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PROJECT MANUAL

Montclair State University

Police Station – Renovations
Montclair, NJ

DATE: Aug 04, 2023
Revised October 3, 2023

PROJECT NO. 23014.00

SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Project Identification: Police Station Renovations

Montclair State University – Police Station Renovations

B. Architect's Name: JRS Architect

C. Engineer's Name: Boswell Engineering

D. Project Summary:
The project "Renovations" includes the work as shown on the drawings and described in the specifications. There are existing Men's and Women's Locker Rooms and Toilets. The projects calls for modications to the Layouts of Men's and Women's ADA Locker Rooms, ADA Toliets, BreakRoom and addition of new ADA Unisex Toilet and ADA Unisex Shower Room. The existing floor in these areas is in dilapidated condition and requires repair work. The project also includes installing new floor, wall and ceiling finishes, Plumbing Equipment, Lighting Fixtures in these areas.

E. Particular Project Requirements:
1. Existing conditions and proposed work shall be reviewed and coordinated.
2. Hazardous waste work by contractor shall be completed prior to start of demolition.

F. Permits and Fees: Apply for and obtain permits. Copies to Architect.

G. Codes: Comply with applicable codes and regulations of authorities having jurisdiction. Submit copies of inspection reports, notices and similar communications to Architect.

H. Dimensions: Verify dimensions indicated on drawings with field dimensions before fabrication or ordering of materials. Do not scale drawings.

SECTION 011000 - SUMMARY

I. Existing Conditions: Notify Architect of existing conditions differing from those indicated on the drawings. Do not remove or alter structural components without prior written approval.

J. Coordination:
1. Coordinate the work of all trades.
2. Prepare coordination drawings for areas above ceilings where close tolerances are required between building elements and mechanical and electrical work.
3. Verify location of utilities and existing conditions.

K. Installation Requirements, General:
1. Inspect substrates and report unsatisfactory conditions in writing.
2. Do not proceed until unsatisfactory conditions have been corrected.
3. Take field measurements prior to fabrication where practical. Form to required shapes and sizes with true edges, lines and angles. Provide inserts and templates as needed for work of other trades.
4. Install materials in exact accordance with manufacturer's instructions and approved submittals.
5. Install materials in proper relation with adjacent construction and with proper appearance.
6. Restore units damaged during installation. Replace units which cannot be restored at no additional expense to the Owner.
7. Refer to additional installation requirements and tolerances specified under individual specification sections.

L. Limit of Use: Limit use of work as indicated. Keep driveways and entrances clear.

M. Existing Construction: Maintain existing building in a weathertight condition. Repair damage caused by construction operations. Protect building and its occupants.

N. Definitions:
1. Provide: Furnish and install, complete with all necessary accessories, ready for intended use. Pay for all related costs.
2. Approved: Acceptance of item submitted for approval. Not a limitation or release for compliance with the Contract Documents or regulatory requirements. Refer to limitations of 'Approved' in General and Supplementary Conditions.
3. Match Existing: Match existing as acceptable to the Owner.

O. Intent: Drawings and specifications are intended to provide the basis for proper completion of the work suitable for the intended use of the Owner. Anything not expressly set forth but which is reasonable implied or necessary for proper performance of the project shall be included.

P. Writing Style: Specifications are written in the imperative mode. Except where specifically intended otherwise, the subject of all imperative statements is the Contractor. For example, 'Provide tile' means 'Contractor shall provide tile.'

1.03 OWNER OCCUPANCY

A. Owner intends to continue to occupy adjacent portions of the existing building during the entire construction period.

B. Owner intends to occupy the Project upon Substantial Completion.

C. Cooperate with Owner to minimize conflict and to facilitate Owner's operations.

1.05 CONTRACTOR USE OF SITE AND PREMISES

A. Construction Operations: Limited to areas noted on Drawings.

SECTION 011000 - SUMMARY

B. Provide access to and from site as required by law and by Owner:
1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
2. Do not obstruct roadways, sidewalks, or other public ways without permit.

C. Existing building spaces may not be used for storage.

D. Utility Outages and Shutdown:
1. Prevent accidental disruption of utility services to other facilities.

2 PRODUCTS -

A. Product Selections: Comply with the following selection of products, materials and equipment:
1. Single Product Named: Provide that product or approved equal that meets or exceeds the specified product. Any proposed substitutions must be submitted prior to deadline of questions.
2. Refer to Part 2 - 2.1 Manufactures for requirements for substitutions.

2. EXECUTION -

END OF SECTION

SECTION 013113 – PROJECT COORDINATION

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Construction mobilization.

B. Coordination drawings.

C. Contractor Regulations

1.02 CONSTRUCTION MOBILIZATION

A. Cooperate with the Project Coordinator in allocation of mobilization areas of work; for field office and sheds, for access, traffic, and parking facilities.

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

C. 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.

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

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

1.03 COORDINATION DRAWINGS

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

B. Review drawings prior to submission to Architect/Engineer.

1.04 CONTRACTOR REGULATIONS

A. Determine the coordination, policies and procedures with the client Agency with respect to parking, material staging, and storage areas, use of Client Agency utilities, allowable hours of construction, the need and location of construction and storage trailers, etc.

END OF SECTION

SECTION 013300 – SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Submittal procedures.

B. Proposed Products list.

C. Product Data.

D. Shop Drawings.

E. Samples.

F. Design data.

G. Certificates.

H. Manufacturer's instructions.

1.02 SUBMITTAL PROCEDURES

A. Use Projectmates for Submittals.

B. Transmit each submittal with Architect/Engineer accepted form.

C. Identify Project, Contractor, Subcontractor or supplier; pertinent drawing and detail number, and specification section number, as appropriate.

D. 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.

E. Schedule submittals to expedite the Project, and deliver to Architect/Engineer at business address. Coordinate submission of related items.

F. For each submittal for review, allow 14 days excluding delivery time to and from the Contractor.

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

H. Provide space for Contractor and Architect/Engineer review stamps.

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

J. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.

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

1.03 PROPOSED PRODUCTS LIST

A. Within 14 days after date of NTP, submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.

B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.

1.04 PRODUCT DATA

A. Product Data For Review:
   1. Submitted to Architect/Engineer for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
   2. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article in General Conditions

B. Product Data For Information:
   1. Submitted for the Architect/Engineer's knowledge as contract administrator or for the Owner.

C. Product Data For Project Close-out:
   1. Submitted for the Owner's benefit during and after project completion.

D. Submit the number of copies which the Contractor requires, plus two copies which will be retained by the Architect/Engineer.

E. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.

F. Indicate Product utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.

G. After review distribute in accordance with the Submittal Procedures article above and provide copies for record documents described in General Conditions.

1.05 SHOP DRAWINGS

A. Shop Drawings For Review:
   1. Submitted to Architect/Engineer for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
   2. After review, produce copies and distribute in accordance with SUBMITTAL PROCEDURES in General Conditions.

B. Submit the number of opaque reproductions which Contractor requires, plus two copies which will be retained by Architect/Engineer.

1.06 SAMPLES

A. Samples For Review:
   1. Submitted to Architect/Engineer for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents.
   2. After review, produce duplicates and distribute in accordance with SUBMITTAL PROCEDURES in General Conditions.

B. Samples For Information:
   1. Submitted for the Architect/Engineer's knowledge as contract administrator or for the Owner.

C. Samples For Selection:
   1. Submitted to Architect/Engineer for aesthetic, color, or finish selection.

SECTION 01 50 00 – TEMPORARY FACILITIES AND CONTROLS

PART 1 – GENERAL

1.1 Related Documents

1.1.1 Construction Documents and general provisions of the Agreement Between Owner and Construction Manager and the Guaranteed Maximum Price (GMP)

Amendment, including Division 00 General Conditions of the Contract for Construction and Supplementary Conditions and other Division 01 Specification Sections, applicable to this Section.

1.2 Summary

1.2.1 This Section includes temporary facilities and controls for which the Owner/ General Contractor are responsible. The contractor shall be responsible for providing and maintaining temporary facilities for the Police station and separator facilities for construction workers for the duration of the project. The Police Station trailer shall be ADA accessible.

1.2.2 All work which is within an existing facility must be performed such that the existing facility may remain functioning with little or no interruption. Take all necessary precautions and plan all work so that there will be a minimum of interruptions to the operations of the Owner.

1.2.3 Temporary utilities include, but are not limited to, the following:

1.2.2.1 Temporary water service and distribution

1.2.2.2 Temporary electric power and lighting services

1.2.2.3 Temporary heating, cooling and ventilation

1.2.2.4 Temporary telephone service and data

1.2.2.5 Temporary sanitary facilities including drinking water

Provide temporary ADA Mobile Restroom Trailer configured with 2 Toilets, 1 ADA Toilet, 1 urinal and 3 sinks. Provide **Electric:** standard 120V, single phase: uses (2)cords to separate 20 Amp circuits ;

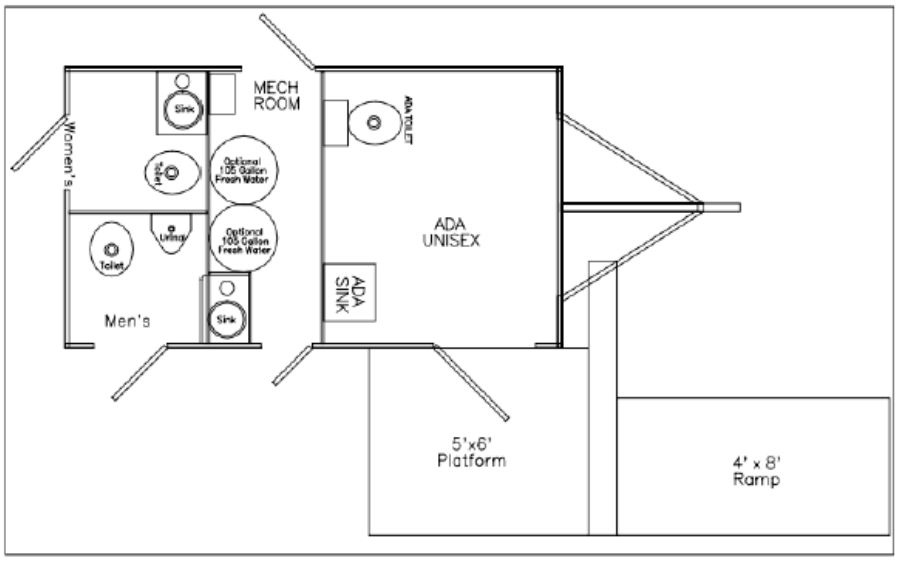
Freshwater: Uses ¾" standard city water hook-up to 200 gal tank;

Grey Water: Uses 3" pipe thread, to 2" Quick Connect Cam lock connection from 440 gal tank

SECTION 01 50 00 – TEMPORARY FACILITIES AND CONTROLS

(convertible to 3”). See manufacturer’s details for further details.

Acceptable units similar to the below floor plan: Units must provide required stairs and ADA ramp.



1.2.4 Support Facilities include, but not limited to the following:

1.2.4.1 Field offices –Construction Manager, Subcontractor, Owner, and Construction Administrator.

1.2.4.2 Storage and fabrication sheds.

1.2.4.3 Temporary enclosures.

1.2.4.4 Temporary lifts, hoists and elevator use.

1.2.4.5 Temporary project identification signs.

1.2.4.6 Temporary exterior lighting.

1.2.4.7 Collection and disposal of waste and cleaning.

1.2.4.8 Stairs.

1.2.5 Security and protection facilities include, but are not limited to, the following:

1.2.5.1 Temporary fire protection.

1.2.5.2 Permanent fire protection

1.2.5.3 Security for site and Agency.

1.2.5.4 Barricades, warning signs, and lights.

1.2.5.5 Enclosure fence.

1.2.5.6 Security enclosure and lockup.

1.2.5.7 Protection.

1.2.5.8 Traffic ways.

1.2.5.9 Identification badges for Construction Manager's personnel &

parking stickers.

1.3 Quality Assurance

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

1.3.1.1 Building and fire code requirements.

1.3.1.2 Health and safety regulations.

1.3.1.3 Utility company regulations.

1.3.1.4 Police, fire department, and rescue squad rules.

1.3.1.5 Environmental protection regulations.

1.3.1.6 Americans with Disabilities Act.

1.3.2 Standards: OSHA. Comply with NFPA 241 "Standard for Safeguarding Construction, Alteration, and Demolition Operations," ANSI A10 Series standards for "Safety Requirements for Construction and Demolition," and NECA 200 "Recommended Practice for Installing and Maintaining Temporary Electric Power at Construction Sites."

1.4 Project Conditions

1.4.1 Temporary Utilities: Prepare a schedule indicating dates for implementation and termination of each temporary utility. At the earliest feasible time, when acceptable to the Owner, the Construction Administrator, and Department of Administrative Services.

SECTION 01 50 00 – TEMPORARY FACILITIES AND CONTROLS

1.4.2 Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Relocate temporary services and facilities as the Work progresses. Do not overload facilities or permit them to interfere with progress. Take necessary fire-prevention measures. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on-site.

PART TWO: PRODUCTS

2.1 Materials

2.1.1 General: Provide new materials. If acceptable to the Architect, the Construction Manager may use undamaged, previously used materials in serviceable condition. Provide materials suitable for use intended.

2.2 Equipment

2.2.1 General: Provide equipment for the duration of the project. Maintenance and cleaning contract to be included. Provide equipment suitable for use intended.

1.2.1.1 The Construction Manager shall furnish tools, apparatus and appliances, hoists and/or cranes and power for same, scaffolding, runways, ladders, temporary supports and bracing and similar work or material necessary to insure convenience and safety in the execution of the Contract except where this is otherwise specified in any Specification Section. All such items shall meet the approval of the Owner but responsibility for design, strength and safety shall remain with the Construction Manager. All such items shall comply with Federal OSHA regulations and applicable codes, statutes, rules and regulations, including compliance with the requirements of the current edition of the "Manual of Accident Prevention in Construction" published by the Associated General Contractors (AGC) and the standards of the State Labor Department. 1.2.1.2 Staging, exterior and interior, required for the execution of this Contract, shall be furnished, erected, relocated if necessary and removed by the Construction Manager. Staging shall be maintained in a safe condition without charge to and for the use of all trades as needed.

PART THREE: EXECUTION

3.1 Temporary Utility Installation

3.1.1 Water Service: Install water service and distribution piping in sizes and pressures adequate for construction. Exercise measures to conserve water.

SECTION 01 50 00 – TEMPORARY FACILITIES AND CONTROLS

3.1.1.1 Extend branch piping with outlets located so water is available by hoses with threaded connections. Provide temporary pipe insulation to prevent freezing.

3.1.1.2 Use trigger-operated nozzles for water hoses, to avoid waste of water.

3.1.2 Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water

for use of construction personnel and of Police Department occupants. Separate facilities for construction personnel must be provided. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities**.**

3.1.2.1 Provide adequate number of facilities for use by all persons and trades employed on Work during construction period**.**

3.1.2.2 Maintain daily in clean and sanitary condition.

3.1.2.3 Toilets: Use of Owner's existing toilet facilities will not be permitted.

3.1.3 Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.

3.1.3.1 HVAC Equipment: Use of Owner's permanent HVAC system is prohibited. Provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.

a. Heating Units: Listed and labeled for type of fuel being consumed, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use.

b. Vent products of combustion directly to out of doors for all fuel-burning heaters and equip units with individual space thermostatic controls.

c. Enclose building prior to activating temporary heat in accordance with Temporary Exterior Enclosures paragraphs in this Section.

d. Permanent HVAC System: Use of Owner's permanent HVAC system during construction of prohibited**.**

3.1.3.2 Maintain minimum ambient temperature of 50 degrees F in areas where construction is in progress, unless indicated otherwise in specifications.

3.1.4 Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.

3.1.4.1 Provide dehumidification systems when required to reduce substrate moisture levels to level required to allow installation or application of finishes.

3.1.5 Electric Power Service: Connect to Owner's existing electric power service.

Maintain equipment in a condition acceptable to Owner.

3.1.5.1 Provide power outlets for construction operations, with branch wiring and distribution boxes located as needed. Provide flexible power cords, a minimum of 3 20 amp. Circuits but dependent on rental unit (Mobile Restroom Trailer) as required. Contractor shall feed temp restroom trailer with power via a aerial pathway as not to obstruct any sidewalks.

3.1.5.2 Power connection and consumption shall not disrupt Owner's need for continuous service. Verify location of power source, existing capacity, Owner's current and future needs during construction. Provide temporary power sufficient to meet Owner's operational requirements in the case of unavoidable interruption of power.

3.1.5.3 All shut downs or interruptions to electrical services shall be scheduled with and approved by Owner forty eight (48) hours in advance.

3.1.6 Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.

3.1.6.1 Provide and maintain lighting for construction operations to achieve a minimum lighting level of 10 foot candles.

3.1.6.2 Provide and maintain 2 foot candles lighting to exterior staging and storage areas after dark for security purposes.

3.1.6.3 Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required.

3.1.6.4 Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

3.1.6.5 Maintain lighting and provide routine repairs.

3.1.6.6 Permanent building lighting may be utilized during construction with Owner's prior approval.

3.2 Support Facilities Installation

3.2.1 Vehicular Access and Parking: Conduct the Work so as to ensure the least possible obstruction to vehicular traffic and inconvenience to the general public and the residents in the vicinity of the Work and to ensure the protection of persons, property and natural resources. No road or street shall be closed to the public except with the permission of the Owner and the proper governmental authority.

3.2.2 Project Signs: Provide Project signs as indicated. Unauthorized signs are not permitted.

3.2.2.1 Provide project identification sign of design and construction indicated on Drawings.

3.2.2.2 Comply with requirements of authorities having jurisdiction.

3.2.3 Temporary Signs: Provide other signs as indicated and as required informing public and individuals seeking entrance to Project.

3.3 Security and Protection Facilities Installation

3.3.1 Progress Cleaning: Comply with requirements specified in Section 01 70 00 - Execution.

3.3.2 Security: Provide security and facilities to protect Work, existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft to a degree approved by the Owner.

3.3.3 Temporary Exterior Enclosures: Provide temporary insulated weather-tight closure of exterior openings 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. All enclosures shall meet exiting requirements as may be required by jurisdictions having authority over the project.

3.3.4 Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner from fumes and noise and to prevent damage to existing materials and equipment.

3.3.5 Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.

3.3.5.1 Prohibit smoking on Owner's property.

3.3.5.2 Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.

3.3.5.3 Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.

3.3.5.4 Take all precautions to prevent possibility of fire resulting from construction operations. Particularly avoid hazardous accumulations of rubbish and unsecured, flammable materials.

3.3.5.5 Provide emergency fire extinguishing equipment of adequate type and quantity, readily available and properly maintained.

3.3.6 Temporary First Aid Facilities: Provide adequate first aid facilities for construction personnel.

SECTION 01 50 00 – TEMPORARY FACILITIES AND CONTROLS

END OF SECTION

2. Submit samples of finishes [from the full range of manufacturers' standard colors, in custom colors selected, textures, and patterns for Architect/Engineer selection.
3. After review, produce duplicates and distribute in accordance with SUBMITTAL PROCEDURES article above and for record documents purposes described in General Conditions.

D. Submit samples to illustrate functional and aesthetic characteristics of the Product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.

E. Include identification on each sample, with full Project information.

F. Submit the number of samples specified in individual specification sections; one of which will be retained by Architect/Engineer.

G. Reviewed samples which may be used in the Work are indicated in individual specification sections.

H. Samples will not be used for testing purposes unless specifically stated in the specification section.

1.07 DESIGN DATA

A. Submit for the Architect/Engineer's knowledge as contract administrator or for the Owner.

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

1.08 CERTIFICATES

A. When specified in individual specification sections, submit certification by the manufacturer, installation/application Subcontractor, or the Contractor to Architect/Engineer, in quantities specified for Product Data.

B. Indicate material or Product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.

C. Certificates may be recent or previous test results on material or Product, but must be acceptable to Architect/Engineer.

1.09 MANUFACTURER'S INSTRUCTIONS

A. When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, adjusting, and finishing, to Architect/Engineer for delivery to Owner in quantities specified for Product Data.

B. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.

END OF SECTION

SECTION 015600 - TEMPORARY BARRIERS AND ENCLOSURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Construction Drawings, Technical Specifications, Addenda, and general provisions of the Contract, including Contract General Conditions and Supplementary General Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. Temporary construction barriers, enclosures and passageways.
   1. Dust and debris barriers.
   2. Security barriers.
   3. Temporary chain link fencing.

B. Protection of completed Work.

C. Removal of construction facilities and temporary controls.

1.3 RELATED SECTIONS

A. Section 01100 - Summary of the Work: Contractor's use of site and premises

B. General Conditions – Article 4 – The Contractor

1.4 PROTECTION OF EXISTING CONDITIONS

A. Protection of Adjacent Facilities: Contractor shall restrict Work to limits indicated on the Drawings and as specified in Section 01 1100 - Summary of the Work: Protect existing, adjacent facilities from damage, including soiling and debris accumulation.

B. Protection of Existing Furniture, Fixtures and Equipment: As applicable, provide temporary enclosures, barriers and covers to protect existing furniture, fixtures and equipment remaining in Project area during construction.

1.5 MAINTENANCE OF CONSTRUCTION FACILITIES AND TEMPORARY CONTROLS

A. Maintenance: Use all means necessary to maintain temporary barriers and enclosures in proper and safe condition throughout progress of the Work.

B. Replacement: In the event of loss or damage, promptly restore temporary barriers and enclosures by repair or replacement at no change in the Contract Sum or Contract Time.

1.6 TEMPORARY BARRIERS, ENCLOSURES AND PASSAGEWAYS

A. Temporary Barriers, General: Provide temporary fencing, barriers and guardrails as necessary to provide for public safety, to prevent unauthorized entry to construction areas and to protect existing facilities and adjacent properties from damage from construction operations.

   1. Refer to temporary fencing and phasing plan in the Drawings. Comply with requirements indicated.

   2. Note requirements for continued occupancy and use of existing buildings and site areas during construction.

3. Comply with applicable code requirements and authorities having jurisdiction, including industrial safety regulations. Review requirements with DPMC Representative.

4. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairways, and other access routes for firefighting.

B. Temporary Closures: Provide temporary closures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weather-tight enclosure for building exterior.

1. Where heating or cooling is needed and permanent enclosure is not complete, provide insulated temporary enclosures. Coordinate closures with ventilating and material drying or curing requirements to avoid dangerous conditions and effects such as mold.

C. Temporary Partitions: Erect and maintain temporary partitions and temporary closures to limit dust and dirt migration, including migration into existing facilities, to separate areas from fumes and noise and to maintain fire-rated separations.

1. Dust barriers: Construct dustproof, floor-to-ceiling partitions of not less than nominal 4-inch (100-mm) studs, 2 layers of 3-mil (0.07-mm) polyethylene sheets, inside and outside temporary enclosure.
   a. Overlap and tape full length of joints.
   b. Include 5/8-inch thick gypsum board at temporary partitions serving as noise barrier.
   c. Insulate partitions to minimize noise transmission to adjacent occupied areas.
   d. Seal joints and perimeter of temporary partitions.

2. Dust barrier passages: Where passage through dust barrier is necessary, provide gasketed doors or heavy plastic sheets that effectively prevent air passage.
   a. Construct a vestibule and airlock at each entrance to temporary enclosure with not less than 48 inches (1219 mm) between doors.
   b. Maintain water-dampened foot mats in vestibule where passage leads to existing occupied spaces.
   c. Equip doors with security locks.

3. Fire-rated temporary partitions: Maintain fire-rated separations, including corridor walls and occupancy separations, by construction of stud partitions with gypsum board faces.
   a. Construction details shall comply with recognized time-rated fire-resistive construction. Typically, 1-hour rated partitions shall be 2x4 wood studs at 16-inches on center or 3-1/2 inch metal studs at 16-inches on center, with 5/8-inch thick Type X gypsum board at both faces, with joints filled, taped and topped.
   b. Seal partition perimeters with acceptable fire stopping and smoke seal materials.
   c. Construct fire-rated temporary partitions whenever existing time-rate fire-resistive construction is removed for 12 hours or more.

D. HVAC Protection: Provide dust barriers at HVAC return grilles and air inlets to prevent spread of dust and clogging of filters.

E. Temporary Floor Protection: Protect existing floors from soiling and damage.
1. Cover floor with 2 layers of 3-mil (0.07-mm) polyethylene sheets, extending sheets 18 inches (460 mm) up the side walls.

2. Cover polyethylene sheets with 3/4-inch (19-mm) fire-retardant plywood.

3. Provide floor mats to clean dust from shoes.

SECTION 015600 - TEMPORARY BARRIERS AND ENCLOSURES

F. Landscape Barriers: Provide barriers around trees and plants designated to remain.
   1. Locate barriers as directed outside of drip lines of trees and plants.

   2. Protect entire area under trees against vehicular traffic, stored materials, dumping, chemically injurious materials, and puddling or continuous running water.

   3. Contractor shall pay all costs to restore trees and plants within barriers that are damaged by construction activities. Restoration shall include replacement with plant materials of equal quality and size. Costs shall include all fines, if any, levied by authorities having jurisdiction.

G. Weather Closures: Provide temporary weather-tight closures at exterior openings to prevent intrusion of water, to create acceptable working conditions, to protect completed Work and to maintain temporary heating, cooling and ventilation. Provide access doors with self-closing hardware and locks.

H. Temporary Access, Passage and Exit Ways: Construct temporary stairs, ramps, and covered walkways, with related doors, gates, closures, guardrails, handrails, lighting and protective devices, to maintain access and exit ways to existing facilities to remain operational.

   1. Design and location of temporary construction shall be by Contractor, subject to review by DPMC Representative and authorities having jurisdiction.

   2. Provide temporary lighting, illuminated interior exit signage, non-illuminated directional and instructional signage, and temporary security alarms for temporary exits and exit passageways.

   3. Temporary measures shall suit and connect to existing building systems, and shall be approved by DPMC Representative and authorities having jurisdiction.

1.7 REMOVAL OF TEMPORARY BARRIERS AND ENCLOSURES

A. Removal of Temporary Barriers and Enclosures: Unless otherwise mutually agreed by DPMC Representative and Contractor, remove temporary materials, equipment, services, and construction prior to Contract Completion review.

B. Cleaning and Repairs: Clean and repair damage, soiling and marring caused by installation or use of temporary barriers and enclosures.

PART 2 - PRODUCTS

Not Used.

PART 3 - EXECUTION

Not Used.

END OF SECTION

SECTION 017000 – EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.01 PROJECT CONDITIONS

A. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

A. New Materials: As specified in product sections; match existing products and work for patching and extending work.

B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.

C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 6000 - Product Requirements.

PART 3 EXECUTION

3.01 EXAMINATION

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 misfabrication.

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 commencing 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.

3.02 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.

3.03 LAYING OUT THE WORK

A. Verify locations of survey control points prior to starting work.

B. Promptly notify Architect of any discrepancies discovered.

C. Protect survey control points prior to starting site work; preserve permanent reference points during construction.

D. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.

E. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Architect.

F. Utilize recognized engineering survey practices.

G. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:

1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations; and _____.
2. Grid or axis for structures.
3. Building foundation, column locations, ground floor elevations, and _____.

H. Periodically verify layouts by same means.

I. Maintain a complete and accurate log of control and survey work as it progresses.

3.04 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.

3.05 CUTTING AND PATCHING

A. Whenever possible, execute the work by methods that avoid cutting or patching.

B. Perform whatever cutting and patching is necessary to:
1. Complete the work.
2. Fit products together to integrate with other work.
3. Provide openings for penetration of mechanical, electrical, and other services.
4. Match work that has been cut to adjacent work.
5. Repair areas adjacent to cuts to required condition.
6. Repair new work damaged by subsequent work.
7. Remove samples of installed work for testing when requested.
8. Remove and replace defective and non-conforming work.

C. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.

D. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.

E. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.

F. Restore work with new products in accordance with requirements of Contract Documents.

G. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

H. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07 8400, to full thickness of the penetrated element.

I. Patching:

1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
2. Match color, texture, and appearance.
3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

3.06 PROGRESS CLEANING

A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.

C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.

D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

3.07 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 coverings when no longer needed; reuse or recycle coverings if possible.

3.08 ADJUSTING

A. Adjust operating products and equipment to ensure smooth and unhindered operation.

3.09 FINAL CLEANING

A. Use cleaning materials that are nonhazardous.

B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.

C. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.

D. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.

E. Clean filters of operating equipment.

F. Clean debris from roofs, gutters, downspouts, scuppers, overflow drains, area drains, drainage

systems, and _____.

G. Clean site; sweep paved areas, rake clean landscaped surfaces.

H. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

3.10 CLOSEOUT PROCEDURES

A. Make submittals that are required by governing or other authorities.

B. Accompany Project Coordinator on preliminary inspection to determine items to be listed for completion or correction in the Contractor's Correction Punch List for Contractor's Notice of Substantial Completion.

C. Notify Architect when work is considered ready for Architect's Substantial Completion inspection.

D. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's Substantial Completion inspection.

E. Conduct Substantial Completion inspection and create Final Correction Punch List containing Architect's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Architect.

F. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.

G. Notify Architect when work is considered finally complete and ready for Architect's Substantial Completion final inspection.

H. Complete items of work determined by Architect listed in executed Certificate of Substantial Completion.

END OF SECTION

SECTION 017329 – CUTTING AND PATCHING

PART 1 - GENERAL

1.01 SECTION INCLUDES

A. Requirements and limitations for cutting and patching of Work.

1.02 SUBMITTALS

A. Submit written request in advance of cutting or alteration which affects:
   1. Structural integrity of any element of Project.
   2. Integrity of weather exposed or moisture resistant element.
   3. Efficiency, maintenance, or safety of any operational element.
   4. Visual qualities of sight exposed elements.

B. Include in request:
   1. Identification of Project.
   2. Location and description of affected Work.
   3. Necessity for cutting or alteration.
   4. Description of proposed Work and Products to be used.
   5. Alternatives to cutting and patching.
   6. Effect on work of Owner or separate Contractor.
   7. Written permission of affected separate Contractor.
   8. Date and time work will be executed.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Primary Products: Those required for original installation.

B. Product Substitution: For any proposed change in materials, submit request for substitution described in Article 4.7.5 of General Conditions.

PART 3 - EXECUTION

3.01 EXAMINATION

A. Examine existing conditions prior to commencing Work, including elements subject to damage or movement during cutting and patching.

B. After uncovering existing Work, assess conditions affecting performance of work.

C. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

A. Provide temporary supports to ensure structural integrity of the Work. Provide devices and methods to protect other portions of Project from damage.

B. Provide protection from elements for areas which may be exposed by uncovering work.

C. Maintain excavations free of water.

3.03 CUTTING

A. Execute cutting and fitting to complete the Work.

B. Uncover work to install improperly sequenced work.

C. Remove and replace defective or non-conforming work.

D. Remove samples of installed work for testing when requested.

E. Provide openings in the Work for penetration of mechanical and electrical work.

F. Employ skilled and experienced installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.

G. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.

3.04 PATCHING

A. Execute patching to complement adjacent Work.

B. Fit Products together to integrate with other Work.

C. Execute work by methods to avoid damage to other Work, and which will provide appropriate surfaces to receive patching and finishing.

D. Employ original installer to perform patching for weather exposed and moisture resistant elements, and sight-exposed surfaces.

E. Restore work with new Products in accordance with requirements of Contract Documents.

F. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.

G. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material to full thickness of the penetrated element.

H. Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.

END OF SECTION

SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 GENERAL

1.01 WASTE MANAGEMENT REQUIREMENTS

A. Owner requires that this project generate the least amount of trash and waste possible.

B. Employ processes that ensure the generation of as little waste as possible due to error, poor planning, breakage, mishandling, contamination, or other factors.

C. Minimize trash/waste disposal in landfills; reuse, salvage, or recycle as much waste as economically feasible.

D. Owner may decide to pay for additional recycling, salvage, and/or reuse based on Landfill Alternatives Proposal specified below.

E. Required Recycling, Salvage, and Reuse: The following may not be disposed off in landfills or by incineration:
   1. Aluminum and plastic beverage containers.
   2. Corrugated cardboard.
   3. Wood pallets.
   4. Clean dimensional wood.
   5. Land clearing debris, including brush, branches, logs, and stumps; see Section 31 1000 - Site Clearing for use options.
   6. Concrete: May be crushed and used as riprap, aggregate, sub-base material, or fill.
   7. Bricks: May be used on project if whole, or crushed and used as landscape cover, sub-base material, or fill.
   8. Concrete masonry units: May be used on project if whole, or crushed and used as sub-base material or fill.
   9. Precast concrete panels: May be used for erosion control or landscape features.
   10. Metals, including packaging banding, metal studs, sheet metal, structural steel, piping, reinforcing bars, door frames, and other items made of steel, iron, galvanized steel, stainless steel, aluminum, copper, zinc, lead, brass, and bronze.
   11. Carpet, carpet cushion, carpet tile, and carpet remnants, both new and removed: DuPont (http://flooring.dupont.com) and Interface (www.interfaceinc.com) conduct reclamation programs.

F. Contractor shall submit periodic Waste Disposal Reports; all landfill disposal, incineration, recycling, salvage, and reuse must be reported regardless of to whom the cost or savings accrues; use the same units of measure on all reports.

G. Contractor shall develop and follow a Waste Management Plan designed to implement these requirements.

H. The following sources may be useful in developing the Waste Management Plan:

I. Methods of trash/waste disposal that are not acceptable are:
   1. Burning on the project site.
   2. Burying on the project site.
   3. Dumping or burying on other property, public or private.
   4. Other illegal dumping or burying.

J. Regulatory Requirements: Contractor is responsible for knowing and complying with regulatory requirements, including but not limited to Federal, state and local requirements, pertaining to legal disposal of all construction and demolition waste materials.

1.02 RELATED REQUIREMENTS

A. Section 01 1000 - Summary: List of items to be salvaged from the existing building for relocation in project or for Owner.

B. Section 01 3000 - Administrative Requirements: Additional requirements for project meetings, reports, submittal procedures, and project documentation.

C. Section 01 5000 - Temporary Facilities and Controls: Additional requirements related to trash/waste collection and removal facilities and services.

D. Section 01 6000 - Product Requirements: Waste prevention requirements related to delivery, storage, and handling.

E. Section 01 7000 - Execution and Closeout Requirements: Trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

F. Section 31 1000 - Site Clearing: Handling and disposal of land clearing debris.

1.03 DEFINITIONS

A. Clean: Untreated and unpainted; not contaminated with oils, solvents, caulk, or the like.

B. Construction and Demolition Waste: Solid wastes typically including building materials, packaging, trash, debris, and rubble resulting from construction, remodeling, repair and demolition operations.

C. Hazardous: Exhibiting the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity or reactivity.

D. Nonhazardous: Exhibiting none of the characteristics of hazardous substances, i.e., ignitibility, corrosivity, toxicity, or reactivity.

E. Nontoxic: Neither immediately poisonous to humans nor poisonous after a long period of exposure.

F. Recyclable: The ability of a product or material to be recovered at the end of its life cycle and remanufactured into a new product for reuse by others.

G. Recycle: To remove a waste material from the project site to another site for remanufacture into a new product for reuse by others.

H. Recycling: The process of sorting, cleansing, treating and reconstituting solid waste and other discarded materials for the purpose of using the altered form. Recycling does not include burning, incinerating, or thermally destroying waste.

I. Return: To give back reusable items or unused products to vendors for credit.

J. Reuse: To reuse a construction waste material in some manner on the project site.

K. Salvage: To remove a waste material from the project site to another site for resale or reuse by others.

L. Sediment: Soil and other debris that has been eroded and transported by storm or well production run-off water.

M. Source Separation: The act of keeping different types of waste materials separate beginning from the first time they become waste.

N. Toxic: Poisonous to humans either immediately or after a long period of exposure.

O. Trash: Any product or material unable to be reused, returned, recycled, or salvaged.

P. Waste: Extra material or material that has reached the end of its useful life in its intended use. Waste includes salvageable, returnable, recyclable, and reusable material.

1.04 SUBMITTALS

A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

B. Sustainable Design Documentation: Submit Landfill Alternatives Proposal, Waste Management Plan, and Waste Disposal Reports in accordance with procedures specified in Section 01 3329.

C. Landfill Alternatives Proposal: Within 10 calendar days after receipt of Notice of Award of Bid, or prior to any trash or waste removal, whichever occurs sooner, submit a projection of trash/waste that will require disposal and alternatives to landfilling, with net costs.
   1. Submit to Architect for Owner's review and approval.
   2. If Owner wishes to implement any cost alternatives, the Contract Price will be adjusted as specified elsewhere.
   3. Include an analysis of trash/waste to be generated and landfill options as specified for Waste Management Plan described below.
   4. Describe as many alternatives to landfilling as possible:
      a. List each material proposed to be salvaged, reused, or recycled.
      b. List the proposed local market for each material.
      c. State the estimated net cost resulting from each alternative, after subtracting revenue from sale of recycled or salvaged materials and landfill tipping fees saved due to diversion of materials from the landfill.
   5. Provide alternatives to landfilling for at least the following materials:

D. Once Owner has determined which of the landfill alternatives addressed in the Proposal above are acceptable, prepare and submit Waste Management Plan; submit within 10 calendar days after notification by Architect.

E. Waste Management Plan: Include the following information:
   1. Analysis of the trash and waste projected to be generated during the entire project construction cycle, including types and quantities.
   2. Landfill Options: The name, address, and telephone number of the landfill(s) where trash/waste will be disposed of, the applicable landfill tipping fee(s), and the projected cost of disposing of all project trash/waste in the landfill(s).
   3. Landfill Alternatives: List all waste materials that will be diverted from landfills by reuse, salvage, or recycling.
   4. Meetings: Describe regular meetings to be held to address waste prevention, reduction, recycling, salvage, reuse, and disposal.
   5. Materials Handling Procedures: Describe the means by which materials to be diverted from landfills will be protected from contamination and prepared for acceptance by designated facilities; include separation procedures for recyclables, storage, and packaging.
   6. Transportation: Identify the destination and means of transportation of materials to be recycled; i.e. whether materials will be site-separated and self-hauled to designated centers, or whether mixed materials will be collected by a waste hauler.

F. Waste Disposal Reports: Submit at specified intervals, with details of quantities of trash and waste, means of disposal or reuse, and costs; show both totals to date and since last report.
   1. Submit updated Report with each Application for Progress Payment; failure to submit Report will delay payment.
   2. Submit Report on a form acceptable to Owner.
   3. Landfill Disposal: Include the following information:
      a. Identification of material.
      b. Amount, in tons or cubic yards (cubic meters), of trash/waste material from the project disposed of in landfills.
      c. State the identity of landfills, total amount of tipping fees paid to landfill, and total disposal cost.
      d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
   4. Incinerator Disposal: Include the following information:
      a. Identification of material.

b. Amount, in tons or cubic yards (cubic meters), of trash/waste material from the project delivered to incinerators.
c. State the identity of incinerators, total amount of fees paid to incinerator, and total disposal cost.
d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.

5. Recycled and Salvaged Materials: Include the following information for each:
   a. Identification of material, including those retrieved by installer for use on other projects.
   b. Amount, in tons or cubic yards (cubic meters), date removed from the project site, and receiving party.
   c. Transportation cost, amount paid or received for the material, and the net total cost or savings of salvage or recycling each material.
   d. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
   e. Certification by receiving party that materials will not be disposed of in landfills or by incineration.
6. Material Reused on Project: Include the following information for each:
   a. Identification of material and how it was used in the project.
   b. Amount, in tons or cubic yards (cubic meters).
   c. Include weight tickets as evidence of quantity.
7. Other Disposal Methods: Include information similar to that described above, as appropriate to disposal method.

PART 3 EXECUTION

2.01 WASTE MANAGEMENT PROCEDURES

A. See Section 01 1000 for list of items to be salvaged from the existing building for relocation in project or for Owner.

B. See Section 01 3000 for additional requirements for project meetings, reports, submittal procedures, and project documentation.

C. See Section 01 5000 for additional requirements related to trash/waste collection and removal facilities and services.

D. See Section 01 6000 for waste prevention requirements related to delivery, storage, and handling.

E. See Section 01 7000 for trash/waste prevention procedures related to demolition, cutting and patching, installation, protection, and cleaning.

2.02 WASTE MANAGEMENT PLAN IMPLEMENTATION

A. Manager: Designate an on-site person or persons responsible for instructing workers and overseeing and documenting results of the Waste Management Plan.

B. Communication: Distribute copies of the Waste Management Plan to job site foreman, each subcontractor, Owner, and Architect.

C. Instruction: Provide on-site instruction of appropriate separation, handling, and recycling, salvage, reuse, and return methods to be used by all parties at the appropriate stages of the project.

D. Meetings: Discuss trash/waste management goals and issues at project meetings.
   1. Pre-bid meeting.
   2. Pre-construction meeting.
   3. Regular job-site meetings.

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E. Facilities: Provide specific facilities for separation and storage of materials for recycling, salvage, reuse, return, and trash disposal, for use by all contractors and installers.
   1. Provide containers as required.
   2. Provide adequate space for pick-up and delivery and convenience to subcontractors.
   3. Keep recycling and trash/waste bin areas neat and clean and clearly marked in order to avoid contamination of materials.

F. Hazardous Wastes: Separate, store, and dispose of hazardous wastes according to applicable regulations.

G. Recycling: Separate, store, protect, and handle at the site identified recyclable waste products in order to prevent contamination of materials and to maximize recyclability of identified materials. Arrange for timely pickups from the site or deliveries to recycling facility in order to prevent contamination of recyclable materials.

H. Reuse of Materials On-Site: Set aside, sort, and protect separated products in preparation for reuse.

I. Salvage: Set aside, sort, and protect products to be salvaged for reuse off-site.

END OF SECTION

SECTION 013000 - ADMINISTRATIVE REQUIREMENTS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Preconstruction meeting.

B. Progress meetings.

C. Construction progress schedule.

D. Progress photographs.

E. Submittals for review, information, and project closeout.

F. Number of copies of submittals.

G. Submittal procedures.

1.2 RELATED SECTIONS – NOT USED

PART 2 - PRODUCTS - NOT USED

PART 3 - EXECUTION

3.1 PRECONSTRUCTION MEETING

A. Architect or owner will schedule a meeting after Notice of Award.

B. Attendance Required:
   1. Owner.
   2. Architect.
   3. Contractor.

C. Agenda:
   1. Submission of list of Subcontractors, list of Products, schedule of values, and progress schedule.
   2. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
   3. Scheduling.

D. Record minutes and distribute copies within two days after meeting to participants, with copies to Architect, Owner, participants, and those affected by decisions made.

3.2 PROGRESS MEETINGS

A. Make arrangements for meetings, prepare updated schedules and look aheads with copies for participants, preside at meetings.

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

C. Agenda:
   1. Review minutes of previous meetings.
   2. Review of Work progress.
   3. Field observations, problems, and decisions.
   4. Identification of problems that impede, or will impede, planned progress.
   5. Review of submittals schedule and status of submittals.
   6. Maintenance of progress schedule.
   7. Corrective measures to regain projected schedules.
   8. Planned progress during succeeding work period.
   9. Maintenance of quality and work standards.
   10. Effect of proposed changes on progress schedule and coordination.

11. Other business relating to Work.

3.3 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. Submit updated schedule with each Application for Payment.

3.4 PROGRESS PHOTOGRAPHS

A. Photography Type: Digital; electronic files.

B. Provide a minimum of 10 digital photographs each week of site and construction throughout progress of Work produced by an experienced photographer, acceptable to Architect.

C. Views: Provide correct exposure and focus, high resolution and sharpness, maximum depth of field, and minimum distortion.

D. Digital Photographs: 24 bit color, minimum resolution of 1024 by 768, in JPG format.
   1. Delivery Medium: email.
   2. File Naming: Include project identification, date and time of view, and view identification.
   3. PDF File: Assemble all photos into printable pages in PDF format, with 2 to 3 photos per page, each photo labeled with file name; one PDF file per submittal.

3.5 SUBMITTALS FOR REVIEW

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. The General Contractor is responsible to review submittals prior to issuing to the Architect or Engineer for review.

E. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 017800.

3.6 SUBMITTALS FOR INFORMATION

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. No action will be taken.

3.7 SUBMITTALS FOR PROJECT CLOSEOUT

A. When the following are specified in individual sections, submit them at project closeout:
   1. Project record As-Built 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.

3.8 NUMBER OF COPIES OF SUBMITTALS

A. Documents for Review:

All submittals shall be submitted electronically via email in pdf format. Submit physical samples for color, texture and size shall be adequate in size to represent the finish appearance.

When hard copies are required use the following guidelines:

1. Small Size Sheets, Not Larger Than 8-1/2 x 11 inches: Submit the number of copies that Contractor requires, plus one copy that will be retained by Architect.
2. Larger Sheets, Not Larger Than 36 x 48 inches: Submit the number of opaque reproductions that Contractor requires, plus one copy that will be retained by Architect.

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

C. Samples: Submit the number specified in individual specification sections; one of which will be retained by Architect. Retained samples will not be returned to Contractor unless specifically so stated.

3.9 SUBMITTAL PROCEDURES

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

B. Identify Project, Contractor, Subcontractor or supplier; pertinent drawing and detail number, and specification section number, as appropriate on each copy.

C. 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.

D. Deliver submittals to Architect at business address.

E. For each submittal for review, allow 15 days excluding delivery time to and from the Contractor.

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

G. Provide space for Contractor Engineer and Architect review stamps.

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

I. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.

END OF SECTION

SECTION 02411913 – SELECTIVE BUILDING AREA DEMOLITION

GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Removal of designated building area construction, equipment, and fixtures.

B. Related Sections:
   1. Division 01 – General Conditions.

1.2 SUBMITTALS

A. Submittals for Review:
   1. Shop Drawings: Indicate areas for demolition, removal sequence and location of salvageable items, and location and construction of temporary work.

1.3 REGULATORY REQUIREMENTS

A. Conform to applicable code for demolition work, safety of structure, and dust control.

B. Obtain required permits from authorities.

C. Notify affected utility companies before starting work and comply with their requirements.

D. Conform to applicable codes when hazardous or contaminated materials are discovered.

E. Do not close or obstruct exits.

F. Do not disable or disrupt building fire or life safety systems without 3 days prior written notice to Owner.

1.4 PROJECT CONDITIONS

A. Minimize interference with streets, walks, public right-of-ways, and adjacent facilities.

B. If hazardous materials are discovered, other than described herein, notify Architect and await instructions.

C. If any of the following conditions are encountered, cease work immediately, notify Architect, and await instructions:
   1. Structure is in danger of movement or collapse.
   2. Materials or conditions encountered differ from those designated in the Contract Documents.

PART 2 - PRODUCTS

Not used

SECTION 02411913 – SELECTIVE BUILDING AREA DEMOLITION

PART 3- EXECUTION

3.1 PREPARATION

A. Erect temporary partitions, barricades, warning devices, and controls where required.

B. Provide protective coverings for construction designated to remain.

3.2 DEMOLITION

A. Remove existing construction to extent indicated on contract drawings and as necessary to complete new work. Do not remove more than is necessary to allow for new construction.

B. Do not damage work designated to remain.

C. Minimize noise and spread of dirt and dust.

D. Assign work to trades skilled in procedures involved.

E. Protect and support active utilities designated to remain. Post warning signs showing location and type of utility and type of hazard.

F. Store items designated to remain property of Owner where directed by Owner.

G. Remove and dispose of waste materials off site.

3.3 UTILITY SERVICES

A. Maintain existing utilities indicated to remain in service and protect against damage during demolition operations. Extent of electrical and mechanical utilities to be removed as shown on Contract Documents.

SECTION 02060 - BUILDING DEMOLITION

PART 1 - GENERAL

1.1 SUMMARY

A. Section includes:

1. Demolition and removal of capped and abandoned site utilities.
2. Demolition materials recycling requirements: The Work of this contract shall provide for a minimum of 50% by weight of the solid waste generated in the Work to be diverted from landfill disposal through a combination of re-use and recycling activities.
3. This section includes requirements for submittal of:
    a. Contractor's Waste Management and Recycling Plan prior to the commencement of the Work.
    b. Contractor's quantitative reports for demolition waste materials generated by the Contractor, as a condition of approval of progress payments.

1.2 DEFINITIONS

A. Remove: Remove and legally dispose of items, except those identified for use in recycling, re-use, and salvage programs.

B. Environmental Pollution and Damage: The presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably alter ecological balances of importance to human or animal life; affect other species of importance to humanity; or degrade the utility of the environment for aesthetic, cultural or historical purposes.

C. Inert Fill: A permitted facility that accepts inert waste such as asphalt and concrete exclusively for the purpose of disposal.

Inert Solids/Inert Waste: Non-liquid solid waste including, but not limited to, soil and concrete, that does not contain hazardous substances or soluble pollutants at concentrations in excess of water-quality standards established by a regional water board and does not contain significant quantities of decomposable solid waste.

D. Class III Landfill: A landfill that accepts non-hazardous materials such as household, commercial, and industrial waste, resulting from construction, remodeling, repair, and demolition operations. A Class III landfill must have a solid waste facilities permit from the governing state/local entity.

E. Demolition Waste: Building materials and solid waste resulting from construction, remodeling, repair, cleanup, or demolition operations that are not hazardous. This term includes, but is not limited to, asphalt concrete, Portland cement concrete, brick, lumber, gypsum wallboard, cardboard and other associated packaging, roofing material, ceramic tile, carpeting, plastic pipe, and steel. The materials may include rock, soil, tree stumps, and other vegetative matter resulting from land clearing and landscaping for construction or land development projects.

F. Chemical Waste: Includes petroleum products, bituminous materials, salts, acids, alkalis, herbicides, pesticides, organic chemicals and inorganic wastes.

SECTION 02060 **- BUILDING DEMOLITION**

G. Recycling: The process of sorting, cleansing, treating and reconstituting materials for the purpose of using the altered form in the manufacture of a new product. Recycling does not include burning, incinerating or thermally destroying solid waste.

H. Reuse: The use, in the same or similar form as it was produced, of a material which might otherwise be discarded.

I. Solid Waste: All putrescible and nonputrescible solid, semisolid, and liquid wastes, including garbage, trash, refuse, paper, rubbish, ashes, industrial wastes, demolition and construction wastes, abandoned vehicles and parts thereof, discarded home and industrial appliances, dewatered, treated, or chemically fixed sewage sludge which is not hazardous waste, manure, vegetable or animal solid and semisolid wastes, and other discarded solid and semisolid wastes. "Solid waste" does not include hazardous waste, radioactive waste, or medical waste as defined or regulated by State law.

1.3 MATERIALS OWNERSHIP

A. Except for items or materials indicated to be reused, salvaged, reinstalled, or otherwise indicated to remain property of the Trustees, demolished materials shall become the Contractor's property and shall be removed, recycled, or disposed from Project site in an appropriate and legal manner.

B. Arrange a meeting no less than ten (10) days prior to demolition with the College designated representatives to review any salvagable items to determine if the College wants to retain ownership, and discuss Contractor’s Waste Management and Recycling Plan.

1.04 SUBMITTALS

A. Submittals for Construction Document phase:
   1. Qualification Data: For demolition firm.

B. Submittals for Demolition phase:
   1. Proposed dust-control measures.
   2. Proposed noise-control measures.
   3. Schedule of demolition activities indicating the following:
      a. Detailed sequence of demolition and removal work, including start and end dates for each activity.
      b. Dates for shutoff, capping, and continuation of utility services.
   4. If hazardous materials are encountered and disposed of, landfill records indicating receipt and acceptance of hazardous wastes by a landfill facility licensed to accept hazardous wastes.
   5. Contractor’s Waste Management and Recycling Plan:
      a. Review Contract Documents and site conditions and estimate total Project C&D materials to be generated, names of landfills where Project

C&D materials would normally be disposed of. Indicate types and quantities of materials under the Work that are anticipated to be feasible for on-site processing, and source-separation for re-use or recycling. Indicate procedures that will be implemented in this program to effect jobsite source-separation, such as, identifying a convenient location where dumpsters would be located, signage to identify materials to be placed in dumpsters, etc.,

b. Contact Construction Administrator for a list of local reuse and recycling organizations and companies.

c. Prior to commencing the Work, Contractor's Waste Management and Recycling Plan. Submit in format provided (Section 02060A). Waste Management and Recycling Plan must include, but not be limited to, the following:
   - Contractor's name and project identification information;
   - Procedures to be used;
   - Materials to be re-used and recycled;
   - Estimated total quantities of materials generated in Project;
   - Names and locations of landfills, re-use and recycling facilities/sites;
   - Tonnage calculations that demonstrate that Contractor will re-use and recycle a minimum of 50%-75% by weight of C&D materials generated in the Work.

d. Contractor's Waste Management and Recycling Plan must be approved by Construction Administrator prior to the Start of Work.

e. Contractor's Waste Management and Recycling Plan will not otherwise relieve the Contractor of responsibility for adequate and continuing control of pollutants and other environmental protection measures.

6. Contractor's Reuse, Recycling, and Disposal Report

a. Submit Contractor's Reuse, Recycling, and Disposal Report with each application for progress payment. Failure to submit the form and its supporting documentation will render the application for progress payment incomplete and delay progress payments. If applicable, include manifests, weight tickets, receipts, and invoices specifically identifying the Project for re-used and recycled materials:

   - On-site crushing of asphalt and concrete for use off-site and on site;
   - Crushed concrete will be used as infill for the pool
   - Reuse of building materials or salvageable items;
   - Source-separated recycling facilities;
   - Mixed debris recycling facilities;
   - Recycling of material, including soils, as landfill alternative daily cover; use surplus soil the are acceptable as fill for infill of pool.
   - Delivery of soils or mixed inerts to an inert landfill or other use;
   - Disposal of soils or other materials at a landfill or transfer station;

b. Contractor's Reuse, Recycling, and Disposal Report must quantify all materials generated in the Work, disposed in Class III Landfills, or diverted from disposal through recycling. Indicate zero (0) if there is no quantity to report for a type of material.:

- Report disposal or recycling either in tons or in cubic yards: if scales are available at disposal or recycling facility, report in tons; otherwise,
  report in cubic yards. Report in units for salvage items when no tonnage or cubic yard measurement is feasible.
- Indicate locations to which materials are delivered for reuse, salvage, recycling, accepted as daily cover, inert backfill, or disposal in landfills or transfer stations.
- Provide legible copies of weigh tickets, receipts, or invoices that specifically identify the project generating the material. Said documents must be from recyclers and/or disposal site operators that can legally accept the materials for the purpose of re-use, recycling, or disposal:

Indicate project title, project number, progress payment number, name of company completing the Contractor's Report and compiling backup documentation, the printed name, signature, and daytime phone number of the person completing the form, the beginning and ending dates of the period covered on the Contractor's Report, and the date that the Contractor's Report is completed.

7. At Project closeout:
   a. Record drawings: Identify and accurately locate capped utilities and other subsurface structural, electrical, or mechanical conditions.

1.05 QUALITY ASSURANCE

A. Demolition Firm Qualifications: Engage a licensed demolition contractor and an experienced firm that has successfully completed demolition Work similar to that indicated for this Project.

B. Regulatory Requirements: Comply with governing EPA notification regulations before starting demolition. Comply with hauling and disposal regulations of authorities having jurisdiction. Obtain and pay for all permits required.

C. Pre-demolition Conference: Conduct conference at Project site.
   1. Review the environmental goals of this Project with Contractors, subcontractors, and waste haulers and make a proactive effort to increase awareness of these goals among all labor forces on site.

1.06 PROJECT CONDITIONS

A. Areas to be demolished will be vacated and their use discontinued before start of Work.

B. All hazardous materials shall be properly abated, see spec. section.

B. Storage or sale of removed items or materials on-site will not be permitted without advance written approval from **[Owner's Representative].**

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.01 EXAMINATION

A. Verify that utilities have been disconnected and capped.

B. Survey existing conditions and correlate with requirements indicated to determine extent of demolition and recycling required.

C. Survey condition of the building to determine whether removing any element might result in a structural deficiency or unplanned collapse of any portion of the structure or adjacent structures during demolition.

D. Perform surveys as the Work progresses to detect hazards resulting from demolition activities.

3.02 PREPARATION

A. As part of the project scope, the Contractor shall prepare all drawings, documents, and applications and shall obtain all government agency approvals and permits required for demolition activities.

B. Conduct demolition operations and remove C&D materials to ensure minimum interference with roads, streets, walks, and other adjacent occupied and utilized facilities.
   1. Do not close or obstruct streets, walks, or other adjacent occupied or utilized facilities without permission from authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.

C. Conduct demolition operations to prevent injury to people and damage to adjacent buildings and facilities to remain. Ensure safe passage of people around demolition area.
   1. Erect temporary protection, such as walks, fences, railings, canopies, and covered passageways, where required by authorities having jurisdiction.
      a. Maintain temporary protection to people at exterior areas of the existing building where decorative medallion removal work is being done.
   2. Protect existing site improvements, appurtenances, and landscaping that are designated to remain in place.

D. Provide and maintain interior and exterior shoring, bracing, or structural support to preserve stability and prevent movement, settlement, or collapse of buildings to be demolished and adjacent buildings to remain.
   1. Strengthen or add new supports when required during progress of demolition.

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3.03 EXPLOSIVES

Explosives: Use of explosives will not be permitted.

3.04 ENVIRONMENTAL CONTROLS

A. Comply with federal, state and local regulations pertaining to water, air, solid waste, recycling, chemical waste, sanitary waste, sediment and noise pollution.

B. Protection of Natural Resources: Preserve the natural resources within the project boundaries or restore to an equivalent condition.

1. Confine demolition activities to areas defined by public roads, easements, and work area limits indicated on the drawings.
   a. Temporary Construction: Remove indications of temporary construction facilities, such as haul roads, work areas, structures, stockpiles or waste areas.
2. Water Resources: Comply with applicable regulations concerning the direct or indirect discharge of pollutants to underground and natural surface waters.
   a. Oily Substances: Prevent oily or other hazardous substances from entering the ground, drainage areas, or local bodies of water in such quantities as to affect normal use, aesthetics, or produce a measurable ecological impact on the area.
      1) Store and service construction equipment at areas designated for collection of oil wastes.
3. Dust Control, Air Pollution, and Odor Control: Prevent creation of dust, air pollution and odors.
   a. Use temporary enclosures and other appropriate methods to limit dust and dirt rising and scattering in air to lowest practical level.
   b. Store volatile liquids, including fuels and solvents, in closed containers.
   c. Properly maintain equipment to reduce gaseous pollutant emissions.
4. Noise Control: Perform demolition operations to minimize noise.
   a. Repetitive, high level impact noise will be permitted only between the hours of 7:00 a.m. and 6:00 p. m. Repetitive impact noise on the property shall not exceed the 85 dB, measured at 100 feet from the source of the noise. During finals week, the noise level shall not exceed 70 dB, measured at 100 feet from the source of the noise.
   b. Provide equipment, sound-deadening devices, and take noise abatement measures that are necessary to comply with the requirements of this Contract.
5. Salvage, Re-Use, and Recycling Procedures
   a. Identify re-use, salvage, and recycling facilities: Contact Construction Administrator to obtain a list of local reuse organizations and C&D recycling companies.
   b. Develop and implement procedures to re-use, salvage, and recycle demolition materials, based on the Contract Documents, the Contractor's Waste Management and Recycling Plan, estimated quantities of available materials, and availability of recycling facilities. Procedures may include on-site recycling, source-separated recycling, salvage, and/or mixed debris recycling effort

c. Identify materials that are feasible for salvage, determine requirements for site storage, and transportation of materials to a salvage facility.

d. Source-separate new construction, excavation and demolition materials including, but not limited to the following types:
   - Concrete, Concrete Block, Concrete Masonry Units (CMU), Slump Stone (Decorative Concrete Block), and Rocks
   - Paper: Bond, Newsprint, Cardboard, Paper, Packing Materials, and Packaging
   - Cement Fiber Products: Shingles, Panels, Siding
   - Paint
   - Rigid Foam
   - Glass
   - Plastics
   - Carpet and Carpet Padding
   - Beverage Containers
   - Insulation
   - Gypsum Board
   - Porcelain Plumbing Fixtures
   - Fluorescent Light Tubes: per Department of Toxic Substances Control Regulations
   - Green Materials (i.e. tree trimmings and land clearing debris)
   - Metal (ferrous and non-ferrous)
   - Red Clay Brick
   - Soil
   - Wood, Clean Dimensional Wood, Pallet Wood
   - Sheet Wood: Plywood, Oriented Strand Board (OSB), Particle Board
   - Other materials as appropriate

e. Develop and implement a program to transport loads of mixed (commingled) demolition materials that cannot be feasibly source separated to a mixed materials recycling facility [whenever available].

6. DISPOSAL PRACTICES AND WASTE HAULING

a. Legally transport and dispose of materials that cannot be delivered to a source-separated or mixed recycling facility to a transfer station or disposal facility that can legally accept the materials for the purpose of disposal.

b. Use a permitted waste hauler or Contractor's trucking services and personnel. To confirm valid permitted status of waste haulers, contact the state or local waste management agency.

c. Become familiar with the conditions for acceptance of new construction, excavation and demolition materials at recycling facilities, prior to delivering materials.

d. Deliver to facilities that can legally accept new construction, excavation and demolition materials for purpose of re-use, recycling, composting, or disposal.

e. Do not burn, bury or otherwise dispose of rubbish and waste materials on project site.

SECTION 02060 **- BUILDING DEMOLITION**

7. RE-USE AND DONATION OPTIONS

Implement a re-use program to the greatest extent feasible. Options may include:

8. REVENUE
   a. Revenues or other savings obtained from recycled, re-used, or salvaged materials shall accrue to Contractor unless otherwise noted in the Contract Documents or directed by the College.
   b. Remove and transport C&D materials in a manner that will prevent spillage on adjacent surfaces, streets, and areas or dust being emitted into the atmosphere.

   c. Clean adjacent streets of dust, dirt, and C&D materials caused by demolition operations. At the end of each work day, return adjacent areas to condition existing before start of demolition.

3.05 DEMOLITION

A. Building Demolition: Demolish buildings completely and remove from the site. Use methods required to complete Work within limitations of governing regulations and as follows:
   1. Locate demolition equipment throughout the building and remove debris and materials so as not to impose excessive loads on supporting walls, floors, or framing.
   2. Demolish concrete and masonry in sizes that will be suitable for acceptance at recycling or disposal facilities.
   3. Remove structural framing members and lower to ground by method suitable to avoid free fall and to prevent ground impact or dust generation.
   4. Break up and remove concrete slabs on grade in small sizes, suitable for acceptance at recycling or disposal facilities, unless otherwise shown to remain.
   5. Remove all disconnected, abandoned utilities on site.

B. Below-Grade Construction: Demolish foundation walls and other below-grade construction, as follows:
   1. Completely remove below-grade construction, including foundation walls and footings.
   2. Break up and completely remove below-grade concrete slabs, in small sizes, suitable for acceptance at recycling or disposal facilities.
   3. Below-Grade Areas: Completely fill below-grade areas and voids resulting from building demolition operations to street level with satisfactory soil materials.

C. Damages: Promptly repair damages to adjacent facilities caused by demolition operations.

3.06 HANDLING OF DEMOLISHED MATERIALS

A. General: Promptly re-use, salvage, recycle, or dispose of demolished materials. Do not allow demolished materials to accumulate or be stored on-site for more than fourteen (14) days.
B. Burning: Do not burn demolished materials.
C. Disposal: Transport demolished materials off the Trustees' property and legally reuse, salvage, recycle, or dispose of materials.

END OF SECTION

SECTION 072727.01 – WEATHER BARRIER

PART 1 - GENERAL

1.01 GENERAL REQUIREMENTS

A. This Specification shall be read as a whole by all parties concerned. Each Section may contain more or less the complete work of any trade. The Contractor is solely responsible to make clear to the Subcontractors the extent of their work and coordinate overlapping work.

1.02 SYSTEM DESCRIPTION

A. Supply labor, materials and equipment for a mechanically attached water-resistive weather barrier membrane system.

B. Complete Work as shown on the Drawings and specified herein to bridge gaps and seal the water-resistive vapor permeable air barrier membrane against air leakage and water intrusion, including:
   1. Connections of the walls to the roof membrane
   2. Connections of the walls to the foundations
   3. Seismic and expansion joints
   4. Openings and penetrations of window and door frames, store front, curtain wall
   5. Piping, conduit, duct and similar penetrations
   6. Masonry ties, screws, bolts and similar penetrations
   7. All other air leakage pathways in the building envelope

C. Install primary water-resistive vapor permeable air barrier, flashing, and ventilation strip accessories.

1.04 REFERENCE STANDARDS

A. ASTM International (ASTM):
   1. ASTM D5034 - Test Method for Breaking Strength and Elongation of Textile Fabrics (Grab Test).
   2. ASTM E96/E 96M - Test Methods for Water Vapor Transmission of Materials.
   3. ASTM E398 Standard Test Method for Water Vapor Transmission Rate of Sheet Materials Using Dynamic Relative Humidity Measurement.
   4. ASTM E2178 - Standard Test Method for Air Permeance of Building Materials.
   5. ASTM E2357 - Standard Test Method for Determining Air Leakage of Air Barrier Assemblies.
   6. ASTM E283 - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen.
   7. ASTM E84 - Test Method for Surface Burning Characteristics of Building Materials.

B. American Association of Textile Chemists and Colorists (AATCC): ATCC 127 - Test Method for Water Resistance: Hydrostatic Pressure Test.

C. International Code Council Evaluation Service, Inc. (ICC-ES): ICC-ES AC38 - Acceptance Criteria for Water-Resistive Barriers.

1.05 SUBMITTALS

A. Submit manufacturers' current product data sheets, details and installation instructions for the water-resistive vapor permeable air barrier membrane components and accessories.

B. Submit samples of the following:
   1. Manufacturer's sample warranty
   2. Water-resistive vapor permeable air barrier sheet, minimum 8 by 10 inches (203 by 254 mm)
   3. Components, minimum 12 inch (305 mm) lengths
   4. Membrane flashings
   5. Fasteners, clips, strapping, cladding attachment fasteners and masonry ties
   6. Sealants

1.06 QUALITY ASSURANCE

A. Single Source: Mechanically attached water-resistive vapor permeable air barrier membrane components and accessories must be obtained as a single-source membrane system to ensure total system compatibility and integrity.

B. Manufacturer Qualifications

1. Manufacturer of specified products listed in this Section to have minimum 10 years of continued experience in the manufacture and supply of highly vapor permeable water resistive air barrier products successfully installed in similar project applications.
2. Manufacturer of specified products listed in this Section to have experienced in-house technical and field observation personal qualified to provide expert technical support.

C. Fire Performance Characteristics: Provide water-resistive barrier meeting the following fire-test characteristics.
1. Surface-Burning Characteristics: ASTM E84 Class "A" Rating:
Flame spread index: 10 or less
Smoke developed index: 135 or less

1.08 PRE-INSTALLATION CONFERENCE

A. Contractor shall convene [one] week prior to commencing work of this section, under provisions of Section 01 31 19 – Project Meetings.
B. Ensure all contractors responsible for creating a continuous plane of water and air tightness are present.

1.09 DELIVERY, STORAGE AND HANDLING

A. Refer to current Product Installation Instructions and SDS at www.vaproshield.com for proper storage and handling.
B. Deliver materials to the job site in undamaged and original packaging indicating the name of the manufacturer and product.
C. Store roll materials on end in original packaging. Protect rolls from direct sunlight and inclement weather until ready for use.
D. Waste Management and Disposal
1. Separate and recycle waste materials in accordance with Section [01355 - Waste Management and Disposal], and with the Waste Reduction Work Plan.

1.10 COORDINATION

A. Ensure continuity of the mechanically attached water-resistive vapor permeable air barrier system throughout the scope of this section.
1. Air barrier vapor permeable membrane to include self-adhered or mechanically attached air barrier, transition membranes and sealants at penetrations.
2. Drainage plane to include drainage cavity, water resistive barrier and flashings to the exterior.

1.11 ALTERNATES

Submit request for alternates in accordance with Section 01 25 00 – Substitution Procedures.
A. Submit requests for alternates a minimum of ten (10) working days prior to bid date.
B. Alternate submission to include:
1. Evidence that alternate materials meet or exceed performance characteristics of specified Product requirements as well as documentation from an approved independent testing laboratory certifying the minimum physical dimensions, tensile strength, fire burning characteristics, vapor permeance and air leakage rates of the fully self-adhered water-resistive vapor permeable air barrier membrane. All testing to be performed without the aid of primers or surface conditioners.
2. Manufacturer's complete set of details for mechanically attached water-resistive vapor permeable air barrier membrane system showing a continuous plane of water and air tightness throughout the building enclosure.
3. Manufacturer of alternate materials has experienced in-house technical and field observation personal qualified to provide expert technical support.
C. Acceptable alternates will be confirmed by addendum. Substitute materials not approved in writing prior to bid date shall not be permitted for use on this project.

1.12 WARRANTY

A. Provide manufacturer's standard material warranty in which manufacturer agrees to provide

replacement material for the mechanically attached water-resistive vapor permeable air barrier sheets installed in accordance with manufacturer's instructions that fail due to material defects within 20 years of the date of Purchase.

PART 2 - PRODUCTS

2.01 MATERIALS

A. Primary mechanically attached water-resistive vapor permeable air barrier membrane components and accessories must be obtained from a single-source manufacture to ensure total system compatibility and integrity.

1. Mechanically attached water-resistive vapor permeable air barrier membrane by VaproShield LLC., Gig Harbor, WA, Phone: (866) 731-7663, Website: www.vaproshield.com.

B. WATER-RESISTIVE VAPOR PERMEABLE MECHANICALLY ATTACHED AIR BARRIER MATERIALS (Basis of Design)

1. Primary mechanically attached air barrier sheet membrane shall be RevealShield® IT Integrated Tape water-resistive vapor permeable air barrier sheet membrane by VaproShield, a zero VOC vapor permeable air barrier sheet membrane consisting of multiple layers of spun-bonded polypropylene tested in accordance with ICC-ES AC 38 criteria to meet IBC and IRC requirements for weather resistive barriers having the following properties:
   a. Color: Black UV stable, 180 days 100% exposure prior to coverage with an open joint cladding.
   b. Breaking strength and Elongation to ASTM D5034: 126.0 lbf (560 N), machine direction; 87.7 lbf (390 N), cross-machine direction.
   c. Water Vapor Permeance tested to ASTM E96 Method B: minimum of 97 perms (6696 ng/Pa.s.m^2)
   d. Water Vapor Permeance tested to ASTM E398: minimum of 74 perms (5119 ng/Pa.s.m^2)
   e. Air Leakage: ≤0.0033 cfm/ft^2 @ 1.57 psf (≤0.017 L/s m^2 @ 75 Pa) when tested in accordance with ASTM E 2178.
   f. Water Resistance tested to AATCC 127, 550 mm hydrostatic head for 5 hours: No leakage
   g. Application Temperature: No minimum temperature.
   h. Surface Burning Characteristics tested to ASTM E84: Class A, Flame-spread index of less than 10, Smoke-developed index of less than 135
   i. Physical Dimensions: 0.0177 inches (0.45 mm) thick and 59 inches (1.5 m) wide and 9.133 oz/yd^2 (309.7 g/m^2).

C. WATER-RESISTIVE VAPOR PERMEABLE TRANSITION AND FLASHING MEMBRANE Part One of a two part Flashing System

1. Self-adhered air barrier transition and flashing membrane for all window jambs, headers, door openings, inside and outside corners, and other transitions shall be pre-cut RevealFlashing SA™ Self-Adhered or RevealFlashing™ by VaproShield, a zero VOC fully self-adhered water-resistive vapor permeable sheet membrane having the following properties:
   a. RevealFlashing SA™ Self-Adhered flashing Black: 11 3/4 inches (30 cm) wide x 164 feet (50 m) long
      i. Air Leakage: ≤0.0033 cfm/ft^2 @ 1.57 psf (≤0.0017 L/s m^2 @ 75 Pa) when tested in accordance with ASTM E2178 and <0.01 cfm/ft^2 @ 1.57 psf (<0.01 L/s m^2 @ 75 Pa)) when tested in accordance with ASTM E 2357
      ii. Water Vapor Permeance tested to ASTM E96 Method B: minimum of 70 perms (4005 ng/Pa.s.m^2)
      iii. Water Vapor Permeance tested to ASTM E398: minimum of 60 perms (3433 ng/Pa.s.m^2)

iv. Water Resistance tested to AATCC 127, 550 mm hydrostatic head for 5 hours: No leakage

b. RevealFlashing™ Black: 6 1/2 inches (16.5 cm) or 11 3/4 inches (30 cm) wide x 164 feet (50 m) long

i. Air Leakage: ≤0.0033 cfm/ft² @ 1.57 psf (≤0.017 L/s m² @ 75 Pa) when tested in accordance with ASTM E2178.

ii. Water Vapor Permeance tested to ASTM E96 Method B: minimum of 97 perms (6696 ng/Pa.s.m²)

iii. Water Vapor Permeance tested to ASTM E398: minimum of 97 perms (6696 ng/Pa.s.m²)

iv. Water Resistance tested to AATCC 127, 550 mm hydrostatic head for 5 hours: No leakage

D. VAPROLIQUI-FLASH™ VAPOR PERMEABLE WATER RESISTIVE FLASHING FOR ROUGH OPENINGS Part II of Two Part Flashing System

1. Window and door pre-cut RevealFlashing™ SA Self-Adhered flashing shall include VaproLiqui-Flash by VaproShield, a liquid-applied vapor permeable air barrier flashing material with vapor permeance and resistance to air leakage properties compatible with the primary air barrier membrane.

E. THROUGH WALL FLASHING

1. Thru-wall flashing shall include Vapro-SS Flashing™ by VaproShield, a flexible 2 mil (0.05 mm) stainless steel sheet with an 8 mil (0.20 mm) butyl adhesive backing and may include a VaproTermination Bar™ when the top section of the Vapro-SS Flashing™ is exposed.

a. Vapro-SS Flashing™: 4, 6, 9, 12, 18 or 24 inches (10.2, 15.2, 22.9, 30.5, 45.7, 61 cm) x 50 feet (15.24 m) long.

b. Tensile Strength/Puncture: 100,000 psi when tested in accordance with ASTM D882 and 2,500 psi when tested in accordance with ASTM E154

c. VaproTermination Bar™: 1 inch (25 mm) wide x 8 feet (2.4 m) long, UV-resistance rigid thermoplastic extrusion, if required by sequence of installation.

F. TRANSITION FLASHING

2. Transition flashing shall include VaproSilicone Transition™ by VaproShield, a flexible 80 mil (2 mm) extruded silicone sheet.

a. VaproSilicone Transition™: 4, 6 or 9 inches (10.2, 15, 23 cm) x 50 feet (15.24 m) long.

b. Dynamic Movement Capability: +200 / -50 % when tested in accordance to ASTM C1523.

c. Elongation: 400 % when tested in accordance to ASTM D412.

d. Tensile Strength: 295 psi (2.03 MPa) when tested in accordance with ASTM D412.

e. Tear Strength: 20 ppi (3.5 N/mm) when tested in accordance to ASTM D624.

2.02 PENETRATION SEALANT

A. Provide sealant for penetrations as recommended by manufacturer and as specified under Division 07 Section: Sealants. Appropriate sealants shall be VaproBond™ or VaproLiqui-Flash™.

PART 3 EXECUTION

3.01 GENERAL

A. Verify that surfaces and conditions are ready to accept the work of this section. Notify [engineer] [architect] [consultant] in writing of any discrepancies. Commencement of the work or any parts thereof shall mean acceptance of the prepared substrates.

B. All surfaces must be dry, sound, clean, free of oil, grease, dirt, excess mortar or other contaminants detrimental to the attachment of the mechanically attached water resistive air barrier membrane and flashings. Fill voids and gaps in substrate greater than 7/8 inch (22 mm) in width to provide an even

surface. Strike masonry joints full-flush.

C. No minimum application temperature of mechanically attached water-resistive vapor permeable air barrier sheet membrane and mechanically attached flashings.

D. Ensure all preparatory work is complete prior to applying primary mechanically attached water-resistive vapor permeable air barrier sheet membrane.

E. Mechanical fasteners used to secure sheathing surfaces or penetrate sheathing surfaces shall be set flush with sheathing, fastened into solid backing and covered with the upper overlapping membrane. If exposed fasteners are present on the surface of the membrane, cover and seal with Vapro-LiquiFlash or VaproBond™.

F. If exposed fasteners are required, use VaproCaps™ to insure water/air tight seal.

3.02 COORDINATION OF MECHANICALLY ATTACHED VAPOR PERMEABLE WATER RESISTIVE, AIR BARRIER MEMBRANE INSTALLATION

A. Download Installation Instructions at http://vaproshield.com/public-documents/installation-instructions.

B. Installation Summary:

a. Mechanically attached water-resistive vapor permeable air barrier sheet membrane should be installed horizontally over the outside face of exterior sheathing surfaces or other approved substrates.

b. Complete detail work at; wall openings, building transitions and penetrations prior to field applications.

c. Install mechanically attached water-resistive vapor permeable air barrier sheet membrane over the outside face of exterior sheathing surfaces or substrate, measure and pre-cut into manageable sized sheets to suit the application conditions.

d. Install mechanically attached water-resistive vapor permeable air barrier sheet membrane complete and continuous to substrate in a sequential minimal 6 inch (76 mm) horizontal overlapping weatherboard.

e. Stagger all vertical end lap seams and overlap a minimum of 12 inch (305 mm).

f. Roll installed membrane with roller to ensure positive contact and adhesion immediately after the integral tape release film has been removed at the horizontal overlaps.

3.03 BUILDING TRANSITION CONDITIONS

A. Consult published details at WWW.VaproShield.com.

B. Tie-in to structural beams, columns, floor slabs and intermittent floors, parapet curbs, foundation walls, roofing systems and at the interface of dissimilar materials with self-adhering air barrier transition and flashing membrane.

C. Align and position fully self-adhered air barrier transition and flashing membrane, remove protective film and press firmly into place. Provide minimum 6 inch (152 mm) lap on to substrates.

D. Ensure minimum 6 inch (152 mm) overlap at side and end laps of membrane and 6 inch (152 mm) at inside and outside corners, if joints occur at corner locations.

E. Roll membrane and lap seams with roller to ensure positive contact and adhesion, immediately.

3.04 MECHANICAL EQUIPMENT PENETRATIONS

A. Mechanical pipe, electrical conduit and/or duct work must be secured solid into position prior to installation of mechanically attached water-resistive vapor permeable air barrier sheet membrane.

B. Electrical services penetrating the wall assembly and mechanically attached water-resistive vapor permeable air barrier sheet membrane must be placed in appropriate conduit and secured solid into position.

C. Install manufactured flanged penetration sleeves as recommended by sleeve manufacturer.

D. For straight sided penetrations, cut and fit mechanically attached water-resistive vapor permeable air barrier sheet membrane to accommodate sleeve, install VaproLiqui-Flash to seal the air barrier membrane to ductwork or preformed flange sleeve.

E. For pipe penetrations, refer to manufacturer's standard details.

3.05 WINDOW, DOOR AND OTHER WALL OPENINGS

SECTION 072727.01 – WEATHER BARRIER

A. Consult published installation instructions at WWW.VaproShield.com.
B. Two part flashing system; RevealFlashing™ SA Self Adhered or RevealFlashing™ and VaproLiqui-Flash™, Vapro-SS Flashing™ or VaproBond™ Flashing by VaproShield around window or wall openings subject to the opening size and installation of window, door or louver type.
C. RevealFlashing™ SA Self-Adhered flashing or RevealFlashing™ air barrier transition and flashing membrane installed 2 ¾ inch (70 mm) into rough wall openings for the sill, jambs and head.
D. Use VaproLiqui-Flash™ to adhere the RevealFlashing™ into the rough opening, coating the rough opening at the 2 ¾ inch (70 mm) overlap before applying the RevealFlashing™. Alternatively VaproBond™ Flashing maybe substituted for VaproLiqui-Flash™ as the bonding material.
E. For RevealFlashing SA Self-Adhered flashing remove release film, align flashing membrane and apply pressure to ensure positive contact. Roll Lap seams to ensure adhesion. Provide lap seams in singled fashion, to shed water.
F. VAPROLIQUI-FLASH VAPOR PERMEABLE WATER RESISTIVE FLASHING FOR ROUGH OPENINGS
    1. Download Installation Instructions at http://vaproshield.com/public-documents/installation-instructions.
    2. Liquid-applied window and door flashing shall be VaproLiqui-Flash™ by VaproShield, a liquid-applied vapor permeable air barrier flashing material with resistance to moisture and air leakage properties compatible with the primary weather resistant air barrier membrane.
    3. Apply a 12-15 wet mil (0.030-0.038 mm) coating onto the installed RevealFlashing™ SA Self-Adhered flashing, 1 inch (25.4 mm) onto the face continuing into the rough opening, covering the 2 ¾ inch (70 mm) RevealFlashing™ SA Self-Adhered flashing and the remaining exposed rough opening surface.
G. THROUGH-WALL FLASHING MEMBRANE
    1. Download Installation Instructions at http://vaproshield.com/public-documents/installation-instructions.
    2. Apply through-wall self-adhered flashing membrane along the base of masonry veneer walls and over shelf angles as detailed by designer.
        a. Press membrane firmly into place, overlap minimum 3 inches (76 mm) at all laps. Promptly roll all surfaces using a hand roller to ensure good adhesion.
        b. Applications shall form a continuous flashing membrane and shall extend up a minimum of 6 inches (15 cm) up the back-up wall.
        c. Seal the top edge of the membrane where it meets the substrate using VaproBond™. Trowel-apply a feathered edge to seal termination to shed water or install VaproTermination Bar and VaproBond™ sealant at the top edge.
        d. Install through-wall flashing membrane 1/2 inch (13 mm) from outside edge of veneer. Provide “end dam” flashing as detailed by the designer.

3.06 HORIZONTAL INSTALLATION
A. For horizontal applications, align sheets and begin installation of mechanically attached water-resistive weather barrier membrane at bottom or lowest point of wall.
B. To avoid misalignment of subsequent applications, it is recommended to pre-mark or "Snap" a level line to work from.
C. Measure and pre-cut into manageable sized sheets to suit the application conditions.
D. Allow for excess material at bottom of wall to accommodate tie-ins and connections to adjacent surfaces.
E. Align and position mechanically attached water-resistive weather barrier membrane. Provide minimum 6 inch (152 mm) overlap at the horizontal sides, remove release film of the integrated tape and press firmly into place. Stagger all vertical end lap seams and overlaps a minimum of 12 inch (305 mm). Roll lapped Integrated Tape seams with roller to ensure contact and adhesion.
F. Add a continuous bead of VaproBond™ adhesive sealant between the vertical overlapping joints and roll the overlapping surfaces to insure continuous contact and adhesion.
G. Install subsequent sheets of mechanically attached water-resistive weather barrier membrane in overlapping weatherboard format. Ensure sheets lay smooth and flat to surfaces. Roll lapped Integrated Tape seams with roller to ensure contact and adhesion.

SECTION 072727.01 – WEATHER BARRIER

H. Refer to http://vaproshield.com/installation/instructions for the most current and complete installation instructions.

3.07 BATTENS VENTILATION STRIPS, SHIMS OR MAT FOR RAIN SCREEN CLADDING SYSTEMS

A. Provide and install specified battens and ventilation strips under cladding systems.
B. Install horizontal starter strip or vent strip at base of wall, vertical battens and top vent strip, secure into solid backing ready for installation of cladding system.
C. Coordinate spacing of battens and vent strips to accommodate cladding system.

3.08 FASTENING CLIPS AND MASONRY TIES

A. Install clips and masonry ties over primary self-adhered vapor permeable air barrier membrane.
B. Secure clips and masonry ties with corrosion-resistant, or stainless steel screws with gasketed fasteners.
C. Consult VaproShield Technical Services for recommendations on appropriate masonry tie types and methods to seal penetrations.

3.09 FIELD QUALITY CONTROL

A. Make notification when sections of work are complete to allow review prior to covering mechanically attached water-resistive weather barrier membrane system, with the installation of the cladding.
B. Owner to engage independent consultant to observe substrate and membrane installation prior to placement of cladding system(s) and provide written documentation of observations.

3.10 PROTECTION

A. Protect wall areas covered with mechanically attached water-resistive weather barrier membrane from damage due to construction activities, high wind conditions, and extended exposure to inclement weather.
B. Review condition of mechanically attached water-resistive weather barrier membrane prior to installation of cladding. Repair, or remove and replace damaged sections with new membrane.
C. Recommend to cap and protect exposed back-up walls against wet weather conditions during and after application of membrane, including wall openings and construction activity above completed mechanically attached water-resistive weather barrier membrane installations.
D. Remove and replace water-resistive weather barrier membrane affected by chemical spills or surfactants.

END OF SECTION

SECTION 08 1416 FLUSH WOOD DOORS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Flush wood doors; flush configuration; non-rate and rated.

1.2 RELATED SECTIONS

A. 081113 – Hollow Metal Doors and Frames.

B. 087100 – Door Hardware.

C. 099000 – Paints and Coatings: Site finishing of doors.

1.3 REFERENCES

A. AWI/AWMAC (QSI) - Architectural Woodwork Quality Standards Illustrated; Architectural Woodwork Institute and Architectural Woodwork Manufacturers Association of Canada; 2006, 8th Ed., Version 2.0.

1.4 SUBMITTALS

A. See Section 4.7 for submittal procedures.

B. Product Data: Indicate door core materials and construction; veneer species, type and characteristics.

C. Shop Drawings: Illustrate door opening criteria, elevations, sizes, types, swings, special blocking for hardware, factory machining criteria, factory finishing criteria.

D. Samples: Submit two samples of door construction, 12 x 12 inch in size cut from top corner of door.

E. Warranty, executed in Owner's name.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Package, deliver and store doors in accordance with specified quality standard.

B. Accept doors on site in manufacturer's packaging. Inspect for damage.

C. Protect doors with resilient packaging sealed with heat shrunk plastic. Do not store in damp or wet areas; or in areas where sunlight might bleach veneer. Seal top and bottom edges with tinted sealer if stored more than one week. Break seal on site to permit ventilation.

1.6 PROJECT CONDITIONS

A. Coordinate the work with door opening construction, door frame and door hardware installation.

1.7 WARRANTY

A. Interior Doors: Provide manufacturer's warranty for the life of the installation.

B. Include coverage for delamination of veneer, warping beyond specified installation tolerances, defective materials, and telegraphing core construction.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Wood Veneer Faced Doors:
   1. Eggers Industries: www.eggersindustries.com.

SECTION 08 1416 FLUSH WOOD DOORS

2. Algoma Hardwoods. www.algomahardwoods.com
3. Weyerhaeuser Co.. www.weyerhaeuser.com
4. Approved Equal.

2.2 DOORS

A. All Doors: See drawings for locations and additional requirements.
   1. Quality Level: Stain grade, in accordance with AWI/AWMAC Architectural Woodwork Quality Standards Illustrated, Section 1300.
   2. Wood Veneer Faced Doors: 5-ply

B. Interior Doors: 1-3/4 inches thick; solid core; flush construction.

2.3 DOOR CORES

A. Non-Rated Solid Core and 20 Minute Rated Doors: Type particleboard core (PC), plies and faces as indicated above.

2.4 DOOR FACINGS

A. Wood Veneer - Premium AA Grade, Select White Maple

B. Facing Adhesive: Type I - waterproof.

2.5 ACCESSORIES

A. Metal Louvers:
   1. Material and Finish: Roll formed steel; pre-painted finish to color as selected.
   2. Louver Blade: Inverted V blade, sight proof.

B. Vision Panel:
   1. Lite openings shall be furnished with same species wood lite beads.
   2. All glazing shall be installed in the factory for all rated and non-rated wood doors

2.6 DOOR CONSTRUCTION

A. Fabricate doors in accordance with door quality standard specified.

B. Cores Constructed with Stiles and Rails:

C. Provide solid blocks at lock edge for hardware reinforcement.

D. Fit door edge trim to edge of stiles after applying veneer facing.

E. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.

F. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.
   1. Exception: Doors to be field finished.

G. Provide edge clearances in accordance with AWI Quality Standards Illustrated Section 1700.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that opening sizes and tolerances are acceptable.

C. Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.

SECTION 08 1416 FLUSH WOOD DOORS

3.2 INSTALLATION

A. Install doors in accordance with manufacturer's instructions and specified quality standard. Install fire-rated doors in accordance with NFPA 80 requirements.

B. Trim door height by cutting bottom edges to a maximum of 3/4 inch (19 mm).

C. Use machine tools to cut or drill for hardware.

D. Prepare doors for electric hardware wiring.

E. Coordinate installation of doors with installation of frames and hardware.

F. Install door louvers plumb and level, where required.

3.3 INSTALLATION TOLERANCES

A. Conform to specified quality standard for fit and clearance tolerances.

B. Conform to specified quality standard for maximum diagonal distortion.

3.4 ADJUSTING

A. Adjust doors for smooth and balanced door movement.

B. Adjust closers for full closure.

3.5 SCHEDULE - See Drawings

END OF SECTION

SECTION 087100 DOOR HARDWARE

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Furnishing of all items of finish hardware as hereinafter specified or obviously necessary to complete the building, except those items which are specifically excluded from this section of the specifications.

1.2 RELATED SECTIONS

A. The following sections of this specification should be examined in order to identify materials or equipment which may be obtained through this section:
   1. 08 1113 – Hollow Metal Doors and Frames
   2. 08 1416 – Flush Wood Doors

1.3 DESCRIPTION OF WORK

A. "Finish Hardware" includes items known commercially as finish hardware which are required for swing, sliding and folding doors, except special types of unique and non-matching hardware specified in the same section as the door and door frame. Extent of finish hardware required is indicated on drawings and in schedules. Types of finish hardware required include the following:
   1. Butt Hinges
   2. Lock cylinders and keys
   3. Lock and latch sets
   4. Exit Devices
   5. Push/pull units
   6. Closers
   7. Protection plates
   8. Weatherstripping for exterior doors
   9. Thresholds
   10. Silencers

1.4 REFERENCES

A. Finish hardware in this section shall meet the following standards as established by the American National Standards Institute, Inc. (ANSI) which is sponsored by the Builders Hardware Manufacturers Association, Inc. (BHMA). Product tests are to be administered by the ETL Testing Laboratories, Inc., Underwriters Laboratories, or other official testing laboratories which have been designated by BHMA for the testing of ANSI standards. The standards latest revision will be in effect.

B. Materials & Finishes
   1. Butts & Hinges ANSI A156.1 Grade 1
   2. Locks & Lock Trim ANSI A156.2 Grade 1
   3. Exit Devices ANSI A156.3 Grade 1
   4. Door Controls - Closers ANSI A156.4 Grade 1
   5. Auxiliary Lock & Assoc. Products ANSI A156.5 Grade 1
   6. Architectural Door Trim ANSI A156.6
   7. Template Hinge Dimensions ANSI A156.7
   8. Door Controls - Overhead Holders ANSI A156.8 Grade 1
   9. Cabinet Hardware ANSI A156.9
   10. Cabinet Locks ANSI A156.11 Grade 1
   11. Mortise Locks & Latches ANSI A15
   12. Auxiliary Hardware

C. Listed Hardware—Hardware which is to be installed in or on fire labeled doors and frames, Class A or lesser, single or pairs, shall be tested and listed by Underwriters Laboratories and/or Warnock Hersey Laboratories Division. Exit devices which are to be used as panic hardware shall be tested and listed

in Underwriters Laboratories "Accident Equipment List - Panic Hardware". All listed hardware shall be in compliance with National Fire Protection Association Number 80 and be properly stamped or labeled for easy identification.

1.5 SUBMITTALS

A. See section 4.7 for submittal procedures.

B. After the award of a formal contract, A completed typewritten copY of the proposed Finish Hardware Schedule shall be submitted to the Architect for approval. This schedule shall be prepared using the "Sequence and Format for the Hardware Schedule" as approved and recommended by the Door and Hardware Institute (DHI). After approval of the schedule, the Hardware Supplier shall provide two (2) copies of the approved schedule to the Architect for file and distribution purposes.

C. When submitting schedules for approval, include three (3) sets of manufacturers' cut sheets on hardware item proposed.

D. Templates—The Hardware Supplier shall provide necessary templates and/or physical hardware to all trades requiring them in order to cut, reinforce, or otherwise prepare their material or product to receive the hardware item. In the event that physical hardware is required by any manufacturer, the Hardware Supplier shall ship to them such hardware via prepaid freight in sufficient time to prevent any delay in execution of their work.

1.6 DELIVERY, STORAGE AND HANDLING

A. All items of hardware to be delivered to the job site shall be completely packaged with all necessary screws, bolts, miscellaneous parts, instructions, and where necessary, installation templates for manufacturers' suggested installation. They are to be clearly labeled so as to conveniently identify them and their intended location in the building.

B. A representative of the General Contractor shall receive the hardware when delivered at the job site. A dry, locked storage space, complete with shelving, shall be set aside for the purpose of unpacking, sorting out, checking and storage.

C. Finish hardware shall be delivered to the General Contractor by the Hardware Supplier. Direct factory shipments to the job site are not acceptable.

D. The hardware shall be jointly inventoried by representatives of the General Contractor and the Hardware Supplier.

E. Items damaged prior to acceptance by General Contractor shall be replaced promptly with proper material, and without additional cost to the General Contractor.

F. All hardware shall be handled in a manner to minimize marring, scratching, or damage.

PART 2 - PART 2 - PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Requirements for design, grade, function, finish, size, and other distinctive quantities of each type of finish hardware are indicated in the hardware schedule, Drawing A6.01.

2.2 FINISH OF HARDWARE

A. Finish of hardware items shall be listed in the hardware schedule and shall conform to ANSI A156.18 unless other specified.

SECTION 087100 **DOOR HARDWARE**

2.3 HINGES

A. Except for hinges and pivots to be installed entirely (both leaves) into wood doors and frames, provide only template hinges which conform to ANSI whenever applicable.

B. Use ball bearing hinges on heavy doors, doors where high frequency service is expected and doors equipped with door closers.

C. All butt hinges to be used on exterior doors or doors subject to special atmospheric conditions shall be Stainless Steel.

D. Hinge pins, except as otherwise indicated, shall be as follows:
   1. Steel hinges—Steel pins.
   2. Non-ferrous hinges—Stainless Steel pins.
   3. Exterior doors—Non-removable pins (NRP) or security stud.
   4. Interior doors—Non-rising pins.
   5. Tips—Flat button and matching plug, finished to match leaves, except where hospital tip is indicated.

E. Size of hinges shall be as follows:

F.

Door Thickness	Width	Hinge Height	Hinge Width
1-3/4"	to 36"	4½"	4" or 4½"
1-3/4"	over 36"	5"	4½" Extra Heavy Ball Bearing

G. Numbers of hinges per door, provide quantities as follows:
   1. For doors less than 5 feet high—1 pair.
   2. For doors 5 feet to 7 feet 6 inches high—1½ pair and one addition hinge for each additional 2½ feet of door height or fraction thereof.

H. When projection of door trim is such as to prevent desired degree of opening, the proper hinge width shall be provided to allow the door to clear the trim.

I. It is the responsibility of the Finish Hardware Supplier to field verify all existing frames and submit hardware schedule indicating hinge sizes compatible with existing frames.

J. Basis of Design hinges are by Stanley.

K. Acceptable manufactures are Ives, Bommer, Hagger or Approved Equal

2.4 LEVER HANDLE LOCKSETS LATCHSETS AND CYLINDERS

A. All locks and cylinders are to be by the same manufacturer.

B. Mechanical locksets for this project shall be Mortise type with lever handle trim as specified.

C. The lockset case shall be manufacturer's standard wrought steel with zinc dichromate finish.

D. Strikes shall be curved lip stainless steel ANSI Standard A115.1, 4-7/8"x1-1/4". Provide straight lip strikes, 7/8" lip to center, at pairs of doors.

E. Provide cylinders with keyed-alike cores as specified in the hardware sets at the end of this section.

F. Locksets for labeled fire doors shall have a fusible link or other mechanism to prevent latchbolt retraction in the event of fire.

G. Scheduled locksets, latchsets, and cylinders are: Schlage.

H. Acceptable manufactures are Yale, Corbin Russwin, Hagger or Approved Equal

2.5 EXIT DEVICES

A. All exit devices for this project shall have the chassis, end cap, and horizontal mounting rail, mounted directly to, and flush with, the door surface. No gaps or space shall be permitted between the back of

the horizontal mounting rail and the door surface. If required, a continuous solid spacer bar shall be used to fill the space between the back of the device and the door surface.

B. The touch pad shall retract the latchbolt by means of a sliding motion of the touch pad activating the level arm for easy operations and reduced friction.

C. Trim for exit devices shall be either pull or lever type by exit device manufacturer as specified.

D. All exit devices shall carry manufacturer's one-year warranty.

E. Basis of Design is scheduled as Von Duprin.

F. Acceptable manufactures are Falcon, Corbin Russwin, Adams Rite or Approved Equal

2.6 DOOR CLOSERS

A. All door closers for this project shall be the product of one of the manufacturer and shall have cast iron cases.

B. Door closers shall be full rack and pinion type construction, non-handed and adjustable spring power in accordance with ANSI A117.1 handicapped code.

C. All closers shall have separate adjustable, non-critical key control valves, one each for the following:
   1. Closing speed
   2. Latching speed
   3. Backcheck and/or delayed action

D. The spindle shall be heavy duty heat treated steel construction.

E. The installing contractor shall be responsible for proper installation of door closers in accordance with degree of opening indicated on hardware schedule. The installing contractor shall be responsible for adjustment of the three individual valves, for proper control as follows:
   1. Closing speed
   2. Latching speed
   3. Delayed action, or backcheck

F. All door closers shall be listed by Underwriters Laboratories for use on self-closing fire rated doors.

G. All door closers shall carry a ten-year (10) year warranty.

H. Scheduled door closers are by LCN.

I. Acceptable manufactures are Norton, Hagar, Sargent or Approved Equal

2.7 STOPS

A. Stops shall be supplied for all doors not equipped with a holding or stay device. They shall control the desired limit of opening, helping to prevent damage to adjacent walls, columns, equipment, the door or its hardware.

B. Overhead stops shall be used where specified, or where floor stops cannot be used. Where specified, provide overhead stops which incorporate field adjustability between 85 and 110 degrees of door opening. Plastic end caps at overhead stops are not acceptable.

C. All stops to be fastened to concrete shall use expansion shields and machine screws.

D. Basis of design floor stops are by Ives.

E. Acceptable manufactures are Rockwood, Hagar, or Approved Equal

2.8 KICKPLATES

A. Kickplates shall be .050 thickness stainless, as required for scheduled finish, specified height by specified width.

B. Kickplates shall be applied on the push side and/or pull side of all doors where noted.

C. All kickplates to be beveled four sides.

D. Basis of Design kickplates are Ives.

E. Acceptable manufactures are Rockwood, Hagar, or Approved Equal

2.9 Kickdown Hold Open

A. Kickdown Door Holder shall be constructed from Cast Brass or Aluminum Construction.

B. Basis of Design Hold Open is by Ives.

C. Acceptable manufactures are Rockwood, Hagar, or Approved Equal.

2.10 SEALS

A. Seals shall be manufactured from nylon brush insert with all extruded aluminum retainer. Seals shall designed to be installed on metal or wood door frames.

B. Scheduled seals are by Pemko.

C. Acceptable manufactures are Zero, Reese or Approved Equal.

2.11 THRESHOLDS

A. Except as scheduled otherwise, thresholds shall be flat saddle thermal barrier type, handicap accessible to meet ANSI 117.1 1980. Include machine screws with lead expansion shields for installation.

B. Finish of thresholds is to be mill finish aluminum.

C. Basis of Design by Pemko.

D. Acceptable manufactures are Zero, Reese or Approved Equal.

2.12 FLUSHBOLTS

A. Manual Flush Bolts: BHMA A156.16; minimum 3/4-inch (19-mm) throw; designed for mortising into door edge.

B. Finish of thresholds is to be satin stainless steel.

C. Basis of Design by Ives.

D. Acceptable manufactures are Glynn Johnson, Rockwood, Hagar or Approved Equal.

PART 3 - EXECUTION

3.1 GENERAL

A. Mount hardware units at heights indicated in "Recommended Locations for Builders Hardware" for Standard Steel Doors and Frames, Custom Steel Doors and Frames, Wood Doors and Frames by the Door and Hardware Institute (DHI), except if otherwise specifically indicated or to comply with requirements of governing regulations, requirements for the handicapped

B. Degree of opening for doors with overhead holders, closers, etc., shall be included in the hardware schedule for the Architect's approval.

C. All hardware shall be installed by tradesmen skilled in the application of commercial grade hardware.

D. Install each hardware item in compliance with the instructions and recommendations. Securely fasten all parts to be attached. Fit faces of mortised parts snug and flush. Make sure all operating parts move freely and smoothly without binding, sticking or excessive clearance. Wherever cutting and fitting is required to install hardware onto or into surfaces which are later to be painted or finished in another way, the hardware shall be removed and stored prior to the painting or finishing. Items shall then be reinstalled only when the finishes have been completed on the surface to which the hardware is to be applied.

E. To maintain warranties and preserve fire-ratings, fasteners used for installation are to be those provided with respective hardware items by hardware manufacturer. Self-drilling, self-tapping “TEK” screws are not to be used for any item of hardware unless packaged with hardware item by manufacturer.

F. At exterior doors and elsewhere as indicated, set thresholds in a bed of sealant as specified in Section 079200 to completely fill concealed voids and exclude moisture from every source. Do not plug drain holes or block weeps. Remove excess sealant.

G. After installation, representative templates, instruction sheets and installation details shall be placed in a file folder to be turned over to the Owner when the building is accepted. Included shall be at lease five (5) each of any special adjusting and/or installation tools furnished with the hardware by the manufacturer.

3.2 ADJUSTING AND CLEANING

A. Adjust and check each operating item of hardware to ensure correct operation and function. Units which cannot be adjusted to operate as intended for the application made shall be replaced.

B. Final adjustment: Whenever hardware is installed more than one month prior to building acceptance or occupancy of a space or area, the installer shall return to the work during the week prior to acceptance or occupancy and make final check and adjustment of all hardware items. Hardware shall be cleaned as necessary to restore correct operation, function, and finish. Door control devices shall be adjusted to compensate for the final operation of heating and ventilating equipment.

3.3 PROTECTION

A. Whenever hardware is located in areas where it may be subject to damage during construction by handling, cleaning, etc., (i.e., painting, cleaning of bricks) it shall be protected and/or removed from its location until the hazardous condition is terminated.

END OF SECTION

SECTION 09 3000 TILING

PART 1 GENERAL

1.1 SUMMARY

A. Section Includes:
1. Floor and wall tile finishes.
2. Marble thresholds.

B. Related Sections:
1. Division 01: Administrative, procedural, and temporary work requirements.
2. Section 07 9200 - Joint Sealers.

1.2 REFERENCES

A. American National Standards Institute (ANSI):
1. A108/A118/A136.1 - American National Standard for Installation of Ceramic Tile.
2. A137.1 - Specifications for Ceramic Tile.

B. ASTM International (ASTM):
1. A82/A82M - Standard Specification for Steel Wire, Plain, for Concrete Reinforcement.
2. A185/A185M - Standard Specification for Welded Steel Wire Reinforcement, Plain, for Concrete.
3. C144 - Standard Specification for Aggregate for Masonry Mortar.
4. C150 - Standard Specification for Portland Cement.
5. C207 - Standard Specification for Hydrated Lime for Masonry Purposes.
6. C847 - Standard Specification for Metal Lath.
7. C1028 - Standard Test Method for Static Coefficient of Friction of Ceramic Tile and Other Like Surfaces by the Horizontal Dynamometer Pull-Meter Method.
8. D226 - Standard Specification for Asphalt Saturated Organic Felt Used in Roofing and Waterproofing.
9. D227 - Standard Specification for Coal-Tar Saturated Organic Felt Used in Roofing and Waterproofing.
10. D4263 - Standard Test Method for Indicating Moisture in Concrete by the Plastic Sheet Method.
11. D4397 - Standard Specification for Polyethylene Sheeting for Construction, Industrial and Agricultural Applications.

C. Tile Council of North America (TCNA) - Handbook for Ceramic Tile Installation.

D. Resilient Floor Covering Institute (RFCI) - FloorScore Certification Program.

1.3 SUBMITTALS

A. Submittals for Review:
1. Product Data: Manufacturer's installation, cleaning, and maintenance instructions.
2. Samples:
   a. Tile: [1 x 1] inch samples showing available colors.] [Full size samples in each color.]
   b. Grout: [1/2 x 1/2 x 3] inch long samples [showing available colors.] [in each color.]

1.4 QUALITY ASSURANCE

SECTION 09 3000 TILING

A. Installer Qualifications: Minimum [5] years [documented] experience in work of this Section.

B. Tile and Trim Units: Meet ANSI A137.1,.

C. Static Coefficient of Friction for Floor Tile: Minimum 0.60, tested to ASTM C1028 in dry condition.

1.5 DELIVERY, STORAGE AND HANDLING

A. Deliver mortar, adhesive, and grout containers bearing hallmark certifying compliance with reference standards.

B. Protect adhesive containers from freezing and overheating according to manufacturer's instructions.

1.6 PROJECT CONDITIONS

A. Environmental Requirements: Maintain minimum ambient temperature of [50] degrees F during and after installation.

1.7 MAINTENANCE

A. Extra Materials: [[2] percent] of each tile.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturers - Tile:
1. Nemo
2. Daltile
3. Shaw Contract
4. Armstrong

B. Acceptable Manufacturers - Setting and Grouting Materials:
1. Bostik Findley. (www.bostik-us.com)
2. Laticrete International, Inc. (www.laticrete.com)
3. Mapei Corp. USA. (www.mapei.com)
4. TEC. (www.tecspecialty.com)

C. Substitutions: [Under provisions of Division 01.] [Not permitted.]

2.2 MATERIALS

A. Tile:
1. Size: as specified on drawings..
2. Color: as specified on drawings
3. Trim units: [Beads,] [coves,] [and] [bullnoses,] color to match tile.

2.3 ACCESSORIES

A. Latex-Portland Cement Mortar: ANSI A118.4, polymer modified dry set type.

B. Dry Set Portland Cement Mortar: ANSI A118.1, polymer modified dry set type.

C. Epoxy Adhesive:
1. ANSI A118.3, thin set bond type.

D. Portland Cement: ASTM C150, Type 1, white color.

E. Sand: ASTM C144, clean, free of organic matter.

F. Lime: ASTM C207, Type S, hydrated.

G. Water: Clean, potable.

H. Grout:
   1. ANSI [A118.3, epoxy type.]
   2. Color: [To be selected from manufacturer's full color range.]

I. Thresholds: Class A [stone to match tile , honed finish, beveled both sides, radiused from bevels to vertical planes, one piece for full width of door or opening.

J. Joint Sealers: Specified in Section 07 9200.

K. Crack Suppression Membrane:
   1. Type: ANSI A118.12, load bearing, [single component, cold liquid applied type [with reinforcing fabric.

L. Joint Tape: Waterproof, perforated bedding tape.

M. Metal Lath: ASTM C847, expanded diamond mesh, hot dip galvanized.

PART 3 EXECUTION

3.1 PREPARATION

A. Clean surfaces to remove loose and foreign matter that could impair adhesion.

B. Remove ridges and projections. Fill voids and depressions with patching compound compatible with setting materials.

C. Allowable Substrate Tolerances:
   1. Thin set method:
      a. Maximum variation in substrate surface: [1/8] inch in 8 feet.
      b. Maximum height of abrupt irregularities: [1/32] inch.
   2. Thick set method: Maximum [1/4] inch in 10 feet variation in substrate surface.

D. Test concrete substrate to ASTM D4263; do not install tile until surfaces are sufficiently dry.

3.2 INSTALLATION

A. Install [crack suppression membrane]] in accordance with manufacturer’s instructions.

B. Methods:
   1. Walls: ANSI [A108.1A, thick set with [reinforced] portland cement mortar bed.] [A108.1B, thick set with [reinforced] mortar bed and [latex-portland cement] [dry-set portland cement] mortar.] [A108.4, thin set with organic adhesive.] [A108.6, thin set with epoxy adhesive.]
   2. Floors: ANSI [A108.1B, thick set with mortar bed and latex-portland cement mortar] [A108.5, thin set with latex-portland cement mortar.] [A108.6, thin set with epoxy adhesive.]

C. Minimize pieces less than one half size. Locate cuts to be inconspicuous.

D. Lay tile to pattern as shown on Drawings. Do not interrupt tile pattern through openings.

E. Joint Widths:
   1. [Ceramic] tile: [3/16]

2. [Quarry] [and] [paver] tile: [1/4] inch.

F. Make joints watertight, without voids, cracks, excess mortar, or excess grout. [Align joints in wall and floor of same-sized tile.]

G. Fit tile around projections and at perimeter. Smooth and clean cut edges. Ensure that trim will completely cover cut edges.

H. Install Trim:
1. Inside corners: Cove units.
2. Outside corners: Bead units.
3. Base: Base units.
4. Exposed tile ends: Bullnose units.

I. Install thresholds where tile abuts dissimilar floor finish. Center on door or opening.

J. Allow tile to set for a minimum of [48] hours before grouting.

K. Grout tile joints in accordance with ANSI A108.10 without excess grout.

L. Control Joints:
1. Provide control joints at:
   a. Changes in backup material.
   b. Changes in plane.
   c. Over joints in substrate.
   d. Maximum [32] feet on center at interior locations except maximum [12] feet at surfaces exposed to direct sunlight.
   e. Maximum [16] feet on center at exterior locations.
2. Form joints per TCNA Method EJ-171.
3. Install joint backing and joint sealer as specified in Section 07 9200.

3.3 ADJUSTING

A. Remove and replace pieces that have been damaged during installation.

3.4 PROTECTION

A. Provide protection for completed work using nonstaining sheet coverings.

B. Prohibit traffic on tile floors for minimum [3] days after installation.

END OF SECTION

SECTION 096519 RESILIENT TILE FLOORING

Part 1 - General

1.01 Summary

A. Section Includes:
1. Flooring and accessories as shown on the drawings and schedules and as indicated by the requirements of this section.

B. Related Documents
1. Drawings and General Provisions of the Contract (including General and Supplementary Conditions and Division 1 sections) apply to the work of this section.

C. Related Sections:
1. Other Division 9 sections for floor finishes related to this section but not the work of this section

1.02 References

A. ASTM International:
1. ASTM E 648 Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source
2. ASTM E 662 Standard Test Method for Specific Optical Density of Smoke Generated by Solid Materials
3. ASTM F 710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring
4. ASTM F 1066 Standard Specification for Vinyl Composition Tile
5. ASTM F 1482, Standard Guide to Wood Underlayment Products Available for Use Under Resilient Flooring
6. ASTM F 1861 Standard Specification for Resilient Wall Base
7. ASTM F 1869 Standard Test Method for Measuring Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride
8. ASTM F 2170 Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes

C. National Fire Protection Association (NFPA):
1. NFPA 253 Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source
2. NFPA 258 Standard Test Method for Measuring the Smoke Generated by Solid Materials

D. Sustainability Standards
1. ASTM E1347 - 06(2011) Standard Test Method for Color and Color-Difference Measurement by Tristimulus Colorimetry
2. ASTM D5116 - 10 Standard Guide for Small-Scale Environmental Chamber Determinations of Organic Emissions From Indoor Materials/Products and California Department of Public Health (CDPH) Standard Method V1.1-2010
3. ASTM D6866 - 12 Standard Test Methods for Determining the Biobased Content of Solid, Liquid, and Gaseous Samples Using Radiocarbon Analysis.
4. ISO 14001 Environmental management systems -- Requirements with guidance for use
5. ISO 14021 Environmental labels and declarations-Self-declared environmental claims (Type II environmental labeling)

6. ISO 14024 Environmental labels and declarations -- Type I environmental labeling -- Principles and procedures
7. ISO 14025 Environmental labels and declarations -- Type III environmental declarations -- Principles and procedures
8. NSF/ANSI 332: Sustainability Assessment for Resilient Floor Coverings

1.03 System Description

A. Performance Requirements:
Provide flooring which has been manufactured, fabricated and installed to performance criteria certified by manufacturer without defects, damage, or failure.

B. Administrative Requirements
1. Pre-installation Meeting: Conduct an on-site pre-installation meeting to verify project requirements, substrate conditions, manufacturer's installation instructions and manufacturer's warranty requirements. Comply with Division 1 Project Management and Coordination (Project Meetings) Section.
2. Pre-installation Testing: Conduct pre-installation testing as follows: i.e. moisture tests, bond test, pH test, etc)

D. Sequencing and Scheduling
1. Install flooring and accessories after the other finishing operations, including painting, have been completed. Close spaces to traffic during the installation of the flooring.
2. Do not install flooring over concrete slabs until they are sufficiently dry to achieve a bond with the adhesive, in accordance with the manufacturer's recommended bond, moisture tests and pH test.

1.04 SUBMITTALS

A. Tech Data - Submit shop drawings, seaming plan, coving details, and manufacturer's technical data, installation and maintenance instructions for flooring and accessories.

B. Samples - Submit the manufacturer's standard samples showing the required colors for flooring and applicable accessories.

C. MSDS - Submit Material Safety Data Sheets (MSDS) available for flooring products, adhesives, patching/leveling compounds, floor finishes (polishes) and cleaning agents.

D. Closeout Submittals: Submit the following:
a. Operation and Maintenance Data: Operation and maintenance data for installed products in accordance with Division 1 Closeout Submittals (Maintenance Data and Operation Data) Section. Include methods for maintaining installed products, and precautions against cleaning materials and methods detrimental to finishes and performance.
b. Warranty: Warranty documents specified herein

1.05 QUALITY ASSURANCE

A. Responsibility

SECTION 096519 RESILIENT TILE FLOORING

Single-Source Responsibility: provide types of flooring and accessories supplied by one manufacturer, including leveling and patching compounds, and adhesives.

B. Fire Performance Characteristics: Provide resilient vinyl composition tile flooring with the following fire performance characteristics as determined by testing material in accordance with ASTM test methods indicated below by a certified testing laboratory or other testing agency acceptable to authorities having jurisdiction:
   a. ASTM E 648 Critical Radiant Flux of 0.45 watts per sq. cm. or greater, Class I
   b. ASTM E 662 (Smoke Generation) Maximum Specific Optical Density of 450 or less

1.06 DELIVERY, STORAGE, AND HANDLING

A.Comply with manufacturer's ordering instructions and lead time requirements to avoid construction delays.

C. Deliverability
Deliver materials in good condition to the jobsite in the manufacturer's original unopened containers that bear the name and brand of the manufacturer, project identification, and shipping and handling instructions.

D. Storage
Store materials in a clean, dry, enclosed space off the ground, protected from harmful weather conditions and at temperature and humidity conditions recommended by the manufacturer. Protect adhesives from freezing. Store flooring, adhesives and accessories in the spaces where they will be installed for at least 48 hours before beginning installation.

1.07 PROJECT CONDITIONS

A. Temperature
Maintain a minimum temperature in the spaces to receive the flooring and accessories of 65°F (18°C) and a maximum temperature of [100°F (38°C)][85°F (29°C)] for at least 48 hours before, during, and for not less than 48 hours after installation. Thereafter, maintain a minimum temperature of 55°F (13°C) in areas where work is completed. Protect all materials from the direct flow of heat from hot-air registers, radiators, or other heating fixtures and appliances. Refer to the Armstrong Guaranteed Installations Systems manual, F-5061 for a complete guide on project conditions.

1.08 WARRANTY

A. Resilient Flooring: Submit a written warranty executed by the manufacturer, agreeing to repair or replace resilient flooring that fails within the warranty period.

B. Warranty Period
Warranty Period: 5 years

C. Rights
The Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

SECTION 096519 RESILIENT TILE FLOORING

D. Validation
For the Warranty to be valid, this product is required to be installed using the appropriate Armstrong Guaranteed Installation System. Product installed not using the specific instructions from the Guaranteed Installation System will void the warranty.

Part 2- PRODUCTS

2.01 Manufacturer

A. Resilient tile flooring, wall base, adhesives and accessories:
1. Armstrong World Industries, Inc.,
2. Mannington Commercial
3. Tarkett
4. Approved Equal

2.02 Resilient Tile Flooring Materials

A. Products – Basis of Design
Provide Vinyl Composition Tile: Match existing color and style.
a. Description: Tile composed of polyvinyl chloride resin, plasticizers, fillers, stabilizers and pigments with colors and texture dispersed uniformly throughout its entire thickness.
b. Vinyl composition tile shall conform to the requirements of ASTM F 1066, 'Standard Specification Vinyl Composition Floor Tile", Class 2, through-pattern
c. Color to be submitted for approval with chip of existing - 12 x 12 x 1/8

2.03 Wall Base Materials

A. Resilient Base: ASTM F1861, Type TS rubber, vulcanized thermoset; top set - Style B, Cove.
a. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E 648 or NFPA 253.
b. Height: 4 inch (100 mm).
c. Thickness: 0.125 inch (3.2 mm)thick.
d. Finish: Satin.
e. Length: Roll.
f. Color: As scheduled on drawings.

B. Manufacturers:
a. Johnsonite, a Tarkett Company: wWw.johnsonite.com.
b. Roppe Corp: www.roppe.com.
c. Armstrong World Industries, Inc: www.armstrong.co
d. Approved Equal

2.05 Adhesives

A. Full Spread
For Tile Installation System, Full Spread: Provide Armstrong S-750 Premium Tile Flooring Adhesive under the tile and Armstrong S-725 Wall Base Adhesive at the wall base as recommended by the flooring manufacturer.

B. Tile On
[For Tile Installation System, Tile On: Provide Armstrong S-750 Premium Tile Flooring Adhesive Resilient Tile Adhesive under the tile over smooth, completely bonded existing resilient flooring and Armstrong S-725 Wall Base Adhesive at the wall base as recommended by the flooring manufacturer.

C. High Moisture
For Tile High-Moisture Installation Warranty, Full Spread: Provide Armstrong S-515 Clear Thin Spread Tile Adhesive Resilient Tile Adhesive under the tile and Armstrong S-725 Wall Base Adhesive at the wall base as recommended by the flooring manufacturer.

2.06 Accessories

A. Patching
For patching, smoothing, and leveling monolithic subfloors (concrete, terrazzo, quarry tile, ceramic tile, and certain metals), provide Armstrong S-184 Fast-Setting Cement-Based Patch and Underlayment

B. Sealing
For sealing joints between the top of wall base or integral cove cap and irregular wall surfaces such as masonry, provide plastic filler applied according to the manufacturer's recommendations.

C. Transition
Provide transition/reducing strips tapered to meet abutting materials.

D. Threshold
Provide threshold of thickness and width as shown on the drawings.

E. Resilient Edge Strips
Provide resilient edge strips of width shown on the drawings, of equal gauge to the flooring, homogeneous vinyl or rubber composition, tapered or bullnose edge, with color to match or contrast with the flooring, or as selected by the Architect from standard colors available.

F. Metal Edge Strips
Provide metal edge strips of width shown on the drawings and of required thickness to protect exposed edges of the flooring. Provide units of maximum available length to minimize the number of joints. Use butt-type metal edge strips for concealed anchorage, or overlap-type metal edge strips for exposed anchorage. Unless otherwise shown, provide strips made of extruded aluminum with a mill finish.

Part 3 - EXECUTION

3.01 Manufacturer's Instructions

A. Compliance: Comply with manufacturer's product data, including technical bulletins, product catalog, installation instructions, and product carton instructions for installation and maintenance procedures as needed.

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3.02 Examination

A. Site Verification

Site Verification of Conditions: Verify substrate conditions (which have been previously installed under other sections) are acceptable for product installation in accordance with manufacturer's instructions (i.e. moisture tests, bond test, pH test, etc.).

B. Visual Inspection

Visually inspect flooring materials, adhesives and accessories prior to installation. Flooring material with visual defects shall not be installed and shall not be considered as a legitimate claim.

C. Examine Subfloors

Examine subfloors prior to installation to determine that surfaces are smooth and free from cracks, holes, ridges, and other defects that might prevent adhesive bond or impair durability or appearance of the flooring material.

D. Inspect Subfloors

Inspect subfloors prior to installation to determine that surfaces are free from curing, sealing, parting and hardening compounds; residual adhesives; adhesive removers; and other foreign materials that might prevent adhesive bond. Visually inspect for evidence of moisture, alkaline salts, carbonation, dusting, mold, or mildew.

E. Reporting

Report conditions contrary to contract requirements that would prevent a proper installation. Do not proceed with the installation until unsatisfactory conditions have been corrected.

F. Failure Warning

Failure to call attention to defects or imperfections will be construed as acceptance and approval of the subfloor. Installation indicates acceptance of substrates with regard to conditions existing at the time of installation.

3.03 Preparation

A. Smooth Surfaces

Subfloor Preparation: Smooth concrete surfaces, removing rough areas, projections, ridges, and bumps, and filling low spots, control or construction joints, and other defects with Armstrong S-184 Fast-Setting Cement-Based Patch and Underlayment as recommended by the flooring manufacturer. Refer to Armstrong Guaranteed Installation Systems manual, F-5061 and ASTM F 710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring for additional information on subfloor preparation.

B. Subfloor Cleaning

Subfloor Cleaning: Remove paint, varnish, oils, release agents, sealers, and waxes. Remove residual adhesives as recommended by the flooring manufacturer. Remove curing and hardening compounds not compatible with the adhesives used, as indicated by a bond test or by the compound manufacturer's recommendations for flooring. Avoid organic solvents. Refer to the Armstrong Guaranteed Installation Systems manual, F-5061 and ASTM F 710 Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring for additional information on subfloor preparation.

C. Full Spread / Tile Installation

For Tile Installation System, Full Spread or for Tile Installation System, Tile On , perform subfloor moisture testing in accordance with [ASTM F 2170, 'Standard Test Method for Determining Relative Humidity in Concrete Slabs Using in-situ Probes'][ASTM F 1869,Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride] and Bond Tests as described in the Armstrong Guaranteed Installation Systems manual, F-5061, to determine if surfaces are dry; free of curing and hardening compounds, old adhesive, and other coatings; and ready to receive flooring. [Relative humidity shall not exceed 80%.][MVER shall not exceed 5 lbs./1000 sq. ft./24 hrs.] On installations where both the Percent Relative Humidity and the Moisture Vapor Emission Rate tests are conducted, results for both tests shall comply with the allowable limits listed above. Do not proceed with flooring installation until results of moisture tests are acceptable. All test results shall be documented and retained]

D. High Moisture S-515

For Tile High-Moisture Installation Warranty when using S-515 Adhesive, perform subfloor moisture testing in accordance with [ASTM F 2170, 'Standard Test Method for Determining Relative Humidity in Concrete Slabs Using in-situ Probes'][ASTM F 1869,'Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride' and Bond Tests as described in the Armstrong Guaranteed Installation Systems manual, F-5061, to determine if surfaces are dry; free of curing and hardening compounds, old adhesive, and other coatings; and ready to receive flooring. [Relative humidity shall not exceed 90%.][MVER shall not exceed 7 lbs./1000 sq. ft./24 hrs.] On installations where both the Percent Relative Humidity and the Moisture Vapor Emission Rate tests are conducted, results for both tests shall comply with the allowable limits listed above. Do not proceed with flooring installation until results of moisture tests are acceptable. All test results shall be documented and retained].

G. pH Test

Concrete pH Testing: Perform pH tests on concrete floors regardless of their age or grade level. All test results shall be documented and retained.

I. Surface Cleaning

Surface Cleaning: Vacuum or broom-clean surfaces to be covered immediately before the application of flooring. Make subfloor free from dust, dirt, grease, and all foreign materials.

3.04 Installation of Flooring

A. Wall to Wall

Install flooring wall to wall before the installation of floor-set cabinets, casework, furniture, equipment, movable partitions, etc. Extend flooring into toe spaces, door recesses, closets, and similar openings as shown on the drawings.

D. Scribe

Scribe, cut, and fit to permanent fixtures, columns, walls, partitions, pipes, outlets, and built-in furniture and cabinets.

E. Tools

Install flooring with adhesives, tools, and procedures in strict accordance with the manufacturer's written instructions. Observe the recommended adhesive trowel notching, open times, and working times.

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3.05 Installation of Accessories

A. Top Set

Apply top set wall base to walls, columns, casework, and other permanent fixtures in areas where top-set base is required. Install base in lengths as long as practical, with inside corners fabricated from base materials that are mitered or coped. Tightly bond base to vertical substrate with continuous contact at horizontal and vertical surfaces.

B. Voids

Fill voids with plastic filler along the top edge of the resilient wall base or integral cove cap on masonry surfaces or other similar irregular substrates.

C. Resilient Edge Strips

Place resilient edge strips tightly butted to flooring, and secure with adhesive recommended by the edge strip manufacturer. Install edge strips at edges of flooring that would otherwise be exposed.

3.06 Cleaning

A. Initial Maint

Perform initial and on-going maintenance according to the latest edition of Manufacturer Installation Systems manual.

3.07 Protection

A. Protection

Protect installed flooring as recommended by the flooring manufacturer against damage from rolling loads, other trades, or the placement of fixtures and furnishings.

END OF SECTION

SECTION 09 9000 INTERIOR PAINTS AND COATINGS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Surface preparation.

B. Field application of paints.

C. Scope: Finish all interior surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:

D. Do Not Paint or Finish the Following Items:
   1. Items fully factory-finished unless specifically so indicated; materials and products having factory-applied primers are not considered factory finished.
   2. Items indicated to receive other finishes.
   3. Items indicated to remain unfinished.
   4. Fire rating labels, equipment serial number and capacity labels, and operating parts of equipment.
   5. Floors, unless specifically so indicated.
   6. Glass.
   7. Concealed pipes, ducts, and conduits.

1.2 RELATED SECTIONS

A. 055000 – Metal Fabrications: Shop-primed items.

1.3 REFERENCES

A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency; current edition.

B. ASTM D16 - Standard Terminology for Paint, Related Coatings, Materials, and Applications; 2003.

C. ASTM D4442 - Standard Test Methods for Direct Moisture Content Measurement of Wood and Wood-Base Materials; 1992 (Reapproved 2003).

D. GreenSeal GS-11 - Paints; 1993.

E. NACE (IMP) - Industrial Maintenance Painting; NACE International; Edition date unknown.

F. SSPC (PM1) - Good Painting Practice: SSPC Painting Manual, Vol. 1; Society for Protective Coatings; Fourth Edition.

1.4 DEFINITIONS

A. Conform to ASTM D16 for interpretation of terms used in this section.

1.5 SUBMITTALS

A. Submit under provisions of Article 4.7 of General Conditions.

B. Product Data: Provide data on all finishing products, including VOC content.

C. Samples: Submit two samples, 12x12 inch in size illustrating range of colors and textures available for each surface finishing product scheduled.

D. Certification: By manufacturer that all paints and coatings comply with VOC limits specified.

E. Manufacturer's Instructions: Indicate special surface preparation procedures.

F. Maintenance Data: Submit data on cleaning, touch-up, and repair of painted and coated surfaces.

1.6 REGULATORY REQUIREMENTS

A. Conform to applicable code for flame and smoke rating requirements for products and finishes.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

B. Container Label: Include manufacturer's name, type of paint, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.

C. Paint Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

1.8 FIELD CONDITIONS

A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the paint product manufacturer.

B. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.

C. Do not apply exterior coatings during rain or snow, or when relative humidity is outside the humidity ranges required by the paint product manufacturer.

D. Minimum Application Temperatures for Latex Paints: 45 degrees F for interiors; 50 degrees F for exterior; unless required otherwise by manufacturer's instructions.

E. Minimum Application Temperature for Varnish Finishes: 65 degrees F for interior or exterior, unless required otherwise by manufacturer's instructions.

F. Provide lighting level of 80 ft candles measured mid-height at substrate surface.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Provide all paint and coating products used in any individual system from the same manufacturer; no exceptions.

B. Paints: (see finish schedule for Products)
   1. Sherwin Williams Company: www.sherwin-williams.com for Exterior painting.
   2. PPG Architectural Finishes, Inc: www.ppgaf.com for Exterior painting.
   3. Benjamin Moore & Co: www.benjaminmoore.com. for Interior painting.
   4. Approved Equal

2.2 PAINTS AND COATINGS - GENERAL

A. Paints and Coatings: Ready mixed, unless intended to be a field-catalyzed coating.
   1. Provide paints and coatings of a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating, with good flow and brushing properties, and capable of drying or curing free of streaks or sags.
   2. Supply each coating material in quantity required to complete entire project's work from a single production run.
   3. Do not reduce, thin, or dilute coatings or add materials to coatings unless such procedure is specifically described in manufacturer's product instructions.

B. Primers: Where the manufacturer offers options on primers for a particular substrate, use primer categorized as "best" by the manufacturer.

C. Volatile Organic Compound (VOC) Content:
   1. Provide coatings that comply with the most stringent requirements specified in the following:
      a. 40 CFR 59, Subpart D--National Volatile Organic Compound Emission Standards for Architectural Coatings.
      b. Architectural coatings VOC limits of State in which the project is located.

c. USGBC LEED Rating System, edition as stated in Section 01355; for interior wall and ceiling finish (all coats), anti-corrosive paints on interior ferrous metal, clear wood stains and finishes, sanding sealers, other sealers, shellac, and floor coatings.

2. Determination of VOC Content: Testing and calculation in accordance with 40 CFR 59, Subpart D (EPA Method 24), exclusive of colorants added to a tint base and water added at project site; or other method acceptable to authorities having jurisdiction.

2.3 ACCESSORY MATERIALS

A. Accessory Materials: Provide all primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials required to achieve the finishes specified whether specifically indicated or not; commercial quality.

B. Patching Material: Latex filler.

C. Fastener Head Cover Material: Latex filler.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

B. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

C. Test shop-applied primer for compatibility with subsequent cover materials.

D. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers. Where acceptability of substrate conditions is in question, apply samples and perform in-situ testing to verify compatibility, adhesion, and film integrity of new paint application.

1) Report, in writing, conditions that may affect application, appearance, or performance of paint.

E. Substrate Conditions:

1) Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:
   a) Concrete: 12 percent.
   b) Masonry (Clay and CMU): 12 percent.
   c) Wood: 15 percent.
   d) Gypsum Board: 12 percent.
   e) Plaster: 12 percent.
2) Gypsum Board Substrates: Verify that finishing compound is sanded smooth.
3) Plaster Substrates: Verify that plaster is fully cured.
4) Spray-Textured Ceiling Substrates: Verify that surfaces are dry.

F. Proceed with coating application only after unsatisfactory conditions have been corrected; application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Clean surfaces thoroughly and correct defects prior to coating application.

B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

C. Remove or mask surface appurtenances, including electrical plates, hardware, light fixture trim, escutcheons, and fittings, prior to preparing surfaces or finishing.

D. Surfaces: Correct defects and clean surfaces which affect work of this section. Remove or repair existing coatings that exhibit surface defects.

E. Seal surfaces that might cause bleed through or staining of topcoat.

F. Remove mildew from impervious surfaces by scrubbing with solution of tetra-sodium phosphate and bleach. Rinse with clean water and allow surface to dry.

G. Concrete and Unit Masonry Surfaces to be Painted: Remove dirt, loose mortar, scale, salt or alkali powder, and other foreign matter. Remove oil and grease with a solution of tri-sodium phosphate; rinse well and allow to dry. Remove stains caused by weathering of corroding metals with a solution of sodium metasilicate after thoroughly wetting with water. Allow to dry.

H. Gypsum Board Surfaces to be Painted: Fill minor defects with filler compound. Spot prime defects after repair.

I. Galvanized Surfaces to be Painted: Remove surface contamination and oils and wash with solvent. Apply coat of etching primer.

J. Uncorroded Uncoated Steel and Iron Surfaces to be Painted: Remove grease, mill scale, weld splatter, dirt, and rust. Where heavy coatings of scale are evident, remove by hand wire brushing or sandblasting; clean by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts, and nuts are similarly cleaned. Prime paint entire surface; spot prime after repairs.

K. Shop-Primed Steel Surfaces to be Finish Painted: Sand and scrape to remove loose primer and rust. Feather edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces. Re-prime entire shop-primed item.

L. Interior Wood Surfaces to Receive Opaque Finish: Wipe off dust and grit prior to priming. Seal knots, pitch streaks, and sappy sections with sealer. Fill nail holes and cracks after primer has dried; sand between coats. Back prime concealed surfaces before installation.

M. 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 reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

N. 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) Concrete Floors: Remove oil, dust, grease, dirt, and other foreign materials. Comply with SSPC-SP-13/NACE 6 or ICRI 03732.

O. Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceed that permitted in manufacturer's written instructions.

3.3 APPLICATION

A. Apply products in accordance with manufacturer's instructions.

B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

C. Apply each coat to uniform appearance.

D. Sand wood and metal surfaces lightly between coats to achieve required finish.

E. Vacuum clean surfaces of loose particles. Use tack cloth to remove dust and particles just prior to applying next coat.

F. Wood to Receive Transparent Finishes: Tint fillers to match wood. Work fillers into the grain before set. Wipe excess from surface.

G. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

H. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."
    1) Use applicators and techniques suited for paint and substrate indicated.
    2) Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
    3) Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
    4) Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
    5) Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.

b. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.

c. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

d. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

e. Painting Fire Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:
    1) Paint the following work where exposed in equipment rooms:
        a) Equipment, including panelboards[**and switch gear**].
        b) Uninsulated metal piping.
        c) Uninsulated plastic piping.
        d) Pipe hangers and supports.
        e) Metal conduit.
        f) Plastic conduit.
        g) Tanks that do not have factory-applied final finishes.
        h) Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
    2) Paint the following work where exposed in occupied spaces:
        a) Equipment, including panelboards.
        b) Uninsulated metal piping.
        c) Uninsulated plastic piping.
        d) Pipe hangers and supports.
        e) Metal conduit.
        f) Plastic conduit.
        g) Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
        h) Other items as directed by Architect.
    3) Paint portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets that are visible from occupied spaces.

3.4 FINISHING MECHANICAL AND ELECTRICAL EQUIPMENT

A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.

B. Finish equipment, piping, conduit, and exposed duct work.

C. Reinstall electrical cover plates, hardware, light fixture trim, escutcheons, and fittings removed prior to finishing.

3.5 CLEANING

i. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.
ii. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.
iii. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.
iv. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.
v. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 SCHEDULE - SURFACES TO BE FINISHED

A. Do Not Paint or Finish the Following Items:
1. Items fully factory-finished unless specifically noted.
2. Fire rating labels, equipment serial number and capacity labels.
3. Stainless steel items.

B. Mechanical and Electrical: Use paint systems defined for the substrates to be finished.
1. Paint all insulated and exposed pipes occurring in finished areas to match background surfaces, unless otherwise indicated.
2. Paint shop-primed items occurring in finished areas.
3. Paint dampers exposed behind louvers, grilles, and convector and baseboard cabinets to match face panels.

END OF SECTION

SECTION 099123 INTERIOR PAINTING

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 surface preparation and the application of paint systems on **interior substrates:**

1. Concrete.
2. Clay masonry.
3. Concrete masonry units (CMU).
4. Steel.
5. Cast iron.
6. Galvanized metal.
7. Aluminum (not anodized or otherwise coated).
8. Wood.
9. Gypsum board.
10. Plaster.
11. Spray-textured ceilings.
12. Cotton or canvas insulation covering.
13. ASJ insulation covering.

B. Related Requirements:

1. Section 051200 "Structural Steel Framing" for shop priming of metal substrates with primers specified in this section.
2. Section 099113 "Exterior Painting" for surface preparation and the application of paint systems on exterior substrates.
3. Section 099300 "Staining and Transparent Finishing" for surface preparation and the application of wood stains and transparent finishes on interior wood substrates.
4. Section 099600 "High-Performance Coatings" for tile-like coatings.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.

1. Indicate VOC content.

B. Sustainable Design Submittals:

1. Product Data for LEED 2009 Credit EQ 4.2: For paints and coatings, showing printed statement of VOC content.
2. Laboratory Test Reports: For paints and coatings, indicating compliance with LEED 2009 Credit EQ 4.2 requirements for low-emitting materials.

C. Samples for Initial Selection: For each type of topcoat product.

D. Samples for Verification: For each type of paint system and in each color and gloss of topcoat.

1. Submit Samples on rigid backing, 8 inches (200 mm) square.
2. Label each coat of each Sample.
3. Label each Sample for location and application area.

E. Product List: For each product indicated, include the following:

1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
2. Indicate VOC content.

1.4 CLOSEOUT SUBMITTALS

1. Coating Maintenance Manual: Provide coating maintenance manual including area summary with finish schedule, area detail designating location where each product/color/finish was used, product data pages, material safety data sheets, care and cleaning instructions, touch-up procedures, and color samples of each color and finish used.

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials[**, from the same product run,**] that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Paint: [**1 gal. (3.8 L)**] of each material and color applied.

1.6 QUALITY ASSURANCE

A. 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 100 sq. ft. (9 sq. m).
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.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Delivery and Handling: Deliver products to Project site in an undamaged condition in manufacturer's original sealed containers, complete with labels and instructions for handling, storing, unpacking, protecting, and installing. Packaging shall bear the manufacturer's label with the following information:

1. Product name and type (description).
2. Batch date.
3. Color number.
4. VOC content.
5. Environmental handling requirements.
6. Surface preparation requirements.
7. Application instructions.

B. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.

1.8 FIELD CONDITIONS

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).

B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

C. Lead Paint: It is not expected that lead paint will be encountered in the Work.

1. If suspected lead paint is encountered, do not disturb; immediately notify Architect and Owner.

2. Do not disturb lead paint or items suspected of containing hazardous materials except under procedures specified.

3. Perform preparation for painting of substrates known to include lead paint in accordance with EPA Renovation, Repair and Painting Rule and additional requirements of authorities having jurisdiction.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis-of-Design Product: Subject to compliance with requirements, provide Sherwin-Williams Company (The); products indicated or comparable product from one of the following:

1. PPG Architectural Finishes, Inc: www.ppgaf.com for Exterior painting.
2. Benjamin Moore & Co: www.benjaminmoore.com. for Interior painting.
3. Approved Equal

B. Comparable Products: Comparable products of approved manufacturers will be considered in accordance with Section 016000 "Product Requirements," and the following:

1. Products are approved by manufacturer in writing for application specified.
2. Products meet performance and physical characteristics of basis of design product including published ratio of solids by volume, plus or minus two percent.

C. Source Limitations: Obtain paint materials from single source from single listed manufacturer.

1. Manufacturer's designations listed on a separate color schedule are for color reference only and do not indicate prior approval.

2.2 PAINT, GENERAL

A. Material Compatibility:

1. 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.
2. 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.

B. VOC Content: For field applications that are inside the weatherproofing system, paints and coatings shall provide materials that comply with VOC limits of authorities having jurisdiction and for interior paints and coatings applied at Project site, the following VOC limits exclusive of colorants added to a tint base, when calculated according to 40 CFR 59, Subpart D (EPA Method 24):

1. Flat Paints and Coatings: 50 g/L.
2. Nonflat Paints and Coatings: 150 g/L.

3. Primers, Sealers, and Undercoaters: 200 g/L.
4. Anticorrosive and Antirust Paints Applied to Ferrous Metals: 250 g/L.
5. Floor Coatings: 100 g/L.
6. Shellacs, Clear: 730 g/L.
7. Shellacs, Pigmented: 550 g/L.

C. Low-Emitting Materials: Interior paints and coatings shall comply with the testing and product requirements of the California Department of Health Services' "Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small Scale Environmental Chambers."

D. Colors: **As selected by Architect from manufacturer's full range**

2.3 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 coatings 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 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work. Verify suitability of substrates, including surface conditions and compatibility with existing finishes and primers. Where acceptability of substrate conditions is in question, apply samples and perform in-situ testing to verify compatibility, adhesion, and film integrity of new paint application.

1. Report, in writing, conditions that may affect application, appearance, or performance of paint.

B. Substrate Conditions:

1. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

a. Concrete: 12 percent.
b. Masonry (Clay and CMU): 12 percent.
c. Wood: 15 percent.
d. Gypsum Board: 12 percent.
e. Plaster: 12 percent.

2. Gypsum Board Substrates: Verify that finishing compound is sanded smooth.
3. Plaster Substrates: Verify that plaster is fully cured.
4. Spray-Textured Ceiling Substrates: Verify that surfaces are dry.

C. Proceed with coating application only after unsatisfactory conditions have been corrected; application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Manual" applicable to substrates indicated.

B. 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 if any.

C. 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 reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

D. 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. Concrete Floors: Remove oil, dust, grease, dirt, and other foreign materials. Comply with SSPC-SP-13/NACE 6 or ICRI 03732.

E. Masonry Substrates: Remove efflorescence and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces or mortar joints exceed that permitted in manufacturer's written instructions.

F. Steel Substrates: Remove rust, loose mill scale, and shop primer, if any. Clean using methods recommended in writing by paint manufacturer[**.**] [**but not less than the following:**]

1. SSPC-SP 2, "Hand Tool Cleaning."
2. SSPC-SP 3, "Power Tool Cleaning."
3. SSPC-SP 7/NACE No. 4, "Brush-off Blast Cleaning."

4. SSPC-SP 11, "Power Tool Cleaning to Bare Metal."

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 fabricated from coil stock by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.

I. Aluminum Substrates: Remove loose surface oxidation.

J. Wood Substrates:

1. Scrape and clean knots, and apply coat of knot sealer before applying primer.
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.

K. Cotton or Canvas Insulation Covering Substrates: Remove dust, dirt, and other foreign material that might impair bond of paints to substrates.

3.3 APPLICATION

A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."

1. Use applicators and techniques suited for paint and substrate indicated.
2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
4. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
5. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.

B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.

C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

E. Painting Fire Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:

1. Paint the following work where exposed in equipment rooms:

a. Equipment, including panelboards[**and switch gear**].
b. Uninsulated metal piping.
c. Uninsulated plastic piping.
d. Pipe hangers and supports.
e. Metal conduit.
f. Plastic conduit.
g. Tanks that do not have factory-applied final finishes.
h. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.

2. Paint the following work where exposed in occupied spaces:

a. Equipment, including panelboards.
b. Uninsulated metal piping.
c. Uninsulated plastic piping.
d. Pipe hangers and supports.
e. Metal conduit.
f. Plastic conduit.
g. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
h. Other items as directed by Architect.

3. Paint portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets that are visible from occupied spaces.

3.4 FIELD 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.

3.5 CLEANING AND PROTECTION

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 INTERIOR PAINTING SCHEDULE

A. Concrete Substrates, Nontraffic Surfaces **and Clay Masonry**:

1. Latex System:

a. Prime Coat: Primer, latex, interior.

1) S-W Loxon Concrete & Masonry Primer Sealer, A24W8300, at 8.0 mils (0.203 mm) wet, 3.2 mils (0.081 mm) dry.

b. Intermediate Coat: Latex, interior, matching topcoat.

c. Topcoat: Latex, interior, low sheen.

1) S-W ProMar 200 Zero VOC Latex Low Sheen Eg-Shel, B24-2600 Series, at 4.0 mils (0.102 mm) wet, 1.6 mils (0.041 mm) dry, per coat.

d. Topcoat: Latex, interior, eggshell.

1) S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series, at 4.0 mils (0.102 mm) wet, 1.7 mils (0.043 mm) dry, per coat .

e. Topcoat: Latex, interior, semi-gloss.

1) S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series, at 4.0 mils (0.102 mm) wet, 1.6 mils (0.041 mm) dry, per coat .

f. Topcoat: Latex, interior, gloss.

1) S-W ProMar 200 Zero VOC Gloss, B21-12650 Series, at 4.0 mils (0.102 mm) wet, 1.4 mils (0.036 mm) dry, per coat.

2. Water-Based Light Industrial Coating System:

a. Prime Coat: Primer sealer, latex, interior:

1) S-W Loxon Concrete & Masonry Primer Sealer, A24W8300, at 8.0 mils (0.203 mm) wet, 3.2 mils (0.081 mm) dry.

b. Intermediate Coat: Light industrial coating, interior, water based, matching topcoat.
c. Topcoat: Light industrial coating, interior, water based, eggshell:

1) S-W Pro Industrial Pre-Catalyzed Water Based Epoxy, K45-151 Series, at 4.0 mils (0.102 mm) wet, 1.5 mils (0.038 mm) dry, per coat.

d. Topcoat: Light industrial coating, interior, water based, semi-gloss:

1) S-W Pro Industrial Pre-Catalyzed Water Based Epoxy, K46-151 Series, at 4.0 mils (0.102 mm) wet, 1.5 mils (0.038 mm) dry, per coat.

B. CMU Substrates:

1. Latex System:

a. Block Filler: Block filler, latex, interior/exterior:

1) S-W PrepRite Block Filler, B25W25, at 75-125 sq. ft. per gal. (1.84 to 3.07 sq. m per liter).

b. Intermediate Coat: Latex, interior, matching topcoat.
c. Topcoat: Latex, interior, flat:

1) S-W ProMar 200 Zero VOC Latex Flat, B30-2600 Series, at 4.0 mils (0.102 mm) wet, 1.6 mils (0.041 mm) dry, per coat.

d. Topcoat: Latex, interior, low sheen:

1) S-W ProMar 200 Zero VOC Latex Low Sheen Enamel, B24-2600 Series, at 4.0 mils (0.102 mm) wet, 1.6 mils (0.041 mm) dry, per coat.

e. Topcoat: Latex, interior, eggshell:

1) S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series, at 4.0 mils (0.102 mm) wet, 1.7 mils (0.043 mm) dry, per coat.

f. Topcoat: Latex, interior, semi-gloss:

1) S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series, at 4.0 mils (0.102 mm) wet, 1.6 mils (0.041 mm) dry, per coat.

g. Topcoat: Latex, interior, gloss:

1) S-W ProMar 200 Zero VOC Gloss, B21-12650 Series, at 4.0 mils (0.102 mm) wet, 1.5 mils (0.038 mm) dry, per coat.

2. Water-Based Light Industrial Coating System:

a. Block Filler: Block filler, latex, interior/exterior:

1) S-W PrepRite Block Filler, B25W25, at 75-125 sq. ft. per gal. (1.84 to 3.07 sq. m per liter).

b. Intermediate Coat: Light industrial coating, interior, water based, matching topcoat.
c. Topcoat: Light industrial coating, interior, water based, eggshell:

1) S-W Pro Industrial Pre-Catalyzed Water Based Epoxy, K45-151 Series, at 4.0 mils (0.102 mm) wet, 1.5 mils (0.038 mm) dry, per coat.

d. Topcoat: Light industrial coating, interior, water based, semi-gloss:

1) S-W Pro Industrial Pre-Catalyzed Water Based Epoxy, K46-151 Series, at 4.0 mils (0.102 mm) wet, 1.5 mils (0.038 mm) dry, per coat.

C. Metal Substrates (Aluminum, Steel, Galvanized Steel):

1. Latex System:

a. Prime Coat: Primer, rust-inhibitive, water based:

1) S-W Pro Industrial Pro-Cryl Universal Primer, B66-310 Series, at 5.0 to 10 mils (0.127 to 0.254 mm) wet, 2.0 to 4.0 mils (0.051 to 0.102 mm) dry.

b. Intermediate Coat: Water-based acrylic, interior, matching topcoat.
c. Topcoat: Water-based acrylic, semi-gloss:

1) S-W Pro Industrial Acrylic Semi-Gloss Coating, B66-650 Series, at 2.5 to 4.0 mils (0.064 to 0.102 mm) dry, per coat.

d. Topcoat: Water-based acrylic, gloss:

1) S-W Pro Industrial Acrylic Gloss Coating, B66-660 Series, at 2.5 to 4.0 mils (0.064 to 0.102 mm) dry, per coat.

2. Water-Based Light Industrial Coating System:

a. Prime Coat: Primer, rust-inhibitive, water based:

1) S-W Pro Industrial Pro-Cryl Universal Primer, B66-310 Series, at 5.0 to 10 mils (0.127 to 0.254 mm) wet, 2.0 to 4.0 mils (0.051 to 0.102 mm) dry.

b. Intermediate Coat: Light industrial coating, interior, water based, matching topcoat.

c. Topcoat: Light industrial coating, interior, water based, eggshell:

1) S-W Pro Industrial Pre-Catalyzed Water Based Epoxy, K45-151 Series, at 4.0 mils (0.102 mm) wet, 1.5 mils (0.038 mm) dry, per coat.

d. Topcoat: Light industrial coating, interior, water based, semi-gloss:

1) S-W Pro Industrial Pre-Catalyzed Water Based Epoxy, K46-151 Series, at 4.0 mils (0.102 mm) wet, 1.5 mils (0.038 mm) dry, per coat.

3. Waterbased/Alkyd Urethane System:

a. Prime Coat:

1) S-W Pro Industrial Pro-Cryl Universal Primer, B66-310 Series, at 5.0 to 10 mils (0.127 to 0.254 mm) wet, 2.0 to 4.0 mils (0.051 to 0.102 mm) dry.

b. Intermediate Coat: Water-based acrylic-alkyd, interior, matching topcoat.
c. Topcoat: Water-based alkyd-urethane, semi-gloss, interior:

1) S-W Pro Industrial Waterbased Alkyd Urethane Semi-Gloss, B53-1150 Series, at 4.0 mils (0.102 mm) wet, 1.4 mils (0.036 mm) dry, per coat.

d. Topcoat: Water-based alkyd-urethane, gloss, interior:

1) S-W Pro Industrial Waterbased Alkyd Urethane Gloss, B53-1050 Series, at 4.0 mils (0.102 mm) wet, 1.4 mils (0.036 mm) dry, per coat.

D. Wood Substrates: Including exposed wood items not indicated to receive shop-applied finish.

1. Latex System:

a. Prime Coat: Primer sealer, latex, interior:

1) S-W PrepRite ProBlock Primer Sealer, B51-620 Series, at 4.0 mils (0.102 mm) wet, 1.4 mils (0.036 mm) dry.

b. Intermediate Coat: Latex, interior, matching topcoat.
c. Topcoat: Latex, interior, eggshell:

1) S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series, at 4.0 mils (0.102 mm) wet, 1.7 mils (0.043 mm) dry, per coat.

d. Topcoat: Latex, interior, semi-gloss:

1) S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series, at 4.0 mils (0.102 mm) wet, 1.6 mils (0.041 mm) dry, per coat.

e. Topcoat: Latex, interior, gloss:

1) S-W ProMar 200 Zero VOC Gloss, B21-12650 Series, at 4.0 mils (0.102 mm) wet, 1.5 mils (0.038 mm) dry, per coat.

2. Water-Based Light Industrial Coating System:

a. Prime Coat: Primer sealer, latex, interior:

1) S-W PrepRite ProBlock Primer Sealer, B51-620 Series, at 4.0 mils (0.102 mm) wet, 1.4 mils (0.036 mm) dry.

b. Intermediate Coat: Light industrial coating, interior, water based, matching topcoat.
c. Topcoat: Light industrial coating, interior, water based, eggshell:

1) S-W Pro Industrial Pre-Catalyzed Water Based Epoxy, K45-151 Series, at 4.0 mils (0.102 mm) wet, 1.5 mils (0.038 mm) dry, per coat.

d. Topcoat: Light industrial coating, interior, water based, semi-gloss:

1) S-W Pro Industrial Pre-Catalyzed Water Based Epoxy, K46-151 Series, at 4.0 mils (0.102 mm) wet, 1.5 mils (0.038 mm) dry, per coat.

E. [**Gypsum Board**] [**Plaster**] [**and**] [**Spray-Texture Ceiling**] Substrates:

1. Latex System:

a. Prime Coat: Primer, latex, interior:

1) S-W ProMar 200 Zero VOC Latex Primer, B28W2600, at 4.0 mils (0.102 mm) wet, 1.0 mils (0.025 mm) dry.

b. Intermediate Coat: Latex, interior, matching topcoat.
c. Topcoat: Latex, interior, flat:

1) S-W ProMar 200 Zero VOC Latex Flat, B30-2600 Series, at 4.0 mils (0.102 mm) wet, 1.6 mils (0.041 mm) dry, per coat.

d. Topcoat: Latex, interior, low sheen:

1) S-W ProMar 200 Zero VOC Latex Low Sheen Enamel, B24-2600 Series, at 4.0 mils (0.102 mm) wet, 1.6 mils (0.041 mm) dry, per coat.

e. Topcoat: Latex, interior, eggshell:

1) S-W ProMar 200 Zero VOC Latex Eg-Shel, B20-2600 Series, at 4.0 mils (0.102 mm) wet, 1.7 mils (0.043 mm) dry, per coat.

f. Topcoat: Latex, interior, semi-gloss:

1) S-W ProMar 200 Zero VOC Latex Semi-Gloss, B31-2600 Series, at 4.0 mils (0.102 mm) wet, 1.6 mils (0.041 mm) dry, per coat.

g. Topcoat: Latex, interior, gloss:

1) S-W ProMar 200 Zero VOC Gloss, B21-12650 Series, at 4.0 mils (0.102 mm) wet, 1.5 mils (0.038 mm) dry, per coat.

2. Water-Based Light Industrial Coating System:

a. Prime Coat: Primer sealer, latex, interior:

1) S-W ProMar 200 Zero VOC Latex Primer, B28W2600, at 4.0 mils (0.102 mm) wet, 1.0 mils (0.025 mm) dry.

b. Intermediate Coat: Light industrial coating, interior, water based, matching topcoat.
c. Topcoat: Light industrial coating, interior, water based, eggshell:

1) S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K45-151 Series, at 4.0 mils (0.102 mm) wet, 1.5 mils (0.038 mm) dry, per coat.

d. Topcoat: Light industrial coating, interior, water based, semi-gloss:

1) S-W Pro Industrial Pre-Catalyzed Waterbased Epoxy, K46-151 Series, at 4.0 mils (0.102 mm) wet, 1.5 mils (0.038 mm) dry, per coat.

END OF SECTION 099123

SECTION 092116 GYPSUM BOARD

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:
   1. Interior Gypsum board.

B. Related Sections:
   1. 072116 – Blanket Insulation.
   2. 05 4000 - Cold-Formed Metal Framing

C. Drawings, the provisions of the Agreement, the General Conditions, and Division 1 specification sections apply to work of this Section.

1.2 REFERENCES

A. American Society for Testing and Materials (ASTM):
   1. C475 - Joint Treatment Materials for Gypsum Wallboard Construction.
   2. C557 - Adhesives for Fastening Gypsum Wallboard to Wood Framing.
   3. C931 - Standard Specification for Exterior Gypsum Soffit Board.
   4. C1002 - Steel Drill Screws for the Application of Gypsum Board.
   5. C1177 Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing
   6. C1278 - Specification for Fiber Reinforced Gypsum Panels.
   7. C1395 - Specification for Gypsum Ceiling Board
   8. C1396 - Specification for Gypsum Board
   9. D3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber

B. Gypsum Association (GA):
   1. GA-214 - Recommended Levels of Gypsum Board Finish.
   2. GA-216 - Recommended Specifications for the Application and Finishing of Gypsum Board.

C. Northwest Wall and Ceiling Bureau (NWCB): LFGB-398 - Recommended Levels for Finishing of Gypsum Board.

D. Underwriters Laboratories (UL) 752 - Standard for Bullet Resisting Equipment.

1.3 SUBMITTALS

A. See General Conditions Article 4.7 for submittal procedures.

B. Submit complete manufacturer's product literature and installation instructions for each of the materials used.

1.4 QUALITY ASSURANCE

A. Perform work in accordance with GA 216, unless specified otherwise, or required otherwise to meet fire rating requirements.

B. Regulatory Requirements:
   1. Provide assemblies meeting the hourly fire ratings indicated and specified. Assemblies shall be approved by the local jurisdictional authorities.
   2. Fire rating requirements take precedence over the construction requirements indicated. In the event of conflict, notify the Architect, and do not begin construction in the area of conflict until the conflict has been resolved.

SECTION 092116 GYPSUM BOARD

PART 2 - PRODUCTS

2.1 GYPSUM BOARD MATERIALS

A. Furnish boards of maximum permissible length for type of installation indicated, tapered edge for boards to be exposed, taped and finished; square edge for boards in concealed applications; 5/8 inch thick unless noted or specified otherwise; furnish type X for fire rated partitions.

B. Types:
   1. General Wall Areas: Mold Resistant Gypsum Board:
      a. comply with ASTM C1396 or ASTM C1177; 5/8 inch thickness; Type "X." Back shall be resistant to mold and mildew growth; average score of not less than 8 when tested in accordance with ASTM D3273.
   2. Ceiling Board: ASTM C1395; sag resistant

C. Manufacturer
   a. USG Corporation "Mold Tough AR Firecode Core,"
   b. Georgia Pacific "DensArmor Fireguard Interior Guard",
   c. National Gypsum Co. "Gold Bond Brand XP Fire-Shield Wallboard,"
   d. Approved Equal

2.2 ACCESSORIES

A. Adhesive for laminated construction: ASTM C557, unless recommended otherwise by the gypsum board manufacturer.

B. Interior Gypsum Trim:
   1. Conform to GA 216, unless indicated or specified otherwise.
   2. Concealed flange crimp-on or tape-on type; metal or PVC at Contractor's option.
   3. Control Joint Trim: USG 093 or approved.
   4. Reveal Moldings: Fry Reglet Co., Pittcon Industries, Inc., Gordon Inc, or approved; aluminum extrusions with taping flanges; shapes as indicated.

C. Joint Tapes:
   1. Standard: ASTM C475 and GA 216.
   2. Mesh Tape for Water Resistant Backing Board: 2-1/2 inch wide glass fiber tape; 10x10 mesh; self adhesive type.

D. Joint Compound, Tape, and Finishing Compound: ASTM C475; furnish setting type joint compound for use at water resistant board.
   1. Typical: USG "SHEETROCK Brand Taping, All-Purpose, and/or Topping Compound," or approved.
   2. Setting Type: USG "SHEETROCK Brand Easy Sand Setting-Type Joint Compound," or approved.

E. Screws: ASTM C1002.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Prior to starting work, carefully inspect installed work of other trades and verify that such work is complete to the point where work of this Section may properly commence. Notify the Architect in writing of conditions detrimental to the proper and timely completion of the work.

B. Do not begin work until unsatisfactory conditions are resolved. Beginning work constitutes acceptance of site conditions and responsibility for defective installation caused by prior observable conditions.

3.2 GYPSUM BOARD INSTALLATION

A. Install gypsum board in accordance with GA 216, and fire rated assembly requirements.

B. Erect wallboard so that edges and corners are firmly supported.

C. Use screws to fasten gypsum board to metal furring or framing. Adhesive application of gypsum board may be used if it is in accordance with the manufacturer's recommendations and meets fire rating requirements.

D. Trim:
   1. Use longest practical lengths, with no piece less than 2 feet long for continuous runs greater than 8 feet. Securely fasten and align trim ends at joints.
   2. Place concealed flange corner beads at external corners. At angles other than 90 degrees, bend the flange to conform to the angle.
   3. Place concealed flange type L trim where gypsum board abuts dissimilar materials.
   4. Use J trim at exposed gypsum board edges and at joints where sealant is indicated.

E. Allow a 1/2 inch gap where gypsum board extends to overhead structure and deflection provisions are incorporated into lightgage metal framing. Do not fasten gypsum board to top runner.

F. Sealant Joints:
   1. Coordinate installation of firestopping and sealants at concealed joints between partitions and structure at fire rated and acoustically insulated partitions.
   2. Where sealant joints are indicated at ends or edges of wallboard, install for uniform 1/8 inch joint, unless otherwise indicated. Installation of sealant in exposed locations is specified in Section 07 9200.

G. Install required number of layers of wallboard behind panel boards and other recessed elements as necessary to maintain fire rating of walls.

3.3 CEILING AND SOFFIT SUPPORT MATERIALS

A. Hanger Anchorage Devices: Screws, clips, bolts or other devices compatible with indicated structural anchorage for ceiling hangers and whose suitability has been proven through standard construction practices or by certified test data.

B. Powder-Actuated Fasteners in Concrete: Fabricated from corrosion-resistant materials, with clips or other accessory devices for attaching hangers [and with capability to sustain, without failure, a load equal to 10x calculated loads].

C. Hangers:
   1. Steel wire or rods, sizes to comply with requirements of ASTM C754 for ceiling or soffit area and loads to be supported.
   2. Wire: ASTM A 641, soft, Class 1 galvanized.
   3. Rods and flats:
      1. Mild steel components.
      2. Finish: Galvanized or painted with rust-inhibitive paint for interior work; galvanized for exterior work.

3.4 CONTROL JOINTS

A. Discontinue gypsum board and use control joint trim at control joints.

B. Coordinate with the framing installer to ensure that framing is installed immediately on either side of each control joint.

C. Space control joints as indicated. When not indicated, locate as follows:
   1. At maximum 30 foot intervals along continuous wall planes.

2. At maximum 50 foot intervals at continuous ceilings with perimeter relief.
3. At maximum 30 foot intervals at continuous ceilings without perimeter relief.
4. At locations where expansion or control joints occur in the building structure.
5. Locate control joints to form rectangular or square sections, in "L," "U," "T," or other irregularly shaped areas.
6. Position control joints to intersect light fixtures, air diffusers, door openings, and other areas of stress concentration.
7. Coordinate with Section 092200 for special requirements at fire rated assemblies.

D. Verify location with the Architect prior to installation. Give the Architect a minimum of 48 hours notice.

3.5 FINISHING

A. Provide finishing in accordance with GA 214.

B. Where necessary to sand, do so without damaging the face of the gypsum board.

C. Levels of Finish:
1. Level 5: Provide at the following locations:
   a. Surfaces perpendicular and adjacent to or near (within 24 inches of) exterior windows, and surface mounted light fixtures.
   b. Surfaces to receive deep tone colors and/or semi-gloss or gloss finishes.
2. Level 4: Typical, unless indicated or specified otherwise.
3. Level 3: Provide at the following locations:
   a. Surfaces to receive vinyl wall covering.
4. Level 2: Provide at the following locations:
   a. Storage rooms.
   b. Mechanical rooms.
   c. Janitors closets..
5. Level 1: Provide at the following locations:
   a. Surfaces of fire rated assemblies concealed from view in the finished work (“fire-taping”).
   b. Surfaces of acoustical assemblies concealed form view in the finished work

D. Level 4 and 5 finishes: Return to the site after primer is applied, and touch-up surface defects.

3.6 TOLERANCES

A. Install gypsum board with 1/8 inch in 10 feet maximum variation from plane in any direction.

END OF SECTION

SECTION 09 5000 ACOUSTICAL CEILING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and general conditions of Contract, including General and Supplementary Conditions and Divisions-1 Specification sections apply to work of this section.

1.2 SUMMARY

A. Section Includes

1. Acoustical ceiling panels
2. Exposed grid suspension system
3. Wire hangers, fasteners, main runners, cross tees, and wall angle moldings
4. Perimeter Trim

B. Related Sections

1. Section 09 51 00 - Acoustical Ceilings
2. Section 09 51 13 - Acoustical Fabric-Faced Panel Ceilings
3. Section 09 53 00 - Acoustical Ceiling Suspension Assemblies
4. Section 09 20 00 - Plaster and Gypsum Board
5. Section 01 81 13 - Sustainable Design Requirements
6. Section 01 81 19 - Indoor Air Quality Requirements
7. Section 02 42 00 - Removal and Salvage of Construction Materials
8. Divisions 23 - HVAC Air Distribution
9. Division 26 - Electrical

C. Alternates

1. Prior Approval: Unless otherwise provided for in the Contract documents, proposed product substitutions may be submitted no later than TEN (10) working days prior to the date established for receipt of bids. Acceptability of a proposed substitution is contingent upon the Architect's review of the proposal for acceptability and approved products will be set forth by the Addenda. If included in a Bid are substitute products that have not been approved by Addenda, the specified products shall be provided without additional compensation.

2. Submittals that do not provide adequate data for the product evaluation will not be considered. The proposed substitution must meet all requirements of this section, including but not necessarily limited to, the following: Single source materials suppliers (if specified in Section 1.5); Underwriters' Laboratories Classified Acoustical performance; Panel design, size, composition, color, and finish; Suspension system component profiles and sizes; Compliance with the referenced standards.

1.3 REFERENCES

A. American Society for Testing and Materials (ASTM):

SECTION 09 5000 ACOUSTICAL CEILING

1. ASTM A 1008 Standard Specification for Steel, Sheet, Cold Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability

2. ASTM A 641 Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire

3. ASTM A 653 Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process

4. ASTM C 423 Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method

5. ASTM C 635 Standard Specification for Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings

6. ASTM C 636 Recommended Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-in Panels

7. ASTM D 3273 Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber

8. ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials

9. ASTM E 119 Standard Test Methods for Fire Tests of Building Construction and Material

A. Armstrong Fire Guard Products

10. ASTM E 580 Installation of Metal Suspension Systems in Areas Requiring Moderate Seismic Restraint

11. ASTM E 1111 Standard Test Method for Measuring the Interzone Attenuation of Ceilings Systems

12. ASTM E 1414 Standard Test Method for Airborne Sound Attenuation Between Rooms Sharing a Common Ceiling Plenum

13. ASTM E 1264 Classification for Acoustical Ceiling Products

B. International Building Code

C. ASHRAE Standard 62.1-2004, Ventilation for Acceptable Indoor Air Quality

D. NFPA 70 National Electrical Code

E. ASCE 7 American Society of Civil Engineers, Minimum Design Loads for Buildings and Other Structures

F. International Code Council-Evaluation Services - AC 156 Acceptance Criteria for Seismic Qualification Testing of Non-structural Components

G. International Code Council-Evaluation Services Report - Seismic Engineer Report

1. ESR 1308 - Armstrong Suspension Systems

H. International Association of Plumbing and Mechanical Officials - Seismic Engineer Report

1. 0244 - Armstrong Single Span Suspension System

I. California Department of Public Health CDPH/EHLB Emission Standard Method Version 1.1 2010

J. LEED - Leadership in Energy and Environmental Design is a set of rating systems for the design, construction, operation, and maintenance of green buildings

K. International Well Building Standard

L. Mindful Materials

M. Living Building Challenge

N. U.S. Department of Agriculture BioPreferred program (USDA BioPreffered).

1.4 SYSTEM DESCRIPTION

Continuous/Wall-to-Wall

1.5 SUBMITTALS

A. Product Data: Submit manufacturer's technical data for each type of acoustical ceiling unit and suspension system required.

B. Samples: Minimum 6 inch x 6 inch samples of specified acoustical panel; 8 inch long samples of exposed wall molding and suspension system, including main runner and 4 foot cross tees.

C. Shop Drawings: Layout and details of acoustical ceilings show locations of items that are to be coordinated with, or supported by the ceilings.

D. Acoustical Certifications: Manufacturer's certifications that products comply with specified requirements, including laboratory reports showing compliance with specified tests and standards. For acoustical performance, each carton of material must carry an approved independent laboratory classification of NRC, CAC, and AC.

a. If the material supplied by the acoustical subcontractor does not have an Underwriter's Laboratory classification of acoustical performance on every carton, subcontractor shall be required to send material from every production run appearing on the job to an independent or NVLAP approved laboratory for testing, at the architect's or owner's discretion. All products not conforming to manufacturer's current published values must be removed, disposed of and replaced with complying product at the expense of the Contractor performing the work.

1.6 SUSTAINABLE MATERIALS

Transparency: Manufacturers will be given preference when they provide documentation to support sustainable requirements for the following: Material ingredient transparency, Removal of Red List Ingredients per LBCV3, Life Cycle impact information, Low-Emitting Materials, and Clean Air performance.

1. Health Product Declaration. The end use product has a published, complete Health Product Declaration with disclosure at a minimum of 1000ppm of known hazards in compliance with the Health Product Declaration open Standard.

2. Declare Label. The end use product has a published Declare label by the International Living Future Institute with disclosure of 100 ppm with a designation of Red List Free or Compliant (less than 1% proprietary ingredients).

3. Low Emitting products with VOC emissions data. Preference will also be given to manufacturers that can provide emissions data showing their products meet CDHP Standard Method v1.1 (Section 01350).

4. Life cycle analysis. Products that have communicated lifecycle data through Environmental Product Declarations (EPDs) will be preferred.

5. End of Life Programs/Recycling: Where applicable, manufacturers that provide the option for recycling of their products into new products at end-of-life through take-back programs will be preferred.

6. Products meeting LEED V4 requirements including:

Storage & Collection of Recyclables

Construction and Demolition Waste Management Planning

Building Life-Cycle Impact Reduction

Building Product Disclosure and Optimization Environmental Product Declarations

Building Product Disclosure and Optimization Sourcing of Raw Materials

Building Product Disclosure and Optimization Material Ingredients

Construction and Demolition Waste Management

1.7 QUALITY ASSURANCE

A. Single-Source Responsibility: Provide acoustical panel units and grid components by a single manufacturer.

1. Fire Performance Characteristics: Identify acoustical ceiling components with appropriate markings of applicable testing and inspecting organization.

2. Surface Burning Characteristics: As follows, tested per ASTM E 84 and complying with ASTM E 1264 Classification.

3. Fire Resistance: As follows tested per ASTM E119 and listed in the appropriate floor or roof design in the Underwriters Laboratories Fire Resistance Directory

B. Acoustical Panels: As with other architectural features located at the ceiling, may obstruct or skew the planned fire sprinkler water distribution pattern through possibly delay or accelerate the activation of the sprinkler or fire detection systems by channeling heat from a fire either toward or away from the

device. Designers and installers are advised to consult a fire protection engineer, NFPA 13, or their local codes for guidance where automatic fire detection and suppression systems are present.

C. Coordination of Work: Coordinate acoustical ceiling work with installers of related work including, but not limited to building insulation, gypsum board, light fixtures, mechanical systems, electrical systems, and sprinklers.

1.8 DELIVERY, STORAGE AND HANDLING

A. Deliver acoustical ceiling units to project site in original, unopened packages and store them in a fully enclosed space where they will be protected against damage from moisture, direct sunlight, surface contamination, and other causes.

B. Before installing acoustical ceiling units, permit them to reach room temperature and a stabilized moisture content.

C. Handle acoustical ceiling units carefully to avoid chipping edges or damaged units in any way.

1.9 PROJECT CONDITIONS

A. Space Enclosure:

Standard Ceilings: Do not install interior ceilings until space is enclosed and weatherproof; wet work in place is completed and nominally dry; work above ceilings is complete; and ambient conditions of temperature and humidity are continuously maintained at values near those intended for final occupancy. Building areas to receive ceilings shall be free of construction dust and debris.

HumiGuard Plus Ceilings: Building areas to receive ceilings shall be free of construction dust and debris. Products with HumiGuard Plus performance and hot dipped galvanized steel, aluminum or stainless steel suspension systems can be installed up to 120°F (49°C) and in spaces before the building is enclosed, where HVAC systems are cycled or not operating. Cannot be used in exterior applications where standing water is present or where moisture will come in direct contact with the ceiling.

HumiGuard Max Ceilings: Building areas to receive ceilings shall be free of construction dust and debris. Ceilings with HumiGuard Max performance can be installed in conditions up to 120°F (49°C) and maximum humidity exposure including outdoor applications, and other standing water applications, so long as they are installed with either SS Prelude Plus, AL Prelude Plus, or Prelude Plus Fire Guard XL suspension systems. Products with Humiguard Max performance can be installed in exterior applications, where standing water is present, or where moisture will come in direct contact with the ceiling. Only Ceramaguard with AL Prelude Plus suspension system can be installed over swimming pools.

1.10 ALTERNATE CONSTRUCTION WASTE DISPOSAL

A. Ceiling material being reclaimed must be kept dry and free from debris.

B. Contact the Armstrong Recycle Center a consultant will verify the condition of the material and that it meets the Armstrong requirements for recycling. The Armstrong consultant with provide assistance to facilitate the recycling of the ceiling.

C. Recycling may qualify for LEED Credits:

a. LEED 2009 - Category 4: Material and Resources (MR)

i. Credit MRc2: Construction Waste Management

b. LEEDv4 - MRp2 - Construction Waste Management Planning Qualifies as a material stream (non-structural) targeted for diversion. Ceilings will be source-separated and diverted through the Armstrong Ceiling Recycling Program.

c. LEEDv4-MRc5 -

i. Option 1: Divert ceilings to qualify for one of the 3 material streams (50%)

ii. Option 2: Divert ceilings to qualify for one of the 4 material streams (75%)

1.11 WARRANTY

A. Acoustical Panel: Submit a written warranty executed by the manufacturer, agreeing to repair or replace panels that fail within the warranty period. Failures include, but are not limited to the following:

1. Acoustical Panels: Sagging and warping

2. Grid System: Rusting and manufacturer's defects

B. Warranty Period:

1. Acoustical panels: Ten (10) years from date of substantial completion

2. Suspension: Ten (10) years from date of substantial completion

3. Ceiling System: Thirty (30) years from date of substantial completion

C. The Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

1.12 MAINTENANCE

A. Extra Materials: Deliver extra materials to Owner. Furnish extra materials described below that match products installed. Packaged with protective covering for storage and identified with appropriate labels.

SECTION 09 5000 ACOUSTICAL CEILING

1. Acoustical Ceiling Units: Furnish quality of full-size units equal to 5.0 percent of amount installed.

2. Exposed Suspension System Components: Furnish quantity of each exposed suspension component equal to 2.0 percent of amount installed.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Ceiling Panels:

1. Armstrong World Industries, Inc.

B. Suspension Systems:

1. Armstrong World Industries, Inc.

C: Perimeter Systems

1. Armstrong World Industries, Inc.

2.2.1 ACOUSTICAL CEILING UNITS

A. Acoustical Panels Type AP

1. Surface Texture: Fine
2. Composition: Mineral Fiber
3. Color: White
4. Size: 24 in x 24 in
5. Edge Profile: Beveled Tegular 15/16 in for interface with PRELUDE XL 15/16" Exposed Tee grid.
6. Noise Reduction Coefficient(NRC): ASTM C 423; Classified with UL label on product carton 0.75
7. Ceiling Attenuation Class (CAC) : ASTM C 1414; Classified with UL label on product carton 35
8. Sabin:N/A
9. Articulation Class (AC):
10. Flame Spread: ASTM E 1264; Class A (UL)
11. Light Reflectance (LR) White Panel: ASTM E 1477; 0.90
12. Dimensional Stability: HumiGuard Plus
13. Recycle Content: Post-Consumer - 0% - 1% Pre-Consumer - 75% - 76%
14. Material Ingredient Transparency: Health Product Declaration (HPD); Declare Label
15. Life Cycle Assessment: Third Party Certified Environment Product Declaration (EPD)
16. Acceptable Product: ULTIMA Lay-In and Tegular, 1914 No added formaldehyde as manufactured by Armstrong World Industries

2.3.1 METAL SUSPENSION SYSTEMS

A. Components:

Main beams and cross tees, base metal and end detail, fabricated from commercial quality hot dipped galvanized steel complying with ASTM A 653. Main beams and cross tees are double-web steel construction with type exposed flange design. Exposed surfaces chemically cleansed, capping prefinished galvanized steel in baked polyester paint. Main beams and cross tees shall have rotary stitching.

a. Structural Classification: ASTM C 635 Intermediate Duty duty

b. Color: White and match the actual color of the selected ceiling tile, unless noted otherwise.

c. Sustainability: Environmetal Product Declaration (EPD), Health Product Declaration (HPD)

d. Acceptable Product: PRELUDE XL 15/16" Exposed Tee as manufactured by Armstrong World Industries

B. Attachment Devices: Size for five times design load indicated in ASTM C 635, Table 1, Direct Hung unless otherwise indicated.

C. Wire for Hangers and Ties: ASTM A 641, Class 1 zinc coating, soft annealed, with a yield stress load of at least time three design load, but not less than 12 gauge.

D. Edge Moldings and Trim:

1. 7800 - 12' Wall Molding

E. Accessories:

1. 7445 - Stabilizer Bar

PART 3 - EXECUTION

3.1 EXAMINATION

A. Do not proceed with installation until all wet work such as concrete, terrazzo, plastering and painting has been completed and thoroughly dried out, unless expressly permitted by manufacturer's printed recommendations. (Exception: HumiGuard Max Ceilings)

3.2 PREPARATION

A. Measure each ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling. Avoid use of less than half width units at borders, and comply with reflected ceiling plans. Coordinate panel layout with mechanical and electrical fixtures.

B. Coordination: Furnish layouts for preset inserts, clips, and other ceiling anchors whose installation is specified in other sections.

1. Furnish concrete inserts and similar devices to other trades for installation well in advance of time needed for coordination of other work.

3.3 INSTALLATION

A. Follow manufacturer installation instructions.

B. Install suspension system and panels in accordance with the manufacturer's instructions, and in compliance with ASTM C 636 and with the authorities having jurisdiction.

C. Suspend main beam from overhead construction with hanger wires spaced 4-0 on center along the length of the main runner. Install hanger wires plumb and straight.

D. Install wall moldings at intersection of suspended ceiling and vertical surfaces. Miter corners where wall moldings intersect or install corner caps.

E. For reveal edge panels: Cut and reveal or rabbet edges of ceiling panels at border areas and vertical surfaces.

F. Install acoustical panels in coordination with suspended system, with edges resting on flanges of main runner and cross tees. Cut and fit panels neatly against abutting surfaces. Support edges by wall moldings.

3.4 ADJUSTING AND CLEANING

A. Replace damaged and broken panels.

B. Clean exposed surfaces of acoustical ceilings, including trim, edge moldings, and suspension members. Comply with manufacturer's instructions for cleaning and touch up of minor finish damage. Remove any ceiling products that cannot be successfully cleaned and or repaired. Replace with attic stock or new product to eliminate evidence of damage.

C. Before disposing of ceilings, contact the Armstrong Recycling Center at 877-276-7876, select option #1 then #8 to review with a consultant the condition and location of building where the ceilings will be removed. The consultant will verify the condition of the material and that it meets the Armstrong requirements for recycling. The Armstrong consultant with provide assistance to facilitate the recycle of the ceiling.

End of section

SECTION 10 21 00 – TOILET COMPARTMENTS AND URINAL SCREENS

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Toilet compartments and urinal screens.

1.2 RELATED REQUIREMENTS

A. Section 061000 - Rough Carpentry, coordination with blocking.

B. Section 092000 - Plaster and Gypsum Board, coordination with blocking.

C. Section 093000 - Tiling, coordination with layout and installation.

D. Section 102113 - Toilet Compartments, coordination with accessories.

1.3 SUBMITTALS

1. Submit under provisions of Section 01 33 00.
2. Product Data: Submit manufacturer's data sheets for each product specified.
3. Shop Drawings: Submit plan, section, elevation and perspective drawings necessary to describe and convey the layout, profiles and product components, including fixture location, anchorage and accessories. Verify dimensions with field measurements prior to final production of toilet compartments.

1.4 QUALITY ASSURANCE

A. Manufacturer: Provide products manufactured by a company with a minimum of 10 years successful experience manufacturing similar products.
B. Single Source Requirements: To the greatest extent possible provide products from a single manufacturer.
C. Accessibility Requirements: Comply with requirements applicable in the jurisdiction of the project, including but not limited to ADA and ICC/ANSI A117.1 requirements as applicable.
D. Self Burning Characteristics: As determined by testing identical products according to ASTM E 84 or another standard acceptable to authorities having jurisdiction, by a qualified testing agency. Identifies products with appropriate markings or applicable testing agency.
1. Flame-Spread Index: 25 or less
2. Smoke-Developed Index: 450 or less

1.5 DELIVERY,STORAGE, AND HANDLING

A. Deliver, store and handle materials and products in strict compliance with manufacturer's instructions and recommendations. Protect from damage.

1.6 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.7 WARRANTY

SECTION 10 21 00 – TOILET COMPARTMENTS AND URINAL SCREENS

A. Warranty: Manufacturer's standard ten year warranty covering for materials and workmanship. Manufacturer’s standard 10 year guarantee against defects in material and workmanship for door hardware, frame and mounting brackets.

PART 2 - PRODUCTS

1. MANUFACTURERS
    A. Basis of Design Products: Subject to compliance with requirements, provide the named product for each fixture specified in Part 2[, or an approved comparable product.]
        1. Bobrick Washroom Equipment
2. Toilet Partition
    A. Basis of Design: Solid Phenolic Duraline Series 1182
    B. Door/Panel Height: Compartment Height: Stiles 85" (2159 mm) above finished floor to top of headrail, doors and panels (58" (1473 mm) located 12" (305 mm) above finished floor)
    C. Floor Clearance: 305 mm(12")
    D. Door/Panel Height: 1473 mm(58")
    E. Floor Clearance: 305 mm(12")
    F. Configuration: Floor Mounted Overhead-Braced
    G. Stile Standard Height: 2159 mm(85")
    H. Stile Maximum Height:2108 mm(83")
    I. Material: Solidly fused plastic laminate with matte-finish melamine surfaces, colored face sheets and black phenolic resin core that are integrally bonded, edges are black
        i.
    J. Color: Charcoal 077 FH by Fundermax
    K. National Fire Protection Association/International Building Code Interior Wall and Ceiling Finish: Class A / Uniform Building Code: Class I
        i. Flame Spread Index (ASTM E 84): 15 for panels and stiles.
        ii. Smoke Developed Index (ASTM E 84): 25 for panels, 20 for stiles.
    L. Door and stile Thickness: 3/4" (19 mm) thick stiles and door.
    M. Panel Thickness: 1/2" (13 mm) thick panels and screens.
    N. Leveling Devices: 7 gauge, 3/16" (5mm) thick, corrosion-resistant, chromate-treated, double zinc-plated steel angle leveling bar bolted to stile; furnished with 3/8" (10mm) diameter threaded rods, hex nuts, lock washers, flat washers, spacer sleeves, expansion anchors, and shoe retainers.
    O. Stile Shoes: One-piece, 22 gauge (0.8mm), 18-8, Type 304 stainless steel, 4 inch (102 mm) height; tops with 90 degree return to stile. One-piece shoe capable of adapting to 3/4" (19mm) or 1" (25mm) stile thickness and capable of being fastened (by clip) to stiles starting at wall line.
    P. Wall Posts: Pre-drilled for door hardware, 18-8, Type 304, 16 gauge (1.6 mm) stainless steel with satin finish; 1" (25 mm) x 1-1/2" (38 mm) x 58" (1473 mm)
    Q. Anchors: Expansion shields and threaded rods at floor connections as applicable. Threaded rods secured to supports above ceiling as applicable. Supports above ceiling furnished and installed as Work of Section 05 50 00- Metal Fabrications
    R. Hardware:
        i. Compliance: Operating force of less than 5 lb (2.25kg)
        ii. Emergency Access: Hinges, latch allow door to be lifted over keeper from outside compartment on inswing doors
        iii. Materials: Stainless Steel 18-8, Type 304, heavy-gauge stainless steel with satin finish
        iv. Fastening: Hardware secured to door and stile by through-bolted, theft-resistant, pin-in-head Torx stainless steel machine screws into factory-installed, threaded brass inserts. Fasteners secured directly into core not acceptable

SECTION 10 21 00 – TOILET COMPARTMENTS AND URINAL SCREENS

v.
vi. Threaded Brass Inserts: Factory-installed; withstand direct pull force exceeding 1500 lb (680 kg) per insert
vii. Clothes Hooks: Projecting no more than 1-1/8" (29 mm) from face to door
viii. Hardware Options: Standard Brackets
ix. Hinges: Balanced, with field-adjustable cam to permit door to be fully closed or partially open when compartment is unoccupied
x. Mounting Brackets: Mounted inside compartment; exposed brackets on exterior of compartment not acceptable with the exception of outswing doors

3. Urinal Partition
   A. Basis of Design: Solid PhenolicDuraline Series1185
   B. Mounting: Wall Mounted
   C. Compartment Height: Screens height at 1219 mm (48") located 305 mm (12") above finished floor
   D. Material: Solidly fused plastic laminate with matte-finish melamine surfaces, colored face sheets and black phenolic resin core that are integrally bonded, edges are black
   E. Color: Charcoal 077 FH by Fundermax
   F. Fire Resistance: National Fire Protection Association/International Building Code Interior Wall and Ceiling Finish: Class A / Uniform Building Code: Class I
      i. Flame Spread Index (ASTM E 84): 15 for panels and stiles.
      ii. Smoke Developed Index (ASTM E 84): 25 for panels, 20 for stiles.
   G. Panel Thickness: 1/2" (13 mm) thick panels and screens.
   H. Leveling Devices: 7 gauge, 3/16" (5mm) thick, corrosion-resistant, chromate-treated, double zinc-plated steel angle leveling bar bolted to stile; furnished with 3/8" (10mm) diameter threaded rods, hex nuts, lock washers, flat washers, spacer sleeves, expansion anchors, and shoe retainers.
4. Shower Compartments
   A. Basis of Design: Solid Phenolic Duraline Series 2182G.67P
   B. Panel Height: **Custom see elevations. Panel height 86” mounted 12” aff using one panel and two custom height stiles (99” net) to extend to wall on an angle with one stile notched for shower fixture.**
   C. Floor Clearance: 12”
   D. Door Height: 86”
   E. Floor Clearance: 12"
   F. Privacy Option: gap-free interlocking design with no sight line feature
   G. Configuration: Floor Mounted Overhead-Braced
   H. Material: Solidly fused plastic laminate with matte-finish melamine surfaces, colored face sheets and black phenolic resin core that are integrally bonded, edges are black
      i.
   I. Color: Charcoal 077 FH by Fundermax
   J. Fire Resistance: National Fire Protection Association/International Building Code Interior Wall and Ceiling Finish: Class I
      i. Flame Spread Index (ASTM E 84): 15 for panels and stiles.
      ii. Smoke Developed Index (ASTM E 84): 25 for panels, 20 for stiles.
   K. Door and stile Thickness: 3/4" (19 mm) thick stiles and door.
   L. Panel Thickness: 1/2" (13 mm) thick panels and screens.
   M. Leveling Devices: 7 gauge, 3/16" (5mm) thick, corrosion-resistant, chromate-treated, double zinc-plated steel angle leveling bar bolted to stile; furnished with 3/8" (10mm) diameter threaded rods, hex nuts, lock washers, flat washers, spacer sleeves, expansion anchors, and shoe retainers.
   N. Stile Shoes: One-piece, 22 gauge (0.8mm), 18-8, Type 304 stainless steel, 4 inch (102 mm) height; tops with 90 degree return to stile. One-piece shoe capable of adapting to 3/4" (19mm) or 1" (25mm) stile thickness and capable of being fastened (by clip) to stiles starting at wall line.

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O.

P. Wall Posts: Pre-drilled for door hardware, 18-8, Type 304, 16 gauge (1.6 mm) stainless steel with satin finish; 1" (25 mm) x 1-1/2" (38 mm) x 58" (1473 mm)

Q. Anchors: Expansion shields and threaded rods at floor connections as applicable. Threaded rods secured to supports above ceiling as applicable. Supports above ceiling furnished and installed as Work of Section 05 50 00- Metal Fabrications

R. Hardware:
   i. Compliance: Operating force of less than 5 lb (2.25kg)
   ii. Emergency Access: Hinges, latch allow door to be lifted over keeper from outside compartment on inswing doors
   iii. Materials: Stainless Steel 18-8, Type 304, heavy-gauge stainless steel with satin finish
   iv. Fastening: Hardware secured to door and stile by through-bolted, theft-resistant, pin-in-head Torx stainless steel machine screws into factory-installed, threaded brass inserts. Fasteners secured directly into core not acceptable
   v. Threaded Brass Inserts: Factory-installed; withstand direct pull force exceeding 1500 lb (680 kg) per insert
   vi. Clothes Hooks: Projecting no more than 1-1/8" (29 mm) from face to door
   vii. Hardware Options: Full height brackets
   viii. Hinges: Balanced, with field-adjustable cam to permit door to be fully closed or partially open when compartment is unoccupied
   ix. Mounting Brackets: Mounted inside compartment; exposed brackets on exterior of compartment not acceptable with the exception of outswing doors

PART 3 - EXECUTION

3.1 - EXAMINATION

A. Do not begin installation until substrates have been properly prepared.
B. Surfaces to receive panels shall be even, smooth, dry, and free from defects detrimental to the installation of the panel system. Notify Contractor in writing of conditions detrimental to proper and timely completion of the work.
C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Clean surfaces thoroughly prior to installation.
B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

3.3 INSTALLATION

A. Installation must be performed by a trained and authorized Bobrick dealer/installer.
B. Install products in strict compliance with the manfactuer’s written instructions and recommendations.

3.4- ADJUSTING AND CLEANING

A. Adjust hardware for proper operation after installation. Verify that doors self-close and when from the 90-degree position, the door closes in no fewer than 4 seconds.
B. Touch-up, repair or replace damaged products.
C. Clean exposed surfaces of compartments, hardware, and fittings.

SECTION 102800 WASHROOM ACCESSORIES

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Washroom accessories as scheduled in this Section and as indicated on the Drawings.

1.2 RELATED REQUIREMENTS

A. Section 061000 - Rough Carpentry, coordination with blocking.

1.3 SUBMITTALS

A. Submit under provisions of General Conditions Article 4.7.

B. Product Data: Submit manufacturer's data sheets for each product specified, including the following:
1. Installation instructions and recommendations.
2. Storage and handling requirements and recommendations.
3. Cleaning and maintenance instructions.
4. Replacement parts information.

C. Schedule: Submit a toilet accessory schedule, indicating the type and quantity to be installed in each washroom. Use room numbers as indicated on the Drawings.

1.4 QUALITY ASSURANCE

A. Accessibility Requirements: Comply with requirements applicable in the jurisdiction of the project, including but not limited to ADA and ICC/ANSI A117.1 requirements as applicable.

B. Hazardous Materials: Comply with EU Directive “Restrictions of Hazardous Substances (RoHS) requirements.”

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver, store and handle materials and products in strict compliance with manufacturer's instructions and recommendations. Protect from damage.

1.6 WARRANTY

A. Manufacturer’s Warranty for Washroom Accessories: Manufacturer’s standard 1 year warranty for materials and workmanship.

SECTION 102800 WASHROOM ACCESSORIES

PART 2 PRODUCTS

2.1 MANUFACTURER

A. Manufacturer:
   1) Bobrick Washroom Equipment, Inc. -Basis of Design
   2) Bradley Corporation
   3) Inpro
   4) Approved equal

PART 3 EXECUTION

3.1 INSTALLATION

A. Install products in strict compliance with manufacturer's written instructions and recommendations, including the following:
   1. Verify blocking has been installed properly.
   2. Verify location does not interfere with door swings or use of fixtures.
   3. Comply with manufacturer's recommendations for backing and proper support.
   4. Use fasteners and anchors suitable for substrate and project conditions
   5. Install units rigid, straight, plumb, and level, in accordance with manufacturer's installation instructions and approved shop drawings.
   6. Conceal evidence of drilling, cutting, and fitting to room finish.
   7. Test for proper operation.

3.2 CLEANING AND PROTECTION

A. Clean exposed surfaces of compartments, hardware, and fittings using methods acceptable to the manufacturer.

B. Touch-up, repair or replace damaged products until Substantial Completion.

END OF SECTION

SECTION 104415 - FIRE EXTINGUISHERS, CABINETS AND ACCESSORIES

PART 1 - GENERAL

1.1 SECTION INCLUDES

A. Fire extinguishers.

B. Fire extinguisher cabinets.

1.2 REFERENCES

A. NFPA 10 - Standard for Portable Fire Extinguishers; National Fire Protection Association; 2007.

B. UL (FPED) - Fire Protection Equipment Directory; Underwriters Laboratories Inc.; current edition.

1.3 SUBMITTALS

A. See General Conditions Article 4.7 for submittal procedures.

B. Shop Drawings: Indicate cabinet physical dimensions.

C. Product Data: Provide extinguisher operational features.

D. Manufacturer's Installation Instructions: Indicate special criteria and wall opening coordination requirements.

E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

F. Maintenance Data: Include test, refill or recharge schedules and re-certification requirements.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Fire Extinguishers, Cabinets and Accessories:
   1. JL Industries, Inc; Product Panorama 1035C70: www.jlindustries.com.
   2. Larsen's Manufacturing Co; Product Gemini GSS2409R2-C: www.larsensmfg.com.
   3. Apex
   4. Approved Equal

2.2 FIRE EXTINGUISHERS

A. Fire Extinguishers - General: Comply with product requirements of NFPA 10 and applicable codes, whichever is more stringent.
   1. Provide extinguishers labeled by Underwriters Laboratories Inc. for the purpose specified and indicated. Verify that extinguishers will meet Green requirements and do not contain CFC's or HCFC's.

B. Dry Chemical Type Fire Extinguishers: Heavy duty steel tank, with pressure gage.
   1. Class A:B:C.
   2. Size 10.
   3. Rating: 4-A: 60B:C
   4. Model: Cosmic 10E by J.L. Industries, Inc. or MP10 by Larsen's Manufacturing Co.

2.3 FIRE EXTINGUISHER CABINETS

A. Metal: Formed stainless steel sheet; 0.036 inch thick base metal.

B. Cabinet Configuration: Semi-Recessed type.
   1. Interior nominal dimensions of 9-1/2 inch wide x 24 inch high x 6 inch deep.
   2. Trim: Flat, 1-5/8 inch wide face.
   3. Form cabinet enclosure with right angle inside corners and seams. Form perimeter trim.

4.

C. Door Glazing: Plastic, clear, 3/16 inch thick acrylic. Frameless.

D. Cabinet Mounting Hardware: Appropriate to cabinet. Pre-drill for anchors.

E. Weld, fill, and grind components smooth.

F. Finish of Cabinet Interior: White enamel.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify rough openings for cabinet are correctly sized and located.

3.2 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install cabinets plumb and level in wall openings, 27 inches from finished floor to inside bottom of cabinet.

C. Secure rigidly in place.

D. Place extinguishers in cabinets.

END OF SECTION