

## **Division 01**

SECTION 011200.1  
SUMMARY OF WORK – CONTRACT #1G

**CONTRACT #1G – GENERAL CONSTRUCTION CONTRACT**

**PART 1. GENERAL**

**1.01 SUMMARY**

- A. Contract #1G consists of the following: furnishing and installing all of the building components for the Port Ewen Fire House. This includes general site work, excavation, foundation systems, masonry, insulation, roofing, building systems, interior finishes, an elevator, kitchen, etc..

**1.02 PROJECT AND SITE CONDITIONS**

- A. Project and site conditions are generally illustrated on the Drawings. CONTRACTOR is responsible for inspecting all work locations and familiarizing himself with conditions affecting the work prior to submitting a bid for the work.
- B. The approximate locations of known underground utilities are shown on Drawings for CONTRACTOR's information. This does not relieve CONTRACTOR from the requirement to locate and protect the utilities.

**1.03 COORDINATION WITH OTHER PRIME CONTRACTORS**

- A. This project will involve coordination with other contracts. All Prime CONTRACTORS shall attend the pre-construction meeting with the OWNER and the ENGINEER.
- B. It is the responsibilities of each Primes CONTRACTORS to coordinate his work with the other Prime CONTRACTORS in order that the construction may proceed in an efficient and logical manner.
  - 1. The CONTRACTOR shall have no claim or claims whatever against the OWNER, the ENGINEER, other Prime CONTRACTORS, or other parties due to delays or other reasons caused by the work by others or his failure to coordinate such work; nor will the OWNER or ENGINEER certify to or guarantee the completion time of work being done by others.
  - 2. The CONTRACTOR shall request from the other Prime CONTRACTORS copies of the relevant shop drawings/submittals approved by the ENGINEER.
- C. All of the Prime CONTRACTORS shall create and agree upon a work schedule for this project that must also be agreed upon by the OWNER and the ENGINEER.
  - 1. Any changes to the approved work schedule must be agreed upon by all Prime CONTRACTORS and the OWNER and the ENGINEER.
- D. Technical specifications regarding work that involves more than one Prime CONTRACTOR shall be included in all relevant Contract Documents.
  - 1. These specification sections are provided for informational purposes only.

**1.04 COORDINATION WITH UTILITY COMPANIES**

- A. The CONTRACTOR shall notify NYS Dig Safe and pertinent utility companies 72 hours in advance of doing any work at or adjacent to said utilities.

**1.05 DESIGN ENGINEER'S ESTIMATE OF QUANTITIES**

- A. Bid Items and estimated quantities are presented on the Bid Form included in these Contract Documents. The estimated quantities for unit price pay items are approximate only and are included solely for the purpose of comparison of bids.

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- B. The OWNER does not expressly or by implication agree that the nature of the materials encountered below the surface of the ground or the actual quantities of materials encountered or required will correspond therewith and reserves the right to increase or decrease any quantity or to eliminate any quantity as OWNER may deem necessary.
- C. CONTRACTOR will not be entitled to any adjustment in a unit bid price as a result of any change in an estimated quantity and agrees to accept the aforesaid unit bid prices as complete and total compensation for any additions or deductions caused by a variation in quantities, as a result of more accurate field measurement or by any changes or alterations in the Work ordered by the OWNER. If the actual quantities measured in the field are 100 % over or under the original estimated quantities, then the unit price may be adjusted by negotiation.

1.06 UNIT PRICE WORK REQUIREMENTS INCLUDE

- A. This section identifies Bid items by number and lists applicable Specification sections and method of measurement and payment.
- B. Provide all labor, materials, equipment, supplies, supervision, and all services necessary to furnish and install each Bid item as required by Contract Documents.

1.07 MEASUREMENTS FOR PAYMENT

- A. Bid items
  - 1. For unit price items, the CONTRACTOR shall be paid based on actual quantities measured in the field as shown on the pay limits of the contract plans and described in the bid form times the unit price on the bid form. The measurement for each bid item is listed under Part 3 of this specification.
  - 2. For lump sum items, the CONTRACTOR shall be paid either by partial payments or Lump Sum after the completion of the bid item. For partial payments, the CONTRACTOR shall submit for ENGINEER's review and approval a "schedule of values" that shall provide the basis for partial payments. The total costs of all components of work shall equal the Lump Sum bid for this Item.
- B. CONTRACTOR shall prepare monthly payment requests in a standard form as given by the ENGINEER. CONTRACTOR shall review a preliminary payment request with the ENGINEER prior to submittal of the formal request.
- C. On a daily basis as required, CONTRACTOR shall review daily production and payment quantities with the ENGINEER.
- D. After the completion of the project, the measurements for each bid item shall be re-measured. The remaining payments from the OWNER to the CONTRACTOR shall be adjusted accordingly to the final measurements of the bid items.

PART 2. PRODUCTS

This section is not used. Refer to individual specification sections for more information on each bid item.

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PART 3. EXECUTION

3.01 MOBILIZATION AND GENERAL CONSTRUCTION

- A. Mobilization and General Construction bid item for the project shall be no more than the maximum 3.0 % of the total project cost.
- B. Measurement and Payment for these items will be made as progress payments against the Lump Sum Prices bid for Bid Items G.1 on the Bid Form included in the Contract Documents.
- C. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
  - 1. Upon completion of mobilization as approved by the ENGINEER, one-third (1/3) of the items shall be considered complete and payments made.
  - 2. The remainder of the payments under these Items shall be made on a regular monthly basis that accounts for equal payment for General Construction Work throughout the Contract schedule, except that ENGINEER may withhold such payments for failure to complete General Construction work not specifically included elsewhere in the Documents, provided 10-days advance written notice has been provided to CONTRACTOR of the deficiency.
- D. The lump sum bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. Record Drawings and Project Photos.
  - 2. Certified Payrolls and other project documentation.
  - 3. Maintenance and documentation of project schedule.
  - 4. Maintenance of temporary field facilities.
  - 5. Maintenance of required insurance and Bonds.
  - 6. Shop drawings and material submittals
  - 7. As-built drawings
  - 8. Health and Safety Plans
  - 9. Mobilization of equipment
  - 10. Mobilization of work force
  - 11. Furnish and install temporary light during construction.
  - 12. All other work required by the Contract Documents but not listed individually under other Bid Items.

**Bid Item G.1 – Mobilization and General Construction**

3.02 GENERAL SEDIMENTATION AND EROSION CONTROL

- A. Measurement and Payment for general sedimentation and erosion controls shall be a Lump Sum cost spread out over the entire length of the project. These items must be installed and maintained in accordance with NYS Department of Environmental Conservation (NYS DEC) and with the Sediment and Erosion Control Plans. This lump sum cost shall include all items as detailed in the Sediment and Erosion Control Plans and/or shown on the Contract Plans. The payments under this Item shall be made on a regular monthly basis that accounts for equal payment for sedimentation and erosion controls throughout the Contract schedule, except that ENGINEER may withhold such payments for failure to complete erosion control work, provided 10-days advance written notice has been provided to CONTRACTOR of the deficiency.

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- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. The general sediment and erosion control shall include all costs associated with complying with the erosion control plans as shown on the Contract Plans. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including but not limited to:
  - 1. Layout and site preparation
  - 2. Furnish and installing silt fence, culvert inlet protective devices (stone & block drop inlet protection, curb drop inlet protection, grate filters (inlet), HDPE culvert inlet protection, combo silt fence/check dam inlet protection) as required by or shown on the Contract Plans.
  - 3. Installing and maintaining all additional sediment and erosion control devices as required to maintain full compliance with NYSDEC stormwater discharge requirements. These control devices may not be shown on the Contract Plans as the dewatering methods are within the means and methods of the CONTRACTOR and the control devices are a function of the dewatering method. All costs for these control devices shall be included in as part of this bid price.
  - 4. Furnish and completing all dust control, dewatering operations, and daily seeding, mulching, and rough grading.
  - 5. Maintenance of all sediment and erosion control components during the entire construction phase.
  - 6. General compliance with the sediment and erosion control plan.

**Bid Item G.2** – Provide and install all general sediment and erosion control necessary to protect the environment in accordance with NYSDEC and the erosion control plans, as provided in the Contract Documents.

3.03 BURIED UTILITY LOCATING

- A. Measurement for payment for this item will be made on a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment for this item shall be made based on the Lump Sum bid on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- C. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. The CONTRACTOR shall procure the services of a qualified utility locator to accurately locate all buried utilities. The utility locator shall locate all buried utilities within the grounds of the WWTP and offsite pump stations.
  - 2. The utility locator shall accurately mark each utility in accordance with NYS Code Rule 753.
  - 3. The CONTRACTOR shall be responsible to maintain the utility markings (or demonstrate record keeping which allow for the utilities locations and type to remain known) for the duration of the project. In the event of the markings being lost, the CONTRACTOR shall procure the services of the utility locator to relocate the utilities at no additional cost to the OWNER. CONTRACTOR is responsible for providing OWNER with a AutoCAD 2016 compatible file that ENGINEER can insert into construction and as-built drawings
  - 4. Other appurtenant and incidental work

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**Bid Item G.3** – Locate and maintain all markings of all buried utilities within the firehouse grounds site according to these Contract Documents and the above conditions.

3.04 EXCAVATION

- A. Measurement and Payment for furnishing and installing excavation at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item G.4 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. Layout and field survey.
  - 2. Preparation and submission of a P.E. stamped shoring and dewatering plan.
  - 3. Site preparation including all clearing and grubbing and the proper disposal of excess materials.
  - 4. Excavation, temporary sheathing, shoring, and bracing.
  - 5. Excavation of all excess materials on the site as required to bring the site to final grade.
  - 6. Furnishing and excavating all fill material on the site to bring the site to final grade.
  - 7. Environmental controls and protection as required by the plans and permits.
  - 8. Disposal of all excavated material which is unsuitable for unclassified backfill and disposal of all excess material per NYS DEC requirements
  - 9. Other appurtenant and incidental work.

**BID ITEM G.4** - Excavation for all site work, foundations, utilities, and services at the Port Ewen Fire House building according to these Contract Documents and the above conditions.

3.05 DEWATERING

- A. Measurement and Payment for furnishing and installing dewatering of the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item G.5 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. All components necessary to dewater the site for construction in conformance with dewatering plan.
  - 2. Other appurtenant and incidental work.

**BID ITEM G.5** - Dewatering at the Port Ewen Fire House building according to these Contract Documents and the above conditions.

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3.06 WATER, SANITARY YARD PIPING, AND PUMP STATION

- A. Measurement and Payment for furnishing and installing water and sewer components of the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item G.6 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. Furnish and install pump station, grease trap, oil-water separator and other structures as shown on the plans.
  - 2. Furnish and install force main to connect the firehouse to the municipal sewer system.
  - 3. Furnish and install potable water piping from municipal water system to the firehouse.
  - 4. Other appurtenant and incidental work.

**BID ITEM G.6** - Furnish and install the water and sewer services to the Port Ewen Fire House building according to these Contract Documents and the above conditions.

3.07 STORM WATER DRAINAGE AND STRUCTURES

- A. Measurement and Payment for furnishing and installing storm water and drainage structures of the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item G.7 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. Furnish and install stormwater drainage piping, structures, frames and grates.
  - 2. This item includes all subgrade, fabric, grade rings and incidental items to complete a functional installation.
  - 3. This Item includes the drainage systems and structures to the limits of the pretreatment structure and underground detention system.
  - 4. Other appurtenant and incidental work.

**BID ITEM G.7** - Furnish and install the water and sewer services to the Port Ewen Fire House building according to these Contract Documents and the above conditions.

3.08 UNDERGROUND STORM WATER DETENTION SYSTEM AND PRETREATMENT STRUCTURE

- A. Measurement and Payment for furnishing and installing underground storm water detention system and pretreatment structure components of the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.

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- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item G.8 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. Furnish and install stormwater pretreatment structure and components to connect it to the drainage system and detention system.
  - 2. Furnish and install the storm water detention system.
  - 3. This item includes all subgrade, fabric, grade rings and incidental items to complete a functional installation.
  - 4. Other appurtenant and incidental work.

**BID ITEM G.8** - Furnish and install underground storm water detention system and pretreatment structure components at the Port Ewen Fire House building according to these Contract Documents and the above conditions.

3.09 SUBBASE PREPARATION

- A. Measurement and Payment for furnishing and installing subbase components of the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item G.9 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. Furnishing, placing and compacting subbase for building.
  - 2. Furnishing, placing and compacting subbase for paved and sidewalk areas of the site to the lines and grades shown on the plans.
  - 3. Finished subgrade shall maintain a reveal on all structures, sidewalks so as to allow placement of pavement to provide a continuous surface with asphalt depths specified.
  - 4. 12" subbase in all parking lots and roadways.

**BID ITEM G.9** - Furnishing and installing subbase at the Port Ewen Fire House building according to these Contract Documents and the above conditions.

3.10 CAST-IN-PLACE CONCRETE

- A. Measurement and Payment for furnishing and installing new foundation and slab components in the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item G.10 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:

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1. Layout and survey including under slab survey using ground penetrating radar.
1. Furnishing and installing the following including but not limited to:
  - all shoring and bracing
  - all applicable structural fill, backfill, geotextile fabric and compaction
  - all design, furnishing and erection of shoring and bracing
  - all waterstops, anchor bolts, chamfer strips, wall sleeves, grating embedment and miscellaneous penetrations (CONTRACTOR shall coordinate all hardware locations with the applicable equipment supplier)
  - all wall sleeves and castings
  - all reinforcement and concrete
  - all precast concrete
  - all applicable concrete sealants
  - all concrete fill, complete with all applicable coordination with all equipment suppliers
  - all equipment isolation pads as shown on the Contract Plans or recommended by the equipment supplier
  - all construction, contraction and expansion joints per the Contract Plans
  - Sidewalks
2. Temporary support and maintenance of other utilities and structures affected by the work.
3. Other appurtenant and incidental work

**BID ITEM G.10** - Construction of all structure components of the Port Ewen Fire House building according to these Contract Documents and the above conditions.

3.11 STRUCTURAL STEEL

- A. Measurement and Payment for furnishing and installing new structural components in the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item G.11 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  1. Layout and survey all structural steel components.
  2. Furnishing and installing the following including but not limited to:
    - Columns
    - Trusses
    - Concrete over steel decks
    - All structural steel components.
    - Miscellaneous penetrations (CONTRACTOR shall coordinate all hardware locations with the applicable equipment supplier)
  3. Other appurtenant and incidental work

**BID ITEM G.11** - Construction of all structure steel components of the Port Ewen Fire House building according to these Contract Documents and the above conditions

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3.12 ASPHALT

- A. Measurement and Payment for furnishing and asphalt pavement at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item G.12 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. Layout and survey.
  - 2. Furnish 4” new asphalt binder
  - 3. Furnishing and Installing 2” asphalt top course paving.
  - 4. Provide pavement markings as indicated on contract drawings
  - 5. Other appurtenant and incidental work

**Bid Item G.12** – Furnish and install all asphalt paving for the Port Ewen Fire House.

3.13 PERMEABLE PARKING AREA

- A. Measurement and Payment for furnishing and installing the permeable parking area at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item G.13 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. Layout and survey.
  - 2. Furnish and install subgrade and subbase.
  - 3. Furnish and install fabric.
  - 4. Furnish and install permeable paving system.
  - 5. Furnish and install top soil and seed.
  - 6. Other appurtenant and incidental work.

**Bid Item G.13** – Furnish and install permeable parking area

3.14 GAS SERVICE

- A. Measurement and Payment for furnishing and installing natural gas service at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.

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- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item G.14 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. Layout and survey.
  - 2. Provide all excavation, trenching, and restoration required by Central Hudson for the installation of new gas piping.
  - 3. Provide shutoff valve and valve box.
  - 4. Provide all needed piping and fittings required for a complete installation.
  - 5. Other appurtenant and incidental work

**Bid Item G.14** – Furnish and install natural gas service for the Port Ewen Fire House.

3.15 LANDSCAPING AND RESTORATION

- A. Measurement and Payment furnishing and installing landscaping and restoration at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item G.15 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. Provide all material and labor needed to restore site to pre-construction conditions.
  - 2. Furnish and install landscaping per contract drawings and specifications.
  - 3. Other appurtenant and incidental work

**Bid Item G.15** – Landscaping and Restoration

3.16 EXTERIOR WALL SYSTEM AND VENEER

- A. Measurement and Payment furnishing and installing exterior wall system at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item G.16 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. Furnish and install block walls as shown on the plans complete with blocking, firestops and bracing.

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2. Furnish and install anchorage at all wall bases and engineered wall connectors as shown on the plans.
3. Furnish and install all exterior brick and stone veneer.
4. Furnish and install insulation and vapor barriers as specified.
5. Furnish and install all sills and soffits.
6. All other components of the exterior wall system shown on plans.

**Bid Item G.16** – Furnish and install all exterior wall systems and veneers.

3.17 INTERIOR WALLS

- A. Measurement and Payment furnishing and interior walls at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item G.17 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  1. Furnish and install all interior walls as shown on the plans.
  2. Furnish and install anchorage at all wall bases. Anchor top of wall to trusses or brace corners in a manner acceptable to the Engineer.
  3. Furnish and install insulation as per the Architectural sheet schedules.
  4. Furnish and install sheetrock and tape/plaster or other materials per the Architectural sheet schedules.
  5. Furnish and install painting on all interior surfaces per architectural sheets and specifications

**Bid Item G.17** – Furnish and install interior walls.

3.18 CEILINGS

- A. Measurement and Payment furnishing and installing ceilings at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item G.18 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  1. Furnish and install ceilings per architectural plans and specifications.
  2. Furnish and install ceiling grid and tiles in areas per the Architectural sheet schedules.
  3. Coordinate and lay-out grid around HVAC and lighting fixtures

**Bid Item G.18** – Furnish and install ceilings.

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3.19 WINDOWS

- A. Measurement and Payment furnishing and installing windows at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item G.19 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. Furnish and install windows as per the Architectural sheet schedules.
  - 2. Frame out and shim rough opening apply drainage mat.
  - 3. Install window shimming opening to provide a tight installation.
  - 4. Apply flashing, seal vapor barrier and create a continuous air seal on the interior by integrating the rough opening and the window frame with low expansion polyurethane foam or backer rod and sealant.
  - 5. Ensure weep holes/channels are clear of debris for proper water drainage. Do not seal weep holes/channels.
  - 6. Trim out and seal exterior frames to provide a weathertight assemble.
  - 7. Trim out interior of window

**Bid Item G.19** – Furnish and install windows.

3.20 DOORS

- A. Measurement and Payment furnishing and installing doors at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item G.20 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. Furnish and install interior doors with sizes, openings and ratings as per the Architectural sheet schedules
    - a. Frames, square, plumb and brace rough openings.
    - b. Install frame lapping over sheetrock and level and square the frame.
    - c. Hang doors and test for smooth closing and operation, and adjust as required.
    - d. Paint door as per painting specification
  - 2. Furnish and install exterior doors with sizes, openings and ratings as per the Architectural sheet schedules
    - a. Frames, square, plumb and brace rough openings.
    - b. Install frame lapping over interior sheetrock and level and square the frame.
    - c. Hang doors and test for smooth closing and operation, and adjust as required.

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- d. Provide backer rod, trim and caulking to maintain exterior vapor barrier and provide a weathertight seal.
- e. Paint door as per painting specification

**Bid Item G.20** – Furnish and install doors

3.21 FLOORING

- A. Measurement and Payment furnishing and installing flooring at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item G.21 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. Furnish and install flooring as per the Architectural sheet schedules and specifications.

**Bid Item G.21** – Furnish and install flooring.

3.22 ROOFING

- A. Measurement and Payment furnishing and installing roofing at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item G.22 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. Furnish and install roofing system.
  - 2. Furnish and install soffit, end caps, snow guards and vents as specified and as shown on the plans Frames, square, plumb and brace rough openings.
  - 3. Furnish and install gutter system.

**Bid Item G.22** – Furnish and install roofing system

3.23 ELEVATOR & STAIRWAYS

- A. Measurement and Payment furnishing and installing elevators and stairways at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.

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SUMMARY OF WORK – CONTRACT #1G

- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item G.23 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. Furnish and install the elevator.
  - 2. Furnish and install the elevator control panel and accessories.
  - 3. Furnish and install sump pump and associated equipment.
  - 4. Furnish and install all stairways

**Bid Item G.23** – Furnish and install elevator and stairways

3.24 INSULATION

- A. Measurement and Payment furnishing and installing insulation at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item G.24 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. Furnish and install insulation.

**Bid Item G.24** – Furnish and install insulation system

3.25 LOCKERS, CABINETS, AND COUNTERS

- E. Measurement and Payment furnishing and installing lockers at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- F. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- G. Payment for this item shall be made based on the Lump Sum bid for Bid Item G.25 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- H. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. Furnish and install lockers.
  - 2. Furnish and install cabinets
  - 3. Furnish and install counters

**Bid Item G.25** – Furnish and install lockers, cabinets, and counters.

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SUMMARY OF WORK – CONTRACT #1G

3.26 SIGNAGE

- A. Measurement and Payment furnishing and installing signage at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item G.26 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. Furnish and install signage on the building.
  - 2. Furnish and install signage on the site.

**Bid Item G.26** – Furnish and install signage

**BID ALTERNATE #1 – VINTAGE VEHICLE BAY**

3.27 VINTAGE VEHICLE BAY

- A. Measurement and Payment furnishing and installing the vintage vehicle bay at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item AT.1 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. Furnish and install grading for vintage vehicle bay.
  - 2. Furnish and install foundation for vintage vehicle bay.
  - 3. Furnish and install structural walls for vintage vehicle bay.
  - 4. Furnish and install brick and stone veneer for vintage vehicle bay.
  - 5. Furnish and install doors and windows for vintage vehicle bay.
  - 6. Furnish and install painting for vintage vehicle bay
  - 7. Furnish and install insulation for vintage vehicle bay
  - 8. Furnish and install roofing system for vintage vehicle bay.
  - 9. Furnish and install all other components of the vintage vehicle per the architectural and structural plans.

**Bid Item AT.1** – Vintage vehicle bay

**BID ALTERNATE #2 – ABOVE GROUND STORMWATER**

3.28 ABOVE GROUND STORMWATER

- A. Measurement and Payment furnishing and installing the vintage vehicle bay at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.

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SUMMARY OF WORK – CONTRACT #1G

- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item AT.2 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. Furnish and install above ground stormwater system per drawings and specifications.

**Bid Item AT.2** – Furnish and install above ground storm water system.

END OF SECTION

SECTION 011200.2  
SUMMARY OF WORK – CONTRACT #1E

**CONTRACT #1E– ELECTRICAL CONTRACT**

**PART 1. GENERAL**

**1.01 SUMMARY**

- A. Contract #1E consists of the following: furnishing and installing all of the electrical components of the Port Ewen Fire House. This includes general electrical work associated with installing lighting, receptacles, phone lines, computer network, building control systems, heating, and ventilation.

**1.02 PROJECT AND SITE CONDITIONS**

- A. Project and site conditions are generally illustrated on the Drawings. CONTRACTOR is responsible for inspecting all work locations and familiarizing himself with conditions affecting the work prior to submitting a bid for the work.
- B. The approximate locations of known underground utilities are shown on Drawings for CONTRACTOR's information. This does not relieve CONTRACTOR from the requirement to locate and protect the utilities.

**1.03 COORDINATION WITH OTHER PRIME CONTRACTORS**

- A. This project will involve coordination with other contracts. All Prime CONTRACTORS shall attend the pre-construction meeting with the OWNER and the ENGINEER.
- B. It is the responsibilities of each Primes CONTRACTORS to coordinate his work with the other Prime CONTRACTORS in order that the construction may proceed in an efficient and logical manner.
  - 1. The CONTRACTOR shall have no claim or claims whatever against the OWNER, the ENGINEER, other Prime CONTRACTORS, or other parties due to delays or other reasons caused by the work by others or his failure to coordinate such work; nor will the OWNER or ENGINEER certify to or guarantee the completion time of work being done by others.
  - 2. The CONTRACTOR shall request from the other Prime CONTRACTORS copies of the relevant shop drawings/submittals approved by the ENGINEER.
- C. All of the Prime CONTRACTORS shall create and agree upon a work schedule for this project that must also be agreed upon by the OWNER and the ENGINEER.
  - 1. Any changes to the approved work schedule must be agreed upon by all Prime CONTRACTORS and the OWNER and the ENGINEER.
- D. Technical specifications regarding work that involves more than one Prime CONTRACTOR shall be included in all relevant Contract Documents.
  - 1. These specification sections are provided for informational purposes only.

**1.04 COORDINATION WITH UTILITY COMPANIES**

- A. The CONTRACTOR shall notify NYS Dig Safe and pertinent utility companies 72 hours in advance of doing any work at or adjacent to said utilities.

**1.05 DESIGN ENGINEER'S ESTIMATE OF QUANTITIES**

- A. Bid Items and estimated quantities are presented on the Bid Form included in these Contract Documents. The estimated quantities for unit price pay items are approximate only and are included solely for the purpose of comparison of bids.

SECTION 011200.2  
SUMMARY OF WORK – CONTRACT #1E

- B. The OWNER does not expressly or by implication agree that the nature of the materials encountered below the surface of the ground or the actual quantities of materials encountered or required will correspond therewith and reserves the right to increase or decrease any quantity or to eliminate any quantity as OWNER may deem necessary.
- C. CONTRACTOR will not be entitled to any adjustment in a unit bid price as a result of any change in an estimated quantity and agrees to accept the aforesaid unit bid prices as complete and total compensation for any additions or deductions caused by a variation in quantities, as a result of more accurate field measurement or by any changes or alterations in the Work ordered by the OWNER. If the actual quantities measured in the field are 100 % over or under the original estimated quantities, then the unit price may be adjusted by negotiation.

1.06 UNIT PRICE WORK REQUIREMENTS INCLUDE

- A. This section identifies Bid items by number and lists applicable Specification sections and method of measurement and payment.
- B. Provide all labor, materials, equipment, supplies, supervision, and all services necessary to furnish and install each Bid item as required by Contract Documents.

1.07 MEASUREMENTS FOR PAYMENT

- A. Bid items
  - 1. For unit price items, the CONTRACTOR shall be paid based on actual quantities measured in the field as shown on the pay limits of the contract plans and described in the bid form times the unit price on the bid form. The measurement for each bid item is listed under Part 3 of this specification.
  - 2. For lump sum items, the CONTRACTOR shall be paid either by partial payments or Lump Sum after the completion of the bid item. For partial payments, the CONTRACTOR shall submit for ENGINEER's review and approval a "schedule of values" that shall provide the basis for partial payments. The total costs of all components of work shall equal the Lump Sum bid for this Item.
- B. CONTRACTOR shall prepare monthly payment requests in a standard form as given by the ENGINEER. CONTRACTOR shall review a preliminary payment request with the ENGINEER prior to submittal of the formal request.
- C. On a daily basis as required, CONTRACTOR shall review daily production and payment quantities with the ENGINEER.
- D. After the completion of the project, the measurements for each bid item shall be re-measured. The remaining payments from the OWNER to the CONTRACTOR shall be adjusted accordingly to the final measurements of the bid items.

PART 2. PRODUCTS

This section is not used. Refer to individual specification sections for more information on each bid item.

PART 3. EXECUTION

SECTION 011200.2  
SUMMARY OF WORK – CONTRACT #1E

3.01 MOBILIZATION AND GENERAL CONSTRUCTION

- A. Mobilization and General Construction bid item for the project shall be no more than the maximum 3.0 % of the total project cost.
- B. Measurement and Payment for these items will be made as progress payments against the Lump Sum Prices bid for Bid Items E.1 on the Bid Form included in the Contract Documents.
- C. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
  - 1. Upon completion of mobilization as approved by the ENGINEER, one-third (1/3) of the items shall be considered complete and payments made.
  - 2. The remainder of the payments under these Items shall be made on a regular monthly basis that accounts for equal payment for General Construction Work throughout the Contract schedule, except that ENGINEER may withhold such payments for failure to complete General Construction work not specifically included elsewhere in the Documents, provided 10-days advance written notice has been provided to CONTRACTOR of the deficiency.
- D. The lump sum bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. Record Drawings and Project Photos.
  - 2. Certified Payrolls and other project documentation.
  - 3. Maintenance and documentation of project schedule.
  - 4. Maintenance of temporary field facilities.
  - 5. Maintenance of required insurance and Bonds.
  - 6. Shop drawings and material submittals
  - 7. As-built drawings
  - 8. Health and Safety Plans
  - 9. Mobilization of equipment
  - 10. Mobilization of work force
  - 11. Furnish and install temporary light during construction.
  - 12. All other work required by the Contract Documents but not listed individually under other Bid Items.

**Bid Item E.1** – Mobilization and General Construction

3.02 TEMPORARY POWER

- A. Measurement and Payment for furnishing and installing temporary power for construction of the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item E.2 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. Layout and survey.

SECTION 011200.2  
SUMMARY OF WORK – CONTRACT #1E

2. Furnish and install a temporary service for construction activities.
3. Furnish and install temporary power and lighting panels.

**Bid Item E.2** – Furnish and install a temporary power service.

3.03 ELECTRICAL SERVICE

- A. Measurement and Payment for furnishing and installing new electrical service and components in the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item E.3 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  1. Layout and survey.
  2. Furnish and install primary electrical conductors from the Central Hudson primary to the service transformer.
  3. Furnish and install service conduit and conductors from the transformer to the main disconnect switch.
  4. All trenching and excavation associated with new service.
  5. Furnish and install Main disconnect.
  6. Furnish and install Meter Can and head.
  7. Other appurtenant and incidental work

**Bid Item E.3** – Furnish and install all Electrical Service Components for the Port Ewen Fire House.

3.04 ELECTRICAL DISTRIBUTION

- A. Measurement and Payment for furnishing and installing new distribution panel and components in the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item E.4 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  1. Layout and survey.
  2. Furnishing and Installing all conduit and conductors on drawings.
  3. Furnish and install all pull and junction boxes.
  4. Furnish and install Main Distribution Panel MDP.
  5. Furnish and install panels LP1, LP2, and LP3.
  6. Furnish and install panels HP1, and HP2.
  7. Furnish and install feeders from MDP to all panels.

SECTION 011200.2  
SUMMARY OF WORK – CONTRACT #1E

8. Furnish and install conduit and conductors and safety switch for elevator.
9. Furnish and install conduit and conductors and safety switch for hose dryer.
10. Furnish and install conduit and conductors and safety switch for industrial gear washer.
11. Other appurtenant and incidental work

**Bid Item E.4** – Furnish and install all Electrical Distribution Components for the Port Ewen Fire House.

3.05 BACKUP GENERATOR

- A. Measurement and Payment for furnishing and installing new backup generator and automatic transfer switch and components in the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item E.5 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  1. Layout and survey.
  2. Furnishing and Installing an 250KW Natural Gas, 120/208V 3phase generator.
  3. Furnish and install a 4pole automatic transfer switch (ATS).
  4. Furnish and install all conduit and conductors for connecting the generator and ATS to the building electrical system.
  5. Furnish testing of the generator and ATS.
  6. Other appurtenant and incidental work

**Bid Item E.5** – Furnish and install a backup generator for the Port Ewen Fire House.

3.06 LIGHTING

- A. Measurement and Payment for furnishing and installing new lighting at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item E.6 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  1. Layout and survey.
  2. Furnish and install interior lighting.
  3. Furnish and install exterior lighting.
  4. Furnish and install light poles and bases
  5. Furnish and install power conductors and conduits.
  6. Furnish and install all switches.
  7. Furnish and install power to signage.

SECTION 011200.2  
SUMMARY OF WORK – CONTRACT #1E

8. Furnish and install all hangers and fasteners.
9. Other appurtenant and incidental work.

**Bid Item E.6** – Furnish and install lighting for the Port Ewen Fire House.

3.07 RECEPTACLES

- A. Measurement and Payment for furnishing and installing conduit, conductors, receptacles, and pull boxes at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item E.7 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  1. Layout and survey.
  2. Furnishing and Installing all conduit and conductors.
  3. Furnish and install all outlet boxes.
  4. Furnish and install all hangers, fasteners, etc.
  5. Furnishing and installing all receptacles.
  6. Other appurtenant and incidental work

**Bid Item E.7** – Furnish and install all receptacles for the Port Ewen Fire House.

3.08 MECHANICAL AND PLUMBING ELECTRICAL

- A. Measurement and Payment furnishing and installing disconnects, conduit and conductors for the heating and ventilation equipment at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item E.8 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  1. Furnish and install conduit and conductors and safety switch for HVAC units.
  2. Furnish and install conduit and conductors and safety switch for vehicle exhaust system.
  3. Furnish and install conduit and conductors and safety switch for makeup air.
  4. Furnish and install conduit and conductors and safety switch for hot water heater.
  5. Furnish and install conduit and conductors and safety switch for pumps.
  6. Furnish and install electrical circuits to the temperature control devices.
  7. Other appurtenant and incidental work

**Bid Item E.8** – Furnish and install electrical components for the mechanical and plumbing equipment.

SECTION 011200.2  
SUMMARY OF WORK – CONTRACT #1E

3.09 KITCHEN ELECTRICAL

- A. Measurement and Payment furnishing and installing disconnects, conduit and conductors for the kitchen equipment at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item E.9 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. Furnish and install conduit and conductors for first floor kitchen equipment including the cook equipment, warmers, refrigerator, ice maker, dishwasher, and stove/range(gas) etc.
  - 2. Furnish and install conduit and conductors for second floor kitchenette equipment including the refrigerator, and microwave.
  - 3. Furnish and install conduit and conductors for the water fountains.
  - 4. Other appurtenant and incidental work

**Bid Item E.9** – Furnish and install electrical components for the kitchen equipment.

3.10 GROUNDING SYSTEM

- A. Measurement and Payment furnishing and installing disconnects, conduit and conductors for the kitchen equipment at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item E.10 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. Furnish and install grounding system per drawings.
  - 2. Other appurtenant and incidental work

**Bid Item E.10** – Furnish and install grounding system.

3.11 COMPUTER AND PHONE NETWORK

- A. Measurement and Payment for furnishing and installing the conductors and components for the computer network at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.

SECTION 011200.2  
SUMMARY OF WORK – CONTRACT #1E

- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item E.11 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. Layout and survey.
  - 2. Furnishing and installing the networking cables and jacks.
  - 3. Furnish and install wireless units.
  - 4. Furnish and install network switch.
  - 5. Furnish and install cable and internet service.
  - 6. Furnish and install phone cable and jacks.
  - 6. Other appurtenant and incidental work

**Bid Item E.11** – Furnish and install the computer networking components at the Port Ewen Fire House.

3.12 FIRE DETECTION SYSTEM

- A. Measurement and Payment for furnishing and installing the conductors and components for the fire detection system at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item E.12 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. Layout and survey.
  - 2. Furnishing and installing the Controller.
  - 3. Furnishing and installing the Smoke, CO, Heat Detectors and all other components of the fire detection system.
  - 4. Furnishing and installing the Pull Boxes.
  - 5. Furnishing and installing the Notification Appliances.
  - 6. Furnishing and Installing interface to Building Monitoring Systems.
  - 7. Other appurtenant and incidental work

**Bid Item E.12** – Furnish and install the fire detection system networking components at the Port Ewen Fire House.

**BID ALTERNATE #1 – VINTAGE VEHICLE BAY**

3.13 VINTAGE VEHICLE BAY ELECTRICAL

- A. Measurement and Payment furnishing and installing the vintage vehicle bay electrical at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.

SECTION 011200.2  
SUMMARY OF WORK – CONTRACT #1E

- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item AT.1 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. Furnish and install receptacles for vintage vehicle bay.
  - 2. Furnish and install lighting for vintage vehicle bay.
  - 3. Furnish and install HVAC electrical for vintage vehicle bay.
  - 4. Furnish and install conduit and conductors for vintage vehicle bay.
  - 5. Furnish and install all other components of the vintage vehicle bay electrical per the architectural and structural plans.

**Bid Item AT.1** – Vintage vehicle bay electrical

END OF SECTION

SECTION 011200.3  
SUMMARY OF WORK – CONTRACT #1H

**CONTRACT #1H – HVAC CONTRACT**

**PART 1. GENERAL**

**1.01 SUMMARY**

- A. Contract #1H consists of furnishing and installing all of the HVAC components in the Port Ewen Fire House. This includes all work associated with the furnishing and installation of the new variable refrigerant flow units (VRFs), heat recovery Ventilators (HRVs), exhaust fans, louvers, unit heaters, cabinet heaters, ceiling fans, kitchen ventilation, diffusers, grilles, ductwork, ductwork insulation, and HVAC controls.

**1.02 PROJECT AND SITE CONDITIONS**

- A. Project and site conditions are generally illustrated on the Drawings. CONTRACTOR is responsible for inspecting all work locations and familiarizing himself with conditions affecting the work prior to submitting a bid for the work.
- B. The approximate locations of known underground utilities are shown on Drawings for CONTRACTOR's information. This does not relieve CONTRACTOR from the requirement to locate and protect the utilities.

**1.03 COORDINATION WITH OTHER PRIME CONTRACTORS**

- A. This project will involve coordination with other contracts. All Prime CONTRACTORS shall attend the pre-construction meeting with the OWNER and the ENGINEER.
- B. It is the responsibilities of each Prime CONTRACTORS to coordinate his work with the other Prime CONTRACTORS in order that the construction may proceed in an efficient and logical manner.
  - 1. The CONTRACTOR shall have no claim or claims whatever against the OWNER, the ENGINEER, other Prime CONTRACTORS, or other parties due to delays or other reasons caused by the work by others or his failure to coordinate such work; nor will the OWNER or ENGINEER certify to or guarantee the completion time of work being done by others.
  - 2. The CONTRACTOR shall request from the other Prime CONTRACTORS copies of the relevant shop drawings/submittals approved by the ENGINEER.
- C. All of the Prime CONTRACTORS shall create and agree upon a work schedule for this project that must also be agreed upon by the OWNER and the ENGINEER.
  - 1. Any changes to the approved work schedule must be agreed upon by all Prime CONTRACTORS and the OWNER and the ENGINEER.
- D. Technical specifications regarding work that involves more than one Prime CONTRACTOR shall be included in all relevant Contract Documents.
  - 1. These specification sections are provided for informational purposes only.

**1.04 COORDINATION WITH UTILITY COMPANIES**

- A. The CONTRACTOR shall notify NYS Dig Safe and pertinent utility companies 72 hours in advance of doing any work at or adjacent to said utilities.

**1.05 DESIGN ENGINEER'S ESTIMATE OF QUANTITIES**

SECTION 011200.3  
SUMMARY OF WORK – CONTRACT #1H

- A. Bid Items and estimated quantities are presented on the Bid Form included in these Contract Documents. The estimated quantities for unit price pay items are approximate only and are included solely for the purpose of comparison of bids.
- B. The OWNER does not expressly or by implication agree that the nature of the materials encountered below the surface of the ground or the actual quantities of materials encountered or required will correspond therewith and reserves the right to increase or decrease any quantity or to eliminate any quantity as OWNER may deem necessary.
- C. CONTRACTOR will not be entitled to any adjustment in a unit bid price as a result of any change in an estimated quantity and agrees to accept the aforesaid unit bid prices as complete and total compensation for any additions or deductions caused by a variation in quantities, as a result of more accurate field measurement or by any changes or alterations in the Work ordered by the OWNER. If the actual quantities measured in the field are 100 % over or under the original estimated quantities, then the unit price may be adjusted by negotiation.

1.06 UNIT PRICE WORK REQUIREMENTS INCLUDE

- A. This section identifies Bid items by number and lists applicable Specification sections and method of measurement and payment.
- B. Provide all labor, materials, equipment, supplies, supervision, and all services necessary to furnish and install each Bid item as required by Contract Documents. See General Conditions of the contract 11.03 Unit Price Work; Sections A, B, and C.

1.07 MEASUREMENTS FOR PAYMENT

- A. Bid items
  - 1. For unit price items, the CONTRACTOR shall be paid based on actual quantities measured in the field as shown on the pay limits of the contract plans and described in the bid form times the unit price on the bid form. The measurement for each bid item is listed under Part 3 of this specification.
  - 2. For lump sum items, the CONTRACTOR shall be paid either by partial payments or Lump Sum after the completion of the bid item. For partial payments, the CONTRACTOR shall submit for ENGINEER's review and approval a "schedule of values" that shall provide the basis for partial payments. The total costs of all components of work shall equal the Lump Sum bid for this Item.
- B. CONTRACTOR shall prepare monthly payment requests in a standard form as given by the ENGINEER. CONTRACTOR shall review a preliminary payment request with the ENGINEER prior to submittal of the formal request.
- C. On a daily basis as required, CONTRACTOR shall review daily production and payment quantities with the ENGINEER.
- D. After the completion of the project, the measurements for each bid item shall be re-measured. The remaining payments from the OWNER to the CONTRACTOR shall be adjusted accordingly to the final measurements of the bid items.

PART 2. PRODUCTS

This section is not used. Refer to individual specification sections for more information on each bid item.

SECTION 011200.3  
SUMMARY OF WORK – CONTRACT #1H

PART 3. EXECUTION

3.01 MOBILIZATION AND GENERAL CONSTRUCTION

- A. Mobilization and General Construction bid item for the project shall be no more than the maximum 3.0 % of the total project cost.
- B. Measurement and Payment for these items will be made as progress payments against the Lump Sum Prices bid for Bid Items H.1 on the Bid Form included in the Contract Documents.
- C. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
  - 1. Upon completion of mobilization as approved by the ENGINEER, one-third (1/3) of the items shall be considered complete and payments made.
  - 2. The remainder of the payments under these Items shall be made on a regular monthly basis that accounts for equal payment for General Construction Work throughout the Contract schedule, except that ENGINEER may withhold such payments for failure to complete General Construction work not specifically included elsewhere in the Documents, provided 10-days advance written notice has been provided to CONTRACTOR of the deficiency.
- D. The lump sum bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including::
  - 1. Record Drawings and Project Photos.
  - 2. Certified Payrolls, MWBE documents, and other project documentation.
  - 3. Maintenance and documentation of project schedule.
  - 4. Maintenance of temporary field facilities.
  - 5. Maintenance of required insurance and Bonds.
  - 6. Shop drawings and material submittals
  - 7. As-built drawings
  - 8. Health and Safety Plans
  - 9. Mobilization of equipment
  - 10. Mobilization of work force
  - 11. All other work required by the Contract Documents but not listed individually under other Bid Items.

**Bid Item H.1** – Mobilization and General Construction

3.02 VARIBALE REFRIGERANT FLOW UNITS AND EQUIPMENT

- A. Measurement and Payment for furnishing and installing VRFs and components in the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item H.2 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.

SECTION 011200.3  
SUMMARY OF WORK – CONTRACT #1H

- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
1. Layout and survey.
  2. Furnish and install VRF Fan Coils
  3. Furnish and install Condensing Units.
  4. Furnish and install pad for condensing units.
  5. All trenching and excavation associated with pad.
  6. Furnish and install VRF Heat Recovery Boxes
  7. Furnish and install heat recovery ventilators
  8. Furnish and install energy recovery ventilators
  9. All rigging as required.
  10. Other appurtenant and incidental work.

**Bid Item H.2** – Furnish and install VRFs and equipment.

3.03 EXHAUST FANS

- A. Measurement and Payment for furnishing and installing heat recovery ventilators, and accessories in the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item H.3 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
1. Layout and survey.
  2. Furnishing and Installing the exhaust fans.
  3. Furnish and install the kitchen hood.
  4. Furnish and install the kitchen exhaust fan.
  5. Furnish and install make up air unit
  6. Furnish and install louvers.
  7. Other appurtenant and incidental work

**Bid Item H.3** – Furnish and install exhaust fans, and accessories.

3.04 HYDRONIC HEATERS, BOILERS, PUMPS

- A. Measurement and Payment for furnishing and installing exhaust fans and louvers at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item H.4 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.

SECTION 011200.3  
SUMMARY OF WORK – CONTRACT #1H

- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
1. Layout and survey.
  2. Furnish and install all hydronic heaters.
  3. Furnish and install all boilers.
  4. Furnish and install all pumps and starters.
  5. Furnish and install all heating pipes per drawings.
  6. Insulate all pipes per drawings
  7. Other appurtenant and incidental work.

**Bid Item H.4** – Furnish and install hydronic heaters, boilers, and pumps for the Port Ewen Fire House.

3.05 DUCTS

- A. Measurement and Payment for furnishing and installing unit and cabinet heaters at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item H.5 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
1. Layout and survey.
  2. Furnish and install all ducts.
  3. Furnish and install all duct insulation.
  4. Furnish and install all diffusers.
  5. Furnish and install all grilles
  6. Furnish and install all hangers, supports, fasteners, etc
  7. Furnishing and installing all dampers, duct accessories, etc
  8. Other appurtenant and incidental work.

**Bid Item H.5** – Furnish and install ducts and accesories for the Port Ewen Fire House.

3.06 CEILING FANS

- A. Measurement and Payment for furnishing and installing all ceiling fans at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item H.6 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
1. Layout and survey.
  2. Furnishing and Installing all ceiling fans and accessories, etc. for a complete system.

SECTION 011200.3  
SUMMARY OF WORK – CONTRACT #1H

3. Furnish and install ceiling fan controllers.
4. Other appurtenant and incidental work

**Bid Item H.6** – Furnish and install industrial ceiling fans.

3.07 RADIANT HEATING

- A. Measurement and Payment for furnishing and installing all radiant heating at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item H.7 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  1. Furnish and install all in slab radiant heating as shown on the plans..
  2. Other appurtenant and incidental work.

**Bid Item H.7** – Furnish and install radiant heating

3.08 EXHUST EXTRACTION SYSTEM

- A. Measurement and Payment for furnishing and installing the exhaust extraction system at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item H.8 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  1. Layout and survey.
  2. Furnishing and installing exhust extraction units.
  3. Furnishing and installing exhauhst hose reels
  4. Furnish and install associated duct work.
  5. Furnish and install controls.
  6. Other appurtenant and incidental work.

**Bid Item H.8** – Furnish and install ceiling fans

3.09 FURNISHING AND INSTALLING ALL HVAC CONTROLS

- A. Measurement and Payment for furnishing and installing the HVAC controls at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item H.9 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.

SECTION 011200.3  
SUMMARY OF WORK – CONTRACT #1H

- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
1. Layout and survey.
  2. Furnishing and installing all HVAC controls
  3. Furnishing all thermostats.
  4. Other appurtenant and incidental work.

**Bid Item H.9** – Furnish and install all HVAC Controls.

3.10 FURNISHING AND INSTALLING ALL TESTING AND BALANCING

- A. Measurement and Payment for furnishing and installing the testing and balancing of the HVAC systems at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item H.10 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
1. Furnishing and installing all testing and balancing of the HVAC systems including, but not limited to, duct leakage tests, air balancing, etc.
  2. Other appurtenant and incidental work.

**Bid Item H.10** – Furnish and install all Testing and Balancing.

**BID ALTERNATE #1 – VINTAGE VEHICLE BAY**

3.11 VINTAGE VEHICLE BAY MECHANICAL

- A. Measurement and Payment furnishing and installing the vintage vehicle bay mechanical at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item AT.1 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
1. Furnish and install mechanical components for the vintage vehicle bay.

**Bid Item AT.1** – Vintage vehicle bay mechanical

END OF SECTION

SECTION 011200.4  
SUMMARY OF WORK – CONTRACT #1P

**CONTRACT #1P – PLUMBING CONTRACT**

**PART 1. GENERAL**

**1.01 SUMMARY**

- A. Contract #1P consists of furnishing and installing all of the Plumbing components in the Port Ewen Fire House. This includes all work associated with the furnishing and installation of all Plumbing components for the Port Ewen Firehouse as shown in the Contract Documents.

**1.02 PROJECT AND SITE CONDITIONS**

- A. Project and site conditions are generally illustrated on the Drawings. CONTRACTOR is responsible for inspecting all work locations and familiarizing himself with conditions affecting the work prior to submitting a bid for the work.
- B. The approximate locations of known underground utilities are shown on Drawings for CONTRACTOR's information. This does not relieve CONTRACTOR from the requirement to locate and protect the utilities.

**1.03 COORDINATION WITH OTHER PRIME CONTRACTORS**

- A. This project will involve coordination with other contracts. All Prime CONTRACTORS shall attend the pre-construction meeting with the OWNER and the ENGINEER.
- B. It is the responsibilities of each Prime CONTRACTORS to coordinate his work with the other Prime CONTRACTORS in order that the construction may proceed in an efficient and logical manner.
  - 1. The CONTRACTOR shall have no claim or claims whatever against the OWNER, the ENGINEER, other Prime CONTRACTORS, or other parties due to delays or other reasons caused by the work by others or his failure to coordinate such work; nor will the OWNER or ENGINEER certify to or guarantee the completion time of work being done by others.
  - 2. The CONTRACTOR shall request from the other Prime CONTRACTORS copies of the relevant shop drawings/submittals approved by the ENGINEER.
- C. All of the Prime CONTRACTORS shall create and agree upon a work schedule for this project that must also be agreed upon by the OWNER and the ENGINEER.
  - 1. Any changes to the approved work schedule must be agreed upon by all Prime CONTRACTORS and the OWNER and the ENGINEER.
- D. Technical specifications regarding work that involves more than one Prime CONTRACTOR shall be included in all relevant Contract Documents.
  - 1. These specification sections are provided for informational purposes only.

**1.04 COORDINATION WITH UTILITY COMPANIES**

- A. The CONTRACTOR shall notify NYS Dig Safe and pertinent utility companies 72 hours in advance of doing any work at or adjacent to said utilities.

**1.05 DESIGN ENGINEER'S ESTIMATE OF QUANTITIES**

- A. Bid Items and estimated quantities are presented on the Bid Form included in these Contract Documents. The estimated quantities for unit price pay items are approximate only and are included solely for the purpose of comparison of bids.

SECTION 011200.4  
SUMMARY OF WORK – CONTRACT #1P

- B. The OWNER does not expressly or by implication agree that the nature of the materials encountered below the surface of the ground or the actual quantities of materials encountered or required will correspond therewith and reserves the right to increase or decrease any quantity or to eliminate any quantity as OWNER may deem necessary.
- C. CONTRACTOR will not be entitled to any adjustment in a unit bid price as a result of any change in an estimated quantity and agrees to accept the aforesaid unit bid prices as complete and total compensation for any additions or deductions caused by a variation in quantities, as a result of more accurate field measurement or by any changes or alterations in the Work ordered by the OWNER. If the actual quantities measured in the field are 100 % over or under the original estimated quantities, then the unit price may be adjusted by negotiation.

1.06 UNIT PRICE WORK REQUIREMENTS INCLUDE

- A. This section identifies Bid items by number and lists applicable Specification sections and method of measurement and payment.
- B. Provide all labor, materials, equipment, supplies, supervision, and all services necessary to furnish and install each Bid item as required by Contract Documents. See General Conditions of the contract 11.03 Unit Price Work; Sections A, B, and C.

1.07 MEASUREMENTS FOR PAYMENT

- A. Bid items
  - 1. For unit price items, the CONTRACTOR shall be paid based on actual quantities measured in the field as shown on the pay limits of the contract plans and described in the bid form times the unit price on the bid form. The measurement for each bid item is listed under Part 3 of this specification.
  - 2. For lump sum items, the CONTRACTOR shall be paid either by partial payments or Lump Sum after the completion of the bid item. For partial payments, the CONTRACTOR shall submit for ENGINEER's review and approval a "schedule of values" that shall provide the basis for partial payments. The total costs of all components of work shall equal the Lump Sum bid for this Item.
- B. CONTRACTOR shall prepare monthly payment requests in a standard form as given by the ENGINEER. CONTRACTOR shall review a preliminary payment request with the ENGINEER prior to submittal of the formal request.
- C. On a daily basis as required, CONTRACTOR shall review daily production and payment quantities with the ENGINEER.
- D. After the completion of the project, the measurements for each bid item shall be re-measured. The remaining payments from the OWNER to the CONTRACTOR shall be adjusted accordingly to the final measurements of the bid items.

PART 2. PRODUCTS

This section is not used. Refer to individual specification sections for more information on each bid item.

SECTION 011200.4  
SUMMARY OF WORK – CONTRACT #1P

PART 3. EXECUTION

3.01 MOBILIZATION AND GENERAL CONSTRUCTION

- A. Mobilization and General Construction bid item for the project shall be no more than the maximum 3.0 % of the total project cost.
- B. Measurement and Payment for these items will be made as progress payments against the Lump Sum Prices bid for Bid Items P.1 on the Bid Form included in the Contract Documents.
- C. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
  - 1. Upon completion of mobilization as approved by the ENGINEER, one-third (1/3) of the items shall be considered complete and payments made.
  - 2. The remainder of the payments under these Items shall be made on a regular monthly basis that accounts for equal payment for General Construction Work throughout the Contract schedule, except that ENGINEER may withhold such payments for failure to complete General Construction work not specifically included elsewhere in the Documents, provided 10-days advance written notice has been provided to CONTRACTOR of the deficiency.
- D. The lump sum bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. Record Drawings and Project Photos.
  - 2. Certified Payrolls, MWBE documents, and other project documentation.
  - 3. Maintenance and documentation of project schedule.
  - 4. Maintenance of temporary field facilities.
  - 5. Maintenance of required insurance and Bonds.
  - 6. Shop drawings and material submittals
  - 7. As-built drawings
  - 8. Health and Safety Plans
  - 9. Mobilization of equipment
  - 10. Mobilization of work force
  - 11. All other work required by the Contract Documents but not listed individually under other Bid Items.

**Bid Item P.1 – Mobilization and General Construction**

3.02 WATER SERVICE

- A. Measurement and Payment for furnishing and installing new water service and components in the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item P.2 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. Layout and survey.

SECTION 011200.4  
SUMMARY OF WORK – CONTRACT #1P

2. Furnish and install piping and valves connecting the water utility to the Port Ewen Firehouse.
3. Coordinate with the Port Ewen Water Department.
4. All trenching and excavation associated with the water service.
5. Other appurtenant and incidental work.

**Bid Item P.2** – Furnish and install water service.

3.03 POTABLE WATER

- A. Measurement and Payment for furnishing and installing all potable water accessories in the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item P.3 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  1. Layout and survey.
  2. Furnish and install potable water plumbing, shut-off valves, surge arrestors, hangers, insulation, and incidental construction.
  3. Make, seal and firestop all penetrations in rated walls.
  4. Furnish and install all hose bibs.
  5. Furnish and install boiler feed with RPZ and shut-off valves.
  6. Furnish and install any incidental plumbing work required to serve fixtures.
  7. Furnish all equipment and piping shown on plumbing plans not included in other line items.
  8. Other appurtenant and incidental work

**Bid Item P.3** – Furnish and install potable water, and accessories.

3.04 SANITARY SERVICE CONNECTION

- A. Measurement and Payment for furnishing and installing the sanitary connection at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item P.4 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  1. Layout and survey.
  2. Furnish and install connection from the firehouse to the onsite sanitary pump station
  3. Coordinate with the Port Ewen Sewer Department.

SECTION 011200.4  
SUMMARY OF WORK – CONTRACT #1P

4. Other appurtenant and incidental work.

**Bid Item P.4** – Furnish and install sanitary service for the Port Ewen Fire House.

3.05 SANITARY & FLOOR DRAINS

- A. Measurement and Payment for furnishing and installing all sanitary and floor drains at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item P.5 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  1. Layout and survey.
  2. Furnish and install under-slab drains bedding stone and compaction.
  3. Furnish and install floor drains and penetrations for plumbing drains.
  4. Furnish and install all piping and vents to connect fixtures.
  5. Furnish and install vent pipes, loop and roof penetrations.
  6. Furnish and install connecting pipe for trench drains and floor drain clean-outs.
  7. Other appurtenant and incidental work

**Bid Item P.5** – Furnish and install sanitary and floor drains.

3.06 FURNISHING AND INSTALLING BATH AND OTHER FIXTURES

- A. Measurement and Payment for furnishing and installing all bathroom and other fixtures at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item P.6 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  1. Furnish and install toilets, faucets, sinks, shower stalls and other fixtures as shown on the plans complete and ready for use.
  2. Furnish and install all kitchen sinks and faucets.
  3. Furnish and install all mop sinks and faucets in janitor closets.
  4. Furnish and install connections for dishwasher.
  5. Furnish and install water fountains
  6. Contractor shall make and seal all penetrations as needed to complete the work.
  7. Other appurtenant and incidental work.

**Bid Item P.6** – Furnish and install bath and other fixtures

SECTION 011200.4  
SUMMARY OF WORK – CONTRACT #1P

3.07 FURNISHING AND INSTALLING ALL NATURAL GAS PIPING

- A. Measurement and Payment for furnishing and installing all natural gas piping at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item P.7 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. Layout and survey.
  - 2. Furnishing and installing all natural gas piping.
  - 3. All trenching and excavation associated with the natural gas piping.
  - 4. Central Hudson will be providing a new lateral with a shut off valve and a new gas meter. Contractor to verify exact location of the new shut off valve. This Bid Item is to include all other natural gas piping as shown on the drawings.
  - 5. Other appurtenant and incidental work.

**Bid Item P.7** – Furnish and install Natural Gas Piping

3.08 FURNISHING AND INSTALLING DOMESTIC HOT WATER HEATER

- A. Measurement and Payment for furnishing and installing the domestic hot water heater at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.
- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item P.8 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. Layout and survey.
  - 2. Furnishing and installing the tankless hot water heater including, but not limited to, PVC venting and PVC combustion air piping, mounting and supports, etc.
  - 3. Other appurtenant and incidental work.

**Bid Item P.8** – Furnish and install all Domestic Hot Water Heater.

**BID ALTERNATE #1 – VINTAGE VEHICLE BAY**

3.11 VINTAGE VEHICLE BAY PLUMBING

- A. Measurement and Payment furnishing and installing the vintage vehicle bay plumbing at the Port Ewen Fire House shall be a Lump Sum basis and no Measurement for Payment shall be made.

SECTION 011200.4  
SUMMARY OF WORK – CONTRACT #1P

- B. Payment under these Items shall be the same regardless of whether additional work is done or if the Contract is extended.
- C. Payment for this item shall be made based on the Lump Sum bid for Bid Item AT.1 on the Bid Forms in the Contract Documents. Partial payments shall be based on the approved schedule of values.
- D. The lump sum price bid shall include all costs for labor, materials, equipment, and supplies required to complete the work including:
  - 1. Furnish and install plumbing components for the vintage vehicle bay.

**Bid Item AT.1** – Vintage vehicle bay plumbing

END OF SECTION

SECTION 012100  
ALLOWANCES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements governing allowances.
- B. Types of allowances include the following:
  - 1. Contingency allowances.

1.2 DEFINITIONS

- A. Allowance is a quantity of work or dollar amount established in lieu of additional requirements, used to defer selection of actual materials and equipment to a later date when direction will be provided to Contractor. If necessary, additional requirements will be issued by Change Order.

1.3 SELECTION AND PURCHASE

- A. At the earliest practical date after award of the Contract, advise Engineer of the date when final selection, or purchase and delivery, of each product or system described by an allowance must be completed by the Owner to avoid delaying the Work.
- B. At Engineer's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.
- C. Purchase products and systems selected by Engineer from the designated supplier.

1.4 ACTION SUBMITTALS

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

1.5 INFORMATIONAL SUBMITTALS

- A. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.
- B. Submit time sheets and other documentation to show labor time and cost for installation of allowance items that include installation as part of the allowance.
- C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

SECTION 012100  
ALLOWANCES

1.6 CONTINGENCY ALLOWANCES

- A. Use the contingency allowance only as directed by Engineer for Owner's purposes and only by work directives that indicate amounts to be charged to the allowance.
- B. Contractor's overhead, profit, and related costs for products and equipment ordered by Owner under the contingency allowance are included in the allowance and are not part of the Contract Sum. These costs include delivery, installation, taxes, insurance, equipment rental, and similar costs.
- C. Work directives authorizing use of funds from the contingency allowance will include Contractor's related costs and reasonable overhead and profit.
- D. At Project closeout, credit unused amounts remaining in the contingency allowance to Owner by Change Order.

1.7 ADJUSTMENT OF ALLOWANCES

- A. Allowance Adjustment: To adjust allowance amounts, prepare a Change Order proposal based on the difference between purchase amount and the allowance, multiplied by final measurement of work-in-place where applicable. If applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.
  - 1. If requested, prepare explanation and documentation to substantiate distribution of overhead costs and other markups.
  - 2. Submit substantiation of a change in scope of Work, if any, claimed in Change Orders related to unit-cost allowances.
  - 3. Owner reserves the right to establish the quantity of work-in-place by independent quantity survey, measure, or count.
- B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the purchase order amount or Contractor's handling, labor, installation, overhead, and profit.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

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

3.2 PREPARATION

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

SECTION 012100  
ALLOWANCES

3.3 SCHEDULE OF ALLOWANCES

- A. Allowance No. 1G Contingency Allowance: Include a contingency allowance of \$200,000.00 for use according to Engineer's written instructions.
- B. Allowance No. 1E Contingency Allowance: Include a contingency allowance of \$50,000.00 for use according to Engineer's written instructions.
- C. Allowance No. 1H Contingency Allowance: Include a contingency allowance of \$15,000.00 for use according to Engineer's written instructions.
- D. Allowance No. 1P Contingency Allowance: Include a contingency allowance of \$10,000.00 for use according to Engineer's written instructions.

END OF SECTION

SECTION 012100  
ALLOWANCES

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SECTION 013050  
CONSTRUCTION SEQUENCING

PART 1            GENERAL

1.1      WORK INCLUDED

- A. GC Contractor shall coordinate between the all prime contractors and their sub-contractors as a requirement of this project. All contractors shall coordinate scheduling through the Engineer and Owner and the General Contractor will be the lead.
- B. All contractors will be required to attend scheduled construction meetings to discuss and resolve critical items.
- C. The Contractor shall provide the Engineer with a minimum of 1 week notice of their intent to place any new structure or piece of equipment into operation.
- D. No equipment shall be placed into temporary or permanent operation without prior approval of the Engineer. All equipment shall be placed into operation in the presence of a manufacturers' designated representative.
- E. The General Contractor shall be responsible for preparation of an overall construction schedule for the Firehouse. The schedule shall allow for sufficient time to complete all tasks required by each Prime Contractor and their subcontractors. The schedule will be reviewed by all Prime Contractors for verification of sufficient time to complete all tasks. The schedule will be subject to the approval of the Owner and Engineer and shall meet all the time frames outlined in the contract documents.

PART 2            PRODUCTS  
                    Not Used

PART 3            EXECUTION  
                    Not Used

END OF SECTION

SECTION 013100  
PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
  - 1. General coordination procedures
  - 2. Coordination drawings
  - 3. RFIs
  - 4. Digital project management procedures
  - 5. Project meetings
- B. Each contractor shall participate in coordination requirements. Certain areas of responsibility are assigned to a specific contractor.

1.3 DEFINITIONS

- A. RFI: Request for Information. Request from Owner, Engineer, or Contractor seeking information required by or clarifications of the Contract Documents.

1.4 INFORMATIONAL SUBMITTALS

- A. 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. Name, address, telephone number, and email address of entity performing subcontract or supplying products.
  - 2. Number and title of related Specification Section(s) covered by subcontract.
  - 3. Drawing number and detail references, as appropriate, covered by subcontract.
- B. Key Personnel Names: Within 15 days of starting construction operations, submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and cellular telephone numbers and e-mail addresses. Provide names, addresses, and telephone numbers of individuals assigned as alternates in the absence of individuals assigned to Project.

SECTION 013100  
PROJECT MANAGEMENT AND COORDINATION

1.5 GENERAL COORDINATION PROCEDURES

- 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 to ensure maximum performance and accessibility for required maintenance, service, and repair.
  - 3. Make adequate provisions to accommodate items scheduled for later installation.
  
- B. Coordination: Each contractor shall cooperate with General Contractor who shall coordinate its construction operations with those of other contractors and entities to ensure efficient and orderly installation of each part of the Work. Each contractor shall coordinate its own operations with 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 other contractors to ensure maximum performance and accessibility for required maintenance, service, and repair.
  - 3. Make adequate provisions to accommodate items scheduled for later installation.
  
- C. 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.
  
- D. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and scheduled activities of other contractors and direction of Project coordinator 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 3 week look ahead 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. Preinstallation conferences.
  - 8. Project closeout activities.
  - 9. Startup and adjustment of systems.

SECTION 013100  
PROJECT MANAGEMENT AND COORDINATION

1.6 COORDINATION DRAWINGS

- A. Coordination Drawings, General: Prepare coordination drawings according to requirements in individual Sections, and additionally where installation is not completely indicated on Shop Drawings, where limited space availability necessitates coordination, or if coordination is required to facilitate integration of products and materials fabricated or installed by more than one entity.
1. Content: Project-specific information, drawn accurately to a scale large enough to indicate and resolve conflicts. Do not base coordination drawings on standard printed data. Include the following information, as applicable:
    - a. Use applicable Drawings as a basis for preparation of coordination drawings. Prepare sections, elevations, and details as needed to describe relationship of various systems and components.
    - b. Coordinate the addition of trade-specific information to coordination drawings by multiple contractors in a sequence that best provides for coordination of the information and resolution of conflicts between installed components before submitting for review.
    - c. Indicate functional and spatial relationships of components of Architectural, structural, civil, mechanical, and electrical systems.
    - d. Indicate space requirements for routine maintenance and for anticipated replacement of components during the life of the installation.
    - e. Show location and size of access doors required for access to concealed dampers, valves, and other controls.
    - f. Indicate required installation sequences.
    - g. Indicate dimensions shown on Drawings. Specifically note dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternative sketches to Engineer indicating proposed resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
- B. Coordination Drawing Organization: Organize coordination drawings as follows:
1. Floor Plans and Reflected Ceiling Plans: Show Architectural and structural elements, and mechanical, plumbing, fire-protection, fire-alarm, and electrical Work. Show locations of visible ceiling-mounted devices relative to acoustical ceiling grid. Supplement plan drawings with section drawings where required to adequately represent the Work.
  2. Plenum Space: Indicate subframing for support of ceiling, raised access floor, and wall systems, mechanical and electrical equipment, and related Work. Locate components within plenums to accommodate layout of light fixtures and other components indicated on Drawings. Indicate areas of conflict between light fixtures and other components.
  3. Mechanical Rooms: Provide coordination drawings for mechanical rooms showing plans and elevations of mechanical, plumbing, fire-protection, fire-alarm, and electrical equipment.
  4. Structural Penetrations: Indicate penetrations and openings required for all disciplines.
  5. Slab Edge and Embedded Items: Indicate slab edge locations and sizes and locations of embedded items for metal fabrications, sleeves, anchor bolts, bearing plates, angles, door floor closers, slab depressions for floor finishes, curbs and housekeeping pads, and similar items.
  6. Mechanical and Plumbing Work: Show the following:

SECTION 013100  
PROJECT MANAGEMENT AND COORDINATION

- a. Sizes and bottom elevations of ductwork, piping, and conduit runs, including insulation, bracing, flanges, and support systems.
  - b. Dimensions of major components, such as dampers, valves, diffusers, access doors, cleanouts and electrical distribution equipment.
  - c. Fire-rated enclosures around ductwork.
7. Electrical Work: Show the following:
- a. Runs of vertical and horizontal conduit 3/4 inches in diameter and larger.
  - b. Light fixture, exit light, emergency battery pack, smoke detector, and other fire-alarm locations.
  - c. Panel board, switch board, switchgear, transformer, busway, generator, and motor-control center locations.
  - d. Location of pull boxes and junction boxes, dimensioned from column center lines.
8. Fire-Protection System: Show the following:
- a. Locations of standpipes, mains piping, branch lines, pipe drops, and sprinkler heads.
9. Review: Engineer will review coordination drawings to confirm that in general the Work is being coordinated, but not for the details of the coordination, which are Contractor's responsibility. If Engineer determines that coordination drawings are not being prepared in sufficient scope or detail, or are otherwise deficient, Engineer will so inform Contractor, who shall make suitable modifications and resubmit.

1.7 REQUEST FOR INFORMATION (RFI)

- A. General: Immediately on discovery of the need for additional information, clarification, or interpretation of the Contract Documents, Contractor shall prepare and submit an RFI in the form specified.
1. Engineer will return without response those RFIs submitted to Engineer by other entities controlled by Contractor.
  2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
- B. RFI Forms: Software-generated form with substantially the same content as indicated above, acceptable to Engineer.
1. Attachments shall be electronic files in PDF format.
- C. Engineer's Action: Engineer will review each RFI, determine action required, and respond. Allow seven working days for Engineer's response for each RFI. RFIs received by Engineer after 1:00 p.m. will be considered as received the following working day.
1. The following Contractor-generated RFIs will be returned without action:
    - a. Requests for approval of submittals.
    - b. Requests for approval of substitutions.

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PROJECT MANAGEMENT AND COORDINATION

- c. Requests for approval of Contractor's means and methods.
  - d. Requests for coordination information already indicated in the Contract Documents.
  - e. Requests for adjustments in the Contract Time or the Contract Sum.
  - f. Requests for interpretation of Engineer's actions on submittals.
  - g. Incomplete RFIs or inaccurately prepared RFIs.
2. Engineer's action may include a request for additional information, in which case Engineer's time for response will date from time of receipt by Engineer of additional information.
  3. Engineer's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 012600 "Contract Modification Procedures."
    - a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Engineer in writing within 10 days of receipt of the RFI response.

1.8 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 and Engineer of scheduled meeting dates and times a minimum of 10 working days prior to meeting.
  2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
  3. Minutes: Entity responsible for conducting meeting will record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Engineer, within five days of the meeting.
- B. Preconstruction Conference: Engineer will schedule and conduct a preconstruction conference before starting construction, at a time convenient to Owner and Engineer, but no later than 15 days after execution of the Agreement.
  1. Attendees: Authorized representatives of Owner, Engineer, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. 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:
    - a. Responsibilities and personnel assignments.
    - b. Tentative construction schedule.
    - c. Phasing.
    - d. Critical work sequencing and long lead items.
    - e. Designation of key personnel and their duties.
    - f. Lines of communications.
    - g. Use of web-based Project software.
    - h. Procedures for processing field decisions and Change Orders.
    - i. Procedures for RFIs.

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PROJECT MANAGEMENT AND COORDINATION

- j. Procedures for testing and inspecting.
  - k. Procedures for processing Applications for Payment.
  - l. Distribution of the Contract Documents.
  - m. Submittal procedures.
  - n. Work restrictions.
  - o. Working hours.
  - p. Owner's occupancy requirements.
  - q. Responsibility for temporary facilities and controls.
  - r. Procedures for disruptions and shutdowns.
  - s. Construction waste management and recycling.
  - t. Parking availability.
  - u. Office, work, and storage areas.
  - v. Equipment deliveries and priorities.
  - w. First aid.
  - x. Security.
  - y. Progress cleaning.
3. Minutes: Entity responsible for conducting meeting will record and distribute meeting minutes.
- C. Progress Meetings: Engineer will conduct progress meetings at regular intervals.
- 1. Attendees: In addition to representatives of Owner and Engineer, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meeting shall be familiar with Project and authorized to conclude matters relating to the Work.
  - 2. Minutes: Entity responsible for conducting the meeting will record and distribute the meeting minutes to each party present and to parties requiring information.
    - a. 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.
- D. Coordination Meetings: Conduct Project coordination meetings at regular intervals. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.
- 1. Attendees: In addition to representatives of Owner and Engineer, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the meetings shall be familiar with Project and authorized to conclude matters relating to the Work.

SECTION 013100  
PROJECT MANAGEMENT AND COORDINATION

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 013100  
PROJECT MANAGEMENT AND COORDINATION

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SECTION 013300  
SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section Includes:
  - 1. Submittal schedule requirements.
  - 2. Administrative and procedural requirements for submittals.

1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information and physical samples that require Engineer's responsive action. Action submittals are those submittals indicated in individual Specification Sections as "action submittals."
- B. Informational Submittals: Written and graphic information and physical samples that do not require Engineer's responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as "informational submittals."

1.4 SUBMITTAL SCHEDULE

- A. Submittal Schedule: Submit, as an action submittal, a list of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or revisions to submittals noted by Engineer and additional time for handling and reviewing submittals required by those corrections.
  - 1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.
  - 2. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.
  - 3. Format: Arrange the following information in a tabular format:
    - a. Scheduled date for first submittal.
    - b. Specification Section number and title.
    - c. Name of subcontractor.
    - d. Description of the Work covered.
    - e. Scheduled date for Engineer's final release or approval.

SECTION 013300  
SUBMITTAL PROCEDURES

1.5 SUBMITTAL FORMATS

- A. Submittal Information: Include the following information in each submittal:
1. Project name.
  2. Date.
  3. Name of Engineer.
  4. Name of Contractor.
  5. Name of firm or entity that prepared submittal.
  6. Names of subcontractor, manufacturer, and supplier.
  7. Unique submittal number, including revision identifier. Include Specification Section number with sequential alphanumeric identifier; and alphanumeric suffix for resubmittals.
  8. Number and title of Specification Section, with paragraph number and generic name for each of multiple items.
  9. Drawing number and detail references, as appropriate.
  10. Indication of full or partial submittal.
  11. Location(s) where product is to be installed, as appropriate.
  12. Other necessary identification.
  13. Remarks.
  14. Signature of transmitter.
- B. Options: Identify options requiring selection by Engineer.
- C. Deviations and Additional Information: On each submittal, clearly indicate deviations from requirements in the Contract Documents, including minor variations and limitations; include relevant additional information and revisions, other than those requested by Engineer on previous submittals. Indicate by highlighting on each submittal or noting on attached separate sheet.
- D. PDF Submittals: Prepare submittals as PDF package, incorporating complete information into each PDF file. Name PDF file with submittal number.

1.6 SUBMITTAL PROCEDURES

- A. Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
1. Email: Prepare submittals as PDF package, and transmit to Engineer by sending via email. Include PDF transmittal form. Include information in email subject line as requested by Engineer.
    - a. Engineer will return annotated file. Annotate and retain one copy of file as a digital Project Record Document file.
  2. Paper: Prepare submittals in paper form, and deliver to Engineer.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.

SECTION 013300  
SUBMITTAL PROCEDURES

1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
  2. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.
  3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.
  4. Coordinate transmittal of submittals for related parts of the Work specified in different Sections so processing will not be delayed because of need to review submittals concurrently for coordination.
    - a. Engineer reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Processing Time: Allow time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Engineer'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 10 working days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Engineer 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 10 days for review of each resubmittal.
- D. Resubmittals: Make resubmittals in same form and number of copies 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 with approval notation from Engineer's action stamp.
- E. 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.
- F. Use for Construction: Retain complete copies of submittals on Project site. Use only final action submittals that are marked with approval notation from Engineer's action stamp.
- 1.7 SUBMITTAL REQUIREMENTS
- A. 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 published data are unsuitable 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:

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SUBMITTAL PROCEDURES

- a. Manufacturer's catalog cuts.
  - b. Manufacturer's product specifications.
  - c. Standard color charts.
  - d. Statement of compliance with specified referenced standards.
  - e. Testing by recognized testing agency.
  - f. Application of testing agency labels and seals.
  - g. Notation of coordination requirements.
  - h. Availability and delivery time information.
4. For equipment, include the following in addition to the above, as applicable:
- a. Wiring diagrams that show factory-installed wiring.
  - b. Printed performance curves.
  - c. Operational range diagrams.
  - d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.
5. Submit Product Data before Shop Drawings, and before or concurrent with Samples.
- B. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
    - a. Identification of products.
    - b. Schedules.
    - c. Compliance with specified standards.
    - d. Notation of coordination requirements.
    - e. Notation of dimensions established by field measurement.
    - f. Relationship and attachment to adjoining construction clearly indicated.
    - g. Seal and signature of professional engineer if specified.
  2. Paper Sheet Size: Except for templates, patterns, and similar full-size Drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches, but no larger than 30 by 42 inches.
- C. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of Engineers and owners, and other information specified.
- D. Design Data: Prepare and submit written and graphic information indicating compliance with indicated performance and design criteria in individual Specification Sections. Include list of assumptions and summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Number each page of submittal.
- E. Certificates:
1. Certificates and Certifications Submittals: Submit a statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity. Provide a notarized signature where indicated.

SECTION 013300  
SUBMITTAL PROCEDURES

2. Installer Certificates: Submit written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
  3. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
  4. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
  5. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
  6. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on AWS forms. Include names of firms and personnel certified.
- F. Test and Research Reports:
1. Compatibility Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
  2. Field Test Reports: Submit written reports indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
  3. Material Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
  4. Preconstruction Test Reports: Submit reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
  5. Product Test Reports: Submit written reports indicating that current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
  6. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
    - a. Name of evaluation organization.
    - b. Date of evaluation.
    - c. Time period when report is in effect.
    - d. Product and manufacturers' names.
    - e. Description of product.
    - f. Test procedures and results.
    - g. Limitations of use.

SECTION 013300  
SUBMITTAL PROCEDURES

1.8 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
  - 1. If criteria indicated are insufficient to perform services or certification required, submit a written request for additional information to Engineer.
- B. Delegated-Design Services Certification: In addition to Shop Drawings, Product Data, and other required submittals, submit digitally signed PDF file and three paper copies of certificate, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
  - 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

1.9 CONTRACTOR'S REVIEW

- A. Action Submittals and Informational Submittals: 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 Engineer.
- B. Contractor's Approval: Indicate Contractor's approval for each submittal with a uniform approval stamp. Include name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.
  - 1. Engineer will not review submittals received from Contractor that do not have Contractor's review and approval.

1.10 ENGINEER'S REVIEW

- A. Action Submittals: Engineer will review each submittal, indicate corrections or revisions required, and return it.
  - 1. PDF Submittals: Engineer will indicate, via markup on each submittal, the appropriate action.
- B. Informational Submittals: Engineer will review each submittal and will not return it, or will return it if it does not comply with requirements. Engineer will forward each submittal to appropriate party.
- C. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Engineer.

SECTION 013300  
SUBMITTAL PROCEDURES

- D. Incomplete submittals are unacceptable, will be considered nonresponsive, and will be returned for resubmittal without review.
- E. Engineer will discard submittals received from sources other than Contractor.
- F. Submittals not required by the Contract Documents will be returned by Engineer without action.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

SECTION 013300  
SUBMITTAL PROCEDURES

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SECTION 014000  
QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for quality assurance and quality control.
- B. Testing and inspection services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.
  - 1. Specific quality-assurance and quality-control requirements for individual work results are specified in their respective Specification Sections. Requirements in individual Sections may also cover production of standard products.
  - 2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and quality-control procedures that facilitate compliance with the Contract Document requirements.
  - 3. Requirements for Contractor to provide quality-assurance and quality-control services required by Engineer, Owner, or authorities having jurisdiction are not limited by provisions of this Section.
  - 4. Specific test and inspection requirements are not specified in this Section.

1.3 DEFINITIONS

- A. Experienced: When used with an entity or individual, "experienced" unless otherwise further described means having successfully completed a minimum of 5 previous projects similar in nature, size, and extent to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.
- B. Field Quality-Control Tests: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
- C. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, assembly, and similar operations.
  - 1. Use of trade-specific terminology in referring to a trade or entity does not require that certain construction activities be performed by accredited or unionized individuals, or that requirements specified apply exclusively to specific trade(s).

SECTION 014000  
QUALITY REQUIREMENTS

- D. Preconstruction Testing: Tests and inspections performed specifically for Project before products and materials are incorporated into the Work, to verify performance or compliance with specified criteria.
- E. Product Tests: Tests and inspections that are performed by a nationally recognized testing laboratory (NRTL) according to 29 CFR 1910.7, by a testing agency accredited according to NIST's National Voluntary Laboratory Accreditation Program (NVLAP), or by a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with specified requirements.
- F. Source Quality-Control Tests: Tests and inspections that are performed at the source; for example, plant, mill, factory, or shop.
- G. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.
- H. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.
- I. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Contractor's quality-control services do not include contract administration activities performed by Engineer.

1.4 DELEGATED-DESIGN SERVICES

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
  - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Engineer.

1.5 CONFLICTING REQUIREMENTS

- A. Conflicting Standards and Other Requirements: If compliance with two or more standards or requirements are specified and the standards or requirements establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer conflicting requirements that are different, but apparently equal, to Engineer for direction before proceeding.
- B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Engineer for a decision before proceeding.

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1.6 ACTION SUBMITTALS

- A. Delegated-Design Services Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit a statement signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional, indicating that the products and systems are in compliance with performance and design criteria indicated. Include list of codes, loads, and other factors used in performing these services.

1.7 INFORMATIONAL SUBMITTALS

- A. Contractor's Quality-Control Plan: For quality-assurance and quality-control activities and responsibilities.
- B. Qualification Data: For Contractor's quality-control personnel.
- C. Contractor's Statement of Responsibility: When required by authorities having jurisdiction, submit copy of written statement of responsibility submitted to authorities having jurisdiction before starting work on the following systems:
  - 1. Seismic-force-resisting system, designated seismic system, or component listed in the Statement of Special Inspections.
  - 2. Main wind-force-resisting system or a wind-resisting component listed in the Statement of Special Inspections.
- D. Testing Agency Qualifications: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.
- E. Schedule of Tests and Inspections: Prepare in tabular form and include the following:
  - 1. Specification Section number and title.
  - 2. Entity responsible for performing tests and inspections.
  - 3. Description of test and inspection.
  - 4. Identification of applicable standards.
  - 5. Identification of test and inspection methods.
  - 6. Number of tests and inspections required.
  - 7. Time schedule or time span for tests and inspections.
  - 8. Requirements for obtaining samples.
  - 9. Unique characteristics of each quality-control service.
- F. Reports: Prepare and submit certified written reports and documents as specified.
- G. Permits, Licenses, and Certificates: For Owner's record, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents established for compliance with standards and regulations bearing on performance of the Work.

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1.8 CONTRACTOR'S QUALITY-CONTROL PLAN

- A. Quality-Control Plan, General: Submit quality-control plan within 10 days of Notice to Proceed, and not less than five days prior to preconstruction conference. Submit in format acceptable to Engineer. Identify personnel, procedures, controls, instructions, tests, records, and forms to be used to carry out Contractor's quality-assurance and quality-control responsibilities. Coordinate with Contractor's Construction Schedule.
- B. Quality-Control Personnel Qualifications: Engage qualified personnel trained and experienced in managing and executing quality-assurance and quality-control procedures similar in nature and extent to those required for Project.
  - 1. Project quality-control manager may also serve as Project superintendent.
- C. Submittal Procedure: Describe procedures for ensuring compliance with requirements through review and management of submittal process. Indicate qualifications of personnel responsible for submittal review.
- D. Testing and Inspection: In quality-control plan, include a comprehensive schedule of Work requiring testing or inspection, including the following:
  - 1. Contractor-performed tests and inspections including Subcontractor-performed tests and inspections. Include required tests and inspections and Contractor-elected tests and inspections. Distinguish source quality-control tests and inspections from field quality-control tests and inspections.
  - 2. Special inspections required by authorities having jurisdiction and indicated on the Statement of Special Inspections.
  - 3. Owner-performed tests and inspections indicated in the Contract Documents.
- E. Continuous Inspection of Workmanship: Describe process for continuous inspection during construction to identify and correct deficiencies in workmanship in addition to testing and inspection specified. Indicate types of corrective actions to be required to bring work into compliance with standards of workmanship established by Contract requirements and approved mockups.
- F. Monitoring and Documentation: Maintain testing and inspection reports including log of approved and rejected results. Include work Engineer has indicated as nonconforming or defective. Indicate corrective actions taken to bring nonconforming work into compliance with requirements. Comply with requirements of authorities having jurisdiction.

1.9 REPORTS AND DOCUMENTS

- A. Test and Inspection Reports: Prepare and submit certified written reports specified in other Sections. Include the following:
  - 1. Date of issue.
  - 2. Project title and number.
  - 3. Name, address, telephone number, and email address of testing agency.
  - 4. Dates and locations of samples and tests or inspections.
  - 5. Names of individuals making tests and inspections.

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6. Description of the Work and test and inspection method.
  7. Identification of product and Specification Section.
  8. Complete test or inspection data.
  9. Test and inspection results and an interpretation of test results.
  10. Record of temperature and weather conditions at time of sample taking and testing and inspection.
  11. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
  12. Name and signature of laboratory inspector.
  13. Recommendations on retesting and reinspecting.
- B. Manufacturer's Technical Representative's Field Reports: Prepare written information documenting manufacturer's technical representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, telephone number, and email address of technical representative making report.
  2. Statement on condition of substrates and their acceptability for installation of product.
  3. Statement that products at Project site comply with requirements.
  4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
  5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
  6. Statement whether conditions, products, and installation will affect warranty.
  7. Other required items indicated in individual Specification Sections.
- C. Factory-Authorized Service Representative's Reports: Prepare written information documenting manufacturer's factory-authorized service representative's tests and inspections specified in other Sections. Include the following:
1. Name, address, telephone number, and email address of factory-authorized service representative making report.
  2. Statement that equipment complies with requirements.
  3. Results of operational and other tests and a statement of whether observed performance complies with requirements.
  4. Statement whether conditions, products, and installation will affect warranty.
  5. Other required items indicated in individual Specification Sections.

1.10 QUALITY ASSURANCE

- A. General: Qualifications paragraphs in this article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.
- B. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units. As applicable, procure products from manufacturers able to meet qualification requirements, warranty requirements, and technical or factory-authorized service representative requirements.

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- C. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
- D. Installer Qualifications: A firm or individual experienced in installing, erecting, applying, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.
- E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar in material, design, and extent to those indicated for this Project.
- F. Specialists: Certain Specification Sections require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.
  - 1. Requirements of authorities having jurisdiction shall supersede requirements for specialists.
- G. Testing Agency Qualifications: An NRTL, an NVLAP, or an independent agency with the experience and capability to conduct testing and inspection indicated, as documented according to ASTM E 329; and with additional qualifications specified in individual Sections; and, where required by authorities having jurisdiction, that is acceptable to authorities.
- H. Manufacturer's Technical Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to observe and inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.
- I. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

1.11 QUALITY CONTROL

- A. Contractor Responsibilities: Tests and inspections not explicitly assigned to Owner are Contractor's responsibility. Perform additional quality-control activities, whether specified or not, to verify and document that the Work complies with requirements.
  - 1. Unless otherwise indicated, provide quality-control services specified and those required by authorities having jurisdiction. Perform quality-control services required of Contractor by authorities having jurisdiction, whether specified or not.
  - 2. Engage a qualified testing agency to perform quality-control services.
    - a. Contractor shall not employ same entity engaged by Owner, unless agreed to in writing by Owner.

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QUALITY REQUIREMENTS

3. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspection will be performed.
  4. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.
  5. Testing and inspection requested by Contractor and not required by the Contract Documents are Contractor's responsibility.
  6. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.
- B. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.
- C. Testing Agency Responsibilities: Cooperate with Engineer and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
1. Notify Engineer and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
  2. Determine the locations from which test samples will be taken and in which in-situ tests are conducted.
  3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
  4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
  5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
  6. Do not perform duties of Contractor.
- D. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Section 013300 "Submittal Procedures."
- E. Manufacturer's Technical Services: Where indicated, engage a manufacturer's technical representative to observe and inspect the Work. Manufacturer's technical representative's services include participation in preinstallation conferences, examination of substrates and conditions, verification of materials, observation of Installer activities, inspection of completed portions of the Work, and submittal of written reports.
- F. Associated Contractor Services: Cooperate with agencies and representatives performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
1. Access to the Work.
  2. Incidental labor and facilities necessary to facilitate tests and inspections.
  3. Adequate quantities of representative samples of materials that require testing and inspection. Assist agency in obtaining samples.
  4. Facilities for storage and field curing of test samples.
  5. Delivery of samples to testing agencies.

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6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
  7. Security and protection for samples and for testing and inspection equipment at Project site.
- G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspection.
1. Schedule times for tests, inspections, obtaining samples, and similar activities.

1.12 SPECIAL TESTS AND INSPECTIONS

- A. Special Tests and Inspections: Conducted by a qualified testing agency as required by authorities having jurisdiction, as indicated in individual Specification Sections, and as follows:
1. Verifying that manufacturer maintains detailed fabrication and quality-control procedures and reviewing the completeness and adequacy of those procedures to perform the Work.
  2. Notifying Engineer and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
  3. Submitting a certified written report of each test, inspection, and similar quality-control service to Engineer with copy to Contractor and to authorities having jurisdiction.
  4. Submitting a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
  5. Interpreting tests and inspections and stating in each report whether tested and inspected work complies with or deviates from the Contract Documents.
  6. Retesting and reinspecting corrected work.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 ACCEPTABLE TESTING AGENCIES

- A. Determined upon review.

3.2 TEST AND INSPECTION LOG

- A. Test and Inspection Log: Prepare a record of tests and inspections. Include the following:
1. Date test or inspection was conducted.
  2. Description of the Work tested or inspected.
  3. Date test or inspection results were transmitted to Engineer.
  4. Identification of testing agency or special inspector conducting test or inspection.

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- B. Maintain log at Project site. Post changes and revisions as they occur. Provide access to test and inspection log for Engineer's reference during normal working hours.
  - 1. Submit log at Project closeout as part of Project Record Documents.

3.3 REPAIR AND PROTECTION

- A. General: On completion of testing, inspection, sample taking, and similar services, repair damaged construction and restore substrates and finishes.
  - 1. Provide materials and comply with installation requirements specified in other Specification Sections or matching existing substrates and finishes. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible. Comply with the Contract Document requirements for cutting and patching in Section 017300 "Execution."
- B. Protect construction exposed by or for quality-control service activities.
- C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION

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QUALITY REQUIREMENTS

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SECTION 014200  
REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DEFINITIONS

- A. General: Basic Contract definitions are included in the Conditions of the Contract.
- B. "Approved": When used to convey Engineer's action on Contractor's submittals, applications, and requests, "approved" is limited to Engineer's duties and responsibilities as stated in the Conditions of the Contract.
- C. "Directed": A command or instruction by Engineer. Other terms including "requested," "authorized," "selected," "required," and "permitted" have the same meaning as "directed."
- D. "Indicated": Requirements expressed by graphic representations or in written form on Drawings, in Specifications, and in other Contract Documents. Other terms including "shown," "noted," "scheduled," and "specified" have the same meaning as "indicated."
- E. "Regulations": Laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, and rules, conventions, and agreements within the construction industry that control performance of the Work.
- F. "Furnish": Supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.
- G. "Install": Unload, temporarily store, unpack, assemble, erect, place, anchor, apply, work to dimension, finish, cure, protect, clean, and similar operations at Project site.
- H. "Provide": Furnish and install, complete and ready for the intended use.
- I. "Project Site": Space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.3 INDUSTRY STANDARDS

- A. Applicability of Standards: Unless the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.
- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.

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REFERENCES

- C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.

1.4 ABBREVIATIONS AND ACRONYMS

- A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities indicated in Gale's "Encyclopedia of Associations: National Organizations of the U.S." or in Columbia Books' "National Trade & Professional Associations of the United States."
- B. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.
1. AABC - Associated Air Balance Council; [www.aabc.com](http://www.aabc.com).
  2. AAMA - American Engineeural Manufacturers Association; [www.aamanet.org](http://www.aamanet.org).
  3. AAPFCO - Association of American Plant Food Control Officials; [www.aapfco.org](http://www.aapfco.org).
  4. AASHTO - American Association of State Highway and Transportation Officials; [www.transportation.org](http://www.transportation.org).
  5. AATCC - American Association of Textile Chemists and Colorists; [www.aatcc.org](http://www.aatcc.org).
  6. ABMA - American Bearing Manufacturers Association; [www.americanbearings.org](http://www.americanbearings.org).
  7. ABMA - American Boiler Manufacturers Association; [www.abma.com](http://www.abma.com).
  8. ACI - American Concrete Institute; (Formerly: ACI International); [www.concrete.org](http://www.concrete.org)
  9. ACPA - American Concrete Pipe Association; [www.concrete-pipe.org](http://www.concrete-pipe.org).
  10. AEIC - Association of Edison Illuminating Companies, Inc. (The); [www.aeic.org](http://www.aeic.org).
  11. AF&PA - American Forest & Paper Association; [www.afandpa.org](http://www.afandpa.org).
  12. AGA - American Gas Association; [www.aga.org](http://www.aga.org).
  13. AHAM - Association of Home Appliance Manufacturers; [www.aham.org](http://www.aham.org).
  14. AHRI - Air-Conditioning, Heating, and Refrigeration Institute (The); [www.ahrinet.org](http://www.ahrinet.org).
  15. AI - Asphalt Institute; [www.asphaltinstitute.org](http://www.asphaltinstitute.org).
  16. AIA - American Institute of Engineers (The); [www.aia.org](http://www.aia.org).
  17. AISC - American Institute of Steel Construction; [www.aisc.org](http://www.aisc.org).
  18. AISI - American Iron and Steel Institute; [www.steel.org](http://www.steel.org).
  19. AITC - American Institute of Timber Construction; [www.aitc-glulam.org](http://www.aitc-glulam.org).
  20. AMCA - Air Movement and Control Association International, Inc.; [www.amca.org](http://www.amca.org).
  21. ANSI - American National Standards Institute; [www.ansi.org](http://www.ansi.org).
  22. AOSA - Association of Official Seed Analysts, Inc.; [www.aosaseed.com](http://www.aosaseed.com).
  23. APA - APA - The Engineered Wood Association; [www.apawood.org](http://www.apawood.org).
  24. APA - Engineeural Precast Association; [www.archprecast.org](http://www.archprecast.org).
  25. API - American Petroleum Institute; [www.api.org](http://www.api.org).
  26. ARI - Air-Conditioning & Refrigeration Institute; (See AHRI).
  27. ARI - American Refrigeration Institute; (See AHRI).
  28. ARMA - Asphalt Roofing Manufacturers Association; [www.asphaltroofing.org](http://www.asphaltroofing.org).
  29. ASCE - American Society of Civil Engineers; [www.asce.org](http://www.asce.org).

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REFERENCES

30. ASCE/SEI - American Society of Civil Engineers/Structural Engineering Institute; (See ASCE).
31. ASHRAE - American Society of Heating, Refrigerating and Air-Conditioning Engineers; [www.ashrae.org](http://www.ashrae.org).
32. ASME - ASME International; (American Society of Mechanical Engineers); [www.asme.org](http://www.asme.org).
33. ASSE - American Society of Safety Engineers (The); [www.asse.org](http://www.asse.org).
34. ASSE - American Society of Sanitary Engineering; [www.asse-plumbing.org](http://www.asse-plumbing.org).
35. ASTM - ASTM International; [www.astm.org](http://www.astm.org).
36. ATIS - Alliance for Telecommunications Industry Solutions; [www.atis.org](http://www.atis.org).
37. AWEA - American Wind Energy Association; [www.awea.org](http://www.awea.org).
38. AWI - Engineerural Woodwork Institute; [www.awinet.org](http://www.awinet.org).
39. AWMAC - Engineerural Woodwork Manufacturers Association of Canada; [www.awmac.com](http://www.awmac.com).
40. AWPA - American Wood Protection Association; [www.awpa.com](http://www.awpa.com).
41. AWS - American Welding Society; [www.aws.org](http://www.aws.org).
42. AWWA - American Water Works Association; [www.awwa.org](http://www.awwa.org).
43. BHMA - Builders Hardware Manufacturers Association; [www.buildershardware.com](http://www.buildershardware.com).
44. BIA - Brick Industry Association (The); [www.gobrick.com](http://www.gobrick.com).
45. BICSI - BICSI, Inc.; [www.bicsi.org](http://www.bicsi.org).
46. BIFMA - BIFMA International; (Business and Institutional Furniture Manufacturer's Association); [www.bifma.org](http://www.bifma.org).
47. BISSC - Baking Industry Sanitation Standards Committee; [www.bissc.org](http://www.bissc.org).
48. BWF - Badminton World Federation; (Formerly: International Badminton Federation); [www.bissc.org](http://www.bissc.org).
49. CDA - Copper Development Association; [www.copper.org](http://www.copper.org).
50. CE - Conformance Europeenne; <http://ec.europa.eu/growth/single-market/ce-marking/>
51. CEA - Canadian Electricity Association; [www.electricity.ca](http://www.electricity.ca).
52. CEA - Consumer Electronics Association; [www.ce.org](http://www.ce.org).
53. CFFA - Chemical Fabrics and Film Association, Inc.; [www.chemicalfabricsandfilm.com](http://www.chemicalfabricsandfilm.com).
54. CFSEI - Cold-Formed Steel Engineers Institute; [www.cfsei.org](http://www.cfsei.org).
55. CGA - Compressed Gas Association; [www.cganet.com](http://www.cganet.com).
56. CIMA - Cellulose Insulation Manufacturers Association; [www.cellulose.org](http://www.cellulose.org).
57. CISCA - Ceilings & Interior Systems Construction Association; [www.cisca.org](http://www.cisca.org).
58. CISPI - Cast Iron Soil Pipe Institute; [www.cispi.org](http://www.cispi.org).
59. CLFMI - Chain Link Fence Manufacturers Institute; [www.chainlinkinfo.org](http://www.chainlinkinfo.org).
60. CPA - Composite Panel Association; [www.pbmdf.com](http://www.pbmdf.com).
61. CRI - Carpet and Rug Institute (The); [www.carpet-rug.org](http://www.carpet-rug.org).
62. CRRC - Cool Roof Rating Council; [www.coolroofs.org](http://www.coolroofs.org).
63. CRSI - Concrete Reinforcing Steel Institute; [www.crsi.org](http://www.crsi.org).
64. CSA - Canadian Standards Association; [www.csa.ca](http://www.csa.ca).
65. CSA - CSA International; (Formerly: IAS - International Approval Services); [www.csa-international.org](http://www.csa-international.org).
66. CSI - Construction Specifications Institute (The); [www.csinet.org](http://www.csinet.org).
67. CSSB - Cedar Shake & Shingle Bureau; [www.cedarbureau.org](http://www.cedarbureau.org).
68. CTI - Cooling Technology Institute; (Formerly: Cooling Tower Institute); [www.cti.org](http://www.cti.org).
69. CWC - Composite Wood Council; (See CPA).
70. DASMA - Door and Access Systems Manufacturers Association; [www.dasma.com](http://www.dasma.com).
71. DHI - Door and Hardware Institute; [www.dhi.org](http://www.dhi.org).
72. ECA - Electronic Components Association; (See ECIA).
73. ECAMA - Electronic Components Assemblies & Materials Association; (See ECIA).

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REFERENCES

74. ECIA - Electronic Components Industry Association; [www.eciaonline.org](http://www.eciaonline.org).
75. EIA - Electronic Industries Alliance; (See TIA).
76. EIMA - EIFS Industry Members Association; [www.eima.com](http://www.eima.com).
77. EJMA - Expansion Joint Manufacturers Association, Inc.; [www.ejma.org](http://www.ejma.org).
78. ESD - ESD Association; (Electrostatic Discharge Association); [www.esda.org](http://www.esda.org).
79. ESTA - Entertainment Services and Technology Association; (See PLASA).
80. ETL - Intertek (See Intertek); [www.intertek.com](http://www.intertek.com).
81. EVO - Efficiency Valuation Organization; [www.evo-world.org](http://www.evo-world.org).
82. FCI - Fluid Controls Institute; [www.fluidcontrolsintstitute.org](http://www.fluidcontrolsintstitute.org).
83. FIBA - Federation Internationale de Basketball; (The International Basketball Federation); [www.fiba.com](http://www.fiba.com).
84. FIVB - Federation Internationale de Volleyball; (The International Volleyball Federation); [www.fivb.org](http://www.fivb.org).
85. FM Approvals - FM Approvals LLC; [www.fmglobal.com](http://www.fmglobal.com).
86. FM Global - FM Global; (Formerly: FMG - FM Global); [www.fmglobal.com](http://www.fmglobal.com).
87. FRSA - Florida Roofing, Sheet Metal & Air Conditioning Contractors Association, Inc.; [www.floridarroof.com](http://www.floridarroof.com).
88. FSA - Fluid Sealing Association; [www.fluidsealing.com](http://www.fluidsealing.com).
89. FSC - Forest Stewardship Council U.S.; [www.fscus.org](http://www.fscus.org).
90. GA - Gypsum Association; [www.gypsum.org](http://www.gypsum.org).
91. GANA - Glass Association of North America; [www.glasswebsite.com](http://www.glasswebsite.com).
92. GS - Green Seal; [www.greenseal.org](http://www.greenseal.org).
93. HI - Hydraulic Institute; [www.pumps.org](http://www.pumps.org).
94. HI/GAMA - Hydronics Institute/Gas Appliance Manufacturers Association; (See AHRI).
95. HMMA - Hollow Metal Manufacturers Association; (See NAAMM).
96. HPVA - Hardwood Plywood & Veneer Association; [www.hpva.org](http://www.hpva.org).
97. HPW - H. P. White Laboratory, Inc.; [www.hpwhite.com](http://www.hpwhite.com).
98. IAPSC - International Association of Professional Security Consultants; [www.iapsc.org](http://www.iapsc.org).
99. IAS - International Accreditation Service; [www.iasonline.org](http://www.iasonline.org).
100. IAS - International Approval Services; (See CSA).
101. ICBO - International Conference of Building Officials; (See ICC).
102. ICC - International Code Council; [www.iccsafe.org](http://www.iccsafe.org).
103. ICEA - Insulated Cable Engineers Association, Inc.; [www.icea.net](http://www.icea.net).
104. ICPA - International Cast Polymer Alliance; [www.icpa-hq.org](http://www.icpa-hq.org).
105. ICRI - International Concrete Repair Institute, Inc.; [www.icri.org](http://www.icri.org).
106. IEC - International Electrotechnical Commission; [www.iec.ch](http://www.iec.ch).
107. IEEE - Institute of Electrical and Electronics Engineers, Inc. (The); [www.ieee.org](http://www.ieee.org).
108. IES - Illuminating Engineering Society; (Formerly: Illuminating Engineering Society of North America); [www.ies.org](http://www.ies.org).
109. IESNA - Illuminating Engineering Society of North America; (See IES).
110. IEST - Institute of Environmental Sciences and Technology; [www.iest.org](http://www.iest.org).
111. IGMA - Insulating Glass Manufacturers Alliance; [www.igmaonline.org](http://www.igmaonline.org).
112. IGSHPA - International Ground Source Heat Pump Association; [www.igshpa.okstate.edu](http://www.igshpa.okstate.edu).
113. ILI - Indiana Limestone Institute of America, Inc.; [www.iliai.com](http://www.iliai.com).
114. Intertek - Intertek Group; (Formerly: ETL SEMCO; Intertek Testing Service NA); [www.intertek.com](http://www.intertek.com).
115. ISA - International Society of Automation (The); (Formerly: Instrumentation, Systems, and Automation Society); [www.isa.org](http://www.isa.org).
116. ISAS - Instrumentation, Systems, and Automation Society (The); (See ISA).

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117. ISFA - International Surface Fabricators Association; (Formerly: International Solid Surface Fabricators Association); [www.isfanow.org](http://www.isfanow.org).
118. ISO - International Organization for Standardization; [www.iso.org](http://www.iso.org).
119. ISSFA - International Solid Surface Fabricators Association; (See ISFA).
120. ITU - International Telecommunication Union; [www.itu.int/home](http://www.itu.int/home).
121. KCMA - Kitchen Cabinet Manufacturers Association; [www.kcma.org](http://www.kcma.org).
122. LMA - Laminating Materials Association; (See CPA).
123. LPI - Lightning Protection Institute; [www.lightning.org](http://www.lightning.org).
124. MBMA - Metal Building Manufacturers Association; [www.mbma.com](http://www.mbma.com).
125. MCA - Metal Construction Association; [www.metalconstruction.org](http://www.metalconstruction.org).
126. MFMA - Maple Flooring Manufacturers Association, Inc.; [www.maplefloor.org](http://www.maplefloor.org).
127. MFMA - Metal Framing Manufacturers Association, Inc.; [www.metalframingmfg.org](http://www.metalframingmfg.org).
128. MHIA - Material Handling Industry of America; [www.mhia.org](http://www.mhia.org).
129. MIA - Marble Institute of America; [www.marble-institute.com](http://www.marble-institute.com).
130. MMPA - Moulding & Millwork Producers Association; [www.wmmpa.com](http://www.wmmpa.com).
131. MPI - Master Painters Institute; [www.paintinfo.com](http://www.paintinfo.com).
132. MSS - Manufacturers Standardization Society of The Valve and Fittings Industry Inc.; [www.mss-hq.org](http://www.mss-hq.org).
133. NAAMM - National Association of Engineerural Metal Manufacturers; [www.naamm.org](http://www.naamm.org).
134. NACE - NACE International; (National Association of Corrosion Engineers International); [www.nace.org](http://www.nace.org).
135. NADCA - National Air Duct Cleaners Association; [www.nadca.com](http://www.nadca.com).
136. NAIMA - North American Insulation Manufacturers Association; [www.naima.org](http://www.naima.org).
137. NBGQA - National Building Granite Quarries Association, Inc.; [www.nbgqa.com](http://www.nbgqa.com).
138. NBI - New Buildings Institute; [www.newbuildings.org](http://www.newbuildings.org).
139. NCAA - National Collegiate Athletic Association (The); [www.ncaa.org](http://www.ncaa.org).
140. NCMA - National Concrete Masonry Association; [www.ncma.org](http://www.ncma.org).
141. NEBB - National Environmental Balancing Bureau; [www.nebb.org](http://www.nebb.org).
142. NECA - National Electrical Contractors Association; [www.necanet.org](http://www.necanet.org).
143. NeLMA - Northeastern Lumber Manufacturers Association; [www.nelma.org](http://www.nelma.org).
144. NEMA - National Electrical Manufacturers Association; [www.nema.org](http://www.nema.org).
145. NETA - InterNational Electrical Testing Association; [www.netaworld.org](http://www.netaworld.org).
146. NFHS - National Federation of State High School Associations; [www.nfhs.org](http://www.nfhs.org).
147. NFPA - National Fire Protection Association; [www.nfpa.org](http://www.nfpa.org).
148. NFPA - NFPA International; (See NFPA).
149. NFRC - National Fenestration Rating Council; [www.nfrc.org](http://www.nfrc.org).
150. NHLA - National Hardwood Lumber Association; [www.nhla.com](http://www.nhla.com).
151. NLGA - National Lumber Grades Authority; [www.nlga.org](http://www.nlga.org).
152. NOFMA - National Oak Flooring Manufacturers Association; (See NWFA).
153. NOMMA - National Ornamental & Miscellaneous Metals Association; [www.nomma.org](http://www.nomma.org).
154. NRCA - National Roofing Contractors Association; [www.nrca.net](http://www.nrca.net).
155. NRMCA - National Ready Mixed Concrete Association; [www.nrmca.org](http://www.nrmca.org).
156. NSF - NSF International; [www.nsf.org](http://www.nsf.org).
157. NSPE - National Society of Professional Engineers; [www.nspe.org](http://www.nspe.org).
158. NSSGA - National Stone, Sand & Gravel Association; [www.nssga.org](http://www.nssga.org).
159. NTMA - National Terrazzo & Mosaic Association, Inc. (The); [www.ntma.com](http://www.ntma.com).
160. NWFA - National Wood Flooring Association; [www.nwfa.org](http://www.nwfa.org).
161. PCI - Precast/Prestressed Concrete Institute; [www.pci.org](http://www.pci.org).
162. PDI - Plumbing & Drainage Institute; [www.pdionline.org](http://www.pdionline.org).

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163. PLASA - PLASA; (Formerly: ESTA - Entertainment Services and Technology Association); <http://www.plasa.org>.
164. RCSC - Research Council on Structural Connections; [www.boltcouncil.org](http://www.boltcouncil.org).
165. RFCI - Resilient Floor Covering Institute; [www.rfci.com](http://www.rfci.com).
166. RIS - Redwood Inspection Service; [www.redwoodinspection.com](http://www.redwoodinspection.com).
167. SAE - SAE International; [www.sae.org](http://www.sae.org).
168. SCTE - Society of Cable Telecommunications Engineers; [www.scte.org](http://www.scte.org).
169. SDI - Steel Deck Institute; [www.sdi.org](http://www.sdi.org).
170. SDI - Steel Door Institute; [www.steeldoor.org](http://www.steeldoor.org).
171. SEFA - Scientific Equipment and Furniture Association (The); [www.sefalabs.com](http://www.sefalabs.com).
172. SEI/ASCE - Structural Engineering Institute/American Society of Civil Engineers; (See ASCE).
173. SIA - Security Industry Association; [www.siaonline.org](http://www.siaonline.org).
174. SJI - Steel Joist Institute; [www.steeljoist.org](http://www.steeljoist.org).
175. SMA - Screen Manufacturers Association; [www.smainfo.org](http://www.smainfo.org).
176. SMACNA - Sheet Metal and Air Conditioning Contractors' National Association; [www.smacna.org](http://www.smacna.org).
177. SMPTE - Society of Motion Picture and Television Engineers; [www.smpte.org](http://www.smpte.org).
178. SPFA - Spray Polyurethane Foam Alliance; [www.sprayfoam.org](http://www.sprayfoam.org).
179. SPIB - Southern Pine Inspection Bureau; [www.spib.org](http://www.spib.org).
180. SPRI - Single Ply Roofing Industry; [www.spri.org](http://www.spri.org).
181. SRCC - Solar Rating & Certification Corporation; [www.solar-rating.org](http://www.solar-rating.org).
182. SSINA - Specialty Steel Industry of North America; [www.ssina.com](http://www.ssina.com).
183. SSPC - SSPC: The Society for Protective Coatings; [www.sspc.org](http://www.sspc.org).
184. STI - Steel Tank Institute; [www.steeltank.com](http://www.steeltank.com).
185. SWI - Steel Window Institute; [www.steelwindows.com](http://www.steelwindows.com).
186. SWPA - Submersible Wastewater Pump Association; [www.swpa.org](http://www.swpa.org).
187. TCA - Tilt-Up Concrete Association; [www.tilt-up.org](http://www.tilt-up.org).
188. TCNA - Tile Council of North America, Inc.; [www.tileusa.com](http://www.tileusa.com).
189. TEMA - Tubular Exchanger Manufacturers Association, Inc.; [www.tema.org](http://www.tema.org).
190. TIA - Telecommunications Industry Association (The); (Formerly: TIA/EIA - Telecommunications Industry Association/Electronic Industries Alliance); [www.tiaonline.org](http://www.tiaonline.org).
191. TIA/EIA - Telecommunications Industry Association/Electronic Industries Alliance; (See TIA).
192. TMS - The Masonry Society; [www.masonrysociety.org](http://www.masonrysociety.org).
193. TPI - Truss Plate Institute; [www.tpinst.org](http://www.tpinst.org).
194. TPI - Turfgrass Producers International; [www.turfgrasssod.org](http://www.turfgrasssod.org).
195. TRI - Tile Roofing Institute; [www.tilerroofing.org](http://www.tilerroofing.org).
196. UL - Underwriters Laboratories Inc.; <http://www.ul.com>.
197. UNI - Uni-Bell PVC Pipe Association; [www.uni-bell.org](http://www.uni-bell.org).
198. USAV - USA Volleyball; [www.usavolleyball.org](http://www.usavolleyball.org).
199. USGBC - U.S. Green Building Council; [www.usgbc.org](http://www.usgbc.org).
200. USITT - United States Institute for Theatre Technology, Inc.; [www.usitt.org](http://www.usitt.org).
201. WASTEC - Waste Equipment Technology Association; [www.wastec.org](http://www.wastec.org).
202. WCLIB - West Coast Lumber Inspection Bureau; [www.wclib.org](http://www.wclib.org).
203. WCMA - Window Covering Manufacturers Association; [www.wcmanet.org](http://www.wcmanet.org).
204. WDMA - Window & Door Manufacturers Association; [www.wdma.com](http://www.wdma.com).
205. WI - Woodwork Institute; [www.wicnet.org](http://www.wicnet.org).
206. WSRCA - Western States Roofing Contractors Association; [www.wsrca.com](http://www.wsrca.com).
207. WWPA - Western Wood Products Association; [www.wwpa.org](http://www.wwpa.org).

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- C. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is believed to be accurate as of the date of the Contract Documents.
1. DIN - Deutsches Institut fur Normung e.V.; [www.din.de](http://www.din.de).
  2. IAPMO - International Association of Plumbing and Mechanical Officials; [www.iapmo.org](http://www.iapmo.org).
  3. ICC - International Code Council; [www.iccsafe.org](http://www.iccsafe.org).
  4. ICC-ES - ICC Evaluation Service, LLC; [www.icc-es.org](http://www.icc-es.org).
- D. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Information is subject to change and is up to date as of the date of the Contract Documents.
1. COE - Army Corps of Engineers; [www.usace.army.mil](http://www.usace.army.mil).
  2. CPSC - Consumer Product Safety Commission; [www.cpsc.gov](http://www.cpsc.gov).
  3. DOC - Department of Commerce; National Institute of Standards and Technology; [www.nist.gov](http://www.nist.gov).
  4. DOD - Department of Defense; [www.quicksearch.dla.mil](http://www.quicksearch.dla.mil).
  5. DOE - Department of Energy; [www.energy.gov](http://www.energy.gov).
  6. EPA - Environmental Protection Agency; [www.epa.gov](http://www.epa.gov).
  7. FAA - Federal Aviation Administration; [www.faa.gov](http://www.faa.gov).
  8. FG - Federal Government Publications; [www.gpo.gov/fdsys](http://www.gpo.gov/fdsys).
  9. GSA - General Services Administration; [www.gsa.gov](http://www.gsa.gov).
  10. HUD - Department of Housing and Urban Development; [www.hud.gov](http://www.hud.gov).
  11. LBL - Lawrence Berkeley National Laboratory; Environmental Energy Technologies Division; [www.eetd.lbl.gov](http://www.eetd.lbl.gov).
  12. OSHA - Occupational Safety & Health Administration; [www.osha.gov](http://www.osha.gov).
  13. SD - Department of State; [www.state.gov](http://www.state.gov).
  14. TRB - Transportation Research Board; National Cooperative Highway Research Program; The National Academies; [www.trb.org](http://www.trb.org).
  15. USDA - Department of Agriculture; Agriculture Research Service; U.S. Salinity Laboratory; [www.ars.usda.gov](http://www.ars.usda.gov).
  16. USDA - Department of Agriculture; Rural Utilities Service; [www.usda.gov](http://www.usda.gov).
  17. USDOJ - Department of Justice; Office of Justice Programs; National Institute of Justice; [www.ojp.usdoj.gov](http://www.ojp.usdoj.gov).
  18. USP - U.S. Pharmacopeial Convention; [www.usp.org](http://www.usp.org).
  19. USPS - United States Postal Service; [www.usps.com](http://www.usps.com).
- E. Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the standards and regulations in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.
1. CFR - Code of Federal Regulations; Available from Government Printing Office; [www.gpo.gov/fdsys](http://www.gpo.gov/fdsys).
  2. DOD - Department of Defense; Military Specifications and Standards; Available from DLA Document Services; [www.quicksearch.dla.mil](http://www.quicksearch.dla.mil).
  3. DSCC - Defense Supply Center Columbus; (See FS).
  4. FED-STD - Federal Standard; (See FS).

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5. FS - Federal Specification; Available from DLA Document Services; [www.quicksearch.dla.mil](http://www.quicksearch.dla.mil).
    - a. Available from Defense Standardization Program; [www.dsp.dla.mil](http://www.dsp.dla.mil).
    - b. Available from General Services Administration; [www.gsa.gov](http://www.gsa.gov).
    - c. Available from National Institute of Building Sciences/Whole Building Design Guide; [www.wbdg.org/ccb](http://www.wbdg.org/ccb).
  6. MILSPEC - Military Specification and Standards; (See DOD).
  7. USAB - United States Access Board; [www.access-board.gov](http://www.access-board.gov).
  8. USATBCB - U.S. Engineerural & Transportation Barriers Compliance Board; (See USAB).
- F. State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. This information is subject to change and is believed to be accurate as of the date of the Contract Documents.
1. CBHF; State of California; Department of Consumer Affairs; Bureau of Electronic and Appliance Repair, Home Furnishings and Thermal Insulation; [www.bearhfti.ca.gov](http://www.bearhfti.ca.gov).
  2. CCR; California Code of Regulations; Office of Administrative Law; California Title 24 Energy Code; [www.calregs.com](http://www.calregs.com).
  3. CDHS; California Department of Health Services; (See CDPH).
  4. CDPH; California Department of Public Health; Indoor Air Quality Program; [www.cal-iaq.org](http://www.cal-iaq.org).
  5. CPUC; California Public Utilities Commission; [www.cpuc.ca.gov](http://www.cpuc.ca.gov).
  6. SCAQMD; South Coast Air Quality Management District; [www.aqmd.gov](http://www.aqmd.gov).
  7. TFS; Texas A&M Forest Service; Sustainable Forestry and Economic Development; [www.txforestservation.tamu.edu](http://www.txforestservation.tamu.edu).

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION

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TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

1.3 USE CHARGES

- A. General: Installation and removal of and use charges for temporary facilities shall be included in the Contract Sum unless otherwise indicated. Allow other entities engaged in the Project to use temporary services and facilities without cost, including, but not limited to, Engineer, occupants of Project, testing agencies, and authorities having jurisdiction.
- B. Water and Sewer Service: Currently there are no water and sewer services at the site. The general contractor shall be responsible for supplying water and sewer to the engineers trailer during construction. All contracts are responsible for their own water and sewer services during construction.
- C. Electric Power Service: Currently there is no electric power services at the site. The general contractor shall be responsible for supplying electrical power to the engineers trailer during construction. All contracts are responsible for their own power services during construction.

1.4 INFORMATIONAL SUBMITTALS

- A. Site Utilization Plan: Show temporary facilities, temporary utility lines and connections, staging areas, construction site entrances, vehicle circulation, and parking areas for construction personnel.
- B. Implementation and Termination Schedule: Within 15 days of date established for commencement of the Work, submit schedule indicating implementation and termination dates of each temporary utility.
- C. Fire-Safety Program: Show compliance with requirements of NFPA 241 and authorities having jurisdiction. Indicate Contractor personnel responsible for management of fire-prevention program.
- D. Moisture- and Mold-Protection Plan: Describe procedures and controls for protecting materials and construction from water absorption and damage and mold.

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TEMPORARY FACILITIES AND CONTROLS

- E. Dust- and HVAC-Control Plan: Submit coordination drawing and narrative that indicates the dust- and HVAC-control measures proposed for use, proposed locations, and proposed time frame for their operation. Include the following:
1. Locations of dust-control partitions at each phase of work.
  2. HVAC system isolation schematic drawing.
  3. Location of proposed air-filtration system discharge.
  4. Waste-handling procedures.
  5. Other dust-control measures.

1.5 QUALITY ASSURANCE

- A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.6 PROJECT CONDITIONS

- A. Temporary Use of Permanent Facilities: Engage Installer of each permanent service to 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 MATERIALS

- A. Chain-Link Fencing: Minimum 2-inch, 0.148-inch- thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet high with galvanized-steel pipe posts; minimum 2-3/8-inch- OD line posts and 2-7/8-inch- OD corner and pull posts, with 1-5/8-inch- OD top rails, with galvanized barbed-wire top strand.
- B. Portable Chain-Link Fencing: Minimum 2-inch, 0.148-inch- thick, galvanized-steel, chain-link fabric fencing; minimum 6 feet high with galvanized-steel pipe posts; minimum 2-3/8-inch- OD line posts and 2-7/8-inch- OD corner and pull posts, with 1-5/8-inch- OD top and bottom rails. Provide concrete galvanized-steel bases for supporting posts.
- C. Dust-Control Adhesive-Surface Walk-Off Mats: Provide mats minimum 36 by 60 inches.

2.2 EQUIPMENT

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

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TEMPORARY FACILITIES AND CONTROLS

- B. HVAC Equipment: Unless Owner authorizes use of permanent HVAC system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
  - 1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
  - 2. Heating Units: Listed and labeled for type of fuel being consumed, by a qualified testing agency acceptable to authorities having jurisdiction, and marked for intended location and application.
  - 3. Permanent HVAC System: If Owner authorizes use of permanent HVAC system for temporary use during construction, provide filter with MERV of 8 at each return-air grille in system and remove at end of construction.

PART 3 - EXECUTION

3.1 TEMPORARY FACILITIES, GENERAL

- A. Conservation: Coordinate construction and use of temporary facilities with consideration given to conservation of energy, water, and materials. Coordinate use of temporary utilities to minimize waste.
  - 1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. See other Sections for disposition of salvaged materials that are designated as Owner's property.

3.2 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
  - 1. Locate facilities to limit site disturbance as specified in Section 011200 "Summary."
- 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.

3.3 TEMPORARY UTILITY INSTALLATION

- A. General: Install temporary service or connect to existing service.
  - 1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
- B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.
  - 1. Connect temporary sewers to municipal system as directed by authorities having jurisdiction.

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- C. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction.
- D. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking water for use of construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities.
- E. Temporary Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.
  - 1. Provide temporary dehumidification systems when required to reduce ambient and substrate moisture levels to level required to allow installation or application of finishes and their proper curing or drying.
- F. Isolation of Work Areas in Occupied Facilities: Prevent dust, fumes, and odors from entering occupied areas.
  - 1. Prior to commencing work, isolate the HVAC system in area where work is to be performed.
    - a. Disconnect supply and return ductwork in work area from HVAC systems servicing occupied areas.
    - b. Maintain negative air pressure within work area using HEPA-equipped air-filtration units, starting with commencement of temporary partition construction, and continuing until removal of temporary partitions is complete.
  - 2. Maintain dust partitions during the Work. Use vacuum collection attachments on dust-producing equipment. Isolate limited work within occupied areas using portable dust-containment devices.
  - 3. Perform daily construction cleanup and final cleanup using approved, HEPA-filter-equipped vacuum equipment.
- G. Electric Power Service: Provide electric power service and distribution system of sufficient size, capacity, and power characteristics required for construction operations.
  - 1. Install electric power service underground unless otherwise indicated.
- H. 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.

3.4 SUPPORT FACILITIES INSTALLATION

- A. General: Comply with the following:

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TEMPORARY FACILITIES AND CONTROLS

1. Provide construction for temporary offices, shops, and sheds located within construction area or within 30 feet of building lines that is noncombustible according to ASTM E 136. Comply with NFPA 241.
  2. Maintain support facilities until Engineer schedules Substantial Completion inspection. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.
- B. Parking: Use designated areas of Owner's existing parking areas for construction personnel.
- C. Dewatering Facilities and Drains: Comply with requirements of authorities having jurisdiction. Maintain Project site, excavations, and construction free of water.
1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining properties or endanger permanent Work or temporary facilities.
  2. Remove snow and ice as required to minimize accumulations.
- 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 progress cleaning requirements in Section 017300 "Execution."
- 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 Elevator Use: Use of elevators is not permitted.
- G. Temporary Stairs: Until permanent stairs are available, provide temporary stairs where ladders are not adequate.
- H. Temporary Use of Permanent Stairs: Use of new stairs for construction traffic will be permitted, provided stairs are protected and finishes restored to new condition at time of Substantial Completion.
- 3.5 SECURITY AND PROTECTION FACILITIES INSTALLATION
- A. Protection of Existing Facilities: Protect existing vegetation, equipment, structures, utilities, and other improvements at Project site and on adjacent properties, except those indicated to be removed or altered. Repair damage to existing facilities.
1. Where access to adjacent properties is required in order to affect protection of existing facilities, obtain written permission from adjacent property owner to access property for that purpose.
- B. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction as required to comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
1. Comply with work restrictions specified in Section 011200 "Summary."

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- C. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to undisturbed areas and to adjacent properties and walkways, according to NYSDEC Standards.
  - 1. Verify that flows of water redirected from construction areas or generated by construction activity do not enter or cross tree- or plant-protection zones.
  - 2. Inspect, repair, and maintain erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
  - 3. Clean, repair, and restore adjoining properties and roads affected by erosion and sedimentation from Project site during the course of Project.
  - 4. Remove erosion and sedimentation controls and restore and stabilize areas disturbed during removal.
- D. Stormwater Control: Comply with requirements of authorities having jurisdiction. Provide barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.
- E. Tree and Plant Protection: Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.
- F. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Perform control operations lawfully, using materials approved by authorities having jurisdiction.
- G. Site Enclosure Fence: Prior to commencing earthwork, furnish and install site enclosure fence in a manner that will prevent people from easily entering site except by entrance gates.
  - 1. Extent of Fence: As required to enclose entire Project site or portion determined sufficient to accommodate construction operations.
  - 2. Maintain security by limiting number of keys and restricting distribution to authorized personnel.
- H. Security Enclosure and Lockup: Install temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security. Lock entrances at end of each workday.
- I. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- J. Temporary Egress: Maintain temporary egress from existing occupied facilities as indicated and as required by authorities having jurisdiction.
- K. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.
  - 1. Where heating or cooling is needed and permanent enclosure is incomplete, insulate temporary enclosures.

SECTION 015000  
TEMPORARY FACILITIES AND CONTROLS

- L. 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.
  - 1. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, and fire-retardant-treated plywood on construction operations side.
  - 2. Construct dustproof partitions with two layers of 6-mil polyethylene sheet on each side. Cover floor with two layers of 6-mil polyethylene sheet, extending sheets 18 inches up the sidewalls. Overlap and tape full length of joints. Cover floor with fire-retardant-treated plywood.
    - a. Construct vestibule and airlock at each entrance through temporary partition with not less than 48 inches between doors. Maintain water-dampened foot mats in vestibule.

3.6 MOISTURE AND MOLD CONTROL

- A. Contractor's Moisture-Protection Plan: Describe delivery, handling, storage, installation, and protection provisions for materials subject to water absorption or water damage.
  - 1. Indicate procedures for discarding water-damaged materials, protocols for mitigating water intrusion into completed Work, and replacing water-damaged Work.
  - 2. Indicate sequencing of work that requires water, such as sprayed fire-resistive materials, plastering, and terrazzo grinding, and describe plans for dealing with water from these operations. Show procedures for verifying that wet construction has dried sufficiently to permit installation of finish materials.
  - 3. Indicate methods to be used to avoid trapping water in finished work.
- B. Exposed Construction Period: Before installation of weather barriers, when materials are subject to wetting and exposure and to airborne mold spores, protect as follows:
  - 1. Protect porous materials from water damage.
  - 2. Protect stored and installed material from flowing or standing water.
  - 3. Keep porous and organic materials from coming into prolonged contact with concrete.
  - 4. Remove standing water from decks.
  - 5. Keep deck openings covered or dammed.
- C. Partially Enclosed Construction Period: After installation of weather barriers but before full enclosure and conditioning of building, when installed materials are still subject to infiltration of moisture and ambient mold spores, protect as follows:
  - 1. Do not load or install drywall or other porous materials or components, or items with high organic content, into partially enclosed building.
  - 2. Keep interior spaces reasonably clean and protected from water damage.
  - 3. Periodically collect and remove waste containing cellulose or other organic matter.
  - 4. Discard or replace water-damaged material.
  - 5. Do not install material that is wet.
  - 6. Discard and replace stored or installed material that begins to grow mold.
  - 7. Perform work in a sequence that allows wet materials adequate time to dry before enclosing the material in gypsum board or other interior finishes.

SECTION 015000  
TEMPORARY FACILITIES AND CONTROLS

- D. Controlled Construction Period: After completing and sealing of the building enclosure but prior to the full operation of permanent HVAC systems, maintain as follows:
1. Control moisture and humidity inside building by maintaining effective dry-in conditions.
  2. Use temporary or permanent HVAC system to control humidity within ranges specified for installed and stored materials.
  3. Comply with manufacturer's written instructions for temperature, relative humidity, and exposure to water limits.
    - a. Hygroscopic materials that may support mold growth, including wood and gypsum-based products, that become wet during the course of construction and remain wet for 48 hours are considered defective and require replacing.
    - b. Measure moisture content of materials that have been exposed to moisture during construction operations or after installation. Record readings beginning at time of exposure and continuing daily for 48 hours. Identify materials containing moisture levels higher than allowed. Report findings in writing to Engineer.
    - c. Remove and replace materials that cannot be completely restored to their manufactured moisture level within 48 hours.

3.7 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.
- 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 no later than 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.

END OF SECTION

SECTION 015000  
TEMPORARY FACILITIES AND CONTROLS

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SECTION 016500  
STARTING OF SYSTEMS

PART 1                   GENERAL

1.1     SECTION INCLUDES

- A. Starting systems.
- B. Demonstration and instructions.
- C. Testing, adjusting, and balancing.

1.2     RELATED TOPICS

- A. Quality Control: Manufacturers field reports.
- B. Contract Closeout: System operation and maintenance data and extra materials.

1.3     STARTING SYSTEMS

- A. Coordinate schedule for start-up of various equipment and systems.
- B. Notify Engineer seven (7) days prior to start-up of each item.
- C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, or for other conditions which may cause damage.
- D. Verify that tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
- E. Verify wiring and support components for equipment are complete and tested.
- F. Execute start-up under supervision of applicable manufacturer's representative and/or Contractors' personnel (as specified in individual Sections) in accordance with manufacturers' instructions.
- G. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.
- H. Submit a written report indicating that equipment or system has been properly installed and is functioning correctly.

1.4     DEMONSTRATION AND INSTRUCTIONS

- A. Demonstrate operation and maintenance of products to Owner's personnel two (2) weeks prior to date of Substantial Completion.
- B. Demonstrate project equipment and instruct in a classroom environment located at the site and instructed by a qualified manufacturers' representative who is knowledgeable about the project.
- C. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owners' personnel in detail to explain all aspects of operation and maintenance.
- D. Demonstrate start-up, operation, control, adjustment, troubleshooting, servicing, maintenance, and shutdown of each item of equipment at agreed time, at equipment location.
- E. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.
- F. The amount of time required for instruction on each item of equipment and system is that specified in individual sections.
- G. The Owner reserves the right to videotape any of the demonstrations or instructions provided under this section.

SECTION 016500  
STARTING OF SYSTEMS

1.5 TESTING, ADJUSTING, AND BALANCING

- A. Appoint, employ, and pay for services of an independent firm to perform testing, adjusting, and balancing.
- B. Reports will be submitted by the independent firm to the Engineer indicating observations and results of tests and indicating compliance or non-compliance with the requirements of the Contract Documents.

PART 2                      PRODUCTS  
Not Used

PART 3                      EXECUTION  
Not Used

END OF SECTION

SECTION 017300  
EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes general administrative and procedural requirements governing execution of the Work including, but not limited to, the following:
  - 1. Construction layout.
  - 2. Field engineering and surveying.
  - 3. Installation of the Work.
  - 4. Cutting and patching.
  - 5. Progress cleaning.
  - 6. Starting and adjusting.
  - 7. Protection of installed construction.

1.3 DEFINITIONS

- A. Cutting: Removal of in-place construction necessary to permit installation or performance of subsequent work.
- B. Patching: Fitting and repair work required to restore construction to original conditions after installation of subsequent work.

1.4 QUALITY ASSURANCE

- A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.
  - 1. Structural Elements: When cutting and patching structural elements, notify Engineer of locations and details of cutting and await directions from Engineer before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.
  - 2. 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 that results in increased maintenance or decreased operational life or safety. Operational elements include the following:
    - a. Primary operational systems and equipment.
    - b. Fire separation assemblies.

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EXECUTION

- c. Air or smoke barriers.
  - d. Fire-suppression systems.
  - e. Plumbing piping systems.
  - f. Mechanical systems piping and ducts.
  - g. Control systems.
  - h. Communication systems.
  - i. Fire-detection and -alarm systems.
  - j. Conveying systems.
  - k. Electrical wiring systems.
  - l. Operating systems of special construction.
- B. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections.
- B. In-Place Materials: Use materials for patching 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 provide a match acceptable to Engineer for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities, mechanical and electrical systems, and other construction affecting the Work. General Contractor shall engage a utility location service to locate all such utilities by non-destructive means prior to starting any demolition.
  - 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; underground electrical services; and other utilities.
  - 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.
- B. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where

SECTION 017300  
EXECUTION

indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
  2. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
  3. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
- C. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
1. Description of the Work.
  2. List of detrimental conditions, including substrates.
  3. List of unacceptable installation tolerances.
  4. Recommended corrections.
- D. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and conditions.

### 3.2 PREPARATION

- A. Existing Utility Information: Furnish information to local utility and Owner that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- C. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- D. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents caused by differing field conditions outside the control of Contractor, submit a request for information to Engineer according to requirements in Section 013100 "Project Management and Coordination."

### 3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Engineer promptly.

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EXECUTION

- B. General: Engage a professional engineer to lay out the Work using accepted surveying practices.
  - 1. Establish benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
  - 2. Establish limits on use of Project site.
  - 3. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.
  - 4. Inform installers of lines and levels to which they must comply.
  - 5. Check the location, level and plumb, of every major element as the Work progresses.
  - 6. Notify Engineer when deviations from required lines and levels exceed allowable tolerances.
  - 7. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and rim and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Engineer.

3.4 FIELD ENGINEERING

- A. Identification: Owner will identify existing benchmarks, control points, and property corners.
- B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
  - 1. Do not change or relocate existing benchmarks or control points without prior written approval of Engineer. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Engineer before proceeding.
  - 2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.
- C. Certified Survey: On completion of foundation walls, major site improvements, and other work requiring field-engineering services, prepare a certified survey showing dimensions, locations, angles, and elevations of construction and sitework.
- D. Final Property Survey: Engage a professional engineering to prepare a final property survey showing significant features (real property) for Project. Include on the survey a certification,

SECTION 017300  
EXECUTION

signed by professional engineering, that principal metes, bounds, lines, and levels of Project are accurately positioned as shown on the survey.

1. Show boundary lines, monuments, streets, site improvements and utilities, existing improvements and significant vegetation, adjoining properties, acreage, grade contours, and the distance and bearing from a site corner to a legal point.
2. Recording: At Substantial Completion, have the final property survey recorded by or with authorities having jurisdiction as the official "property survey."

3.5 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
  1. Make vertical work plumb and make horizontal work level.
  2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
  3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.
  4. Maintain minimum headroom clearance of 96 inches in occupied spaces and 78 inches in unoccupied spaces.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.
- F. Tools and Equipment: Where possible, select tools or equipment that minimize production of excessive noise levels.
- G. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
  1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Engineer.
  2. Allow for building movement, including thermal expansion and contraction.
  3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

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- H. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- I. Repair or remove and replace damaged, defective, or nonconforming Work.
  - 1. Comply with Section 017700 "Closeout Procedures" for repairing or removing and replacing defective Work.

3.6 CUTTING AND PATCHING

- A. Cutting and Patching, 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.
- B. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during installation or cutting and patching operations, by methods and with materials so as not to void existing warranties.
- C. Temporary Support: Provide temporary support of work to be cut.
- D. 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.
- E. Adjacent Occupied Areas: Where interference with use of adjoining areas or interruption of free passage to adjoining areas is unavoidable, coordinate cutting and patching according to requirements in Section 011000 "Summary."
- F. 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.
- G. 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 neatly to minimum 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. Excavating and Backfilling: Comply with requirements in applicable Sections where required by cutting and patching operations.

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EXECUTION

5. 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.
  6. Proceed with patching after construction operations requiring cutting are complete.
- H. 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 practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.
1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical 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 minimize evidence of patching and refinishing.
    - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    - b. Restore damaged pipe covering to its original condition.
  3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
    - a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
  4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
  5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.
- I. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.7 OWNER-INSTALLED PRODUCTS

- A. Site Access: Provide access to Project site for Owner's construction personnel.
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction personnel.
  1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.

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EXECUTION

2. Preinstallation Conferences: Include Owner's construction personnel at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend preinstallation conferences conducted by Owner's construction personnel if portions of the Work depend on Owner's construction.

3.8 PROGRESS CLEANING

- A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
  1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
  2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
  3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
    - a. Use containers intended for holding waste materials of type to be stored.
  4. Coordinate progress cleaning for joint-use areas where Contractor and other contractors are working concurrently.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
  1. Remove liquid spills promptly.
  2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.
- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways. Comply with waste disposal requirements in Section 015000 "Temporary Facilities and Controls."
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.

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EXECUTION

- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.9 STARTING AND ADJUSTING

- A. Coordinate startup and adjusting of equipment and operating components
- B. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- C. Adjust equipment for proper operation. Adjust operating components for proper operation without binding.
- D. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- E. Manufacturer's Field Service: Comply with qualification requirements in Section 014000 "Quality Requirements."

3.10 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Protection of Existing Items: Provide protection and ensure that existing items to remain undisturbed by construction are maintained in condition that existed at commencement of the Work.
- C. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION

SECTION 017300  
EXECUTION

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SECTION 017700  
CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
  - 1. Substantial Completion procedures.
  - 2. Final completion procedures.
  - 3. Warranties.
  - 4. Final cleaning.
  - 5. Repair of the Work.

1.3 ACTION SUBMITTALS

- A. Product Data: For each type of cleaning agent.
- B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.
- C. Certified List of Incomplete Items: Final submittal at final completion.

1.4 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance: For continuing coverage.
- C. Field Report: For pest control inspection.

1.5 MAINTENANCE MATERIAL SUBMITTALS

- A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.

1.6 SUBSTANTIAL COMPLETION PROCEDURES

- A. Contractor's List of Incomplete Items: Prepare and submit a list of items to be completed and corrected (Contractor's punch list), indicating the value of each item on the list and reasons why the Work is incomplete.

SECTION 017700  
CLOSEOUT PROCEDURES

- B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
  2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, damage or settlement surveys, property surveys, and similar final record information.
  3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
  4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Engineer. Label with manufacturer's name and model number.
  5. Submit testing, adjusting, and balancing records.
  6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
- C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.
1. Advise Owner of pending insurance changeover requirements.
  2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
  3. Complete startup and testing of systems and equipment.
  4. Perform preventive maintenance on equipment used prior to Substantial Completion.
  5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
  6. Advise Owner of changeover in utility services.
  7. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
  8. Complete final cleaning requirements.
  9. Touch up paint and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the Work will be completed and ready for final inspection and tests. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Engineer, that must be completed or corrected before certificate will be issued.
1. Request reinspection 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.

SECTION 017700  
CLOSEOUT PROCEDURES

1.7 FINAL COMPLETION PROCEDURES

- A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:
  - 1. Certified List of Incomplete Items: Submit certified copy of Engineer's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Engineer. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
  - 2. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
  
- B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Engineer will either proceed with inspection or notify Contractor of unfulfilled requirements. Engineer 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. Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.8 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
  - 1. Organize list of spaces in sequential order,
  - 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
  - 3. Include the following information at the top of each page:
    - a. Project name.
    - b. Date.
    - c. Name of Engineer.
    - d. Name of Contractor.
    - e. Page number.
  - 4. Submit list of incomplete items in the following format:
    - a. MS Excel electronic file. Engineer will return annotated file.

1.9 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Engineer for designated portions of the Work where warranties are indicated to commence on dates other than date of Substantial Completion, or when delay in submittal of warranties might limit Owner's rights under warranty.

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- B. Organize warranty documents into an orderly sequence based on the table of contents of Project Manual.
- C. Warranties in Paper Form:
  - 1. Bind warranties and bonds in heavy-duty, three-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents.
  - 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.

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: Perform final cleaning. 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 before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
    - 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 not planted, mulched, or paved to a smooth, even-textured surface.
    - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
    - e. Remove snow and ice to provide safe access to building.

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- f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
- g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
- h. Sweep concrete floors broom clean in unoccupied spaces.
- i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
- j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish mirrors and glass, taking care not to scratch surfaces.
- k. Remove labels that are not permanent.
- l. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
- m. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
- n. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
- o. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter on inspection.
- p. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
- q. Leave Project clean and ready for occupancy.

3.2 REPAIR OF THE WORK

- A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.
- B. Repair, or remove and replace, defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.
  - 1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
  - 2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that already show evidence of repair or restoration.
    - a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.
  - 3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.

SECTION 017700  
CLOSEOUT PROCEDURES

4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.

END OF SECTION

SECTION 017830  
PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. Section includes administrative and procedural requirements for project record documents, including the following:
  - 1. Record Drawings.

1.3 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
  - 1. Number of Copies: Submit one set(s) of marked-up record prints.
  - 2. Number of Copies: Submit copies of record Drawings as follows:
    - a. Initial Submittal:
      - 1) Submit one paper-copy set(s) of marked-up record prints.
      - 2) Engineer will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.
    - b. Final Submittal:
      - 1) Submit one paper-copy set(s) of marked-up record prints.
      - 2) Submit record PDF files on a USB flash drive.
      - 3) Plot each drawing file, whether or not changes and additional information were recorded.

1.4 RECORD DRAWINGS

- A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.
  - 1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
    - a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.

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PROJECT RECORD DOCUMENTS

- b. Accurately record information in an acceptable drawing technique.
  - c. Record data as soon as possible after obtaining it.
  - d. Record and check the markup before enclosing concealed installations.
  - e. Cross-reference record prints to corresponding photographic documentation.
2. Content: Types of items requiring marking include, but are not limited to, the following:
- a. Dimensional changes to Drawings.
  - b. Revisions to details shown on Drawings.
  - c. Depths of foundations.
  - d. Locations and depths of underground utilities.
  - e. Revisions to routing of piping and conduits.
  - f. Revisions to electrical circuitry.
  - g. Actual equipment locations.
  - h. Duct size and routing.
  - i. Locations of concealed internal utilities.
  - j. Changes made by Change Order or Work Change Directive.
  - k. Changes made following Engineer's written orders.
  - l. Details not on the original Contract Drawings.
  - m. Field records for variable and concealed conditions.
  - n. Record information on the Work that is shown only schematically.
3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked-up record prints with Engineer. When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:
1. Format: Annotated PDF electronic file.
  2. Incorporate changes and additional information previously marked on record prints. Delete, redraw, and add details and notations where applicable.
  3. Refer instances of uncertainty to Engineer for resolution.
  4. Engineer will furnish Contractor with one set of digital data files of the Contract Drawings for use in recording information.

PART 2 - PRODUCTS

PART 3 - EXECUTION

END OF SECTION