

**Appendix 5.05**  
**PSU Div.1-General Construction Requirements**

**SECTION 01010  
SUMMARY OF WORK**

**PART 1- GENERAL**

**1.01 WORK COVERED BY THE PROJECT MANUAL AND DRAWINGS**

- A. Work covered by the Project Manual and Drawings consists of: Parking Structure 1 located at 1872 SW Broadway, Portland, Oregon, 97201
- B. The work includes the following items:
  - 1. Correct structural, mechanical and electrical deficiencies
  - 2. Correct ADA deficiencies
  - 3. Incorporate energy saving improvements relating to lighting and HVAC upgrades
- C. The Contractor shall supply all labor, transportation, apparatus, scaffolding, tools and other items necessary for the completion of the work in conformance with OUS General Conditions for Public Improvements Contracts, Section A.2.
- D. The Work shall be started within ten (10) calendar days following approval of the Contractor's Certificate of Insurance and the Execution of Contract by PSU Facilities, attention (fapcontracts@pdx.edu). All work shall be final completed within the time frames established in the Request for Proposals for Design-Build Services. Time is of an essence on this project. Failure to complete the project within the time specified will result in damages to the Owner.

**1.02 CONTRACTOR'S USE OF PREMISES**

- A. Contractor shall limit use of the Premises for Work and storage to allow for:
  - 1. Owner and tenant occupancy of adjacent spaces, day and night
  - 2. Public use, day and night
  - 3. Security
  - 4. Safe entry and exit for vehicles and pedestrians
- B. Access through the interior of the building will be coordinated with the Owner's Authorized Representative.

**1.03 PROTECTIONS**

- A. Protect sidewalks, asphalt paving, concrete, trees, shrubs, and lawn areas at all times from spillage of materials used in carrying out the Work. Prevent materials from clogging sinks, catch basins and yard drains; maintain drains clean and in proper working conditions. Dumping of plaster, solvents, or other injurious

materials in PSU plumbing systems is not permitted. Costs of cleaning or repair will be withheld from Contractor as required.

- B. Clean, repair, resurface, or restore existing surfaces to their original, or better, condition, or completely replace such surfaces to match existing, where damaged by construction operations.
- C. The Contractor shall be responsible for any and all damages as specified in OUS General Conditions for Public Improvement Contracts Section G.1.1.
- D. The Owner will not be responsible for protection of materials or equipment from vandalism or theft. Security is the responsibility of the Contractor. See Section 01500 Temporary Facilities.
- E. The Contractor will verify that all drains in the construction area are in working order and notify the Owner's Representative, in writing, of any drains that are plugged, prior to the Start of Work. Start of Work will be considered as acknowledgement that all drains are clear and in good working order.
- F. Debris shall not be allowed to remain around the buildings during performance of Work, and shall be disposed of daily and/or as directed by Owner's Authorized Representative.
- G. The Contractor shall manage a safe job environment for both the safety of all people around the Premises as well as the safety of the Owner's and general public's property.
- H. Do not store materials where they will interfere with operations of Owner. Storage areas must be approved by the Owner's Authorized Representative prior to start of the Work.

1.04 OWNER OCCUPANCY

- A. The Owner and building tenants will occupy the Premises during the entire period of construction for the conduct of normal operations. Cooperate and coordinate with Owner's Authorized Representative in construction operations to minimize conflict and to facilitate the Owner's usage, especially in the following areas:
  - 1. Restricted access and parking
  - 2. Use of elevators and stairs
  - 3. Temporary storage space availability
  - 4. Provide a written schedule of Work specifying where and when Work will be accomplished

- 5. Notify Owner’s Authorized Representative a minimum of 72 hours prior to performing any work that will release strong odors or fumes, causes noise, or requires windows to be closed during hot weather. See Section 01734 for additional Indoor Air Quality requirement, which includes coordination of noise abatement.
- B. Conduct operations in such a way to ensure the least inconvenience to University staff, students and the general public.
- C. To maintain continual operations by the Owner and building tenants, evening and/or weekend work by the Contractor will be required for short durations at various stages of the Project. Coordinate with the Owner’s Authorized Representative at least seventy-two (72) hours in advance to performing evening or weekend work.

1.05 SALVAGE

- A. All material indicated to be removed shall become the property of the Contractor except those items noted on the drawings and in the specifications as being retained by the Owner.
- B. All locksets, cylinders and strikes removed shall be returned to Owner. Coordinate with Owners Authorized Representative.
- C. The City of Portland has mandated the recycling of demolition materials. See Section 01732 of these Specifications for Waste Management requirements, which includes recycling documentation to be provided to the Architect and Owner by the Contractor.

**PART 2 -PRODUCTS**

2.01 REUSE OF EXISTING MATERIAL

- A. Except as specifically indicated or specified, materials and equipment removed from existing construction shall not be used in the completed Work.
- B. For material and equipment specifically indicated or specified to be reused in the Work or salvaged to Owner:
  - 1. Use special care in removal, handling, storage, and reinstallation to assure proper function in the completed Work.

2. Arrange for transportation, storage, and handling of products that require off-site storage, restoration or renovation. Pay all costs for such Work.
3. Contractor shall be responsible for removing and reinstalling mechanical units, vents, guys, antennae, and electrical and grounding wires or conduits.

**PART 3 -EXECUTION**

**3.01 PREPARATION**

- A. Inspect existing conditions, Work requirements, and the Contract Documents. Verify that materials and equipment being furnished meet requirements specified. Report any discrepancies to the Owner’s Authorized Representative prior to proceeding with work.

**3.02 MATERIAL HANDLING**

- A. If, in the opinion of the Contractor, cranes, hoists, towers, or other lifting devices are necessary for the proper and efficient movement of materials, comply with these requirements:
  1. Use only experienced personnel
  2. Remove equipment as soon as possible after task is ended
  3. Coordinate the placement of such equipment with the Owner’s Authorized Representative to ensure that utility tunnels, utilities, and surfaces are not damaged.
  4. Obtain required permits and meet the requirements of governing authorities regarding street and sidewalk closures, safety, noise, and other applicable regulations.
  5. Provide barricades and warning ribbons to close off areas temporarily for loading and unloading, to insure public safety.
- B. Contractor shall not allow any materials or debris to free-fall from the building.

**3.03 WORKMANSHIP**

- A. Unless otherwise specified, perform the Work using workers skilled in the particular type of Work involved.
- B. Should the Owner or the Architect, in writing, deem anyone on the Work incompetent or unfit for the assigned duties, dismiss the worker immediately or reassign that worker to a different task requiring a lesser degree of competence.

- C. Workmanship shall be first class in every respect as determined by the Owner's Authorized Representative and Architect, and all Work performed shall be performed in accordance with standard industry practice.
- D. The Contractor shall maintain effective supervision on the project at all times Work is being performed. The Superintendent shall be the same person throughout the course of the Work, and shall attend the pre-construction conference.

#### 3.04 TESTING

- A. The Owner reserves the right to perform any testing as may be required to determine compliance with the Project Manual and Drawings. Costs for such testing will be the Owner's responsibility unless testing indicates noncompliance. Costs for testing which indicates noncompliance shall be borne by the Contractor. Non-complying Work shall be corrected and testing will be repeated until the Work complies with the Project Manual and Drawings. Contractor will pay costs for retesting non-complying Work.
- B. The Contractor shall cooperate in every respect with the activities of the testing agency.

END OF SECTION

**SECTION 01040**  
**PROJECT COORDINATION**

**PART 1 – GENERAL**

1.01 DESCRIPTION:

A. This Section includes administrative and supervisory requirements necessary for coordinating contract documentation, communications and construction operations. The requirements of this Section relate to all work by the Contractor and Sub-contractors performing work under these Contract documents including, but not limited to, the following:

1. Pre-construction Coordination
2. Identification of Owner's Authorized Representatives
3. Identification of Architect
4. Listing of Sub-contractors
5. Contractor Emergency Contact Information
6. Safety & Emergency Procedures
7. Unforeseen Hazardous Materials
8. Permits and Fees
9. Key Requests
10. Progress Meetings
11. Requests for Clarifications & Information
12. Construction Directives
13. Construction Change Orders

1.02 RELATED WORK IN OTHER SECTIONS:

A. Additional requirements related to Project Coordination may be found in the following:

1. Instructions to Bidders
2. OUS General Conditions
3. Other Sections of these specifications.

**PART 2 – PRODUCTS**

NOT USED

**PART 1 – EXECUTION**

1.01 PRE-CONSTRUCTION CONFERENCE

- A. A pre-construction conference shall predate the Work and shall include but not be limited to the following agenda:
1. Contract management and communication requirements
  2. Emergency phone numbers
  2. Record maintenance requirements
  3. Work schedule
  4. Schedule of values
  5. Submittal schedule
  6. Early purchase, long lead items and owner procurements
  7. Multiple contract coordination
  8. Maintenance of access and use of the premises
  9. Traffic control, parking and contractor's use of the job site
  10. Hazardous materials
  11. Job site safety
  12. Job site inspection & observation requirements
  13. Review of contract documents
  14. Progress meetings
  15. other subjects of interest desired by the Contractor, Architect, Owner's Authorized Representative(s), Manufacturer's Representatives, and other participants.
- B. Refer to Division 1, Section 01300 for submittals required prior to the pre-construction conference.
- C. Coordinate all operations with the Owner's Authorized Representative during the construction period.



- D. Submit to the Owner’s Authorized Representative for approval, a schedule of Values for the Work to be performed; schedule of values shall include project and building name, when the Work is to begin, and estimated duration of the Work. The Schedule of Values is to be provided to the Owner’s Authorized Representative.
- E. Submit to the Owner’s Authorized Representative for approval, a schedule for the Work to be performed; schedule shall include project and building name, when the Work is to begin, and estimated duration of the Work. The Schedule is to be provided to the Owner’s Authorized Representative. The schedule shall be specific as to which portion of the Work is taking place on a particular day.
- F. Prior to start of any work, Contractor shall provide at the pre-construction meeting an emergency responsible person/contact list on a 24-hour, “7 day a week” basis for any emergency issue that may arise in connection with this project. Contractor must reissue the list any time the responsible person(s) changes. Issue to Owner’s Authorized Representative. See Project Information Sheet provided herein.
- G. Parking for personal vehicles will not be provided on the premises. See Section 01500 Temporary Facilities.
- H. Schedule elevator usage with the Owner’s Representative a minimum of 72 hours in advance so as not to inconvenience the public.

1.02 IDENTIFICATION OF OWNER’S AUTHORIZED REPRESENTATIVE

- A. The Owner’s Project Manager and the Owner’s Field Construction Manager (Jointly the Owner’s Authorized Representative or his designee) will be appointed by the Owner and identified at the Pre-construction meeting. The Owner’s Authorized Representative will provide coordination during construction and on-site observation. See Project Information Sheet provided herein.

1.03 IDENTIFICATION OF ARCHITECT

- A. Not Used

1.04 LISTING OF SUB-CONTRACTORS

- A. Provide to the Owner's Authorized Representative at the pre-construction conference three (3) copies of list of sub-contractors anticipated to perform work on the project. Provide on the list of sub-contractor's: subcontractor's name, contact person, mailing address and telephone number. Substitution shall be permitted only with the approval of the Owner's Authorized Representative.

1.05 CONTRACTOR EMERGENCY CONTACT INFORMATION

- A. Provide to the Owner's Authorized Representative at the pre-construction conference Contractor Emergency Contact telephone numbers. See Project Information Sheet provided herein.

1.06 SAFETY AND EMERGENCY PROCEDURES

- A. The Contractor shall be responsible for maintaining a safe job site at all time, until the Owner takes possession. The Contractor shall comply with all safety regulations, and for enforcing compliance with all safety regulations and procedures by all workers, sub-contractors and visitors on the site.
- B. Refer to Division 1, Section 01500 for minimal temporary facilities required for job site safety. The Contractor shall provide procedures and additional temporary facilities as required.
- C. The Contractor shall maintain indoor air quality and noise control standards specified in Division 1, Section 01734.
- D. The Contractor shall complete and submit the Owner's Authorized Representative, at the pre-construction conference the "Construction Project Safety Form" provided herein.

1.07 UNFORESEEN HAZARDOUS MATERIAL

- A. Asbestos: The Owner has exercised due diligence in the identification and removal of asbestos containing materials from the work area. Prior to each phase of construction the Contractor shall confirm the non-existence of asbestos containing materials in the work area prior to proceeding. If the Contractor identifies materials suspected of containing asbestos, he shall immediately stop work in that area of the job site and proceed in accordance with Division 1, Section 01732, Item 3.01(F).
- B. Lead Paint: The Owner has exercised due diligence in the identification and removal of lead paint from the work area. Prior to each phase of construction the Contractor shall confirm the non-existence of materials coated with lead based

paint in the work area prior to proceeding, as required in accordance with OSHA Directive CPL 2-2.58. If lead based paint materials are suspected, the contractor shall immediately notify the Owner's Authorized Representative and proceed in accordance with OSHA Standards and Directives. If required an adjustment in the Contract Sum and Contract Time will be made through Execution of a Contract Change Order.

#### 1.08 PERMITS & FEES

- A. Portland State University is enrolled in the city of Portland's Facilities Permit Program. See OUS Standard General Conditions and Supplementary General Conditions.
- B. The Owner shall provide Building, Electrical, Mechanical and Plumbing permits for buildings in accordance with OUS Supplemental Condition. If the Contractor needs to block a portion of the right-of-way, the Contractor must secure the proper permits from the City of Portland and shall give all requisite notices to public authorities. The Contractor shall be responsible for all violations of the law for any cause in connection with the Work or caused by obstructing streets or sidewalks.
- C. The Contractor shall provide proper notice to all governing jurisdictions including but not limited to the Oregon Department of Environmental Quality prior to beginning work.
- D. Contractor shall pay for and document Oregon Bureau of Labor and Industries fees as required by Bureau of Labor & Industry.

#### 1.09 KEY REQUESTS

- A. Keys will be provided to the Contractor as required for access to buildings and work areas. There is a deposit of \$100.00 required for each key given to the Contractor. Contractor shall fill out Contractor's key request form and deliver for approval to Project Manager a minimum of 48 hours in advance. This deposit will be refunded upon return of the key(s.) Keys will not be provided to sub-contractors, nor will Facilities open locked doors for Contractor's employees or sub-contractors. Contractor shall provide and coordinate all such requirements.

#### 1.10 PROGRESS MEETINGS

- A. The contractor shall schedule for the contractor's Project Manager and Field

Superintendent to attend weekly Progress Meetings with the design team and the Owner's Authorized Representative. The contractor shall coordinate and assure the attendance of sub-contractors as required by the agenda and the Owner's Authorized Representative.

- B. Weekly Progress Meetings shall be held on days and times to be determined, following the pre-construction conference and continuing through substantial completion and until final completion. The Owner's Authorized Representative may require additional on-site 'tail-gate' meetings as necessary to resolve construction related issues and facilitate continued progress.
- C. Progress meetings shall be held at:
  - PSU, Office of Facilities
  - 202 University Services Building
  - 617 SW Montgomery
- D. The progress meeting minutes serve as the official communication between all parties involved in the Project. The Contractor shall:
  - 1. Prepare agendas.
  - 2. Record minutes and include decisions.
  - 3. Record attendance
  - 4. Distribute minutes to attendees within three (3) calendar days after meetings.
- E. Minimum agenda shall include:
  - 1. Review and approve minutes of previous meetings.
  - 2. Review work progress and work schedule since previous meeting.
  - 3. Discuss field observations, problems, clarifications and information required.
  - 4. Review delivery schedules, identify problems that could impede planned progress.
  - 5. Review proposed changes in construction or procedures.
  - 6. Delivery and discussion of submittals.
  - 7. Submittal of progress payment requests for review.
  - 8. Other items as may be required.

#### 1.11 REQUESTS FOR CLARIFICATIONS AND INFORMATION

- A. Throughout the course of work, the Contractor may require clarifications or additional information from the Architect or Owner's Authorized Representative.

This information may include but not be limited to the following:

1. Clarifications whether specific work is within the scope of an item of work and no Contract adjustment is anticipated.
  2. Clarifications or interpretations of information or directions provided in the Contact Documents, for which no Contract adjustment is anticipated.
  3. Clarifications or directions as a result of unforeseen conditions, which may or may not result in adjustments to the Contact Sum or days allowed for contact completion.
  4. Additional details or information needed for construction, which were not originally included in the contract documents, which may or may not result in adjustments to the Contact Sum or days allowed for contact completion.
- B. The contractor's field superintendent shall be the principle generator of requests for clarification and information (RFI's) as a result of field operations and conditions.
- C. Three copies of requests for clarifications and information (RFI) shall be typed and submitted in accordance with the communication process described in Section 01300.
- D. All RFI's shall be sequentially numbered and include the following information:
1. Project item information as specified in Section 01300, Item 1.05.
  2. Reason for request, and clarification and information requested.
  3. Work impacted by request for clarification or information.
  4. Drawings or sketches as necessary.
  5. Contractors recommendations as appropriate.
  6. Signature and date by contractor's authorized representative.
- E. If the contractor anticipates that a change in the scope of work may be necessary in conjunction with a request for clarification or information, he may submit with the request a proposal to perform additional work as a Contract Change Order as specified herein. No changes in work shall commence without an approved RFI response, Construction Directive or Executed Contract Change Order.
- F. All RFI Responses will be by the design team through and with the approval of the Owner's Authorized Representative.
- G. Response time to process RFI's shall be seven (7) calendar days from the date received by the design team, to allow reasonable time for researching the question and preparing a response. If, due to unavoidable circumstances, information is

needed immediately, coordinate with the Owner's Authorized Representative who will attempt to expedite a response by FAX or e-mail. When responses are expedited, an RFI must still be submitted as a confirmation of the communication prior to submitting for progress payment for the related work.

- H. A log and copies of all RFI's shall be maintained in the jobsite office, for review or reference by the Contractor, design team and Owner's Authorized Representative.

#### 1.12 CONSTRUCTION DIRECTIVES

- A. Construction Directives may be initiated by the Owner's Authorized Representative, or the design team on approval of the Owner's Authorized representative, and provides interpretations of the contract documents or orders minor changes in the work, which may require changes in the Contract Sum or Contract Time, which would be subsequently executed through a Construction Change Order. Interpretation of the Contract documents shall be in accordance with OUS General conditions for Public Improvement Contracts Section A.3, and as amended by the OUS Supplemental General Conditions. Construction Directives are not Construction Change Orders. If the Contractor believes the work described in a Construction Directive requires a change in Contract Sum or Contract Time, he shall submit a proposal to perform additional work as a Construction Change Order as specified herein. Do not proceed with Construction Order work until a proposal for Change Order work has been submitted and directed to proceed by the Owner's Authorized Representative. Proceeding without authorization waives the Contractor's claim for additional Contract Sum or Contract Time.
- B. Construction Directives shall be executed using the attached Construction Directive form.

#### 1.13 CONSTRUCTION CHANGE ORDERS

- A. Contract Bid award is based on the Base Bid. Additional work may be authorized by amending the Contract based upon Unit Prices provided in the Bid Form, the Contractor's Schedule of Values, or other Contractor Proposals approved by the Owner's Authorized Representative, and in accordance with Section D of the OUS General Conditions for Public Improvement Contracts.
- B. A Construction Change Order is a written order issued after the execution of a contract, which authorizes and directs a change in scope of work and an adjustment in the Contract Sum, Contract Time or both. Change Orders will be processed using AIA Document 701, and is not complete until all signatures have

been obtained and a signed copy is received by the Contractor.

- C. A Contract Change Order request can be initiated by the Owner's Authorized Representative through a proposal request to the Contractor, or by the Contractor through submittal of a proposal request in conjunction with a RFI response or Construction Directive.
- D. The Contractor's proposal for Contract Change Order Work shall include the following:
  - 1. Project item information as specified in Section 01305, Item 1.05.
  - 2. Reason for request
  - 3. Itemized statement of required materials and equipment, including adjustments to adjacent and dependent work.
  - 4. Itemized statement of required labor, including adjustments to adjacent and dependent work.
  - 5. Total Contract Sum adjustment required for the Change in Work.
  - 6. Total Contract Time adjustment required for the Change in Work.
  - 7. Additional Documentation as required to support the request.
  - 8. Signature and date by contractor's authorized representative.
- E. Construction Change Order work shall be reviewed by the Architect and the Owner's Authorized Representative and executed in accordance with OUS General Conditions for Public Improvement Contracts Section D, and as amended herein.
- F. If a fair and reasonable Contract Change Order adjustment cannot be agreed upon, the Owner's Authorized Representative may in writing direct the Contractor to proceed with the Change in Work on a 'Time and Materials' basis in accordance with OUS General Conditions for Public Improvement Contracts.

END OF SECTION

PORTLAND STATE UNIVERSITY  
OFFICE OF FACILITIES  
PROJECT INFORMATION

**Project Name:** \_\_\_\_\_ **Project No:** \_\_\_\_\_

**Project Description:** \_\_\_\_\_

**Project Address:** \_\_\_\_\_ **Work Start Date:** \_\_\_\_\_

**Project Manager:** \_\_\_\_\_ **Phone:** \_\_\_\_\_ **Fax:** \_\_\_\_\_

**Project Site Construction Manager:** \_\_\_\_\_ **Phone:** \_\_\_\_\_

**Design Consultant:** \_\_\_\_\_ **Phone:** \_\_\_\_\_

**Address:** \_\_\_\_\_

**E-Mail:** \_\_\_\_\_ **FAX:** \_\_\_\_\_

**Bid Opening Date:** \_\_\_\_\_ **Contract Bid Price:** \_\_\_\_\_

**Contract Execution Date:** \_\_\_\_\_ **Pre-Const. Meeting:** \_\_\_\_\_

**Notice to Proceed Date:** \_\_\_\_\_ **Contract Calendar Days:** \_\_\_\_\_

**Final Contract Completion Date:** \_\_\_\_\_ **Liquidated Damages:** NA

**Contractor Name:** \_\_\_\_\_ **Office Phone:** \_\_\_\_\_

**Project Manager:** \_\_\_\_\_ **Cell:** \_\_\_\_\_ **Pager:** \_\_\_\_\_

**Contractor Office Address:** \_\_\_\_\_

**E-Mail:** \_\_\_\_\_ **Office FAX:** \_\_\_\_\_

**On Site Construction Office Address:** \_\_\_\_\_ **Site Phone:** \_\_\_\_\_

**Site E-Mail:** \_\_\_\_\_ **Site FAX:** \_\_\_\_\_

**Site Superintendent:** \_\_\_\_\_ **Cell:** \_\_\_\_\_ **Pager:** \_\_\_\_\_

**Contractor's Emergency & Weekend Phone:**

- 1. \_\_\_\_\_
- 2. \_\_\_\_\_
- 3. \_\_\_\_\_



PORTLAND STATE UNIVERSITY  
OFFICE OF FACILITIES

CONSTRUCTION PROJECT SAFETY FORM INSTRUCTIONS

The purpose of the Construction Project Safety Form is to allow contractors to plan the construction or remodeling project in such a way as to prevent injuries and protect the environment. **This form will need to be filled out by the Contractor and provided to the Owner's Authorized Representative at the preconstruction conference.**

**The information provided on the form will be reviewed at the preconstruction conference.**

All projects must be planned with safety consideration for people who will be in contact with the area; in particular, sight, hearing, or mobility impaired people who are not covered under OSHA regulations but are covered under general liability issues.

PSU requires that all contractors and subcontractors come to the job trained in all Occupational Safety and Health ACT (OSHA) Standards applicable to their work process. This information is outlined in the OR-OSHA document "Occupational Hazards Common to Construction & Remodeling Activities." This document can be obtained free of charge by contacting the OR-OSHA Resource Center at 1-800-922-2689 or on-line at [www.ROSHA.org](http://www.ROSHA.org).

All construction and remodeling activities regardless of size and/or scope must be fenced, barricaded, or otherwise protected (isolated) to restrict entrance and to ensure the safety of those in the general area. **All building materials and equipment need to be placed within the isolation enclosure.** Any open trenches outside the isolated space will need to be fenced or covered with approved cover (contact the Owner's Authorized Representative for specifics).

REQUIRED PROJECT ISOLATION AND BARRICADING OPEN TRENCHES FOR  
OUTSIDE CONSTRUCTION SITES

Construction projects that involve building a facility, any exterior remodel, any excavation, or demolition, at a minimum, will install the following perimeter isolation:

*A six foot chain-link fence, with controlled access points, extending in all directions around the excavation or building site such that no area of the construction is accessible to pedestrians or unauthorized personnel or vehicles. Note: At the University's option, other barricading plans may be accepted. These may apply to projects such as road resurfacing, parking lot striping, exterior building water proofing, etc. Typical temporary construction fencing shall be covered with opaque material to prevent seeing inside the fencing. Construction fencing shall be placed on the interior side of the opaque material.*

*Also see Section 01600 (Contractor Staging)*

Indoor projects which will create dust (cutting sheetrock, sanding, sawing etc.) are subject to the following:

1. Areas where existing doors can provide isolation will be labeled “Construction Area Authorized Personnel Only.”
2. All other areas will be isolated by a solid barrier. The minimum barrier allowed is 4 mil poly sheeting.

Any excavation across or adjacent to sidewalks or pathways which must be left open overnight, must be identified with working, blinking, construction lights in addition to being covered.

**The contractor will provide all trench covering and fencing material, PSU will not provide any materials.**

PORTLAND STATE UNIVERSITY  
OFFICE OF FACILITIES  
CONSTRUCTION PROJECT SAFETY FORM

Complete and deliver with the Project Information sheet to the Owner’s Authorized Representative at the Pre-Construction Conference.

Meeting Date: \_\_\_\_\_ Time: \_\_\_\_\_ Location: \_\_\_\_\_

Project: \_\_\_\_\_ Job #: \_\_\_\_\_

Contractor: \_\_\_\_\_ Start: \_\_\_\_\_ Completion: \_\_\_\_\_

Contractor Foreman: \_\_\_\_\_

PSU Project Mgr: \_\_\_\_\_

Emergency Fire/Medical.Security #: 911      Non-Emergency Campus Safety (503) 725-4407

Confined Space to be accessed? Y or N Location: \_\_\_\_\_

If yes, review confined space program with PSU Project Manager

Welding or hot work to be done? Y or N If yes, describe extinguisher, and fire watch, plan:

\_\_\_\_\_

MSDS copies to be on the job site and copies available to PSU Project Manager.

Lead paint involved? Y or N Contact PSU Health and Safety Supervisor (503) 725-8458

Describe hazard mitigation plan: \_\_\_\_\_

\_\_\_\_\_

Asbestos involved? Y or N If yes, Contact PSU Health and Safety Supervisor (503) 725-8458

Hazard Waste Plan developed? Y or N Containers: \_\_\_\_\_

\_\_\_\_\_ Storage Loc: \_\_\_\_\_

\_\_\_\_\_

In the event of suspected hazardous materials or spill contact PSU Health and Safety Supervisor (503) 725-8458 or Cell # (503) 888-0189.

Describe hazmat spill plan: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Will there be any open trenches or holes? Y or N Describe plan to barricade: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Internal combustion engines? Y or N If yes, is CO monitoring required? Y N

Other air contaminates? Y or N If yes, describe: \_\_\_\_\_

Building air intake & return air locations: \_\_\_\_\_

(No chemical compounds to be used near functioning intake or return air locations.)

Material deliver or parking creating hazard? Y or N If yes, describe minimization plan: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

No vehicle is allowed to park on sidewalk entrances/exits to steam tunnel (metal hatch cover).

Dust created? Y or N If yes, describe control plan: \_\_\_\_\_  
\_\_\_\_\_

Noise sources? List: \_\_\_\_\_

Describe noise control methods: \_\_\_\_\_

Crane to be used? Y or N If yes, describe plan: \_\_\_\_\_  
\_\_\_\_\_

(Loads will not be moved over or suspended above pedestrian occupied areas)

Exterior chute to be used? Y or N If yes describe plan: \_\_\_\_\_  
\_\_\_\_\_

Construction area to be fenced? Y or N Type & location: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Fence to be locked? Y or N Job Trailer on site? Y or N To be locked? Y or N All contractor lock keys to Security Services dispatch and PSU Project Manager

Building exitways to be blocked or restricted at any time? Y or N If yes, describe ADA alternate routes and overall egress plan: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Will project create interior hazards to building occupants? Y or N If yes, describe hazards and minimization plan: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Lock changes planned? Y or N If yes, describe location and responsible party: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

PORTLAND STATE UNIVERSITY  
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REQUEST FOR INFORMATION

Project: \_\_\_\_\_ RFI No.: \_\_\_\_\_

Contractor: \_\_\_\_\_ Date submitted: \_\_\_\_\_

Subcontractor: \_\_\_\_\_ Date info req'd: \_\_\_\_\_

Supplier: \_\_\_\_\_

Provide all information required by Specification Division I Section 01040. Attach additional sheets as required.

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Request:

Contractor \_\_\_\_\_ Date \_\_\_\_\_

Response:

Architect \_\_\_\_\_ Date \_\_\_\_\_

Acknowledgement by Owner's Rep. \_\_\_\_\_ Date \_\_\_\_\_

PORTLAND STATE UNIVERSITY  
OFFICE OF FACILITIES  
CONSTRUCTION DIRECTIVE

Project: \_\_\_\_\_ Directive No.: \_\_\_\_\_

Contractor: \_\_\_\_\_ Date submitted: \_\_\_\_\_

Subcontractor: \_\_\_\_\_ Date info req'd: \_\_\_\_\_

Supplier: \_\_\_\_\_

You are hereby directed to execute promptly this Directive which interprets the Contract Documents or orders minor changes in the work. If you consider that a change in Contract Sum or Contract Time is required, submit an itemized change order proposal as required by Specification Division I Section 01040. If your proposal is in order, this Directive will be superseded by a Change Order.



Description:

Architect: \_\_\_\_\_ Date: \_\_\_\_\_

Owner's Authorized Rep: \_\_\_\_\_ Date: \_\_\_\_\_

**SECTION 01045  
CUTTING AND PATCHING**

**PART 1 – GENERAL**

1.01 DESCRIPTION

- A. Work of this Section includes administrative and procedural requirements for cutting and patching.

1.02 RELATED WORK IN OTHER SECTIONS

- A. Additional information regarding cutting and patching requirements may be found in the follows:
  - 1. OUS General Conditions
  - 2. Other Sections of these specifications.
  - 3. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division I Specification Sections, apply to this Section.

1.03 QUALITY ASSURANCE:

- A. The Contractor shall perform all cutting and patching in conformance with OUS General Conditions for Public Improvements Section F.3 and as specified herein.
- B. Requirements for Structural Work: Do not cut and patch structural elements in a manner that would change their load-carrying capacity or load-deflection ratio. The Owner's Authorized Representative shall pre-approve all field modifications.
- C. Operational Limitations: Do not cut and patch operating elements or related components in a manner that would result in reducing their capacity to perform as intended. Do not cut and patch operating elements or related components in a manner that would result in increased maintenance or decreased operation life or safety.
- D. Visual Requirements: Do not cut and patch construction exposed on the exterior or



in occupied spaces in a manner that would, in the Architect's opinion, reduce the building's aesthetic qualities. Do not cut and patch construction in a manner that would result in visual evidence of cutting and patching. The contractor shall remove and replace construction cut and patched in a visually unsatisfactory manner at no expense to the owner.

## **PART 2- PRODUCTS**

### **2.1 GENERAL REQUIREMENTS:**

- A. Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible if identical materials are unavailable or cannot be used. Use materials whose installed performance will equal or surpass that of existing materials.

## **PART 3- EXECUTION**

### **3.1 INSPECTION:**

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed before cutting. If unsafe or unsatisfactory conditions are encountered, take corrective action before proceeding.

### **3.2 PREPARATION:**

- A. Temporary Support: Provide temporary support of work to be cut.
- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Project that might be exposed during cutting and patching operations.
- C. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Avoid cutting existing pipe, conduit, or ductwork serving the building but scheduled to be removed or relocated until provisions have been made to bypass them.

### **3.3 PERFORMANCE:**

- A. General: Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.
- B. Cutting:

1. Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.
2. Cut existing construction using methods least likely to damage elements retained or adjoining construction.
3. In general, where cutting, use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
4. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
5. Cut through concrete and masonry using a cutting machine, such as a Carborundum saw or a diamond-core drill.
6. Comply with requirements of applicable Division 2 Sections where cutting and patching requires excavating and backfilling.
7. Where services are required to be removed, relocated, or abandoned, by-pass utility services, such as pipe or conduit, before cutting. Cut-off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal the remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter.

C. Patching:

1. Patch with durable seams that are as invisible as possible. Comply with specified tolerances.
2. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.
3. Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
4. Where removing walls or partitions extends one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform color and appearance.
5. Where patching occurs in a smooth painted surface, extend final paint coat over entire unbroken surface containing the patch after the area has received primer and second coat.
6. Patch, repair, or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.

D. Cleaning:

1. Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar items. Thoroughly

clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.

END OF SECTION

**SECTION 01300**  
**SUBMITTALS**

**PART 1 – GENERAL**

1.01 DESCRIPTION:

A. The requirements specified in this Section relate to Submittal materials, Requests for Information and Requests for Clarification by all Contractors, Sub-contractors and Suppliers performing Work under these Contract Documents and includes:

1. Submittal Procedures
2. Submittals Schedule
3. Proposed Products List
4. Shop Drawings
5. Product Data
6. Samples
7. Manufacturer's Instructions
8. Manufacturer's Operations & Maintenance Manuals
9. Manufacturer's Certificates

1.02 RELATED WORK IN OTHER SECTIONS:

A. Additional submittal requirements may be provided as follows:

1. Instructions to Bidders
2. OUS General Conditions
3. Supplemental General Conditions
4. Other Sections of these specifications.

1.03 All Submittals, Shop Drawings, Product Data and Samples shall be in accordance with OUS General Conditions for Public Improvement Contracts Section B.18 as amended by the Supplemental General Conditions and as specified herein.

1.04 Transmit six (6) copies of each submittal with sequentially numbered forms. Provide two (2) additional copies when submittal involves mechanical or electrical review. Re-submittals shall have original number and alphabetic prefix.

1.05 Identify Project, Contractor, Subcontractor and supplier; pertinent drawing sheet and

detail number(s), and specification numbers, as appropriate.

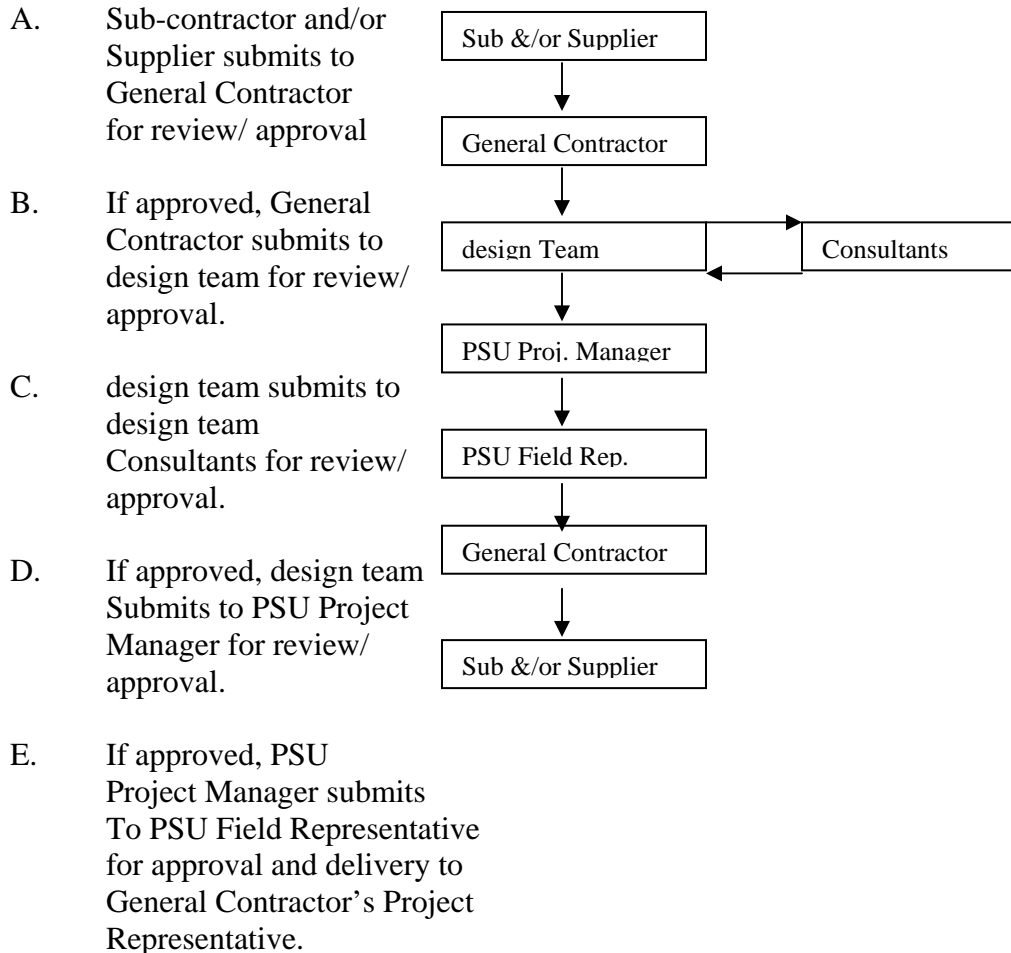
- 1.06 Review of the submittals by the Architect and Owner's Authorized Representative shall not relieve the Contractor of its obligations as specified in OUS General Conditions for Public Improvement Contracts Section B.18.
- 1.07 The General Contractor shall sign certifying that review, verification of products required, field dimensions, adjacent construction work and coordination of information, is in accordance with the work of the Contract Documents.
- 1.08 Provide space for review approval by design team and the Owner's Authorized Representative, as specified herein.
- 1.09 Schedule submittals to expedite Project; deliver to design team and Owner's Authorized Representative as directed herein and coordinate submission of related items.

## **PART 2 – SUBSEQUENT TO THE AWARD OF THE CONTRACT**

- 2.01 Seventy-two (72) hours prior to the pre-construction conference and in all cases prior to the commencement of work, the Contractor shall submit the following to the Owner's Authorized Representative:
  - A. Certificate of Insurance as required.
  - B. Signed Public Improvement Agreement.
  - C. Five (5) original copies of Performance & Payment Bonds.
  - D. Schedule of Values.
  - E. Project Construction Schedule.
  - F. Submittal List and Schedule of Submittals, identifying long lead items.
  - G. Contractor Emergency Contact Information.
- 2.02 Prepare Schedule of Submittals in chronological order by date of required submittal approval. Indicate the following:
  - A. Category of submittal.
  - B. Name of sub-contractor or supplier.
  - C. Generic Description of Work covered.
  - D. Related Specification Section Number.
  - E. Activity or event number on the project construction schedule.
  - F. Proposed submittal date for first submittal.
  - G. Date material required for installation.
  - H. Re-submittal dates and final release or approval by design team and Owner's Authorized Representative.

**PART 3 – DURING CONSTRUCTION**

3.01 The general Submittal Review Procedure is illustrated in the following diagram.



3.02 Allow fourteen (14) calendar days for submittal review by design team and Owner’s Authorized Representative. Allow (3) additional calendar days for mechanical and electrical reviews. The General Contractor shall be responsible for timely the submittal of materials approvals in order to satisfy required delivery dates and maintain the construction schedule.

**3.03 ACTION BY DESIGN TEAM AND OWNER’S REPRESENTATIVE**

A. Except for submittals for the record or information, where action and return is required, the Architect will review each submittal, mark to indicate action taken, and return promptly through and with approval of the Owner’s Authorized Representative. All unacceptable or rejected submittals shall be immediately

corrected and resubmitted for review.

1. Compliance with specified characteristics is the Contractor's responsibility.

B. Action Stamp: The design team will stamp each submittal with a uniform action stamp. The design team will mark the stamp appropriately to indicate the action taken, as follows:

1. Final Unrestricted Release: When the design team marks a submittal "No Exceptions Taken," the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents.
2. Final-But-Restricted Release: When the design team marks a submittal "Make Corrections Noted," the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents.
3. Returned for Resubmittal: When the design team marks a submittal "Revise and Resubmit," do not proceed with Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal according to the notations; resubmit without delay. Repeat if necessary to obtain different action mark.
4. Unsolicited Submittals: The design team will return unsolicited submittals to the sender without action.

3.04 The Owner's Representative may request additional information during the course of the project to monitor material and equipment deliveries as well as coordinate work and materials by others. The General Contractor may be required to submit and periodically update a Material Delivery Summary indicating material order dates, purchase order numbers, expected delivery dates and actual delivery dates.

### 3.05 SHOP DRAWINGS

- A. Submit newly prepared information drawn accurately to scale. Highlight, encircle, or otherwise indicate deviations from the Contract Documents. Do not reproduce Contract Documents as the basis of Shop Drawings.
- B. Shop Drawings include fabrication and installation Drawings, setting diagrams, schedules, patterns, templates and similar Drawings. Include the following information:
  1. Dimensions.

2. Identification of products and materials included by sheet and detail number.
  3. Compliance with specified standards.
  4. Notation of coordination requirements.
  5. Notation of dimensions established by field measurement.
  6. Sheet Size: Except for templates, patterns and similar full-size Drawings, submit Shop Drawings on sheets at least **8-1/2 by 11 inches** but no larger than **30 by 42 inches**.
  7. Do not use Shop Drawings without an appropriate final stamp indicating action taken.
- C. Subsequent to Substantial Completion and prior to Final Pay Request, Submit five (5) copies of As Built documentation of all shop drawings to the Architect for inclusion in Project Record Documents. See OUS General Conditions for Public Improvement Contracts Section K and Division 1 Section 01780 for Project Closeout requirements.

### 3.06 PRODUCT DATA

- A. Collect Product Data into a single submittal for each element of construction or system. Product Data includes printed information, such as manufacturer's installation instructions, catalog cuts, standard color charts, roughing-in diagrams and templates, standard wiring diagrams, and performance curves.
1. Mark each copy to show applicable choices and options. Where printed Product Data includes information on several products that are not required, mark copies to indicate the applicable information. Include the following information:
    - a. Manufacturer's printed recommendations.
    - b. Compliance with trade association standards.
    - c. Compliance with recognized testing agency standards.
    - d. Notation of dimensions verified by field measurement.
    - e. Notation of coordination requirements.
  2. Do not submit Product Data until compliance with requirements of the Contract Documents has been confirmed.
  3. Submittals: Submit 6 copies of each required submittal; submit 2 additional copies where review is required by design team's consultants. Up to four copies will be retained by design team and Owner, plus copies by design team's consultant, the remaining copies will returned marked with action taken and corrections or modifications required.
  4. Distribution: Furnish copies of final submittal to installers,



subcontractors, suppliers, manufacturers, fabricators, and others required for performance of construction activities.

- a. Do not proceed with installation until a copy of Product Data is in the Installer's possession.
- b. Do not permit use of unmarked copies of Product Data in connection with construction.

### 3.07 SAMPLES

- A. Submit full-size, fully fabricated Samples cured and finished as specified and physically identical with the material or product proposed. Samples include partial sections of manufactured or fabricated components, cuts or containers of materials, color range sets, and swatches showing color, texture, and pattern.
  1. Mount or display Samples in the manner to facilitate review of qualities indicated. Prepare Samples to match the Architect's sample. Include the following:
    - a. Specification Section number and reference.
    - b. Product name or name of the manufacturer.
    - c. Compliance with recognized standards.
  2. Submit Samples for review of size, kind, color, pattern, and texture. Submit Samples for a final check of these characteristics with other elements and a comparison of these characteristics between the final submittal and the actual component as delivered and installed.
    - a. Where variation in color, pattern, texture, or other characteristic is inherent in the material or product represented, submit at least 3 multiple units that show approximate limits of the variations.
    - b. Samples not incorporated into the Work, or otherwise designated as the Owner's property, are the property of the Contractor and shall be removed from the site prior to Substantial Completion.
  3. Submittals: Except for Samples illustrating assembly details, workmanship, fabrication techniques, connections, operation, and similar characteristics, submit three sets. The Architect will return two sets marked with the action taken.
  4. Maintain sets of Samples, as returned, at the Project Site, for quality comparisons throughout the course of construction.

- a. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
- b. Sample sets may be used to obtain final acceptance of the construction associated with each set.
- c. Distribution of Samples: Prepare and distribute additional sets to subcontractors, manufacturers, fabricators, suppliers, installers, and others as required for performance of the Work.

### 3.08 QUALITY ASSURANCE SUBMITTALS

- A. Submit quality-control submittals, including design data, certifications, manufacturer's instructions, manufacturer's field reports, and other quality-control submittals as required under other Sections of the Specifications.
- B. Certifications: Where other Sections of the Specifications require certification that a product, material, or installation complies with specified requirements, submit a notarized certification from the manufacturer certifying compliance with specified requirements.
  1. Signature: Certification shall be signed by an officer of the manufacturer or other individual authorized to sign documents on behalf of the company.
- C. Inspection and Test Reports: Requirements for submittal of inspection and test reports from independent testing agencies are specified in Division 1 Section "Quality Control."

### 3.09 MANUFACTURER'S INSTRUCTIONS

- A. When specified in individual Specification Sections, submit manufacturer's printed instructions for delivery, storage, assembly, start-up, testing, adjusting and finishing.
- B. Submit any conflicts between the manufacturer's instructions and the Contract Documents for clarification by the Architect and Owner's Authorized Representative.

### 3.10 MANUFACTURER'S CERTIFICATE

- A. When specified in individual Specification Sections, submit manufacturer's

certificate for review, in quantities specified.

- B. Indicate material or product conforms to or exceeds specific requirements. Submit supporting reference date, affidavits, and certificates as appropriate.
- C. Certificates may be recent or previous test results on materials or products, but must be acceptable to the Architect and the Owner's Authorized Representative.

**- PRODUCTS (Not Applicable)**

**- EXECUTION (Not Applicable)**

END OF SECTION

**SECTION 01400**  
**QUALITY REQUIREMENTS**

**PART 1 – GENERAL**

1.01 DESCRIPTION

A. The requirements specified in this Section relate to general quality control of the Project and supplement the quality control requirements specified in the OUS General Conditions for Public Improvement Contracts and other Sections of these Specifications. The requirements of this Section relate to all work performed by all Contractors and Sub-contractors performing work under these Contract Documents and include:

1. References and standards.
2. Quality assurance submittals.
3. Mock-ups.
4. Control of installation.
5. Tolerances.
6. Testing and inspection services.
7. Manufacturers' field services.

1.02 RELATED SECTIONS

A. Additional requirements related to Quality Requirements may be provided as follows:

1. OUS General Conditions
2. Other Sections of the specifications.

1.03 REFERENCES

- A. ASTM C 1021 -Standard Practice for Laboratories Engaged in Testing of Building Sealants; 1997.
- B. ASTM C 1077 -Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation; 2000.
- C. ASTM C 1093 -Standard Practice for Accreditation of Testing Agencies for Unit

Masonry; 1995.

- D. ASTM D 3740 -Standard Practice for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction; 1999c.
- E. ASTM E 329 -Standard Specification for Agencies Engaged in the Testing and/or Inspection of Materials Used in Construction; 2000b.
- F. ASTM E 543 – Standard Practice for Agencies Performing Nondestructive Testing; 1999.
- G. ASTM E 548 – Standard Guide for General Criteria used for Evaluating Laboratory Competence; 1994.

#### 1.04 SUBMITTALS

- A. Testing Agency Qualifications:
  - 1. Prior to start of Work, submit agency name, address, and telephone number, and names of full time registered Engineer and responsible officer.
  - 2. Submit copy of report of laboratory facilities inspection made by Materials Reference Laboratory of National Bureau of Standards during most recent inspection, with memorandum of remedies of any deficiencies reported by the inspection.
- B. Design Data: Submit for Architect's knowledge as contract administrator or for the Owner, for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.
- C. Test Reports: After each test/inspection, promptly submit two copies of the report to the Contractor and additional copies to the Architect and Owner's Authorized Representative for processing through the procedure specified in Section 01305. All test reports shall include the following information:
  - 1. Date issued.
  - 2. Project title and number.
  - 3. Name of inspector.
  - 4. Date and time of sampling or inspection.
  - 5. Identification of product and specifications section.
  - 6. Location In the Project.
  - 7. Type of test/inspection.
  - 8. Date of test/inspection.

9. Results of test/inspection.
  10. Conformance with Contract Documents.
  11. When requested by Architect, provide interpretation of results.
- D. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Architect and Owner's Authorized Representative, in accordance with the procedure specified in Section 01305. All certificates shall include the following information:
1. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
  2. Certificates may be recent or previous test results on material or product, but must be acceptable to the Architect and Owner.
- E. Manufacturer's Instructions: When specified in individual specification sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.
- F. Manufacturer's Field Reports: Submit reports for review by Architect and Owner's Authorized Representative.
1. Submit report in duplicate within 30 days of observation to design team for information.
  2. Submit for information for the limited purpose of assessing conformance with information given and the design concept expressed in the contract documents.
- G. Erection Drawings: Submit drawings for review and approval by design team and Owner's Authorized Representative, in accordance with the procedure specified in Section 01305.
1. Submit information for the limited purpose of assessing quality control, and conformance with the design concept and contract documents.

#### 1.05 REFERENCES AND STANDARDS

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

requirements are specified or are required by applicable codes.

- B. Conform to reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.
- C. Obtain copies of standards where required by product specification sections.
- D. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.
- E. Should specified reference standards conflict with Contract Documents, request clarification from design team before proceeding.

#### 1.06 TESTING AND INSPECTION AGENCIES

- A. Unless otherwise directed in writing by the Owner's Authorized Representative, the Contractor shall make arrangements for all required testing and inspections in accordance with OUS General Conditions for Public Improvement Contracts Section B.7.
- B. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.
- C. Employed Agency shall comply with the following criteria:
  - 1. Testing agency: Comply with requirements of ASTM E 329, ASTM E 548, ASTM E 543, ASTM C 1021, ASTM C 1077, and ASTM C 1093.
  - 2. Inspection agency: Comply with requirements of ASTM 03740, ASTM E329, and ASTM E548.
  - 3. Laboratory: Authorized to operate in State in which Project is located.
  - 4. Laboratory Staff: Maintain a full time registered Engineer on staff to review services.
  - 5. Testing Equipment: Calibrated at reasonable intervals with devices of an accuracy traceable to either National Bureau of Standards or accepted values of natural physical constants.

#### PART 2- PRODUCTS

**NOT USED**

PART 3- EXECUTION

3.01 CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have Work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 MOCK-UPS

- A. When required by other Sections of these specifications or the Architect provide mock-ups for review of conformance with quality, performance and design intent.
- B. Review of mock-ups will be performed under provisions identified in this section and identified in the respective product specification sections.
- C. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.
- D. Accepted mock-ups shall be a comparison standard for the remaining Work.
- E. Where mock-up has been accepted by Architect and is specified in product specification sections to be removed, remove mock-up and clear area when directed to do so.

3.03 TOLERANCES



- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from design team before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

#### 3.04 TESTING AND INSPECTION

- A. See individual specification sections for testing required.
- B. Testing Agency Duties:
  - 1. Test samples of mixes submitted by Contractor.
  - 2. Provide qualified personnel at site. Cooperate with design team and Contractor in performance of services.
  - 3. Perform specified sampling and testing of products in accordance with specified standards.
  - 4. Ascertain compliance of materials and mixes with requirements of Contract Documents.
  - 5. Promptly notify design team and Contractor of observed irregularities or non-conformance of Work or products.
  - 6. Perform additional tests and inspections required by design team or Owner's Authorized Representative.
  - 7. Submit reports of all tests/inspections specified.
- C. Limits on Testing/Inspection Agency Authority:
  - 1. Agency may not release, revoke, alter, or enlarge on requirements of the Contract Documents.
  - 2. Agency may not approve or accept any portion of the Work.
  - 3. Agency may not assume any duties of Contractor.
  - 4. Agency has no authority to stop the Work.
- D. Contractor Responsibilities:
  - 1. Deliver to agency at designated location, adequate samples of materials proposed to be used which require testing, along with proposed mix designs.
  - 2. Cooperate with laboratory personnel, and provide access to the Work and

- to manufacturers' facilities.
  - 3. Provide incidental labor and facilities:
  - 4. To provide access to Work to be tested/inspected.
  - 5. To obtain and handle samples at the site or at source of Products to be tested/inspected.
  - 6. To facilitate tests/inspections.
  - 7. To provide storage and curing of test samples.
  - 8. Notify Architect and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
  - 9. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
  - 10. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
- E. Re-testing required because of non-conformance to specified requirements shall be performed by the same agency on instructions by design team. Payment for re-testing will be charged to the Contractor by deducting testing charges from the Contract Price.

### 3.05 MANUFACTURERS' FIELD SERVICES

- A. When specified in individual specification sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, as applicable, and to initiate instructions when necessary.
- B. Submit qualifications of observer to design team and Owner's Authorized Representative 30 days in advance of required observations.
  - 1. Observer subject to approval of design team.
  - 2. Observer subject to approval of Owner.
- C. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

### 3.06 DEFECT ASSESSMENT

- A. Immediately replace Work or portions of the Work not conforming to the Contract Documents at no additional cost to the Owner.

END OF SECTION

**SECTION 01500**  
**TEMPORARY FACILITIES AND CONTROLS**

**PART 1 – GENERAL**

1.02 DESCRIPTION:

- A. The requirements specified in this Section relate to Temporary Facilities, Controls, Utilities and procedures required by all Sub-contractors through the General Contractor performing work under these Contract Documents and includes:

1. General Requirements for Temporary Facilities and Controls.
2. Temporary Utilities.
3. Temporary Electricity.
4. Temporary Lighting.
5. Temporary Heat.
6. Temporary Ventilation.
7. Temporary Telephone and Fax.
8. Temporary Water Service.
9. Temporary Sanitary Facilities.
10. Temporary Fire Protection and Detection.
11. Temporary Construction.
12. Temporary Controls.
13. Tree and Plant Protection.
14. Security.
15. Traffic Regulation and Parking.
16. Project Identification.
17. Field Office.
18. Progress Cleaning
19. Removal of Utilities, Facilities and Controls

1.02 RELATED WORK IN OTHER SECTIONS:

- A. Additional requirements related Temporary Facilities and Controls may be provided as follows:

1. OUS General Conditions
2. Supplemental General Conditions
3. Other Sections of these specifications.

1.03 GENERAL TEMPORARY FACILITIES AND CONTROL REQUIREMENTS

- A. This section specifies requirements for temporary services and facilities, including such items as temporary utility services, temporary construction and support facilities, temporary controls, traffic regulations, project security and protection.
- B. Cost or usage charges for temporary services or facilities are NOT chargeable to Owner, and will NOT be considered as basis for claim for change orders.
- C. Temporary utility services required for use at the Project Site include but are not limited to the following:
  1. Water service and distribution.
  2. Temporary electric power and lighting.
  3. Telephone, Fax and e-mail service.
- D. Temporary construction and support facilities required for Project include but are not limited to the following:
  1. Temporary heat.
  2. Temporary ventilation.
  3. Sanitary facilities.
  4. Waste disposal service.
  5. Construction aids and miscellaneous general services and facilities.
  6. Temporary enclosures.
  7. Project identification, bulletin boards and signs.
  8. Field office.
  9. Parking
- E. Security and protection facilities and services required for Project include but are not limited to the following:
  1. Temporary fire protection.
  2. Barricades, warning signs and lights.
  3. Environmental protection.

- F. Comply with requirements of local laws and regulations as well as Owner's requirements governing construction, and local industry standards, in installation and maintenance of temporary services and facilities, including but not limited to the following:
1. Building codes, including local requirements for permits, testing and inspection.
  2. Health and safety regulations.
  3. Utility company regulations and recommendations for temporary services.
  4. Police and Fire Department rules and recommendations.
  5. Environmental Protection Agency regulations and requirements.
  6. Hazardous Materials Safety Regulations.
- G. Comply with requirements of NFPA Code 241, "Standards for Safeguarding Building Construction and Demolition Operations" and ANSI -A 10 Series standards for "safety Requirements for Construction and Demolition" and AGC/ASA/ASC Joint Guideline #5, "Temporary Job Utility and Services". Refer to "Guidelines for Bid Conditions for Temporary Job Utilities and Services" as prepared jointly by AGC and ASC for industry recommendations
- H. Inspect and test each service before placing temporary utilities in use. Arrange for required inspections and tests by governing authorities, and obtain required certifications and permits for use.
- I. During progress of Work, submit copies of reports and permits required by governing authorities, or necessary for installation and efficient operation of temporary services and facilities.
- J. Provide each temporary service and facility ready for use at each location when service or facility is first needed to avoid delay in performance of Work. Maintain or expand as required and modify temporary services and facilities as needed throughout progress of Work. Do not remove until services or facilities are no longer needed, or are replaced by authorized use of completed permanent facilities.
- K. Operate temporary services and facilities in safe and efficient manner. Do not overload temporary services or facilities, and do not permit them to interfere with progress of Work. Should services of independent engineer be required to survey existing or temporary utilities, it shall be at no cost to Owner. Do not allow unsanitary conditions, public nuisances or hazardous conditions to develop or persist at the Site.
- L. Do not permit disruption of existing services, freezing of pipes, flooding or contamination of water sources.
- M. Maintain temporary facilities in such manner as to prevent discomfort to users. Take necessary fire protection measures. Maintain temporary support facilities in sanitary manner so as to avoid health problems and other deleterious effects.

- N. Maintain Site security and protection measures in safe, lawful and publicly acceptable manner. Take necessary measures to prevent site erosion, as applicable. At not time is Site to be without protective fence enclosure(s), as required to protect general public.

#### 1.04 TEMPORARY UTILITIES

- A. Coordinate with the Owner's Authorized Representative and make connections to existing services to provide temporary services to the Project. Connections to the service shall be the responsibility of the Contractor.
- B. Coordinate with the Owner's Authorized Representative for acceptable time for service interruptions, where necessary to make connections for temporary services.
- C. Do not interrupt any utility service. Seventy-two (72) hours prior request and approval from the Owner's Authorized Representative is required to enable the Owner to shut down any utility required for the work. Contractor's employees shall **not** shut down utilities.

#### 1.05 TEMPORARY WATER SERVICE

- A. Provide temporary water service and distribution piping of sizes and pressures adequate for construction purposes throughout the construction period and until permanent service is in use, including but not limited to following uses:
  - 1. Construction processes.
  - 2. Fire protection, as appropriate.
  - 3. Drinking water.
  - 4. Cleaning.
- B. Where water use is authorized by Owner's Authorized Representative, connect to Owner's metered source, usage will be paid by Owner. Contractor shall exercise water conservation measures, provide hoses with threaded connection and provide temporary pipe insulation to prevent freezing. Owner's Authorized Representative reserves the right to require the Contract to furnish and install a temporary flow meter during construction and pay for water use, if contractor does not exercise satisfactory water conservation measures.

#### 1.06 TEMPORARY ELECTRICITY

- A. Provide weather proof, grounded temporary electric power service and

distribution system of sufficient size, capacity and power characteristics to accommodate performance of Work during construction period.

- B. Install service and grounding in compliance with National Electric Code (NFPA 70). Include necessary meters, transformers, overload protected disconnect and main distribution switch gear.
- C. Provide metal conduit, tubing or armored cable for protection of temporary power wiring where exposed to possible damage during construction operations.
- D. Temporary service electrical wiring will be limited to 110-120 volt, 20-amp rating, and wiring of lighting circuits may be non-metallic sheathed cable in areas where located overhead and exposed for surveillance, where permitted by code. Do not wire temporary lighting with plain, exposed (insulated) electrical conductors. Provide metal enclosures or boxes for wiring devices.
- E. For power hand tools and task lighting, provide temporary 4-gang outlets at each floor level, spaced so that 100-foot extension cord can reach each area of Work. Provide separate 110 120 volt, 20 amp circuit for each 4-gang outlet (4 outlets per circuit).

#### 1.07 TEMPORARY LIGHTING

- A. Wherever overhead floor or roof deck has been completed, install temporary lighting adequate to provide sufficient illumination for safe Work and traffic conditions in every area of Work. Take precautions to limit glare or direct illumination into areas occupied after dark.
- B. Provide and maintain lighting for construction operations to achieve minimum lighting level of 2 watt/sq. ft.
- C. Provide and maintain 1 watt/sq. ft. lighting to staging and storage areas during periods of non-construction after dark for security purposes.
- D. Provide and maintain 0.25 watt/sq. ft. lighting to interior work areas during periods of non-construction after dark for security purposes.
- E. Provide branch wiring from power source to distribution boxes with lighting conductors, pigtails, and lamps as required.
- F. Maintain lighting and provide routine repairs.

#### 1.08 TEMPORARY TELEPHONE, FAX AND E-MAIL

- A. The Owner will provide connection line(s) for temporary telephone, facsimile (FAX) machine and electronic mail service to the job site field office location. Telephone service will be local access limited. Coordinate location and setup with the Owner's Authorized Representative.

- B. The Contractor shall provide temporary on site telephone equipment, facsimile (Fax) machine and electronic mail access system on dedicated lines at field office. See Section 01300, Project Administration for off site emergency contact requirements.
- C. Maintain temporary telephone, facsimile and e-mail service from start of Work through Final Completion.

#### 1.09 TEMPORARY HEAT

- A. Provide and pay for heat devices as required to maintain specified conditions for construction operations.

#### 1.10 TEMPORARY VENTILATION

- A. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases. See Section 01734, Indoor Air Quality for addition temporary ventilation requirements.

#### 1.11 TEMPORARY SANITARY FACILITIES

- A. The Contractor will provide temporary toilet facilities for its workers and may not use the Owners toilet facilities.
- B. Do not discharge liquid wastes into sewers or drainage facilities, containing excessive amounts of soil, construction debris, chemicals, oils and similar contaminants that might clog sewers or pollute waterways. The contractor shall bear the cost of any damages to the sewer system, caused directly or indirectly by his crews or subcontractors.

#### 1.12 WASTE DISPOSAL SERVICE

- A. If existing sewers or drainage facilities cannot be lawfully used for discharge of liquid waste, provide containers to remove and dispose of waste off Site in a lawful manner. See Section 01732, Waste Management
- B. Provide solid waste disposal and recycling facilities for the removal of construction related materials, trash and debris, in accordance with Section 01732. No on-site area is available for a `roll-off` dumpster location. Coordinate with the City of Portland and the Owner's Authorized Representative the `hooding` of parking meters and the use of public right-of-way for rubbish disposal as required.



- C. Do not dispose of hazardous materials in a manner that could allow the materials to enter landfills, waterways or other unapproved facilities. The Contractor shall comply with the hazardous material provisions of OUS General Conditions for Public Improvements Section F, and Division 1 Section 1732.

### 1.13 CONSTRUCTION AIDS & GENERAL SERVICE FACILITIES

#### A. Construction Aids:

- 1. Design, construct and maintain construction aids and miscellaneous general services facilities as needed to accommodate performance of Work. Construction aids and miscellaneous general services and facilities include, but are not limited to the following:
  - 1) Temporary stairs and ladders.
  - 2) Guardrails and barriers.
  - 3) Walkways.
- 2. Provide temporary stairs where ladders are not adequate for proper, safe or efficient performance of Work.
- 3. Install and maintain temporary walkways around work and to field offices, toilets and other similar areas. Construct walkways of gravel or duckboard units.
- 4. Provide lifting devices necessary for the proper and efficient movement of materials; provide operating personnel for equipment as required. Provide for use of all hoisting equipment on the project during "off hours" as required to prevent impeding the project schedule.

#### B. Pollution Control:

- 1. Provide general protection facilities, operate temporary facilities, conduct construction activities, and enforce strict discipline for personnel on Site by methods which comply with environmental regulations, and that minimize possibility that air, water and subsoil may be contaminated or polluted, or that other undesirable effects may occur from performance of Work.

#### A. Noise Control:

- 1. Contractor shall provide and maintain adequate and effective mufflers,

sound barriers and controls for all construction equipment so that noise from this equipment can be controlled to satisfaction of Owner.

Coordinate with Owner's Authorized Representative when construction work requires use of air hammers or other objectionable noisy equipment. Comply with all laws and regulations applicable the noise pollution abatement and workplace noise. See Section 01734.

2. Rotohammering, grinding, drilling or other excessively noisy operations shall be coordinated with Owner's Authorized Representative and scheduled to avoid impacting building occupants. Jack hammering shall not be allowed at existing building interiors.

B. Dust Control:

1. All streets, roads or detours used for hauling materials shall be oil dust treated as required to prevent dust, or continually watered to prevent dust. Dust prevention measures, both indoors and outdoors shall be continuous until Final Acceptance by Owner.
2. Provide interior dust control measures, such as temporary partitions, taping of air spaces at doors, maintenance of filters and protection of ducts, etc., as required to control dust. Coordinate to prevent accidental activation of particulate-sensing fire detection system as described under requirements for Hot Work Permit.

A. Erosion and Sediment Control:

1. Follow city approved master erosion control plan, when applicable. Maintain copy on site.

#### 1.14 TEMPORARY ENCLOSURES

A. Security:

1. The Contractor shall be responsible for any and all protections required during performance of the work, and shall be responsible for any and all damages as specified in OUS General Conditions for Public Improvement Contracts Section G1.1. 2. The Owner will not be responsible for protection of materials or equipment from vandalism or theft. Security is the responsibility of the Contractor.

- B. Provide security and facilities to protect Work, existing facilities, and Owner's operations from unauthorized entry, vandalism or theft.

- C. Maintain a security program continuously throughout Project, until Owner occupancy or Owner acceptance precludes, need for security program.
  
- D. Barriers:
  - 1. Comply with recognized standards and code requirements for erection of substantially adequate barriers where needed to prevent accidents and losses. Paint with appropriate colors, graphics and warning signs to inform construction personnel and public of hazard of concern. Provide lighting and flashing signals as required.
  - 2. Provide barriers to prevent unauthorized entry to construction areas to allow for Owner's use of site, and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
  - 3. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing building.
  - 4. Protect non-owned vehicular traffic, stored materials, site and structures from damage.
  
- E. Fencing:
  - 1. Where fencing is required, install general enclosure fence with suitable lock for gates. Locate where indicated on Drawings or as required to substantially complete enclosure around Site or staging/construction operations. Install in a manner that will prevent unauthorized persons from easily entering Site. Except when otherwise directed, provide open-mesh, chain-link fencing with posts substantially set in ground, or in moveable concrete blocks.
  - 2. Within five days of Commencement of Work, Contractor shall provide fencing plan for approval by Owner. Plan shall indicate existing fencing to remain, new fencing required and type, location and sequencing of temporary barriers or fencing required for fencing outside primary Site.
  
- F. Protection of Installed Work:
  - 1. Protect installed Work and provide special protection where specified in individual j Specification Sections.
  - 2. Provide temporary and removable protection for installed Products. Control activity in the immediate work area to minimize damage.
  - 3. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear,

damage, or movement of heavy objects, by protecting with durable sheet materials.

4. 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.

#### 1.15 PROJECT IDENTIFICATION

##### A. Project Identification Signage:

1. Project Identification Signage will be furnished by Owner and installed by Contractor. Coordinate signage placement with the Owner's Authorized Representative.
2. Project Identification Signage shall be installed by the Contractor within five (5) days of delivery by the Owner and shall be removed by the Contractor following notice of Substantial Completion and prior to Final Completion. Upon removal Project Identification Signage shall become the property of the contractor.
3. Project Identification Sign will consist of two signs, 4'x8' =32 sq ft area, 3/4" marine plywood mounted. Contractor to provide 4"x4" post or other materials and means to mount sign with bottom of sign 4 feet above ground.

##### B. Project Informational Signs:

1. Contractor shall provide temporary directional signs to direct traffic into and within site. Relocate as Work progress requires.

#### 1.16 FIELD OFFICE

- A. Provide field office area, and storage and staging locations within the defined scope of work area and in a location approved by the Owner's Authorized Representative. Provide temporary lighting, heated and ventilation as specified herein.
- B. Provide plan table, notice boards and other furnishings as require for Contractor's daily operations and as required by the Owner's Authorized Representative.
- C. Provide on-site office equipment as specified herein.
- D. Relocate field office area, and storage and staging location as required to not

impede work. At completion of Work, remove buildings, utility service and debris. Restore area to prior condition.

#### 1.17 TRAFFIC REGULATION AND PARKING

##### A. Traffic Control:

1. Comply with all rules and regulations of Owner, City, State and county authorities regarding closing of public streets to use by public traffic, including pedestrians. No road shall be closed to public except by expressed by permission by Owner and City. Control obstructions and hazards with approved signs, barricades and lights where necessary to protect safety of public. Convenience of general public adjacent to Project, protection of persons and property, and access of emergency vehicles are of prime importance and shall be provided for in satisfactory manner.

##### B. Flagging Services:

1. Contractor shall provide trained flaggers and barricade hazardous operations during construction activities requiring the use of street areas, as directed by the Owner's Authorized representative. Equip flaggers and guards on duty with approved red work apparel and stop/slow paddle kept clean and in good condition.
2. Utilize traffic control cones, drums, flares and lights which are approved by the city of Portland Bureau of Transportation. Use flares and lights during hours of low visibility to delineate traffic lanes and guide traffic.

##### C. Temporary Use of Roads:

1. Provide detours necessary for unimpeded traffic flow.
2. Provide and maintain unobstructed access to fire hydrants.
3. Maintain emergency vehicle top access to the premises.

##### D. Construction Related Parking Control:

1. Contractor, sub-contractor and employee parking will not be provided on the premises. The purchase of hoods for parking meters from the city of Portland is suggested.
2. Coordinate all construction deliveries with the Owner's Authorized Representative. Purchase and obtain a temporary parking permit from the Portland State University office of Transportation and Parking twenty-four (24) hours prior to anticipated delivery parking need. Temporary construction related parking shall be limited to an assigned staging area as

approved in writing by the Owner's Authorized Representative.  
designated for Contractor's use.

3. The Contractor shall be responsible for all contractor and sub-contractor parking citations by the City of Portland and the Portland State University office of Transportation and Parking. All citations must be paid prior to submission of Notice of Final Completion and Request for Final Payment.

#### 1.18 TEMPORARY FIRE PROTECTION

- A. Until fire protection needs may be fulfilled by permanent facilities, install and maintain temporary fire protection facilities of types needed to adequately protect against reasonably predictable and controllable fire losses.
  1. Provide equipment of adequate capacity to extinguish minor fires in combustible material on the Premises during the construction period.
  2. Comply with applicable recommendations of NFPA Standard 10 "Standard for Portable Fire Extinguishers".
  3. Maintain equipment in working condition with current inspection certificate attached to each.
  4. Locate fire extinguishers where they are most convenient, visible and effective for their intended purpose, but provide no less than one extinguisher on each floor or in each general Work area, at or near each usable stairwell.
  5. Store combustible materials in containers in recognized fire-safe areas.
- B. Develop and supervise overall fire prevention and first-aid fire protection program for personnel at Project Site.
  1. Review needs with local fire department officials and establish procedures to be followed.
  2. Smoking is prohibited on the premises. Contractor's personnel are to abide by all rules and regulations regarding smoking and all other fire prevention regulations in force where the Work is to be performed. Smoking is not permitted in structures on the PSU campus.
  3. Post warning and information and enforce strict discipline.
  4. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire protection facilities, stairways and other access routes for fighting fires.
  5. Provide supervision of welding operations, combustion type temporary heating units, and similar sources of Ignition for fire.
  6. Contractor shall ensure that contractor's employees are familiar with Owner's fire procedures and location of fire hydrants and extinguishers in adjacent parts of building adjacent to the construction area.

## 1.19 PROGRESS CLEANING

- A. Dirt and debris of all nature caused by execution of Work shall be removed from the Site at end of each work day. Contractor shall be responsible for disposal of all scraps and materials that are relative to this Project.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing space.
- C. Hose all paved areas staged with construction material and generally prepare area of Work for occupancy with no further clean-up required by Owner.
- D. Clean all spilled dirt, gravel or other foreign material caused by construction operations from all streets and roads at conclusion of each day's operations. Cleaning of large areas shall be by grader and front-end loader supplemented by washing with water power brushing and hand labor.
- E. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- F. Remove waste materials, debris, and rubbish from Site daily and dispose off-site.

## 1.20 REMOVAL OF UTILITIES, FACILITIES AND CONTROLS

- A. Remove temporary above grade or buried utilities, equipment, facilities, materials, prior to Substantial Completion inspection.
- B. Remove underground installations to a minimum depth of two (2) feet. Grade site as indicated. C. Clean and repair damage caused by installation or use of temporary work.
- C. Restore existing facilities used during construction to original condition. Restore permanent facilities used during construction to specified condition.

END OF SECTION

**SECTION 01550  
CONTRACTOR PARKING**

**PART I - GENERAL**

1.01 DESCRIPTION

- A. All parking costs and expenses incurred by any contractor in the course of doing business on Owner's property are the sole responsibility of such contractor. There is no free parking on the Owner's property. Parking rates for the City of Portland are posted at the parking entrances or on parking meters. Vehicles without permits may be towed away at the expense of the vehicle's owner. Parking is not allowed on any Owner's roadway unless so indicated. The Contractor's authorized representative can obtain parking permits for its employees from the Portland State University Transportation & Parking Services Office, Neuberger Hall (503.725.3442) at prevailing rates. All costs for parking permits, parking in University parking lots and ramps, and any fines incurred by any contractor shall be the responsibility of the contractor.
- B. Contractor shall not park in any area not designated for vehicle parking. It will be the responsibility of such contractor to repair and/or reimburse Owner for any damage to Owner's property caused by contractor's vehicle.
- C. Vehicles to be parked on the Owner's property shall be governed by Owner's Transportation & Parking Services Office.

1.02 RELATED SECTIONS

- A. Additional requirements related to Quality Requirements may be provided as follows:
  - 1. OUS General Conditions
  - 3. Other Sections of the specifications.

END OF SECTION



**SECTION 01565  
TREE AND PLANT PROTECTION**

**PART 1 GENERAL**

1.1 SECTION INCLUDES

- A. Work of this section includes preservation and protection of existing trees, shrubs, and lawn to remain.

1.2 GENERAL WORK CONSTRAINTS

- A. Unless indicated otherwise on the documents all existing trees, shrubs, and lawn shall remain and be protected.
- B. No work shall occur within the area inside the protective fencing.

1.3 COMPENSATION FOR DAMAGE TO EXISTING TREES

- A. The Contractor is responsible for compensating the Owner for any and all damage to trees, shrubs, and lawn.
- B. Compensation action and amounts shall be as directed and calculated by a certified Arborist selected by the Owner.

**PART 2 PRODUCTS**

2.1 TREE PROTECTION AND WORK LIMIT FENCING

- A. Protective Fencing: 6 foot tall temporary chain link fencing with temporary concrete post bases.

**PART 3 EXECUTION**

3.1 INSTALLATION

- A. Provide protective fencing at the limits for construction as indicated on the landscape drawings and as approved in the Field by the Owner.
- B. Prior to beginning construction, tour the site with the Owner and outline the location where protective fencing shall be installed.
- C. Fencing shall be installed plumb in locations identified in the field by the Owner.
- D. Fencing used to define the edge of construction, where it coincides with the location approved by the Owner for plant protection fence, is acceptable for protection fencing.

3.2 MAINTENANCE

- A. Maintain all protective fencing plumb, tight, at full height, and where located in the field by District. Replace damaged fencing with new materials as needed.

3.3 REMOVAL

- A. Remove protective fencing just prior to the site review for Substantial Completion.

END OF SECTION

**SECTION 01600  
CONTRACTOR STAGING**

**PART 1 - GENERAL**

**1.01 BUILDING ENTRY/ROUTES**

- A. Contractor shall schedule all necessary material stocking, demolition and trash removal through building during non-peak hours or as approved by the PSU (or “Owner”) Project Manager. All materials will be brought into the building through the approved entry and transported using the Owner’s assigned route.
- B. The entry is only to be used for loading and unloading. The entry will not be used for parking. Vehicles left unattended will be towed at the expense of the Contractor.

**1.02 PARKING**

- A. Unless stated in a Contract, all parking will be at the expense of the Contractor. All vehicles parked on Owner’s property must have a parking permit. The Contractor must arrange and secure for all temporary parking permits. Due to limited space, only work vehicles will be allowed at the worksite, and these may be enclosed within the Contractor’s assigned fenced work area. Contractor shall make every effort to carpool to the worksite when possible. It is the Contractor’s responsibility to secure all parking permits or pay the appropriate meter.

**1.03 STAGING/LAY DOWN AREA**

- A. During each phase of Construction, areas required for staging must be submitted to the Owner at least three (3) weeks in advance of the requirement. The date when the area will be reusable by Owner must be included.
- B. During construction, the Contractor shall provide all security for its materials, offices, staging and construction parking areas, etc. Owner shall have no responsibility for any of these items. Contractor shall also be responsible for maintaining a safe construction area on Owner’s property and offsite as well, including, without limitation, keeping all public and private roadways and parking areas clean, safe and functioning. The Contractor shall only be obligated clean up of those portions of public or private roadways and parking which have been affected by Contractor's activities.
  - 1. Use of lay down area is for the staging and storing of construction related equipment or material for Contractor construction activities only as related

to PSU projects.

2. Contractor is responsible for making sure the lay down area complies with all local building and fire codes and regulations and all Owner's safety codes and requirements.
3. Contractor is responsible for keeping the grounds surrounding the lay down area safe and clean of construction materials, litter, trash, and scrap materials. Continuous housekeeping is required including daily removal of combustible waste and storage of combustible waste in approved metal containers and trash bins with metal lids. Outdoor tool and equipment power cords shall be removed nightly. Clean-up and sweeping to be done on a daily basis at the completion of a work shift.
4. Contractor is responsible for their own trash management, including removal of trash from campus. Contractor shall comply with recycling guidelines specified in the Contract Documents.
5. Work & safety rules specified in the Contract Documents apply to lay down areas. Construction Personal Protective Equipment is required in the lay down area.
6. Owner will not be held liable for any loss or damage to any contractor structures or equipment in the lay down area.
7. There is NO SMOKING in the lay down area or inside structures or shipping containers in the lay down area. No smoking signs shall be posted at these locations.
8. Contractor is responsible for keeping all fire and emergency access lanes surrounding the lay down area open at all times. Fire lane parking is subject to immediate tow at Contractor's expense. Fire hydrants must be accessible at all times.
9. Contractor's portable toilets must be located inside the designated lay down area and maintained to PSU's satisfaction at all times.
10. Contractors will not be permitted to store any type of construction material on top of their shipping containers or structures for safety reasons. No combustible materials will be permitted to be stored under a storage trailer.
11. Contractor shall return the lay down area in the same or better condition than when initially used. Payment and/or fees may be withheld until repairs by the Contractor have been completed to PSU's satisfaction.
12. If outside staging of material is required in unpaved areas, Owner is not responsible for mud, dirt, snow, rain, ice and/or rust on materials.

13. Materials stored in staging area(s) must be protected from the elements and from damage or degradation as required in contract documents.
14. Typical temporary construction fencing shall be covered with opaque material to prevent seeing inside the fencing. Construction fencing shall be placed on the interior side of the opaque material.
15. The lay down area shall be made as small as possible and configured to minimize impact to the daily operations of the campus. Contractor to use lay down area for minimal amount of material inventory as required to provide an efficient construction process.

END OF SECTION

**SECTION 01630  
PRODUCT REQUIREMENTS AND SUBSTITUTIONS**

**PART 1- GENERAL**

1.01 DESCRIPTION

A. The requirements specified in this section relate to general product requirements substitutions by the Contractor, Sub-contractors and Suppliers performing Work under these Contract Documents and includes:

1. Contractor's Responsibilities
2. Product Options
3. Substitution Requests during the Bidding Process
4. Substitution Requests after the Award of Contract
5. Substitutions not permitted
6. Product Delivery, Storage & Handling
7. Product Installation

1.02 RELATED WORK IN OTHER SECTIONS

A. Additional Product Option and Substitution Request Information may be provided as follows:

1. OUS General Conditions
2. Other Sections of these specifications.

1.03 DEFINITIONS

A. "Products" are materials, machinery, components, equipment, fixtures and other systems incorporated into the Project, regardless of whether they were purchased for the Project or taken from the Contractor's previously purchased inventory. It does not include machinery and equipment used in preparation, fabrication, conveying and erection of the Work.

B. "Materials" are products that must be substantially cut, shaped, worked, mixed, finished, refined or otherwise fabricated, processed or installed to form units of Work.

C. "Substitutions" includes proposed changes in products, materials, equipment, and methods of construction required by the Contract Documents.

1.04 REQUESTS FOR SUBSTITUTIONS

- A. Requests for substitution of products in place of those specified shall be in accordance with the Public Improvement Agreement, OUS General Conditions, with Supplemental Conditions, and as specified herein. The Contractor assumes responsibility for the requirements as set forth herein. Any cost or time impact shall be at the Contractors expense.

1.05 CONTRACTOR’S RESPONSIBILITIES

- A. In requesting substitution, the Contractor shall comply with OUS General Conditions for Public Improvement Contracts, This includes but is not limited to the following:
  - 1. Investigate proposed products and determine that they are equal or superior in all respects to products specified.
  - 2. Provide same guarantee for accepted substitutions as for products specified.
  - 3. Coordinate installation of accepted substitutions into the Work, making such changes as may be required for the Work to be complete in all respects and within original time constraints.
  - 4. Waive all claims for additional costs related to substitutions, which consequently become apparent.

**PART 2 - PRODUCTS**

2.01 PRODUCT OPTIONS

- A. Contractor’s Options in selecting products is limited by the requirements of the Contract Documents and governing regulations. They are not controlled by industry traditions or procedures experienced by the Contractor on previous construction projects. Where products or manufactures are specified by name or manufacturer, they shall be assumed accompanied by the term, “or approved equal”. Comply with the Contract Document requirements for Substitutions and submittals to obtain review from Architect and Owner’s Authorized Representative for use of substitute products.

**PART 3 - EXECUTION**

### 3.01 SUBSTITUTION REQUESTS DURING THE BIDDING PROCESS

- A. Substitution requests shall meet the following criteria for review by the Architect and Owner's Authorized Representative:
1. Submit five (5) copies of each request for substitution using the submittal process specified in Division 1, Section 01305, Item 3.01.
  2. Substitutions shall be requested using the Substitution Request Form provided herein.
  3. Itemized comparison of proposed substitution with product or method specified.
  4. Complete data on each material and system for this project only, substantiating compliance of proposed substitution with the Contract Documents.
  5. Complete evidence including test numbers and supporting reports indicating compliance with referenced standards.
  6. A statement from the Manufacturer(s) of the proposed substitution materials stating that any and all warranties required by the contract documents for the originally specified materials can and will be provided for the substitution materials, and that required warranties shall be issued upon successful completion of the Work.
- B. Substitutions shall be requested prior to the Deadline for Request for Change and Protests, and accepted by Addendum prior to the date and time bid materials are due at the PSU Office of Facilities.

### 3.02 SUBSTITUTION REQUESTS AFTER AWARD OF CONTRACT

- A. Substitutions will normally not be considered after date of Contract, except when required due to unforeseen circumstances. Within a period of thirty (30) days after date of Contract, the Owner may, at its option, consider formal written requests for substitution of products in place of those specified, when submitted in accordance with the requirements stipulated herein. Substitution requests shall meet the following criteria for review by the Architect and Owner's Authorized Representative:
1. Submit five (5) copies of each request for substitution using the submittal process specified in Division 1, Section 01305, Item 3.01.
  2. Substitutions shall be requested using the Substitution Request Form provided herein.



- B. To receive consideration, one or more of the following conditions must be documented in any such request:
  - 1. The substitution is required for compliance with final interpretation of code requirements or insurance regulations.
  - 2. The substitution is required due to unavailability of a specified product, through no fault of the Contractor.
  - 3. The substitution is required because subsequent information disclosed the inability of the specified product to perform properly or to fit in the designated space.
  - 4. The substitution is required because it has become clearly evident, in the judgment of the Owner, that a substitute would be substantially in the best interest of the Owner in terms of cost, time, or other considerations.
  
- B. For products specified only by referenced standards, provide products by any Manufacturer meeting standards specified.
  
- C. For products specified by naming one or more products, provide any product named. If certain conditional requirements are stipulated, each product must comply with these requirements. Requests for approval of substitutions are subject to meeting requirements stipulated above.
  
- D. For products specified by naming a product to match existing products or systems, provide product of the same name. There is no option and no substitution is allowed.
  
- E. For each substitution that is accepted, the Contractor shall coordinate the work of all other trades and modify surrounding conditions as required to complete the work to the satisfaction of the Owners Authorized Representative at no additional cost to the Owner.

### 3.03 SUBSTITUTIONS NOT PERMITTED

- A. Submitted without first requesting approval thereof in accordance with requirements of this Section.
  
- B. Acceptance will require substantial revision of the Contract Documents, except as allowed by Paragraph 3.02 above.

### 3.04 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products according to the manufacturer's recommendations, using means and methods that will prevent damage, deterioration, and loss, including theft.
  - 1. Schedule delivery to minimize long-term storage at the site and to prevent overcrowding of construction spaces.
  - 2. Coordinate delivery with installation time to assure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and- other losses.
  - 3. Deliver, handle and store products in accordance with the manufacturer's recommendations, using means and methods that will prevent damage, deterioration and loss. Control delivery schedules to ensure timely delivery for incorporation into the Work, while minimizing long-term storage at the site and preventing overcrowding of the construction area.
  - 4. Deliver products to the site in an undamaged condition in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
  - 5. Promptly inspect shipments to assure that products comply with requirements, quantities are correct and products are undamaged.
  - 6. Store products subject to damage by the elements above ground, under cover in a weather tight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

### 3.05 PRODUCT INSTALLATION

- A. Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other Work.
- B. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION

**SECTION 01732  
WASTE MANAGEMENT**

**PART 1- GENERAL**

1.01 PROJECT GOALS

- A. The Owner requires that this project generate the least amount of waste and trash possible.
- B. This project has been designed to comply with SEED (State Energy Efficient Design) criteria. The Contractor, sub-contractors and suppliers shall work with the design team and Owner's Authorized Representative to achieve as sustainable of a project as possible from initial control of the site through final completion.

1.02 RELATED WORK IN OTHER SECTIONS

- A. Additional waste management requirements may be found in the following:
  - 1. OUS General Conditions
  - 2. Other Sections of these specifications.

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. Non-hazardous: 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 wasted 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.

#### 1.4 WASTE MANAGEMENT REQUIREMENTS

- A. The contractor shall familiarize himself with the relevant requirements, provide the necessary documentation and instruct all sub-contractors and suppliers regarding energy efficiency, air quality, demolition, recycling, waste management and final cleaning.

- 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. 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.
- E. 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. The city of Portland requires all building projects with a permit value of \$50,000 or more to separate and recycle certain materials from the job site. The contractor shall be responsible for assuring recycling at the job site and for completing the pre-construction recycling plan form.

## **PART 2- PRODUCTS**

- 2.01 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. See Division 1 Section 01305 for submittal procedures.
- 2.02 Submit Waste Disposal Reports with each application for progress payment, with details of quantities of trash and waste, means of disposal or reuse, and costs; show both totals to date and since last report. Failure to submit Report will delay payment. Prepare Waste Disposal Reports as follows:
  - A. Submit Report on a form acceptable to Owner.
  - B. Landfill Disposal: Include the following information:
    - 1. Identification of material.
    - 2. Amount, in tons or cubic yards, or trash/waste material from the project disposed of in landfills.
    - 3. State the identity of landfills, total amount of tipping fees paid to landfill,

- and total disposal cost.
  - 4. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
- C. Incinerator Disposal: Include the following information:
- 1. Identification of material.
  - 2. Amount, in tons or cubic yards, of trash/waste material from the project delivered to incinerators.
  - 3. State the identity of incinerators, total amount of fees paid to incinerator, and total disposal cost.
  - 4. Included manifest, weight tickets, receipts, and invoices as evidence of quantity and cost.
- D. Recycled and Salvaged Materials: Include the following information for each:
- 1. Identification of material, including those retrieved by installer for use on other projects.
  - 2. Amount, in tons or cubic yards, date removed from the project site, and receiving party.
  - 3. Transportation cost, amount paid or received for the material, and the net total cost or savings of salvage or recycling each material.
  - 4. Include manifests, weight tickets, receipts, and invoices as evidence of quantity and cost.
  - 5. Certification by receiving party that materials will not be disposed of in landfills or by incineration.
- E. Material Reused on Project: Include the following information for each:
- 1. Identification of material and how it was used in the project.
  - 2. Amount, in tons or cubic yards.
  - 3. Include weight tickets as evidence of quantity.
- F. Other Disposal Methods: Include information similar to that described above, as appropriate to disposal method.

**PART 3- EXECUTION**

**3.01 WASTE MANAGEMENT PLAN IMPLEMENTATION**

- A. Designate an on-site person or persons responsible for instructing workers and

overseeing documenting results of the Waste Management Plan.

- B. Communication: Distribute copies of the Waste Management Plan to job site foreman, each subcontractor, Architect, and Owner's Authorized Representative.
- 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.
- 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 contractors.
  - 3. Keep recycling and trash/waste bin areas neat and clean and clearly marked in order to avoid contamination of materials.
- F. Hazardous Materials: If, during the course of the Work, the Contractor observes or suspects the existence of Hazardous Materials in the structure or components within the defined scope of work area, the Contractor shall immediately stop Work in the immediate area and notify the Owner's Authorized Representative, who will, under separate contract, facilitate the remove of the hazardous material. The Contractor will be required to schedule ten (10) days of slack or "down" time for the removal of potential unforeseen materials. Any delay caused by asbestos abatement that lasts less than ten (10) days shall not constitute a delay as defined in Section D.2 of the OUS General Conditions for Public Improvement Contracts and shall not result in any additional compensation to the contractor. If removal of the material takes more than ten (10) days, the Contractor shall be entitled to an extension of the completion date for the Work equal to the number of days required for removal, plus reimbursement for Contractor's cost of the Work for only those days in excess of ten (10).

1. Hazardous Material abatement in the defined scope of work area was performed in January 2003. A copy of the Asbestos Abatement Inspection Report shall be provided to the contractor prior to beginning work and shall be maintained on the job site throughout the course of work.
  
- 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 01734  
INDOOR AIR QUALITY**

**PART 1- GENERAL**

**1.01 PROJECT GOALS**

- A. The owner and building tenants will occupy adjacent areas of the premises during the entire period of construction. The Contractor shall maintain indoor air quality of occupied spaces throughout the construction period to permit normal operations and upon substantial completion provide premises and building systems that meet minimal indoor air quality standards as described herein.
  
- B. Dust and Airborne Particulates: Prevent dust and other particulates from entering HVAC ducts and equipment, and from migrating into occupied spaces.
  - 1. Cleaning of existing ductwork to remain is not contemplated under this contract. Verify the condition of existing ducts and equipment prior to starting work.
  - 2. The Contractor shall bear the cost of duct and equipment cleaning required due to failure to protect ducts and equipment from construction dust.
  - 3. The Contractor shall coordinate with the Owner's Authorized Representative and provide adequate barriers, taping, ventilation and filters to prevent dust, fumes, odors, vapors or other agents from impacting normal operations in adjacent occupied spaces. Failure to do so may result in suspension of Work at the Contractors expense.
  - 4. Procedures and products have been specified to minimize indoor air pollutants:
    - A) Furnish Products meeting or exceeding the specifications.
    - B) Avoid construction practices that could result in contamination of installed products leading to indoor air pollution.

**1.02 RELATED WORK IN OTHER SECTIONS**

- A. Additional information related to Indoor Air Quality management requirements, temporary facilities required and Owner's remedies for non-compliance may be found in the following:
  - 1. OUS General Conditions
  - 2. Other Sections of these specifications.

1.03 REFERENCES

- A. ASHRE 62 – Ventilation For Acceptable Indoor Air Quality; 1999 and Addenda.
- B. ASHRAE Std. 129 – Measuring Air-Change Effectiveness; 1997.
- C. Oregon Administrative Rules Sections; 437-002—0081, 437-002-0107, 437-002-0382.
- D. Oregon Administrative Rules Section 437-003-0027.

1.04 DEFINITIONS

- A. Absorptive Materials: Gypsum board, acoustical ceiling tile and panels, carpet and carpet tile, fabrics, fibrous insulation, and other similar products.
- B. Contaminates: Gases, vapors, smoke, airborne mold and mildew, and other regulated pollutants including but not limited to construction related noise.
- C. Particulates: Dust, dirt and other airborne solid matter.
- D. Wet Work: Concrete, plaster, coatings, adhesives and other products that emit water vapor or volatile organic compounds during the installation, drying, or curing processes.

**PART 2- PRODUCTS**

NOT USED

**PART 3- EXECUTION**

3.1 CONSTRUCTION PROCEDURES

- A. Prevent the absorption of moisture and humidity by absorptive materials by:
  - 1. Sequencing the delivery of such materials so that they are not present in the building until wet work is completed and dry.
  - 2. Delivering and storing such materials in fully sealed moisture-

- impermeable packaging.
3. Provide sufficient ventilation for drying of wet work without impacting delivery schedules.
- B. Begin temporary construction heating and ventilation as soon as the work limits are substantially enclosed.
- C. If extremely dusty or dirty work must be performed, coordinate the temporary shut down of HVAC systems with the Owner's Authorized Representative. The Owner's Authorized Representative may require work by the Contractor outside of normal business hours (8:00 AM through 5:00 PM) if HVAC systems serving occupied areas are required to be shut down for extended periods.
- D. When working in a portion of an occupied building, provide barriers necessary to prevent movement of air from the construction area to occupied areas.
- E. HVAC equipment and ductwork SHALL NOT be used for ventilation during construction:
1. Provide minimum temporary ventilation equivalent to 1.5 air changes per hour. Increase as required for wet work.
  2. Exhaust directly to outside. The Owner's Authorized Representative shall approve the Contractors exhaust venting plan including; equipment, routing and outlet prior to installation.
  3. Seal HVAC air inlets and outlets immediately after duct installations.
- F. Do not store construction materials or waste in mechanical rooms, electrical rooms or exit ways. Coordinate all materials storage with the Owner's Authorized Representative.
- G. Prior to use of return air ductworks without intake filters, remove dust and debris generated by construction activities.
1. Inspect duct intakes, return air grills, and terminal units for dust.
  2. Clean plenum spaces, including top sides of lay-in ceilings, outsides of ducts, tops of pipes and conduits.

3. Clean tops of doors and frames.
  4. Clean mechanical and electrical rooms where work is performed, including the tops of pipes, ducts, conduits, equipment and supports.
  5. Clean return plenums of air handling units.
  6. Remove intake filters last, after all cleaning operations are complete.
- H. Do not perform dusty or dirty work after starting use of return air ducts without intake filters.
- I. Use other relevant recommendations of SMACNA IAQ Guidelines for Occupied Buildings Under Construction to avoid unnecessary contaminants due to the construction process.
- J. Perform Air Contaminant Testing as specified herein.

### 3.02 AIR CONTAMINANT TESTING:

- A. Perform air contaminate testing before starting construction, as a baseline for evaluating post-occupancy test results, as specified herein.
- B. Perform air contaminate testing prior to submitting for substantial completion.
- C. Do not start air contaminant testing until:
1. All other construction operations are substantially complete.
  2. HVAC systems have been tested adjusted, and balanced for proper operation.
  3. New HVAC unit air filters have been installed.
- D. Collect the following indoor air samples from representative spaces of the work areas:
1. Collect samples while windows and exterior doors are closed, HVAC system is in normal operation and the building premises are unoccupied.
  2. Collect samples in each space served by the new air handling system.
  3. Collect air samples between a height of 48 inches and 72 inches above

- finished floor.
4. Collect samples from same locations on three separate days and average the results of the three samples.
- E. Submit a report analyze the air samples and compare them against the pre-construction baseline (See Section 01305 for submittal procedure).
- F. Air Contamination Concentrations and Limits shall be as set forth in the Oregon Administrative Rules and as follows (the most restrictive shall apply):
1. Carbon Monoxide: Measure in ppm, in relation to outside air, at air intake; not more than outside air.
  2. Airborne Mold and Mildew: Measure in relation to outside air, at air intake, but in no case less than 48 inches above finish grade; not more then outside air.
  3. Formaldehyde: Measure in micrograms per cubic meter in relation to outside air, at air intake; Not more than 20 micrograms per cubic meter higher then outside air.
  4. Total Volatile Organic Compounds (TVOC): Measure in micrograms per cubic meter, in relation to outside air, at air intake; Not more than 200 micrograms per cubic meter higher than outside air.
  5. Total Particulate Matter: Measure in micrograms per cubic meter, in relation to air, at air intake, not more than 20 micrograms per cubic meter higher then outside air.

### 3.03 VENTILATION EFFECTIVENESS TESTING:

- A. Perform ventilation effectiveness testing prior to substantial completion.
- B. Do not begin ventilation effectiveness testing until:
  1. HVAC systems have been tested adjusted, and balanced for proper operation.
  2. Air contamination testing has been completed satisfactorily.
  3. New HVAC unit air filter have been installed.
- C. Test each air handler zone in accordance with ASHRAE 129.
- D. If calculated air change effectiveness for a particular zone is less than 0.9 due to inadequate balancing of the system, adjust and retest at no additional cost to the Owner.

END OF SECTION

**SECTION 01780  
CONTRACT CLOSEOUT**

**PART 1 - GENERAL**

1.01 DESCRIPTION:

- A. The requirements specified in this Section relate to all Contractors individually performing Work under these Contract Documents and include:
  - 1. Final Cleaning
  - 2. System Start-up, Testing & Adjusting
  - 3. Operations & Maintenance Manuals
  - 4. Warranties & Bonds
  - 5. Training
  - 6. Spare Parts & Extra Quantities
  - 7. Project Record Documents
  - 8. Final Review and Payment
  
- B. Project closeout is a term used to describe certain collective project requirements, indicating Work under this Contract that is fulfilled near the end of the Contract time in preparation for Final Completion, as well as Final Payment to the Contractor.
  
- C. Special requirements for individual units of work may be included in appropriate Specification Sections of this Project Manual.

1.02 RELATED WORK IN OTHER SECTIONS

- A. Additional Contract closeout requirements may be provided as follows:
  - 1. OUS General Conditions
  - 2. Supplementary General Conditions
  - 3. Section 01305, Submittals
  - 4. Other Sections of these Specifications

**PART 2 - PREREQUISITES TO SUBSTANTIAL COMPLETION**

2.01 GENERAL DESCRIPTION:

- A. Substantial Completion shall be defined per OUS General Conditions for Public Improvement Contracts Section A.1, and Notification of Substantial Completion

by the Contractor to the Owner shall be through the Architect as specified in Section K.4 of the same and as supplemented by OUS Supplemental General Conditions. See Division 1, Section 01300 for general Submittal Review Procedure.

- B. Submit Certificate of Substantial Completion with accompanying `punchlist' and date for punchlist completion to the Architect once the Contract Documents have been reviewed, Work has been inspected and all prerequisites to substantial completion have been addressed.
- C. Prior to signing the Certificate of Substantial Completion, the Architect will perform one Substantial Completion review of the Work. The Contractor shall pay the cost of additional Substantial Completion reviews of the Work.

## 2.02 FINAL CLEANING

- A. Perform final cleaning of all items of Work prior to Substantial Completion review of the Work. Employ professional cleaners for final cleaning. Clean each surface or unit of work to condition expected from normal commercial building cleaning and maintenance program. Comply with all manufacturer's recommendations. Complete the following prior to requesting Architect's review of the Work for Substantial Completion certification:
  - 1. Clean interior and exterior glass and surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces.
  - 2. Vacuum all carpeted, fabric and other soft surfaces.
  - 3. Clean all Contractor and Owner provided equipment and fixtures.
  - 4. Clean or replace all filters of operating equipment.
  - 5. Clean debris from roofs, gutters, downspouts and drainage systems impacted by the Work.
  - 6. Clean the Project Site and adjacent areas impacted by the Work, including landscaped and parking areas, or rubbish, litter and other foreign substances. Sweep paved areas to broom clean condition. Remove stains, spills and other foreign deposits. Rake grounds that are neither paved nor planted to smooth, even-textured surface.
  - 7. Re-clean areas and equipment prior to inspection for Final Completion, if dirtied in completion of punchlist work.
- B. Unless otherwise directed by the Architect or Owner's Authorized Representative, remove temporary protective devices and facilities, which were installed during the course of the Work to protect previously completed work from the remainder of the construction to be completed, or to protect the public.

- C. Comply with all safety standards and governing regulations for cleaning and dispose of waste materials in accordance with Division 1, Section 01732 and the OUS General Conditions for Public Improvement Contracts.

### 2.03 SYSTEM START-UP, TESTING & ADJUSTING

- A. The project has been designed to comply with SEED (State Energy Efficient Design) criteria. Coordinate with the Owner's Authorized Representative the system start-up, testing, adjusting and balancing to comply with the Owner's Commissioning requirements.
- B. The Contractor shall coordinate the scheduling for the start-up and testing of various equipment and systems provided by the Contractor and Owner with the Owner's authorized representative.
- C. Notify the Owner's Authorized Representative and the Architect a minimum of fourteen (14) calendar days prior to the start-up or testing of each item.
- D. The Contractor shall submit to the Owner's Authorized Representative for review and approval, a minimum of fourteen (14) calendar days prior to the start-up or testing, five (5) copies of the following:
  - 1. A paragraph-by-paragraph program of the Contractor's proposed testing procedure, developed to demonstrate compliance with the contract documents.
  - 2. Check off sheets for the review of each item of equipment and system.
  - 3. Each program and check off sheet shall provide the following information:
    - 1) Project information required by Division 1, Section 01300, Item 1.05.
    - 2) Product information required by Division 1, Section 01300, Item 3.06.
    - 3) Other information as required the fully describe the item.
    - 4) Provide spaces for testing "Review" sign off by Owner's Authorized Representatives and the Architect's Authorized Representative
- E. Verify that each piece of equipment or system has been checked for proper connection of services, lubrication, drive rotation, belt tension, control sequencing or other conditions that could cause damage.
- F. Verify that tests, meter readings and specified electrical characteristics agree with those required by equipment or system manufacturers.
- G. Verify that wiring, piping and support components for equipment are complete



and tested.

- H. Execute start-up under the supervision of the Owner's Authorized Representative(s), the responsible manufacturer's representative, Contractor's personnel in accordance with the manufacture's recommendations.
- I. Submit five (5) copies of all Installation, Adjustment and Balancing and Testing Reports for each piece of equipment and system in accordance with the Submittal Review Procedures, specified in Division 1, Section 01300, Item 3.01.
- J. Operating equipment and systems shall be tested in the presence of the Owner's Authorized Representatives and the Architect's Authorized Representative to demonstrate compliance with the Contract Documents and the manufacturer's recommendations:
  - 1. Testing shall be conducted under operating conditions as specified by the Owner's Authorized Representatives and the Architect's Authorized Representative.
  - 2. Copies of all test reports shall be included in the Project Record Documents.
- K. All elements of systems shall be tested to demonstrate that total systems satisfy all requirements of the Contract Documents. Test each piece of equipment for proper operation, followed by each subsystem, followed by entire system, followed by interfaces with other major systems.
- L. The Contractor shall provide all materials and equipment required for equipment and system testing.
- M. The Contractor shall perform the following minimal tests and additional tests as required by the Owner's Authorized Representative:
  - 1. System shall be checked for proper installation, and shall be adjusted and calibrated to verify that it is ready to function as specified.
  - 2. All system elements shall be checked to verify that they have been properly installed and that all connections have been made correctly.
  - 3. All discrete elements and sub-systems shall be adjusted and balanced and shall be checked for proper operation.

#### 2.04 OPERATIONS & MAINTENANCE MANUALS

- A. The Contractor shall Operations and Maintenance Manuals for review and project record documentation in accordance with OUS General Conditions for public

Improvement Contract Section K.2, in accordance with the Submittal Review Procedures, specified in Division 1, Section 01300, Item 3.01.

- B. Include Operation and Maintenance instructions complete with technical information, required warranties & bonds and name, address and phone number of the Contractor(s) and Manufacturer(s) of each material and product. Bind in separate three-ring binders. Label similar to Project Documents binder with dividers by Specification section and supplier.

## 2.05 WARRANTIES & BONDS

- A. Provide all warranties and bonds specified in other Sections of this project manual.
- B. Include all required warranties and bonds in the Operations and Maintenance Manuals in accordance with Item 2.04 herein.
- C. List Subcontractor, supplier and manufacturer, with address and telephone number of responsible principles.
- D. Verify that documents are in proper form, contain all information, and are notarized as applicable.
- E. Co-execute documents as required.

## 2.06 TRAINING

- A. The Contractor shall coordinate with the Owner's Authorized Representative training sessions for all equipment and systems in accordance with OUS General Conditions for public Improvement Contract Section K.5.

## 2.07 SPARE PARTS & EXTRA QUANTITIES

- A. The Contractor shall provide spare parts and extra quantities in accordance with OUS General Conditions for public Improvement Contract Section K.6.
- B. The Contractor shall submit in accordance with Division 1 Section 01300 Item 3.01, five (5) copies of the following:
  - 1. Check off sheets for the review of each item of material or product for which extra quantities are required.
  - 2. Each check off sheet shall provide the following information:
    - 1) Project information required by Division 1, Section 01300, Item

- 1.05.
  - 2) Product information required by Division 1, Section 01300, Item 3.06.
  - 3) Amount of extra parts or quantity required.
  - 4) Provide spaces for testing "Review" sign off by Owner's Authorized Representatives and the Architect's Authorized Representative.
- C. Coordinate delivery to the Owner with the Owner's Authorized Representative and submit receipts of delivery corresponding to spare parts and extra quantities check off sheet.

## 2.08 PROJECT RECORD DOCUMENTS

- A. Submit three (3) copies of the Project Record Documents for review in accordance with Division 1 Section 01300 Item 3.01. The Project Record Documents shall be organized to include the following information:
1. Title and date of Project, Owner's Project Number
  2. Table of Contents
  3. Specifications
  4. As-Built Drawings (blueprints or photocopies)
  5. Inspection Reports, as applicable
  6. Warranty(ies), as applicable
  7. Operations and Maintenance Instructions
  8. Approved and stamped Shop Drawings, Product Data and Samples (Provide 1 set of reproducible copies for Owner's file, in Microsoft Word or AutoCAD 2000 electronic formats, or on 3 MIL thick double sided and toothed Mylar.)
- B. Bind each copy of the Project Record Documents in a black, hard cover, three-ring binder with each Section clearly indexed with tabbed divider pages.
- C. The project team list shall include the address and phone number of the Owner, Architect, Contractor, inspectors, subcontractors, and the materials manufacturers.
- D. Legibly mark each Specification Section to indicate actual as-built conditions. The as-built Specifications shall clearly indicate changes in the Work made by Addendum(a) and/or Change Order(s), actual materials used, and actual Manufacturer(s) used.
- E. Legibly mark the drawings to indicate actual "as-built conditions." The drawings shall clearly indicate changes in the Work made by Addendum(a) and/or Change

Order(s). The Owner shall employ the Architect to modify CAD documents into a "recorded as-built" base for Owner's usage, based on information provided by Contractor.

- F. Include inspection reports and Architect's field reports, if applicable.
  - G. Include a copy of required Warranty(ies) clearly marked to identify the Owner's responsibilities under the terms of the Warranty(ies).
- 1.03 Make corrections to all Project Record Documents and resubmit as part of Final Completion Review.
- 1.04 RECORD DOCUMENTS
- A. Contact the Owner's Authorized Representative for a sample of acceptable Record Documents if needed.

### **PART 3 - PREREQUISITES TO FINAL COMPLETION AND PAYMENT**

- 3.01. The Contractor shall comply with all terms of OUS General Conditions for Public Improvement Contract Sections E.6 and I.1, unless otherwise amended herein, prior to filing Notice of Final Completion or requesting Final Payment.
- 3.02 The Contractor shall return all keys requested for access to buildings and work areas and obtain a deposit refund, as specified in Division 1, Section 01040, Item 1.09.
- 3.02. The Contractor shall notify all Subcontractors in writing of incomplete and/or incorrect items and the anticipated filing of Final Completion. Notify far enough in advance of the completion date that the Work can be completed on schedule. Said Work shall be immediately corrected.
- 3.03. Submit to the Owner's Authorized Representative Lien Releases in accordance with OUS General Conditions for Public Improvement Contract Section K.8.
- 3.04. The Contractor shall provide the Owner with an unconditional Certificate of Occupancy from the local building officials, in accordance with OUS General Conditions for Public Improvement Contract Section K.8.
- 3.05. Notify the Architect in writing that all items are complete and ready for Final Completion review and that the Work product is fully usable.
- 3.06. Submit three (3) copies of all record documents for Final Completion review at this time.

- 3.07. The Architect will review all documents. The Architect will review all Work that has been certified as complete to the best knowledge of the Contractor. The Architect will also list all remaining incomplete punchlist Work and assign a probable value and time to complete such uncompleted Work.
- 3.08. The Architect will review the Work for conformance. Time is of an essence on this project. If the Work is found to be in nonconformance, the Architect will notify the Owner of the nonconforming items and probable value and time for completion. Nonconforming items will require retainage of monies to ensure that the Contractor will complete all Work within the time established by the Public Improvement Agreement and as amended by executed Change Orders.
- 3.09. The Contractor shall make the required corrections to the Work expeditiously. Sufficient retainage monies will be held to pay for uncompleted Work, should the Contractor fail to perform. A letter will be addressed to the Contractor noting the project status and the monies available for a partial-final payment upon receipt of billing.
- 3.10. When Contract closeout procedures are completed and all Punchlist deficiencies have been corrected, final acceptance by the Owner will be documented. The Contractor will receive written notice of acceptance of the Work and notification that final payment may be billed and released. Note that final wage rate submittal and documentation of all BOLI fees are required prior to final payment.
- 3.11. The Contractor shall be responsible for all parking citations received in relation with the project from the City of Portland and the Portland State University office of Transportation and Parking. All citations must be paid prior to submission of notice of Final Completion and Request for final Payment.
- 3.12. All warranties shall commence and become effective in accordance with Section I of the OUS General Conditions for Public Improvement Contracts and as modified by OUS Supplemental General Conditions.

**PART 4 - PRODUCTS**

Not Used

**PART 5 - EXECUTION**

Not Used

END OF SECTION