

VOLUME 2
GENERAL REQUIREMENTS AND
TECHNICAL SPECIFICATION

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DIVISION 01 SAMPLE FORMS:

- *Daily Construction Quality Control Report
(to be used by Contractor for daily field reports)
- *Request for Information Form
- *Request for Substitution Form
- *Certificate of Equal Performance
- *Submittal cover sheet

TECHNICAL SPECIFICATIONS

SECTION 010100-GENERAL DESCRIPTION

PART 1 - GENERAL

1.01 GENERAL DESCRIPTION

A. Project Name: Cedarvale Village Plumbing and Drain Replacement

B. Project Owner:

1. Seattle Housing Authority.

C. Project Type:

1. Public:
 - a. All requirements associated with public bid process apply unless specifically noted.

D. Related Documents:

1. All sections within specification document.
2. Addenda as indicated within Owner's Section/Information and as may be applicable during bid process.

1.02 QUALITY ASSURANCE

A. General:

1. All installation work shall be completed to professional standards, in compliance with all applicable code and inspection requirements.

1.03 GENERAL SCOPE

A. General Scope Statement:

Plumbing and Drain line replacement.

1.04 GENERAL SCOPE SUMMARY (*items included in project*)

A. General:

- 1) Replace all galvanized metal water supply lines for 24 townhome apartments in 6 buildings.
- 2) Replace all ductile iron drain lines.
- 3) Supply lines: Replace with Wirsbo/Uponour PEX or equivalent to.
- 4) Stub out from walls with secured copper to ball valve.
- 5) Drain Lines: Replace with black ABS.
- 6) Existing metal vent pipes shall be left in place and reused.
- 7) Replace and Relocate unit water shut-off valve.

- 8) Replace all sink faucets and drains.
- 9) Connect new cold water supply lines to existing hose bibs.
- 10) Keep existing kitchen and bathroom sinks.
- 11) Replace approximately half the Kitchen sink Base Cabinets and Countertops (to access the shared wet wall between units).

B. Miscellaneous - General:

- 1) Scope includes all cutting and patch-back of wall and flooring materials to match existing.
- 2) Scope includes removal and disposal of old pipes, fixtures and construction debris.
- 3) Scope includes all equipment rental.
- 4) Scope includes building and plumbing permits, as required.

1.05 BIDDING PROCESS

- A. Refer to Owner's Instructions.**

PART 2 - PROJECT REQUIREMENTS & NOTES

2.01 COORDINATION

- A. Contractor (Prime contractor): Provide Weekly Plan of Work to Owner's Representative.**
- B. Coordination Statement: Contractor will coordinate access to each building with Owner's Project Manager or Representative.**
- C. Owner's Representatives:**
Lyle Harris, Construction Project Manager
Jason Hughes, Assistant Construction Project Manager

2.02 INSPECTIONS

- A. Bid Process: The Owner's representative will schedule a bid walk for contractors during the bid process.**
- B. Work-in-Progress Inspections: (during work)**
1. Project is subject to periodic and possibly full-time inspections by Owner's representative(s)
 2. Supplemental as required during course of project.
- C. Close-out:**
1. Substantial Completion Inspection
 2. Final Inspection

3. Manufacturer's Warranty

2.03 LICENSES – REGULATORY REQUIREMENTS

A. Contractor's responsibility:

1. Contractor is responsible for any and all permits and their fees necessary to complete this project and shall have copies on the job site at all times during the project, including sub-contractors.
2. Prime contractor is responsible for all fines, or other ramifications for not complying with this instruction.

2.04 SCHEDULE

A. A written schedule is required to be submitted and approved before project start-up.

1. Refer to submittal requirements within this document.
2. Substantial Completion Date: Will be scheduled upon issue of Notice to Proceed.
3. Final Completion Date: Will be scheduled upon issue of Notice to Proceed.

B. Completion of work is required based on approved schedule.

1. Refer to 2.08 for further information.
 - a. Schedule must include not only start and finish dates, but track specific activities, location, work patterns, staging areas, etc.

C. Completion of the work, in its entirety, by the date indicated within the Owner's instructions and applicable contract documents is considered mandatory on this project.

1. Coordination with SHA on schedule, delays, etc. is required during the entire course of this project.
2. Once contractor starts the work of this project, they shall remain on the project with a full crew until all the specified/contracted work of the project is completed in its entirety.

2.05 OPERATIONS *and* SCHEDULING

A. The facilities are in an occupied residential community and contractor shall be required to meet all Owner's requirements for set up and storage of materials, schedules, etc.

1. Blockage of neighboring building access areas is not acceptable without prior written approval.
 - a. Contractor is responsible for any damage associated with this project.

- B. Contractor is required to take care to make as little interruption as possible of the day-to-day activities of the neighboring units and residents.
 - 1. Core work hours: 8am to 5pm Monday through Friday.
 - 2. Schedule must comply with local zoning laws and requirements for noise, etc.
 - 3. Prior schedule approval, including non-acceptable work days (*periods*) is required by Owner and Owner's representative prior to project start.
 - a. See holiday schedule including Presidents' Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and Christmas Day.

2.06 BUILDING ACCESS; STAGING & LOADING:

- A. NOTE: All equipment, materials, and demolition materials etc. shall be removed daily.
- B. Under no circumstances shall the Main (Front) Entry(s), or other restricted areas be blocked.
- C. Location of access, staging, drop box, etc. shall be discussed at the mandatory pre-bid meeting and confirmed during pre-construction conference.
 - 1. Notification of selected applicable locations shall be provided to Owner's representative prior to start

2.07 ENVIRONMENTAL

- A. The contractor is responsible for maintaining the quality of the environment within and around the building, at all times, during this project.
 - 1. Notify Owner of any situation that may be considered unhealthy to surrounding buildings.
 - 2. It is the Contractor's responsibility for environmental control during the project.
- B. Noise:
 - 1. Contractor shall take all precautions to limit the noise associated with the project during the entire course of the project.
 - a. Workers may mobilize at 7:00 am with no loud noise acceptable.
 - b. Actual work may not commence before the defined/approved start time, 8 am, without prior written approve due to noise considerations at this project.

2.08 WEATHER RELATED REQUIREMENTS

- A. Weather:

1. This project is located in a region where weather is a very high consideration.
2. Contractor is responsible for monitoring weather conditions and adjusting their project activities, coordination, and protection accordingly.
3. All precautions and protections of building, building components, material storage, and work areas are required during the project due to any inclement weather conditions.

2.09 CREW SIZE REQUIREMENTS

- A. Contractor shall provide a crew large enough to complete the project in a timely manner and stay within submitted and approved schedule.
- B. Crew shall comply with all Owners' requirements at all times.
- C. The intent of the project is to allow the contractor the ability to schedule the work and crew size associated with this project as best fits their work schedule; however, once the Contractor starts the work of this project, they are required to stay on the project, without pulling off to work on another project, until the specified unit (s) work is completed in compliance with the defined submitted schedule dates.

2.10 MISCELLANEOUS

A. SANITARY CONTROL:

1. Contractor shall provide temporary restroom facilities for workers, and maintain in a clean and secure manner during the course of the project.

B. POWER & WATER:

1. Contractor may use on-site power and water and shall make every effort to conserve resources provided by Owner.
 - a. Contractor is responsible for all problems, damage, etc. that may result from the use of the Owner's power and water.

2.11 SAFETY

- A. At all times, the Contractor shall comply with all applicable Codes and Standards with regard to safety and health issues and assume all responsibility for compliance.
 1. Applicable to, but not limited to, all Federal, State, and Local laws, standards and regulations.

2. Contractor shall meet all Owner's safety requirements as defined within their company policy or directed by Owner's representative.
- B. Contractor shall comply with all industry standards, as well as any additional Owner and/or Owner's representative requests, at all times during the course of the project.
 1. At all times, Contractor shall maintain a safe work site including not only persons working on project but also neighboring buildings and residents, SHA staff and/or persons that may be in the area.

2.12 SECURITY

- A. Contractor shall be responsible for the security of all applicable equipment and materials during the course of the project.
 1. The Owner shall not be responsible for any problems, damage or loss associated with this instruction without additional cost to Owner.
- B. Contractor shall maintain a secured site during the course of the project.
- C. Contractor shall comply with Owner's security requirements at all times.
- D. To be discussed at pre-bid and pre-construction meetings.

2.13 LIQUIDATED EXPENSES (*Liquidated Damages*)

- A. Refer to Owner's Instructions.

2.14 BONDS

- A. Bid Security Bond: Applicable for project instructions/requirements.
- B. Performance and Payment Bonds: Applicable for project instructions/requirements.

PART 3 - SUBMITTALS

3.01 SUBMITTALS

A. DOCUMENTS:

1. Refer to Owner's Project Requirements.
2. Submittals shall be submitted complete applicable to the required submittal time. If the submittal is not complete and/or is submitted in pieces at different times, it will be subject to rejection of the entire submittal package by Owner and/or Owner's representative.

B. PRIOR TO BID: (To Owner)

- a. Refer to "DIVISION 01 SAMPLE FORMS".

C. AT TIME OF BID: (To Owner within Bid Package)

1. BID FORMS:

- a. Completed and fully executed BID FORMS for work as specified within this Specification.

2. SUB-CONTRACTORS:

- a. Complete list of sub-contractors and job function as required for this project.

3. BONDS:

- a. As applicable for project instructions/requirements.

4. EXPERIENCE PROFILE INFORMATION:

- a. Refer to Owner's Instructions

5. FIRST-TIER SUB-CONTRACTOR DISCLOSURE INFORMATION:

- a. Comply with Owner's bid instructions as to the required timeframe for submittal of document.

D. PRIOR TO CONTRACT AWARD:

1. INSURANCE:

- a. Contractor will provide a dated Certificate of Insurance showing the amounts, the name, telephone number, expiration date, and agent issuing the Certificate as well as the name and address of the company writing the surety IN ACCORDANCE WITH Owner's Requirements.
- b. Sub-contractors: Each sub-contractor to work for Contractor will provide the same information for their company before doing any work under this contract or Contractor's contract for this project.

- c. Owner's Risk Manager will review insurance for compliance.
 2. LICENSES:
 - a. Contractor is to provide a copy of their current Contractor's License as issued by the State and City (*as may be applicable*), where the work is located, and will provide the same for any sub-contractors before work begins.
 3. MANUFACTURER'S LITERATURE:
 - a. Submit most recent copies of Manufacturer's Printed Literature and Specifications applicable to all products, materials, and specifications proposed for use within the scope of this project.
 4. SCHEDULE:
 - a. Submit estimated work schedule including start date and estimated completion *date*.
 5. PERFORMANCE / PAYMENT BONDS:
 - a. Performance / Payment bonds as requested by Owner.
 6. SAFETY PROGRAM:
 - a. Copy of Contractor's written Safety Program which is subject to review and approval by Owner's Safety Officer.
 - b. NOTE: Additional copy of Contractor's Approved Safety Program shall be kept at the job site.
 7. CONTRACT DOCUMENTS:
 - a. Fully executed Owner's Contract documents.
- E. UPON COMPLETION: (*To Owner*)
1. GUARANTEE(S) / WARRANTIES:
 - a. **CONTRACTOR'S GUARANTEE:** Submit fully executed copy of the Contractor's Guarantee of workmanship.
 - b. **MANUFACTURER'S WARRANTY:** Submit fully executed copy of any applicable Manufacturer's Warranty (*as applicable and if purchased by Owner*) to the Owner for review.
 2. REFUSE RECEIPTS: Copies of all refuse and dumping receipts as proof of legal disposal of all materials associated with this project.

3. NOTE: The above items are required and must be approved prior to and in order to process any final billing requests.

PART 4 - CONTRACT DOCUMENTS - *and* - ADMINISTRATIVE REQUIREMENTS

4.01 AIA DOCUMENT NOTIFICATION / CLARIFICATION

A. Disclaimer:

1. All references to "Architect" in AIA forms, or any other documents within this specification, are generic and do not imply that Owner is acting as or claiming to be an architect within the scope of this project's "General Description".

4.02 STANDARD CONTRACT

- A. Contractor shall review, sign, and return the contract documents provided by the Owner.
- B. Comply with all other requirements noted within the specifications and Owner's General Requirements.

4.03 CHANGE ORDERS

- A. All change will be on the Owner's "Change Order" form.
- B. Complete "Request for Change Order" including details of change and time extensions if required.
- C. The Request for Change Order shall be completed as follows:
 1. Accurate written description of requested change as an addition or deduction.
- D. Submit Request for Change Order to Owner for review.
- E. Owner will issue actual Change Order Form for execution by both parties.
 1. NOTE: Change Order is not formally approved until all signatures are obtained.
- F. Cost breakdown shall meet requirements developed and submitted on the Bid Form.

4.04 APPLICATION FOR PAYMENT

- A. Execute a copy of AIA Document G702 "APPLICATION AND CERTIFICATE FOR PAYMENT" along with AIA Document G702A "Continuation Sheet".
 1. Document must be fully executed and signed with all change order documentation, etc.

2. Include Company Invoice for each billing with fully executed application for payment.
 - a. Billing will not be processed without the required Company Invoice for each billing.

- B. Submit draft via e-mail on a monthly basis to Owner for review; and when approved and notified by Owner's Representative then submit original to Owner for processing.

- C. Final payment will be made upon receipt by Owner of fully executed AIA Document G706, "CONTRACTOR'S AFFIDAVIT OF PAYMENT OF DEBTS AND CLAIMS" and AIA Document G706A, "CONTRACTOR'S AFFIDAVIT OF RELEASE OF LIENS".
 1. Under no circumstances will final payment be released until receipt and acceptance of all project documents by Owner.

 2. Final payment shall not be approved until all punch list items are completed and project has been completely accepted by Owner.

- D. OCCUPATIONAL SAFETY AND HEALTH ACT & WISHA – REQUIREMENTS
It shall be the sole responsibility of the Contractor to assess the job conditions and to comply with all applicable safety precautions to insure that the Owner's personnel, agents, invitees, business associates, and workers, engaged in project or not, are protected from injury during the time of the contract, and all activities associated with this project.

- E. The Contractor and applicable sub-contractors shall indemnify and hold the Owner and the Owner's agent(s) harmless from any and all expenses incurred as a result of legal action(s) resulting from injury to any party during the time of the contract.
 1. This instruction applies to anyone whether they are a part of the project or not.

- F. The Contractor shall comply fully with the provisions of the "Occupational Safety and Health Act" of 1970 (or most recent as applies) and WISHA as applicable to the work of this project, and strictest document shall apply.
 1. Contractor shall indemnify and hold the Owner and Owner's agent(s) and Consultant harmless of and from any and all penalties, fines, or expenses which may occur by reason of violation by the Contractor and/or their sub-contractor(s) of any of the terms and provisions of said act or standards.

END OF SECTION 010100

SECTION 011000 - SUMMARY OF WORK

PART 1 – GENERAL

1.1 SUMMARY

- A. This section includes the following:
 - 1. Work covered by the Contract Documents.
 - 2. Work by Owner or under other contracts.
 - 3. Contractor design elements.
 - 4. Contractor's use of premises.
 - 5. Owner' occupancy requirements.
 - 6. Existing utilities.
 - 7. Contractor identification.
- B. Related Sections include the following.
 - 1. See Division 1 Section "Temporary Facilities".

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. Project Identification: Plumbing and Drainline Replacement
Location: Cedarvale Village
- B. Owner: Seattle Housing Authority, 190 Queen Anne Avenue N, PO Box 19028, Seattle, WA 98109-1028.
Phone: 206-615-3365
- C. General Contractor: To be determined
- D. The Work includes, but is not limited to:
Replace all galvanized metal water supply lines for 24 townhome apartments in 6 buildings. Replace all drainlines. Open wall areas as needed to access work areas, repair walls back to existing condition.
- E. Project will be constructed under a General Construction Contract.

1.3 WORK BY OWNER OR UNDER OTHER CONTRACTS

- A. General: Cooperate fully with separate contractors and Owner's maintenance personnel so work on those contracts may be carried out smoothly and as scheduled, without interfering with or delaying work under this Contract. Coordinate the Work of this Contract with work performed by the Owner or by others under separate contracts.

1.4 CONTRACTOR DESIGN ELEMENTS

- A. Should any work under this Contract require Contractor design, Contractor shall comply with the following requirements:
1. Submit Shop Drawings and Calculations to Owner for review.
 2. Submit Shop Drawings and Calculations to governing agency for approval and permits as required.

1.5 CONTRACTOR USE OF PREMISES

- A. Use of Site: Limit use of premises to areas approved by Owner. Do not disturb portions of project site beyond areas within which the Work is indicated to occur. See also Section 01500 Temporary Facilities and Controls.
1. Owner Occupancy: Allow for Owner occupancy of Project site and use by residents and other users.
 2. Staging Areas: Site area is limited. Obtain approval from Owner, in writing and in advance, for use of areas for staging and other construction operations. On-site parking is for residents and site SHA staff only. Contractor shall park off-site. Parking spaces may be made available with prior Owner approval when required for staging of equipment, material delivery and debris disposal.
 3. Driveways and Entrances: Keep driveways, entrances, and loading areas serving the premises clear and available to the Owner, the Owner's employees, residents, other users, and emergency vehicles at all times. Do not use these areas, at any time, for parking, storage of materials, or placement of containers used for collection of demolition debris.
 4. Deliveries: Schedule deliveries and debris pick-ups to minimize use of driveways and entrances, to minimize space and time

requirements for storage of materials and equipment on-site, and to minimize construction traffic during high-volume bus drop-off and pick-up times. Deliveries to site shall not be permitted without prior approval by, and coordination with the Contractor.

- B. Use of the Existing Buildings: Maintain the existing buildings in a weathertight condition throughout the construction period. Repair all damage to building interiors / exteriors of building and adjacent areas caused by construction operations. Take all precautions necessary to protect the building and its occupants during the construction period. Protect all walkways, driveways and entries from dust and debris during the construction process. Contractor shall clean daily all dust and debris. Contractor shall cover and protect areas adjacent to work areas from dust and debris.
- C. Daily Clean-Up: Contractor shall be responsible for complete daily clean-up and legal disposal, off site, of all debris generated during and from the work. Owner will not provide personnel for providing routine housekeeping services. Contractor shall be responsible for providing portable outdoor toilets (self contained outhouse) in the number required to accommodate its workforce throughout the construction period.
- D. The Owner will provide electricity and water for Contractor's construction operations, except as noted below.
- E. Normal working hours shall be 8:00 a.m. to 5:00 p.m., Monday through Friday, except holidays including the following: New Year's Day, Memorial Day, Independence Day, Labor Day, Thanksgiving Day and the day following Thanksgiving, and Christmas Day. Work shall not be performed outside normal working hours without prior approval from Owner. Approval does not constitute authorization for payment of overtime pay rates by the Owner.

1.6 OCCUPANCY REQUIREMENTS

- A. Owner Occupancy: Building will be fully occupied and shall be kept in normal operating conditions at all times.

Special Precautions: During the Contractor's construction of the work, the building will continue to be occupied. Protect the health and safety of the occupants at all times, including maintaining use of exit stairways, corridors, and doors. Contractor shall take all necessary precautions to ensure minimal disturbance to residents. Interruption of building access and occupancy will not be permitted without Owner's prior approval. Limit construction operation and methods to those that will not unduly affect the

environment of the resident-occupied spaces, including noise, dust, odors, hazards and other undesirable effects and conditions. Schedule work activities to ensure that the Owner and/or Contractor is able to notify residents at least forty eight hours in advance of the day Contractor will be entering any residential units.

- B. The Owner will prepare a letter of Substantial Completion for the building.
- C. On Substantial Completion, Owner will assume responsibility for maintenance of newly installed systems.
- D. Resident Notification: Contractor shall be responsible for maintaining the resident notification process. Seattle Housing Authority's policy, and law, is that residents be notified 48 hours in advance of any entry into resident units to perform work. SHA's Project Manager will assist the Contractor in this process.
- E. Emergency Contact: Prior to the start of construction furnish the Owner, in writing, the names and telephone numbers of individuals to be contacted in the event of an out-of-hours emergency at the building site. Post a similar list readily visible from the outside of the field office or at a location acceptable to the Owner of the building.

1.7 EXISTING UTILITIES

Utilities of record are shown on the Drawings insofar as possible to do so. These, however, are shown for convenience only and the Owner and Design Team assume no responsibility for improper locations or failure to show utility locations on the Drawings. The Contractor is responsible for determining the location of all existing utilities (using due diligence including locate services, available drawings, and site observation) prior to commencing work. Contractor shall immediately repair and restore operation of any utilities damaged during construction and conform to utility company's repair requirements.

1.8 CONTRACTOR IDENTIFICATION

Contractor and subcontractor personnel shall wear identification badges or company logo clothing and wear them in a visible location at all time while on SHA premises. Contractor and subcontractor personnel found not wearing a badge may be subject to being dismissed from the project premises and only being allowed to return when wearing the proper badge.

END OF SECTION 011000

SECTION 011120 - CONTRACT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and general provisions of the contract, including General Conditions and other Division 0 and Division 1 Specification Sections, apply to this section.

1.2 PRE-CONSTRUCTION CONFERENCE

Prior to beginning the Work, the Contractor shall meet with the Owner to coordinate the Progress Schedule, to verify procedures and to discuss other requirements that may be of concern to any of the parties involved.

1.3 CHANGES IN THE WORK

Refer to Part 7 of the General Conditions.

1.4 INSTRUCTIONS

All instructions will be given to the Contractor, or his/her authorized agent, by the Owner's Representative for distribution to all subcontractors or tradesmen on the Work; in like manner all communication from subcontractors and tradesmen on the Work to the Owner will be given through the Contractor. No subcontractors or tradesmen shall contact the Owner to discuss the Work, except as the Contractor may arrange.

1.5 WASTE SITES

- A. The Contractor shall select his/her own waste sites not upon the job site or any property contiguous thereto. The Contractor is solely and alone responsible for any and all damages done or regulations violated in the disposal of waste material, and for any other actions which he/she performs. Contractor holds the Owner faultless and free from liability for any and all damages and costs incurred as a result of Contractor's actions.
- B. It shall be the responsibility of the Contractor to pay all fees and costs incurred in the testing, packaging, transportation and disposal of waste material.
- C. Dispose of all waste in a legal manner at appropriate, off site legal waste sites.

1.6 STORAGE OF TOOLS AND MATERIALS

Storage of tools and materials on the site shall always be subject to the satisfaction of the Owner. The Owner shall assume no responsibility or liability

for materials and equipment stored on the site. Refer to Section 5.08 of the General Conditions.

1.7 SIGNS

Posting of any and all signs are subject to the satisfaction of the Owner.

1.8 WATER AND POWER

Refer to Section 01 50 00 Temporary Facilities and Controls.

1.9 PROTECTION OF PUBLIC AND PRIVATE UTILITIES/PROPERTY

A. The Contractor shall be responsible for any breakage of utilities or services resulting from his/her operations and shall hold the Owner and its agents harmless from any claims resulting from disruption of service or damage to utilities.

B. The Contractor shall be responsible for any damage to improvements in the City right of way including, but not limited to, streets, sidewalks, curbs and the like and shall repair any damage prior to project's acceptance. Prior to the start of Work the Contractor shall document in writing and photographs any existing damage to adjacent streets, sidewalks, curbs etc. and submit to Owner's Representative for the Project record.

1.10 DUST CONTROL

Keep dust down at all times, including non-working hours, weekends and holidays.

1.11 AIR QUALITY

Comply with all applicable standards, order, or regulations issued pursuant to the Clean Air Act of 1970.

1.12 PROTECTION

See Section 5.11 of the General Conditions

END OF SECTION 011120

SECTION 011400 - WORK RESTRICTIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General Conditions and other Division 0 and Division 1 Specification Sections, apply to this Section.

1.2 USE OF PREMISES

- A. Use of Site: Limit use of premises to work in areas indicated. Do not disturb portions of site beyond areas in which the Work is indicated.
- B. Limits: Confine construction operations to building and surrounding site, within project property lines or other limits established by Owner.
- C. Owner Occupancy: Allow for Owner occupancy of site and use by management staff and residents at all times.
- D. Driveways and Entrances: Keep driveways and entrances serving premises clear and available to residents, Owner's staff, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.
- E. Contactor to provide the necessary safety warning signs and barricades where applicable during exterior / outdoor construction activities.
- F. Use of Existing Building: Maintain existing building in a weather tight condition at all times throughout construction period. Repair damage caused by construction operations. Protect building and its occupants during construction period.

1.3 OCCUPANCY REQUIREMENTS

- A. Owner Occupancy: Existing buildings will be occupied by residents and Owner's staff during entire construction period. Cooperate with Owner during construction operations to facilitate residents' and Owner's management agents and utilization with minimal disruption.
- B. Utility Shut Downs: Prior to initial shut down of building water system, review shut down and reactivation procedures with Owner maintenance personnel. General Contractor must provide a minimum of 72 hour advance notice to Owner before turning off building utilities. Utility shut downs shall not last more than 8 hours. Building utilities must be

**SEATTLE HOUSING AUTHORITY SOLICITATION 5207
CEDARVALE VILLAGE PLUMBING
AND DRAIN REPLACEMENT**

**SECTION 011400
WORK RESTRICTIONS**

reactivated and verified to be functioning before workers depart for the day. Any deviation from these guidelines must be approved by the Owner.

END OF SECTION 011400

SECTION 012500 - CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of the Contract, including General Conditions and other Division 0 and Division I Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section specifies administrative and procedural requirements for handling and processing Contract modifications.

1.3 MINOR CHANGES IN THE WORK

- A. The Owner will issue supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Sum or the Contract Time in writing to the Contractor.

1.4 PROPOSAL REQUESTS

- A. Owner-Initiated Proposal Requests: The Owner will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
 1. Proposal Requests issued by the Owner are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
 2. After receipt of Proposal Request, within time specified in Proposal Request, submit a Change Order Proposal to the Owner providing a quotation of cost adjustments to the Contract Sum and the Contract Time necessary to execute the change. The quotation of cost adjustments shall include a detailed labor, material, and equipment breakdown. Lump sum cost quotations will not be accepted. See General Conditions Section 7.
 - a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.

- c. Include costs of labor and supervision directly attributable to the change.
 - d. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use one-half available total float before requesting an extension of the Contract Time.
 - B. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a Change Order Proposal to Owner. Refer to General Conditions Section 7.
 - 1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
 - 2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
 - 3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
 - 4. Include costs of labor and supervision directly attributable to the change.
 - 5. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use one-half available total float before requesting an extension of the Contract Time.
 - 6. Comply with requirements in Division 1 Section including "Products" if the proposed change requires substitution of one product or system for product or system specified.
 - C. Change Order Proposal Form: May be of Contractor's own creation, provided that the above information is included and presented in a comprehensible format, and approved by Owner and Design Engineering Team.
- 1.5 CHANGE ORDER PROCEDURES
- A. On Owner's approval of a Change Order Proposal, Contractor will prepare a Change Order for signatures of Owner, Design Engineer, and Contractor on an AIA Document G701 or Contractor's approved form.

1.6 CONSTRUCTION CHANGE DIRECTIVE

- A. Construction Change Directive: Owner may issue a Construction Change Directive on AIA Document G714. Construction Change Directive instructs Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
 - 1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

END OF SECTION 012500

SECTION 012600 - APPLICABLE CODES AND STANDARDS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and general provisions of the contract, including General Conditions and other Division 0 and Division 1 Specifications, apply to this section.

1.2 CODES, ORDINANCES, REGULATIONS, AND STANDARDS

A. The codes, ordinances, regulations and Industry Standards which govern the work have been noted in the Contract Documents where possible and practical. The applicable codes, ordinances, regulations and standards are recapitulated in this Section of the Specifications as a guide to the Contractor. Unless otherwise noted, the applicable editions of the codes, ordinances, regulations, and Industry Standards are the latest editions current and in force at the time of the date the Drawings and Specifications.

B. Related Work Described Elsewhere:

1. Contractual Requirements - General Conditions

PART 2 - PRODUCTS

2.1 CODES, ORDINANCES, REGULATIONS AND STANDARDS

Codes in effect and regulatory agencies for the work include, but are not limited to, the following. It shall be the responsibility of the Contractor to ascertain and comply with pertinent regulations or offices other than those listed.

Regulating Agencies:

Seattle Department of Planning and Development
Seattle Fire Department
Department of Labor and Industries

Regulating Codes

Seattle Building Code
Seattle Land Use and Zoning Code
Uniform Federal Accessibility Standards (UFAS)
National Fire Protection Association Codes (inclusive as applicable),
National Fire Code

National Fire Protection Association Code No. 70
National Fire Protection Association (NFPA) Life Safety Code

National Electrical Code
Federal Communications Commission (FCC), communications Act of 1934
Code of Federal Regulations, title 47, Telecommunication
Underwriter's Laboratories, Inc. (UL)
Uniform Plumbing Code
Uniform Mechanical Code
ASME Boiler and Pressure Vessel Code
Occupational Safety and Health Act (OSHA)
Washington Industrial Safety and Health Act (WISHA)
Washington State Building Code (IBC 2006 with Amendments)

2.2 ASSOCIATIONS AND STANDARDS

Reference to a Technical Society, Institution, Association, or Government Authority is made in the Specification in accordance with the following abbreviations:

| | |
|--------|-------------------------------------------------------------------------------------------------------------------------------|
| AASHTO | American Association of State Highway Transportation Officials Washington, DC |
| ACI | American Concrete Institute (ACI) P.O. Box 4754, Redford Station, Detroit, MI 48219 |
| ADA | Americans with Disabilities Act, Public Law 1010-336, (ADA) |
| AIA | American Institute of Architects 1735 New York Avenue NW, Washington, DC 20000 |
| ANSI | American National Standards Institute (Formerly ASA, the USASI) 1430 Broadway, New York, NY 10018 |
| APA | American Plywood Association Tacoma, WA |
| APWA | American Public Works Association, Washington Chapter Fourth and Vine Building, Seattle, WA |
| ASA | American Standards Association 10 East 40th Street, New York, NY |
| ASHRAE | American Society of Heating Refrigerating and Air Conditioning Engineers, Inc. 345 East 47th Street, New York, NY 10017 |
| ASME | American Society of Mechanical Engineers 29 West 39th Street, New York, NY |
| ASTM | American Society for Testing and Materials 1916 Race Street, Philadelphia, PA 19103 |
| AWPA | American Wood Preservers Association 839 17th Street NW, Washington, DC 20006 |
| CRSI | Concrete Reinforcing Steel Institute 288 North LaSalle Street, Chicago, IL 60601 |
| CS | Commercial Standard of US Department of Commerce Washington, DC 20025 |

| | |
|-------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CSI | Construction Specifications Institute 99 Canal Center Plaza, Suite 300, Alexandria, VA 22314-1588 |
| NAAMM | National Association of Architectural Metal Manufacturers 228 North LaSalle Street, Chicago, IL 60601 |
| NFPA | National Fire Protection Association 470 Atlantic Avenue, Boston, MA 02210 |
| PCA | Portland Cement Association Old Orchard Road, Skokie, IL 60076 |
| SSPC | The Society for Protective Coatings Pittsburgh, PA |
| UL | Underwriters Laboratories 333 Phingsten Road, Northbrook, IL 60062 |
| WCLIB | West Coast Lumber Inspection Bureau 1750 SW Skyline Boulevard, Portland, OR |
| WSDOT | Washington State Department of Transportation Highway Administration Building, Olympia, WA 98504 as adopted by the City of Seattle in their Supplemental Specifications for Standard Specifications for Road, Bridge, and Municipal Construction. |

PART 3 - EXECUTION

3.1 COMPLIANCE

The Contractor shall ascertain and comply with all codes, ordinances, regulations, and Industry Standards as shown on the Drawings and specified herein and/or as required by the public authorities, which govern the work.

END OF SECTION 012600

SECTION 012900 - PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.

1.2 SCHEDULE OF VALUES

- A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's Construction Schedule for Owner's approval.
 - 1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including Application for Payment forms with Continuation Sheets, Submittal Schedule, Contractor's Construction Schedule, and Short Interval Schedules.
 - 2. Submit the Schedule of Values to Owner's Representative or Project Manager at earliest possible date but no later than seven (7) working days from notice to proceed and prior to submittal of initial Applications for Payment.
 - 3. Sub-schedules: Where the Work is separated into phases requiring separately phased payments, provide sub-schedules showing values correlated with each phase of payment.
- B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section.
 - 1. Identification: Include the following Project identification on the Schedule of Values:
 - a. Project name and location.
 - b. Owner's name
 - c. Contract number
 - d. Change Order Number
 - e. Work Order Number
 - f. Change Order to Work Order Number

- g. Project Manager Name
 - h. Contract Administrator Name
 - i. Contractor's name and address.
 - j. Date of submittal.
2. Submit draft of Pay Application/Invoice on Contractor's approved form.
3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate. Include separate line items under required principal subcontracts for operation and maintenance manuals, punch list activities, Project Record Documents, and demonstration and training in the amount of 5 percent of the Contract Sum.
4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
5. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.
6. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
7. Each item in the Schedule of Values and Applications for Payment shall be complete.
 - a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at Contractor's option.
8. Schedule Updating: Update and resubmit the Schedule of Values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.3 APPLICATIONS FOR PAYMENT

- A. Each Application for Payment shall be consistent with previous applications and payments as certified and paid for by Owner.

1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.
- B. Payment Application Times: The date for each progress application is the 5th day of the month. The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction Work covered by each Application for Payment is one month, beginning on the first day of the month and ending on the last day of the month.
- C. Payment Application Forms: Use the Contractor's approved form as form for Applications for Payment.
- D. Application Preparation: Complete every entry on form. Owner's Representative or Project Manager and Engineer will return incomplete applications without action.
 1. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions were made.
 2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.
- E. Waivers of Mechanic's Lien: With each Application for Payment, the Contractor shall submit Lien Release form that covers both the work that has been paid for, and the work that is requested in the current payment application. At the completion of the project, as a condition of Final Payment and release of Retainage, the Contractor shall provide a Lien Release for the contract work.
 1. Contractor shall require executed Lien Release forms from all subcontractors that cover both the work that has been paid for and the work that is requested in the current payment application. Contractor shall maintain file records of these subcontractor Lien Release forms, and make them available to Owner if so requested.
 2. Owner reserves the right to designate which entities involved in the Work must submit waivers.
 3. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to Owner.
- F. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:
 1. List of subcontractors.

2. Schedule of Values.
 3. Contractor's Construction Schedule (preliminary if not final).
 4. Schedule of unit prices.
 5. Submittal Schedule (preliminary if not final).
 6. List of Contractor's principal subcontractors.
 7. Copies of building permits.
 8. Copies of authorizations and licenses from authorities having jurisdiction for performance of the Work.
- G. Application for Payment at Substantial Completion: After issuance by the Engineer of the Certificate of Substantial Completion, submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.
1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.
 2. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
- H. Final Payment Application: Submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:
1. Evidence of completion of Project closeout requirements.
 2. Insurance certificates for products and completed operations where required and proof that taxes, fees, and similar obligations were paid.
 3. Updated final statement, accounting for final changes to the Contract Sum.
 4. Contractor's letter of Release of Liens.
 5. Evidence that claims have been settled.
 6. Final, liquidated damages settlement statement.

END OF SECTION 012900

SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions and Division 0 and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. Coordination Drawings.
 - 2. Project meetings.

1.3 COORDINATION

- A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations included in different Sections that depend on each other for proper installation, connection, and operation.
 - 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 - 2. Coordinate installation of different components with subcontractors to ensure maximum accessibility for required maintenance, service, and repair.
 - 3. Make adequate provisions to accommodate items scheduled for later installation.
 - 4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including mechanical and electrical. Where space conflicts occur location priority shall be allocated in the following order:
 - a. Lighting.

- b. Diffusers.
 - c. Ductwork.
 - d. Fire protection.
 - e. Plumbing.
- B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
- 1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
- 1. Preparation of Contractor's Construction Schedule.
 - 2. Preparation of utilities shut down schedule.
 - 3. Preparation of the Schedule of Values.
 - 4. Installation and removal of temporary facilities and controls.
 - 5. Delivery and processing of submittals.
 - 6. Progress meetings.
 - 7. Pre-installation conferences.
 - 8. Project closeout activities.
 - 9. Startup and adjustment of systems.
 - 10. Project closeout activities.

1.4 SUBMITTALS

- A. Coordination Drawings: Prepare Coordination Drawings if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.

1. Content: Project- specific information, drawn accurately to scale. Do not base Coordination Drawings on reproduction of the Contract Documents or standard printed data. Include the following information, as applicable:
2. Sheet size: At least 8-1/2 by 11 inches, but no larger than 30 by 42 inches.
3. Number of Copies: Submit one PDF copy of each Coordination Drawings submittal accordingly and return one PDF copy to the Contractor.
4. Refer to individual Sections for Coordination Drawing requirements for Work in those Sections.

1.5 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
 1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner of scheduled meeting dates and times.
 2. Minutes: Contractor to record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and the General Contractor, within three days of the meeting.
- B. Pre-Construction Conference: Schedule a Pre-Construction Conference before starting construction, at a time convenient to Owner, but no later than 10 days after execution of the Agreement. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.
 1. Attendees: Authorized representatives of Owner, Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Discuss items of significance that could affect progress, including the following, but not necessarily in this order:
 - a. Construction schedule.
 - b. Phasing.

- c. On site procedures for workers relations with residents and Owner's staff. Resident notification procedures.
 - d. Critical work sequencing and long-lead items.
 - e. Designation of key personnel and their duties.
 - f. Procedures for processing field decisions and Change Orders.
 - g. Procedures for requests for information (RFIs).
 - h. Procedures for testing and inspecting.
 - i. Procedures for processing Applications for Payment.
 - j. Distribution of the Contract Documents.
 - k. Submittal procedures.
 - l. Preparation of Record Documents.
 - m. Use of the premises and existing buildings and utilities.
 - n. Work restrictions.
 - o. Owner's occupancy requirements.
 - p. Responsibility for temporary facilities and controls.
 - q. Construction waste management and recycling.
 - r. Parking availability.
 - s. Office, work, and storage areas.
 - t. Equipment deliveries and priorities.
 - u. First aid.
 - v. Security.
 - w. Progress cleaning.
 - x. Working hours.
3. Minutes: Record and distribute meeting minutes.

- C. Pre-installation Conferences: Contractor shall conduct pre-installation conferences. Subcontractors shall attend pre-installation conferences at Project site before each construction activity that requires coordination with other construction.
1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise the Owner of scheduled meeting dates.
 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
 - a. The Contract Documents.
 - b. Options.
 - c. Related Requests for Information (RFIs).
 - d. Related Change Orders.
 - e. Purchases.
 - f. Deliveries.
 - g. Submittals.
 - h. Review of mockups.
 - i. Possible conflicts.
 - j. Compatibility problems.
 - k. Time schedules.
 - l. Manufacturer's written recommendations.
 - m. Warranty requirements.
 - n. Compatibility of materials.
 - o. Acceptability of substrates.
 - p. Space and access limitations.
 - q. Regulations of authorities having jurisdiction.

- r. Testing and inspecting requirements.
 - s. Installation procedures.
 - t. Coordination with other work.
 - u. Required performance results.
 - v. Protection of adjacent work.
 - w. Protection of construction and personnel.
- 3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
 - 4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
 - 5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- D. Progress Meetings: Conduct progress meetings at weekly intervals unless otherwise agreed upon.
- 1. Attendees: Owner and Contractor. If the project team deems it necessary to include other parties at the weekly construction progress meeting, then these parties shall be invited on as-needed basis.
 - 2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Include as the first item on the agenda, resident coordination issues and resident notifications.
 - b. Contractor's Construction Schedule: Review overall project schedule and short interval schedule. Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

- 1) Review short interval schedule for next period. Activities on short interval schedule shall note impacts to residents, including but not limited to work in noise, dust, odor, closures of common areas and parking impacts.
- c. Review present and future needs of each entity present, including the following:
- 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Deliveries.
 - 4) Off-site fabrication.
 - 5) Access.
 - 6) Site utilization.
 - 7) Temporary facilities and controls.
 - 8) Work hours.
 - 9) Hazards and risks.
 - 10) Progress cleaning.
 - 11) Quality and work standards.
 - 12) Status of correction of deficient items.
 - 13) Field observations.
 - 14) Requests for interpretations (RFI's).
 - 15) Status of submittals.
 - 16) Status of proposal requests.
 - 17) Pending changes.
 - 18) Status of Change Orders.
 - 19) Pending claims and disputes.
 - 20) Documentation of information for payment requests.

3. Minutes: Contractor to record and distribute the meeting minutes.
4. Reporting: Contractor to distribute minutes of the meeting to each party present and to parties who should have been present.
5. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting

END OF SECTION 013100

SECTION 013200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

Drawings and general provisions of the Contract, including General Conditions and Division 0 and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
 - 1. Contractor's Construction Schedule.
 - 2. Submittals Schedule.
 - 3. Daily Construction Reports.
- B. See Division 1 Section "Application for Payment" for submitting the Schedule of Values.

1.3 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
 - 1. Critical Activities: Activities on the critical path. They must start and finish on the planned early start and finish times.
 - 2. Predecessor Activity: An activity that precedes another activity in the network.
 - 3. Successor Activity: An activity that follows another activity in the network.
- B. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.
- C. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.

- D. Float: The measure of leeway in starting and completing an activity.
 - 1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
- E. Major Area: A separate building, or a similar significant construction element.

1.4 SUBMITTALS

- A. Submittal Schedule: Submit copies of Submittal Schedule to the Owner. Arrange the following information in a tabular format:
 - 1. Scheduled dates Contractor's delivery of submittal to Owner for all submittals.
 - 2. Specification Section number and title.
 - 3. Submittal category (action or informational).
 - 4. Name of subcontractor.
 - 5. Description of the Work covered.
 - 6. Scheduled date for Owner's final release or approval.
- B. Contractor's Construction Schedule: Submit copies of initial schedule to Owner, large enough to show entire schedule for entire construction period.
 - 1. Submit an electronic copy of schedule, using Microsoft Project software, via e-mail.
- C. Daily Construction Reports: Distribute copies to Owner via fax or email at agreed upon daily or weekly intervals.

1.5 COORDINATION

- A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate subcontractors.
- B. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittal Schedule, progress reports, payment requests, and other required schedules and reports.

1. Secure time commitments for performing critical elements of the Work from parties involved.
2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 SUBMITTALS SCHEDULE

- A. Preparation: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, revision and resubmittal, ordering, manufacturing, fabrication, and delivery when establishing dates.
 1. Coordinate Submittals Schedule with list of subcontracts, the Schedule of Values, and Contractor's Construction Schedule.
 2. Submit concurrently with the first complete submittal of Contractor's Construction Schedule.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

- A. Time Frame: Extend schedule from date established for commencement of the Work to date of Final Completion.
 1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- B. Activities: Treat each major area as a separate numbered activity for each principal element of the Work. Comply with the following:
 1. Activity Duration: Define activities so no activity is longer than 20 days, unless specifically allowed by the Owner.
 2. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
 3. Submittal Review Time: Include review and resubmittal times indicated in Division 1 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with Submittals Schedule.

4. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for the Owner's administrative procedures necessary for certification of Substantial Completion.
- C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
1. Phasing: Arrange list of activities on schedule by phase.
 2. Work Under More Than One Contract: Include a separate activity for each contract.
 3. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
 4. Work Restrictions: Show the effect of the following items on the schedule:
 - a. Coordination with existing construction.
 - b. Limitations of continued occupancies.
 - c. Uninterruptible services.
 - d. Partial occupancy before Substantial Completion.
 - e. Use of premises restrictions.
 - f. Provisions for future construction.
 - g. Seasonal variations.
 - h. Environmental control.
 5. Work Stages: Indicate important stages of construction for each major portion of the Work.
 - a. Minimize duration of utilities shutdown that effect building residents and facility operations. Contractor must provide proper noticing to Owner (3) business days in advance prior to any utility shutdown. Utility shutdowns shall be discussed during Owner-Contractor team meetings.
- D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and Final Completion, and the following interim milestones:

1. Each phase Start, Substantial Completion and Final Completion.
- E. Contract Modifications: If a Contract Modification is determined by the Contractor to impact the Critical Path of the Construction Schedule, then the Contractor shall produce a draft revision to the Construction Schedule to show the Team the impact of the change.
- 2.3 CONTRACTOR'S CONSTRUCTION SCHEDULE (CPM SCHEDULE)
- A. General: Prepare time scaled network diagrams using Microsoft Project or other scheduling software.
 - B. CPM Schedule: Prepare Contractor's Construction Schedule for complete project using a computerized, cost- and resource-loaded, time-scaled CPM network analysis diagram for the Work.
 1. Develop network diagram in sufficient time to submit CPM schedule so it can be accepted for use no later than 10 days prior to the date established for commencement of the Work.
 - a. Failure to include any work item required for performance of this Contract shall not excuse Contractor from completing all work within applicable completion dates, regardless of Owner's approval of the schedule.
 2. Establish procedures for monitoring and updating CPM schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.
 3. Use "one workday" as the unit of time. Include list of non-working days and holidays incorporated into the schedule.
 - C. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work. Using the preliminary network diagram, prepare a skeleton network to identify probable critical paths.
 1. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities:
 - a. Preparation and processing of submittals.
 - b. Mobilization and demobilization.
 - c. Delivery.
 - d. Fabrication.

- e. Utility interruptions.
 - f. Installation.
 - g. Work by Owner that may affect or be affected by Contractor's activities.
 - h. Owner relocation activities between phases
 - i. Testing and commissioning.
 - j. Other Project Close-out activities.
2. Critical Path Activities: Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates.
 3. Format: Mark the critical path. Locate the critical path near center of network; locate paths with most float near the edges.

2.4 REPORTS

- A. Daily Construction Reports: Prepare a daily construction report using form provided recording the following information concerning events at each Project site:
 1. List of subcontractors at Project site.
 2. Hours worked by crew and work accomplished
 3. Equipment at Project site.
 4. Material deliveries.
 5. Accidents.
 6. Stoppages, delays, shortages, and losses.
 7. Meter readings and similar recordings.
 8. Orders and requests of authorities having jurisdiction.
 9. Services connected and disconnected.
 10. Equipment or system tests and startups.
 11. Weather, temperature, precipitation, and wind conditions.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Contractor's Construction Schedule Updating: At weekly intervals, update schedule to reflect actual construction progress and activities. Issue schedule for each regularly scheduled progress meeting.
 - 1. Revise schedule immediately after each meeting or other activity where revisions have been recognized or made. Issue updated schedule concurrently with the report of each such meeting.
 - 2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
 - 3. As the Work progresses, indicate Actual Completion percentage for each activity.
- B. Distribution: Distribute copies of approved schedule to Owner Representative, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility.
 - 1. Post copies in Project meeting rooms and temporary field offices.
 - 2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 013200

SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 – GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.
- B. See Division 1 Section "Construction Progress Documentation" for submitting schedules and reports, including Contractor's Construction Schedule.
- C. See Division 1 Section "Quality Requirements" for submitting test and inspection reports and for mockup requirements.
- D. See Division 1 Section "Closeout Procedures" for submitting warranties.

1.2 SUBMITTAL PROCEDURES

- A. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
 - 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for
 - 3. The Owner reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- B. Submittals Schedule: Comply with requirements in Division 1 Section "Construction Progress Documentation" for list of submittals and time requirements for scheduled performance of related construction activities.
 - 1. Submit Shop Drawings with transmittal form electronically in form of ".pdf" files capable of being reviewed and commented on using Adobe Reader 7.0 or later, Adobe Acrobat Standard, or Adobe Acrobat Professional. Owner will return Shop Drawings with transmittal form electronically.
 - a. Maximum Size of Print: 22 inches by 34 inches.
- C. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Owner's receipt of submittal. No extension of the Contract Time will be authorized because of

failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow a minimum of five (5) working days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Owner will advise Contractor when a submittal being processed must be delayed for coordination.
 2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 3. Resubmittal Review: Allow a minimum of 5 working days for review of each resubmittal.
- D. Identification: Utilize the Submittal Form coversheet included in “DIVISION 01 SAMPLE FORMS” and complete all appropriate fields.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
 2. Include the following information on the Submittal form for processing and recording action taken:
 - a. Project name.
 - b. Date.
 - c. Name of Contractor.
 - d. Name of subcontractor.
 - e. Name of supplier.
 - f. Name of manufacturer.
 - g. Submittal number or other unique identifier, including revision identifier.
 - 1) Number submittals sequentially (e.g. 1, 2, etc.). Resubmittal numbers shall include a decimal point, followed by a sequential revision number (e.g 2.1, 2.2, etc.).
 - h. Number and title of appropriate Specification Section.
 - i. Drawing number and detail references, as appropriate.
 - j. Location(s) where product is to be installed, as appropriate.

- k. Other necessary identification.
- E. Deviations: Highlight, encircle, or otherwise specifically identify deviations from the Contract Documents on submittals.
- F. Resubmittals: Make resubmittals in same form as initial submittal.
 - 1. Note date and content of previous submittal.
 - 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 - 3. Resubmit submittals until they are marked "No Exception Taken" or "Make Correction Noted".
- G. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.
- H. Use for Construction: Use only submittals with mark indicating "No Exception Taken" or "Make Correction Noted".

PART 2 – PRODUCTS

2.1 ACTION SUBMITTALS

- A. General: Prepare and submit Action Submittals required by individual Specification Sections.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 - 1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
 - 2. Mark each copy of each submittal to show which products and options are applicable.
 - 3. Include the following information, as applicable:
 - a. Manufacturer's written recommendations.
 - b. Manufacturer's product specifications.

- c. Manufacturer's installation instructions.
 - d. Manufacturer's catalog cuts.
 - e. Wiring diagrams showing factory-installed wiring.
 - f. Printed performance curves.
 - g. Operational range diagrams.
 - h. Compliance with specified referenced standards.
 - i. Testing by recognized testing agency.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale.
- 1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Dimensions.
 - b. Identification of products.
 - c. Fabrication and installation drawings.
 - d. Roughing-in and setting diagrams.
 - e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
 - f. Shop-work manufacturing instructions.
 - g. Templates and patterns.
 - h. Schedules.
 - i. Notation of coordination requirements.
 - j. Notation of dimensions established by field measurement.
 - k. Relationship to adjoining construction clearly indicated.
 - l. Seal and signature of professional engineer if specified.
 - m. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, electronically submit 'pdf' files of Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 40 inches.
- D. Samples: Submit physical Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 2. Identification: Attach label on unexposed side of Samples that includes the following:
 - a. Generic description of Sample.
 - b. Product name and name of manufacturer.
 - c. Sample source.
 - d. Number and title of appropriate Specification Section.
 3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 - a. Number of Samples: Submit a minimum of three full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Engineer will return two full set(s) of submittal with options selected and will keep one full set.
 5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials;

swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

- a. Number of Samples: Submit at least two sets of Samples. Owner will retain one Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a Project Record Sample.
- E. Product Schedule or List: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location.
- F. Submittals Schedule: Comply with requirements specified in Division 1 Section "Construction Progress Documentation."
- G. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
 1. Trade
 2. Firm Name
 3. Type of Firm (Subcontractor, Supplier, Fabricator, etc.)
 4. Contact Person
 5. Mailing Address
 6. Phone and Fax Numbers
 7. E-Mail Address

PART 3 – EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Owner.

3.2 OWNER ACTION

- A. General Owner will not review submittals that do not bear Contractor's approval stamp and reviewer's hand-signed, wet-ink signature, and will return them without action.

- B. Action Submittals: Owner will review each submittal, make marks to indicate corrections or modifications required, and return it. Owner will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:
1. **NO EXCEPTIONS TAKEN:** Means fabrication, manufacture, or construction may proceed providing submittal complies with Contract Documents.
 2. **MAKE CORRECTIONS NOTED:** Means fabrication, manufacture, or construction may proceed providing submittal complies with Owner's notations and Contract Documents. If, for any reason, Contractor cannot comply with notations, Contractor shall make revisions and resubmit as described for submittals stamped REJECTED.
 3. **REJECTED:** Means submittal does not comply with design intent of Contract Documents. Submittals stamped REJECTED are not to be used. Contractor shall make revisions and resubmit.
 4. **REVISE AND RESUBMIT:** Means submittal is in variance with the Contract Documents. Revise as noted and resubmit.
 5. **SUBMIT SPECIFIED ITEM:** Means submitted item was not included in Contract Documents. Resubmit with specified item.
- C. Partial submittals are not acceptable, will be considered non-responsive, and will be returned without review.
- D. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 013300

SECTION 013500 - SUBSTITUTIONS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General Conditions and other Division 0 and Division 1 Specification Sections, apply to this Section.

1.2 SUBSTITUTIONS

- A. The materials, products and equipment described in the Contract Documents establish a standard of required function, dimension, appearance and quality to be met by any proposed substitution.
- B. No substitution will be considered prior to receipt of Bids unless written request for approval has been received by the Owner and Architect at least ten days prior to the date for receipt of Proposals. Each such request shall include the name of the material or equipment for which it is to be substituted and a complete description of the proposed substitute including drawings, cuts, performance and test data and any other information necessary for an evaluation. A statement setting forth any changes in other materials, equipment or other Work that incorporation of the substitute would require shall be included (see 1.2.E). The burden of proof of the merit of the proposed substitute is upon the proposer. The Owner's decision of approval or disapproval of a proposed substitution shall be final.
- C. If the Owner approves any proposed substitution prior to receipt of Bids, such approval will be set forth in an Addendum. Bidders shall not rely upon approvals made in any other manner. Should any proposed product substitution require any re-design work by the Owner or his consultants to accommodate the substitute product, costs for such re-design work shall be included in the Bid amount and shall be paid to the Owner at reasonable rates for the time expended in the required re-design work.
- D. No substitutions will be considered after the Contract award unless specifically provided in the Contract Documents.
- E. Substitution requests shall be made only on the Substitution Request Form and Certificate of Equal Performance found hereinafter (see "DIVISION 01 SAMPLE FORMS"). Fill in all data requested on the form and such form shall be received by the Owner and Architect at least ten days prior to the date for receiving proposals.

PART 2 – PRODUCTS

- A. Substitution of proposed or recommended products is acceptable pending owner's approval of the substitution proposal. Any substitute product or materials must meet or exceed quality and performance specifications of the proposed products, or as defined in the project documents.

END OF SECTION 013500

SECTION 015000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS:

- A. Drawings and general provisions of the contract, including General Conditions and other Division 0 and Division 1 specifications, apply to this section.

1.2 SUMMARY

- A. This Section includes requirements for temporary utilities, support facilities, and security and protection facilities.
- B. Also see Division 1 section 011000 Summary of Work under item (1.5) for Contractor use of premises.

1.3 USE CHARGES

- A. General: Cost or use charges for temporary facilities shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, testing agencies, and authorities having jurisdiction.
- B. Water Service: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
- C. Electric Power Service: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.
- D. Contractor shall carefully and responsibly conserve any utilities being furnished by Owner.

1.4 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for any required temporary electric service. Install service to comply with NFPA 70.**PROJECT CONDITIONS**
- B. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

PART 2– PRODUCTS

2.1 TEMPORARY FACILITIES

- A. Field Offices, General: No facilities will be provided by the owner for temporary field offices. Provision of field office space will be the responsibility of the Contractor.

2.2 EQUIPMENT

- B. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work and impact on residents and Owner's staff. Relocate and modify facilities as required by progress of the Work.
- B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
 - 1. Arrange with utility company, Owner, and residents for times when service can be interrupted, if necessary, to make connections for temporary services.
- B. Electric Power Service: Use of Owner's existing electric power service will be permitted, as long as equipment is maintained in a condition acceptable to Owner.
- C. Electric Power Service: If existing owner system will not provide adequate power for construction activities provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.
 - 1. Install electric power service overhead, unless otherwise indicated.
 - 2. Connect temporary service to Owner's existing power source, as directed by Owner.

- D. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.
 - 1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
- E. Telephone Service: Provide temporary telephone service for contractor personnel. The phones can be cell phones, if the contact numbers are supplied to all project team members.

3.3 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:
 - 1. Maintain support facilities until Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
- B. Traffic Controls: Comply with requirements of authorities having jurisdiction.
 - 1. Protect existing site improvements to remain including curbs, pavement, and utilities.
 - 2. Maintain access for fire-fighting equipment and access to fire hydrants.
- C. Parking: Construction personnel shall not park in Owner's existing parking areas unless authorized by Owner.
 - 1. Provide temporary directional signs for construction personnel, building occupants and visitors.
 - 2. Maintain and touchup signs so they are legible at all times.
- D. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with Division 1 Sections "Cleaning" and "Close-Out Procedures" for progress cleaning requirements.
 - 1. Construction personnel are prohibited from using the building waste receptacles for construction debris.
- E. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.

1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
- F. Temporary Use of Existing Stairs: Cover stairs with protective covering of plywood or similar material so finishes will be undamaged at time of acceptance.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
- B. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction.
- C. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.
- D. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- E. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities.
- F. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner from fumes and noise.
- G. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.
 1. Prohibit smoking in all construction and occupied areas. Smoking is not allowed within 25 feet of the building.
 2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.

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

3.5 OPERATION, TERMINATION, AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.
- B. Maintenance: Maintain facilities in good operating condition until removal.
 1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
- C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion, unless approved by Owner.
- D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or at Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
 1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
 2. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 1 Section 01770 "Closeout Procedures."

3.6 CLEAN-UP

- A. In addition to clean-up specified elsewhere in Project Manual, clean-up of common areas, exterior work locations, and unit work areas shall be performed daily. Remove construction trash, materials, and equipment at end of daily work. Ensure that all areas are clean and safe for occupancy and use by residents, visitors, and Owner's staff.

END OF SECTION 015000

SECTION 016000 - MATERIALS AND EQUIPMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

Drawings and general provisions of the contract, including General Conditions and other Division 0 and Division 1 Specification Sections, apply to this section.

1.2 COORDINATION

A. Coordinate related requirements specified in other parts of the Project Manual including but not limited to:

1. General Conditions of the Contract for Construction,
2. Division 1, Section "Submittals".

1.3 DEFINITIONS

- A. Materials: Materials are products that are shaped, formed, worked, applied, finished, refined, fabricated, processed or installed to become part of the Work or part of Equipment to be installed in the Work.
- B. Equipment: Equipment is a product with operational parts, moving or otherwise requiring service connections such as wiring or plumbing.
- C. Products: Products are items either purchased for incorporation into the work or from previous stock.
- D. Named Products: Named Products are items identified by Manufacturer, product name, make, model or identifying number indicated in the Manufacturer's standard product literature.

1.4 PRODUCT SELECTION:

- A. Specification by Standards: When specification is not proprietary, select a product/Manufacturer which is suitable for the use intended and meets the referenced standards (ex: U.L., ASTM, ANSI, APA etc.) and other criteria indicated in the specification.
- B. Performance Specification: Where specification is based on performance, select a product suitable for the use intended that meets the performance criteria outlined in the specification.
- C. Colors/Patterns/Textures Etc.: Where specifications require submittal and selection of colors etc., provide full product line for selection by Architect.

1.5 GENERAL REQUIREMENTS:

- A. Conform to applicable specifications and standards.
- B. Comply with size, make, type and quality as specified.
- C. Manufactured and Fabricated Products:
 - 1. Design, fabricate, and assemble in accordance with referenced standards & standards recognized by the construction industry for product type.
 - 2. Manufacture like parts of duplicate units to be interchangeable and of standard sizes and gages.
 - 3. Two or more items of the same kind to be identical and by same manufacturer.
 - 4. Products to be suitable for service conditions.
 - 5. Adhere to indicated equipment capacities, sizes, and dimensions.
- D. Do not use materials and equipment for other than specified purposes and uses.

1.6 MANUFACTURER'S INSTRUCTIONS

- A. When Specifications require installation of work to comply with Manufacturer's printed instructions, obtain and distribute instructions to concerned parties prior to installation.
- B. Handle, install, connect, clean, condition, and adjust products in strict accordance with Manufacturer's instructions and in conformity with specified requirements.
 - 1. Should job conditions or specified requirements conflict with Manufacturer's instructions, notify the Owner for instructions.
 - 2. Do not proceed with work without clear instructions.
- C. Perform work in accordance with Manufacturer's instructions. Do not omit any preparatory step or installation procedure unless acceptable to Manufacturer's technical representative and approved by Owner.

1.7 TRANSPORTATION AND HANDLING

Arrange deliveries of Products in accord with construction schedules. Coordinate to avoid conflict with work and site conditions. Deliver Products in undamaged conditions, in Manufacturer's original containers or packaging, with identifying labels intact and legible. Immediately on delivery, inspect shipments. Assure compliance with requirements of Contract Documents and approved submittals. Assure that Products are properly protected and undamaged.

1.8 STORAGE AND PROTECTION

Store products in accord with Manufacturer's instructions, with seals and labels intact and legible. Store in weathertight enclosures products subject to damage by elements. Maintain temperature and humidity within ranges required by Manufacturer's instructions.

END OF SECTION 016000

SECTION 016510 – DELIVERY, STORAGE AND HANDLING

PART 1 – GENERAL

1.1 REQUIREMENTS INCLUDED

- A. Requirements
- B. Delivery
- C. Product Handling
- D. Storage
- E. Maintenance after Storage
- F. Protection after Installation
- G. Damaged Products

1.2 RELATED REQUIREMENTS SPECIFIED ELSEWHERE

- A. Make particular reference to the following Division One sections:
 - 1. Section 011000 - Summary
 - 2. Section 013100 - Project Management and Coordination
 - 3. Section 015000 – Temporary Facilities and Controls

1.3 REQUIREMENTS

- A. Provide for expeditious transportation and delivery of products to project site undamaged, on a schedule to avoid delay of the work.
- B. Provide equipment and personnel at the site to unload and handle products in a manner to avoid damage to products.
- C. Protect Owner and residents from harm during transportation and delivery of product to project site.
- D. Protect existing construction and Owner and residents' furnishings, furniture and equipment from damage during transportation and delivery of products to project site.
- E. Provide secure storage and protection for products to be incorporated into the work, and maintenance and protection for products after installation and until completion of the work.

1.4 DELIVERY

- A. Arrange deliveries of products in accordance with construction progress schedules and in ample time to facilitate inspection prior to installation.
- B. Coordinate deliveries to avoid conflict with work and conditions at site, including but not limited to:
 - 1. Work of other contractors, or Owner.
 - 2. Limitations of storage space.
 - 3. Availability of equipment and personnel for handling products.
- C. Deliver products in undamaged condition in original containers or packaging, with identifying labels intact and legible.
- D. Partial deliveries of component parts of equipment shall be clearly marked to identify the equipment, to permit easy accumulation of parts and to facilitate assembly.
- E. Immediately upon delivery, inspect shipment to assure:
 - 1. Product complies with requirements of Contract Documents and reviewed submittals.
 - 2. Quantities are correct.
 - 3. Containers and packages are intact, labels are legible.
 - 4. Products are properly protected and undamaged. Minor damages may be repaired, provided the finish items are equal in all respects to new work.

1.5 PRODUCT HANDLING

- A. Provide equipment and personnel necessary to handle products, including those provided by Owner, by methods to prevent soiling or damage to products or packaging.
- B. Provide additional protection during handling as necessary to prevent scraping, marring, or otherwise damaging products or surrounding surfaces.
- C. Handle products by methods to prevent bending or overstressing.
- D. Lift heavy components only at designated lifting points.

1.6 STORAGE

- A. Store products immediately on delivery, and protect until installed in the work. Store in accordance with manufacturer's instructions, with seals, labels intact and legible.
- B. Store products subject to damage by elements in substantial weather-tight enclosures.
 - 1. Maintain temperatures within ranges required by manufacturer's instructions.
 - 2. Provide humidity control for sensitive products, as required by manufacturer's instructions.
 - 3. Store unpacked products on shelves, in bins, or in neat stacks, accessible for inspection.
- C. Exterior Storage:
 - 1. As referenced herein, "Exterior Storage" shall mean in a garage or elsewhere on site if and as approved by Owner, and at off-site locations.
 - 2. Provide substantial platforms blocking, or skids to support fabricated products 4" above ground, prevent soiling or staining.
 - 3. Cover products, subject to discoloration or deterioration from exposure to the elements, with impervious sheet coverings. Avoid use of non-vented plastic or canvas shelters which could create humidity chambers. Provide adequate ventilation to avoid condensation.
 - 4. Store loose granular materials on solid surfaces such as paved areas, or provide plywood or sheet materials to prevent mixing with foreign matter.
 - a. Provide surface drainage to prevent flow or ponding of rainwater.
 - b. Prevent mixing of refuse or chemically injurious materials or liquids.
- D. Arrange storage in manner to provide easy access for inspection.
- E. Move stored products which interfere with work in progress, the operations of the Owner, or separate contractor. Moving of stored products shall be

at no additional cost to the Owner.

1.7 MAINTENANCE OF STORAGE

- A. Maintain periodic system of inspection of stored products on schedules basis to assure that:
 - 1. State of storage facilities is adequate to provide required conditions.
 - 2. Required environmental conditions are maintained on continuing basis.
 - 3. Surfaces of products exposed to elements are not adversely affected. Any weathering of products, coatings, and finishes is not acceptable under requirements of Contract Documents.

1.8 PROTECTION AFTER INSTALLATION

- A. Provide protection of installed products to prevent damage from subsequent operations. Remove protection when no longer needed, prior to completion of work.
- B. Control traffic to prevent damage to equipment and surfaces.
- C. Provide coverings to protect finished surfaces from damage.

1.9 DAMAGED PRODUCTS

- A. Damaged or deteriorated materials shall be removed from the premises. Replace materials which have been damaged.

END OF SECTION 016510

SECTION 017310 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes procedural requirements for cutting and patching.

1.2 PRECONSTRUCTION MEETING

- A. Prior to commencing cutting and patching schedule meeting with Owner and related Subcontractors to discuss procedures to be followed in performing cutting and patching and measures to be taken to minimize disruption to residents, visitors, Owner's staff, and building utilities.

1.3 QUALITY ASSURANCE

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity, load-deflection ratio, or lateral force resisting capacity.
- B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or results in increased maintenance or decreased operational life or safety.
- C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, results in reducing their capacity to perform as intended, or results in increased maintenance or decreased operational life or safety.
- D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching.

1.4 WARRANTY

- A. Existing Warranties: All cutting and patching activities required as part of this project shall be warranted by the contractor against failure.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.

- B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
 - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
 - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
 - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Existing Utility Services and Mechanical/Electrical Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting to minimize interruption to occupied areas.

3.3 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

2. Do not cut concrete reinforcing steel or other structural elements, unless the Structural Engineer has reviewed the condition and approved the Work in advance. Relocate hole where necessary to avoid cutting structural elements. Patch abandoned hole.
- B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
1. In general, use hand or small power tools designed for sawing and 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.
 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 4. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 5. Proceed with patching after construction operations requiring cutting are complete.
 6. Core Drilling: To minimize noise disturbance to residents, core drilling is preferred over impact hammer drilling.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
 2. Exposed Finishes: 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.

- D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION 017310

SECTION 017400 CLEANING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

General provisions of the Contract, including General Conditions and Division 0 and Division 1 Specification Sections, apply to this Section; including but not limited to:

1.2 DESCRIPTION

Coordinate related requirements specified in other parts of the Project Manual. For cleaning of specific products refer to Manufacturer's directions. This Section specifies cleaning during and at conclusion of the Work.

1.3 DISPOSAL REQUIREMENTS

Conduct cleaning and disposal operations in compliance with governing codes, ordinances, regulations, anti-pollution laws.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Use only cleaning materials not damaging to surfaces and creating hazards to health or property.
- B. Use only cleaning materials and methods recommended by Manufacturer of surface material to be cleaned.
- C. Use cleaning materials only on surfaces recommended by cleaning material Manufacturer.

PART 3 - EXECUTION

3.1 DURING CONSTRUCTION

- A. Execute periodic daily cleaning to keep work, site, and adjacent properties free from accumulations of waste materials, rubbish, and debris resulting from construction.
- B. Protect new and existing materials from damage by construction debris. Contractor to provide protective covering on the stair well floors and walls at roof access areas.
- C. If the contractor uses the elevator for transporting materials and equipment, the contractor must install protective materials on the walls and floor to prevent damage.

- D. Contractor shall take care to minimize spread of scuff marks from shoe soles.
- E. Provide on-site containers for collection of waste materials, debris, and rubbish.
 - 1. Dispose of debris at legal disposal areas offsite.
 - 2. Use of building waste facilities and containers by construction personnel is prohibited.

3.2 DUST CONTROL

- A. Keep work spaces clean and free of dust throughout construction process on an as-needed basis.

3.3 FINAL CLEANING

Given that this project has multiple sites and involves multiple activities, the contractor shall instruct all sub-contractors to perform final cleaning as work is completed in each unit. Final Cleaning includes, but is not limited to the following:

- Clean up boot marks, hand prints, scuff marks and other blemishes that result from the work being performed.
- Removal of tools, packaging, materials, replaced fixtures, etc...

END OF SECTION 017400

SECTION 017700 – CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout for the following, but not limited to.
 - 1. Inspection procedures.
 - 2. Warranties.
 - 3. Final cleaning.
- B. See Division 1 Section "Payment Procedures" for requirements for Applications for Payment for Substantial Completion and Final Completion.
- C. See Division 1 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.2 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.
 - 1. Construction Schedule shall indicate dates by which Contractor's Punch List will be generated and punch list items will be completed.
 - 2. Contractor shall walk the Project and prepare a detailed list of items to be completed and corrected (Contractor's Punch List). Submit Contractor's Punch List to Owner for review. Contractor shall not walk the project or prepare Contractor's Punchlist until all items in the original scope of work have been completed. Contractor's punchlist may include items remaining to be completed that have been added to the original scope of the work by Change Order.
 - 3. Advise Owner of pending insurance changeover requirements.
 - 4. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 - 5. Advise Owner of any specific warranties that will start after date of Substantial Completion and the date of commencement for those specific warranties.

6. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 7. Prepare and submit Project Record Documents, operation and maintenance manuals, and similar final record information.
 8. Deliver tools, spare parts, controls software, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
 9. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 10. Complete startup testing of systems.
 11. Submit test/adjust/balance records.
 12. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 13. Advise Owner of changeover in heat and other utilities.
 14. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
 15. Complete final cleaning requirements, including touchup painting.
 16. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Owner will either proceed with inspection or notify Contractor of unfulfilled requirements. Owner will prepare the letter of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Owner, that must be completed or corrected before certificate will be issued.
1. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.
 2. Results of completed inspection will form the basis of requirements for Final Completion.

1.3 FINAL COMPLETION

- A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
 - 1. Submit a final Application for Payment according to Division 1 Section "Payment Procedures."
 - 2. Submit a copy of Owner's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Owner. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 - 3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 - 4. Coordinate with Subcontractors and Manufacturer, and provide to Owner's maintenance personnel the necessary technical information for maintaining new systems.
- B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Owner will either proceed with inspection or notify Contractor of unfulfilled requirements. Owner will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
 - 1. Re-inspection: Request re-inspection when the Work identified in previous inspections as being incomplete, completed or corrected.

1.4 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Preparation: Submit punch list to Owner via e-mail in a computer-generated format, using a software application that is used by the Owner. Include name and identification of each space and area affected by construction operations for items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1.5 WARRANTIES

- A. Submittal Time: Submit written warranties to the Owner for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated. Contractor shall communicate to Owner the warranty start dates for all newly installed systems
- B. Warranty Term: Follow warranty guidelines established in product specifications.

- C. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
 - 1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2 by 11 inch paper.
 - 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
 - 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
- D. Provide additional copies of each warranty to include in operation and maintenance manuals.

1.6 MAINTENANCE SERVICE

- A. During the construction period, all new systems installed shall be maintained by the General Contractor until an official In-Service or Startup Date has been established. Contractor is to submit for approval, to Owner in writing, the turnover of new completed systems and commencement of maintenance services other than date of Substantial Completion is indicated.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Provide final cleaning related to Contract work only. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average

commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations for the work related to Contract work only before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project: Pre-existing conditions are excluded from the following cleaning scope:
 - a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances produced by construction.
 - f. Remove debris and construction dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
 - g. Sweep concrete floors broom clean in unoccupied spaces.
 - h. Remove labels that are not permanent.
 - i. Leave Contract Work clean.
- C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 017700

SECTION 017820 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
 - 1. Operation information for systems, subsystems, and equipment.
 - 2. Maintenance information for the care and maintenance of systems and equipment.

1.2 SUBMITTALS

- A. Manual: Submit one copy of each manual in final form at least 7 days before final inspection. Owner will return copy with comments within 7 days after final inspection.
 - 1. Correct or modify each manual to comply with Owner's comments. Submit 2 copies of each corrected manual within 15 days of receipt of Owner's comments on the required corrections.

PART 2 - PRODUCTS

2.1 MANUALS, GENERAL

- A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain a title page, table of contents, and manual contents.
- B. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:
 - 1. Subject matter included in manual.
 - 2. Name and address of Project.
 - 3. Name and address of Owner.
 - 4. Date of submittal.

5. Name, address, and telephone number of Contractor.
 6. Cross-reference to related systems in other operation and maintenance manuals.
- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
- D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
1. Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2 by 11 inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
 - a. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.
 2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
 3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software diskettes for computerized electronic equipment.

2.2 OPERATION INFORMATION

- A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and equipment descriptions, operating standards, operating procedures, operating logs, wiring and control diagrams, and license requirements.
- B. Descriptions: Include the following:
1. Product name and model number.
 2. Manufacturer's name.

3. Equipment identification with serial number of each component.
 4. Equipment function.
 5. Operating characteristics.
 6. Limiting conditions.
 7. Performance curves.
 8. Engineering data and tests.
 9. Complete nomenclature and number of replacement parts.
- C. Operating Procedures: Include start-up, break-in, and control procedures; stopping and normal shutdown instructions; routine, normal, seasonal, and weekend operating instructions; and required sequences for electric or electronic systems.
- D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
- E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification, flow directions, name piping source example "hot or cold water".
- F. Piped Systems: Provide updated valve tag schedule.

2.3 PRODUCT MAINTENANCE INFORMATION

- A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
- B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- C. Product Information: Include the following, as applicable:
1. Product name and model number.
 2. Manufacturer's name.

3. Color, pattern, and texture.
 4. Material and chemical composition.
 5. Reordering information for specially manufactured products.
- D. Maintenance Procedures: Include manufacturer's written recommendations and inspection procedures, types of cleaning agents, methods of cleaning, schedule for cleaning and maintenance, and repair instructions.
 - E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
 - F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
- 2.4 SYSTEMS AND EQUIPMENT MAINTENANCE INFORMATION
- A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.
 - B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents.
 - C. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
 - D. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including maintenance instructions, drawings and diagrams for maintenance, nomenclature of parts and components, and recommended spare parts for each component part or piece of equipment:
 - E. Maintenance Procedures: Include test and inspection instructions, troubleshooting guide, disassembly instructions, and adjusting instructions, and demonstration and training videotape if available, that detail essential maintenance procedures:
 - F. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.

- G. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
- I. Provide all necessary software, technical manuals, programming codes, tools, for all new systems installed.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

- A. Product Maintenance Information: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- B. Operation and Maintenance Information: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
- C. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.
 - 1. Do not use original Project Record Documents as part of operation and maintenance manuals.

END OF SECTION 017820

SAMPLE FORMS

PART 1 - GENERAL

1.1 SUMMARY

- A. The forms listed below and included in this section are referenced in other sections, and are to be used by the Contractor prior to and during the course of this project:

| |
|----------------------------------------------------------------------------------------------|
| Daily Construction Quality Control Report (to be used by Contractor for daily field reports) |
| Request for Information Form |
| Request for Substitution Form |
| Certificate of Equal Performance |
| Submittal cover sheet |

- B. AIA G702 and 703 Application and Certificate for Payment are available from AIA or the Contractor may submit an equal form approved by the Owner.

DAILY CONSTRUCTION QUALITY CONTROL REPORT (SAMPLE FORM)

Work on Date: _____

Report #: __

Contract Title: _____

Location: _____

Weather: __ Clear: _____ Partly Cloudy: __ Rainfall: (_ % of workday)

Temperature during workday: High __ degree F. Low _____ degree F.

1. Work performed by Contractor/Subcontractor(s):

| Contractor Name: (Trade) | Number of Personnel | Craft/ Hours | Work Performed (Location) |
|-----------------------------|------------------------|-----------------|------------------------------|
| | | | |

2. Equipment Data:

| Type, Size, Etc. | Owned | Rented | Hours Used | Hours Standby |
|------------------|-------|--------|------------|---------------|
| | | | | |

3. Accidents/Unusual Events:

| |
|--|
| |
| |

4. Owner Directions/Decisions:

| |
|--|
| |
| |

5. Services Connected/Disconnected:

| |
|--|
| |
| |

6. Stoppages/Delays/Shortages/Losses:

| |
|--|
| |
| |

7. Emergency Procedures:

| |
|--|
| |
| |

8. Remarks:

| |
|--|
| |
| |

Contractor's Verification: The above report is complete and correct. All materials, equipment used and work performed during this reporting period are in compliance with the contract documents except as noted herein:

COMPLETED BY:

 (Print name)

 (Signature)

 (Date)

END OF DAILY CONSTRUCTION QUALITY CONTROL REPORT

REQUEST FOR INFORMATION (SAMPLE FORM)

RFI Number: _____

Project: _____

Description:

Date Sent:

Reference:

Date Needed:

Cost Impact:

Schedule Impact:

CONTRACTOR'S QUESTION AND PROPOSED ANSWER

I have thoroughly reviewed the Contract Documents and determined that required information is not included therein and that this RFI is necessary.

Question

Proposed Answer

By:
Firm:

Date:

OWNER'S/CONSULTANT'S RESPONSE

Response

By:

Date:

END OF REQUEST FOR INFORMATION

REQUEST FOR SUBSTITUTION (SAMPLE FORM)

REQUEST NO. _____ (assigned by A/E)

A completed copy of this form must be submitted to the Owner and Consultant for a substitution to be considered. If the substitution is given initial approval, the Contractor shall submit a completed copy of the form titled "Certification of Equal Performance and Assumption of Liability for Equal Performance," in order for the substitution to be considered fully approved.

Project: _____

Address: _____

Dated: _____

Architect: _____

Address: _____

In order to give proper consideration to all request for approval, the following information shall be supplied and all questions answered:

1. Nature of request: _____

2. Specification Section(s) affected: _____

3. Drawing details affected: _____

4. Will the substitution affect the project schedule, and if so, state number of days added or deleted: _____

5. Does the change affect dimensions shown on the plans in any way: _____

If yes, please clearly indicate changes on the submittal(s)

6. What effect does the change have on any other trades? _____

7. Does the change meet all applicable code or ordinance requirements? _____

8. Is there a cost or maintenance benefit to the Owner? _____

a. If cost benefit, how much? _____

b. If maintenance benefit, explain how: _____

9. Submit with request all necessary samples and substantiating data; Including shop drawings, catalog cuts, performance and test data; to prove conformance to the contract Documents, equal quality and performance to that which is specified. Clearly mark manufacturer's literature to indicate quality in performance.

10. Will the undersigned pay for any engineering or detailing cost caused by the requested change? _____

Firm: _____

Address: _____

Phone: _____ Date: _____

Name of Proposer: _____

Title: _____

Signature: _____

END OF REQUEST FOR SUBSTITUTION

**CERTIFICATION OF EQUAL PERFORMANCE AND ASSUMPTION OF LIABILITY
FOR EQUAL PERFORMANCE**

Project: _____

Address: _____

Description of Substitution: _____

Architect: _____

Address: _____

The undersigned has thoroughly studied the plans and specifications for the above project and guarantees by this signature that the requested material equipment or system substitution or change in construction procedure or technique will in addition to conforming to any and all applicable code requirements, perform equal to or better than that material, or combination of materials, presently detailed and specified.

Firm: _____

Address: _____

Phone: _____ Date: _____

Name: _____ Title: _____

Signature: _____

Note: Signature must be by person having authority to legally bind his firm to the above terms. Failure to provide legally binding signature will result in retraction of approval.

Accepted by Architect

Accepted by Owner

By: _____

Date: _____

END OF CERTIFICATION OF EQUAL PERFORMANCE

SUBMITTAL COVER SHEET (SAMPLE FORM)

| Contract No. _____ Submittal No. _____ Resubmittal () Previous Subm. No. _____ Subcontractor or Supplier: _____ | | | | | | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|--------------------------|------------------------------------------|-------|
| This section to be completed by Contractor. | | | | | | This Section to be Completed By Reviewer | |
| Item No. | *P/C | Spec. Paragraph | Contractor's Cat. or Dwg. No. | Description of Item | Copies Subm. | Review Action | Notes |
| 1. | | | | | | | |
| 2. | | | | | | | |
| 3. | | | | | | | |
| 4. | | | | | | | |
| 5. | | | | | | | |
| 6. | | | | | | | |
| 7. | | | | | | | |
| 8. | | | | | | | |
| Contractor certifies to Review of Submittal, Verification of Field Measurements and Compliance with Contract Document. By: _____ Date: _____ | | | Legend-Review Action 1. No exceptions taken () 2. Note markings () 3. Comments attached 4. Rejected () Partial Submittal Completed Submittal | | Distribution: | By (Print) | Date |
| | | | | | Initial Review Completed | | |
| Deviation: Yes ___ No ___ Substitution: Yes ___ No ___ | | | | | | | |
| Remarks: | | | | | Final Review | | |
| | | | | | Returned to Contractor | | |

END OF SUBMITTAL COVER SHEET

TECHNICAL SPECIFICATIONS

Division 00 GENERAL CONDITIONS

Section 00 00 01 Existing Conditions

Section 00 00 02 General Instruction to Contractor

Division 02 DEMOLITION

Section 02 00 00 Selective Demolition

Division 09 FINISHES

Section 09 01 00 Gypsum Wallboard

Section 09 90 00 Painting

Division 12 FURNISHINGS

Section 12 35 30 Residential Casework

Section 12 36 61 Countertops

Division 22 PLUMBING

Section 22 00 00 General Plumbing Requirements

VOLUME 3
DRAWING PLAN