. Lump Sum Allowance: For replacement of wet or damaged exterior plywood sheathing, exterior gypsum sheathing, wood framing, and batt insulation.

a. Amount: $25,000.

B. Allowance No. 2: Organic Growth Remediation Allowance

1. Lump Sum Allowance: For encapsulation and treatment of organic growth.

a. Amount: $2,000.

END OF SECTION

SECTION 01 23 00 - ALTERNATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS

A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the Bidding Requirements that may be added to or deducted from the base bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.

2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES

A. Coordination: Modify or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.

1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

2. Costs for each alternate include costs of related coordination, modification, or adjustment.

B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated modifications to alternates.

C. Execute accepted alternates under the same conditions as other work of the Contract.

D. Schedule: A schedule of alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Alternate No. 1 – Expanded extent of siding rehabilitation at Buildings G, H and I (Add Alternate).

1. Base Bid: The extent of siding rehabilitation at Buildings G, H and I shall be as shown in the construction documents.

2. Alternate: The extent of siding rehabilitation at Buildings G, H and I shall be expanded. The expansion includes the following additional work:

a. Demolition:

1) Remove all siding and trim in areas around the exterior access stairs.

a) Existing ceilings/soffits to remain.

2) Remove all siding and trim around unit entrances at first and second floors.
3) Remove and dispose of existing unit entrance doors at first and second floors.

b. New Work:

1) Provide new fiber cement siding, fiber cement trim, water-resistive barriers, metal and membrane flashings, sealants, paint, and other materials in areas of expanded siding rehabilitation.
2) Provide new water-resistive barrier wraps at existing unit entrance door rough openings similar to what is shown in the base bid for typical window rough openings.
3) Provide new sill back-dam and traffic coating pan at existing unit entrance door rough openings.

a) Provide 2’-0” wide strip of traffic coating at entrance door sills, similar to what is in the base bid for the edge of balcony areas.

4) Provide new unit entry doors to match existing.

a) Paint doors to match existing.

B. Alternate No. 2 – Move hose bibs to sides of Buildings G, H and I (Add Alternate)

1. Base Bid: Existing hose bibs are to remain. Provide trim block-outs, metal and membrane flashings, sealants, and other materials as shown in the Drawings at existing hose bibs.

2. Alternate: Move existing hose bibs from the front corners of buildings G, H and I to the sides of these buildings.

    a. Relocate hose bibs to laundry room demising walls, as shown in the Drawings.
    b. Provide new frost-free hose bibs and all associated re-plumbing of hose bibs.
    c. Provide fiber cement siding, trim block-outs, metal and membrane flashings, sealant, and other materials as shown in the Hose Bib Alternate detail.

C. Alternate No. 3 – Decorative metal panel at SW entrance gate of Building G (Add Alternate)

1. Base Bid: Provide metal railings and gates at Building G as shown in the Drawings.

2. Alternate: In addition to the base bid metal railings and gates at Building G, provide a decorative water-jet cut, laser cut, or stamped metal panel as shown in the alternate gate design detail.

    a. Provide stainless steel anchors to attach the decorative metal panel to the new gate.
    b. Provide shop drawings of the decorative metal panel for review by the Architect.
    c. Approximate size of decorative metal panel is 3’-6” x 2’-6”.

END OF SECTION

SECTION 01 30 00 – ADMINISTRATIVE REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Preconstruction Meetings;

B. Pre-Installation Conferences;

C. Progress Meetings;

D. Request for Information (RFI);

E. Progress Photos;

F. Coordination Drawings;

G. Submittals for review, information, and project closeout;

H. Number of copies of submittals;

I. Submittal procedures;

J. Layout of work;

K. Field Engineering.

1.2 RELATED SECTIONS

A. Section 01 00 00 – General Requirements

B. Section 01 40 00 – Quality Requirements.

C. Section 01 60 00 – Product Requirements.

D. Section 01 70 00 – Execution and Closeout Requirements

E. Section 01 78 00 – Closeout Submittals: Project record documents.

1.3 DEFINITIONS

A. Coordination Drawings:

1. Show relationship and integration of different construction elements that require careful coordination during fabrication or installation to fit in space provided or to function as intended.

B. Product Data:

1. Printed information, such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams, and performance curves.

C. Samples:

1. Partial sections of manufactured or fabricated components, cuts or containers of material, color range sets, and swatches showing color, texture, and pattern.

D. Field samples:

1. Full-sized physical examples erected on-site to illustrate finishes, coatings, or finish materials.

2. Samples used to establish standard by which Work will be judged.

E. Mockups:

1. Full size assemblies for review of construction, coordination, testing, or operation; they are not Samples.

2. Approved mockups will be used to establish standard by which Work will be judged.

1.4 PROJECT COORDINATION

A. Project Coordinator:

1. Noel Southard, LMC Construction.
19200 SW Teton Ave, Tualatin, OR, 97062
Telephone: 503-646-0521
Fax 503-646-6823
Cell Phone 503-969-3662.
Email: noels@lmcincorporated.com

B. Cooperate with the Project Coordinator in allocation of mobilization areas of site; for field offices and sheds, for access, traffic, and parking facilities.

C. Coordinate construction operations included in various Sections of these Specifications to assure efficient and orderly installation of each part of the Work.

1. Schedule construction operations in sequence required to obtain best results where installation of one part of Work depends on installation of other components.

2. Coordinate installation of different components to assure maximum accessibility for required maintenance, service, and repair.

3. Coordinate storage or staging areas for all trades.

D. During construction, coordinate use of site and facilities through the Project Coordinator.

E. Comply with Project coordinator's procedures for intra-project communications; submittals, reports and records; schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.

F. Comply with instructions of the Project Coordinator for use of temporary utilities and construction facilities.

G. Administrative Procedures:

1. Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and assure orderly progress of Work.

2. Administrative activities include, but are not limited to:

a. Preparation of schedules;
b. Installation of temporary facilities;
c. Delivery and processing of submittals;
d. Progress meetings;
e. Project closeout activities.

H. Coordinate field engineering and layout work under instructions of the Project Coordinator.

I. Make the following types of submittals to Architect:

1. Requests for Information;

2. Substitution Requests;

3. Shop drawings, product data, and samples;

4. Test and inspection reports;

5. Design data;

6. Manufacturer's instructions and field reports;

7. Applications for payment and change order requests;

8. Progress schedules;

9. Coordination drawings;

10. Closeout submittals.

J. Staff Names: Within 15 days of commencement of construction operations, submit a list of Contractor's principal staff assignments, including superintendent and other personnel involved in daily Project activities.

1. Identify individuals, their duties and responsibilities.

2. List personnel, addresses and telephone numbers.

K. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.

L. Conservation: Coordinate construction operations to assure that operations are carried out with consideration given to conservation of energy, water, and materials.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION

3.1 PRECONSTRUCTION MEETING

A. Schedule a meeting immediately after notice to proceed.

B. Schedule meeting at time convenient to Owner and Architect, but not later than 10 days after Notice to Proceed.

1. Hold conference at Project site or other convenient location.

C. Attendance Required:

1. Owner;

2. Architect.

3. Contractor;

4. Superintendent;

5. Subcontractors;

6. Manufacturers deemed necessary by Contractor and Architect.

7. Testing Agencies as required.

D. Agenda:

1. Submission of executed bonds and insurance certificates;

2. Distribution of Contract Documents;

3. Submission of list of Subcontractors, list of Products, schedule of values, and progress schedule;

4. Designation of personnel representing the parties to Contract, Contractor and Architect:

   a. Emergency Off-hours contacts.

5. Routing of Correspondence;

6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal requests, change orders, and contract closeout procedures.

7. Scheduling:

   a. Critical work sequencing.

8. Building Enclosure Design Intent:

   a. Work sequence of exterior enclosure components;
   b. Testing requirements.

9. Security and housekeeping procedures:

   a. Site access, traffic, and parking rules;
   b. Office, work, and storage areas;
   c. Working hours.

10. Application for payment procedures;

11. Procedures for testing and Inspection;

12. Procedures for maintaining record documents.

E. Record minutes and distribute copies within 72 hours after meeting to participants, with copies to Architect, Owner, Participants, and those affected by decisions made at meeting.

3.2 PRE-INSTALLATION CONFERENCES

A. Conduct pre-installation Conference before each activity that requires coordination with other construction activities. Specification Sections that may require Pre-Installation Conferences include those listed below. These may be combined into one pre-installation conference:

1. 01 40 00 – Quality Requirements;

2. 02 41 00 – Demolition

3. 07 18 00 –Traffic Coating;

4. 07 21 00 – Thermal Insulation;

5. 07 25 05 – Building Wrap Weather Barriers;

6. 07 46 46 – Fiber Cement Siding and Trim;

7. 07 62 00 – Sheet Metal Flashing and Trim;

8. 07 92 00 – Joint Sealers;

9. 08 53 13 – Vinyl Windows.

B. Attendance Required:

1. Owner;

2. Architect;

3. Appropriate Engineers and/or Installers for Product being Installed;

4. Manufacturer's representative, if required by manufacturer or these Specifications;

5. Code enforcement personnel, if required by local codes.

C. Notifications:

1. Notify attendees of scheduled Conference a minimum of seven (7) calendar days in advance of the conference.

D. Agenda:

1. Submission of list of subcontractors, list of products, schedule of values, and progress schedule;

2. Designation of personnel representing the parties from Contractor, Owner, and Architect;

3. Procedures and processing of field decisions, submittals, and substitutions.

4. Scheduling;

5. Scheduling and preparation for activities of other trades;

6. Review progress of time schedules, manufacturer's preparation and installation recommendations, safety requirements, weather limitations, substrate acceptability, compatibility problems, and inspection and testing requirements;

7. Review progress of other construction activities and preparations for particular activity under consideration, including requirements for following:

a. Contract Documents and related Change Orders;
b. Shop Drawings, product data, and Quality Control Samples;
c. Mockups;
d. Possible conflicts or compatibility problems;
e. Weather limitations;

f. Manufacturer's preparation and installation recommendations;
g. Warranty requirements;
h. Substrate acceptability;
i. Governing regulations;
j. Inspecting and testing requirements;
k. Protection.

8. Record significant discussions, agreements, and disagreements of each conference. Hold meeting either preceding or following a Progress Meeting.

a. Number and record meetings sequentially;
b. Distribute meeting record to concerned parties, including Architect and Owner within 72 hours after meeting.

E. Do not proceed with installation if conference cannot be successfully concluded.

1. Initiate whatever actions are necessary to resolve impediments to performance of Work and reconvene conference at earliest feasible date.

3.3 PROGRESS MEETINGS

A. Schedule and administer meetings throughout progress of the Work at maximum bi-monthly intervals.

B. Make arrangements for meetings, prepare agenda with copies for participants, and preside at meetings.

C. Attendance Required: Job superintendent, major Subcontractors and suppliers, Owner, Architect, as appropriate to agenda topics for each meeting.

D. Agenda:

1. Review minutes of previous meetings;

2. Review of Work Progress;

3. Field observations, problems, and discussions;

4. Identification of problems which impede planned progress;

5. Review of submittals schedule and status of submittals;

6. Review of off-site fabrication and delivery schedules;

7. Maintenance of progress schedule;

8. Corrective measures to regain projected schedules;

9. Planned progress during succeeding work period;

10. Coordination of projected progress;

11. Maintenance of quality and work standards;

12. Effect of proposed changes on progress schedule and coordination;

13. Other business relating to Work.

E. Record minutes and distribute copies within 72 hours after meeting to participants, with copies to Architect, Owner, participants, and those affected by decisions made.

3.4 REQUESTS FOR INFORMATION

A. When field conditions or contents of Contract Documents require clarification or verification by Architect, the following procedure is required:

1. Present item or items requiring clarification/verification at Progress Meeting for discussion.

a. For critical or emergency items, contact Architect at once.

2. If it is determined by the Architect that item or items do not require written RFI submittals, then clarification/verification determination shall be in Progress Meeting Report.

3. If it is determined by the Architect that item or items require written RFI submittal, prepare each RFI using AIA G716 – Request for Information or other form approved by the Architect.

a. Design Clarification/Variation Request (DCVR) and other forms are unacceptable.

4. Number RFI's sequentially from "001".

5. Record each RFI in a log, identifying each by RFI number, subject, date submitted, date of response, and disposition. Update and distribute log at project meetings.

6. Provide a proposed solution to the RFI.

7. Architect shall respond to submitted RFI's within seven (7) calendar days in space provided on RFI form.

a. Contractor shall clearly indicate if a response to the RFI is required prior to this time, and the Architect will make every effort to meet the Contractor's timing.
b. The Contractor is required to give the Architect a reasonable amount of time to respond to RFI's.
c. The Architect may include attachments to the RFI. These attachments will be considered part of the RFI response unless otherwise noted.

B. Route and copy RFI's in same manner as correspondence.

C. If an agreement regarding clarification/verification of RFI's acceptable to both parties cannot be reached, see General Conditions and Supplementary Conditions for procedures to resolve conflict.

3.5 CONSTRUCTION PROGRESS SCHEDULE

A. Within 10 days after date of the Agreement, submit preliminary schedule defining planned operations for the first 60 days of Work, with a general outline for remainder of Work.

B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.

C. Within 20 days after review of preliminary schedule, submit draft of proposed complete schedule for review.

1. Include written certification that major contractors have reviewed and accepted proposed schedule.

D. Within 10 days after joint review, submit complete schedule.

E. Submit updated schedule with each Application for Payment.

3.6 COORDINATION DRAWINGS

A. Provide information required by Project coordinator for preparation of coordination drawings.

B. Prepare coordination drawings where coordination is needed for installation of products and materials fabricated by separated entities.

1. Prepare coordination drawings where limited space availability necessitates maximum utilization of space for efficient installation of different components.

C. Review drawings prior to submission to Architect.

3.7 PRODUCT DATA

A. Collect Product data into a single submittal for each element of construction or system.

B. Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products that are not required or proposed for Work, clearly mark copies to indicate applicable information.

C. Include the following information:

1. Manufacturer's printed recommendations;

2. Compliance with trade association standards;

3. Compliance with recognized testing agency standards;

4. Performance characteristics and capacities;

5. Notation of dimensions verified by field measurement;

6. Required clearances, wiring and piping diagrams, and controls;

7. Manufacturer's standard schematic drawings and diagrams, modified as required to suit Project requirements;

8. Notation of coordination requirements.

D. Colors and Patterns:

1. Except where specified color and pattern is indicated in Contract Documents, and whenever a choice of color or pattern is available in specified products, submit 2 color and pattern charts to Architect for selection.

E. Submit the following for each required submittal:

1. Two copies for Architect;

2. Number of copies as required by Contractor for distribution.

F. Architect will retain two copies and return remainder, marked with action taken and corrections or modifications required, to Contractor for distribution.

1. Contractor to retain number of copies required for maintenance manuals.

2. Do not permit use of unmarked copies of product data in connection with construction.

3.8 SAMPLES

A. Submit samples for review of size, kind, color, pattern, and texture, and to illustrate functional and aesthetic characteristics of Product.

B. Where variation in color, pattern, or texture, or other characteristic is inherent in material or product represented, submit at least 3 multiple units that show approximate limits of variations, or number of units indicated in individual specification Sections.

C. Field Samples: Full-size examples erected on-site to illustrate finishes, coatings, or finish materials and to establish project standard.

3.9 QUALITY ASSURANCE SUBMITTALS

A. Submit quality assurance submittals, including:

1. Design data;

2. Certifications;

3. Manufacturer's instructions;

4. Manufacturer's field reports;

5. Other quality control submittals required under individual Technical Specifications of Project Manual;

B. Certifications: Where individual Technical Specifications Sections of Project Manual require certification that a product, material, or installation complies with specified requirements, submit a notarized certification from manufacturer certifying compliance with specified requirements.

3.10 SUBMITTALS FOR REVIEW (ACTION SUBMITTALS)

A. When the following are specified in individual sections, submit them for review:

1. Product data;

2. Shop drawings;

3. Samples for selection;

4. Samples for verification.

B. Submit to Architect for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.

C. Samples will be reviewed only for aesthetic, color, or finish selection.

D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01 78 00 – CLOSEOUT SUBMITTALS.

3.11 SUBMITTALS FOR INFORMATION (INFORMATIONAL SUBMITTALS)

A. When the following are specified in individual sections, submit them for information:

1. Design data;

2. Certificates;

3. Test reports;

4. Inspection reports;

5. Manufacturer’s instructions;

6. Manufacturer’s field reports;

7. Other types indicated.

B. Submit for Architect’s knowledge as contract administrator or for Owner.

3.12 SUBMITTALS FOR PROJECT CLOSEOUT

A. When the following are specified in individual sections, submit them at project closeout:

1. Project record documents;

2. Operation and maintenance data;

3. Warranties;

4. Bonds;

5. Other types as indicated.

B. Submit for owner's benefit during and after project completion.

3.13 NUMBER OF COPIES OF SUBMITTALS

A. Documents for Review:

1. Small size sheets, not larger than 8-1/2 x 11 inches: Submit two copies; the Contractor shall make their own copies from original returned by the Architect.

2. Larger sheets, not larger than 30 x 42 inches: Submit one reproducible opaque reproduction.

a. Upon approval of the Architect, electronic versions of large-scale drawings may be submitted for review.

3. Except for templates, patterns and similar full-size drawings, do not submit sheets larger than 30 x 42 inches.

B. Documents for Information: Submit two copies.

C. Documents for Project Closeout: Make one reproduction of submittal originally reviewed. Submit one extra of submittals for information.

D. Samples: Submit the number specified in individual specification sections; two of which will be retained by Architect.

1. After review, produce duplicates.

2. Retained samples will not be returned to Contractor unless specifically so stated.

E. Copies will be returned, marked with Architect's action taken and corrections or modifications required, to contractor for reproduction and distribution.

1. Do not permit use of unmarked Shop Drawings in connection with construction.

F. Only one copy of submittal required if submittal is submitted electronically. See SUBMITTAL PROCEDURES article below for more information.

3.14 SUBMITTAL PROCEDURES

A. Transmit each submittal with approved form.

1. Architect will not accept submittals received from sources other than Contractor.

2. Sequentially number the transmittal form. Revise submittals with original number and a sequential alphabetic suffix.

a. Retain numbering system throughout revisions with addition of sequential letters for each revision to initial submittal.

3. Submit items pertaining to only one Specification Section in each submittal.

B. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of Products required, field dimensions, adjacent construction Work, and coordination of information is in accordance with the requirements of the Work and Contract Documents.

C. Deliver submittals to Architect at business address.

1. If agreed upon during initial preconstruction meeting, submittals may be submitted electronically.

2. In the case of electronic submission of submittals, only one copy of submittal need be delivered.

D. Schedule submittals to expedite the project, and coordinate submission of related items.

E. For each submittal for review, allow 7 working days excluding delivery time to and from the Contractor.

F. Identify variations from Contract documents and Product or system limitations which may be detrimental to successful performance of the completed Work.

G. Provide space for Contractor and Architect's review stamps.

H. When revised for resubmission, identify all changes made since previous submission.

I. Submittals not requested will not be recognized or processed.

J. Submittal log:

1. Maintain an accurate submittal log for duration or Work, showing current status of submittals at all times.

2. Make log available to Owner and Architect for review upon request.

3.15 ARCHITECT'S ACTION

A. Except for submittals for record or information, where action and return is required, Architect will review each submittal, mark to indicated action take, and return to Contractor.

1. Allow minimum 10 working days for Architect's review of each submittal following receipt of submittal.

B. Action Stamp: Architect will stamp each submittal with an action stamp, and mark stamp appropriately to indicate action take, as follows:

1. REVIEWED:

a. Final Unrestricted Release: Work covered by submittal may proceed provided it complies with requirements of Contract Documents.
b. Final payment depends on that compliance.

2. REVIEWED AS NOTED:

a. Final Restricted Release: Work covered by submittal may proceed provided it complies with corrections on submittal and requirements of Contract Documents.
b. Final payment depends on that compliance.

3. REVISE AND RESUBMIT:

a. Returned for Re-submittal: Do not proceed with Work covered by submittal, including purchasing, fabrication, delivery, or other activity.
b. Revise or prepare a new submittal according to notations and resubmit to Architect. Repeat as necessary to obtain a mark releasing submittal.

4. REJECTED:

a. Rejected from use: Work or product covered may NOT proceed or be used.

5. NOT REVIEWED:

a. Portion of submittal not reviewed by Architect: Portion of submittal not reviewed by Architect due to inability to make changes to information. An example of such might be a material data sheet submitted by a manufacturer.

6. Other Action: Where a submittal is for information or record purposes or special processing or other activity, Architect will return submittal marked RECORD DOCUMENT.

C. Unsolicited Submittals: Architect will return unsolicited submittals to sender without action.

3.16 LAYOUT OF WORK

A. Survey and verify conditions of project site.

B. Record existing conditions prior to construction for comparison with Contract Documents.

1. Report conflicts to Architect prior to start of Work.

2. Architect will provide revisions to Contract Documents or issue instruction to deal with conflicts.

3. Be responsible for remedying conflicts which could have been prevented by timely reviews of existing conditions.

3.17 FIELD ENGINEERING

A. Engineering Services:

1. Provide field engineering services as required for construction.

B. Existing Control Points:

1. Protect control points prior to starting Work, and preserve permanent reference points during construction.

2. Report to Architect's Representative when any reference point is lost or destroyed, or requires relocation because of necessary changes in grades or locations.

C. Verification:

1. Verify dimension of new and existing Work.

a. If field measurements differ slightly from Drawings, modify to accommodate. If field measurements differ significantly, notify Architect prior to commencing Work.

2. Coordinate locations of openings through floors, roofs and walls with Architectural, Mechanical, Electrical and Plumbing drawings.

END OF SECTION

SECTION 01 40 00 – QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. References and standards;

B. Quality assurance submittals;

C. Quality Control Coordinator;

D. Quality Control Requirements;

E. Mock-ups;

F. Control of installation;

G. Tolerances;

H. Testing and inspection services;

I. Manufacturer's field services

1.2 RELATED SECTIONS

A. Section 01 60 00 – Product Requirements: Requirements for material and product quality.

1.3 REFERENCES

A. ASTM C 1021 – Standard Practice for Laboratories Engaged in Testing of Building Sealants; 2001.

B. ASTM C 1077 – Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation; 2005.

C. ASTM C 1093 – Standard Practice for Accreditation of Testing Agencies for Unit Masonry; 1995 (Re-approved 2001).

D. ASTM E 329 – Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction; 2005.

E. ASTM E 543 – Standard Practice for Agencies Performing Nondestructive Testing; 2004.

1.4 SUBMITTALS

A. Quality Control Plan:

1. Preconstruction Meeting: Submit for approval a written Contractor Quality Control (CQC) plan prior to meeting.

a. Plan to be used for agenda.

2. Contractor shall submit for approval a written plan within 10 working days after pre-construction meeting.

3. Changes to plan during contract period to obtain quality specified to be agreed upon by Architect, Owner and Contractor.

4. Architect reserves the right to require changes in plan during contract period as necessary to obtain quality specified.

5. No change in approved plan may be made without written concurrence by Contractor, Owner and Architect.

B. Manufacturer's Instructions:

1. When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

C. Manufacturer's Field Reports: Submit reports for Architect's benefit as contract administrator or for Owner.

1. Submit report in duplicate within 30 days of observation to Architect for information.

2. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

D. Shop Drawings: Submit drawings for Architect's benefit as contract administrator or for Owner.

1. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.

2. Data indicating inappropriate or unacceptable Work may be subject to action by Architect or Owner.

1.5 QUALITY ASSURANCE

A. General:

1. Quality of Work: Contractor's responsibility.

2. Testing: Responsibility of an Owner's independent testing laboratory.

3. Inspect and test Work often enough to ensure that quality of materials, workmanship, construction, finish, and functional performance is in compliance with applicable specifications and drawings.

4. Quality Control Daily Reports shall be completed by Quality Control Supervisor.

   a. Deliver Quality Control Daily Reports to Architect for Project records.

5. Test reports shall be completed by person performing test.

6. Architect may designate locations of tests.

B. Quality Control Coordinator:

1. Contractor's jobsite supervisory staff may be used to assist the Quality Control Coordinator, supplemented as necessary by additional personnel.

2. Contractor's designated Quality Control Coordinator or competent supplementary personnel shall be on the project site whenever contract work is in progress.

1.6 REFERENCE STANDARDS

A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.

B. Obtain copies of standards where required by product specification sections.

C. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.

D. Should specified reference standard conflict with Contract Documents, request clarification from Architect before proceeding.

E. The contractual relationships, duties and responsibilities of the parties in Contract and those of Architect shall not be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.7 TESTING AND INSPECTION AGENCIES

A. Owner will employ services of an independent testing agency to perform certain specified testing. See applicable sections and Contract Documents for description of services required.

B. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

C. Employed Testing Agency:

1. Testing agency: Comply with requirements of ASTM E 329, ASTM E 543, ASTM C 1021, ASTM C 1077, and ASTM C 1093.

2. Inspection agency: Comply with requirements of ASTM E329.

3. Laboratory: Authorized to operate in state in which Work occurs.

4. Laboratory Staff: Maintain a full time registered Engineer on staff to review services.

5. Testing Equipment: Calibrated at reasonable intervals either by NIST or using a NIST established Measurement Assurance Program, under a laboratory measurement quality assurance program.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION

3.1 ON-SITE QUALITY CONTROL REQUIREMENTS

A. Notification:

1. Notify Architect at least 48 hours in advance of preparatory phase meeting.

2. Notify Architect at least 24 hours in advance of the initial and follow-up phases.

B. Preparatory Phase:

1. Perform before beginning each feature of work.

2. Review submittal requirements with personnel directly responsible for the quality control of work. At minimum, Contractor's Quality Control Supervisor and foreman responsible for the feature of the Work shall be in attendance.

3. Review applicable specification sections and drawings related to feature of Work.

4. Ensure that copies of referenced standards related to sampling, testing, and execution for feature of work are available on site.

5. Ensure that provisions have been made for field control testing.

6. Examine work area to ensure that preliminary work has been completed.

7. Verify field dimensions and advise the Architect of discrepancies with contract documents.

8. Ensure that necessary equipment and materials are at project site and that they comply with approved shop drawings and submittals.

9. Prepare a report on preparatory phase activities and discussions. Attach report to Contractor's Quality Control Daily Report.

C. Initial Phase:

1. As soon as work begins, inspect and test a representative portion of a particular feature of Work for quality of workmanship.

2. Review control testing procedures to ensure compliance with contract requirements.

3. Prepare a report on initial phase activities and discussions. Attach report to Contractor's Quality Control Daily Report. Exact location of initial phase shall be indicated for future reference and comparison with follow-up phases.

D. Follow-Up Phase:

1. Inspect and test as work progresses to ensure compliance with contract requirements until completion of Work.

E. Additional Preparatory and Initial Phases:

1. Additional preparatory and initial phases may be required on same feature of work for the following reasons:

a. Quality of ongoing work is unacceptable;
b. Changes occur in applicable quality control staff, onsite production supervision, or work crew.
c. Work on a particular feature of Work is resumed after a substantial period of inactivity.

3.2 QUALITY CONTROL OF INSTALLATION

A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship to produce Work of specified quality.

B. Comply with manufacturer's instructions, including each step in sequence.

C. If manufacturer's instructions conflict with Contract Documents, request clarification from Architect before proceeding.

D. Comply with specified standards as minimum quality for the Work, except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.

E. Have Work performed by persons qualified to produce required and specified quality.

F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.

G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.3 MOCK-UPS

A. Tests will be performed under provisions identified in this section and identified in the respective product specification sections.

B. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.

C. Accepted mock-ups shall be a comparison standard for the remaining Work.

D. Where mock-up has been accepted by Architect and is specified in product specification section to be removed, remove mock-up and clear area when directed to do so.

3.4 TOLERANCES

A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.

B. Comply with manufacturer's tolerances. If manufacturer's tolerances conflict with Contract Documents, request clarification from Architect before proceeding.

C. Adjust products to appropriate dimensions; position before securing products in place.

3.5 TESTING AND INSPECTION

A. See individual specification sections for testing requirements.

B. Testing Agency Duties:

1. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.

2. Perform specified sampling and testing of products in accordance with specified standards.

3. Ascertain compliance of materials and mixes with requirements of Contract Documents.

4. Promptly notify Architect and Contractor of irregularities or non-conformance of Work or products.

5. Perform additional tests and inspections required by Architect.

6. Attend preconstruction meeting and progress meetings.

7. Attend progress meeting(s) if requested by Owner, Architect or Contractor.

8. Submit reports of all tests/inspections specified.

C. Limits on Testing/Inspection Agency Authority:

1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.

2. Agency may not approve or accept any portion of the Work.

3. Agency may not assume any duties of Contractor.

4. Agency has no authority to stop Work.

D. Contractor Responsibilities:

1. Cooperate with laboratory personnel and provide access to the Work and to manufacturer's facilities.

2. Provide incidental labor and facilities:

a. To provide access to Work to be tested/inspected;
b. To obtain and handle samples at the site or at source of Products to be tested/inspected;
c. To facilitate tests/inspections;
d. To provide storage and curing of testing samples.

3. Notify Architect and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.

4. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.

E. Re-testing required because of non-conformance to specified requirements shall be performed by the same agency on instructions by Architect. Payment for re-testing will be charged to the contractor by deducting testing charges from the Contract Price.

1. If second test conforms to specifications, then Owner will pay for cost of second test.

3.6 MANUFACTURER'S FIELD SERVICES

A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment as applicable, and to initiate instructions when necessary.

B. Submit qualifications of observer to Architect 10 days in advance of required observations.

C. Report observations and site decisions or instruction given to applicators or installers that are supplemental or contrary to manufacturer's written instructions.

3.7 DEFECT ASSESSMENT

A. Replace Work or portions of the Work not conforming to specified requirements.

B. If, in the opinion of the Architect, it is not practical to remove and replace the Work, Architect will direct an appropriate remedy or adjust payment.

END OF SECTION

SECTION 01 42 00 – DEFINITIONS AND REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 DEFINITIONS

A. General:

1. Basic Contract definitions are included in Conditions of Contract.

B. Owner:

1. Means owner of project or their agent when applicable.

C. Consultant or Architect:

1. Means RDH Building Sciences, Inc., 308 SW First Ave., Portland, OR 97204.

D. Contractor:

1. Means party contracted to perform the work.

E. Installer:

1. Contractor or other entity engaged by Contractor, either as an employee, subcontractor, or contractor of lower tier, to perform a particular construction activity, including installation, erection, application, or similar operations.

2. Installers are required to be experienced in operations they are engaged to perform

3. Term “experience” when used with term “installer” means having successfully completed a minimum of five previous project similar in size and scope to this Project being familiar with special requirements indicated, and having complied with the requirements of authorities having jurisdiction.

F. Testing Agencies:

1. Independent entities engaged to perform specific inspections or tests, either at Project sit or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.

G. Approved:

1. When used in conjunction with Consultant's action on Contractor's submittals, applications, and requests, is limited to Consultant's duties and responsibilities as stated in Conditions of Contract.

H. Directed:

1. Terms such as "directed," "requested," "authorized," "selected," "approved," "required," "and "permitted" mean directed by Consultant, requested by Consultant, and similar phrases.

I. Indicated:

1. Refers to graphic representations, notes, or schedules in Drawings; or to other paragraphs or schedules in Specifications and similar requirements in Contract Documents.

2. Terms such as "show," "noted," scheduled," and "specified" are used to help user locate reference. Location is not limited.

J. Regulations:

1. Includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within construction industry that control performance of Work.

K. Furnish:

1. Means to supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

L. Install:

1. Describes operations at project site including actual unloading, temporary storage, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

M. Provide:

1. Means to furnish and install, complete and ready for intended use.

N. Project site:

1. Space available to Contractor for performing construction activities, either exclusively or in conjunction with others performing other work as part of Project.

1.3 BUILDING CODE:

A. Latest edition of International Building Code (IBC) Oregon Structural Specialty Code (OSSC).

1. Appropriate code editions are listed on title page of Drawings.

1.4 INDUSTRY STANDARDS

A. Applicability of Standards: Unless Contract documents include more stringent requirements, applicable construction industry standards have same force and effect as if bound or copied directly into Contract Documents to extent referenced. Such standards are made a part of Contract Documents by reference.

B. Publications Dates: Comply with standards in effect as of date of Contract Documents. All referenced standards assume the most recently published versions unless specifically stated otherwise.

C. Conflicting Requirements: Comply with most stringent requirement when compliance with two or more standards is specified and standards establish different or conflicting requirements.

1. Refer uncertainties and requirements that are different, but apparently equal, to Consultant for decision before proceeding.

D. Minimum Quantity or Quality levels: Quantity or quality level shown or specified shall be minimum provided or performed.

E. Copies of Standards: Each entity engaged in construction on project must be familiar with industry standards applicable to its trade, and is responsible for maintaining copies of standards needed to perform Work.

1. Make copies of applicable standards available upon request.

1.5 ABBREVIATIONS AND ACRONYMS

A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States."

B. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

AABC	Associated Air Balance Council www.aabc.com	(202) 737-0202
AAMA	American Architectural Manufacturers Association www.aamanet.org	(847) 303-5664
AASHTO	American Association of State Highway and Transportation Officials	(202) 624-5800

	www.transportation.org	
AATCC	American Association of Textile Chemists and Colorists www.aatcc.org	(919) 549-8141
ABMA	American Bearing Manufacturers Association www.americanbearings.org	(202) 367-1155
ACI	American Concrete Institute (Formerly: ACI International) www.concrete.org	(248) 848-3700
ACPA	American Concrete Pipe Association www.concrete-pipe.org	(972) 506-7216
AEIC	Association of Edison Illuminating Companies, Inc. (The) www.aeic.org	(205) 257-2530
AF&PA	American Forest & Paper Association www.afandpa.org	(800) 878-8878 (202) 463-2700
AGA	American Gas Association www.aga.org	(202) 824-7000
AHAM	Association of Home Appliance Manufacturers www.aham.org	(202) 872-5955
AHRI	Air-Conditioning, Heating, and Refrigeration Institute (The) www.ahrinet.org	(703) 524-8800
AI	Asphalt Institute www.asphaltinstitute.org	(859) 288-4960
AIA	American Institute of Architects (The) www.aia.org	(800) 242-3837 (202) 626-7300
AISC	American Institute of Steel Construction www.aisc.org	(800) 644-2400 (312) 670-2400
AISI	American Iron and Steel Institute www.steel.org	(202) 452-7100
AITC	American Institute of Timber Construction www.aitc-glulam.org	(303) 792-9559
AMCA	Air Movement and Control Association International, Inc. www.amca.org	(847) 394-0150
ANSI	American National Standards Institute	(202) 293-8020

	www.ansi.org	
AOSA	Association of Official Seed Analysts, Inc. www.aosaseed.com	(607) 256-3313
APA	APA - The Engineered Wood Association www.apawood.org	(253) 565-6600
APA	Architectural Precast Association www.archprecast.org	(239) 454-6989
API	American Petroleum Institute www.api.org	(202) 682-8000
ARI	Air-Conditioning & Refrigeration Institute (See AHRI)	
ARI	American Refrigeration Institute (See AHRI)	
ARMA	Asphalt Roofing Manufacturers Association www.asphaltroofing.org	(202) 207-0917
ASCE	American Society of Civil Engineers www.asce.org	(800) 548-2723 (703) 295-6300
ASCE/SEI	American Society of Civil Engineers/Structural Engineering Institute (See ASCE)	
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers www.ashrae.org	(800) 527-4723 (404) 636-8400
ASME	ASME International (American Society of Mechanical Engineers) www.asme.org	(800) 843-2763 (973) 882-1170
ASSE	American Society of Safety Engineers (The) www.asse.org	(847) 699-2929
ASSE	American Society of Sanitary Engineering www.asse-plumbing.org	(440) 835-3040
ASTM	ASTM International (American Society for Testing and Materials International) www.astm.org	(610) 832-9500
ATIS	Alliance for Telecommunications Industry Solutions www.atis.org	(202) 628-6380

AWEA	American Wind Energy Association www.awea.org	(202) 383-2500
AWI	Architectural Woodwork Institute www.awinet.org	(571) 323-3636
AWMAC	Architectural Woodwork Manufacturers Association of Canada www.awmac.com	(403) 453-7387
AWPA	American Wood Protection Association (Formerly: American Wood-Preservers' Association) www.awpa.com	(205) 733-4077
AWS	American Welding Society www.aws.org	(800) 443-9353 (305) 443-9353
AWWA	American Water Works Association www.awwa.org	(800) 926-7337 (303) 794-7711
BHMA	Builders Hardware Manufacturers Association www.buildershardware.com	(212) 297-2122
BIA	Brick Industry Association (The) www.gobrick.com	(703) 620-0010
BICSI	BICSI, Inc. www.bicsi.org	(800) 242-7405 (813) 979-1991
BIFMA	BIFMA International (Business and Institutional Furniture Manufacturer's Association) www.bifma.com	(616) 285-3963
BISSC	Baking Industry Sanitation Standards Committee www.bissc.org	(866) 342-4772
BOCA	BOCA (Building Officials and Code Administrators International Inc.) (See ICC)	
BWF	Badminton World Federation (Formerly: International Badminton Federation) www.bwfbadminton.org	60 3 9283 7155
CDA	Copper Development Association www.copper.org	(800) 232-3282 (212) 251-7200
CEA	Canadian Electricity Association www.electricity.ca	(613) 230-9263

CEA	Consumer Electronics Association www.ce.org	(866) 858-1555 (703) 907-7600
CFFA	Chemical Fabrics & Film Association, Inc. www.chemicalfabricsandfilm.com	(216) 241-7333
CFSEI	Cold-Formed Steel Engineers Institute www.cfsei.org	(866) 465-4732 (202) 263-4488
CGA	Compressed Gas Association www.cganet.com	(703) 788-2700
CIMA	Cellulose Insulation Manufacturers Association www.cellulose.org	(888) 881-2462 (937) 222-2462
CISCA	Ceilings & Interior Systems Construction Association www.cisca.org	(630) 584-1919
CISPI	Cast Iron Soil Pipe Institute www.cispi.org	(404) 622-0073
CLFMI	Chain Link Fence Manufacturers Institute www.chainlinkinfo.org	(301) 596-2583
CPA	Composite Panel Association www.pbmdf.com	(703) 724-1128
CRI	Carpet and Rug Institute (The) www.carpet-rug.org	(706) 278-3176
CRRC	Cool Roof Rating Council www.coolroofs.org	(866) 465-2523 (510) 485-7175
CRSI	Concrete Reinforcing Steel Institute www.crsi.org	(800) 328-6306 (847) 517-1200
CSA	Canadian Standards Association www.csa.ca	(800) 463-6727 (416) 747-4000
CSA	CSA International (Formerly: IAS - International Approval Services) www.csa-international.org	(866) 797-4272 (416) 747-4000
CSI	Construction Specifications Institute (The) www.csinet.org	(800) 689-2900 (703) 684-0300
CSSB	Cedar Shake & Shingle Bureau www.cedarbureau.org	(604) 820-7700
CTI	Cooling Technology Institute (Formerly: Cooling Tower Institute) www.cti.org	(281) 583-4087

CWC	Composite Wood Council (See CPA)	
DASMA	Door and Access Systems Manufacturers Association www.dasma.com	(216) 241-7333
DHI	Door and Hardware Institute www.dhi.org	(703) 222-2010
ECA	Electronic Components Association www.ec-central.org	(703) 907-8024
ECAMA	Electronic Components Assemblies & Materials Association (See ECA)	
EIA	Electronic Industries Alliance (See TIA)	
EIMA	EIFS Industry Members Association www.eima.com	(800) 294-3462 (703) 538-1616
EJMA	Expansion Joint Manufacturers Association, Inc. www.ejma.org	(914) 332-0040
ESD	ESD Association (Electrostatic Discharge Association) www.esda.org	(315) 339-6937
ESTA	Entertainment Services and Technology Association (See PLASA)	
EVO	Efficiency Valuation Organization www.evo-world.org	(415) 367-3643 44 20 88 167 857
FIBA	Fédération Internationale de Basketball (The International Basketball Federation) www.fiba.com	41 22 545 00 00
FIVB	Fédération Internationale de Volleyball (The International Volleyball Federation) www.fivb.org	41 21 345 35 45
FM Approvals	FM Approvals LLC www.fmglobal.com	(781) 762-4300
FM Global	FM Global (Formerly: FMG - FM Global) www.fmglobal.com	(401) 275-3000

FRSA	Florida Roofing, Sheet Metal & Air Conditioning Contractors Association, Inc. www.floridaroof.com	(407) 671-3772
FSA	Fluid Sealing Association www.fluidsealing.com	(610) 971-4850
FSC	Forest Stewardship Council U.S. www.fscus.org	(612) 353-4511
GA	Gypsum Association www.gypsum.org	(301) 277-8686
GANA	Glass Association of North America www.glasswebsite.com	(785) 271-0208
GS	Green Seal www.greenseal.org	(202) 872-6400
HI	Hydraulic Institute www.pumps.org	(973) 267-9700
HI/GAMA	Hydronics Institute/Gas Appliance Manufacturers Association (See AHRI)	
HMMA	Hollow Metal Manufacturers Association (See NAAMM)	
HPVA	Hardwood Plywood & Veneer Association www.hpva.org	(703) 435-2900
HPW	H. P. White Laboratory, Inc. www.hpwhite.com	(410) 838-6550
IAPSC	International Association of Professional Security Consultants www.iapsc.org	(415) 536-0288
IAS	International Approval Services (See CSA)	
ICBO	International Conference of Building Officials (See ICC)	
ICC	International Code Council www.iccsafe.org	(888) 422-7233 (202) 370-1800
ICEA	Insulated Cable Engineers Association, Inc. www.icea.net	(770) 830-0369
ICPA	International Cast Polymer Alliance www.icpa-hq.org	(703) 525-0511

ICRI	International Concrete Repair Institute, Inc. www.icri.org	(847) 827-0830
IEC	International Electrotechnical Commission www.iec.ch	41 22 919 02 11
IEEE	Institute of Electrical and Electronics Engineers, Inc. (The) www.ieee.org	(212) 419-7900
IES	Illuminating Engineering Society (Formerly: Illuminating Engineering Society of North America) www.ies.org	(212) 248-5000
IESNA	Illuminating Engineering Society of North America (See IES)	
IEST	Institute of Environmental Sciences and Technology www.iest.org	(847) 981-0100
IGMA	Insulating Glass Manufacturers Alliance www.igmaonline.org	(613) 233-1510
IGSHPA	International Ground Source Heat Pump Association www.igshpa.okstate.edu	(405) 744-5175
ILI	Indiana Limestone Institute of America, Inc. www.iliai.com	(812) 275-4426
Intertek	Intertek Group (Formerly: ETL SEMCO; Intertek Testing Service NA) www.intertek.com	(800) 967-5352
ISA	International Society of Automation (The) (Formerly: Instrumentation, Systems, and Automation Society) www.isa.org	(919) 549-8411
ISAS	Instrumentation, Systems, and Automation Society (The) (See ISA)	
ISFA	International Surface Fabricators Association (Formerly: International Solid Surface Fabricators Association) www.isfanow.org	(877) 464-7732 (801) 341-7360

ISO	International Organization for Standardization www.iso.org	41 22 749 01 11
ISSFA	International Solid Surface Fabricators Association (See ISFA)	
ITU	International Telecommunication Union www.itu.int/home	41 22 730 51 11
KCMA	Kitchen Cabinet Manufacturers Association www.kcma.org	(703) 264-1690
LMA	Laminating Materials Association (See CPA)	
LPI	Lightning Protection Institute www.lightning.org	(800) 488-6864
MBMA	Metal Building Manufacturers Association www.mbma.com	(216) 241-7333
MCA	Metal Construction Association www.metalconstruction.org	(847) 375-4718
MFMA	Maple Flooring Manufacturers Association, Inc. www.maplefloor.org	(888) 480-9138
MFMA	Metal Framing Manufacturers Association, Inc. www.metalframingmfg.org	(312) 644-6610
MHIA	Material Handling Industry of America www.mhia.org	(800) 345-1815 (704) 676-1190
MIA	Marble Institute of America www.marble-institute.com	(440) 250-9222
MMPA	Moulding & Millwork Producers Association (Formerly: Wood Moulding & Millwork Producers Association) www.wmmpa.com	(800) 550-7889 (530) 661-9591
MPI	Master Painters Institute www.paintinfo.com	(888) 674-8937 (604) 298-7578
MSS	Manufacturers Standardization Society of The Valve and Fittings Industry Inc. www.mss-hq.org	(703) 281-6613
NAAMM	National Association of Architectural Metal Manufacturers www.naamm.org	(630) 942-6591

NACE	NACE International (National Association of Corrosion Engineers International) www.nace.org	(800) 797-6223 (281) 228-6200
NADCA	National Air Duct Cleaners Association www.nadca.com	(202) 737-2926
NAIMA	North American Insulation Manufacturers Association www.naima.org	(703) 684-0084
NBGQA	National Building Granite Quarries Association, Inc. www.nbgqa.com	(800) 557-2848
NCAA	National Collegiate Athletic Association (The) www.ncaa.org	(317) 917-6222
NCMA	National Concrete Masonry Association www.ncma.org	(703) 713-1900
NEBB	National Environmental Balancing Bureau www.nebb.org	(301) 977-3698
NECA	National Electrical Contractors Association www.necanet.org	(301) 657-3110
NeLMA	Northeastern Lumber Manufacturers Association www.nelma.org	(207) 829-6901
NEMA	National Electrical Manufacturers Association www.nema.org	(703) 841-3200
NETA	InterNational Electrical Testing Association www.netaworld.org	(888) 300-6382 (269) 488-6382
NFHS	National Federation of State High School Associations www.nfhs.org	(317) 972-6900
NFPA	NFPA (National Fire Protection Association) www.nfpa.org	(800) 344-3555 (617) 770-3000
NFPA	NFPA International (See NFPA)	
NFRC	National Fenestration Rating Council www.nfrc.org	(301) 589-1776
NHLA	National Hardwood Lumber Association www.nhla.com	(800) 933-0318 (901) 377-1818

NLGA	National Lumber Grades Authority www.nlga.org	(604) 524-2393
NOFMA	National Oak Flooring Manufacturers Association (See NWFA)	
NOMMA	National Ornamental & Miscellaneous Metals Association www.nomma.org	(888) 516-8585
NRCA	National Roofing Contractors Association www.nrca.net	(800) 323-9545 (847) 299-9070
NRMCA	National Ready Mixed Concrete Association www.nrmca.org	(888) 846-7622 (301) 587-1400
NSF	NSF International (National Sanitation Foundation International) www.nsf.org	(800) 673-6275 (734) 769-8010
NSPE	National Society of Professional Engineers www.nspe.org	(703) 684-2800
NSSGA	National Stone, Sand & Gravel Association www.nssga.org	(800) 342-1415 (703) 525-8788
NTMA	National Terrazzo & Mosaic Association, Inc. (The) www.ntma.com	(800) 323-9736
NWFA	National Wood Flooring Association www.nwfa.org	(800) 422-4556 (636) 519-9663
PCI	Precast/Prestressed Concrete Institute www.pci.org	(312) 786-0300
PDI	Plumbing & Drainage Institute www.pdionline.org	(800) 589-8956 (978) 557-0720
PLASA	PLASA (Formerly: ESTA - Entertainment Services and Technology Association) www.plasa.org	(212) 244-1505
RCSC	Research Council on Structural Connections www.boltcouncil.org	
RFCI	Resilient Floor Covering Institute www.rfci.com	(706) 882-3833
RIS	Redwood Inspection Service www.redwoodinspection.com	(925) 935-1499

SAE	SAE International (Society of Automotive Engineers) www.sae.org	(877) 606-7323 (724) 776-4841
SBCCI	Southern Building Code Congress International, Inc. (See ICC)	
SCTE	Society of Cable Telecommunications Engineers www.scte.org	(800) 542-5040 (610) 363-6888
SDI	Steel Deck Institute www.sdi.org	(847) 458-4647
SDI	Steel Door Institute www.steeldoor.org	(440) 899-0010
SEFA	Scientific Equipment and Furniture Association www.sefalabs.com	(877) 294-5424 (516) 294-5424
SEI/ASCE	Structural Engineering Institute/American Society of Civil Engineers (See ASCE)	
SIA	Security Industry Association www.siaonline.org	(866) 817-8888 (703) 683-2075
SJI	Steel Joist Institute www.steeljoist.org	(843) 293-1995
SMA	Screen Manufacturers Association www.smainfo.org	(773) 636-0672
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association www.smacna.org	(703) 803-2980
SMPTE	Society of Motion Picture and Television Engineers www.smpte.org	(914) 761-1100
SPFA	Spray Polyurethane Foam Alliance www.sprayfoam.org	(800) 523-6154
SPIB	Southern Pine Inspection Bureau www.spib.org	(850) 434-2611
SPRI	Single Ply Roofing Industry www.spri.org	(781) 647-7026
SRCC	Solar Rating and Certification Corporation www.solar-rating.org	(321) 638-1537

SSINA	Specialty Steel Industry of North America www.ssina.com	(800) 982-0355 (202) 342-8630
SSPC	SSPC: The Society for Protective Coatings www.sspc.org	(877) 281-7772 (412) 281-2331
STI	Steel Tank Institute www.steeltank.com	(847) 438-8265
SWI	Steel Window Institute www.steelwindows.com	(216) 241-7333
SWPA	Submersible Wastewater Pump Association www.swpa.org	(847) 681-1868
TCA	Tilt-Up Concrete Association www.tilt-up.org	(319) 895-6911
TCNA	Tile Council of North America, Inc. (Formerly: Tile Council of America) www.tileusa.com	(864) 646-8453
TEMA	Tubular Exchanger Manufacturers Association, Inc. www.tema.org	(914) 332-0040
TIA	Telecommunications Industry Association (Formerly: TIA/EIA - Telecommunications Industry Association/Electronic Industries Alliance) www.tiaonline.org	(703) 907-7700
TIA/EIA	Telecommunications Industry Association/Electronic Industries Alliance (See TIA)	
TMS	The Masonry Society www.masonrysociety.org	(303) 939-9700
TPI	Truss Plate Institute www.tpinst.org	(703) 683-1010
TPI	Turfgrass Producers International www.turfgrasssod.org	(800) 405-8873 (847) 649-5555
TRI	Tile Roofing Institute www.tileroofing.org	(312) 670-4177
UBC	Uniform Building Code (See ICC)	
UL	Underwriters Laboratories Inc.	(877) 854-3577

	www.ul.com	
UNI	Uni-Bell PVC Pipe Association www.uni-bell.org	(972) 243-3902
USAV	USA Volleyball www.usavolleyball.org	(888) 786-5539 (719) 228-6800
USGBC	U.S. Green Building Council www.usgbc.org	(800) 795-1747
USITT	United States Institute for Theatre Technology, Inc. www.usitt.org	(800) 938-7488 (315) 463-6463
WASTEC	Waste Equipment Technology Association www.wastec.org	(800) 424-2869 (202) 244-4700
WCLIB	West Coast Lumber Inspection Bureau www.wclib.org	(800) 283-1486 (503) 639-0651
WCMA	Window Covering Manufacturers Association www.wcmanet.org	(212) 297-2122
WDMA	Window & Door Manufacturers Association www.wdma.com	(800) 223-2301 (312) 321-6802
WI	Woodwork Institute (Formerly: WIC - Woodwork Institute of California) www.wicnet.org	(916) 372-9943
WMMPA	Wood Moulding & Millwork Producers Association (See MMPA)	
WSRCA	Western States Roofing Contractors Association www.wsrca.com	(800) 725-0333 (650) 938-5441
WWPA	Western Wood Products Association www.wwpa.org	(503) 224-3930

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

SECTION 01 50 00 – TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Temporary utilities;

B. Temporary telephone service;

C. Temporary sanitary facilities;

D. Temporary controls: barriers, enclosures, and fencing;

E. Security requirements;

F. Vehicular access and parking;

G. Waste removal facilities and services;

H. Project identification sign;

I. Field offices.

1.2 QUALITY ASSURANCE

A. Regulations: Comply with industry standards and applicable laws and regulations of authorities having jurisdiction including, but not limited to:

1. Building code requirements;

2. Health and safety regulations;

3. Utility company regulations;

4. Police and fire department rules;

5. Environmental protection regulations.

B. Standards: Comply with the following:

1. NFPA 241; “Standard for Safeguarding Construction, Alterations, and Demolition Operations.”

2. ANSI A10; Series standards for “Safety Regulations for Construction and Demolition.”

3. NECA Electrical Design Library; “Temporary Electrical Facilities.”

C. Comply with NEMA, NECA, and UL standards and regulations for temporary electric service. Install service in compliance with NFPA 70; “National Electric Code.”

D. Inspections:

1. Arrange for authorities having jurisdiction to inspect and test each temporary utility before use.

2. Obtain required certifications and permits.

1.3 USE OF ON-SITE UTILITIES AND FACILITIES

A. Contractor may use on-site utilities during construction with the following restrictions:

1. Electrical:

a. Contractor may use common-use electrical outlets on building for connection of power tools, equipment and other items required for construction.
b. Power may not be drawn from sources connected to resident’s electrical meters.
c. Contractor to clarify which electrical outlets are allowed for use with Property Manager prior to the start of construction. Contractor to clearly communicate this information to all subcontractors. Use of resident’s electrical outlets will not be tolerated.

2. Water:

a. Contractor may use common-use hose bibs on building for construction purposes.
b. Water may not be drawn from sources connected to resident’s hose bibs.
c. Contractor to clarify which hose bibs are allowed for use with on-site Property Manager prior to the start of construction. Contractor to clearly communicate this information to all subcontractors. Use of resident’s hose bibs will not be tolerated.
d. Use trigger-operated nozzles for water hoses to avoid waste of water. Contractor to supply own hoses and water nozzles.

B. Provide and pay for all heating, cooling and ventilation required for construction purposes.

1.4 TEMPORARY SANITARY FACILITIES

A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.

B. Provide self-contained, single-occupant toilet units of chemical, aerated recirculation or combustion type.

C. Provide units properly vented and fully enclosed with a fiberglass-reinforced polyester shell or similar non-absorbent material.

D. Wash Facilities:

1. Install wash facilities supplied with potable water at convenient locations for personnel involved in handling materials that require wash-up.

2. Dispose of drainage properly. Supply cleaning compounds.

3. Provide safety showers, eyewash fountains and similar facilities for safety and sanitation of personnel.

E. Drinking Water Facilities:

1. Provide containerized tap-dispenser bottled-water type drinking water units or bottled water for worker consumption.

F. Maintain daily in clean and sanitary condition.

G. At end of construction, return facilities to same or better condition as originally found.

1.5 TEMPORARY FIRE PROTECTION

A. Fire Extinguishers: Provide hand-carried, portable, UL-rated, Class A fire extinguishers for temporary offices and similar spaces.

1. In other locations, provide hand-carried, portable, UL-rated Class ABC dry-chemical extinguishers or a combination of extinguishers of NGPA recommended classes for exposures.

B. Temporary fire protection:

1. Install and maintain temporary fire protection facilities of types needed to protect against reasonably predictable and controllable fire losses until permanent fire protection facilities are operable.

2. Comply with NFPA 10 and NFPA 241.

3. Store combustible materials in containers in fire safe locations.

4. Maintain unobstructed access to fire protection equipment.

5. Provide supervision of welding operation, combustion type temporary heating units, and similar sources of fire ignition.

1.6 TELEPHONE SERVICE AND ELECTRONIC CORRESPONDENCE

A. Provide, maintain, and pay for telephone service to field office at time of project mobilization.

B. Contractor to provide access to internet and computers to facilitate electronic communications at job site.

1.7 LIFT AND HOISTS

A. Temporary Lifts and Hoists:

1. Provide facilities for hoisting materials and employees.

2. Truck cranes and similar devices used for hoisting materials are considered “tools and equipment” and not temporary facilities.

1.8 BARRIERS

A. Provide barriers to prevent unauthorized entry to construction areas, to allow for owner’s use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.

1. Provide self-closing access doors or other methods to bar accidental access to construction areas by children or pets.

B. Provide barricades and covered walkways required by governing authorities for public rights-of-way.

1. Comply with standards and codes for erection of structurally adequate barricades.

C. Provide appropriate warning signs to inform personnel and public of hazards being protected against.

D. Provide protection for plants designated to remain. Replace damaged plants.

E. Protect vehicular traffic, stored materials, site, and structures from damage.

1.9 EXTERIOR ENCLOSURES

A. Provide temporary insulated weather-tight closure of exterior opening to accommodate acceptable working conditions and protection for Products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.

1.10 INTERIOR ENCLOSURES

A. Provide temporary partitions and ceilings as indicated to separate work areas from Owner-occupied areas, to prevent penetration of dust and moisture into Owner-occupied areas, and to prevent damage to existing materials and equipment.

B. Construction: Framing and reinforced polyethylene sheet materials with closed joints and sealed edges at intersections with existing surfaces.

1. Alternatively, construction enclosures with framing and plywood sheathing materials with closed joints and sealed edges at intersections with existing surfaces.

2. Enclosures must function to maintain a reasonable level of indoor air quality for residents.

1.11 VEHICULAR ACCESS AND PARKING

A. Coordinate access and haul routes with governing authorities and Owner.

B. Provide and maintain access to fire hydrants, free of obstructions.

C. Provide means of removing mud from vehicle wheels before entering streets.

D. Provide temporary parking areas to accommodate construction personnel. When site space is not adequate, provide additional off-site parking.

1.12 WASTE REMOVAL

A. Provide waste removal facilities and services and required to maintain the site in clean and orderly condition.

B. Provide containers with lids. Remove trash form site periodically.

C. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.

D. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.13 PROJECT IDENTIFICATION AND SIGNAGE

A. Prepare signs to provide directional information to construction personnel and visitors.

1. Erect on site at location required.

B. Install signage as required to notify residents of areas of restricted access or areas temporarily being used for staging of materials.

1. Coordinate all signage with the Owner's representative.

C. No other signs are allowed without Owner permission except those required by law.

1.14 FIELD OFFICES

A. Office: Weather-tight, with lighting, electrical outlets, heating and cooling equipment, and equipped with sturdy furniture and drawing display table.

B. Locate offices a minimum distance of 30 feet from existing and new structures.

1. Comply with requirements of jurisdictions having authority if minimum separation distance for field offices cannot be maintained due to site conditions.

C. Storage:

1. Some storage for materials staging and waste will be available in the on-site parking garage for use by the contractor during construction. Contact Heather Pichel, 503-525-2324 to coordinate location and quantity of storage available. Additional storage for materials and waste will need to be accommodated on-site or through procurement of proper street permits by the contractor.

D. Field offices and storage areas may be located within building enclosure if coordinated with Owner's representative prior to construction activities.

1.15 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

A. Remove temporary equipment, facilities, and materials prior to Substantial Completion inspection.

B. Clean and repair damage caused by installation or use of temporary work.

1.16 PROJECT CONDITIONS

A. Keep temporary services and facilities clean and neat in appearance.

B. Operate in a safe and efficient manner.

C. Relocate temporary services and facilities as Work progresses.

D. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on-site.

1.17 TERMINATION AND REMOVAL

A. Remove each temporary facility when need has ended, when replaced by authorized use of a permanent facility, or no later than Substantial Completion, unless otherwise requested by Owner or Consultant.

B. Materials and facilities that constitute temporary facilities are Contractor's property.

1. Owner reserves right to take possession of Project Identification signs.

C. Substantial Completion: Clean and renovate permanent facilities used during construction period.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION – NOT USED

END OF SECTION

SECTION 01 60 00 – PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Transportation, handling, storage and protection.

B. Product option requirements.

C. Substitution limitations and procedures.

D. Spare parts and maintenance materials.

1.2 RELATED SECTIONS

A. Section 01 40 00 – Quality Requirements: Product quality monitoring.

1.3 REFERENCES

A. NFPA 70 – National Electrical Code; National Fire Protection Association; 2005.

B. SCAQMD 1168 – South Coast Air Quality Management District Rule No. 1168; current edition;

1.4 DEFINITIONS

A. Products: Items purchased for incorporation in Work

1. Term “product” includes terms “material,” “equipment,” “system,” and terms of similar intent.

2. “Named Products” are items identified by manufacturer’s product name, including make or model number or other designation, listed in manufacturer’s published product literature.

B. Materials: Products shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of Work.

C. Equipment: Product with operational parts, whether motorized or manually operated, that requires service connections, such as wiring or piping.

1.5 SUBMITTALS

A. Comply with submittal procedures as set forth in Section 01 30 00 – ADMINISTRATIVE REQUIREMENTS.

B. Proposed Products List: Submit list of major products proposed for use, with name of manufacturer, trade name, and model number or each product.

1. Submit within 15 days after date of Notice to Proceed.

2. For product specified only by reference standards, list applicable reference standards.

C. Product Data Submittals: Submit manufacture's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.

D. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.

1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns

1.6 QUALITY ASSURANCE

A. Source Limitations: Provide products of same kind from a single source to fullest extent possible.

B. Compatibility of Products: When given option of selecting products, Contractor is responsible for providing products and construction methods that are compatible with previously selected products and construction methods, or products specified to with those selected products to be compatible.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products according to manufacturer's recommendations.

B. Schedule deliveries to minimize long-term storage at site.

C. Coordinate delivery with installation time to assure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, or other losses.

D. Deliver products to site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling storing, unpacking, protecting, and installing.

E. Inspect products upon delivery to ensure compliance with contract documents and to ensure that products are undamaged and properly protected.

F. Store products at site in a manner that will facilitate inspection and measurement of quantity or counting of units.

G. Store products subject to damage by weather above ground, under cover in a weather tight enclosure, and with ventilation adequate to prevent condensation.

1. Maintain temperature and humidity within range required by manufacturer's instructions.

PART 2 - PRODUCTS

2.1 NEW PRODUCTS

A. Product Substitutions:

1. Where products or manufactures are named and accompanied by term equal, approved, or approved equal, comply with Product Substitution Procedures to obtain approval or an unnamed product.

B. Provide new products unless specifically required or permitted by the Contract Documents.

C. Specified Standards, Codes, and Regulations: Where compliance with an imposed code, standard, or regulation is specified, provide a product that complies with that code, standard, or regulations.

D. Visual Matching:

1. Where matching a sample, Consultant's decision will be final on whether a proposed product matches satisfactory.

E. Visual Selection:

1. Where matching a sample, Consultant's decision will be final on whether a proposed product matches satisfactorily.

F. Where all other criteria are met, Contractor shall give preference to products that:

1. Have longer documented life span under normal use.

G. Adhesives and Joint Sealants:

1. Definition: This provision applies to gunnable, trowelable, and liquid-applied adhesives, sealants, and sealant primers used anywhere on the interior of the building inside the weather barrier, including duct sealers.

2. Provide only products having lower volatile organic compound (VOC) content than required by South Coast Air Quality Management District Rule No. 1168.

a. Require each installer to certify compliance and submit product data showing product content.

3. Specific Product Categories: Comply with limitations specified elsewhere.

2.2 PRODUCT OPTIONS

A. Products Specified by Reference Standards or by Description Only:

1. Use any product meeting those standards or description.

B. Product Specified by Naming One or More Manufacturers:

1. Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.

C. Proprietary Specification Requirement:

1. Single product or manufacturer is named, provide product indicated.

2. No substitutions are permitted.

D. Specification Requirements:

E. Product Specified by Naming One or More Manufactures with a Provision of Substitutions:

1. Submit a request for substitution for any manufacturer not named.

F. Specified Standards, Codes, and Regulations: Where compliance with an imposed code, standard, or regulation is specified, provide a product that complies with that code, standard, or regulations.

G. Inappropriate Product Selections:

1. If Contractor believes specified product, method, or system is inappropriate for use, Contractor to notify Consultant before performing Work in question.

2. If notice of objection is not received prior to delivery to site, it will be assumed by owner and Contractor agrees specified products, methods, and systems are appropriate for use in Project.

2.3 SPARE PARTS AND MAINTENANCE PRODUCTS

A. Provide spare parts, maintenance, and extra products of types and in quantities specified in individual specification sections.

B. Deliver to Project site; obtain receipt prior to final payment

PART 3 - EXECUTION

3.1 INSTALLATION OF PRODUCTS

A. Comply with manufacturer's instructions and recommendations for installation of products in applications indicated.

1. Anchor each product securely in place, accurately located and aligned with other Work.

2. Clean exposed surfaces and protect as necessary from damage and deterioration

B. Should job conditions or specified requirements conflict with Manufacturers' instructions, consult Consultant for further instructions.

3.2 SUBSTITUTION PROCEDURES

A. Definitions

1. Substitutions: Contractor proposals for changes in products, materials, equipment, and methods of construction required by Contract Documents made during biding and after award of Contract are considered to be requests for substitution:

a. Revisions to Contract Documents requested by Owner or Consultant.
b. Specified options of products and construction methods included in Contract Documents.
c. Contractor's determination of and compliance with regulations and orders issued by governing authorities.

B. Substitutions received before execution of Contract will processed as Addenda, if accepted, prior to execution of Contract, and thereafter included in Contract Documents.

C. Contractor's Responsibilities

1. Contractor's responsibilities for substitution requests made after award of Contract are as follows:

a. Investigate proposed products and determine they are equal or superior in respects to products specified.
b. Provide same guarantee for accepted substitutions as for products specified.
c. Make changes in, and coordinate, Work as may be required to incorporate and install accepted substitutions.
d. Waive claims for additional costs, which subsequently become apparent which are related to substitutions.

D. Consultant will consider requests for substitutions only within 15 days after date of Agreement.

E. Substitutions may be considered when a product becomes unavailable through no fault of the Contractor.

F. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.

G. Equality of different materials or products shall be determined by methods set forth in this Section.

1. No product or material shall be arbitrarily presumed to be "equal" without having first been so judged by appropriate procedures.

2. Provide comparison chart itemizing specified parts or components of specified and proposed substitutions.

3. Comparative analysis to be evaluated by Consultant or Engineer approving substitution.

a. Consultant will be sole judge of acceptability of any proposed substitution and decision is final.

4. A request for substitution constitutes a representation that the submitter:

a. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
b. Will provide the same warranty for the substitution as for the specified product.
c. Will coordinate installation and make changed to other Work which may be required for the Work to be complete with no additional cost to Owner.
d. Waives claims for additional costs or time extension which may subsequently become apparent.
e. Will reimburse owner and Consultant for review or redesign services associated with re-approval by authorities.

H. Substitutions will not be considered when they are indicated or implied on shop drawings or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.

1. Where manufacturers, products, or systems listen in Specifications are not followed with "or approved" or "Substitutions: Provide in accordance with requirements of Section 01 60 00," it is intended that substitutions are not permitted.

I. Substitution Submittal Procedure:

1. Submit copies of request for substitution for consideration. Limit each request to one proposed substitution.

a. Submit request for approval of a substitution on Substitution Request Form, copy included at end of this Section.

2. Submit shop drawings, product data, and certified test result attesting to the proposed product equivalence. Burden of proof is on party proposing substitution.

3. The Consultant will notify the Contractor in writing of decision to accept or reject request.

4. Consultant will be sole judge of acceptability of any proposed substitution.

3.3 SUBSTITUTIONS REQUESTED AFTER AWARD OF CONTRACT

A. Substitutions received after execution of Contract: Requests for substitution received after execution of Contract will not be considered, except as a Contractor's Request for Change.

1. Substitutions reviewed in this manner will be processed as Change Orders if accepted.

B. Consultant will receive and consider Contractor's request for substitution after award of Contract when one or more of the following conditions are satisfied, as determined by the Consultant. If the following conditions are not met, Consultant will return requests without action except to record noncompliance with these requirements.

1. Specified product cannot be provided within the Contract Time;

   a. Consultant will not consider request of products that cannot be provided as a result of failure to pursue product promptly or coordinate activities properly.

2. Specified product cannot receive necessary approval by a governing authority, and requested substitution can be approved;

3. Specified product cannot be coordinated with other materials and Contractor certifies that proposed substitution can be coordinated;

4. Specified product cannot provide required warranty and contractor certifies that proposed substitution provides warranty;

5. Requested substitution offers Owner a substantial advantage in cost, time, or other considerations after deducting additional Owner's cost of compensation to Consultant for redesign and evaluation services, increased cost of other construction, and similar considerations.

C. Contractor's submittal and Consultant's acceptance of Shop Drawings, Product Data, or Samples for construction activities not complying with Contract Documents do no constitute an acceptable or valid request for substitution, nor do they constitute approval.

3.4 TRANSPORATION AND HANDLING

A. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.

B. Transport and handle products in accordance with manufacturer's instructions.

C. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.

D. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.

E. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

F. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.5 STORAGE AND PROTECTION

A. Schedule deliveries to minimize long-term storage at site.

B. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed in convenient proximity to Work in order to minimize waste due to excessive material handling and misapplication.

C. Store and protect products in accordance with manufacturer's instructions.

D. Store with seals and labels intact and legible.

E. Store sensitive products in weather tight, climate controlled enclosures in an environment favorable to product.

F. For exterior storage of fabricated products, place on sloped supports above ground.

G. Provide bonded off-site storage and protection when site does not permit on-site storage.

H. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.

1. Maintain temperature and humidity within range required by manufacturer's instructions.

I. Store loose granular materials on solid flat surfaces in a well-drained area, without mixing.

J. Prevent contract with material that may cause corrosion, discoloration, or staining or damage.

K. Provide equipment and personnel to store products by methods to prevent soiling and disfigurement.

L. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

RDH
Making Buildings Better

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Portland, OR 97204

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TO		PROJECT	
FROM		SUBSTITUTION REQUEST #	
REGARDING		A/E PROJECT #	
DATE		CONTRACT FOR	

Substitution Request Form – After the Bidding/Negotiation Phase

Specification Title:	
Description	
Section	
Page	
Article or Paragraph	

Proposed Substitution:	
Description	
Trade Name	
Model #	
Manufacturer	
Address	
Phone	

Installer: _____
Address: _____
Phone: _____

Product History: ☐ New Product ☐ 1-4 years old ☐ 5-10 years old ☐ More than 10 years old

Differences between the proposed substitution and the specified product:

_____

_____

Reason for not providing specified item:
_____

Savings to Owner for accepting substitution: _____ ($_____)

Proposed substitution changes contract time?
☐ No ☐ Yes (Add) (Deduct) _____ days.

☐ Point-by-point comparative data attached (REQUIRED by A/E)

Supporting data enclosed:
☐ Drawings ☐ Product Data ☐ Samples ☐ Tests ☐ Reports ☐ _____

Similar Installation:
Project: _____
Architect: _____
Address: _____
Owner: _____
Date Installed: _____
Proposed Substitution affects other parts of work: ☐ No ☐ Yes, explain:_____
_____

Substitution - After Bid

SECTION 01 70 00 – EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Examination, preparation, and general installation procedures.

B. Cleaning and protection.

C. Closeout procedures, except payment procedures.

1.2 RELATED SECTIONS

A. Section 01 10 00 – Scope of Work: Limitations on working in existing building; continued occupancy; work sequence; identification of salvaged and relocated materials.

B. Section 01 30 00 – Administrative Requirements: Submittals procedures.

C. Section 01 40 00 – Quality Requirements: Testing and inspection procedures.

D. Section 01 78 00 – Closeout Submittals: Project record documents, product submittals, warranties and bonds.

1.3 SUBMITTALS

A. See Section 01 30 00 – Administrative Requirements, for submittal procedures.

B. Safety Plan: Submit safety plan as specified by OSHA and local authorities.

C. Cutting and Patching: Submit written request in advance of cutting of alternations which affect:

1. Structural integrity of any element of Project;

2. Integrity of weather exposed or moisture resistant element;

3. Efficiency, maintenance, or safety of any operation element;

4. Visual qualities of sign exposed elements;

5. Work of Owner or separate Contractor;

6. Existing construction outside the immediate area of construction such as roadways, sidewalks, and utilities.

D. Project Record Documents: Accurately record actual locations of capped and active utilities.

1.4 PROJECT CONDITIONS

A. Protect site from ponding or running water. Provide water barriers as required to protect work from weather, dirt, debris, damage and other environmental factors.

B. Provide tarps or shrink-wrap to allow for installation of components that require specific environmental conditions.

C. Ventilate enclosed areas to assist curing of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, and vapors or gases.

D. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere.

E. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.

F. Pollution Control: Provide means, methods and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations.

1.5 COORDINATION

A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequences of installation of interdependent construction elements, with provisions for accommodating items installed later.

B. Notify affected utility companies and comply with their requirements.

C. Coordinate completion and clean-up of work of separate sections.

PART 2 - PRODUCTS-NOT USED

PART 3 - EXECTUION

3.1 EXAMINTATION

A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.

B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.

C. Examine and verify specific conditions described in individual specification sections.

D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or mis-fabrication.

E. Verify that utility services are available, of the correct characteristics, and in the correct locations.

F. Prior to Cutting: Examine existing conditions prior to commending work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

G. If existing conditions differ from design intent, promptly notify Consultant through use of a Request for Information (RFI).

3.2 PREPARATION

A. Clean substrate surfaces prior to applying next material or substance.

B. Seal cracks or openings of substrate prior to applying next material or substance.

C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.3 PRE-INSTALLATION MEETINGS

A. When required in individual specification sections, convene a pre-installation meeting at the site prior to commencing work of the section. See Section 01 60 00 for additional information on pre-installation meetings.

B. Require attendance of parties directly affecting, or affected by, work of the specification section.

C. Notify Consultant five days in advance of meeting date.

D. Prepare agenda and preside at meeting:

1. Review conditions of examination, preparation and installation procedures.

2. Review coordination with related work.

E. Record minutes and distribute copies within 72 hours after meeting to participants, with copies to Consultant, Owner, participants, and those affected by decisions made.

1. See Section 01 30 00 – Administrative Requirements for additional information on distribution of meeting minutes and pre-installation meeting requirements.

3.4 GENERAL INSTALLATION REQUIREMENTS

A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.

B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.

C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.

D. Make consistent texture on surfaces with seamless transitions, unless otherwise indicated.

E. Make neat transitions between different surfaces maintaining texture and appearance.

3.5 PROGRESS CLEANING

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

B. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site. Do not burn or bury waste.

3.6 PROTECTION OF INSTALLED WORK

A. Protect installed work from damage by construction operations.

B. Provide special protection where specified in individual specification sections.

C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.

D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.

E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.

F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.

G. Remove protective covering when no longer need; reuse or recycle plastic coverings if possible.

3.7 FINAL CLEANING

A. Execute final cleaning prior to final project assessment.

B. Use cleaning materials that are non-hazardous.

C. Clean exterior glass and surfaces exposed to view. Remove temporary labels, stains and foreign substances. Polish transparent and glossy surfaces. Vacuum carpeted and soft surfaces.

1. Cleaning of interior side of glass will be the responsibility of the resident.

D. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.

E. Clean debris from roofs, gutters, downspouts, and drainage systems.

F. Clean site and sweep paved areas.

G. Clean flower beds, grass, and other landscaped areas adjacent to buildings.

H. Remove waste, surplus material, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.8 CLOSEOUT PROCEDURES

A. Make submittals that are required by governing or other authorities.

1. Provide copies to Consultant and Owner.

B. Accompany Project Coordinator on preliminary inspection to determine items to be listed for completion or correction on Contractor's Notice of Substantial Completion.

C. Notify Consultant when work is considered ready for Substantial Completion.

D. Submit written certification that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contact Document and ready for Consultant's review.

E. Correct defects in work listed in executed Certificate of Substantial Completion and comply with requirements for access to Owner-occupied areas.

F. Accompany Project Coordinator on preliminary final inspection.

G. Notify Consultant when work is considered finally complete.

H. Complete items of work determined by Consultant's final review.

3.9 MAINTENANCE SERVICE

A. Furnish service and maintenance of components indicated in specification section during the warranty period.

B. Examine system components at frequency consistent with reliable operation. Clean, adjust and lubricate as required.

C. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.

D. Maintenance service shall not be assigned or transferred to any agent or Subcontractor without prior written consent of the Owner.

END OF SECTION

SECTION 01 78 00 – CLOSEOUT SUBMITTALS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Project Record Documents;

B. Operation and Maintenance Data;

C. Warranties and Bonds;

D. Inspection Procedures.

1.2 RELATED SECTIONS

A. Section 01 30 00 – Administrative Requirements: Submittals procedures, shop drawings, product data, and samples;

B. Section 01 60 00 – Product Requirements: Product Submittals.

C. Section 01 70 00 – Execution and Closeout Requirements.

D. Individual Product Sections: Specific requirements for operation and maintenance data;

E. Individual Product Sections: Warranties required for specific products or Work.

1.3 SUBMITTALS

A. Project Record Documents:

1. Submit documents to Consultant with claim for final Application for Payment.

B. Product Submittals:

1. See Section 01 60 00 for Product Submittal requirements.

2. At the end of the project, submit binder containing all product submittals in a tabbed, indexed format, organized by specification section.

C. Warranties:

1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within ten days after acceptance.

2. Make other submittals within ten days after Date of Substantial Completion, prior to final Application for Payment.

3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within ten days after acceptance, listing the date of acceptance as the beginning of the warranty period.

D. Lien Release: Provide a copy from all suppliers of unconditional lien releases indicating payment in full for all materials supplied.

PART 2 - PRODUCTS – NOT USED

PART 3 - EXECUTION

3.1 SUBSTANTIAL COMPLETION

A. Prior to requesting inspection for certification of Substantial Completion, complete the following:

1. In Application for Payment that coincides with, or first follows, date of Substantial Completion is claimed, show 100 percent completion for portion of Work claimed as substantially complete.
    a. Include supporting documentation for completion as indicated in these Contract Documents.
    b. If 100 percent cannot be shown, include a list of incomplete items, value of incomplete construction, and reasons Work is not compete.

2. Advise Owner of pending insurance changeover requirements.

3. Submit warranties, workmanship bonds, maintenance agreements, final certifications, and similar documents.

4. Obtain and submit releases enabling Owner unrestricted use of Work and access to services and utilities.
    a. Include occupancy permits.

5. Submit:
    a. Record Drawings;
    b. Record Specifications;
    c. Manufacturer's Maintenance Manuals for installed products;
    d. Final project photographs;
    e. Damage or settlement surveys;
    f. Property surveys;
    g. Other final record information.

6. Deliver tools, spare parts, extra stock, and similar items.

7. Complete startup testing of systems and instruction to Owner's operation and maintenance personnel.

8. Discontinue and remove temporary facilities from site, along with mockups, construction tools, and similar elements.

9. Complete final cleanup requirements.

10. Touch up and otherwise repair and restore marred, exposed finishes, including touchup painting.

B. Inspection Procedures:

1. On receipt from Contractor a written request for inspection with certification the project is substantially complete and a punch list, Consultant will proceed with an inspection or advise Contractor of unfilled requirements.

2. Consultant will prepare Certificate of Substantial Completion following inspection or advise Contractor of construction that must be completed or corrected before certificate can be issued.

   a. Consultant will re-inspect once when requested with assurance that punch list and Work is substantially complete.
   b. Result of completed inspection will form basis of requirements for Final Acceptance.

3. Owner will allow Contractor no longer than 15 calendar days from Date of Substantial Competition to remedy deficiencies.

3.2 FINAL ACCEPTANCE

A. Prior to requesting final inspection for certification of final acceptance and final payment, submit the following:

1. Final payment request with releases, including insurance certificates for products and systems where applicable;

2. Updated final statement accounting for final additional changes to Contract Sum;

   a. Consultant will prepare a final Change Order after final acceptance that shows adjustments to Contract Sum which have not been previously made by Change Orders.

3. Certified copy of Consultant's final inspection list of items to be completed or corrected endorsed and dated by Consultant;

   a. Certification to state each item has been completed or corrected or otherwise resolved for acceptance.

4. Consent of Surety to Final Payment;

5. Evidence of final, continuing insurance coverage complying with insurance requirements.

B. Procedures

1. Consultant will re-inspect to verify status of completion upon receipt of notice that Work, including list of items from earlier inspection, has been completed.

   a. Indicate items for which completion is delayed under circumstances acceptable to Owner and Consultant.

2. If Work is found to be complete following final inspection, Consultant will issue a certificate of final acceptance.

3. Should Consultant and owner determine that Work is incomplete or defective:

   a. Consultant will promptly notify Contractor, in writing, listing incomplete or defective Work.
   b. Contractor to remedy deficiencies promptly, and notify Consultant when ready for re-inspection.

3.3 PROJECT RECORD DOCUMENTS

A. Maintain on site one set of the following record documents; record actual revisions to the Work and identify as RECORD DRAWINGS – PROJECT SET:

1. Drawings;

2. Specifications;

3. Addenda;

4. Change Orders and other modifications to the Contract;

5. Reviewed shop drawings, product data, and samples;

6. RFI's, ASI's, sketches, and other documents that clarify the work;

7. Binder containing all approved product submittals;

8. Manufacturer's instruction for assembly, installation, and adjusting.

B. Mark Drawings to show actual installation and construction where construction varies substantially from Work as shown.

1. Using an erasable colored pencil (not ink or indelible pencil). Clearly describe change by graphic line and note.

2. Date entries, and note related Change Order numbers where applicable.

3. Call attention to entries by a "cloud" drawn around areas affected.

4. Where overlapping changes occur, mark with different colors.

C. Conversion of schematic layouts:

1. Design of future modifications of facility may require accurate information as to final physical layout of items which are shown schematically on Drawings.

2. Show on Project set of Record Drawings, by dimensions accurate to within on inch, centerline of each run of items shown schematically on Drawings. Clearly identify item by accurate note such as “cast iron drain”, “galv. Water”, and like. Show, by symbol or note, vertical location of item (“under slab”, “in ceiling plenum”, “exposed” and like). Relate by identification descriptive to Specifications.

D. Ensure entries are complete and accurate, enabling future reference by Owner.

E. Store record documents separate from documents used for construction.

F. Record information concurrent with construction progress.

G. Specifications:

1. Legibly mark and record at each product section description of actual products installed, including the following:

a. Manufacturer’s name and product model and number;
b. Product substitutions or alternates utilized;
c. Changes made by Addenda and modifications, such as Change orders and modifications issued during construction.

2. Show changes in actual Work performed in comparison with Specification text;

H. Record Drawings and Shop Drawings:

1. Legibly mark each item to record actual construction including:

a. `Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
b. Field changes of dimension and detail.
c. Details not on original Contract drawings.

I. Final Record Documents: Prior to request for Substantial Completion, secure from Consultant at no charge to Contractor two complete sets of bond copies of Contract Documents.

1. Carefully transfer change data shown on Project set of Record Drawings to corresponding bond copy, coordinating changes as required.

2. Clearly indicate at each affected detail and other drawings a full description of changes made during construction, and actual location of items.

3. Show final location of electrical junction boxes and outlets, telephone and data outlets, supply and return registers, and the like.

4. Call attention to entries by a “cloud” drawn around areas affected.

5. Make changes neatly, consistently, and with proper media to assure longevity and clear reproduction.

3.4 OPERATION AND MAINENANCE DATA FOR MATERIALS AND FINISHES

A. For Each Product, Applied Material, and Finish:

1. Product data, with catalog number, size, composition, and color and texture designations.

2. Information for re-ordering custom manufactured products.

B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.

C. Moisture protection and weather-exposed products: Include product data listing applicable references standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.

D. Additional information as specified in individual product specification sheets.

E. Provide a listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

3.5 WARRANTIES

A. Obtain warranties, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers within 10 days after completing of the applicable item of Work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial Completion is determined.

B. Verify documents are in proper form, contain full information, and notarized.

C. Co-execute submittals when required.

D. Retain warranties until time specified for submittal.

E. Include originals of each in operation and maintenance manuals, indexed separately on Table of Contents.

END OF SECTION

SECTION 02 41 00 – DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. Work included: labor, materials, equipment and services necessary for the following:

1. Removal of designated construction;
2. Removal of designated building equipment and fixtures;
3. Removal of construction necessary for new enclosure component installation;
4. Products for patching and extending Work;
5. Disposal of materials;
6. Repair of damaged surfaces, finishes, and cleaning.

1.2 RELATED SECTIONS

A. Section 01 10 00 – Scope of Work for areas to be demolished, work sequence, Owner occupancy, and protection of installed work.

1.3 REGULATORY REQUIREMENTS

A. Conform to applicable code for demolition work, dust control, products requiring electrical disconnection and re-connection.

B. Obtain required permits from authorities.

C. Do not close or obstruct egress from any building exit or site exit.

D. Do not disable or disrupt building fire or life safety systems without 3 days prior written notice to Owner.

E. Conform to applicable regulatory procedures when hazardous or contaminated materials are discovered.

1.4 EXISTING CONDITIONS

A. Conduct demolition to minimize interference with adjacent and occupied building areas.

B. The Contractor shall coordinate with the Architect when it is necessary to access, measure and/or photograph existing conditions prior to execution of the work.

1.5 PROTECTION

A. Prevent debris from blocking surface drainage system, mechanical and electrical systems, or other areas of buildings or surrounding area which must remain in operation.

B. Protect all adjacent surfaces and glazing.

PART 2 - PRODUCTS

2.1 PRODUCTS FOR PATCHING AND EXTENDING WORK

A. New Materials: As specified in product Sections; match existing Products and work for patching and extending work.

1. Where new materials are indicated on Drawings and product Section for material is not included in Project Manual (Specifications), provide new materials as specified on Drawings.

2. Immediately notify Architect if materials for patching and extending work are not clear.

B. Type and Quality of Existing Products: Determine by inspection and testing Products where necessary, referring to existing Work as standard.

PART 3 - EXECUTION

3.1 PREPARATION

A. Provide, erect, and maintain temporary barriers at locations required.

B. Erect and maintain weatherproof closures for exterior openings.

C. Erect and maintain temporary partitions to prevent spread of dust, odors, and noise to permit continued building occupancy.

D. Protect existing materials that are not to be demolished.

E. Prevent movement of structure; provide bracing and shoring.

F. Notify affected utility companies before starting Work and comply with their requirements.

G. If required, disconnect and re-route electrical and telephone service lines in accordance with authorities having jurisdiction. Post warning signs on electrical lines and equipment that must remain energized to serve other properties during period of demolition.

1. Obtain any permits necessary.

H. If required, disconnect and cap designated mechanical services in accordance with authorities having jurisdiction.

1. Obtain any permits necessary

I. Do not disrupt active or energized utilities designated to remain undisturbed.

1. All services are designated to remain active.

J. Label, and identify locations, orientation and layout of assemblies identified for reinstallation.

K. Remove and store in a safe location, assemblies identified for reinstallation.

3.2 DEMOLITION

A. Disconnect, remove, and identify designated utilities within demolition area.

B. Demolish in an orderly and careful manner. Protect existing supporting structural members and adjacent construction.

C. Remove unsuitable material not marked for salvage, such as rotted wood, corroded metals, and deteriorated masonry and concrete.

D. Perform work in a safe manner at all times in accordance with OSHA, project, and reference standard safety requirements and protocols.

E. Prepare surfaces and remove surface finishes to provide for proper installation of new Work and finishes.

F. Sheathing and concrete substrates are to be protected. Do not over cut.

G. Remove existing equipment, services, and obstacles where required for refinishing or making good of existing surfaces, and replace as work progresses.

H. At the end of each day's work, leave work in safe condition so that no part is in danger of toppling or falling. Protect interiors of units, and adjacent elements not be demolished from exterior demolition at all times.

I. Provide clean straight cut lines at the extent of all removals as indicated to allow future tie-ins.

J. Demolish to minimize dusting, airborne fungi, and other debris.

K. Do not sell or burn materials on site.

L. Remove contaminated or dangerous materials as defined by authorities having jurisdiction, relating to environmental protection, from site and dispose of in safe manner to minimize danger at site or during disposal. Upon completion of demolition, leave areas in clean condition.

3.3 WORK

A. Dispose of demolished materials except where noted otherwise and in accordance with authorities having jurisdiction.

B. Coordinate work of alterations and renovations to expedite completion sequentially and to accommodate Owner occupancy.

C. Project Finishes: Complete in all respects including operational, mechanical, electrical and plumbing work.

D. Remove, cut, and patch Work in a manner to minimize damage and to provide a means of restoring Products and finishes to specified condition.

E. Refinish visible existing surfaces to remain in renovated rooms and spaces, to specified condition for each material, with a neat transition to adjacent finishes.

F. In addition to specified replacement of equipment and fixtures, restore existing plumbing, heating, ventilation, air conditioning, and electrical systems to full operational condition.

G. Install products as specified in individual technical specification sections.

H. See Section 01 10 00 – Scope of Work for a list of items to be demolished and either saved for reinstallation or disposed of.

3.4 TRANSITIONS

A. Where new Work abuts or aligns with existing, perform a smooth and even transition.

1. Patched Work to match existing adjacent Work in texture and appearance, unless otherwise noted.

B. When finished surfaces are cut so that a smooth transition with new work is not possible, terminate existing surface along a straight line at a natural line of division and make recommendation to Architect.

1. Architect to have final authority on transitions from new to existing surfaces.

3.5 ADJUSTMENTS

A. Where removal of partitions or walls results in adjacent spaces becoming one, re-work floors, walls, and ceilings to a smooth plane without breaks, steps, or bulkheads.

B. Where a change of plane of ¼-inch or more occurs, submit to Architect a recommendation for providing a smooth transition.

C. Trim existing doors as necessary to clear new floor finish.

1. Refinish trim as required.

D. Patch or replace portions of existing surfaces that are damaged, lifted, discolored, or showing other imperfections.

3.6 FINISHES

A. Finish surfaces as specified in individual technical specification sections.

B. Finish patches to produce uniform finish and texture over entire area.

1. When finish cannot be matched, refinish entire surface to nearest intersections.

3.7 SAFETY CODE

A. Carry out demolition work in accordance with applicable laws governing demolition of existing structures.

END OF SECTION

SECTION 06 05 73 – WOOD TREATMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Work includes labor, materials, equipment and services necessary for:

1. Treatment of new lumber and plywood.

2. Fasteners and connectors for preservative-treated wood.

B. Related Sections:

1. 06 10 00 – Rough Carpentry

2. 07 46 46 – Fiber Cement Siding and Trim

1.3 REFERENCES

A. American Wood Protection Association (AWPA) U1 – Use Category System: User Specification for Treated Wood; American Wood-Preservers' Association.

B. AWPA C9 – Plywood – Preservative Treatment by Pressure Processes; American Wood-Preservers' Association.

C. AWPA M2 – Standard for Inspection of Treated Wood Products.

D. AWPA M4 – Standard for the Care of Preservative-Treated Wood Products.

E. AWPA P5 – Standard for Waterborne Preservatives.

F. ASTM A 153/A 153M – Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

G. ASTM A 653/A 653M – Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

1.4 SUBMITTALS

A. See Section 01 30 00 – Administrative Requirements, for submittal procedures.

B. Product Data: Provide technical data on wood preservative materials.

C. For products treated with preservative by vacuum-pressure impregnation submit following information certified by authorized signing officer of treatment plant:

1. Information listed in AWPA M2 applicable to specified treatment.

2. Moisture content after drying following treatment with waterborne preservative.

3. Acceptable types of paint, stain, and clear finishes that may be used over treated materials to be finished after treatment.

4. Treatment compliance for exposed lumber indicated to receive a stained or natural finish.

5. Whether or not the wood is treated with ammonia.

1.5 QUALITY ASSURANCE

A. Inspection of products treated with preservative by vacuum-pressure impregnation will be carried out by an accredited inspection agency.

B. Wood that is preservative treated shall bear the quality mark of an inspection agency that maintains continuing supervision, testing and inspection over the quality of the preservative-treated wood. Omit the marking and provide certificates of treatment compliance issued by the inspection agency for exposed lumber indicated to receive a stained or natural finish. Inspection agencies for preservative-treated wood shall be listed by an accreditation body that complies with the requirements of the American Lumber Standards Treated Wood Program, or equivalent. The quality mark shall be on a stamp or label affixed to the preservative-treated wood, and shall include the following information:

1. Identification of treating manufacturer;

2. Type of preservative used;

3. Minimum preservative retention (pcf);

4. End use for which the product is treated;

5. AWPA standard to which the product was treated;

6. Identify of the accredited inspection agency.

1.6 ENVIRONMENT AND SAFETY

A. Comply with requirements of governing authorities regarding use, handling, storage, and disposal of hazardous materials; and regarding labeling and provision of material safety data sheets. Ensure that building occupants, as well as adjacent materials including landscaping are thoroughly protected.

PART 2 - PRODUCTS

2.1 PRESERVATIVE TREATMENT MATERIALS

A. Products containing chromium will not be permitted. Products containing arsenic will not be permitted.

B. Wood products that are treated shall be treated with waterborne wood preservatives listed in Section 4 of AWPA U1 – 07 or AWPA U1 – 11, excluding those that contain arsenic or chromium.

C. All lumber should be pressure treated after final cutting whenever possible.

D. For exposed items indicated to receive a stained or natural finish, use chemical formulations that do not require incising, contain colorants, bleed through, or otherwise adversely affect finishes.

E. Factory applied preservative treatment by pressure process, AWPA U1 – 07:

1. Unless noted otherwise, preservative treatment shall follow Commodity Specification A or F, Use Category 2 (UC2) for interior construction not in contact with the ground, Use Category 3B (UC3B) for exterior construction not in contact with the ground, or Use Category 4A (UC4A) for items in contact with the ground.

2. Treat all rainscreen furring strips and other wood materials located outside the water-resistive barrier.

3. Treat all exterior beams or column framing in assemblies that allow water to directly reach these members. This also includes wood deck boards and exterior stairs that are exposed to water.

4. Treat all wood framing under decks or balconies with membranes, wood framing in unheated exterior columns, walls, or dividers.

5. Treat all wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete.

6. Posts sawn on four sides in contact with the ground shall be treated in accordance with the requirements of Commodity Specification A, Use Category 4A (UC4A).

a. Use Category 4B (UC4B) or Category 4C (UC4C) if posts are structural, based on severity of environment. Consultant to make final determination.

7. Posts or columns above ground, not in contact with ground shall be treated in accordance with the requirements of Commodity Specification A Use Category 3B (UC3B).

8. Joists within 18" of the exposed earth and girders within 12" of the exposed earth above crawl spaces or unexcavated areas shall be treated in accordance with the requirements of Commodity Specification A Use Category 3B (UC3B).

9. Subfloor above crawl spaces or unexcavated areas shall be treated in accordance with the requirements of Commodity Specification F Use Category 3B (UC3B).

10. Sill plates and studs supported by exterior foundation walls within 6 in. of exposed earth shall be treated in accordance with the requirements of Commodity Specification A Use Category 2 (UC2).

11. Furring strips for cladding shall be treated in accordance with the requirements of Commodity Specification F Use Category 3B (UC3B).

   a. Furring strips shall be made from sawn plywood or dimensional lumber.
   b. Preferably, furring strips should be cut before treatment. If plywood is sawn after treatment, all cut edges shall be field treated. Field treatment is not required for cut edges if the factory preservative penetrates fully through the furring strips. The preservative penetration depth should be verified in the field.

12. Exterior walls below grade shall be treated in accordance with the requirements of Commodity Specification A Use Category 3B (UC3B). Plywood below grade shall be treated in accordance with the requirements of Commodity Specification F Use Category 3B (UC3B).

F. Field treatment for existing lumber and plywood exterior of the moisture barrier and cut ends of lumber and plywood:

1. Use Copper Naphthenate for material originally treated with copper naphthenate, pentachlorophenol, creosote, creosote solution or waterborne preservatives.

G. Field treatment for existing lumber and plywood interior of the moisture barrier and cut ends of lumber and plywood:

1. Use inorganic borate for field treatment of material originally treated with any waterborne treatment.

2. Acceptable products:

   a. Shellguard Insecticide and Fungicide Concentrate for Wood or approved alternative.

3. Field treated sheathing or lumber shall be below 19% moisture content before covering up.

2.2 FASTENERS AND CONNECTORS

1. When using stainless steel connectors, use stainless steel fasteners. When using galvanized connectors, use fasteners with a coating that meets the specifications of ASTM A153.

2. Fasteners for wood that is treated with SBX/DOT or Zinc Borate should have a minimum of a standard G90 zinc coating, or equivalent.

3. Fasteners for wood that is treated with MCA/MCQ require the following minimum corrosion protection:

   a. Standard G90 zinc coating, or equivalent, for wood installed interior of the water-resistive barrier.
   b. Hot-dip galvanized, or equivalent, for wood installed exterior of the water-resistive barrier, but not in contact with the ground.
   c. Stainless steel for wood installed exterior of the water-resistive barrier and in contact with the ground.

4. Fasteners for wood that is treated with ACQ-C, ACQ-D (Carbonate), CA-B, CA-C, and µCA-C require the following minimum corrosion protection:

   a. Hot-dip galvanized, or equivalent, for wood installed interior of the water-resistive barrier.
   b. Stainless steel for wood installed in all other conditions.

5. Fasteners for wood with actual retention levels greater than 0.40 pcf for ACQ, 0.34 for MCQ, 0.21 pcf for CA-B, 0.15 pcf for CA-C and MCA or 0.14 pcf for µCA-C shall be stainless steel.

PART 3 - EXECUTION

3.1 FACTORY APPLICATION OF PRESERVATIVES

A. All new preservative treated lumber exposed to weather shall be incised and factory treated to obtain an average net retention as required in Part 2, above.

   1. Minimum penetration depth is 7/16”.

B. All new lumber interior of the moisture barrier, not exposed to weather shall be un-incised, factory treated to obtain an average net retention as required in Part 2, above.

   1. Minimum depth of penetration of preservative is 7/16”.

C. Composite boards must not be pressure treated with a waterborne preservative. OSB incorporating zinc borate during the manufacturing process may be available if required as directed by Consultant. Glulam beams or columns are not considered to be composite wood material.

D. Following waterborne preservative treatment, dry all dimension lumber and plywood sheathing to below 19% prior to cover-up.

3.2 FIELD APPLICATION OF PRESERVATIVES

A. Field treat the following areas with the appropriate product:

1. All cut ends of treated wood products.

2. All bolt holes, chamfers, cuts, notches, etc to be thoroughly coated by submersing into preservative or other means acceptable to Consultant.

3. Treat existing dimensional lumber and plywood that is not removed and replaced but exposed during the course of the retrofit as directed by Consultant. Existing treated plywood or lumber that is in good condition may not require field treatment unless it is cut. Retained wood that is field treated with copper napthenate is to be dried prior to treatment. Retained wood that is field treated with borate-based preservative can be damp prior to treatment. Before covering up retained wood is must be below 19% moisture content.

B. Acceptable Means of Field Treatment:

1. Field Application of wood preservative to be applied by qualified personnel, in accordance with the manufacturers' instructions but not less than:

a. Minimum 3-minute immersion in wood preservative.
b. Two coats applied by brush or roller.

END OF SECTION

SECTION 06 10 00 – ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Framing with dimension lumber.
2. Framing with engineered wood products
3. Shear wall panels
4. Wood blocking, nailers and supports
5. Wood furring
6. Wood sleepers

B. Related sections

1. 06 05 73 – Wood Treatment
2. 06 16 53 – Moisture Resistant Sheathing
3. 07 25 05 – Building Wrap Weather Barriers

1.3 REFERENCES

A. AWC – Wood Frame Construction Manual.

B. ASTM A 153/A 153M – Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.

C. ASTM A 653/A 653M – Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

D. ASTM E 84 – Standard Test Method for Surface Burning Characteristics of Building Materials.

E. American Wood Protection Association (AWPA) U1 – Use Category System: User Specification for Treated Wood; American Wood-Preservers' Association.

F. AWPA C9 – Plywood – Preservative Treatment by Pressure Processes; American Wood-Preservers' Association.

G. AWPA M2 – Standard for Inspection of Treated Wood Products.

H. AWPA M4 – Standard for the Care of Preservative-Treated Wood Products.

I. AWPA P5 – Standard for Waterborne Preservatives.

J. PS 1 – Construction and Industrial Plywood; National Institute of Standards and Technology (Department of Commerce).

K. PS 20 – American Softwood Lumber Standard; National Institute of Standards and Technology (Department of Commerce).

L. WCLB (GR) – Standard Grading Rules for West Coast Lumber No. 17; West Coast Lumber Inspection Bureau.

M. WWPA G-5 – Western Lumber Grading Rules; Western Wood Products Association.

1.4 SUBMITTALS

A. See Section 01 30 00 – Administrative Requirements, for submittal procedures.

B. Product Data: Provide technical data on insulated sheathing, wood preservative materials, and application instructions.

C. Manufacturer's Certificate: Certify that wood products supplied for rough carpentry meet or exceed specified requirements.

1.5 QUALITY ASSURANCE

A. Lumber: Comply with PS 20 and approved grading rules and inspection agencies.

1. Acceptable Lumber Inspection Agencies: WCLB and WWPA.

2. Lumber of other species or grades, or graded by other agencies, is acceptable provided structural and appearance characteristics are equivalent to or better than products specified.

B. Fire-Retardant Treated Wood: Mark each piece of wood with producer's stamp indicating compliance with specified requirements.

C. Preservative-Treated Wood: Provide lumber and plywood marked or stamped by an ALSC-accredited testing agency, certifying level and type of treatment in accordance with AWPA standards.

1. Preservative-treated wood: comply with requirements of Section 06 05 73 – Wood Treatment.

1.6 DELIVERY, STORAGE, AND HANDLING

A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS

A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.

1. Species: Douglas Fir-Larch, unless otherwise indicated.

2. If no species is specifies, provide any species graded by the agency specified; if no grading agency is specified, provide lumber graded by any grading agency meeting the specified requirements.

3. Grading Agency: Any grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee (www.alsc.org), and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.

B. Treated lumber and plywood: comply with requirements of Section 06 05 73 – Wood Treatment

2.2 DIMENSION LUMBER FOR CONCEALED APPLICATIONS

A. Grading Agency: West Coast Lumber Inspection Bureau (WCLB).

B. Sizes: Nominal sizes as indicated on drawings, S4S.

C. Moisture Content: Kiln-dry or MC15.

D. Stud Framing (2 x 2 through 2 x 6 and 3 x 4):

1. Species: Douglas Fir-Larch.

2. Grade: No. 2.

E. Joist, Rafter, and Small Beam Framing (2 x 6 through 4 x 16):

1. Species: Douglas Fir-Larch.

2. Grade: No.1

F. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:

1. Lumber: S4S, No. 2 or Standard Grade.

2. Boards: Standard or No. 3.

G. Miscellaneous Blocking, Furring, and Nailers:

1. Lumber: S4S, No. 2 or Standard Grade.

2. Boards: Standard or No. 3.

H. Treated wood must be below 19% moisture content at the time of installation.

2.3 CONSTRUCTION PANELS

A. Roof Sheathing: APA Structural I Rated Sheathing, Exterior Exposure Class, and as follows:

1. Span Rating: 24/0.

2. Thickness: 1/2 inch, nominal.

B. Wall Sheathing: APA Structural I Rated Sheathing, Exterior Exposure Class, and as follows:

1. Span Rating: 24/0.

2. Thickness: 1/2 inch, nominal.

C. Treated wood must be below 19% moisture content at the time of installation.

2.4 RAINSCREEN FURRING

A. Preservative treated plywood furring strips: Furring strips shall be made from sawn plywood, cut to widths as specified in the Drawings.

1. Thickness: 1/2 inch, nominal.

2. Furring strips may be cut before treatment. Treat furring strips per Section 06 05 73 – Wood Treatment.

3. Furring strips may be cut from pressure-preservative treated plywood.
   a. If plywood is sawn after treatment, all cut edges shall be field treated per Section 06 05 73 – Wood Treatment.
   b. Field treatment is not required for cut edges if the factory preservative penetrates fully through the furring strips.
   c. The preservative penetration depth shall be verified in the field by the Consultant.

2.5 FASTENERS

A. Framing nails:

1. In accordance with applicable building codes.

B. Bolts for Sill Plates Anchored to Concrete:

1. Hilti Kwik Bolt II, 5/8" diameter, 8-1/2" long, carbon steel, length to achieve a minimum of 4" embedment.

C. Nails for plywood wall sheathing:

1. Hot dip, galvanized common nails, minimum 2" long.

D. Nails for gypsum wall sheathing:

1. See Section 06 16 53.

E. Nails for Strapping:

1. Hot dip, galvanized common nails 2-1/2" long minimum, to penetrate studs minimum 1".

F. Fasteners for use with preservative-treated lumber and construction panels:

1. Reference Section 06 05 73.

G. Screws:

1. Fabricate to ANSI B18.6.4.

2. For non-treated wood applications, screws coated with Climacoat by ITW Buildex are acceptable.

3. For treated wood applications, refer to Section 06 05 73.

2.6 CONNECTORS

A. Corrosion resistant coating on connectors is as follows:

1. For non-treated wood and interior of the exterior sheathing plane, all connectors to be a minimum of G90 hot dipped galvanized.

2. For non-treated wood and in covered unheated areas (vented soffits, parapets, etc) not subject to direct moisture, all connectors to be a minimum of G185 hot dipped galvanized.

3. Hot dipped galvanizing to meet ASTM A 653. Nails, spikes, and lag screws when hot dipped galvanized are to be ASTM A153 Class D at 1.0 oz of zinc per sq ft of surface area of the fastener. Bolts, washers and nuts to meet ASTM A 153 Class D at 1.25 oz of zinc per sq ft of surface area of the fastener.

4. Stainless steel components to meet the following requirements:

   a. Nails and spikes when stainless steel to be 300 Series, Type 18-8, purpose made for replacement of conventional nails.
   b. Stainless steel screws to be 300 Series, Type 18-8.
   c. Stainless steel bolts to be 300 Series, Type 18-8.
   d. Connectors (hangars, framing anchors) to be stainless steel types 316L.

B. Die-Stamped Connectors: Hot dipped galvanized steel, sized to suit framing conditions. Provide connections manufactured by Simpson Strong-Tie Company, Inc. or approved equivalent.

   1. For contact with preservative treated wood in exposed or vented locations, provide minimum G185 galvanized per ASTM A 653/ A 653M.

   2. Simpson Z-Max coating is acceptable.

C. Joist Hangers: Hot dipped galvanized steel, sized to suit framing conditions. Provide hangers manufactured by Simpson.

   1. For contact with preservative treated wood in exposed or vented locations provide minimum G185 galvanizing per ASTM A 653/ A 653M.

   2. Simpson Z-Max coating is acceptable.

D. For custom made connectors from welded steel flat bar and angle, minimum requirement is hot-dipped galvanized, G90 if inside of exterior sheathing, G185 if outside of plane of exterior sheathing.

E. Joist Hangers: Galvanized, minimum 16 gauge.

2.7 ACCESSORIES

A. Foam Sill Gasket at foundation wall or slab on grade: Plate width, closed-cell polyethylene foam from continuous rolls.

   1. Sill-seal by Dow Styrofoam or approved equivalent.

PART 3 - EXECUTION

3.1 PREPARATION

A. Where wood framing bears on cementitious foundations, install full width sill flashing continuous over top of foundation, lap ends of flashing minimum of 4 inches and seal.

B. Install sill gasket under sill plate of framed walls bearing on foundations; puncture gasket cleanly to fit tightly around protruding anchor bolts.

C. Coordinate installation of rough carpentry members described in 01 10 00 Scope of Work.

3.2 REPLACEMENT OF DAMAGED FRAMING

A. Where directed by the Consultant, replace existing damaged lumber framing with new lumber to match size and grade of existing element unless otherwise shown on the drawing or as directed by the Consultant.

B. Replace entire length of damaged member. No splicing or scabbing to existing elements allowed without prior approval of Consultant.

C. Frame, anchor, fasten, tie and brace member to provide necessary strength and rigidity.

D. Countersink bolts where necessary to provide clearance for other work.

E. Provide temporary support and shoring for the structure while working on structural members. Notify Consultant of any conditions, which appear to be unsafe.

3.3 FRAMING INSTALLATION

A. Moisture content of framing may not be greater than 19% at time of installation of sheathing and sheathing membrane.

B. Select material sizes to minimize waste.

C. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.

D. Set structural members level, plumb, and true to line. Discard pieces with defects that would lower required strength or result in unacceptable appearance of exposed members.

E. Make provisions for temporary construction loads, and provide temporary bracing sufficient to maintain structure in true alignment and safe condition until completion of erection and installation of permanent bracing.

F. Install full length structural members without splices.

G. Comply with member sizes, spacing, and configurations indicated, and fastener size and spacing indicated, but not less than required by applicable codes and American Wood Council Wood Frame Construction Manual, latest edition.

H. Install horizontal spanning members with crown edge up and not less than 1-1/2 inches of bearing at each end.

I. Frame wall opening with two or more studs at each jamb; support headers on cripple studs.

J. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

3.4 REPLACMENT OF EXISTING SHEATHING

A. Install new plywood sheathing over exterior stud walls in areas where damaged sheathing has been removed.

B. Roof Sheathing: Secure panels perpendicular to framing members, with ends staggered and sheet ends over firm bearing.

1. Use sheathing clips between roof framing members.

2. Provide solid edge blocking between sheets.

3. Nail panels to framing; staples are not permitted.

C. Wall Sheathing: Secure with long dimension perpendicular to wall studs, with ends over firm bearing and staggered, using nails.

1. Install plywood sheathing so that vertical joints are staggered.

2. Provide a gap of not less than 1/8" between sheets of plywood.

3. Fasten plywood sheathing to framing at intervals and with fasteners as required by the Building Code.

a. See description on plans for additional information.

D. Soffit and overhang locations:

1. Fasten plywood sheathing to framing at intervals and with fasteners as required by the Building Code.

a. See description on plans for additional information.
b. Use hot-dipped galvanized fasteners in vented soffit areas.

3.5 FURRING, BLOCKING, NAILERS, AND SUPPORTS

A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.

B. In framed assemblies that have concealed spaces, provide solid wood fire-blocking as required by applicable local code, to close concealed draft openings between floors and between top story and roof/attic space; other material acceptable to code authorities may be used in lieu of solid wood blocking.

C. In walls, provide blocking attached to studs as backing and support for wall-mounted items, unless item can be securely fastened to two or more studs or other method of support is explicitly indicated.

D. Where ceiling-mounting is indicated, provide blocking and supplementary supports above ceiling, unless other method of support is explicitly indicated.

E. Install furring strips and blocking as required to space out and support wall and ceiling finishes, facings, fascia, soffit, and other work as required.

F. Align and plumb faces of furring and blocking to tolerance of 1/8".

G. Install rough bucks, nailers and linings to rough openings as required to provide backing for frames and other work.

H. Install sleepers, wood cants, fascia backing, nailers, curbs and other wood supports as required.

I. Where rim joists are removed, install new rim joists to match. Ensure new rim joist is installed tight between top of wall plate and the underside of floor sheathing.

3.6 SITE APPLIED WOOD TREATMENT

A. Apply preservative treatment compatible with factory applied treatment at site-sawn cuts, complying with manufacturer's instructions and Section 06 05 73.

B. Allow preservative to dry prior to erecting members per requirements in Section 06 05 73.

3.7 TOLERANCES

A. Framing Members: 1/4 inch from true position, maximum.

B. Variation from Plane: 1/4 inch in 10 feet maximum, and 1/4 inch in 30 feet maximum.

3.8 CLEANING

A. Waste Disposal:

1. Comply with applicable regulations.

2. Do not burn scrap on project site.

3. Do not burn scraps that have been pressure treated.

4. Do not send materials treated with pentachlorophenol, CCA, or ACA to co-generation facilities or "waste-to-energy" facilities.

B. Do not leave any wood, shavings, sawdust, etc. on the ground or buried in fill.

C. Prevent sawdust and wood shavings from entering the storm drainage system.

END OF SECTION

SECTION 06 20 23 – INTERIOR FINISH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes the following:

1. Interior window trim.

1.3 DEFINITIONS

A. Lumber grading agencies, and the abbreviations used to reference them, include the following:

1. NeLMA: Northeastern Lumber Manufacturers' Association.

2. NHLA: National Hardwood Lumber Association.

3. NLGA: National Lumber Grades Authority.

4. SPIB: The Southern Pine Inspection Bureau.

5. WCLIB: West Coast Lumber Inspection Bureau.

6. WWPA: Western Wood Products Association.

1.4 SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product. Indicate component materials, dimensions, profiles, textures, and colors and include construction and application details.

B. Samples for Initial Selection: For each type of paneling indicated.

C. Samples for Verification:

1. For each species and cut of lumber and panel products with non-factory-applied finish, with 1/2 of exposed surface finished, 50 sq. in. for lumber and 8 by 10 inches for panels.

2. For each finish system and color of lumber and panel products with factory-applied finish, 50 sq. in. for lumber and 8 by 10 inches for panels.

D. Warranty: Special warranty specified in this Section.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Protect materials against weather and contact with damp or wet surfaces. Stack lumber, plywood, and other panels flat with spacers between each bundle to provide air circulation. Provide for air circulation within and around stacks and under temporary coverings.

B. Deliver interior finish carpentry materials only when environmental conditions meet requirements specified for installation areas. If interior finish carpentry materials must be stored in other than installation areas, store only where environmental conditions meet requirements specified for installation areas.

1.6 PROJECT CONDITIONS

A. Environmental Limitations: Do not deliver or install interior finish carpentry materials until building is enclosed and weatherproof, wet work in space is completed and nominally dry, and HVAC system is operating and maintaining temperature and relative humidity at occupancy levels during the remainder of the construction period.

B. Do not install finish carpentry materials that are wet, moisture damaged, or mold damaged.

1. Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.

2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.1 STANDING AND RUNNING TRIM

A. Lumber Trim for Opaque Finish (Painted):

1. Species and Grade: White woods, Select; WWPA.

2. Maximum Moisture Content: 19 percent

3. Finger Jointing: Allowed

4. Face Surface: Surfaced (smooth)

2.2 MISCELLANEOUS MATERIALS

A. Fasteners for Interior Finish Carpentry: Nails, screws, and other anchoring devices of type, size, material, and finish required for application indicated to provide secure attachment, concealed where possible.

1. Where galvanized finish is indicated, provide fasteners and anchorages with hot-dip galvanized coating complying with ASTM A 153/A 153M.

B. Glue: Aliphatic-resin, polyurethane, or resorcinol wood glue recommended by manufacturer for general carpentry use.

1. Use wood glue that has a VOC content of 30 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

C. Multipurpose Construction Adhesive: Formulation complying with ASTM D 3498 that is recommended for indicated use by adhesive manufacturer.

1. Use adhesive that has a VOC content of 70 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

2.3 FABRICATION

A. Back out or kerf backs of the following members except those with ends exposed in finished work:

1. Interior standing and running trim except shoe and crown molds.

B. Ease edges of lumber less than 1 inch in nominal thickness to 1/16-inch radius and edges of lumber 1 inch or more in nominal thickness to 1/8-inch radius.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance.

B. Examine finish carpentry materials before installation. Reject materials that are wet, moisture damaged, and mold damaged.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean substrates of projections and substances detrimental to application.

B. Before installing interior finish carpentry, condition materials to average prevailing humidity in installation areas for a minimum of 24 hours unless longer conditioning is recommended by manufacturer.

3.3 INSTALLATION, GENERAL

A. Do not use materials that are unsound, warped, improperly treated or finished, inadequately seasoned, or too small to fabricate with proper jointing arrangements.

1. Do not use manufactured units with defective surfaces, sizes, or patterns.

B. Install interior finish carpentry level, plumb, true, and aligned with adjacent materials. Use concealed shims where necessary for alignment.

1. Scribe and cut interior finish carpentry to fit adjoining work. Refinish and seal cuts as recommended by manufacturer.

2. Countersink fasteners, fill surface flush, and sand where face fastening is unavoidable.

3. Install to tolerance of 1/8 inch in 96 inches for level and plumb. Install adjoining interior finish carpentry with 1/32-inch maximum offset for flush installation and 1/16-inch maximum offset for reveal installation.

4. Coordinate interior finish carpentry with materials and systems in or adjacent to it. Provide cutouts for mechanical and electrical items that penetrate interior finish carpentry.

3.4 STANDING AND RUNNING TRIM INSTALLATION

A. Install with minimum number of joints practical, using full-length pieces from maximum lengths of lumber available. Do not use pieces less than 24 inches long, except where necessary. Stagger joints in adjacent and related standing and running trim. Cope at returns and miter at corners to produce tight-fitting joints with full-surface contact throughout length of joint. Use scarf joints for end-to-end joints. Plane backs of casings to provide uniform thickness across joints where necessary for alignment.

1. Install trim after gypsum board joint finishing operations are completed.

2. Drill pilot holes in hardwood before fastening to prevent splitting. Fasten to prevent movement or warping. Countersink fastener heads on exposed carpentry work and fill holes.

3.5 ADJUSTING

A. Replace interior finish carpentry that is damaged or does not comply with requirements. Interior finish carpentry may be repaired or refinished if work complies with requirements and shows no evidence of repair or refinishing. Adjust joinery for uniform appearance.

3.6 CLEANING

A. Clean interior finish carpentry on exposed and semi-exposed surfaces. Touch up factory-applied finishes to restore damaged or soiled areas.

3.7 PROTECTION

A. Protect installed products from damage from weather and other causes during remainder of the construction period.

B. Remove and replace finish carpentry materials that are wet, moisture damaged, and mold damaged.

1. Indications that materials are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.

2. Indications that materials are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

END OF SECTION

SECTION 07 18 00 – TRAFFIC COATINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes traffic coatings for the following applications:

1. Pedestrian traffic on exposed concrete decks.

B. Related Sections:

1. 01 00 00 – General Conditions
2. 01 10 00 – Scope of Work
3. 01 30 00 – Administrative Requirements
4. 07 62 00 – Sheet Metal Flashing & Trim
5. 07 65 26 – Self-adhered Sheet Flashing
6. 07 92 00 – Joint Sealers

1.3 REFERENCES

A. ASTM C957-04 Standard Specification for High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane with Integral Wearing Surface

B. ASTM C1127 Standard Guide for Use of High Solids Content, Cold Liquid-Applied Elastomeric Waterproofing Membrane with an Integral Wearing Surface

C. ASTM D412-98a Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers – Tension

D. ASTM C794-10 Standard Test Method for Adhesion-in-Peel of Elastomeric Joint Sealants

E. ASTM D 4541 Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers

F. ASTM D7234-05 Standard Test Method for Pull-Off Adhesion Strength of Coatings on Concrete Using Portable Pull-Off Adhesion Testers

G. ASTM E96/E 96M-05 Standard Test Methods for Water Vapour Transmission of Materials

H. AASHTO T277 Standard Method of Test for Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration

I. ASTM D4263 Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method

J. ASTM D713 Standard Practice for Conducting Road Service Tests on Fluid Traffic Marking Materials

1.4 DEFINITIONS

A. Fluid-applied waterproofing: Shall be used interchangeably in this Section and related Sections, and on the Drawings.

1.5 PERFORMANCE REQUIREMENTS

A. The traffic deck coating system shall satisfy the following requirements for the duration of the warranty:

1. The system shall be waterproof, flexible, and thermally compatible with the substrate under applicable service conditions. The new wear course shall not compromise the ability of the system to satisfy this performance standard.

2. The system shall not allow moisture penetration at termination details, drains, upturns, or splices.

3. The system shall exhibit zero chloride permeability when tested in accordance with AASHTO T277 Standard Method of Test for Electrical Indication of Concrete's Ability to Resist Chloride Ion Penetration.

4. Permeance: Full system is to be less 1 Perm when tested to ASTM E96 (Wet Cup).

5. The system shall remain skid resistant under its intended use; wet, snow, or dry.

6. The system shall withstand active cyclical crack movements to a maximum of 1/16 inch and remain waterproof.

7. Adhesion of all layers of the system to each other shall meet or exceed amount set forth in Adhesion Testing article. In the case of retained basecoats, the bond of the existing membrane to the concrete surface is to be verified after cleaning of the membrane surface. Additional membrane removal may be required at the direction of the Architect.

8. The system shall not de-bond, crack, or wear excessively. Loss of aggregate in any area will constitute failure.

9. The coating system shall not support combustion.

1.6 ACTION SUBMITTALS

A. Product Data: For each product indicated.

B. Manufacturer installation Instructions: Indicate special environmental conditions to install product.

C. Compatibility between components of system and adjacent materials is essential. Provide a written declaration to Architect stating that materials and components, as assembled in system, meet this requirement.

D. Color and texture samples: Submit color samples for approval by owner prior to application.

E. Details of the waterproofing system not indicated in these documents including material specifications, thicknesses, and details at joints, cracks, upstands, walls, drains, and termination points.

F. Samples for Initial Selection: For each type of finish indicated.

G. Samples for Verification: For each type of traffic coating required, prepared on rigid backing and of same thickness and material indicated for the Work.

1. Provide stepped Samples on backing large enough to illustrate buildup of traffic coatings.

H. Field quality-control test reports.

1.7 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Material Test Reports: For each traffic coating.

C. Material Certificates: For each traffic coating, signed by manufacturers.

D. Warranty: Special warranty specified in this Section.

1.8 MAINTENANCE MATERIAL SUBMITTALS

A. Maintenance Data: For traffic coatings to include in maintenance manuals. Identify substrates and types of traffic coatings applied. Include recommendations for periodic inspections, cleaning, care, maintenance, and repair of traffic coatings.

1.9 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of traffic coatings required for this Project.

B. Applicator Qualifications: Applicator shall have a minimum 5 years of experience installing coating systems and shall be specifically approved in writing by the membrane system manufacturer.

1. Applicator will demonstrate experience in applying materials at the request of the Architect.

2. Applicator will submit manufacturer's preparation, cure time, mixing and appreciating documentation on site and provide to the Architect for review upon request.

3. Comply with applicable codes, regulations, ordinances, and laws regarding use and application of products that contain volatile organic compounds (VOC).

C. Adhesion Testing: Conduct pre-Mockup adhesion testing of traffic coating systems applied to all substrate materials to verify performance of substrates.

1. Adhesion testing to be performed in accordance with ASTM D4541

2. Adhesion of all layers of the system to each other shall meet or exceed 20psf.

D. Mockups: Apply mockups to set quality standards for materials and execution.

1. Architect will select one representative surface for each traffic coating and each substrate to receive traffic coatings. Apply each coating to area selected to demonstrate surface preparation, joint and crack treatment, thickness, texture, color, and standard of workmanship.

2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.

3. Remove and reapply mockups until they are approved by Architect.

4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

E. Pre-installation Conference: Conduct at Project Site.

1. Before installing traffic coatings, meet with representatives of authorities having jurisdiction, manufacturer's technical representative, Owner, Architect, other Architects, independent testing agency, and other concerned entities.

2. Review methods and procedures for traffic coatings.

3. Examine substrate conditions for compliance with requirements, including slope, condition of surface, and adjoining wall materials.

4. Review special details.

5. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

6. Notify participants at least seven days before conference.

F. Manufacturer's Representative:

1. A representative of the membrane material manufacturer is to be present at the start and periodically during the execution of membrane work.

2. Contractor to permit and facilitate access to site and work areas, at all times, by above mentioned manufacturer's representative.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in original packages and containers with seals unbroken and bearing manufacturer's labels showing the following information:

1. Manufacturer's brand name.

2. Type of material.

3. Directions for storage.

4. Date of manufacture and shelf life.

5. Lot or batch number.

6. Mixing and application instructions.

7. Color.

B. Store materials in a clean, dry location protected from exposure to direct sunlight. In storage areas, maintain environmental conditions within range recommended in writing by manufacturer.

1.11 ENVIRONMENTAL CONDITIONS

A. Conform to membrane and paint manufacturer's recommended temperatures, relative humidity, and substrate moisture content for application and curing of traffic coatings, including special conditions governing use.

B. Apply traffic coatings within the range of ambient and substrate temperatures recommended in writing by manufacturer. Do not apply traffic coatings to damp or wet substrates, when temperatures are below 40 deg F, when relative humidity exceeds 85 percent, or when temperatures are less than 5 deg F above dew point.

1. Do not apply traffic coatings in snow, rain, fog, or mist, or when such weather conditions are imminent during the application and curing period. Apply only when frost-free conditions occur throughout the depth of substrate.

C. Do not install traffic coating until items that will penetrate membrane have been installed.

D. Protect materials from moisture damage or dust contamination until adequately cured.

E. Apply paint finish only in areas where dust is no longer being generated by related construction operations such that airborne particles will not affect the quality of the finished surface.

F. All working conditions shall meet the requirements of the Occupational Health and Safety Administration (OSHA).

G. Contractor to provide forced air circulation during period for enclosed applications.

1.12 PROTECTION

A. Protect traffic coating, paint, and equipment before use and during length of contract from climatic elements.

B. Protect completed work as required, use non-staining coverings.

C. Provide for protection of passing pedestrians and the general public.

1.13 WARRANTY

A. Warranty: Manufacturer agrees to repair or replace traffic coating that fails in materials or workmanship within specified warranty period. Warranty does not include deterioration or failure of traffic coating due to unusual weather phenomena, failure of prepared and treated substrate, formation of new substrate cracks exceeding 1/16 inch in width, fire, vandalism, or abuse by snowplow, maintenance equipment, and truck traffic.

1. Failures include, but are not limited, to the following:

   a. Adhesive or cohesive failures.
   b. Abrasion or tearing failures.
   c. Surface crazing or spalling.
   d. Intrusion of water into deck substrate.

2. Warranty period: Pedestrian and Vehicular Coatings

   a. Provide 5 + 5 year warranty at exposed conditions, and a 10 year warranty at concealed conditions.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Material Compatibility: Provide primers; base-, intermediate-, and topcoat; and accessory materials that are compatible with one another and with substrate under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.

B. Source Limitations:

1. Obtain traffic coatings from a single manufacturer.

2. Obtain primary traffic coating materials, including primers, from traffic coating manufacturer.

C. VOC Content: Provide traffic coatings, for use inside the weatherproofing system, with VOC content of 150 g/L when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

2.2 TRAFFIC COATING

A. Complying with ASTM C 957.

B. Elastomeric Waterproofing Membrane Base Coat: minimum 90% solids, low odor, polyurethane membrane.

C. Products: Subject to compliance with requirements, provide the following:

1. Basis of design: Tremco Vulkem 360NF/951NF.

2. Substitutions: Submit per Section 01 60 00 – Administrative Requirements.

D. Primer: Manufacturer's standard factory-formulated primer recommended for substrate and conditions indicated.

1. Material: Urethane.

E. Base and Intermediate Coats: Single- or multicomponent, liquid urethane elastomer.

1. Vulkem 360NF.

2. Substitutions: Submit per Section 01 60 00 – Administrative Requirements.

F. Topcoat and Finish Coats: Single- or multicomponent, liquid urethane elastomer.

1. Vulkem 951NF.

2. Substitutions: Submit per Section 01 60 00 – Administrative Requirements.

3. Color: As selected by the Owners from manufacturer’s full range.

G. Coordinate materials for intermediate and topcoats with products and manufacturers selected. Component Coat Thicknesses: As recommended by manufacturer for substrate and service conditions indicated, but not less than the following (measured excluding aggregate):

1. Base Coat: 25 dry mil film thickness with reinforcement embedded in base layer where required.

2. Intermediate Coat: 25 dry mil film thickness.

3. Top Coat: 10 dry mil film thickness.

4. Finish Coat: 10 dry mil film thickness.

H. Aggregate: Clean and graded silicon carbide, 20 mesh; 24 mesh silica sand, of particle sizes, shape, and minimum hardness recommended in writing by traffic coating manufacturer.

1. Spreading Rate: As recommended by manufacturer for substrate and service conditions indicated.

2.3 ACCESSORY MATERIALS

A. Joint Sealants: As recommended by system manufacturer.

1. Substitutions: Submit per Section 01 60 00 – Administrative Requirements.

B. Backer rod: As recommended by system manufacturer.

C. Reinforcing Sheet Flashing:

1. Mesh as recommended by traffic coating manufacturer. Install reinforcing mesh into first base coat and follow with second base coat.

2. Mesh to be fully wetted, embedded and encapsulated in base coat.

3. Fish-mouths or wrinkles are not acceptable.

D. Re-sloping and filler material: Elastomeric sloping material mixed with silica sand aggregate as recommended by manufacturer.

1. Substitutions: Submit per Section 01 60 00 – Administrative Requirements.

E. Foil-faced self-adhered sheet flashing: As described in Section 07 65 26.

1. Membrane for leading edge of foil-faced self-adhered sheet flashing to prevent leaching of SBS color through urethane coating

a. Eternabond Webseal.
b. Substitutions: Submit per Section 01 60 00 – Administrative Requirements.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Prior to commencement of work, examine substrates, areas, and conditions, with Installer present, for compliance with requirements for surface smoothness, surface moisture, and other conditions affecting performance of traffic-coating work. Report in writing to the Architect any conditions or surfaces that will adversely affect proper installation of the specified products.

1. Prepare written report, endorsed by Installer, listing conditions detrimental to performance of traffic-coating work.

B. Proceed with installation only after substrate construction and penetrating work have been completed and unsatisfactory conditions have been corrected.

1. Commencement of work shall imply acceptance be the Applicator of surfaces to receive the specified materials.

C. Verify compatibility with and suitability of substrates.

D. Verify that substrates are visibly dry and free of moisture.

1. Test for moisture vapor transmission by plastic sheet method according to ASTM D 4263.

2. Test for moisture content by [measuring with an electronic moisture meter] [method recommended in writing by manufacturer] <Insert test method>.

3.2 PREPARATION

A. General: Before applying traffic coatings, clean and prepare substrates according to ASTM C 1127 and manufacturer's written recommendations to produce clean, dust-free, dry substrate for traffic coating application. Remove projections, fill voids, and seal joints if any, as recommended in writing by traffic coating manufacturer.

B. Schedule preparation work so dust and other contaminant from process do not fall on wet, newly coated surfaces.

C. Mask adjoining surfaces not receiving traffic coatings to prevent overspray, spillage, leaking, and migration of coatings. Prevent traffic-coating materials from entering deck substrate penetrations and clogging weep holes and drains.

D. Concrete Substrates: Mechanically abrade concrete surfaces to a uniform profile according to ASTM D 4259. Do not acid etch.

1. Remove grease, oil, paints, and other penetrating contaminants from concrete.

2. Remove concrete fins, ridges, and other projections.

3. Remove laitance, glaze, efflorescence, curing compounds, concrete hardeners, form-release agents, and other incompatible materials that might affect coating adhesion.

4. Remove remaining loose material to provide a sound surface, and clean surfaces according to ASTM D 4258.

E. Plywood Substrates: Clean and prepare surfaces per manufacturer's written recommendations.

1. Surfaces shall be dry, clean, free of grease, oil, dirt, rust and corrosion, other coatings and contaminants which could affect bond of coating system.

2. Surfaces shall be without sharp edges or offsets at joints.

F. Metal Substrates: Clean and prepare surfaces per manufacturer's written recommendations.

1. Remove oil and grease with a commercial grade alkaline cleaner, thoroughly rinse and dry.

2. Surfaces shall be dry, clean, free of grease, oil, dirt, rust and corrosion, other coatings and contaminants which could affect bond of coating system.

3. Surfaces shall be without sharp edges or offsets at joints.

3.3 TERMINATIONS AND PENETRATIONS

A. Prepare vertical and horizontal surfaces at terminations and penetrations through traffic coatings and at expansion joints, drains, and sleeves according to ASTM C 1127 and manufacturer's written instructions.

B. Provide urethane sealant cants at penetrations and at reinforced balcony-to-wall butt joints. Provide reinforcement of membrane at all changes in plane and at all joints between dissimilar materials.

C. At exposed vertical terminations, provide saw-cut reglets 3/8" x 3/8" to receive urethane termination complete with sealant.

D. Install sheet flashings at deck-to-wall expansion and dynamic joints, and bond to deck and wall substrates according to manufacturer's written recommendations.

3.4 JOINT AND CRACK TREATMENT

A. Prepare, treat, route, and fill joints and cracks in substrates according to ASTM C 1127 and manufacturer's written recommendations. Before coating surfaces, remove dust and dirt from joints and cracks according to ASTM D 4258, unless noted otherwise below.

1. Comply with recommendations in ASTM C 1193 for joint-sealant installation.

B. Apply reinforcing strip in traffic-coating system where recommended in writing by traffic-coating manufacturer.

C. Fill existing concrete slab divots, saw cuts, control joints, reglets or hollow spots as required with:

1. A mixture of basecoat and silica sand as per the manufacturer's recommendation.

D. For fine cracks (1/16" or less), apply 6" wide prestrip of basecoat at affected area.

E. For larger cracks, joints and vertical / horizontal transitions, center 6" wide piece of reinforcing fabric over crack, joint or interface, embed fabric in a basecoat mixture and trowel free of air blisters or wrinkles. Apply second coat of the basecoat immediately after and feather edge to surfaces beyond. Larger cracks will require sealant as per manufacturer's recommendations.

3.5 MIXING

A. Mix base membrane and top coat according to manufacturer's recommendations for each component.

B. Ensure all measuring, mixing and containing tools are clean and dry before mixing each batch.

3.6 TRAFFIC COATING APPLICATION

A. Application, General:

1. Apply traffic coating material according to ASTM C 1127 and manufacturer's written recommendations.

a. Start traffic coating application in presence of manufacturer's technical representative.

2. Verify that wet film thickness of each component coat complies with requirements every 5-10 balconies.

3. Apply traffic coatings to prepared wall terminations and vertical surfaces to height indicated and omit aggregate on vertical surfaces.

4. All defects in the base membrane are to be corrected by removal of known defects and complete recoating in the affected areas. Ensure that repaired areas are well bonded to the substrate. Use inter-coat primer as required by manufacturer.

5. Ensure that drips in the membrane coating are cleaned up immediately and that runs in the membrane are re-rolled or smoothed out prior to setting up.

6. Cure traffic coatings according to manufacturer's written recommendations. Prevent contamination and damage during application and curing stages.

7. At horizontal to vertical transitions and where indicated as “Pre-Strip” (not including free edge of slab), apply a basecoat pre-strip membrane up the vertical surface 6” and 4” onto the horizontal surface. Apply reinforcing mesh into the wet basecoat and cover immediately with a second coat of the basecoat. Reinforcing mesh needs to be applied 4” beyond the face of cladding. Apply basecoat on vertical surfaces to the heights indicated.

    a. Confirm application dimensions with Details. Immediately notify Architect if conflicts exist.

8. Below door and low window sills, apply basecoat and reinforcing similar to horizontal to vertical transitions and as detailed. Extend basecoat onto surfaces of back dam set at sill conditions.

9. At balcony curbs and slab edge saddle intersections install urethane crickets/cants as detailed. Crickets/cants are to be made from a mixture of sand aggregate and elastomeric sloping material as recommended by the manufacturer. Crickets/cants are to be installed on a basecoat pre-strip. Cover saddle intersection with a fabric reinforced two layer basecoat system as specified for horizontal to vertical transitions. Architect to review initial cricket/cant installation to ensure installation is acceptable.

B. Primer:

1. All surfaces receiving membrane application are to be primed.

2. Apply appropriate primer in accordance with manufacturer’s recommendations for all surfaces to receive membrane application.

C. Balcony Re-sloping (when required or as noted)

1. Re-slope areas to ensure positive slope to balcony edge and to correct irregularities and depressions with a mixture of elastomeric sloping material thickened with sand aggregate according to manufacturer’s recommendations. Notify Architect of any existing balconies which are ponding to receive further instructions on method of correction.

2. Trowel slurry mixture on primed surface to provide the correct surface slope or to correct irregularities in deck surface. Screed slurry to remove irregularities in surface

3. Allow slurry to cure to support basecoat membrane application according to manufacturer’s recommendations. Cure time will depend upon the thickness of the material applied and environmental conditions.

4. Protect the slurry from excess dirt and debris resulting from other construction activities during curing.

D. Base and Intermediate Coats: Apply a uniform coating and reinforce with fabric per the manufacturer’s recommendations.

1. Base Coat: 25 dry mil thickness (DMT) of the base membrane to the primed surfaces and exposed detailed areas at wall/slab and saddle intersections.

a. All detailed areas which are receiving the basecoat will require a minimum of xylene wipe prior to base coat application unless the detailed area is still tacky.

2. Intermediate Coat: 25 dry mil thickness (DMT) of intermediate coat to the cured base coat.

3. Detailed areas which have left exposed for a prolonged period of time may require additional primers.

4. Allow base coat to cure to accept foot traffic, minimum of 6 hours.

E. Top and Finish Coats: Uniformly apply Top and Finish Coats over the entire balcony surface.

1. Top Coat: 10 dry mil thickness (DMT) of top coat to the cured intermediate coat.

2. Monterey Sand texture:

a. Broadcast texture material to achieve required uniform texture and back-roll to achieve uniform distribution of aggregate.
b. This is referred to as the “roll-seed-roll” method of aggregate distribution.
c. Do not use the “sand to refusal” method of aggregate distribution.

3. Finish Coat: 10 dry mil thickness (DMT) of finish coat to the cured top coat and Monterey Sand aggregate.

3.7 FIELD QUALITY CONTROL

A. Testing: Manufacturer will perform the following field tests at prepared area immediately after nominal cure for complete coating system.

1. Manufacturer will perform tests for characteristics specified, using applicable referenced testing procedures.

2. Contractor to verify thickness of coatings during traffic coating application.

a. Architect may periodically verify thickness of coatings during traffic coating application.

3. If test results show traffic coating materials do not comply with requirements, remove non-complying materials, prepare surfaces, and reapply traffic coatings until traffic coating installation passes.

B. Final Traffic Coating Inspection: Arrange for traffic coating manufacturer's technical personnel to inspect membrane installation on completion.

1. Notify Architect or Owner 48 hours in advance of date and time of inspection.

C. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

3.8 PROTECTING AND CLEANING

A. Protect traffic coatings from damage and wear during remainder of construction period.

B. Clean spillage from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

END OF SECTION

SECTION 07 21 00 – THERMAL INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Work Included: Labor, materials, equipment and services necessary for:

1. The replacement of damaged batt insulation within wood frame wall cavity.
2. Supply and installation of new batt, rigid and semi-rigid insulation.
3. Supply and installation of spray applied polyurethane foam insulation.

B. Insulation and Barriers:

1. Mineral-wool board insulation.
2. Glass-fiber blanket insulation.
3. Spray polyurethane foam insulation.
4. Vapor retarders.

C. Related Sections

1. 06 10 00 – Rough Carpentry
2. 06 16 53 – Moisture Resistant Sheathing.
3. 07 75 26 – Self-adhered Sheet Membranes
4. 07 46 46 – Fiber Cement Siding and Trim
5. 07 92 00 – Joint Sealers

1.3 REFERENCES

A. ASTM C 553 – Standard Specification for Mineral Fiber Blanket Thermal Insulation for Commercial and Industrial Applications; 2000.

B. ASTM C 612 – Standard Specification for Mineral Fiber Block and Board Thermal Insulation; 2004.

C. ASTM C 665 – Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing; 2001.

D. ASTM E 84 – Standard Test Method for Surface Burning Characteristics of Building Materials; 2005.

E. ASTM E 136 – Standard Test Method for Behavior of Materials in a Vertical Tube Furnace At 750 Degrees C; 2004.

F. ASTM E 96 – Test Methods for Water Vapor Transmission of Materials.

1.4 PERFORMANCE REQUIREMENTS

A. Provide with materials of this Section a continuity of thermal, air and vapor barrier at building enclosure elements, to the greatest extent possible.

1.5 ACTION SUBMITTALS

A. See Section 01 30 00 – Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on product characteristics, performance criteria, and product limitations.

C. Manufacturer's Installation Instructions: Include information on special environmental conditions required for installation and installation techniques.

D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

1.6 INFORMATIONAL SUBMITTALS

A. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for each product.

B. Research/Evaluation Reports: For foam-plastic insulation, from ICC-ES

1.7 QUALITY ASSURANCE

A. Use workers who are trained and experienced in necessary crafts and who are familiar with requirements and methods needed for proper performance of Work of this Section.

B. Surface-Burning Characteristics: As determined by testing identical products according to ASTM E 84 by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Protect insulation materials from physical damage and from deterioration due to moisture, soiling, and other sources. Store inside and in a dry location. Comply with manufacturer's written instructions for handling, storing, and protecting during installation.

B. Protect foam-plastic board insulation as follows:

1. Do not expose to sunlight except to necessary extent for period of installation and concealment.
2. Protect against ignition at all times. Do not deliver foam-plastic board materials to Project site before installation time.
3. Quickly complete installation and concealment of foam-plastic board insulation in each area of construction.

1.9 ENVIRONMENTAL REQUIREMENTS

A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

1.10 SEQUENCING

A. Sequence work to ensure continuity of critical barriers is maintained.

PART 2 - PRODUCTS

2.1 GLASS FIBER BLANKET INSULATION

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. CertainTeed Corporation.
2. Guardian Building Products, Inc.
3. Johns Manville.
4. Knauf Insulation.
5. Owens Corning.

B. Unfaced, Glass-Fiber Blanket Insulation: ASTM C 665, Type I; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E 84; passing ASTM E 136 for combustion characteristics.

C. Sustainability Requirements: Provide glass-fiber blanket insulation as follows:

1. Free of Formaldehyde: Insulation manufactured with 100 percent acrylic binders and no formaldehyde.
2. Low Emitting: Insulation tested according to ASTM D 5116 and shown to emit less than 0.05-ppm formaldehyde.

2.2 SPRAY POLYURETHANE FOAM INSULATION

A. Closed-Cell Polyurethane Foam Insulation: ASTM C 1029, Type II, with maximum flame-spread and smoke-developed indexes of 75 and 450, respectively, per ASTM E 84.

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

    a. BASF Corporation.
    b. BaySystems NorthAmerica, LLC.
    c. Dow Chemical Company (The).
    d. ERSystems, Inc.
    e. Gaco Western Inc.
    f. Henry Company.
    g. NCFI; Division of Barnhardt Mfg. Co.
    h. SWD Urethane Company.
    i. Volatile Free, Inc.

2. Minimum density of 1.5 lb/cu. ft. (24 kg/cu. m), thermal resistivity of 6.2 deg F x h x sq. ft./Btu x in. at 75 deg F (43 K x m/W at 24 deg C).

2.3 VAPOR RETARDERS

A. Sheet Retarder: Certainteed MemBrain, The SMART Vapor Retarder. Polyimide film vapor retarder for use with un-faced, vapor permeable glass fiber and mineral wool insulation in wall and ceiling cavities. Material has a permeance of 1 perm or less when tested to ASTM E 86, dry cup method and increases to greater than 10 perms using the wet cup method.

1. Water Vapor Permeance:

2. ASTM E 86, dry cup method: 1.0 perms (57ng/Pa*s*m2).

3. ASTM E 86, wet cup method: 10.0 perms (1144ng/Pa*s*m2).

4. Fire Hazard Classification: ASTM E 84:

5. Maximum Flame Spread Index; 20.

6. Maximum Smoke Developed Index; 55.

B. Adhesive for Vapor Retarders: Product recommended by vapor-retarder manufacturer and has demonstrated capability to bond vapor retarders securely to substrates indicated.

2.4 ACCESSORIES

A. Tape: Polyethylene self-adhering type, pressure sensitive, mesh reinforced, 2 inches wide.

B. Adhesive: Type recommended by insulation manufacturer for application.

1. Adhesives and Sealants – General: All products installed inside of the building shall have a lower volatile organic compound (VOC) content than required by LEED credit EQ4.1 (Low-Emitting Materials, Adhesives and Sealants).

PART 3 - EXECUTION

3.1 EXAMINATION

A. Clean substrates of substances that are harmful to insulation or vapor retarders, including removing projections capable of puncturing vapor retarders, or that interfere with insulation attachment.

B. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation and adhesive.

C. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials, or substances that may impede adhesive bond.

3.2 PREPARATION

A. Remove, or protect against, projections in construction framing which may damage or prevent proper installation of insulating materials.

B. Coordinate as required with other trades to assure proper and adequate provision in Work of this Section.

C. Protect work of others from damage.

D. Prepare all surfaces in strict accordance with manufacturers written instructions.

E. Surface to receive insulation shall be smooth, level, dry, clean, free from dust, dirt, and other detrimental materials.

F. Examine substrates and immediately inform Consultant in writing of defects.

3.3 INSTALLATION, GENERAL

A. Install Work of this Section in accordance with:

1. Construction documents

2. Manufacturer’s and referenced standard’s recommended installation procedures.

B. Install insulation in thickness indicated to provide thermal continuity around entire building enclosure.

C. Provide ventilation baffles at attic spaces to provide unobstructed ventilation.

D. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain, or snow at any time.

E. Extend insulation to envelop entire area to be insulated. Cut and fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.

F. Provide sizes to fit applications indicated and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units to produce thickness indicated unless multiple layers are otherwise shown or required to make up total thickness.

3.4 INSTALLATION OF INSULATION FOR FRAMED CONSTRUCTION

A. Apply insulation units to substrates by method indicated, complying with manufacturer's written instructions. If no specific method is indicated, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.

B. Glass-Fiber or Mineral-Wool Blanket Insulation: Install in cavities formed by framing members according to the following requirements:

1. Use insulation widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill the cavities, provide lengths that will produce a snug fit between ends.
2. Place insulation in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.
3. Maintain 3-inch clearance of insulation around recessed lighting fixtures not rated for or protected from contact with insulation.
4. For wood-framed construction, install blankets according to ASTM C 1320.

C. Spray-Applied Insulation: Apply spray-applied insulation according to manufacturer's written instructions. Do not apply insulation until installation of pipes, ducts, conduits, wiring, and electrical outlets in walls is completed and windows, electrical boxes, and other items not indicated to receive insulation are masked. After insulation is applied, make flush with face of studs by using method recommended by insulation manufacturer.

3.5 INSTALLATION OF VAPOR RETARDERS

A. Place vapor retarders on side of construction indicated on Drawings. Extend vapor retarders to extremities of areas to protect from vapor transmission. Secure vapor retarders in place with adhesives or other anchorage system as indicated. Extend vapor retarders to cover miscellaneous voids in insulated substrates, including those filled with loose-fiber insulation.

B. Seal vertical joints in vapor retarders over framing by lapping no fewer than two studs.

1. Fasten vapor retarders to wood framing at top, end, and bottom edges; at perimeter of wall openings; and at lap joints. Space fasteners 16 inches o.c.

C. Seal joints caused by pipes, conduits, electrical boxes, and similar items penetrating vapor retarders with vapor-retarder tape to create an airtight seal between penetrating objects and vapor retarders.

D. Repair tears or punctures in vapor retarders immediately before concealment by other work. Cover with vapor-retarder tape or another layer of vapor retarders.

3.6 BATT INSULATION

A. Install insulation in accordance with manufacturer's instructions.

B. Install in exterior wall and ceiling spaces without gaps or voids. Do not compress insulation.

1. Provide only at walls without Board Insulation and as Indicated on drawings.

C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.

D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.

1. Completely fill all stud and joist cavities enclosing supply or waste piping with mineral fiber insulation.

2. Where such piping passes through a floor/ceiling cavity, fill the cavity with insulation to a minimum 18 inch horizontal distance beyond the pipe.

E. Tape insulation batts in place.

F. Coordinate work of this section with construction of Building Wrap Weather Barriers specified in Section 07 25 05.

G. Ceiling Application: Retain insulation batts and vapor retarder in place with spindle fasteners at 12 inches on center.

H. Tape seal butt ends, lapped flanges, and tears or cuts in membrane.

I. Tape seal tears or cuts in vapor retarder.

3.7 SPRAY FOAM INSULATION

A. Install spray foam insulation in accordance with manufacturer's instructions.

B. Install in maximum 2" lifts, or as recommended by manufacturer, whichever dimension is less.

C. Ensure full bond of spray-foam to materials as needed for air barrier continuity.

D. Do not block drainage cavities.

E. Provide at the following locations:

1. As shown on the Drawings.

3.8 PROTECTION

A. Protect installed insulation and vapor retarders from damage due to harmful weather exposures, physical abuse, and other causes. Provide temporary coverings or enclosures where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

END OF SECTION

SECTION 07 25 05 – BUILDING WRAP WEATHER BARRIERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Building wrap weather barriers (Tyvek).
2. Building paper.

B. Related Sections

1. 01 30 00 – Administrative Requirements.
2. 06 10 00 – Rough Carpentry.
3. 06 16 53 – Moisture Resistant Gypsum Sheathing.
4. 07 65 26 – Self-Adhered Sheet Flashing.

1.3 REFERENCES

A. AATCC Test Method 127 – Water Resistance: hydrostatic Pressure Test; 1998.

B. ASTM E 84 – Standard Test method for Surface Burning Characteristics of building Materials; 2005.

C. ASTM E 96 – Standard Test Methods for Water vapor Transmission of Materials; 2000.

D. ASTM E 1677 – Standard Specification for an Air retarder (AR) Material or System for Low-Rise Framed Building Walls; 1995 (Re-approved 2000).

1.4 SUBMITTALS

A. See Section 01 30 00 – Administrative Requirements, for submittal procedures.

B. Product Data: Provide data on material characteristics performance criteria limitations.

C. Test Results: Submit copies of test results showing performance characteristics equaling or exceeding those specified.

D. Manufacturer's installation instructions.

E. Submit samples of fasteners to the Consultant for independent testing.

1.5 MOCKUPS

A. Prepare a mockup on site of a typical sheathing membrane installation, adjacent to a window opening.

B. Prepare a mockup onsite of a typical window remediation.

C. Prepare a mockup on site of a typical vent hood installation.

1.6 PROJECT/SITE COORDINATION

A. Provide a moisture meter on site, approved by the Consultant, for measuring the moisture content of installed materials.

B. Take daily moisture content readings of installed new materials. Keep a log book record of moisture content readings, location, and material tested.

C. Consultant to provide maximum moisture contents for materials on site.

1.7 WARRANTY

A. Provide a 10-year manufacturer warranty for flashing and weather barrier systems.

1. Manufacturer to pay for the cost of the materials and labor to completely resolve any problems with WRB.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Building Wrap: Spunbonded polyolefin, non-woven, non-perforated

1. Air penetration: Maximum of 0.001 cfm/sq ft at 75Pa when tested in accordance with ASTM E2178, Type 1 per ASTM 1677.

2. Water Vapor Transmission: Greater than 28 perms, when tested in accordance with ASTM E 96 Procedure B.

3. Water Penetration Resistance: minimum 110 inches per AATCC Test Method 127.

4. Surface Burning Characteristics: ASTM E 84, Class A, flame spread (10) and indexed smoke developed value (10).

5. Tear Resistance: 12/10 lbs. When tested in accordance with ASTM D1117.

2.2 MANUFACTURERS

A. DuPont Company; Tyvek, Commercial Wrap, Wilmington, DE.

B. Substitutions: not permitted.

2.3 NAILS, FASTENERS AND ACCESSORIES

A. Self-adhered sheet flashing: See Section 07 65 26.

B. Sealing tape: Field of wall

1. 3" Tyvek Tape

C. Fasteners:

1. Fasteners for Sheathing Membrane: Cap nails, staples with min. 1" crown or as recommended by Dupont.

2. Sealants for Sheathing Membrane: Dow 758.

2.4 BUILDING PAPER

A. ASTM D 226, Type 1 (No. 15 asphalt-saturated organic felt), unperforated.

PART 3 - EXECUTION

3.1 PREPARATION

A. Verify that surface and conditions are ready to accept work of this Section in accordance with the manufacturer's recommendations. Remove all sharp objects or obstructions prior to applying sheathing paper.

3.2 INSTALLATION

A. In case of conflict with the requirements specified herein and the manufacturer's recommendations, the more stringent of the two will apply.

B. Tape and seal all joints to provide a continuous air / moisture barrier.

C. Install Building Wrap in accordance with manufacturer's instructions and over exterior sheathing. Install sheathing membrane in one layer.

1. Follow the specific requirements for lapping and integration with flashings described in the details.

2. Install self-adhered membrane flashing around rough openings in walls at windows and doors after sheathing is installed.

3. Install building wrap weather barrier as indicated in drawings and around window and door rough openings after sheathing is installed, overlapped per the manufacturer's requirements.

   a. Install windows and doors where required.
   b. Overlap building wrap weather barrier vertical seams per the manufacturer's requirements.
   c. Complete installation of building wrap weather barrier prior to siding installation.
   d. Under openings will be done using self-adhered membrane flashing and will tie in with air barrier.

D. Attachment to Framing:

1. Attach building wrap weather barrier to wood or exterior sheathing with plastic capped nails every 12" to 18" on vertical stud line with wood stud framing.

2. Attach building wrap weather barrier to steel framing, insulated sheathing board or exterior gypsum with screws and washers every 12" to 18" on vertical stud line with stud framing.

3. Attach building wrap weather barrier to masonry with adhesive recommended by manufacturer

E. Prepare window and door rough openings as per the Drawings.

F. Seal joints and penetrations through building wrap weather barriers with reinforced foil tape and fasteners before installation of finish material.

G. Ensure that building wrap weather barriers are air tight, free from holes, tears, and punctures.

H. Tape penetrations in accordance with manufacturer's instructions.

I. Where new Building Wrap meets existing Building Paper, terminate Building Wrap against sheathing with 6 inch strip of self-adhered sheet flashing and lap Building Paper a minimum of 12 inches over Building Wrap in both the horizontal and vertical directions.

1. Ensure all materials are installed in a shingle-lapped fashion.

3.3 PROECTION AND CLEANING

A. Exterior building envelope finish shall be installed within a two (2) month time period of Building Wrap.

B. Clean dust, dirt and debris from the surface of Building Wrap prior to installation of furring and/or cladding materials.

END OF SECTION

SECTION 07 31 13 – ASPHALT SHINGLES

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Labor, materials, equipment and services necessary to provide and install asphalt shingles.

B. Related Sections:

1. 07 65 26 – Self- Adhered Sheet Flashing.

2. 7 62 00 – Sheet Metal Flashing and Trim.

1.2 REFERENCES

A. ASTM D 224 – Standard Specification for Smooth-Surface Asphalt Roll Roofing.

B. ASTM D 226 – Standard Specification for Asphalt-Saturated Organic Felt used in Roofing and Waterproofing.

C. ASTM D 3018 – Standard Specification for Class A Shingles Surfaced with Mineral granules.

D. ASTM D 3161 – Standard Test Method for Wind-Resistance of Asphalt Shingles (Fan-Induced Method).

E. ASTM D 3462 – Standard Specification for Asphalt Shingles made from Glass Felt and Surfaced with Mineral Granules.

F. ASTM D 4586 – Standard Specification for Asphalt Roof Cement – Asbestos Free.

G. ASTM D 4869 – Standard Specification for Asphalt-Saturated Organic Felt Shingle Underlayment Used in Roofing.

H. ASTM D 6757 – Standard Specification for Inorganic Underlayment for Use with Steep Slope Roofing.

I. ASTM E 108 – Standard Test Methods for Fire Tests of Roofing Coverings.

J. UL® 790 – Class A Fire resistance.

K. UL® 997 – Wind Resistance.

L. ASTM D 3462 – Quality Standards from ASTM.

1.3 QUALIFICATIONS

A. Roofing Contractor to be officially recognized as an authorized contractor by the roofing materials manufacturer.

B. Employ skilled applicators approved by roofing manufacturer.

1.4 WARRANTY

A. Asphalt Shingles:

1. Thirty years from date of substantial completion, or as provided by manufacturer, whichever is longer.

2. Special Installer's Warranty: Written membrane Installer's warranty, signed by installer, covering Work of this Section, for warranty period of one year.

1.5 MOCKUP

A. Construct mockup of one selected roof area to include roof to wall flashings and diverter flashings. Accepted mockup may form part of completed work.

B. Allow 48 hours for inspection of mock-up by Roofing Technical Representative before proceeding with remaining work.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Only competent, qualified tradespeople experienced with composite shingle roofing shall execute the work of this section.

B. A crew of qualified tradespeople is defined as follows:

1. The foreman and at least one other person shall have a minimum of 5 years experience in the installation of asphalt shingle roofing. The balance of the crew installing the asphalt shingles and accessories must demonstrate a knowledge of roofing practices and have a minimum of one year of experience in shingle roofing.

2. The foreman and one other member of the crew must have experience in the installation of asphalt shingles of the same manufacturer.

3. All workers shall install all roofing materials in strict conformance with the manufacturer's latest printed instructions for materials and installation methods.

4. Workers shall proceed with the installation of materials and accessories only where the substrate is in a condition suitable for the application.

5. Workers shall be knowledgeable and experienced in performing their duties in a safe and practical manner and in compliance with all safety standards and requirements.

1.7 SUBMITTALS

A. Submit one sample of asphalt shingle to match existing for review by the Consultant. Do not order or install shingles without prior acceptance of sample by Consultant.

1.8 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Provide and maintain dry, off-ground weatherproof storage.

B. Deliver and store all new materials in their original packaging, bearing the manufacturer's name, related standards, and any other specifications or reference standards.

C. Protect and permanently store all materials in a dry, well-ventilated and weatherproof location. Remove from this location only materials to be used the same day. Maintain storage location at a minimum 50 deg F. Keep materials away from open flame or welding sparks.

D. Avoid stockpiling materials on suspended areas or roofs, which could at certain places affect the loading of such areas.

1.9 ENVIRONMENTAL REQUIREMENTS

A. Install roofing underlayment and roofing on dry sheathing, free of snow and ice. Use only dry materials and apply only during weather that will not introduce moisture into roofing system.

B. Before commencing work, Contractor to ensure that forecasted meteorological conditions shall permit work to be carried out without interruption during the course of the day.

C. Minimum temperature for solvent-based adhesive is 25 deg F.

D. If water penetrates through the assembly due to inadequate protection, Contractor to cut and inspect damages, remove, replace and re-install all materials at their own cost, to eliminate all traces of water in the assembly. Materials to be replaced include insulation and interior finishes damaged by inadequate protection.

1.10 PROTECTION

A. Protect all adjacent surfaces from any damage that may result from the work of this section. If required, the contractor shall make good any deterioration resulting from his work in progress.

B. Ensure the Work is not left unprotected at the end of each working day or during any interruption of work. Roofing must be watertight at end of each shift.

PART 2 - PRODUCTS

A. Asphalt Shingles:

1. Type: Laminated shingles.

2. Color: To match existing.

3. Acceptable Products:

a. To match existing.

B. Accessories:

1. Hip and Ridge Shingles.

2. Roofing Underlayment:

a. Minimum 2 layers of 15# felt or 1 layer of 30# felt.
b. Use self-adhered membrane roofing underlayment at tie-ins to diverter flashings, roof to wall conditions, and other areas as shown in the Drawings.

3. Fasteners, including those for underlayment

a. 3/8" head, corrosion-resistant roofing nails of galvanized steel, length sufficient to penetrate 3/4" into deck or as recommended by manufacturer, whichever is more stringent. Ensure type and number of fasteners comply with all manufacturer requirements.

C. Sheet Metal Flashings: Min 24 gauge pre-painted metal.

D. Flashing Diverters: Min 24 gauge pre-painted metal.

E. Flashing Boots/Saddles: Shop fabricated, fully soldered, galvanized min. G90. See additional information in Section 07 62 00.

PART 3 - EXECUTION

3.1 REMOVAL OF EXISTING ROOFING

A. Remove existing asphalt shingles, flashings and underlayment as required to perform work of the Drawings and other sections of this Specification.

B. Withdraw existing shingle and flashing nails; set those which break off. Leave surfaces free from dirt and loose material.

C. Consultant to review roof sheathing. Contractor to cut out or remove areas of roof sheathing affected by fungal or insect attack.

3.2 INSTALLATION OF NEW SHEATHING

A. Replace identified affected areas of roof sheathing with new plywood sheathing, thickness to match existing. Stagger butt joints with existing material by 2'-0".

3.3 EXAMINATION OF ELEMENTS

A. Roofing manufacturer technical representative to examine work areas and immediately inform Contractor and Consultant in writing of any defects.

B. Prior to commencement of work ensure substrates are firm, straight, smooth, dry, free of snow, ice or frost, and clean of dust and debris.

C. Contractor shall inspect and approve substrate condition prior to commencement of work. Commencement of work implies acceptance of the surface condition.

3.4 FIELD QUALITY CONTROL

A. The contractor is responsible to notify the Consultant 48 hours prior to the commencement of the work.

B. Roofing technical representative to review and approve initial roofing installation.

C. All deficiencies are to be corrected prior to commencement of work.

3.5 CLEANING

A. At completion of work, all refuse resulting from the work of this Section to be removed from site in a legal manner.

B. Clean all adjacent surfaces affected by roofing work, including gutters and downspouts.

END OF SECTION

SECTION 07 46 46 – FIBER CEMENT SIDING AND TRIM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Mineral fiber-cement siding and trim
2. Mineral fiber-cement soffit panels
3. Miscellaneous cedar trim

B. Related Sections

1. 06 10 00 – Rough Carpentry, for wall framing.
2. 07 25 05 – Building Wrap Weather Barriers
3. 07 62 00 – Sheet Metal Flashing and Trim.
4. 07 65 26 – Self-Adhered Sheet Flashing.
5. 07 92 00 – Joint Sealers.
6. 09 90 00 – Painting and Coating.

1.3 REFERENCES

A. ASTM E 84 – Test Method for Surface Burning Characteristics of Building Materials.

B. ASTM E 136 – Test method for Behavior of Materials in a Vertical Tube Furnace at 750 degrees C.

C. ASTM C 1186 – Specifications for Non- Asbestos Fiber Cement Siding, grade II, type A.

1.4 SUBMITTALS

A. Product Data: For each type of product specified, include manufacturer's specifications, construction details, material descriptions, dimensions of individual components and profiles, and finishes.

B. Samples: 12 inches by width of units, or 12 by 12 inch for panel products, of each type and texture specified.

1. Include samples of siding, soffit and trim products where applicable.

C. Submit three copies of specification, installation data and other pertinent manufacturer's literature.

D. Qualification Data: For qualified siding installers.

E. Product Certificates: For each type of siding and trim, from manufacturer.

F. Product Test Reports: Based on evaluation of comprehensive tests performed by qualified testing agency, for fiber cement siding.

G. Research Evaluation Reports: For each type of siding required, from the ICC.

H. Maintenance Data: For each type of siding and trim and related accessories to include in maintenance manuals.

I. Warranty: Sample of special warranty.

1.5 QUALITY ASSURANCE

A. Labeling: Provide fiber-cement siding that is tested and labeled according to ASTM C 1186 by a qualified testing agency acceptable to authorities having jurisdiction.

B. Source Limitations: Obtain each type of siding and trim including related accessories from a single source from a single manufacturer.

C. Mockups: Build mockups to verify selections made under sample submittals and to demonstrate aesthetic effects and set quality standards for fabrication and installation.

1. Construction mock-ups of each typical condition to show location, intersection preparation, color, size, and shape of intersections. Typical conditions are, but not limited to, windows, vents and balcony interfaces.

a. Size: Minimum 48 inches wide by 60 inches high, or similar area as fits the layout of the building exterior.

2. Include outside corner on one end of mockup and inside corner on other end.

3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.

4. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

5. Provide 48 hours notification to Consultant, contractor and manufacturer prior to application of mock-up for review. Application to be reviewed by consultant, contractor and manufacturer before proceeding with cementitious panel work.

D. Pre-installation Conference: Conduct conference at Project Site.

1. Meet with Owner, Consultant, Owner's insurer if applicable, Installer, and installers whose work interfaces with or affects related assemblies.

2. Review methods of procedures related to application.

3. Examine substrate conditions for compliance with requirements, including flatness and attachment to structural members.

4. Review special details.

5. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

E. Manufacturer's Representative

1. A representative of the fiber board manufacturer is to be present at the start and periodically during the installation of fiber board, and to provide written reports on the quality of the installation.

1.6 DELIVERY, STORAGE AND HANDLING

A. Fiber-cement components to be stored under cover and kept dry. Store products stacked on edge, or laid flat on a smooth, level surface. Edges and corners shall be protected from chipping and moisture.

B. Store off ground, under cover and protected from damage.

1. If products become wet, allow to dry thoroughly before installing.

1.7 ENVIRONMENTAL AND SAFETY REQUIREMENTS

A. Comply with requirements of OSHA regarding use, handling, storage, and disposal of hazardous materials; and regarding labeling and provision of material safety data sheets.

1.8 COORDINATION

A. Coordinate with other trades affecting or affected by Work of this Section to ensure proper sequencing.

1.9 WARRANTY

A. Provide manufacturer's transferable warranty which is to indicate that the fiber-cement materials will be free from defects and deterioration, and continue to perform satisfactorily when maintained in general conformance with the submitted maintenance documents

B. Warranty Duration:

1. Panels: 30 years from the date of Substantial Completion.

2. Trim: 15 years, from the date of Substantial Completion of the Work.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Fiber-Cement Siding: ASTM C 1186, Grade II, Type A.

B. Fire Resistance Characteristics:

1. Noncombustible when tested in accordance with ASTM E 136.

2. Surface burning characteristics when tested in accordance with ASTM E 84, UBC Class I:

a. Flame Spread: 0
b. Fuel Contributed: 0
c. Smoke Density: 5

C. Finish

1. In accordance with fiber board manufacturer's recommendations. Color selected by Consultant.

2. Pre-primed on all surfaces with alkali resistant primer approved by manufacturer.

3. Topcoat to be flat sheen and include fungicide.

2.2 MANUFACTURERS

A. James Hardie Building Products.

B. Substitutions: Submit in accordance with requirements of Section 01 60 00.

2.3 SIDING AND TRIM SCHEDULE

A. Siding – Fiber Cement

1. Lap siding: “HardiPlank”

    a. Thickness: 5/16 inch
    b. Weight: 2.3 lbs/sq. ft.
    c. Width: 7-1/4 inch (6 inch exposure)
    d. Length: 12 feet
    e. Prime Finish: Factory
    f. Texture: “Smooth”

2. Soffit Board: “Hardisoffit” vented horizontal soffit board complying with the following:

    a. Thickness: 1/4 inch
    b. Weight: 1.8 lbs/sq. ft.
    c. Size: 4 feet by 8 feet
    d. Prime Finish: Factory
    e. Texture: “Smooth”

B. Trim – Fiber Cement

1. “HardiTrim”, 4/4 NT3 Boards and 5/4 NT3 Boards

    a. Thickness: ¾-inch (4/4) and 1-inch (5/4), actual, as shown in the Drawings.
    b. Weight: 4.35 lbs/sq. ft., 5.65 lbs/sq. ft.
    c. Width: 3-1/2 inch, 4-1/5 inch, 5-1/2 inch, 7-1/4 inch, 11-1/4 inch, Sizes as shown or indicated in the Drawings and as determined by field measurements to match existing.
    d. Length: 12 feet.
    e. Prime finish: Factory.
    f. Texture: “Cedarmill”
    g. Color: “Arctic White”

C. Miscellaneous Cedar Trim

1. Cedar Fascia Boards

    a. Provide new cedar fascia boards to match existing size, thickness and texture as closely as possible in areas of Work.

2.4 FASTENERS

A. Stainless steel fasteners as recommended and approved by siding manufacturer, as described in OSSC Section 1405.16.

1. Length: Sufficient to penetrate into structural framing a minimum ¾-inch.

2.5 ACCESSORIES

A. Siding Accessories, General: Provide starter strips, edge trim, outside and inside corner caps, and other items as recommended by siding manufacturer for building configuration, and as shown on the Drawings.

1. Provide accessories made from some material as adjacent siding unless otherwise indicated.

B. Rainscreen furring strips: Per Section 06 10 00 – Rough Carpentry.

1. Preservative treatment of rainscreen furring per Section 06 05 73 – Wood Treatment.

C. Metal Flashings: Per Section 07 62 00 – Sheet Metal Flashing and Trim

D. Sealant for panel and trim joints: Per Section 07 92 00 – Joint Sealants.

E. Insect Screens:

1. Provide where shown in the drawings and in other locations as necessary to prevent insect ingress into the rainscreen cavity.

2. For concealed (non-visible) applications: Cor-A-Vent S-400 Strip Vent

3. For exposed (visible) locations: Perforated stainless steel flashing per Section 07 62 00 – Metal Flashings.

F. Vent Hoods:

1. Primex rainscreen vent hoods as shown in Drawings.

2. Pre-approved equivalent.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates for compliance with requirements for installation tolerances and other conditions affecting performance of siding and trim and related accessories.

B. Verify that surfaces to receive siding are straight, plumb, true, solid, rigid, dry, and otherwise properly prepared.

C. Correct conditions detrimental to timely and proper completion of work.

D. Do not start work until conditions are satisfactory.

3.2 PROTECTION

A. Protect installed work form other trades.

B. Repair any punctures or tears in the weather or tears in the water resistive barrier prior to the installation of the siding.

3.3 PREPARATION

A. Clean substrates of projections and substances detrimental to application.

3.4 INSTALLATION

A. Install in accordance with manufacturer's written installation instructions applicable to products and applications indicated, unless more stringent requirements apply.

1. Do not install damaged components.

B. Fasten to solid backing in accordance with National Evaluation Service Report for specified wind resistance.

C. Install straight, plumb, level, parallel, true, and secure as appropriate.

D. Fit neatly at joints against trim.

E. Accurately scribe to adjacent surface irregularities.

F. Fit accurately and neatly around any projections through siding.

G. Lap siding:

1. Joint treatment:

a. Install joint flashings at each butt joint in lap siding.
b. Joint flashings to be minimum G-90 prefinished galvanized steel.
c. Sealant or "H" joint covers in lieu of joint flashings at siding butt joints are not acceptable, unless otherwise noted in drawings.

H. Panel siding:

1. Install blocking behind all joints where joints do not occur at stud framing.

2. Place fasteners as described in the latest manufacturer's literature.

3. Install to maximum variation in alignment of 1/8-inch in 10 lineal feet.

I. Trim, Fascia & Soffit Installation:

1. Install panels and trim in accordance with manufacturer's instructions.

2. All work shall be carried out by skilled workers familiar with the application of all products.

3. Panel length and joint location to be confirmed with Consultant. Panel edges at joints to have furred backing.

4. All cut edges to be primed.

5. Fastening: Fasteners to be installed per latest manufacturer's literature.

J. Install accessories as detailed on drawings and in accordance with manufacturer's instructions.

3.5 FINISHES

A. Paint all cut ends, notches and holes prior to installation of boards.

B. Apply two coats of topcoat onto primed fiber cement boards in accordance with 09 90 00 – Painting and Coating.

C. Color and sheen to be as selected by Consultant.

D. Fiber cement board to be painted within 90 days of installation.

1. Ensure fiber cement siding is dry prior to painting.

3.6 ADJUSTING AND CLEANING

A. Remove damaged, improperly installed, or otherwise defective materials and replace with new materials complying with specified requirements.

B. Clean finished surfaces according to manufacturer's written instructions and maintain in a clean condition during construction.

1. Clean siding that has been soiled, or discolored.

C. Touch-up damaged paint surfaces.

D. Replace damaged units.

E. Remove debris from project site.

END OF SECTION

SECTION 07 62 00 – SHEET METAL FLASHING AND TRIM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes:

1. Fabricated sheet metal items, including flashing and counter-flashings

B. Related sections:

1. 06 10 00 – Rough Carpentry
2. 06 16 53 – Moisture Resistant Sheathing
3. 07 25 05 – Building Wrap Weather Barriers
4. 07 46 00 – Siding and Trim
5. 07 65 26 – Self-Adhered Sheet Flashing
6. 07 92 00 – Joint Sealers
7. 09 90 00 – Painting and Coating

1.3 REFERENCES

A. AMAA 2605 – Voluntary Specification, Performance Requirements and Test Procedures for Superior Performing Organic Coatings on Aluminum Extrusions and Panels.

B. ASTM A 792/A 792M – Specification for Steel Sheet, Aluminum-Zinc Alloy-Coated by the Hot-Dip Process with a Minimum Zinc Coating Designation AZ150.

C. ASTM A 653/A 653M – Standard Specification for “Steel Sheet, Zinc-Coating (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process.

D. ASTM A 666 – Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar.

E. ASTM B 32 – Standard Specification for Solder Metal.

F. ASTM B 749 – Standard Specification for Lead and Lead Alloy Strip, Sheet, and Plate Products.

G. ASTM D 2178 – Standard Specification for Asphalt Glass Felt Used in Roofing and Waterproofing.

H. ASTM D 2244 – Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates.

I. ASTM D 4214 – Standard Test Methods for Evaluating the Degree of Claking of Exterior Paint Films

J. ASTM D 4586 – Standard Specification for Asphalt Roof Cement, Asbestos-Free.

K. SMACNA (ASMM) – Architectural Sheet Metal Manual; Sheet Metal and Air Conditioning Contractors' National Association.

1.4 PERFORMANCE REQUIREMENTS

A. General: Sheet metal flashing and trim assemblies shall withstand wind loads, structural movement, thermally induced movement, and exposure to weather without failure due to defective manufacture, fabrication, installation, or other defects in construction. Completed sheet metal flashing and trim shall not rattle, leak, or loosen, and shall remain watertight.

B. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes to prevent buckling, opening of joints, overstressing of components, failure of joint sealants, failure of connections, and other detrimental effects. Base calculations on surface temperatures of materials due to both solar heat gain and nighttime-sky heat loss.

1. Temperature Change: 120 deg F (67 deg C), ambient; 180 deg F (100 deg C), material surfaces.

1.5 SUBMITTALS

A. See Section 01 30 00 – Administrative Requirements, for submittal procedures.

B. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.

C. Samples:

1. Submit one sample, 12 x 12 inch in size illustrating flashing material and layout of typical standing seam (corner) and lap seam (field).

2. Submit one sample 12 x 12 inch in size illustrating metal finish color.

1.6 QUALITY ASSURANCE

A. Perform work in accordance with SMACNA Architectural Sheet Metal Manual requirements and standard details, except as otherwise indicated.

B. Fabricator and installer Qualifications: Company specializing in sheet metal work with five years of documented experience.

C. Mockups:

1. Provide for approval prior to fabrication and installation and as part of the exterior wall assembly, the following:

a. Mock-up for review by the Consultant
b. A sample of each flashing assembly detailed for the project, including cap and through wall flashing, window/door head and sill flashing, base and drip edge flashing and custom flashing fabrications.

2. Locate where directed.

3. Mockup may remain as part of Work.

4. Mockup self-adhered sheet flashings and weather barriers shall be installed by personnel scheduled to perform Work of this Section

D. Pre-installation Conference: Conduct conference at Project Site.

1. Meet with Owner, Consultant, Owner's insurer if applicable, Installer, and installers whose work interfaces with or affects related assemblies.

2. Review methods of procedures related to application.

3. Examine substrate conditions for compliance with requirements, including flatness and attachment to structural members.

4. Review special details.

5. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.

B. Prevent contact with materials, which may cause discoloration or staining.

1.8 WARRANTY ON FINISHES

A. Manufacturer agrees to repair finish or replace sheet metal flashing and trim that shows evidence of deterioration of factory-applied finishes within specified warranty period.

B. Exposed Panel Finish: Deterioration includes, but is not limited to, the following:

1. Color fading more than 5 Hunter units when tested according to ASTM D 2244.

2. Chalking in excess of a No. 8 rating when tested according to ASTM D 4214.

3. Film Integrity: there shall be no evidence of cracking, chipping, peeling, crazing, spotting, flaking, checking or loss of adhesion.

C. Finish Warranty Period: 20 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 PRE-PRIMED SHEET STEEL

A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.

B. Base Metal to be:

1. G90 galvanized sheet steel per ASTM A653/A653M.

2. 24 gauge thickness.

C. Exposed Finish:

1. Bonderized: Includes zinc phosphate bath and chromate dry process.

2. Color: Primed or paint ready finish to receive paint color as selected by Owner.

2.2 PRE-FINISHED SHEET STEEL

A. General: Protect mechanical and other finishes on exposed surfaces from damage by applying strippable, temporary protective film before shipping.

B. Base Metal Base Metal to be:

1. Zinc coated sheet steel conforming to the requirements of ASTM A653 (or A653M as applicable) with a minimum zinc coating of G90 (Z275). <OR>

2. Aluminium-zinc coated (Galvalume) steel sheet conforming to the requirements of ASTM A792 (or A792M) with a minimum coating of AZ50(AZM150).

3. 24 gauge thickness.

C. Exposed Coil-Coated Finish:

1. Two-Coat Fluoropolymer: AAMA 621. Fluoropolymer finish containing not less than 70 percent PVDF resin by weight in color coat. Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturers' written instructions. Dry film thickness of not less than 1.0 mil (0.025 mm) for primer and topcoat.

D. Color: As selected by Consultant from Manufacturer's standard color range. Both top and underside of flashing exposed to view to be finished with the same color.

2.3 UNFINISHED STEEL

A. Form all customized flashings and other unfinished steel flashing products including vents, saddles, etc. of 24 Ga. minimum sheet steel according to the following:

1. Base Metal to be:

a. Zinc coated sheet steel conforming to the requirements of ASTM A653 (or A653M as applicable) with a minimum zinc coating of G90 (Z275). <OR>
b. Aluminium-zinc coated (Galvalume) steel sheet conforming to the requirements of ASTM A792 (or A792M) with a minimum coating of AZ50(AZM150).

B. Formed flashings to be typically folded and sealed and as approved by Consultant. Avoid soldering flashings. Use clinched joints whenever possible.

C. Paint off site after fabrication to match pre-finished flashing. Type and method of paint application must be pre-approved by the Consultant.

2.4 OTHER METALS

A. Stainless Steel

1. ASTM a 666 Type 304, soft temper, 0.015 inch thick; smooth No. 4 finish.

2.5 ACCESSORIES

A. Isolation coating: alkali resistant bituminous paint.

B. Touch-up paint: as recommended by prefinished material manufacturer.

C. Primer: Zinc chromate type.

D. Sealant: As specified in Section 07 92 00.

E. Plastic Cement: ASTM D 4586, Type I.

F. Solder: to ASTM B32 Standard Specifications For Metal Solders

2.6 FASTENERS

A. Into wood:

1. Steel pan head screws with coarse thread for wood.

a. #8 x 1" (minimum) long stainless steel suitable for metal flashing application. Stainless to be 300 Series when exposed otherwise 300 or 400 Series is acceptable.
b. For exposed conditions use hex-head stainless steel screws, with neoprene washer, hex heads colored to match flashing.

B. Into masonry, concrete, stone:

1. One piece steel screw set into predrilled hole in concrete or masonry for medium duty connections.

a. ¼" diameter x 1-1/2" long Kwik Con II Stainless by Hilti. Hex head for easier installation, Philips head for softer materials such as concrete block. Provide stainless steel washers to hold metal securely. Minimum 5/8" diameter.
b. For exposed conditions, provide stainless steel washer with bonded neoprene gasket.

C. Into sheet steel:

1. Steel pan head screws with fine thread for metal. Can be self-tapping or self-drilling.

a. #8 x 1/2" (minimum) long stainless steel suitable for metal flashing application. Stainless to be 300 Series when exposed otherwise 300 or 400 Series is acceptable.
b. For exposed conditions use pan head stainless steel screws, with neoprene washer, heads colored to match flashing.

D. Into structural steel (non-exposed): Self drilling screws, corrosion resistant capable of salt spray testing per ASTM B117 providing 2000 hours red rust and 30 cycles Kesternich SO_2.

1. Leland Industries Inc DT2000 Long Life Coated Plating System - #10 x ¾" complete with washers as required.

2. Provide washers to match the screw coating or stainless. In exposed conditions, provide washers with bonded neoprene gaskets. Minimum 5/8" diameter washers.

2.7 GUTTERS AND DOWNSPOUTS

A. Form gutters, downspouts, flashing diverters, and leader boxes from minimum .027 gauge prefinished aluminum sheet metal. Downspouts to be minimum .040 gauge prefinished aluminum.

1. Gutters Size and Profile: Size in accordance with Charts 1-1, 1-2, and Table 1-4, and 1-5, SMACNA Architectural Sheet Metal Manual.

    a. Minimum size and Profile:

        1) To match existing

    b. Gutters to be internally reinforced to resist ice and snow.

2. Downspouts to match existing dimension. Color to match wall cladding or roof cladding depending on location.

    a. Include cleanouts at all new downspouts.

3. Gutter and Downspout Size and Profile: Size in accordance with SMACNA Architectural Sheet Metal Manual. Minimum size to match existing.

B. Slope, location of expansion joints, fastening system: design gutters and downspouts to conform with Chapter 1 - "Roof drainage Systems" SMACNA Architectural Sheet Metal Manual.

1. Provide all goosenecks, outlets, strainer baskets, connectors to existing storm drainage system, and necessary fastenings.

2. Form 24 inch x 24 inch splash pans from 22ga prefinished steel.

PART 3 - EXECUTION

3.1 FABRICATION

A. Verify all field dimensions prior to fabrication.

B. Fabricate metal flashings and sheet metal work other than aluminum in accordance with applicable SMACNA Architectural Sheet Metal Manual.

1. Provide end dams, back dam legs, and end caps on all horizontal flashing elements.

C. Fabricate cleats of same material as sheet, minimum 4", interlocking with cleat.

D. Form pieces in 10 foot maximum lengths. Make allowance for expansion at joints. Use maximum length sections possible to minimize joints.

E. Hem exposed edges on underside 1/2 inch. Miter and seal corners with sealant.

F. Form sections square, true and accurate to size, free from distortion and other defects detrimental to appearance or performance.

G. Apply isolation coating to metal surfaces to be embedded in concrete or mortar (not required for stainless steel flashing).

H. Form joints between lengths of flashing sections with laps as shown in the Drawings.

1. Standing seams joints required at change in direction (corners). At moving joints, use sealed interlocking hooked seams.

2. Fabricate corners from one piece with minimum 18 inch long legs; seam for rigidity, seal and sealant.

I. All exposed or visible metal flashing and trim to be finished in selected color as indicated including exposed rear faces of end dams, joints, etc. No exposed or visible steel or aluminum flashing work to be unfinished.

J. Fabricate custom flashing details and saddles to minimize solder joints.

K. Install sealant at flashing joints.

L. Metal Flashings including window / door head and sill flashing, through wall flashing, drip edge flashing, base flashing, etc.

1. Form all flashing surfaces as shown on drawings.

2. From flashing to provide 1:4 slope to the exterior unless otherwise noted in the drawings.

M. Reglets And Cap Flashings

1. Prefinished sheet metal as detailed and in accordance with SMACNA Architectural Sheet Metal Manual details. Provide slotted fixing holes and hot dipped galvanized steel/plastic washer fasteners.

N. Fabricate vertical faces with bottom edge formed outward ¼ inch and hemmed to form drip.

O. Scuppers

1. Install scuppers as indicated.

2. Provide necessary fastenings.

3. Isolate metal scuppers from dissimilar materials such as concrete or mortar.

P. Metal Vents:

1. Form all metal vents to profiles indicated.

2. Fully solder to continuously seal corners and connections.

3. Paint unfinished steel in accordance with Section 09 90 00 – Painting and Coating.

Q. Custom flashing fabrications

1. Shop fabricate custom flashing as indicated.

2. Form custom flashing fabrications to minimize the number of metal seams and joints. Whenever possible form flashing with standing or bread pan seams.

3. Use clinched joints whenever possible to avoid soldering.

4. Soldered joints must be pre-approved by the Consultant.

   a. Fully solder joints.
   b. Neutralize solder flux with neutralizing bath prior to painting.

5. Paint off site after fabrication to color specified. Type and method of paint application must be pre-approved by the Consultant. Paint must be a baked on finish application after fabrication.

3.2 EXAMINATION

A. Verify all surfaces are clean and ready to receive work of this Section.

B. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, reglets in place, and nailing strips located.

C. Verify roofing termination and base flashings are in place, sealed, secure.

D. Proceeding with installation indicates acceptance of conditions. Immediately notify the Consultant if conditions exist that prevent proceeding with the Work of this section.

3.3 INSTALLATION

A. Install work of this section in accordance with: Construction documents, reviewed shop drawings, manufactures installation instruction, SMACNA Architectural Sheet Metal Manual and Aluminum Sheet Metal Work on Building Construction.

B. Use concealed fasteners except where approved before installation.

C. Provide underlay sheet metal as required. Secure in place and lap underlayment joints 4 inch minimum.

D. Counter-flash bituminous flashings at intersections of roof with vertical surfaces and curbs. Flash joints using S-lock and standing seams forming tight fit over hook strips.

E. Lock end joints and seal with sealant.

F. Fit flashings tight in place. Provide for thermal expansion. Make corners square, surfaces true and straight in planes, and lines accurate to profiles.

G. Solder metal joints for full metal surface contact. After soldering, wash metal clean and neutralizing solution and rinse with water. Paint soldered assemblies in shop.

H. Install surface mounted reglets true and level, and caulk top of reglet with sealant.

I. Install head and sill flashings at windows and doors in one continuous piece wherever possible.

J. Install flashings lapped “shingle” style with membranes to divert water to the exterior.

K. Install all flashings so that all surfaces have a minimum slope of 1:4 to the exterior.

L. Cross Cavity Wall Flashings at Belly Bands

1. Fit flashings together so that one end of each section is free to move in the joint.

2. Provide end dams when flashings terminate. Caulk end dam to flashing and adjacent material to make watertight.

3. Provide crickets where required to divert moisture to the exterior face of cladding assemblies.

M. Metal vents

1. Install metal vents as indicated.

N. Scuppers

1. Install scuppers as indicated. To secure scupper in oversized cored holes use Hilti HY-150 adhesive.

O. Custom flashing fabrications

1. Install custom soldered flashing fabrications as indicated.

3.4 FIELD QUALITY CONTROL

A. See Section 01 40 00 – Quality Requirements, for field inspection requirements.

B. Review will involve require site visits by consultant and review of work during installation to ascertain compliance with specified requirements.

3.5 SCHEDULE

A. Sill and Ledger Flashings: Pre-finished galvanized steel; 24 gauge (0.0299 inch thick).

B. Roof-to-Wall Flashing, Diverter Flashings: Pre-finished galvanized steel; 24 gauge (0.0299 inch thick).

C. Eave Flashing: Pre-finished galvanized steel; 24 gauge (0.0239 inch thick).

D. Roofing Penetration Flashings, for Pipes, Structural Steel, and Equipment Supports: Pre-finished galvanized steel; 22 gauge (0.0299 inch thick).

3.6 GUTTERS AND DOWNSPOUTS

A. Provide new gutters and downspouts in the Areas of Work.

B. Replace additional gutters damaged during demolition/removal:

1. Replacement gutters to be same profile and color as existing.

2. Replace gutters seam to seam.

3. Install seamed and sealed to be water-tight.

C. Install gutters and secure to building at 24 inches o.c with gutter screws through spacer ferrules. Slope gutters to downspouts as required in Table 1-4 of the SMACNA Architectural Sheet Metal Manual. Provide closure flashing just above eaves trough to hide exposed eave membrane.

D. Provide welded aluminum scupper pipe extensions to the end of the gutters to permit the collected water to spill beyond the building face as detailed.

E. Install diverter flashings at all gutters.

F. Slope gutters ¼ inch per foot minimum.

G. Lock end joints and caulk with sealant.

END OF SECTION

SECTION 07 65 26 – SELF-ADHERED SHEET FLASHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes self-adhering, vapor-retarding, modified bituminous sheet flashings (referred to as “flexible flashings”) for above grade use.

1. Work described in this section includes but is not limited to all labor, materials, equipment and services necessary for the application of self-adhered sheet flashing.

B. Related Sections

1. 06 16 00 – Rough Carpentry
2. 06 16 53 – Moisture Resistant Sheathing
3. 07 25 05 – Building Wrap Weather Barriers
4. 07 62 00 – Sheet Metal Flashing and Trim
5. 07 92 00 – Joint Sealers

1.3 REFERENCES

A. ASTM D4263 “Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method”.

B. ASTM D6135 “Application of Self-Adhering Modified Bituminous Waterproofing”.

1.4 PERFORMANCE REQUIREMENTS

A. Provide continuous self-adhered sheet flashing that prevents passage of water, air infiltration, and vapor diffusion that complies with requirements as demonstrated by mock-up testing by independent Testing Agency of manufacturer’s membrane.

B. Self-adhered sheet flashings shall be capable of performing as a liquid-water drainage plane flashed to discharge to the exterior incidental condensation or water penetration. Self-adhered sheet flashings shall be capable of accommodating substrate movement and of sealing substrate expansion and control joints,

construction material changes, penetrations, tie-ins to installed waterproofing, and transitions at perimeter conditions without deterioration exceeding specified limits.

1.5 SUBMITTALS

A. Product Data: For each product indicated.

1. Include manufacturer's written instructions for evaluating, preparing, and treating substrate; technical data; and tested physical and performance properties of products, including compliance with limits on volatile organic compound (VOC) emissions.

2. Include manufacturer's written instructions for installation of products.

3. Product data sheets for products supplied under this Section, including primers and accessory materials.

4. Include warranty information for specified products.

B. Material Submittal Form:

1. Provide a completed Material Submittal Form indicating components of the assembly required for the Work under this section.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved in writing by manufacturer.

1. Installers must have a minimum five years documented experience installing specified products. Company specializing in performing work of this Section must have successfully completed a minimum of 3 projects of similar size, quality and complexity.

2. Provide list of previous projects and references upon request by the Consultant.

3. Coordinate as required with other trades interfacing with Work of this Section to ensure proper and adequate provision for preceding or subsequent work.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to jobsite in manufacturer's original packaging, with labels intact and legible.

B. Storage:

1. Maintain packaging, seals and labels intact until time of use.

2. Provide and maintain dry, off-ground weatherproof storage.

3. Store materials protected from exposure to direct sunlight.

4. Store rolls of membrane in upright position.

5. Remove only in quantities for same day use.

C. Field Handling and Tracking:

1. Keep daily logs of product batch numbers, supplier deliveries, and other information necessary to identify the source of each site installation. Keep logs of field crews and daily work locations.

1.8 ENVIRONMENTAL CONDITIONS

A. Do not install self-adhered sheet flashings when ambient temperatures are at or below 41˚F for 24 hours before application, and only during dry conditions.

1. Use cold weather products where required by manufacturers guidelines.

B. Minimum temperature for installation of primer is 41˚F.

1. Use cold weather products where required by manufacturer's guidelines.

C. Install membrane on dry substrates, free of snow and ice, use only dry materials and apply only during weather that will not introduce moisture into self-adhered sheet flashing system.

D. If water penetrates through the membrane due to inadequate protection including from interior sources, Contractor to cut and inspect damages and remove and replace all materials at his own cost to eliminate all trace of water in the assembly.

E. Do not allow membrane to remain exposed longer than 6 weeks.

1.9 WARRANTY

A. Correct defective Work within a five year period after Date of Substantial Completion.

B. Special manufacturer's warranty:

1. Written warranty, signed by membrane manufacturer, agreeing to replace membrane material that does not comply with requirements or that does not remain watertight during specified warranty period.

2. Warranty does not include failure of membrane due to failure of substrate prepared and treated according to requirements or formation of new joints and cracks in substrate exceeding 1/16 inch width.

C. Special installer's warranty:

1. Written membrane installer's warranty, signed by installer, covering Work of this Section, for warranty period of five years.

PART 2 - PRODUCTS

2.1 SELF-ADHERED SHEET FLASHING

A. Self-adhered sheet flashing to meet the following minimum criteria:

1. Reinforced with a cross laminated polyethylene sheet 4 mils thick.

2. Membrane is to be 40 mils thick (excluding release film) and must have a release film to protect the adhesive surface.

3. The membrane system must not show any signs of softening, flow or deterioration at temperatures 176˚F or below.

B. Acceptable Products: Subject to compliance with requirements, provide one of the following (in order of preference):

1. Soprema; SupraSeal Stick 1100

2. Henry Company; Blueskin SA

3. Protecto Wrap; Protecto-Wrap PW-100

4. International Building Components, Inc; WaterBlock-40

5. Carlisle; CCW 705

C. Substitutions: See Section 01 60 00 – Product Requirements

2.2 FOIL-FACED SELF-ADHERED SHEET FLASHING

A. Foil-faced self-adhered sheet flashing for use at transitions and penetrations and in areas where sealant adhesion to membrane is required. This includes but is not limited to balcony edges, balcony soffits, scaffolding tie-in points, stucco tie-in points, window perimeters, hose bibs, louver openings, and other waterproofing details. Material to meet the following minimum criteria:

1. Membrane is to be 40 mils thick (including release film) and must have a release film to protect the adhesive surface.

2. The membrane system must not show any signs of softening, flow or deterioration at temperatures of 176˚F or below.

B. Acceptable Products: Subject to compliance with requirements, provide one of the following:

1. ProtectoWrap; Protecto-Wrap PS-45

2. Henry Company; Metal Clad

3. Soprema; Soprasolin HD

2.3 HIGH-TEMPERATURE SELF-ADHERED MEMBRANE FLASHINGS

A. High-temperature self-adhered membrane flashing for use below metal roofs, copings, and flashings. Material to meet the following minimum criteria:

1. Butyl or SBS-Modified Asphalt adhesive surface.

2. Membrane is to be 40 mils thick (including release film) and must have a release film to protect the adhesive surface.

3. The membrane system must not show any signs of softening, flow or deterioration at temperatures 230˚F or below

B. Acceptable Products: Subject to compliance with requirements, provide one of the following:

1. Henry Company; Blueskin PE 200HT

2. Grace Construction Products; Grace Ultra

3. Soprema; Lastobond Shield HT

4. International Building Products; WaterBlock HT

2.4 ACCESSORY MATERIALS

A. General: Accessory materials recommended by self-adhered sheet flashing manufacturer to produce a liquid-water drainage plane flashed to discharge to the exterior incidental condensation or water penetration.

B. Primer: High tack SBS rubber based primer as recommended by manufacturer.

1. Use solvent-borne primers when permitted by authorities having jurisdiction.

2. Do not used waterborne primers when temperature is below 41˚F for 24 hours before application.

3. Do not use SBS based primer for Butyl membranes. For Butyl membranes, use primers as recommended by manufacturer for each substrate.

C. Sealants

1. Self-adhered sheet flashing sealant: As recommended by membrane manufacturer.

2. Foil-faced self-adhered sheet flashing sealant: Silicone sealant as specified in Section 07 92 00.

3. High-temperature self-adhered sheet flashing sealant: As recommended by membrane manufacturer.

4. Do not use urethane sealants with self-adhered sheet flashings.

D. Termination bars:

1. Minimum 18 gauge for steel, 1/16" for aluminum

2. G185 galvanized steel or aluminum

3. 1.5" wide x continuous lengths where possible

4. Gum lip as required

E. Metal termination flashings:

1. Refer to Section 07 62 00 – Metal Flashings and Trim

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, for compliance with requirements and other conditions affecting performance of the Work.

1. Verify conformance with manufacturer's requirements.

2. Verify that substrates are sound and free of oil, grease, dirt, excess mortar, or other contaminants.

3. Verify that concrete has cured and aged for minimum time period recommended by self-adhered sheet flashing manufacturer.

4. Verify that concrete is visibly dry and free of moisture. Test for capillary moisture by plastic sheet method according to ASTM D 4263.

5. Verify that masonry joints are flush and completely filled with mortar.

6. Report unsatisfactory conditions in writing to Consultant.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

1. Coordinate with other trades to assure proper and adequate interface with Work of this Section.

2. Verify items that penetrate sheathing surfaces are securely installed prior to membrane application.

3.2 SURFACE PREPARATION

A. Clean, prepare, and treat substrate according to manufacturer's written instructions. Provide clean, dust-free, and dry substrate for self-adhered sheet flashing application.

B. Mask off adjoining surfaces not covered by self-adhered sheet flashing to prevent spillage and overspray affecting other construction.

C. Ensure substrate is continuous. Provide solid backing as required. Unsupported membrane of 1/4 inch or greater is unacceptable.

1. Fill voids as required or reinstall sheathing to meet maximum gap requirement.

D. All sharp metal edges to be rounded or smoothed off to prevent puncture of self-adhered sheet flashing.

E. Gypsum sheathing substrates:

1. Ensure that fasteners are fully driven and do not protrude beyond face of sheathing.

2. Verify that adjacent sheathing sheets are installed without differential offset of more than 1/8 inch.

3. Damaged sheathing or sheathing where gypsum core is fractured to be replaced.

3.3 INSTALLATION

A. General: Install self-adhered sheet flashings and accessory materials according to manufacturer's written instructions and according to recommendations in ASTM D 6135.

1. Observe temperature and humidity limitations for application.

B. Corners: Prepare, prime, and treat inside and outside corners according to ASTM D 6135.

C. Prepare, treat, and seal vertical and horizontal surfaces at terminations and penetrations with termination mastic and according to ASTM D 6135.

D. Apply conditioner/primer to substrates at required rate, per manufacturer’s recommendations, and allow it to dry prior to application of membrane. Limit priming to areas that will be covered by air-barrier sheet on same day. Re-prime areas exposed for more than 24 hours or areas contaminated by dust or debris.

1. Prime glass-fiber-surfaced gypsum sheathing with number of prime coats needed to achieve required bond, with adequate drying time between coats.

E. Remove release paper layer. Roll out on substrate with a mechanical roller to encourage full contact bond. Use heat gun as required to achieve adequate continuous bond.

F. Lap each sheet or strip in a water-shedding manner with upper sheets overlapping lower sheets in a horizontal fashion.

G. Pre-strip membrane and weather barrier as required to ensure shingle fashion laps at tie-ins.

H. Lap sides and ends in accordance with manufacturer's instruction and with the project details. All laps to be a minimum of 2 inches, or per manufacturer's recommendations, whichever is more stringent.

1. Wipe down scrim material at each overlap area using two-rag alcohol wipe method to remove dust or contaminants prior to installing successive sheets or strips. Roll each lap with hand roller to ensure full and complete adhesion. Detail each exposed edge with detailing compound within one day of installation.

2. All laps except shingle laps to be detailed with sealant.

I. Seal exposed edges of sheet at seams, cuts, penetrations, and terminations not concealed by metal counter-flashings or ending in reglets with termination mastic.

J. Extend membrane onto items protruding to or penetrating assembly and seal termination with manufacturer's recommended sealant.

K. Patch deficient areas with membrane extending 6 inches minimum in all directions from affected area. Seal top and sides of patch with manufacturer's recommended sealant.

1. Repair punctures, voids, and deficient lapped seams in self-adhered membrane flashing. Slit and flatten fish-mouths and blisters.

2. Cut damaged membrane, clean scrim surface around patch area with a two-rag alcohol wipe. Patch with self-adhered membrane flashing extending 6 inches beyond repaired areas in all directions.

3. Roll seams tight with a hand roller and detail edges with manufacturer's recommended sealant.

L. Apply joint sealants forming part of self-adhered membrane flashing within manufacturer's recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.

M. Ensure no membrane or membrane accessories extend to future exterior sealant locations or on finished surfaces. Clean any affected areas as required.

N. Install termination bars (if required) onto membrane to continuously secure as indicated and directed by Consultant. Fasten as required to provide continuous support of membrane and to eliminate bowing of termination bar (minimum 6 inches on center).

1. Top of termination bar shall be shaped to receive fillet bead of neutral cure silicone sealant.

O. Correct deficiencies in or remove material that does not comply with requirements; repair substrates and reapply air-barrier components.

P. At end of each working day, seal top edge of self-adhered sheet flashing to substrate with manufacturer's recommended sealant.

3.4 CLEANING AND PROTECTION

A. Protect self-adhered sheet flashing from damage during application and remainder of construction period, according to manufacturer's written instructions.

1. Protect self-adhered sheet flashing from exposure to UV light and harmful weather exposure as required by manufacturer. If exposed to these conditions for more than manufacturer's recommendations, remove and replace self-adhered sheet flashing.

2. Protect self-adhered sheet flashing from contact with incompatible materials and sealants not approved by manufacturer.

3. Protect membrane from welding activities during construction period.

B. Clean spills, stains, and soiling from construction that would be exposed in the completed Work, using cleaning agents and procedures recommended by manufacturer of affected construction.

C. Clean drips, smears and excess primers from adjacent materials immediately.

D. At end of each day's work, provide protection for complete work and materials out of storage.

END OF SECTION

SECTION 07 92 00 - JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Silicone joint sealants.
2. Urethane joint sealants.
3. Latex joint sealants.
4. Polymer modified sealant.
5. Silyl-terminated polyether sealants.

B. Related Sections:

1. 07 25 05 – Building Wrap Weather Barriers
2. 07 46 46 – Fiber Cement Siding and Trim
3. 07 62 00 – Sheet Metal Flashings and Trim

1.3 REFERENCES

A. ASTM C717, Standard Terminology for Building Seals and Sealants

B. ASTM C834 – Standard Specification for Latex Sealants.

C. ASTM C919, Standard Practice for Use of Sealants in Acoustical Applications.

D. ASTM C920, Standard Specification for Elastomeric Joint Sealants

E. ASTM C1021, Standard Practice for Laboratories Engaged in Testing of Building Sealants.

F. ASTM C1193, Standard Guide for Use of Joint Sealers

G. ASTM C1248, Standard Test Method for Staining of Porous Substrate by Joint Sealants.

H. ASTM C1311, Standard Specification for Solvent Release Sealants

I. ASTM C1521, Standard Practice for Evaluating Adhesion of Installed Weatherproofing Sealant Joint.

1.4 ACTION SUBMITTALS

A. See Section 01 30 00 – Administrative Requirements and 01 60 00 – Product Requirements for submittal procedures and requirements

B. Product Data: For each joint-sealant product indicated.

1. Include construction details, materials descriptions, dimensions of individual components and profiles, and finishes for each manufactured product and accessory.

C. Samples for Verification: For each kind and color of joint sealant required, provide Samples with joint sealants in 1/2-inch wide joints formed between two 6-inch long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.

D. Joint-Sealant Schedule: Include the following information:

1. Joint-sealant application, joint location, and designation.

2. Joint-sealant manufacturer and product name.

3. Joint-sealant formulation (type of sealant).

4. Joint-sealant color.

E. Sealant manufacturer's project recommendations stating recommended surface preparation for each substrate, and type of primer required (if necessary) for proposed sealant.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified Installer

B. Product Certificates: For each kind of joint sealant and accessory, from manufacturer.

C. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, indicating that sealants comply with requirements.

D. Preconstruction Field-Adhesion Test Reports: Indicate which sealants and joint preparation methods resulted in optimum adhesion to joint substrates based on testing specified in "Preconstruction Testing" Article.

E. Field-Adhesion Test Reports: For each sealant application tested.

F. Warranties: Sample of special warranties.

G. MSDS Sheets.

1.6 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.

B. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of sealants required for this Project.

C. Source Limitations: Obtain each kind of joint sealant from single source from single manufacturer.

D. Product Testing: Test joint sealants using a qualified testing agency.

1. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated.

E. Mock-ups

1. Construct mock-up of each typical condition to show location, joint preparation, color, size, shape and the depth of joints complete with back-up material, primer, caulking and sealant. Mock-up may be part of finished work.

a. Provide adequate notification to Architect and sealant manufacturer prior to application of mock-up for review. Cured adhesion and application to be reviewed by Architect and manufacturer before proceeding with remaining sealant work.

2. Locate where directed.

3. Manufacturer to review mock-ups as required.

F. Pre-installation Conference: Conduct conference at Project Site at least two weeks prior to the start of work of this section.

1. Attendees to include:

a. Architect
b. Contractor
c. Applicator
d. Manufacturer’s Technical Representative

2. Agenda:

a. Review schedule
b. Review substrates
c. Review mock-up requirements
d. Review locations

1.7 PRECONSTRUCTION TESTING

A. Preconstruction Field-Adhesion Testing: Before installing sealants globally, field test their adhesion to Project joint substrates as follows:

1. Locate test joints where indicated on Project or, if not indicated, as directed by Architect.

2. Conduct field tests for each application indicated below:

   a. Each kind of sealant and joint substrate indicated.

3. Notify Architect seven days in advance of dates and times when test joints will be installed.

   a. Give Architect adequate notice of when sealants will be cured and ready for testing.

4. Arrange for tests to take place with joint-sealant manufacturer's technical representative present.

   a. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.

      1) For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.

5. Report whether sealant fail adhesively or cohesively. Include data on pull distance used to test each kind of product and joint substrate. For sealants that fail adhesively, remove, clean substrate, reinstall, and retest until satisfactory adhesion is obtained.

6. Evaluation of Preconstruction Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing, in absence of other indications of noncompliance with requirements, will be considered satisfactory. Do not use sealants that fail to adhere to joint substrates during testing.

7. Attendees for Field Adhesion Testing:

   a. Sealant manufacturer’s technical representative
   b. Contractor
   c. Installer
   d. Architect

1.8 JOB SITE DAILY LOG

A. Record the following in job site daily log:

1. Date and description of weather conditions, including temperature first thing in the morning and average air temperature at beginning and end of day.

2. Location of joint sealants installed that day

3. Crew member's names

4. Batch numbers of sealant and primer

5. Note unusual conditions

6. Check preceding day's work

1.9 DELIVERY, STORAGE AND HANDLING

A. Deliver products to job site in their manufacturer's original containers, with labels intact and legible, and maintain intact until time of use.

B. Do not retain material which has exceeded shelf life recommended by manufacturer.

1.10 ENVIRONMENTAL CONDITIONS

A. Maintain temperature, humidity, and substrate moisture content as recommended by the sealant manufacturer during and after installation, until sealant is fully cured.

B. Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer, or are below 40 deg F.

2. When joint substrates are wet.

3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.

4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

5. Some sealants may tolerate cold-weather installation. In these cases, consult the manufacturer's recommendations for installation temperatures and other environmental conditions.

1.11 SAFETY

A. Comply with Occupational Safety and Health Administration (OSHA) requirements regarding use, handling, storage, and disposal of hazardous materials; and regarding labeling and provision of material safety data sheets.

1.12 WARRANTY

A. Special Installer's Warranty: Manufacturer's standard form in which Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Two years from date of Substantial Completion.

B. Special Manufacturer's Warranty: Manufacturer's standard form in which joint-sealant manufacturer agrees to furnish joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period:

a. Polyurethane: 5 year, joint and sealant covering labor and materials to replace.
b. Silicone: 20 year, joint and sealant covering labor and materials to replace.

C. Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:

1. Movement of the structure caused by structural settlement or errors attributable to design or construction resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.

2. Disintegration of joint substrates from natural causes exceeding design specifications.

3. Mechanical damage caused by individuals, tools, or other outside agents.

4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants, or Acts of God.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

B. VOC Content of Interior Sealants: Sealants and sealant primers used inside the weatherproofing system shall comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):

1. Architectural Sealants: 250 g/L.

2. Sealant Primers for Nonporous Substrates: 250 g/L.

3. Sealant Primers for Porous Substrates: 775 g/L.

C. Liquid-Applied Joint Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied joint sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.

D. Color:

1. Colors for each sealant installation to be selected by Architect. See Sealant Schedule if applicable.

2. In exposed installation, color to approximate color of adjacent surfaces, unless otherwise approved or specified by Architect;

2.2 SILICONE JOINT SEALANTS (TYPE 1)

A. Type 1A: Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 100/50, for Use NT.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Dow Corning Corporation; 790
b. Tremco Incorporated; Spectrem 1

B. Type 1B: Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 50, for Use NT.

1. Products: Subject to compliance with requirements, provide one of the following:

a. Dow Corning Corporation; 795
b. Tremco Incorporated; Spectrem 2

C. Type 1C: Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 25, for Use NT.

1. Products: Subject to compliance with requirements, provide the following:

a. Dow Corning Corporation; 758

D. Type 1D: Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 50, for Use NT.

1. Product: Subject to compliance with requirements, provide the following:

a. Dow Corning Corporation; 791

2.3 URETHANE JOINT SEALANTS (TYPE 2)

A. Type 2H: Multicomponent, Nonsag, Traffic-Grade, Urethane Joint Sealant: ASTM C 920, Type M, Grade NS, Class 50, for Use T.

1. Products: Subject to compliance with requirements, provide the following:

a. Tremco Incorporated; Dymeric 240 FC.

B. Type 2J: Immersible, Single-Component, Nonsag, Traffic-Grade, Urethane Joint Sealant: ASTM C 920, Type S, Grade NS, Class 25, for Uses T and I.

1. Products: Subject to compliance with requirements, provide the following:
   a. Tremco Incorporated; Vulkem 116.

2.4 LATEX JOINT SEALANTS (TYPE 4)

A. Type 4A: Latex Joint Sealant: Acrylic latex or siliconized acrylic latex, ASTM C 834, Type OP, Grade NF.

1. Use: For miscellaneous interior caulking around trim and gypsum wallboard.

2. Products: Subject to compliance with requirements, provide one of the following:

   a. BASF Building Systems; Sonolac.
   b. Bostik, Inc.; Chem-Calk 600.
   c. Pecora Corporation; AC-20+.
   d. Schnee-Morehead, Inc.; SM 8200.
   e. Tremco Incorporated; Tremflex 834.

2.5 POLYMER MODIFIED SEALANTS (TYPE 8)

A. Type 3A: Single component, moisture cure, medium modulus polymer modified sealant compound: ASTM C920, Type S, Grade NS, Class 25, for Use NT.

1. Use: For use as termination sealant at self-adhered membrane laps.

2. Products: Subject to compliance with requirements, provide the following:
   a. Self-adhered membrane manufacturer's recommended sealant.

3. Ensure compatibility of termination sealant with self-adhered membrane specified in 07 65 26.

2.6 SILYL-TERMINATED POLYETHER SEALANTS (TYPE 9)

A. Type 9a: Single component, moisture cure, low-modulus silyl-terminated polyether sealant: ASTM C920, Type S, Grade NS, Class 100/50, for Use NT.

1. Use: Exterior paintable sealants at fiber cement siding and trim.

2. Products: Subject to compliance with requirements, provide the following:
   a. BASF Building Systems; Sonolastic 150 with VLM technology.

2.7 JOINT SEALANT BACKING

A. General: Provide sealant backings of material that are non-staining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for

applications indicated by sealant manufacturer based on field experience and laboratory testing.

1. Size: oversize 30%-50%

2. Square backer rods:

   a. 2:1 ratio of width to height, maximum depth 1/2 inch.

B. Cylindrical Sealant Backings: ASTM C 1330, Type B (bi-cellular material with a surface skin), and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

1. Product:

   a. Sof-Rod by Nomaco.
   b. Titan Foam by Backer Rod Manufacturing, Inc.
   c. Approved Substitutions.

C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

2.8 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from field tests.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.

C. Masking Tape: Non-staining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints that will not adhere, leave residue, or damage adjacent finishes.

D. Joint Cleaner: Non-corrosive and non-staining type, compatible with joint forming materials and sealant recommended by sealant manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine joints indicated to receive joint sealants, with Installer present, for compliance with requirements for joint configuration, installation tolerances, and other conditions affecting joint-sealant performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

C. Verify that joint backing and release tapes are compatible with sealant.

3.2 PREPARATION

A. Protect elements surrounding the work of this section from damage or disfigurement.

B. Prepare surfaces in accordance with ASTM C1193 and manufacturer's recommendations.

C. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.

2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:

a. Concrete.
b. Masonry.

3. Remove laitance and form-release agents from concrete.

4. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:

a. Metal.
b. Glass.

D. Examine joint sizes and conditions to establish correct depth to width relationship for installation of backup materials and sealant.

E. Do not apply sealant to joint surfaces treated with sealer, curing compound, water repellent, or other coatings unless tests have been performed to ensure compatibility of materials. Remove coatings as required.

F. Concrete sealed with water repellent:

1. Protect joints prior to applying sealer or apply sealer after sealant is installed and cured.

2. Confirm existing veneer does not contain sealers. Test adhesion of sealant to existing veneer.

G. Ensure joint surfaces are dry and frost free.

H. Examine joint sizes and correct as required to allow for anticipated joint movement and to achieve proper width/depth ratio per manufacturer's recommendation for specified sealant.

3.3 INSTALLATION OF BACKUP MATERIAL

A. Install material to uniform depth below sealant, based on 2:1 joint geometry.

B. Install joint filler to consistently achieve correct joint depth and shape, oversized approximately 30%-50%. Install backer rod without stretching, twisting, braiding or puncturing its outer skin. For high-temperature locations use high heat resistance foam backer rod.

1. Measure joint dimension and size joint backers to achieve width to depth ratio, neck dimensions, and surface bond area as recommended by manufacturer. Joint construction shall conform to ASTM C1193 recommendations.

C. Apply bond breaker tape where required and to manufacturer's instructions.

D. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of sealant backings.

2. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.

E. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

1. Use bond breaker tape for all fillet joint conditions. Do not allow joints to be installed with 3-sided adhesion.

3.4 PRIMING

A. Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

B. Install primer per manufacturer's recommendations. Allow to flash off per manufacturer's recommendations prior to sealant installation.

C. Prime only as much area as can be sealed in the same day.

3.5 MIXING

A. Mix materials in strict accordance with sealant manufacturer's instructions.

3.6 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Perform acoustical sealant application work in accordance with ASTM C919.

D. Mask edges of joint where irregular surface or sensitive joint border exists to provide neat joint.

1. Provide dams where necessary to contain sealant and to prevent water ingress into cavities.

E. Apply sealant in continuous beads.

F. Apply sealant using gun with proper size nozzle.

G. Use sufficient pressure to fill voids and joints solid.

H. Form surface of sealant with full bead, smooth, free from ridges, wrinkles, sags, air pockets, embedded impurities.

I. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.

J. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.

2. Completely fill recesses in each joint configuration.

3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

4. Minimum exterior sealant joint width to be 3/8-inch, with minimum sealant depth to be ¼-inch.

5. Minimum exterior fillet beads to be 3/8-inch by 3/8-inch, with bond breaker used at all exterior joint locations.

K. Tooling of Non-sag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to

eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealant from surfaces adjacent to joints.

2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.

3. Provide proper joint profile per ASTM C 1193, unless otherwise indicated.

3.7 FIELD QUALITY CONTROL

A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:

1. Extent of Testing: Test completed and cured sealant joints as follows:
   a. Perform 10 tests for the first 1000 feet of joint length for each kind of sealant and joint substrate.
   b. Perform 1 test for each 1000 feet of joint length thereafter and 1 test per each floor per elevation and one test per week per installation crew
   c. Extent of testing may be modified as agreed upon by the Design Team in the pre-construction meeting to suite project conditions.

2. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.
   a. For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.

3. Inspect tested joints and report on the following:
   a. Whether sealants filled joint cavities and are free of voids.
   b. Whether sealant dimensions and configurations comply with specified requirements.
   c. Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. Compare these results to determine if adhesion passes sealant manufacturer's field-adhesion hand-pull test criteria.

4. Record test results in a field-adhesion-test log. Include dates when sealants were installed, names of persons who installed sealants, test dates, test locations, whether joints were primed, adhesion results and percent elongations, sealant fill, sealant configuration, and sealant dimensions.

5. Repair sealants pulled from test area by applying new sealants following same procedures used originally to seal joints. Ensure that original sealant surfaces are clean and that new sealant contacts original sealant.

B. Evaluation of Field-Adhesion Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or

to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

3.8 CLEANUP:

A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

B. Clean adjacent surfaces in accordance with sealant manufacturer's instructions.

C. Repair damaged surfaces.

3.9 CURING AND PROTECTION

A. Cure sealant in accordance with sealant manufacturer's instructions.

B. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

C. Do not cover up sealants until proper curing has taken place.

3.10 JOINT-SEALANT SCHEDULE

A. Exterior sealants:

1. At porous substrates such as concrete: Type 1A
    a. Color: To be selected by Architect.
2. General purpose silicone sealant for various substrates: Type 1B
    a. Color: To be selected by Architect.
3. At metal flashing laps: Type 1D
    a. Color: White
4. At laps in water-resistive barrier (WRB): Type 1C
    a. Color: White
5. At traffic coatings: Type 2H or 2J as recommended by the manufacturer
    a. Color: Standard Gray
6. At self-adhered membrane laps: Type 8
    a. Color: Standard Gray or Black

7. At foil-faced self-adhered membrane laps: Type 1B

    a. Color: White

8. At fiber cement siding and trim: Type 9.

    a. Color: White.

B. Interior sealants:

1. At window perimeter to rough opening interface: Type 1C.

    a. Color: White.

2. At window perimeter to interior wood trim interface and general purpose around gypsum wallboard: Type 4A.

    a. Color: White.

END OF SECTION

SECTION 08 53 13 - VINYL WINDOWS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes vinyl-framed windows.

B. Related Sections

1. 06 16 00 – Rough Carpentry
2. 06 16 53 – Moisture Resistant Sheathing
3. 07 25 05 – Building Wrap Weather Barriers
4. 07 62 00 – Sheet Metal Flashing and Trim
5. 07 65 26 – Self-Adhered Membrane Flashing
6. 07 92 00 – Joint Sealers

1.3 REFERENCES

A. ANSI Z97.1 - Safety Performance Specifications and Methods of Test for Safety glazing Material used in Buildings.

B. ASTM E 283 – Standard Test method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.

C. ASTM E 330 – Standard Test Method for Structural performance of Exterior Windows, Doors, Skylights and Curtin Walls by Uniform Static Air Pressure Difference.

D. ASTM E 547-00 – Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors and Curtain Walls by Cyclic Static Air Pressure Difference.

E. ASTM E 1105 – Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform or Cyclic Static Air Pressure Difference.

F. ASTM E 2190 – Specification for Sealed Insulated Glass Units.

G. ASTM F 588 – Standard Test Methods for Measuring the Forced Entry Resistance of Window Assemblies, Excluding Glazing Impact.

H. AAMA/NWWDA 101/I.S.2/A440 – Voluntary Specifications for Aluminum, vinyl (PVC) and Wood Windows and glass Doors; American Architectural Manufacturers Association.

I. National Fenestration Rating Council

1. NFRC 100-91 – Procedure for Determining Fenestration product Thermal Properties.

2. NFRC 200 – Procedure for Determining Solar Heat Gain Coefficient (SHGC).

1.4 PERFORMANCE REQUIREMENTS

A. Product Standard: Comply with AAMA/WDMA/CSA 101/I.S.2/A440 for definitions and minimum standards of performance, materials, components, accessories, and fabrication unless more stringent requirements are indicated.

1. Window Certification: WDMA certified with label attached to each window.

B. Assembly: To accommodate, without damage to components or deterioration of seals, movement between window and perimeter framing and deflection of lintel.

C. AAMA/WDMA/CSA 101/I.S.2/A440 Performance Requirements: Provide windows of performance class and grade indicated that comply with AAMA/WDMA/CSA 101/I.S.2/A440, and additional performance requirements as indicated:

1. Single-Hung Windows: LC-PG50

2. Fixed-lite Windows: CW-PG50

3. Casement Windows: CW-PG50

D. Water Resistance Penetration: No water leakage as defined in AAMA/WDMA/CSA 101/I.S.2/A440 referenced test methods.

1. Fixed and Casement Windows: No water leakage when subjected to 9 PSF for four, five minute cycles per ASTM E547. Field testing for water tightness at 2/3 laboratory test pressure (0.667 x 9 PSF = 6 PSF) when tested per ASTM E 1105 for four, five minute cycles.

2. Single Hung Windows: No water leakage when subjected to 8.3 PSF for four, five minute cycles per ASTM E547. Field testing for water tightness at 2/3 laboratory test pressure (0.667 x 8.3 PSF = 5.5 PSF) when tested per ASTM E 1105 for four, five minute cycles.

E. Air Infiltration Resistance: limit air infiltration through assembly as follows:

1. Fixed and Casement Windows: not to exceed 0.3 cu ft/min/sq ft of wall area, measured at a reference differential pressure across assembly of 6.2 psf as measured in accordance with ASTM E 283.

2. Single Hung Windows: not to exceed 0.55 cu ft/min/sq ft of wall area, measured at a reference differential pressure across assembly of 6.2 psf as measured in accordance with ASTM E 283.

F. Structural: No damage after structural loading to 150% of design pressure (200% for unit skylights and roof windows), as determined by ASTM E 330, Procedure A:

1. 25 psf

G. Forced Entry Resistance: Conform to ASTM F 588 requirements for performance level 10 for window type A.

H. Solar Heat-Gain Coefficient (SHGC): NFRC 200 maximum whole-window SHGC of 0.34.

I. Durability: air and water leakage performance of windows to be not less than that specified for lab-testing.

J. System Internal Drainage: Drain water entering joints, condensation occurring in glazing channels, or migrating moisture occurring within system, to exterior by weep drainage network.

K. Thermal Movement: Design sections to permit movement caused by thermal expansion and contraction of frame material to suit glass, infill, and perimeter opening construction.

1.5 FIELD MEASURE

A. Contractor and window manufacturer to field measure rough openings prior to ordering new windows. The Contractor is responsible to ensure that new windows are correctly sized for existing openings.

1.6 ACTION SUBMITTALS

A. Submit all documentation and samples for review by Architect at one time, prior to ordering replacement windows.

B. Product Data: For each type of product.

1. Include construction details, material descriptions, glazing and fabrication methods, dimensions of individual components and profiles, hardware, and finishes for vinyl windows.

2. Include recommendations for maintenance and cleaning of exterior surfaces.

C. Product Schedule: For vinyl windows. Use same designations indicated on Drawings.

1.7 INFORMATIONAL SUBMITTALS

A. Qualification Data: For manufacturer and Installer.

1. Provide documentation of 5 years of window installation of similar projects.

B. Product Test Reports: For each type of vinyl window, for tests performed by a qualified testing agency.

1. Submit documentation specified to show that products meet or exceed specified requirements.

C. Field quality-control reports.

D. Quality Control Documents

1. Submit copies of test reports to establish that the products assembled by this manufacturer comply with the air leakage and water penetration performance requirements.

2. Submit test reports to establish that the products assembled by this manufacturer comply with the condensation resistance criteria.

3. Submit letter from glazing contractor and product manufacturer confirming that all products will be supplied and installed according to the descriptive and performance requirements of this specification. Identify any specified requirements that are in error or cannot legitimately be met, and provide alternatives which meet the intent of the specification for the Architect's approval.

E. Sample Warranties: For manufacturer's warranties.

1.8 QUALITY ASSURANCE

A. Submit all documentation specified to show that all products meet or exceed the documentation requirements of this specification.

B. Glass and glazing work under this section to conform to US Branch of the IGMA, "Glazing Recommendations for Sealed Insulating Glass Units".

C. Sealed insulating unit manufacturer to be a member in good standing of IGMA, and be prepared to submit evidence of current membership to the Architect upon request.

D. Manufacturer Qualifications: A manufacturer capable of fabricating vinyl windows that meet or exceed performance requirements indicated and of documenting this performance by test reports and calculations.

1. Window/door manufacturer and installation contractor to have a minimum of five years uninterrupted experience in successfully carrying out projects of similar size. Documentation of past experience to be provided on demand.

E. Installer Qualifications: An installer acceptable to vinyl window manufacturer for installation of units required for this Project.

F. Laboratory test reports to be prepared by qualified independent testing laboratories.

G. Design structural support framing components under direct supervision of a Registered Professional Engineer experience in design of this Work and licensed in the state in which the project is located.

1. Design window/door system, including glass and glazing, to meet specified structural performance criteria or, at a minimum, requirements of the Building Code.

2. Supervise preparation of shop and erection drawings.

3. Field review fabrication and installation of products to ensure they comply with those drawings and specified structural performance criteria.

4. Cost of engineering and field review to be included as part of cost for work under this section.

H. Regulatory Requirements: Emergency Egress or Rescue: Comply with requirements for sleeping units of ICB International Building Code.

I. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. First window installation shall serve as a mockup for review by Architect.

a. Do not proceed with additional installations until Architect has reviewed and approved of mockup window.

2. Window / Door flashing sequence mock up shall be performed at an in-situ location or contractor-constructed mock-up wall. Attendees shall include the following:

a. Architect
b. General Contractor
c. Window Installation Contractor
d. Window Manufacturer's Technical Representative

3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.

J. Pre-installation Conference: Conduct conference at Project Site.

1. Attendees to include:

a. Architect
b. Contractor
c. Applicator
d. Manufacturer’s Technical Representative

1. Agenda:
    a. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
    b. Review, discuss, and coordinate the interrelationship of vinyl windows with other exterior wall components. Include provisions for anchoring, flashing, weeping, sealants, and protecting finishes.
    c. Review and discuss the sequence of work required to construct a watertight and weather-tight exterior building envelope.
    d. Inspect and discuss the condition of substrate and other preparatory work performed by other trades.

1.9 DELIVERY, STORAGE AND HANDLING

A. Store window in an upright position in a clean and dry storage area above ground and protect from weather.

B. Keep handling to a minimum. Do not move materials except as needed for installation.

C. Windows delivered to the job site with broken flanges will be rejected by the Architect and must be replaced by Contractor at Contractor’s expense.

D. Store materials inside when possible, in a clean well-drained area free of dust and corrosive fumes. Keep water away from stored assemblies.

E. Stack frames vertically on edge so that water cannot accumulate on or within materials. Use wood, cork, or plastic shims between components to provide for water drainage and air circulation.

F. If interior storage cannot be provided, cover materials with tarpaulins or plastic hung on frames so as to provide air circulation and prevent contaminants from contacting window and glazing materials.

1.10 PROTECTION

A. Trades to take precautions necessary to protect materials, before and after installation, from lime, mortar, water run-off from concrete or copper, careless handling of tools, weld spatter, acids, roofing tar, solvents, abrasive cleaners and other items that could damage glass surfaces and finishes.

B. Trades are not to rely on factory applied protective plastic films to protect materials.

1.11 SITE CONDITIONS

A. Report in writing any defects in existing work, or unsatisfactory site conditions.

B. Start no work until conditions are satisfactory.

C. Start of work shall imply acceptance of existing conditions and surfaces.

D. Glaze without compounds, sealants, or tapes only when glazing surfaces are at temperatures recommended by tape or sealant manufacturer.

1.12 SCHEDULING/COORDINATION

A. Schedule activities such as welding, sandblasting, grinding of steel or concrete, mortal work, acid etching and any other work harmful to finishes or glass, to be completed before start of window installation.

B. When such activities must be carried out in vicinity of stored or installed windows provide hoarding or protection recommended by glazing manufacturer.

C. Coordinate installation of anchors and structural connections with appropriate Sections.

D. Coordinate work with related trades to ensure rough openings, structural supports, curbing and flashing are installed correctly to complement work of this section.

1.13 WARRANTY

A. Manufacturer's Warranty: Manufacturer agrees to repair or replace vinyl windows that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

a. Failure to meet performance requirements.
b. Structural failures including excessive deflection, water leakage, and air infiltration.
c. Faulty operation of movable sash and hardware.
d. Deterioration of materials and finishes beyond normal weathering.
e. Failure of insulating glass.

2. Warranty Period:

a. Window: 10 years from date of Substantial Completion.
b. Glazing Units: 10 years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Corrosion Resistance: All materials used internally or externally to be corrosion resistant, non-staining, non-bleeding, and compatible with adjoining materials.

1. All internal reinforcing steel shall be galvanized or shall have other corrosion resistance suitable to the Architect.

B. Operating Types: Provide the following operating types in locations indicated on Drawings:

1. Casement: Project out.
2. Single hung (Vertical sliding).
3. Fixed.

C. Frames and Sashes: Impact-resistant, UV-stabilized PVC complying with AAMA/WDMA/CSA 101/I.S.2/A440.

1. Finish: Integral color, white.

A. Insulating-Glass Units: ASTM E 2190, certified through IGCC as complying with requirements of IGCC. CBA rated when tested according to ASTM E 773/E 774.

1. Glass: ASTM C 1036, Type 1, Class 1, q3.

a. Tint: Clear.
b. Kind: Fully tempered where indicated on Drawings.

2. Lites: As indicated on drawings.
3. Filling: Fill space between glass lites with argon/air (90%/10%)
4. Low-E Coating: Pyrolytic on second surface.

B. Glazing System: Manufacturer's standard factory-glazing system that produces weather-tight seal.

C. Hardware, General: Provide manufacturer's standard hardware fabricated from aluminum, stainless steel, carbon steel complying with AAMA 907, or other corrosion-resistant material compatible with adjacent materials; designed to smoothly operate, tightly close, and securely lock windows, and sized to accommodate sash weight and dimensions.

1. Exposed Hardware Color and Finish: As selected by Architect from manufacturer's full range.

D. Projected Window Hardware:

1. Gear-Type Rotary Operators: Complying with AAMA 901 when tested according to ASTM E 405, Method A. Provide operators that function without requiring the removal of interior screens or using screen wickets.

a. Type and Style: As selected by Architect from manufacturer's full range of types and styles.

2. Hinges: Manufacturer's standard type for sash weight and size indicated.
3. Single-Handle Locking System: Operates positive-acting arms that pull sash into locked position. Provide one arm on sashes up to 29 inches (735 mm) tall and two arms on taller sashes.

E. Hung Window Hardware:

1. Counterbalancing Mechanism: Complying with AAMA 902, concealed, of size and capacity to hold sash stationary at any open position.
2. Locks and Latches: Allow unobstructed movement of the sash across adjacent sash in direction indicated and operated from the inside only.
3. Tilt Hardware: Releasing tilt latch allows sash to pivot about horizontal axis to facilitate cleaning exterior surfaces from the interior.

F. Weather Stripping: Provide full-perimeter weather stripping for each operable sash unless otherwise indicated.

G. Anchors and Fasteners:

1. Noncorrosive and compatible with window members, trim, hardware, anchors, and other components.

2. Fasteners exposed to external environments and fasteners used to attach window flanges to be stainless steel or hot-dipped galvanized.

3. Fasteners exposed to view: Do not use exposed fasteners to the greatest extent possible. For application of hardware, use fasteners that match finish hardware being fastened.

2.2 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide the following:

1. VPI Quality Windows
   a. Endurance Series Steel-Reinforced Vinyl

2. No substitutions.

B. Source Limitations: Obtain vinyl windows from single source from single manufacturer.

2.3 INSECT SCREENS

A. General: Fabricate insect screens to fully integrate with window frame. Provide screen for each operable exterior sash. Screen wickets are not permitted.

1. Type and Location: Full, inside for open-out sashes; Half, outside for single-hung sashes.

B. Aluminum Frames: Manufacturer's standard aluminum alloy complying with SMA 1004 or SMA 1201. Fabricate frames with mitered or coped joints or corner extrusions, concealed fasteners, and removable PVC spline/anchor concealing edge of frame.

1. Tubular Framing Sections and Cross Braces: Roll formed from aluminum sheet.
2. Finish for Exterior Screens: Baked-on organic coating in color to match windows.

C. Glass-Fiber Mesh Fabric: 18-by-16 mesh of PVC-coated, glass-fiber threads; woven and fused to form a fabric mesh resistant to corrosion, shrinkage, stretch, impact damage, and weather deterioration. Comply with ASTM D 3656.

1. Mesh Color: Manufacturer's standard

2.4 FABRICATION

A. Fabricate vinyl windows in sizes indicated. Include a complete system for assembling components and anchoring windows.

B. Glaze vinyl windows in the factory.

C. Weather strip each operable sash to provide weather-tight installation.

D. Hardware: Mount hardware through double walls of vinyl extrusions or provide corrosion-resistant reinforcement.

E. Complete fabrication, assembly, finishing, hardware application, and other work in the factory to greatest extent possible. Disassemble components only as necessary for shipment and installation. Allow for scribing, trimming, and fitting at Project site.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Verify rough opening dimensions, levelness of sill plate, and operational clearances.

C. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure weathe-rtight window installation.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Comply with manufacturer's written instructions for installing windows, hardware, accessories, and other components. For installation procedures and requirements not addressed in manufacturer's written instructions, comply with installation requirements in ASTM E 2112.

B. Install windows level, plumb, square, true to line, without distortion, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction to produce weather-tight construction.

3.3 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.

1. Testing and inspecting agency will interpret tests and state in each report whether tested work complies with or deviates from requirements.

B. Testing Services: Testing and inspecting of installed windows shall take place as follows:

1. Testing Methodology: Testing of windows for air infiltration and water resistance shall be performed according to ASTM E-1105.

a. In addition, the attached Window Test Flowchart shall be used as a guide for window testing.

2. Water-Resistance Testing:

a. Test Pressure: Two-thirds times test pressure required to determine compliance with AAMA/WDMA/CSA 101/I.S.2/A440 performance grade indicated.
b. Allowable Water Infiltration: No water penetration.

3. Testing Extent:

a. Minimum number of tests to be conducted: Four (4)

1) Two tests of first installation;
2) Two tests at 50% installation.

b. Additional testing shall be conducted to the extent allowed by the Owner's budget for window testing.

1) It is anticipated that the Owners will engage a testing service that charges by the day. In this case, the testing service shall test as many windows as possible for each day they are hired, but not less than two (2) per day of hire.

4. Test Reports: Prepared according to ASTM E-1105.

C. Remove and replace noncomplying windows and retest as specified above.

D. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.

E. Prepare test and inspection reports.

3.4 ADJUSTING, CLEANING, AND PROTECTION

A. Adjust operating sashes and hardware for a tight fit at contact points and weather stripping for smooth operation and weather-tight closure.

B. Clean exposed surfaces immediately after installing windows. Remove excess sealants, glazing materials, dirt, and other substances.

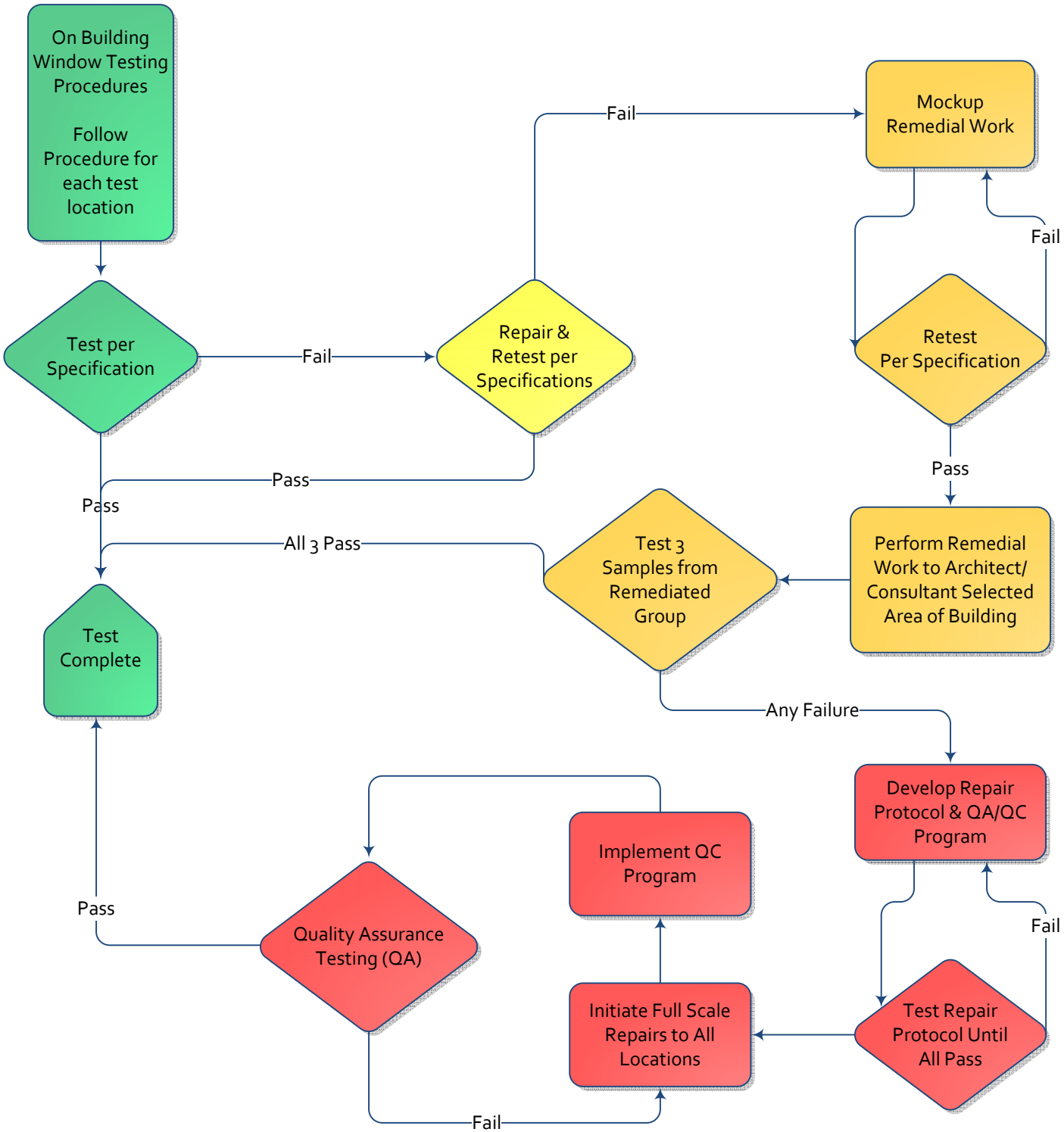
1. Keep protective films and coverings in place until final cleaning.

C. Remove and replace sashes if glass has been broken, chipped, cracked, abraded, or damaged during construction period.

D. Protect window surfaces from contact with contaminating substances resulting from construction operations. If contaminating substances do contact window surfaces, remove contaminants immediately according to manufacturer's written instructions.

END OF SECTION

On-Building Window Testing Procedure



SECTION 09 90 00 – PAINTING AND COATING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This section of work shall include all labor, materials, tools, scaffolds and other equipment services and supervision required to cover with paint the surfaces of the building or structure, the building services and accessories not otherwise protected or covered, as shown on the "Paint Schedule", to the full intent of the drawings and specifications.

B. All finished areas that are affected by the work (new and existing) are to be fully prepared and painted in accordance with this specification in colors to match existing.

C. All surfaces to receive painting are to be fully finished, suitable for the application of pre-treatments, surface preparation, priming and coating in accordance with the Painting Specification Manual.

D. Section Includes:

1. Surface preparation;

2. Field application of paints and other coatings.

3. Surfaces to be finished are indicated in this section and on the drawings.

E. Related Sections:

1. 07 46 46 – Fiber Cement Siding and Trim.

2. 07 92 00 – Joint Sealers

1.3 REFERENCES

A. MPI (APL) – Master Painters Institute Approved Products List; Master Painters and Decorators Association; current editions, www.paintfinfo.com.

B. MPI (APSM) – Master Painters Institute Architectural Painting Specification Manual; Master painters and Decorators Association.

C. PDCA (MAN) – Architectural Specification Manual; Painting and Decorating Contractors of America, and the State in which the Project is located chapter.

1.4 DEFINITIONS

A. Gloss Level 1: Not more than 5 units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.

B. Gloss Level 3: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

C. Gloss Level 4: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.

D. Gloss Level 5: 35 to 70 units at 60 degrees, according to ASTM D 523.

E. Gloss Level 6: 70 to 85 units at 60 degrees, according to ASTM D 523.

F. Gloss Level 7: More than 85 units at 60 degrees, according to ASTM D 523.

1.5 ACTION SUBMITTALS

A. Submit samples in accordance with Section 01 30 00 – Administrative Requirements as requested by the Architect.

B. Product Data: For each type of product. Include preparation requirements and application instructions.

C. Samples for Initial Selection: For each type of topcoat product.

D. Samples for Verification: For each type of paint system and each color and gloss of topcoat.

1. Submit Samples on rigid backing.
2. Label each Sample for location and application area.

E. Product List: For each product indicated, include the following:
1. Printout of current "MPI Approved Products List" for each product category specified, with the proposed product highlighted.
2. VOC content.

F. Submit list of all painting materials to the Architect for review prior to ordering materials.

G. When requested, submit invoice list of all paint materials ordered for project work indicating manufacturer, types and quantities for verification and compliance with specification and design requirements.

H. At project completion, provide an itemized list complete with manufacturer, paint type and color coding for all colors used for Owner's later use in maintenance.

I. Substitutions:

1. Substitutions conforming to this specification must be identified in writing by contractor for approval by Architect.

2. Changing manufacturers' brands, sources of supply of painting materials from those previously approved must be approved by Architect.

3. Request for alternative approval must be submitted in writing and be accompanied by full literature and recommendations from manufacturers concerned.

1.6 QUALITY CONTROL AND ASSURANCE

A. Retain purchase orders, invoices and other documents to prove that material used in contract meets requirements of specification and produce when requested by Architect.

B. Conform to MPI's Painting Architectural Specification Manual and the Maintenance Repainting Manual, latest editions.

C. Qualification of the Manufacturer: The paint products of the Paint Manufacturer shall be listed in the Painting Specification Manual under "Paint Product Recommendation" section, or approved equivalent.

D. Qualification of Applicators: The contractor shall have a minimum of five (5) years proven satisfactory experience. This contractor shall maintain a qualified crew of painters throughout the duration of the work who shall be qualified to fully satisfy the requirements of this specification.

E. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Architect will select one surface to represent surfaces and conditions for application of each paint system specified in Part 3.

a. Vertical and Horizontal Surfaces: Provide samples of at least 10 sq. ft.
b. Other Items: Architect will designate items or areas required.

2. Final approval of color selections will be based on mockups.

a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Owner.

3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.

4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

5. When requested by the Architect, prepare and repaint designated surface, area or room to workmanship standards of the MPI Repainting Manual for review and approval. When approved, surface, area, room and/or items shall become acceptable standard of finish quality for similar on-site repainting work.

F. Pre-installation Conference: Conduct conference at Project Site.

1. Meet with Owner, Architect, Owner's insurer if applicable, Installer, and installers whose work interfaces with or affects related assemblies.

2. Review methods of procedures related to application.

3. Examine substrate conditions for compliance with requirements, including flatness and attachment to structural members.

4. Document proceedings, including corrective measures and actions required, and furnish copy of record to each participant.

1.7 DELIVERY, STORAGE AND HANDLING

A. Deliver and store materials in manufacturer's original container, sealed with labels intact.

B. Ensure dry delivery and storage of materials and equipment at site.

C. Indicate on containers or wrappings:

1. Manufacturer's name and address;

2. Type of paint;

3. Compliance with applicable standard;

4. Color number in accordance with established color schedule.

D. Store materials and equipment in a well-ventilated place with temperature range 50˚ F to 85˚ F.

1. Maintain containers in clean condition, free of foreign materials and residue.

2. Remove rags and waste from storage areas daily.

1.8 ENVIRONMENTAL CONDITIONS

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50˚ F and 95˚ F.

B. Do not apply paints in snow, rain, fog, or mist; when relative humidity exceeds 85 percent; at temperatures less than 5˚ F above the dew point; or to damp or wet surfaces.

C. Apply paint finishes only when temperature and ventilation at location of installation can be satisfactorily maintained within manufacturer's recommendations. Substrate, ambient temperature and humidity must be within limits prescribed by manufacturer.

1. Provide temporary heating where permanent facilities are not available to maintain minimum recommended temperatures.

D. Apply paint finish only in areas where dust is no longer being generated by related construction operations such that airborne particles will not affect the quality of the finished surface.

E. Apply paint only when surface to be painted is dry, properly cured and adequately prepared.

1.9 WARRANTY

A. Provide manufacturer's standard warranty for paint finishes.

PART 2 - PRODUCTS

2.1 MATERIALS

A. All materials (primers, paints, coatings, varnishes, stains, lacquers, fillers, thinners, solvents, etc.) shall be in accordance with the MPI Manuals "Approved Product List".

B. Other paint materials such as linseed oil, shellac, turpentine, etc. shall be the highest quality product of an approved manufacturer listed in the MPI Manuals and shall be compatible with other coating materials as required.

C. Material Compatibility:

1. Systems could fail if paints used for individual coats are incompatible. MPI's paint systems match primers and topcoats and take compatibility into consideration.

2. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.

3. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

D. VOC Content: Provide materials that comply with VOC limits of authorities having jurisdiction.

E. Where required, paints and coatings shall meet flame spread and smoke developed ratings designated by local Code requirements and/or authorities having jurisdiction.

2.2 MANUFACTURERS

A. All exterior paint to be Sherwin Williams A-100 Base, Satin Finish, custom colors available from Sherwin Williams.

B. Substitutions: Submit per Section 01 60 00 – Administrative Requirements.

2.3 TOOLS AND EQUIPMENT

A. Painting equipment to best trade standards for type of product and application.

B. Architect will determine areas where power tools or equipment may be used for both preparing and painting of substrate.

2.4 MIXING AND TINTING

A. Unless otherwise specified, paints shall be ready-mixed. Re-mix prior to application to ensure color and gloss.

B. Paste, powder or catalyzed paint mixes shall be mixed in strict accordance with manufacturer's written instructions.

C. Perform all color tinting operations prior to delivery of paint to site.

D. Where thinner is used, addition shall not exceed paint manufacturer's recommendations

E. Confirm with manufacturer that the addition of tinting components will not significantly affect performance characteristics

2.5 SOURCE QUALITY CONTROL

A. Testing of Paint Materials: Owner reserves the right to invoke the following procedure:

1. Owner will engage the services of a qualified testing agency to sample paint materials. Contractor will be notified in advance and may be present when samples are taken. If paint materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.

2. Testing agency will perform tests for compliance with product requirements.

3. Owner may direct Contractor to stop applying paints if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

PART 3 - EXECUTION

3.1 SCHEDULING OF WORK

A. Submit work schedule starting and final completion dates for approval by Architect.

B. Take measures necessary to complete work within approved scheduled time. Change in schedule must be approved by Architect.

C. Coordinate execution with other work at site.

3.2 EXAMINATION

A. Prior to commencement of work of this section, thoroughly examine all conditions and surfaces scheduled to be repainted and report in writing to the Architect any conditions or surfaces that will adversely affect work of this section.

B. No repainting or painting work to commence until all such adverse conditions and defects have been corrected and surfaces and conditions are acceptable to the Architect.

C. Report to Architect conditions of deteriorated materials found during preparation of surfaces to be painted, not previously disclosed.

D. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

1. Concrete and Fiber Cement: 12 percent.
2. Wood: 15 percent.

E. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers.

F. Proceed with coating application only after unsatisfactory conditions have been corrected.

1. Application of coating indicates acceptance of surfaces and conditions.

3.3 PREPARATION

A. Protect paint and painting equipment before use and during length of contract from climatic elements.

B. Protect all adjacent surfaces and areas from painting operations and damage by drop cloths, shields, masking, templates, or other suitable protective means and make good any damage caused by failure to provide such protection.

C. Comply with manufacturer's written instructions and recommendations in "MPI Manual" applicable to substrates and paint systems indicated.

D. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection.

E. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and re-prime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

F. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.

1. Prepare as directed in MPI Architectural Painting Specification Manual.

G. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.

H. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.

I. Wood Substrates:

1. Scrape and clean knots. Before applying primer, apply coat of knot sealer recommended in writing by topcoat manufacturer for exterior use in paint system indicated.
2. Sand surfaces that will be exposed to view, and dust off.
3. Prime edges, ends, faces, undersides, and backsides of wood.
4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

J. Drywall: Surfaces shall be in a ready condition to paint. Remove contamination, prime surface to show defects. Any imperfections showing after application of the prime coat shall be corrected by drywall contractor. After defects have been remedied, proceed with paint coatings.

K. Metal Flashing with Inorganic Zinc Rich Primer: Prepare as directed by applicator of zinc rich primer.

L. Custom Metal Fabrications and Metal Doors/Frames:

1. Prepare as directed in Section 5.3 – Surface Preparation, MPI Architectural Painting Specification Manual.

2. Ensure all soldering residue has been cleaned from the surface of the metal and neutralized.

M. Metal Doors and Frames:

1. Prepare as directed in Section 5.3 – Surface Preparation, MPI Architectural Painting Specification Manual.

N. Provide for protection of passing pedestrians and the general public.

3.4 APPLICATION

A. Apply paints according to manufacturer's written instructions and recommendations in "MPI Manual."

1. Use applicators and techniques suited for paint and substrate indicated.

2. Paint surfaces behind movable items same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed items with prime coat only.

B. Do not paint unless substrates are acceptable and/or until all environmental conditions (heating, ventilation, lighting, weather conditions and precipitation, or completion of other work) are acceptable for application of products.

C. Cold weather painting, when temperatures are less than 50 degrees F, is only permitted when paints formulated for lower temperatures are used and manufacturer’s limitations are observed for maximum humidity levels and minimum temperatures. Contractor to submit technical information regarding paint manufacturer’s recommendations for cold weather work and protection.

D. Cold weather application of paint is not allowed if ambient humidity levels are over 85%.

E. Paint and repaint all surfaces requiring paint, stain or coating to minimum MPI Manual finish requirements with application methods in accordance with best trade practices for type and application of materials used.

F. Painting coats specified are intended to cover surfaces satisfactorily when applied at proper consistency and in accordance with manufacturer’s recommendation

G. Method of application and uniform coats of specified film thickness be in agreement with paint supplier and Architect.

H. Apply each coat at the proper consistency.

I. Sand lightly and dust between coats to achieve an anchor for the next coat and to remove defects visible from a distance up to 3 ft.

J. Do not apply finishes on surfaces that are not sufficiently dry. Unless manufacturer’s directions state otherwise, each coat shall be sufficiently dry and hard before a following coat is applied.

K. Interior woodwork which is to receive a paint or enamel finish shall be back-primed upon arrival at the job site with enamel undercoating paint

L. All interior surfaces requiring repairs as a result of exterior wall rehabilitation shall be sanded, primed and repaired to a paint ready finish only.

M. Custom flashing fabrications

1. Site preparation and painting will not be acceptable.

3.5 SITE QUALITY CONTROL

A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.

1. Contractor shall touch up and restore painted surfaces damaged by testing.

2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

B. Painted, repainted and primed surfaces shall be considered to lack uniformity and soundness if any of the following defects are apparent:

1. Runs, sags, hiding or shadowing by inefficient application methods;

2. Evidence of poor coverage at rivet heads, plate edges, lap joints, crevices, pockets, corners and re-entrant angles;

3. Damage due to touching before paint is sufficiently dry or any other contributory cause;

4. Damage due to application on moist surfaces are caused by inadequate protection for the weather;

5. Damage and/or contamination of paint due to window blown or air born contaminants;

6. Evidence of poor paint bonding.

7. Painted, repainted or primed surfaces rejected by the Architect shall be made good at the expense of the Contractor.

C. Examine surface for adequate preparation.

D. Check all materials for correctness.

3.6 CLEANING AND PROTECTION

A. Removal of all paint where spilled, splashed, splattered or sprayed as work progresses using means and materials that are not detrimental to affected surfaces.

B. Keep work area free from an unnecessary accumulation of tools, equipment, surplus materials and debris.

C. Remove combustible rubbish material and empty paint cans each day and safely dispose of same in accordance with requirements of authorities having jurisdiction.

D. Clean equipment and dispose of wash water / solvents as well as all other cleaning and protective materials, paints, thinners, paint removers/strippers, in accordance with the safety requirements of authorities having jurisdiction.

E. Protect area where paint has been applied and avoid scuffing newly applied paint.

3.7 PAINT SCHEDULE

A. Exterior Paints:

1. All colors to be selected by the Architect to match existing.

2. Window trim: Color 1

3. Belly bands, other miscellaneous trim: Color 1

4. Field color of fiber cement cladding: Color 1 and Color 2

5. Field-painted metal flashing assemblies: Saddle flashings, through-wall flashings, window flashings, balcony flashings, and other metal flashings as shown on the Drawings: Color 3 - TBD

    a. All custom flashing to be shop painted by approved applicator.

B. Interior Paints:

1. All colors to be selected by Architect to match existing.

2. Interior gypsum wall board: Color 4

3. Interior wood trim: Color 5.

END OF SECTION

SECTION 15 10 00 – PLUMBING

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section includes: Plumbing work associated with the re-cladding and framing repair of the buildings.

1. Piping in exterior walls at locations where framing is repaired is to be re-plumbed in like/kind and compliant with applicable codes.

B. Related Sections

1. 01 10 00 – Scope of Work

2. 02 41 00 - Demolition

1.03 SUBMITTALS

A. Submit proposed frost-free hose bib if existing hose bibs are unable to be re-used. Provide the following information:

1. Product Data

2. Installation Instructions

3. Warranty Information

1.04 QUALIFICATIONS

A. All materials furnished and all work installed shall comply with all building and fire codes, the requirements of local utility companies, and the requirements of all government agencies having jurisdiction.

B. Existing pipes found to be in good serviceable condition may be re-used. It is anticipated that the existing components of the plumbing system will for the most part be able to be re-used.

1.05 FIELD MEASUREMENTS

A. Field-verify measurements and coordinate work to adjust to the new exterior cladding.

1.06 COORDINATION

A. Provide coordination of scheduling and sequencing with other trades.

PART 2 - PRODUCTS

2.01 MATERIALS

A. All pipe, assemblies, and equipment shall bear the approval label of and/or be listed by a recognized listing company.

B. All materials and apparatus required for work, shall be new, and of first-class quality, except where it is deemed acceptable to re-use existing components.

C. It is anticipated that all hose bibs will remain in place. However, if they require replacement due to in-situ condition:
   1. New Hose bibs shall be: automatic draining, manufactured to meet ASSE Standard 1019-B, ¾" male hose thread, anti-siphon vacuum breaker, brass exterior finish, molded nitrile valve, hemispherical cushion type plunger, metal handle, 125 psi maximum pressure, 120˚ F maximum temperature.
      a. Basis of Design: Manufacturer: Woodford – Model 25 or approved equal.

PART 3 - EXECUTION

3.01 EXISTING WORK

A. Disconnect and remove existing hose bibs, and any other pipes, as need be, to properly integrate with the new exterior cladding.

B. Plumbing systems not to be replaced are to always be left in a safe condition and any parts of the system that were shut down for construction activities are to be restored to operational condition by the end of the work day.

3.02 INSTALLATION

A. Any permit necessary to complete the work are the responsibility of the Contractor.

B. All work shall be done by a person skilled in the trade and done in a neat and workman like manner.

C. All materials shall be installed with the knowledge and approval of the Owner or Consultant.

D. The finished project shall be a complete and workable facility.

3.03 FIELD QUALITY CONTROL

A. Section 01 40 00 – Quality Requirements: Testing and inspection services.

B. Test all pipe runs and connections that were in any way affected by the work. Inspect leaks and proper operation.

3.04 CLEANING

A. Section 01 70 00 – Closeout procedures: Cleaning.

B. Remove all trash and debris from work sites at the end of each day.

C. Clean finishes and touch up any minor damage.

3.05 PROTECTION OF FINISHED WORK

A. Section 01 70 00 – Closeout Procedures: Protecting finished work.

END OF SECTION

SECTION 16 10 00 – ELECTRICAL

PART 1 - GENERAL

1.01 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.02 SUMMARY

A. Section include: Electrical work associated with the re-cladding and framing repair of the building.

1. Exterior electrical outlet boxes are to be re-set, or adjusted, as need be, to conform to the details and requirements of the new rain screen cladding.

2. Existing electrical light fixtures are to be removed, labeled, and stored for re-use after siding repair or replacement is complete.

3. Circuits in exterior walls at locations where framing is repaired are to be re-strung using material in like/kind and compliant with applicable codes

4. Existing exposed electrical work encased in conduit is to be relocated inside of stud wall cavity.

5. Low voltage work, including:

a. Cable TV box, conduits, exposed wiring etc.
b. Fire alarm panels, annunciators, etc. Keep fire alarm operable.

B. Related Sections

1. 01 10 00 – Scope of Work.

2. 02 41 00 – Demolition.

1.03 REFERENCES

A. NEMA WD 6 (National Electrical Manufacturers Association) – Wiring Devices-Dimensional Requirements.

1.04 SUBMITTALS

A. No submittals required. Any new material to be used is to be approved by the Owner's representative.

1.05 QUALIFICATIONS

A. All materials furnished and all work installed shall comply with all building and fire codes, the requirements of local utility companies, and the requirements of all government agencies having jurisdiction.

B. Existing electrical wire, conduit, junction boxes, devise boxes, devices, plates, etc. found to be in good serviceable condition may be re-used. It is anticipated that the existing components of the electrical system will for the most part be able to be re-used.

1.06 FIELD MEASUREMENTS

A. Field-verify measurements and coordinate work to adjust device boxes to the new exterior cladding.

1.07 COORDINATION

A. Provide coordination of scheduling and sequencing with other trades.

PART 2 - PRODUCTS

2.01 MATERIALS

A. All electrical material, assemblies, and equipment shall bear the approval label of and be listed by a recognized listing company.

B. All materials and apparatus required for work, shall be new, and of first-class quality, except where it is deemed acceptable to re-use existing components.

PART 3 - EXECUTION

3.01 EXISTING WORK

A. Disconnect and remove electrical components at locations where framing is to be repaired and/or exterior device boxes are to be adjusted to properly meet the new exterior cladding. Circuits are to always be left in a safe condition.

B. Re-set new or existing wiring and conduit behind sheathing in wall cavity unless structural or other existing component make installation of wiring in cavity impractical. Where this type of condition is found, advise Owner and Architect immediately.

3.02 INSTALLATION

A. All work shall be done by a person skilled in the craft and done in a neat and workman like manner.

B. All materials shall be installed with the knowledge and approval of the Owner or Architect.

C. The finished project shall be a complete and workable facility.

3.03 FIELD QUALITY CONTROL

A. 01 40 00 – Quality Requirements: Testing and inspection services.

B. Test all devices and circuits. Inspect for proper connection and operation.

3.04 CLEANING

A. 01 70 00 – Closeout procedures: Cleaning.

B. Remove all trash and debris from work sites at the end of each day.

C. Clean finishes and touch up any minor damage.

3.05 PROTECTION OF FINISHED WORK

A. 01 70 00 – Closeout Procedures: Protecting finished work.

END OF SECTION