

SECTION 010000 - GENERAL REQUIREMENTS FOR ALTERATIONS

PART I - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for Alterations.
- B. Refer to Section 012700 "CUTTING AND PATCHING" for related information.

1.2 ALTERATIONS

- A. Materials for patching, unless otherwise noted, shall match existing materials in quality, appearance and strength. In general, workmanship shall be governed by the requirements of the appropriate Sections of these Specifications. If the Specification is silent on minor materials and workmanship, it shall be understood that this work is to be performed in accordance with industry standards for quality, appearance, strength and applicability.
- B. All finishes and surfaces negligently damaged by demolition and alterations, including those caused by mechanical and electrical trades, shall be the responsibility of those respective Contractors for patching and repairing the affected areas. All other finishes marred or disturbed by all trades in order to perform their respective work shall be repaired and re-finished by the General Construction Contractor.
- C. Whenever an existing room, corridor, or other space is changed by the removal of a wall, partition, or ceiling, the surfaces in the affected areas shall be brought to level planes or provided with surface breaks in locations selected by the Architect. Similarly, floor levels of rooms affected by the alterations shall be brought to the same levels by installation of approved underlayment or, when permitted by the Architect, by providing a transitional floor strip which will accommodate the difference in planes. All work of this nature is the responsibility of the General Construction Contractor.
 - 1. Existing exposed concrete floor surfaces and concealed substrate floor surfaces that are indicated to receive new flooring materials shall be flash patched to maintain a floor level 1/4" in 10 feet, except where required for drainage
- D. Wherever a new material is required to be applied directly over existing surfaces, it shall be understood to mean that the Contractor applying the new material will remove, modify, and/or patch the existing surface in an approved manner sufficient to properly receive the new material.
- E. New partitions shall be anchored to existing walls and shall be extended or braced up to the underside of structure above.

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- F. New ceilings and/or ceiling mounted items shall not be supported from existing ceiling construction even when the latter has been permitted to remain. Supports for new ceilings and/or ceiling mounted items must be carried up to the structural beams or decks and secured thereon unless otherwise indicated in the construction documents.

PART 2 - PRODUCTS - Not Used

PART 3 - EXECUTION - Not used

END OF SECTION 010000

SECTION 011000 - SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Project information.
2. Work covered by Contract Documents.
3. Access to site.
4. Coordination with occupants.
5. Work restrictions.
6. Specification and drawing conventions.

1.2 PROJECT INFORMATION

- A. Project Identification: **ALTERATIONS TO BUILDING #51
EMERGENCY HOUSING SHELTER**
- B. Project Location: **38 Seward Avenue, Middletown NY 10940**
- C. Owner: **Department of Public Works, County of Orange,
2455-2459 Route 17M
Goshen, NY 10924**
- D. Architect: **Lothrop Associates LLP 333 Westchester Ave,
White Plains, NY. 10604**
- B. Construction Manager: **Key Construction Services
327-329 Main Street
Poughkeepsie, New York 12601**

1.3 WORK COVERED BY CONTRACT DOCUMENTS

- A. The Work of Project is defined by the Contract Documents and includes but is not limited to the following:

1. **GENERAL CONSTRUCTION:**

Interior demolition and alterations to existing toilet rooms and related finishes, Roof replacement, Window replacement, Masonry restoration and cleaning, exterior architectural repairs and trim work.

2. **PLUMBING AND FIRE PROTECTION**

Removal and replacement of existing toilet room fixtures, new showers, modification of existing plumbing roughing, modification and relocation of existing sprinkler heads and piping.

3. **HEATING-VENTILATION-AIR CONDITIONING (HVAC)**

New toilet room exhaust systems, modification and replacement of toilet room steam radiation, new air conditioning in Day Rooms and Men's dormitory.

4. **ELECTRICAL**

Replacement lighting and miscellaneous power receptacles in altered toilet rooms, Power for related HVAC equipment.

B. Type of Contract:

1. Project shall be constructed under coordinated, concurrent multiple contracts. Refer to Section 011200 "MULTIPLE CONTRACT SUMMARY" for a description of work included under each of the multiple contracts and for the responsibilities of Project Coordinator. Contracts for this Project include the following:

- a. General Construction (Contract #1G)
- b. Plumbing & Fire Protection (Contract #2P)
- c. Heating-Ventilation and Air Conditioning (Contract #3H)
- d. Electrical (Contract #4E)

1.4 ACCESS TO SITE

A. Contractors shall have full use of the site areas designated for the Work for construction operations during the construction period. Contractor's use of Project is limited only by Owner's right to perform work or to retain other contractors on portions of Project, or as otherwise noted on the drawings.

B. Storage: A dedicated storage and staging area for the Contractor's use during construction shall be located as indicated on the Contract drawings.

C. Condition of Existing Building: Maintain existing building areas affected by construction operations in a weather tight, dust proof and secure condition throughout construction period. Repair damage caused by construction operations.

1.5 COORDINATION WITH OCCUPANTS

- A. Full Owner Occupancy: Owner will occupy site and areas adjacent to work areas in the building during entire construction period. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits unless otherwise indicated.

1.6 WORK RESTRICTIONS

- A. Work Restrictions, General: Comply with restrictions on construction operations.
 - 1. Comply with limitations on use of public streets and with other requirements of authorities having jurisdiction.
- B. On-Site Work Hours: Limit work in the existing building to normal business working hours of 8:00 AM to 4:00 PM, Monday through Friday, unless otherwise indicated.
- C. Nonsmoking Building: Smoking is not permitted within the building or within 30 feet of entrances, operable windows, or outdoor-air intakes.
- D. Controlled Substances: Consumption of alcohol, use of tobacco products and other controlled substances on the premises is not permitted.
- E. Employee Identification: Provide identification tags for Contractor personnel working on Project site. Require personnel to use identification tags at all times.

1.7 SPECIFICATION AND DRAWING CONVENTIONS

- A. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 - 1. Imperative mood and streamlined language are generally used in the Specifications. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.
 - 2. Specification requirements are to be performed by Contractor unless specifically stated otherwise.
- B. Division 01 General Requirements: Requirements of Sections in Division 01 apply to the Work of all Sections in the Specifications.

- C. Drawing Coordination: Requirements for materials and products identified on Drawings are described in detail in the Specifications. One or more of the following are used on Drawings to identify materials and products:
1. Terminology: Materials and products are identified by the typical generic terms used in the individual Specifications Sections.
 2. Abbreviations: Materials and products are identified by abbreviations scheduled on Drawings.
 3. Keynoting: Materials and products are identified by reference keynotes referencing Specification Section numbers found in this Project Manual.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000

SECTION 011200 - MULTIPLE CONTRACT SUMMARY

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes a summary of each contract, including responsibilities for coordination and temporary facilities and controls.

1.2 DEFINITIONS

- A. Permanent Enclosure: As determined by Architect, the condition at which roofing is completed and weathertight; exterior walls are completed and weathertight; and openings are closed with permanent construction or substantial temporary closures equivalent in weather protection to permanent construction.

1.3 PROJECT COORDINATOR

- A. A Construction Manager designated by the Owner, shall be responsible for coordination between the General Construction Contract, Plumbing Contract, HVAC Contract and Electrical Contract

1.4 PROJECT COORDINATOR (Construction Manager) RESPONSIBILITIES

- A. Project coordinator shall perform Project coordination activities for the multiple contracts, including, but not limited to, the following:
 1. Provide typical overall coordination of the Work.
 2. Coordinate shared access to workspaces.
 3. Provide overall coordination of temporary facilities and controls.
 4. Coordinate, schedule, and approve interruptions of permanent and temporary utilities, including those necessary to make connections for temporary services.
 5. Oversee preparation of progress schedules by the several Prime Contractors and integrate into a Master Schedule.
 6. Coordinate construction and operations of the Work with work performed by each Contract and Owner's construction forces, if any.
 7. Oversee preparation of coordination drawings in collaboration with each contractor to coordinate work by more than one contract.
 8. Coordinate sequencing and scheduling of the Work.
 9. Coordinate sequence of activities to accommodate tests and inspections, and coordinate schedule of tests and inspections.
 10. Coordinate cutting and patching.

11. Coordinate protection of the Work.
12. Coordinate completion of interrelated punch list items.
13. Coordinate preparation of Project Record Documents.
14. Collect record Specification Sections from contractors, collate Sections into numeric order, and submit complete set.
15. Coordinate preparation of Operation and Maintenance manuals.

1.5 GENERAL REQUIREMENTS OF CONTRACTS

- A. Extent of Contract: Unless the Agreement contains a more specific description of the Work of each Contract, requirements indicated on Drawings and in Specification Sections determine which contract includes a specific element of Project.
- B. Unless otherwise indicated, the work described in this Section for each Contract shall be complete systems and assemblies, including products, components, accessories, and installation required by the Contract Documents.
 1. Blocking and backing panels for the work of each Contractor shall be the work of the General Construction Contractor unless otherwise indicated.
 2. Furnishing of access panels for the work of each Contractor shall be the work of each Contract for its own work. Installation and painting of access panels shall be the work of the General Construction Contractor.
 3. Equipment pads for the work of each Contract shall be the work of the General Construction Contractor.
 4. Painting for the work of each Contractor shall be the work of the General Construction Contractor.
 5. Cutting and Patching: Unless otherwise indicated, each Contractor shall perform its own cutting and rough patching. Finish patching shall be the work of the General Construction Contractor.
 6. Through-penetration firestopping for the work of each Contractor shall be provided by each Contractor for its own work.
 7. Contractors' Startup Construction Schedule: Within ten (10) working days after Notice to Proceed, each Prime Contractor shall prepare a horizontal bar-chart-type construction schedule for review by the Project Coordinator. After review and further coordination, Project Coordinator shall prepare and issue a coordinated Master Schedule.
- C. Substitutions: Each Contractor shall cooperate with other Contractors involved to coordinate approved substitutions with remainder of the work.
- D. Temporary Facilities: In addition to specific responsibilities for temporary facilities indicated in this Section and in Section 015000 "Temporary Facilities and Services", each Contractor is responsible for the following:

1. Installation, operation, maintenance, and removal of each temporary facility necessary for its own normal construction activity, and costs associated with each facility, except as otherwise provided for in this Section.
2. Plug-in electric power cords and extension cords, supplementary plug-in task lighting, and special lighting necessary exclusively for its own activities.
3. Its own field office, complete with necessary furniture, utilities, and telephone and data service.
4. Photo Documentation of its own work.
5. Its own storage and fabrication sheds.
6. Temporary enclosures for its own construction activities.
7. Staging and scaffolding for its own construction activities.
8. General hoisting facilities for its own construction activities.
9. Waste disposal facilities, including collection and legal disposal of its own hazardous, dangerous, unsanitary, or other harmful waste materials.
10. Progress cleaning of work areas affected by its operations on a daily basis.
11. Secure lockup of its own tools, materials, and equipment.
12. Construction aids and miscellaneous services and facilities necessary exclusively for its own construction activities.

E. Use Charges: Refer to Section 015000 "TEMPORARY FACILITIES AND SERVICES".

1.6 GENERAL CONSTRUCTION CONTRACT

A. Work of the General Construction Contract includes, but is not limited to, the following:

1. Remaining work not identified as work under other Contracts.
2. All General Construction work indicated in the Contract Documents and work included in Specification Divisions 01,02,03,04,05,06,07,08,09,10.

B. Temporary facilities in the General Construction Contract include, but are not limited to, the following:

1. Temporary facilities that are not otherwise specifically assigned to the Plumbing & Fire Protection Contract, HVAC Contract and Electrical Contract.
2. Temporary Facilities and Services specified herein and in Section 015000 "TEMPORARY FACILITIES AND SERVICES".

1.7 PLUMBING AND FIRE PROTECTION CONTRACT

A. Work of the Plumbing & Fire Protection Contract includes, but is not limited to, the following:

1. Plumbing connections to equipment furnished by the General Construction Contract, HVAC Contract and Electrical Contract.

2. All Plumbing work indicated in the Contract Documents and work included in Specification Divisions 01,02, 21 and 22.

- B. Temporary facilities in the Plumbing & Heating Contract include, but are not limited to, the following:

1. Plumbing connections to existing systems and temporary facilities furnished by the General Construction Contract, Plumbing Contract, HVAC Contract and Electrical Contract.
2. Temporary Facilities and Services specified herein and in Section 015000 "TEMPORARY FACILITIES AND SERVICES".

1.8 HEATING-VENTILATING AND AIR CONDITIONING (HVAC) CONTRACT

- A. Work of the HVAC Contract includes, but is not limited to, the following:

1. HVAC connections to equipment furnished by the General Construction Contract, Plumbing & Fire Protection Contract, and Electrical Contract.
2. All HVAC work indicated in the Contract Documents and work included in Specification Divisions 01,02, and 23.

- B. Temporary facilities in the HVAC Contract include, but are not limited to, the following:

1. HVAC connections to existing systems and temporary facilities furnished by the General Construction Contract, Plumbing Contract, HVAC Contract and Electrical Contract.
2. Temporary Facilities and Services specified herein and in Section 015000 "TEMPORARY FACILITIES AND SERVICES".

1.9 ELECTRICAL CONTRACT

- A. Work of the Electrical Contract includes, but is not limited to, the following:

1. Electrical connections to equipment furnished by the General Construction Contract, Plumbing and Fire Protection Contract and HVAC Contract.
2. All Electrical work indicated in the Contract Documents and including work in Specification Divisions 01,02, and 26

- B. Temporary facilities in the Electrical Contract include, but are not limited to, the following:

1. Electrical connections to existing systems and temporary facilities and controls furnished by the General Construction Contract, Plumbing & Fire Protection Contract, HVAC Contract and Electrical Contract.
2. Temporary Facilities and Services specified herein and in Section 015000 "TEMPORARY FACILITIES AND SERVICES".

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PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011200

SECTION 012100 ALLOWANCES

PART 1 - GENERAL

A.1 SUMMARY

- A. Section includes administrative and procedural requirements for allowances.
- B. Itemized records and receipts for allowance items shall be presented to the Architect and Owner for audit. Unused funds shall be credited to the Owner.

1.2 ALLOWANCES

- A. Allowances shall include the cost to the Contractor of materials and equipment delivered at the Site and applicable taxes, if any, less applicable trade discounts, costs for unloading and handling at the Site, labor, installation insurance, bonding, overhead and profit.
- B. In accordance with the Contract Documents, the following Allowances shall be included in the Contract Sum of each Contract, unless modified by the signed Agreement.
- C. **SCHEDULE OF ALLOWANCES**

CONTRACT #1G – GENERAL CONSTRUCTION

- 1. MAW (Miscellaneous Additional Work) - Include a contingency allowance of \$100,000.00 for Miscellaneous Additional General Construction Work as directed by the Architect.
- 2. ROOF SHEATHING – Include a quantity allowance of 200 square feet for removal and replacement of existing tongue and groove wood roof sheathing as directed by the Architect. Replacement sheathing in excess of this allowance if required shall be provided using bid unit prices specified elsewhere..
- 3. ROOF RAFTERS – Include a quantity allowance of 20-2x10 roof rafters, approximately 16 feet in length for “sistering” existing deteriorated roof rafters as directed by the Architect. Replacement sistered rafters in excess of this allowance if required shall be provided using bid unit prices specified elsewhere.

CONTRACT #2P – PLUMBING-FIRE PROTECTION

- 1. MAW (Miscellaneous Additional Work) - Include a contingency allowance of \$25,000.00 for Miscellaneous Additional Plumbing and Fire Protection Work as directed by the Architect.

CONTRACT #3H – HEATING-VENTILATING-AIR CONDITIONING (HVAC)

1. MAW (Miscellaneous Additional Work) - Include a contingency allowance of \$10,000.00 for
Miscellaneous Additional HVAC Work as directed by the Architect.

CONTRACT #4 – ELECTRICAL

1. MAW (Miscellaneous Additional Work) - Include a contingency allowance of \$15,000.00 for
Miscellaneous Additional Electrical Work as directed by the Architect.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012100

SECTION 012200 - UNIT PRICES

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for unit prices.

1.2 DEFINITIONS

- A. Unit price is an amount incorporated in the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.3 PROCEDURES

- A. Unit prices include all necessary material, labor, delivery and handling, installation, insurance, bonding, applicable taxes, overhead, and profit.
- B. Measurement and Payment: See individual Specification Sections for work that requires establishment of unit prices.
- C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this Work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.
- D. List of Unit Prices: A schedule of unit prices referenced in the Specifications contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

PART 4 – SCHEDULE OF UNIT PRICES (Not Used)

END OF SECTION 012200

SECTION 012300 ALTERNATES

PART 1 - GENERAL

1.1 SUMMARY

- . This Section includes administrative and procedural requirements for Alternates.

1.2 DEFINITIONS

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

1. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate the Alternate into the Work. Alternate prices should include all necessary material, labor, delivery, handling, installation, insurance, bonding, applicable taxes, overhead and profit. No other adjustments are made to the Contract Sum.

1.3 PROCEDURES

- A. Coordination: Modify or adjust affected adjacent Work as necessary to completely and fully integrate that Work into the Project.
 1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not mentioned as part of the Alternate.
- B. Execute accepted alternates under the same conditions as other Work of this Contract.

PART 2 - SCHEDULE OF ALTERNATES

- 2.1 Where indicated on the Bid Forms, state the amount to be added to or deducted from the Base Bid Proposal for:

A. **ADD ALTERNATE NO. GC-1 (SOUTH PORTICO)**

State the amount to be **added** to the base bid amount to remove existing fence panels and install Architectural metal screens at the South Portico on the east elevation on Second and Third floors as indicated on the drawings including the patching and repair of existing concrete columns and patching and repair of concrete surfaces to accommodate fasteners for screens. Base bid shall include no work at the South Portico

B. ALTERNATE NO. GC-2 - NOT USED

C. ADD ALTERNATE NO. GC-3 (WINDOWS-NORTH WING-THIRD FLOOR)

State the amount to be **added** to the base bid amount to remove and replace existing windows at the North Wing-Third Floor and as further identified on the drawings. Window replacement shall include repair and restoration of existing interior finishes.

Base bid shall include no window replacement work at this location.

D. ADD ALTERNATE NO. GC-4 (WINDOWS-EAST ELEVATION AND WEST WING)

State the amount to be **added** to the base bid amount to remove and replace existing windows at the East Elevation- and West Wing and as further identified on the drawings. Window replacement shall include repair and restoration of existing interior finishes.

Base bid shall include no window replacement work at this location.

END OF SECTION 012300

SECTION 012500 - PRODUCT SUBSTITUTIONS

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section specifies administrative and procedural requirements for handling requests for substitutions made after award of the Contract.

1.2 SUBSTITUTIONS

- A. Substitutions: Requests for changes in products, materials, equipment, and methods of construction required by Contract Documents proposed by the Contractor after award of the Contract are considered requests for “substitutions.” The following are not considered substitutions:
1. Revisions to Contract Documents requested by the Owner or Architect.
 2. Specified options of products and construction methods included in Contract Documents.
 3. Compliance with governing regulations and orders issued by Authorities Having Jurisdiction.
- B. Submittal: Requests for substitution will be considered if received within thirty (30) days after commencement of the Work. Requests received more than 30 days after commencement of the Work may be considered or rejected at the discretion of the Architect.
1. Submit three (3) copies of each request for substitution in the form and in accordance with procedures for Change Order proposals.
 2. Identify the product, or installation method to be replaced in each request. Include related Specification Section and Drawing numbers. Document compliance with requirements for substitutions, and the following information, as appropriate:
 - a. Product Data, including Drawings and descriptions of products, fabrication and installation procedures.
 - b. Samples, where applicable or requested.
 - c. A comparison of significant qualities of the proposed substitution with those specified.
 - d. A list of changes or modifications needed to other parts of the Work and to construction performed by the Owner and any separate Contractors, that will be necessary to accommodate the proposed substitution.
 - e. A statement indicating the substitution’s effect on the Construction Schedule compared to the Schedule without approval of the substitution. Indicate the effect of the proposed substitution on overall Contract Time.
 - f. Cost information, including a proposal of the net change, if any in the Contract Sum.

- D. Where a proposed substitution involves more than one subcontractor, each subcontractor shall cooperate with the other subcontractors involved to coordinate the Work, provide uniformity and consistency, and to assure compatibility of products.
- E. The Contractor's submittal and Architect's and Construction Manager's acceptance of Shop Drawings, Product Data or Samples that relate to construction activities not complying with the Contract Documents does not constitute an acceptable or valid request for substitution, nor does it constitute approval.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012500

SECTION 012700 CUTTING AND PATCHING

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for cutting and patching.
- B. Refer to other Sections of these Specifications, including Divisions ,22,23 and 26 for specific requirements and limitations applicable to cutting and patching individual parts of the Work.

1.2 DESCRIPTION OF WORK

- A. All cutting required for the installation of building systems, such as for Electrical Work and other trades, shall be performed by the Contractor requiring same for the installation of its Work, unless otherwise specifically indicated or noted to be performed otherwise.
- B. Each Construction Contractor shall perform all rough patching in exposed and unexposed surfaces of building materials and surfaces affected by the cutting and removals for its Work and Work of subcontracts, except for special patching which must be performed by mechanical and electrical trades, such as patching of ductwork, piping and other mechanical and electrical systems.

1.3 CUTTING OF FINISH MATERIALS

- A. When it is necessary to have finish materials cut, drawings shall be submitted by the Contractor showing the proposed changes and indicating the finished conditions. The cutting shall not be done until the Architect and Construction Manager have approved the drawings.
- B. Structural Work: Do not cut and patch structural elements in a manner that would reduce the load-carrying capacity or load deflection ratio. Obtain approval of the cutting and patching proposal before cutting and patching structural elements.
- C. Visual Requirements: Do not cut and patch construction exposed on the exterior or in occupied spaces, in a manner that would reduce the building's aesthetic qualities, or result in visual evidence of cutting and patching. Remove and replace Work cut and patched in a visually unsatisfactory manner.
- D. Materials: Use materials identical to existing materials.
- E. Inspection: Before cutting, examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed. Take corrective action before proceeding, if unsafe or unsatisfactory conditions are encountered.
- F. Temporary Support: Provide temporary support of Work to be cut.

- G. Protection: Protect construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions that might be exposed during cutting and patching operations.
- H. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

1.4 PERFORMANCE

- A. Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.
- B. Cut existing construction to provide for the installation of other components or the performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.
- C. Cutting: Cut using methods least likely to damage elements to be retained or adjoining construction. Where possible review procedures with the original installer; comply with the original installer's recommendations.
- D. Where cutting is required use hand or small power tools designed for sawing or grinding, not hammering and chopping. Cut holes and slots to size required with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.
- E. Cut through concrete and masonry using a cutting machine such as a carborundum saw or diamond core drill.

1.5 PATCHING

- A. Finish patching in exposed areas of new Work shall be performed by the General Construction Contractor with materials to match new finishes.
- A. Patch with durable seams that are as invisible as possible. Comply with specified tolerances.
- B. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.
- C. Restore exposed finishes of patched areas and extend finish into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
- D. Where patching occurs in a smooth painted surface, extend final paint coat over entire unbroken plane containing the patch, after the patched area has received primer and second coat.

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- E. Cleaning: Thoroughly clean areas and spaces where cutting and patching is performed or used as access. Remove paint, mortar, oils, putty and similar items. Thoroughly clean piping, conduit and similar features before painting or finishing is applied.

END OF SECTION 012700

SECTION 013233 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
 - 1. Preconstruction photographs.
 - 2. Periodic construction photographs.

1.2 INFORMATIONAL SUBMITTALS

- A. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.
- B. Digital Photographs: Submit unaltered, original, full-size image files within three days of taking photographs.
 - 1. Digital Camera: Minimum sensor resolution of 12 megapixels.
 - 2. Identification: Provide the following information with each image description in file metadata tag:
 - a. Name of Project.
 - b. Name and contact information for photographer.
 - c. Date photograph was taken.
 - d. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.

1.3 USAGE RIGHTS

- A. Obtain and transfer copyright usage rights from photographer to Owner for unlimited reproduction of photographic documentation.

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

- A. Digital Images: Provide images in JPG format, with minimum size of 12 megapixels.

PART 3 - EXECUTION

3.1 CONSTRUCTION PHOTOGRAPHS

- A. **Photographer:** Engage a qualified photographer subject to Architect's acceptance, to take construction photographs.
- B. **General:** Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.
 - 1. Maintain key plan with each set of construction photographs that identifies each photographic location.
- C. **Digital Images:** Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.
 - 1. **Date and Time:** Include date and time in file name for each image.
 - 2. **Field Office Images:** Maintain one set of images accessible in the field office at Project site, available at all times for reference. Identify images in the same manner as those submitted to Architect.
- D. **Preconstruction Photographs:** Before commencement of demolition, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Architect.
 - 1. Flag construction limits before taking construction photographs.
 - 2. Take photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.
- E. **Periodic Construction Photographs:** Take ten (10) photographs monthly with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.
 - 1. Submit Periodic Construction Photographs monthly to the Architect on a compact disc, properly labeled as specified above.
- F. **Final Completion Construction Photographs:** Take 20 color photographs after date of Substantial Completion for submission as Project Record Documents. Architect will inform photographer of desired vantage points.

END OF SECTION 013233

SECTION 013300 SUBMITTALS PROCEDURES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section specifies procedures for Submittals. Refer to related provisions of Section 007000 "GENERAL CONDITIONS"
- B. General Procedures: Coordinate submittal preparation with performance of construction activities, and with purchasing or fabrication, delivery, and other submittals and related activities. Transmit in advance of performance of related activities to avoid delays.
 - 1. Coordinate transmittal of different submittals for related elements so processing will not be delayed by the need to review concurrently for coordination. The Architect reserves the right to withhold action on a submittal requiring coordination until related submittals are received.
 - 2. Processing: Allow ten (10) working days for initial review. Allow more time if processing must be delayed for coordination with other submittals. The Architect will advise the Contractor when a submittal must be delayed for coordination. Allow ten (10) working days for reprocessing each submittal.
 - a. No extension of time will be authorized because of failure to transmit submittals sufficiently in advance of the Work to permit processing.
 - 3. Submittal Preparation: Provide a cover sheet (Transmittal Form) on Contractor's letterhead independent of the submittal pages. Cover sheet shall contain information listed below and shall be attached to each submittal package. Include Contractor's review statement on the cover sheet.
 - 4. Place a label or title block on each submittal for identification. Provide adequate space on the label or beside the title block on Shop Drawings to record Contractor's review and approval markings and action taken. Include the following information on the Transmittal Form and label for processing and recording action taken.
 - A. Project name.
 - B. Date.
 - C. Name and address of Architect.
 - D. Name and address of Construction Manager
 - E. Name and address of Contractor.
 - F. Name and address of subcontractor.
 - G. Name and address of supplier.
 - H. Name of manufacturer.
 - I. Submission number.

- C. Contractor's Review: The Contractor shall examine the submission and indicate the results of its review with a statement or stamp with its approval representing that it has checked and verified the submission with the requirements of the Work and the Contract Documents on the submission made to the Architect. Contractor will retain one copy of all submissions for its review, and will forward the remaining copies of each shop drawing and catalog cuts, manufacturer's specifications, etc., to the Construction Manager and Architect for review. Submittals which do not bear the Contractor's review stamp will be returned with no action taken.
- D. Submittal Transmittal: Package submittals appropriately for transmittal and handling. Transmit with a Transmittal Form. Submittals received from other than the Contractor will be returned without action.
- E. Contractor's Construction Schedule: Submit a fully developed, bar-chart type construction schedule, within ten (10) days of the date established for Commencement of the Work. Provide a separate bar for each construction activity and a vertical line to identify the first working day of each week. Contractor's Construction Schedule will be used by the Construction Manager to prepare a Master Schedule.
1. Prepare the schedule on reproducible media, of sufficient width to show data for the entire construction period.
 2. Secure commitments for performing critical construction operations from parties involved. Coordinate each activity with other activities and show in proper sequence; include minor elements involved in the construction sequence. Indicate sequences necessary for completion of related portions.
 3. Coordinate the Construction Schedule with the Submittal Schedule, progress reports, and other schedules.
 4. Indicate completion in advance of the date established for Substantial Completion. Indicate Substantial Completion on the Schedule to allow time for procedures necessary for certification of Substantial Completion.
- F. Phasing and Area Separations: If applicable, provide a separate time bar to identify each construction phase or area for each major part of the Work. Indicate where each element must be sequenced with other activities.
- G. Submittal Schedule: Submit the Submittal Schedule within five (5) days of the Construction Schedule. Coordinate the Schedule with the list of subcontracts and vendors, and list of products as well as the Construction Schedule.
1. Prepare the Schedule in chronological order; include submittals required during the first ninety (90) days of construction. Provide the following information:
 - a. Scheduled date for the first submittal.
 - b. Related Section number.
 - c. Name of subcontractor or vendor.
 - d. Description of the construction element covered.
 - e. Scheduled date of the Architect's final submittal release.

- H. Distribution of Schedules: Distribute copies of the Construction and Submittal Schedules to the Construction Manager and Architect, and other parties required to comply with scheduled dates. Await further instructions from the Construction Manager for revisions, coordination and final distribution as directed.
- I. Shop Drawings: Submit new information, drawn to accurate scale. Indicate deviations from Contract Documents. Do not reproduce Contract Documents or copy standard information as the basis of Shop Drawings. Fax copies are unacceptable as shop drawings. Include the following information:
1. Dimensions.
 2. Identification of products, materials and finishes included.
 3. Notation of coordination requirements.
 4. Notation of dimensions established by field measurement.
 5. Sheet Size: Except for templates, patterns and similar full-size Drawings, submit Shop Drawings electronically formatted to be reproduced on standard sheet sizes, such as 8-1/2" x 11", 11" x 17" and 22" x 34".
 6. Submittal: Submit one (1) PDF copy for review; one (1) PDF copy will be returned.
 7. Do not use Shop Drawings for fabrication or construction without a final stamp indicating approval action taken in connection with construction.
- J. Product Data: Collect Product Data into a single submittal for each element or system. Mark each copy to show applicable choices and options. Where Product Data includes information on several products, some of which are not required, mark copies to indicate the applicable information. Fax copies are unacceptable.
1. Include the following information:
 - a. Manufacturer's printed recommendations.
 - b. Compliance with recognized trade association standards.
 - c. Compliance with recognized testing agency standards.
 - d. Application of testing agency labels and seals.
 - e. Notation of dimensions verified by field measurement.
 - f. Notation of coordination requirements.
- K. Submittals: Submit one (1) copy in PDF format, via e mail of each required submittal to the Construction Manager and Architect. The Architect will return one (1) PDF file to the Construction Manager, Contractor, and Owner, marked with action taken and corrections or modifications required.
1. Distribution: Furnish copies of final submittal to installers, and others required for performance of construction activities. Show distribution on transmittal forms. Do not proceed with installation until an applicable copy of Product Data is in the installer's possession.

2. Do not permit use of unmarked copies of Product Data in connection with construction.
 3. Fax copies are unacceptable.
- L. Samples: Submit four (4) full-size Samples to the Construction Manager and Architect, cured and finished as specified and identical to the product proposed. Mount, display, or package Samples to facilitate review.
1. Where practical, include the following information tagged on one face, with the other face reserved for Architect's action stamp. Otherwise, attach a tag to the sample with same information.
 - a. Project name.
 - b. Date.
 - c. Architect's name.
 - d. Construction Manager's name.
 - e. Contractor's name.
 - f. Generic description.
 - g. Source.
 - h. Product name or name of manufacturer.
 - i. Compliance with recognized standards.
 - j. Availability and delivery time.
 2. Submit Samples for review of kind, color, pattern, and texture, for a final check of these characteristics, and a comparison of these characteristics between the final submittal and the component as delivered and installed. Where variations are inherent in the product, submit multiple units that show limits of the variations.
 3. Preliminary submittals: Where Samples are for selection of characteristics from a range of choices, submit a full set of choices for the product. Preliminary submittals will be reviewed and returned indicating selection and other action.
 4. Submittals: Except for Samples illustrating assembly details, workmanship, fabrication techniques, connections, operation and similar characteristics, submit 4 sets; three (3) will be returned marked with the action taken. Maintain one Sample set at the Project site, for quality comparisons.
 - a. Unless noncompliance with Contract Document provisions is observed, the submittal may serve as the final submittal.
 - b. Sample sets may be used to obtain final acceptance of the construction associated with each set.
 5. Distribution: Prepare additional sets for Owner, subcontractors, manufacturers, fabricators, installers, and others as required for performance. Show distribution on transmittal forms.
- M. Architect's Action: Except for submittals for record, information or similar purposes,

where action and return is required, the Architect will review each submittal, mark to indicate action taken, and return.

1. The Architect will indicate the results of its review of the Contractor's shop drawings and other submittals by marking them as follows:
 - a. **NO EXCEPTIONS TAKEN:** Submittal may be released for fabrication, erection, construction and incorporation in the Work without further checking, approval or submission of shop drawings, catalog cuts, etc.
 - b. **MAKE CORRECTIONS NOTED:** Submittal may be released for fabrication, erection, construction and incorporation in the Work subject to notes, corrections shown thereon which have been made by the Architect or its Consultants. Do not resubmit submittals marked Make Corrections Noted.
 - c. **AMEND AND RESUBMIT:** Shop drawings, and submittals so marked must be corrected or changed, and resubmitted to the Architect for final review and approval, in the number and forms listed above. Submit corrected submittals to the Architect no later than ten (10) working days of their return to the Contractor.
 - d. **REJECTED-SEE REMARKS:** The items shown in the submittal are rejected for fabrication or release and their incorporation into the Work is not permitted. Submittals so marked will be returned to the Contractor for corrections and/or the addition of more details, and resubmission will be required in the number and forms listed above. Submit corrected submittals to the Architect no later than ten (10) working days of their return to the Contractor.
2. The Architect's review and action taken on a separate or related item shall not indicate it has reviewed and acted upon the assembly in which the item functions. The Architect's review and action does not relieve the Contractor from responsibility for errors or omissions in the Shop Drawings.
3. In the event of returns for correction and re-submissions, all alterations, changes and additions of new information beyond the scope of the Architect's corrective notations, shall be suitably marked on the shop drawing or drawings and noted in the accompanying transmittal or resubmission.
4. **Record Submittals:** See other sections for requirements, if any, to submit complete set of shop drawings, product data and samples of in-place Work for Owner's records.
5. The Architect shall review each submittal a maximum of two (2) times. The Architect shall not review submittals in excess of two (2) times, which have not been properly corrected, or which have been resubmitted unnecessarily by the

Contractor. Submittal review in excess of two (2) times by the Architect shall be authorized by the Owner as an Additional Service.

- N. Electronic Submittals: All shop drawings and submittals shall be submitted in electronic format, subject to all requirements of this section.
- O. Electronic Copies of Construction Documents: Electronic files (CAD files) for use in preparing shop drawings will be made available from the Architect. The Contractor shall make requests in writing together with a specific list of drawings and shall execute a release form provided by the Architect. The release form shall be executed by the Contractor and end user of the requested files.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 013300

SECTION 014210 REFERENCE STANDARDS AND DEFINITIONS

PART 1 - GENERAL

1.1 SUMMARY

Section includes administrative and procedural requirements for Reference Standards and Definitions.

1.2

A. Definitions: Definitions are provided in Section 007000 "GENERAL CONDITIONS"

1.3 SPECIFICATION FORMAT

A. These Specifications are organized into Divisions and Sections based on the multiple division format and CSI/CSC's "Master Format" 2018 version numbering system.

1.4 SPECIFICATION CONTENT

A. These Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:

B. Abbreviated Language: Language used in the Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be interpolated as the sense requires. Singular words shall be interpreted as plural and plural words interpreted as singular where applicable as the context of the Contract Documents indicates.

C. Streamlined language is generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by the Contractor. At certain locations in the Section Text, subjective language is used for clarity to describe responsibilities that must be fulfilled indirectly by the Contractor or by others when so noted.

D. The words "shall," "shall be," or "shall comply with," depending on the context, are implied where a colon (:) is used within a sentence or phrase.

E. 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.

F. Publication Dates: Comply with standards in effect as of the date of the Contract Documents.

G. Copies of Standards: Copies of applicable standards are not bound with the Contract Documents. Where copies of standards are needed to perform a required construction ac-

tivity, the Contractor shall obtain copies directly from the publication source and make them available on request.

- H. Abbreviations and Names: Where abbreviations and acronyms are used in the Specifications or other Contract Documents, they mean the recognized name of the trade association, standards-producing organization, authorities having jurisdiction, or other entity applicable to the context of the text provision. Refer to Gale Research's "Encyclopedia of Associations" or Columbia Books' "National Trade & Professional Associations of the U.S.," which are available in most libraries.

1.5 PERMITS, LICENSES, AND CERTIFICATES

- A. Permits, Licenses, and Certificates: For the Owner's records, 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.

PART 2 – PRODUCTS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION 014200

SECTION 015000 - TEMPORARY FACILITIES AND SERVICES

PART 1 - GENERAL

1.1 SUMMARY

- A. This Section specifies administrative and procedural requirements for temporary facilities and services, including such items as temporary utility services, temporary construction and support facilities, project security and protection.
- B. The work of this Section shall apply to all Contractors unless otherwise noted herein.
- C. Refer to Section 007000 "GENERAL CONDITIONS" for related information.

1.2 QUALITY ASSURANCE

- A. Comply with requirements of local laws and regulations governing construction and local industry standards in the installation and maintenance of temporary services and facilities.

1.3 WORK OF THE CONTRACT

- A. In addition to all other equipment, plant, labor and materials specified elsewhere in the Specifications or necessary to complete the Work, the Contractors shall furnish, maintain and operate the following temporary facilities and services for the common use of all parties engaged in the construction work of this project unless otherwise specifically noted or as otherwise determined by the Construction Manager.
 - 1. Layout and coordination. (General Construction Contractor)
 - 2. Parking, and staging areas. (General Construction Contractor)
 - 3. Safety and protection. (All Contractors)
 - 4. Temporary barricades, fences and railings. (General Construction Contractor)
 - 5. Dust partitions. (General Construction Contractor)
 - 6. Field offices for Contractor and/or its subcontractors for their own uses. (All Contractors)
 - 7. Telephone and computer for Contractor's use. (All Contractors)
 - 8. Security. (All Contractors)
 - 9. Temporary fire extinguishers. (General Construction Contractor)
 - 10. Stockpiling and storage areas. (All Contractors)
 - 11. Temporary toilets. (General Construction Contractor)
 - 12. Cleaning up and rubbish removal. (All Contractors)

13. Progress photographs. (All Contractors)
 14. Stair and Elevator use. (All Contractors)
 15. Snow Removal. (General Construction Contractor)
 16. Pest Control. (General Construction Contractor)
 17. Temporary water. (Plumbing-Fire Protection Contractor)
 18. Temporary heat and ventilation. (General Construction Contractor)
 19. Temporary electric light and power. (Electrical Contractor)
- B. Temporary facilities and services shall be discontinued as directed by the Construction Manager when their use is no longer required, or they impede the progress of the Work. The Contractors shall thereafter provide, at no increase in the Contract Sum, any and all temporary facilities and services required to complete the Work of the contract. Should a change in the location of any temporary facilities or services be necessary to progress the Work properly, the Contractors shall remove and relocate them as directed by the Construction Manager, all at no increase in the Contract Sum. When directed by the Construction Manager and no longer required, all temporary facilities shall be removed.

1.4 LAYOUT AND COORDINATION

- A. All principal lines, levels, corners, and grades shall be established by the General Construction Contractor with utmost accuracy, with reference points set and recorded for the common use of all.
- B. Reference points shall remain and be maintained as long as required for any part of the Work for all contracts for the project.
- C. Each Contractor shall cooperate and coordinate its Work with the General Construction Contractor with respect to required layout and locations of work items.

1.5 PARKING, AND STAGING AREAS

- A. Parking: On site parking for construction personnel is limited. Parking areas shall be designated by the Owner.
- B. All other maintenance required to keep staging and delivery areas clear and clean from construction rubbish shall be the responsibility of the General Construction Contractor.
- C. Staging: The General Construction Contractor shall maintain the designated staging area free from debris, obstructions, snow, ice, standing water, etc.

1.6 GENERAL SAFETY AND PROTECTION

- A. Each Contractor and each Subcontractor shall take adequate precautions to protect from damage or deterioration, and to safeguard from theft or pilferage all materials, tools, and equipment pertaining to its Work which are on the site of the project, whether stored or incorporated into the Work. Where permanent construction is installed in place of temporary types, such as for door, window or other openings, such permanent construction shall be suitably maintained, protected from damage, and in first class condition when delivered to the Owner.
- B. Each Contractor shall continuously maintain adequate protection of all work from damage including flood or other water damage and shall protect the Owner's property and adjacent property from injury or loss arising in connection with the Contract. Each Contractor shall perform its work in such manner as to insure against injury or damage to the Owner's property or to adjacent property. Each Contractor shall make good any damage, injury or loss which results or which is contributed to by its failure to comply with these requirements.
- C. At the end of each day's Work, all new work subject to damage by the elements and all points where water or frost may enter any part of the structure shall be covered.
- D. In addition to the requirements included in this Section, the Contractors' attention is specifically directed to applicable safety regulations and the requirements of OSHA.

1.7 BARRICADES FENCES AND RAILINGS

- A. Barricades and Fences:
 - 1. Temporary barricades and fences shall be provided by the General Construction Contractor as indicated on the drawings and where necessary or directed by the Construction Manager to restrict or protect construction personnel and the public from construction operations.
 - 3. Removal and replacement of temporary barricades and fences during the course of the work shall be performed by the General Construction Contractor.
 - 4. Barricades and fences damaged by any Contractor due to its operations, including damage caused by its subcontractors, suppliers or truckers, shall be repaired by the responsible Contractor at its own expense.

- B. Railings:
 - 1. The General Construction Contractor shall be responsible for providing all safety railings required to perform or protect its Work and those engaged in its performance.
- C. Codes: The above mentioned does not preclude the safety requirements of OSHA, which shall continue to be the responsibility of each Contractor.

1.8 DUST PARTITIONS

- A. The General Construction Contractor shall provide and maintain temporary dust protection and partitions at the juncture of the Work areas and existing occupied areas adjacent to the work areas on each floor as indicated on the drawings and as directed by the Construction Manager.
- B. Partitions to be constructed using steel studs with 1/2" Type X gypsum board both sides for dust partitions and sheathing grade composition board with building paper (15 #) for any exterior partitions.
 - 1. Partitions shall be provided with hinged flush metal doors, each provided with spring-type hinge-closers, and exit hardware panic devices which will permit emergency exiting from the Work areas. Doors leading into the Work areas are to be taped shut where possible or locked if not part of a required exit way.
 - 2. Suitable markings on partitions and doors shall be as directed by the Construction Manager.
 - 3. In addition to the foregoing and when dust or weather tight partitions are not feasible, other approved means of protection shall be provided as directed by the Construction Manager and at no increase in the Contract Sum.
- C. Upon completion of the work all temporary protection and partitions shall be removed and affected or damaged surfaces patched to match the existing surface or finish.

1.9 FIELD OFFICES

- A. Each Contractor and its subcontractors shall be responsible for providing and maintaining their own temporary field office facilities within the construction site or elsewhere in the building as directed by the Construction Manager.
- B. Each Contractor shall make provisions for security, electricity and other services required for their field facilities.

- C. The General Construction Contractor shall provide a field office on the construction site (or elsewhere in the building as directed by the Construction Manager), equipped with at least the following:
1. Telephone/ cellular telephone
 2. Computer with internet connection for receiving and sending e-mail messages and digital photographs;
 3. Digital camera;
 4. Printer
 5. Plan table;
 6. File cabinets;
 7. Conference table with ten chairs.
- D. Electrical power service for exterior field office trailers, if used shall be arranged and paid for by the Contractor or subcontractor requiring same.
- E. When required by the construction and/or directed by the Construction Manager, the field offices and their adjunct facilities shall be removed completely and/or relocated to new locations at each Contractor's own expense.

1.10 TELEPHONES AND COMPUTERS

- A. Provision for installation of telephone and computer facilities shall be the responsibility of the Contractor and Subcontractors requiring them. Each Contractor shall be responsible for the cost of temporary telephone and computer services and connections.

1.11 SECURITY

- A. The General Construction Contractor shall be responsible for securing the project areas at all times.
- B. Each Contractor shall be responsible for protecting and securing its own Work, materials, tools and equipment, etc., against damage or theft from any cause. All Work is at the risk of each Contractor until it is finally accepted by the Owner.

1.12 TEMPORARY FIRE EXTINGUISHERS

- A. The General Construction Contractor shall provide fire extinguishers in the Work areas for the duration of the construction operations.

1. The fire extinguishers shall be of such types, number, and in locations required under the terms of the fire insurance policy or policies covering the project or required by the agency having jurisdiction.
 2. Temporary fire extinguishers shall be removed from the Work areas when so directed by the Construction Manager.
- B. Each Contractor and subcontractors shall be responsible for providing the necessary fire extinguishers in their own field offices, trailers, sheds, etc., required under the terms of the fire insurance policy or policies covering the project or required by the agency having jurisdiction.

1.13 STOCKPILING AND STORAGE

- A. Stockpiling and storage of equipment and materials will be permitted in limited areas of the building and site when and where directed by the Construction Manager. Each Contractor and subcontractors shall confine their storage activities to the designated areas.

1.14 TEMPORARY TOILETS

- A. The General Construction Contractor shall provide temporary toilets, wash facilities, and drinking water for use of all construction personnel. Comply with requirements of authorities having jurisdiction for type, number, location, operation, and maintenance of fixtures and facilities. Temporary toilets shall be located in the designated staging area.
- B. The General Construction Contractor shall keep the temporary toilet facilities clean and maintained at all times.

1.15 CLEANING UP AND RUBBISH REMOVAL

- A. Each Contractor shall be responsible for clean up and controlling dust and debris caused by their work at all times.
- B. Each Contractor shall keep the premises cleared of scrap waste, empty containers and rubbish resulting directly from its operations. This is to be performed at least once per week or more often if the rubbish interferes with the work of others, presents a fire or safety hazard, or as directed by the Construction Manager.
- A. The General Construction Contractor shall provide suitable debris containers in the designated staging area for disposal of construction debris.

- D. Should the Contractors fail to perform cleanup for which it is responsible, cleanup will be performed by others and the responsible Contractor assessed for the cost accordingly.
- E. Discarded and debris materials shall be removed to debris containers in the staging area by each Contractor.
- F. The General Construction Contractor shall provide debris chutes in each Work area to facilitate the removal of rubbish. Chutes shall be of wooden, composite or steel construction, enclosed, and terminating in a hopper. Chutes shall be properly fastened to the building with weathertight openings. Upon completion of the Project or sooner if their use is no longer required, the debris chutes shall be removed from the site and affected surfaces restored and cleaned.

1.16 PROGRESS PHOTOGRAPHS

- A. Refer to Section 013233 "PHOTOGRAPHIC DOCUMENTATION" for progress photo requirements.

1.17. STAIR AND ELEVATOR USE

- A. Use of Owner's existing elevator during construction will not be permitted.
- B. Use of Owner's existing stairs will be permitted. Existing stair or stairs for use during construction operations shall be as designated by the Construction Manager and Owner.
 - 1. Existing stairs used during construction shall be cleaned and maintained in a condition acceptable to Construction Manager and Owner. Restore, repair stairs to condition existing before initial use at conclusion of all construction operations.
 - 2. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If stairs become damaged, restore damaged areas so no evidence remains of correction work.

1.18 SNOW REMOVAL

- A. The General Construction Contractor shall remove snow whenever the fall totals one inch (1") or more. Provide sand and/or salt in icy areas, regardless of snow fall total, and remove, by pumping or other acceptable means, any areas of standing water caused by melting snow which interfere with operations or access to Work locations.

1. Remove snow from premises and work access areas. Stockpile snow in areas where it will not interfere with construction operations, site access, or access to work areas.

1.19 PEST CONTROL

- A. 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.

1.20 TEMPORARY WATER

- A. The Plumbing- Fire Protection Contractor (PC) shall provide all necessary additional temporary piping distribution lines and connections to the source of supply. PC shall turn on water one (1) hour before regular working hours and turn off water fifteen (15) minutes after regular working hours.
- B. Contractors requiring same shall provide any hose or other extensions to the above lines required by its Work and shall also provide all necessary labor, containers, etc., required to deliver water necessary for its Work.
- C. Each Contractor shall use the precautions necessary to prevent water being wasted and to prevent flooding or damage in the existing building.
- D. The cost of water required for the construction work shall be the responsibility of the Owner.

1.20 TEMPORARY HEAT AND VENTILATION

- A. Temporary heat and ventilation shall be provided by the General Construction Contractor using portable equipment.
- B. Temporary heat and ventilation shall be provided as required to protect the work from cold and excessive humidity.
- C. In general, heat and ventilation shall be provided during finishing operations to insure proper temperature and humidity, for installing all finishing materials. Temperatures within the work areas in the enclosed building shall be maintained at not less than 60 degrees F. (or greater when recommended by material manufacturers) and excessive humidity prevented twenty-four (24) hours a day and seven (7) days a week until the Work is completed and accepted.

1.20 TEMPORARY ELECTRIC LIGHT AND POWER

- A. The Electrical Contractor shall be responsible for furnishing, installing, maintaining, and upon completion removing, a system of temporary light and power for the use of all construction trades and contracts.
- B. The Electrical Contractor shall arrange for a 3 phase, 120/208 volt, 4 wire electrical service of adequate capacity for the needs of all the work during the construction period.
- C. The Electrical Contractor shall provide temporary electric lines for lighting and for taps for electric tools and other temporary equipment. Light bulbs shall be provided in sufficient quantity to light the construction areas for safety purposes. Extension cords shall be provided as may be essential to the proper execution of the work. Electric lines shall be extended to power tools which cannot be located within reach of extension cords.
- D. The Electrical Contractor shall provide temporary lighting at locations where needed for safety and for the proper execution of the work. The Electrical Contractor shall maintain temporary lighting and power systems in good working condition, including the relocation and reinstallation when required to avoid interference with the progress of construction.
- E. The Electrical Contractor shall provide for each Prime Contractor, temporary lighting, switches and power receptacles for temporary field offices that are located within the building.

- F. The Electrical Contractor shall bear the cost of maintaining the temporary electric system in operation for a period of time, fifteen (15) minutes before the established starting time of that trade which starts earliest in the morning, to fifteen (15) minutes after established quitting time of that trade which stops latest in the evening. This applies to every working day in the week which is established as a regular working day for any trade working on the project until final completion and acceptance of the work of the various contracts for the project, or until the services are terminated by instruction from the Construction Manager. This applies to weekdays, Monday through Friday inclusive, which is established as regular work days for any trade on the project, including such days which are a holiday for the electricians, but are a regular work day for any other trade.
- G. The cost of all electric energy consumed by the Work shall be the responsibility of the Owner.
- H. The Electrical Contractor shall coordinate shutdowns for service changes to permanent power. A minimum of seven (7) days' notice shall be given.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not used)

END OF SECTION 015000

SECTION 016000 - MATERIALS, WORKMANSHIP AND EQUIPMENT

PART 1 - GENERAL

1.1 SUMMARY

- A. Administrative and procedural requirements governing the Contractor's selection of products for use in the Project and of workmanship.
- B. "Products" are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock.
- C. "Named Products" are items identified by manufacturer's product name, including make or model designation indicated in the manufacturer's product literature.
- D. "Materials" are products that are shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.
- E. "Equipment" is a product with operational parts, whether motorized or manually operated, that requires service connections such as wiring or piping.
- F. Source Limitations: To the fullest extent possible, provide products of the same kind, from a single source.
 - 1. When the Contractor has the option of selecting between two (2) or more products, the product selected shall be compatible with products previously selected. The Contractor is responsible for providing products and construction methods that are compatible with products and construction methods of all trades.
- G. Nameplates: Except for required labels and operating data, do not attach manufacturer's nameplates or trademarks on surfaces exposed to view in occupied spaces or on the exterior.
 - 1. Equipment Nameplates: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate on an inconspicuous accessible surface. The nameplate shall contain the following information and essential operating data relative to its characteristics and maintenance.
- H. Product Delivery, Storage, and Handling: Deliver, store and handle products in accordance with manufacturer's recommendations, using methods that will prevent damage, deterioration and loss.

1. Schedule delivery to minimize long-term storage and prevent overcrowding construction spaces. Coordinate with installation to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft and other losses.
 2. Deliver products in manufacturer's original sealed container or packaging system, complete with labels and instructions for handling, storing, unpacking, protecting and installing.
 3. Inspect products on delivery to ensure compliance with Contract Documents, and to ensure that products are undamaged and properly protected.
 4. Store products to facilitate inspection and measurement of quantity or counting of units. Store heavy materials away from the structure in a manner that will not endanger supporting construction.
 5. Store products subject to damage by the elements above ground, under cover in a weathertight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.
- I. Product Selection: Provide products that comply with the Contract Documents, are undamaged and unused at installation.
1. Provide products complete with all accessories, trim, finish, safety guards and other devices and details needed for a complete installation and for the intended use and effect.
 2. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 3. Non-Proprietary Specifications: When Specifications list products or manufacturers that are available and may be used, but do not restrict the Contractor to use of these products only, the Contractor may propose any product that complies with Contract requirements. Comply with provisions for Section 012500 "Product Substitutions" to obtain approval for use of an unnamed product.
- J. "Or Equal": When required by statute, any reference in the Specifications to any article, device, product, material, fixture, form or type of construction by name, make or catalog number, such reference shall be interpreted as establishing a standard of quality and shall not be construed as limiting competition; and the Contractor, in such cases, may use any article, device, product, material, fixture, form or type of construction which in the judgment of the Owner and Architect, expressed in writing, is equal to that specified. The Architect shall be the sole and conclusive judge as to the quality of such substitution. Comply with provisions of Section 012500 "Product Substitutions" to obtain approval for use of an unnamed product.

- K. Descriptive Specification Requirements: Where Specifications describe a product, listing characteristics required, with or without use of a brand name, provide a product that provides the characteristics and otherwise complies with requirements.
1. Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide products that comply and are recommended for the application. Manufacturer's recommendations may be contained in product literature, or by certification of performance.
 2. Compliance with Standards: Where Specifications require compliance with a standard, select a product that complies with the standard specified.
 3. Visual Matching: Where Specifications require matching a Sample, the Architect's decision on whether a proposed product matches is final. Where no product matches and complies with other requirements, comply with provisions of Section 012500 "Product Substitutions" for selection of a matching product in another category.
 4. Visual Selection: Where requirements include the phrase "...select a product that complies with other requirements. The Architect will select color, pattern and texture from the product line selected.
- L. Should the State or Federal Government, because of Declaration of an Emergency, or other cause, establish controls over the use of certain construction materials, then each Contractor, immediately after signing Contract, or immediately after such Declaration of an Emergency, shall furnish the Architect with an itemized list of all critical materials required for use on the Project. For each item, the quantity and approximate date on which delivery will be required shall be indicated.
- M. Installation of Products: Comply with manufacturer's instructions and recommendations for installation of products. Anchor each product securely in place, accurately located and aligned with other Work. Clean exposed surfaces and protect to ensure freedom from damage and deterioration at time of Substantial Completion.
- N. Workmanship:
1. Work shall be performed by persons who are skilled and experienced in their respective trades. All installations shall operate properly and in a first class manner.
 2. Workmanship shall conform to best trade practices. Finished surfaces shall be plumb and level straight and free from imperfections, set firmly to accurate measurements.
 3. Surfaces that will be covered shall be cleaned of foreign matter and loose material. Surfaces shall be clean and free from imperfections and defects that would affect the covering material. Surface defects shall be repaired before applying the covering material.
 4. Material shall be applied and/or installed under proper climatic conditions when they may be affected by temperature, moisture, humidity or dust.

5. Before any operation is started, adjoining or backup Work shall be examined with care to ascertain its fitness to receive the work about to be started. All unsatisfactory conditions shall be corrected. If such unsatisfactory conditions are caused by the Work of a separate Contractor they shall be directed to the Architect's attention for his decision. Starting the operation shall constitute acknowledgment and assurance that previously installed Work is correct and shall be considered a waiver of any claim based upon unsuitable conditions.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not used)

END OF SECTION 016000

SECTION 017300 - EXECUTION

PART 1 - GENERAL

1.1 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. Progress cleaning.
 - 5. Starting and adjusting.
 - 6. Protection of installed construction.

1.2 QUALITY ASSURANCE

- A. Refer to Section 012700 "CUTTING AND PATCHING" for requirements.

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 Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of concealed and other utilities and construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems, and other construction affecting the Work.
 - 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer and water-service piping; electrical services, and other utilities.
- 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 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, roofs and exterior conditions 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. Proceed with installation only after unsatisfactory conditions have been corrected or otherwise resolved. Proceeding with the Work indicates acceptance of surfaces and conditions.

3.2 PREPARATION

- A. 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.
- B. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- C. 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 Construction Manager and Architect.

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings. If discrepancies are discovered, notify Architect promptly.

- B. General: Engage a Service or person experienced in lay out of the Work using accepted surveying and layout practices and which is acceptable to the Construction Manager and Architect.
 - 1. Establish benchmarks and control points to set lines and levels at each area 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 Architect when deviations from required lines and levels exceed allowable tolerances.
- C. Building Lines and Levels: Locate and lay out control lines and levels for Work indicated on Drawings, including those required for mechanical and electrical Work. Transfer survey markings and elevations for use with control lines and levels.
- D. Record Log: Maintain a Record of layout control Work. Record deviations from required lines and levels. Make the log available for reference by Construction Manager and Architect.

3.4 FIELD ENGINEERING

- A. Reference Points: Locate permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.

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.
- 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: Do not use tools or equipment that produce harmful noise levels.
- G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.
- H. 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 Architect.
 - 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.
- I. Joints: Make joints of uniform width. Where joint locations in exposed Work are not indicated, arrange joints as directed by Architect for the best visual effect. Fit exposed connections together to form hairline joints.
- J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.
- K. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.6 PROGRESS CLEANING

- A. General: Clean Project Site and Work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.
- B. Refer to Section 015000 "TEMPORARY FACILITIES" for related information.
 - 1. Site: Maintain Project Site free of waste materials and debris.
 - 2. Work Areas: Clean areas where Work is in progress to the level of cleanliness necessary for proper execution of the Work.
 - 3. Remove liquid spills promptly.
 - 4. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

5. 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.
6. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
7. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
8. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.7 STARTING AND ADJUSTING

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

3.8 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. Comply with manufacturer's written instructions for temperature and relative humidity.

END OF SECTION 017300

SECTION 017419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1 - GENERAL

1.1 SUMMARY

- A. Section includes administrative and procedural requirements for the following:
 - 1. Salvaging nonhazardous demolition and construction waste.
 - 2. Recycling nonhazardous demolition and construction waste.
 - 3. Disposing of nonhazardous demolition and construction waste.

1.2 DEFINITIONS

- A. Construction Waste: Building and site improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.
- B. Demolition Waste: Building and site improvement materials resulting from demolition or selective demolition operations.
- C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to authorities having jurisdiction.
- D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.
- E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.
- F. Salvage and Reuse: Recovery of demolition or construction waste and subsequent incorporation into the Work.

1.3 PERFORMANCE REQUIREMENTS

- 1. Salvage and Re-use the items indicated on the Drawings.

1.4 ACTION SUBMITTALS

- A. Waste Management Plan: Submit plan within seven (7) days of date established for the Notice to Proceed.

1.5 INFORMATIONAL SUBMITTALS

- A. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit report. Include the following information:
 - 1. Material category.
 - 2. Generation point of waste.
 - 3. Total quantity of waste in tons.
 - 4. Quantity of waste salvaged, both estimated and actual in tons.
 - 5. Quantity of waste recycled, both estimated and actual in tons.
 - 6. Total quantity of waste recovered (salvaged plus recycled) in tons.
 - 7. Total quantity of waste recovered (salvaged plus recycled) as a percentage of total waste.
- B. Waste Reduction Calculations: Before request for Substantial Completion, submit calculated end-of-Project rates for salvage, recycling, and disposal as a percentage of total waste generated by the Work.
- C. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.
- D. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

1.6 WASTE MANAGEMENT PLAN

- A. General: Develop a waste management plan according to ASTM E 1609 and requirements in this Section. Plan shall consist of waste identification, waste reduction work plan, and cost/revenue analysis. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.
- B. Waste Identification: Indicate anticipated types and quantities of demolition and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.
- C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.
 - 1. Salvaged Materials for Reuse: For materials that will be salvaged and reused in this Project, describe methods for preparing salvaged materials before incorporation into the Work.
 - 2. Salvaged Materials for Sale: Not permitted on Project Site..
 - 3. Salvaged Materials for Donation: Not permitted on Project Site.
 - 4. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.

5. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.
6. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location where materials separation will be performed.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

- A. General: Implement approved waste management plan. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
- B. Waste Management Coordinator: Engage a waste management coordinator to be responsible for implementing, monitoring, and reporting status of waste management work plan.
- C. Training: Train workers, subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.
 1. Distribute waste management plan to everyone concerned within three days of submittal return.
 2. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.
- D. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.
 1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.
 2. Comply with Section 015000 "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

3.2 SALVAGING DEMOLITION WASTE

- A. Salvaged Items for Reuse in the Work, at the direction of the Owner:
 1. Clean salvaged items.
 2. Pack or crate items after cleaning. Identify contents of containers.
 3. Store items in a secure area until installation.
 4. Protect items from damage during transport and storage.

5. Install salvaged items to comply with installation requirements for new materials and equipment. Provide connections, supports, and miscellaneous materials necessary to make items functional for use indicated.

B. Salvaged Items for Sale and Donation: Not permitted on Project site.

C. Salvaged Items for Owner's Use, at the direction of the Owner:

1. Clean salvaged items.
2. Pack or crate items after cleaning. Identify contents of containers.
3. Store items in a secure area until delivery to Owner.
4. Transport items to Owner's storage area designated by Owner.
5. Protect items from damage during transport and storage.

3.3 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

A. General: Recycle paper and beverage containers used by on-site workers.

B. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical according to approved construction waste management plan.

1. Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
 - a. Inspect containers and bins for contamination and remove contaminated materials if found.
2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.
3. Stockpile materials away from construction area.
4. Store materials and components off the ground and protect from the weather.
5. Remove recyclable waste from Owner's property and transport to recycling receiver or processor.

3.4 RECYCLING DEMOLITION WASTE

A. Concrete: Remove reinforcement and other metals from concrete and sort with other metals.

1. Pulverize concrete to maximum 1 1/2-inch size.

B. Masonry: Remove metal reinforcement, anchors, and ties from masonry and sort with other metals.

1. Pulverize masonry to maximum 1-1/2-inch size.

2. Clean and stack undamaged, whole masonry units on wood pallets.
- C. Wood Materials: Sort and stack members according to size, type, and length. Separate lumber, engineered wood products, panel products, and treated wood materials.
- D. Metals: Separate metals by type.
 1. Structural Steel: Stack members according to size, type of member, and length.
 2. Remove and dispose of bolts, nuts, washers, and other rough hardware.
- E. Gypsum Board: Stack large clean pieces on wood pallets or in container and store in a dry location. Remove edge trim and sort with other metals. Remove and dispose of fasteners.
- F. Acoustical Ceiling Panels and Tile: Stack large clean pieces on wood pallets and store in a dry location.
- G. Metal Suspension System: Separate metal members including trim, and other metals from acoustical panels and tile and sort with other metals.
- H. Carpet and Pad: Roll large pieces tightly after removing debris, trash, adhesive, and tack strips.
 1. Store clean, dry carpet and pad in a closed container or trailer provided by Carpet Reclamation Agency or carpet recycler.
- I. Carpet Tile: Remove debris, trash, and adhesive.
 1. Stack tile on pallet and store clean, dry carpet in a closed container or trailer provided by Carpet Reclamation Agency or carpet recycler.
- J. Piping: Reduce piping to straight lengths and store by type and size. Separate supports, hangers, valves, sprinklers, and other components by type and size.
- K. Conduit: Reduce conduit to straight lengths and store by type and size.

3.5 RECYCLING CONSTRUCTION WASTE

- A. Packaging:
 1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.
 2. Polystyrene Packaging: Separate and bag materials.
 3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.
 4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

B. Wood Materials:

1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.
2. Clean Sawdust: Bag sawdust that does not contain painted or treated wood.

C. Gypsum Board: Stack large clean pieces on wood pallets or in container and store in a dry location.

3.6 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.
2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn waste materials.

C. Disposal: Remove waste materials from Owner's property and legally dispose of them.

END OF SECTION 017419

SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 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.
 - 6. Application for Payment
- B. Refer to Section 017000 "GENERAL CONDITIONS" for related information.

1.2 ACTION SUBMITTALS

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

1.3 CLOSEOUT SUBMITTALS

- A. Certificates of Release: From authorities having jurisdiction.
- B. Certificate of Insurance and Maintenance Bond: For continuing coverage.
- C. Field Report: For pest control inspection.
- D. Project Record Documents, including record Drawings, operation, and maintenance manuals.
 - 1. Operation and maintenance data for items so listed in pertinent other Sections of these Specifications and for other items when so directed by the Construction Manager and Architect/Engineer.

- a) Guarantees, warranties and bonds (including Maintenance Bond).
- b) Keys and keying schedule.
- c) Spare parts and extra stock of materials.
- d) Evidence of compliance with requirements of authorities having jurisdiction including, but not necessarily limited to the following:
 - 1. Certificate of Inspection and acceptance from Fire Inspector;
 - 2. Certificate of Inspection and acceptance from Electrical Department or Underwriters Laboratory; or third party Inspection Agency;
 - 3. Certificate of Occupancy.
- e) Certificate of Insurance for products and completed operations.
- f) Evidence of payment and release of liens from all Subcontractors and Suppliers.
- g) List of Subcontractors, service organizations, and principal vendors, including names, addresses and telephone numbers where they can be reached for emergency service at all times including nights, weekends, and holidays.
- h) Consent of Surety to Final Payment (AIA G707).
- i) Contractor's Affidavit of Release of Liens (AIA G706A)
- j) Contractor's Affidavit of Payment of Debts and Claims (AIA G706)
- k) Certificate of Substantial Completion (AIA G704).
- l) Any other items identified in the Specifications as Closeout Submittals or as due prior to Substantial or Final Completion or Closeout.

1.4 MAINTENANCE MATERIAL SUBMITTALS

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

1.5 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.
- B. Contractor shall provide Consent of Surety to reduction in retainage.
- C. Should Architect/Engineer determine Work is not Substantially Complete:
 - 1) Architect/Engineer will prepare "Certificate of Substantial Completion" accompanied by Contractor's list of items to be completed or corrected, as verified by the Architect/Engineer.
 - 2) Architect/Engineer will submit Certificate to Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate.
- D. Submittals Prior to Substantial Completion: Complete the following a minimum of ten (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, final completion construction photographic documentation, damage or settlement surveys, and similar final record information.
 - 3. Submit closeout submittals specified in individual Sections, including specific warranties, Maintenance Bond, 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 Architect. Label with manufacturer's name and model number where applicable.

- a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Architect's signature for receipt of submittals.
5. Submit test/adjust/balance records.
 6. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
- E. Procedures Prior to Substantial Completion: Complete the following a minimum of ten (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 heat and other utilities.
 7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
 8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 9. Complete final cleaning requirements, including touchup painting.
 10. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- F. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of ten (10) days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect 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 Architect, that must be completed or corrected before certificate will be issued.
1. Reinspection: 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.

1.6 FINAL COMPLETION PROCEDURES

- A. Preliminary Procedures: Before requesting final inspection for determining final completion, complete the following:
1. Submit a final Application for Payment.
 2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 4. Submit pest-control final inspection report and warranty.
 5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
- B. Inspection: Submit a written request for final inspection to determine acceptance. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect 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. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.7 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, starting with exterior areas first and proceeding from lowest floor to highest floor.
 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
 3. Submit list of incomplete items in the following format:
 - a. MS Excel electronic file. Architect will return annotated copy.

1.8 SUBMITTAL OF PROJECT WARRANTIES

- A. Time of Submittal: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial

Completion is indicated, or when delay in submittal of warranties might limit Owner's rights under warranty.

- B. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
 - 1. Bind warranties and bonds in heavy-duty, three-ring, cloth-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8- 1/2-by-11-inch paper.
 - 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
 - 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
 - 4. Warranty Electronic File: Scan warranties and bonds and assemble complete warranty and bond submittal package into a single indexed electronic PDF file with links enabling navigation to each item. Provide bookmarked table of contents at beginning of document.
- C. Provide additional copies of each warranty to include in operation and maintenance manuals.

1.9 APPLICATION FOR PAYMENT:

- A. Work Included: Submit Applications for Payment to Construction Manager and Architect/Engineer, in accordance with the approved Schedule of Values.
- B. Format and Data Required: Submit applications typed on AIA documents (G702CMA and G703). Where "Architect" or "Engineer" is referred to on the AIA documents, it shall also mean "Architect/Engineer" as defined in this document.
- C. Preparation of Application: Refer to Section 007000 "General Conditions for Payment Procedures and documentation.

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 of rubbish, waste material, litter, and other foreign substances.
 - b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
 - c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
 - d. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - e. Remove snow and ice to provide safe access to building.
 - 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, plumbing chases, equipment vaults, manholes, attics, and similar spaces.
 - h. Sweep concrete floors broom clean in unoccupied spaces.

- i. Clean transparent materials, including mirrors and glass in doors. Clean exterior and interior surfaces of window glass. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
 - j. Remove labels that are not permanent.
 - k. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
 - l. Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
 - m. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
 - n. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
 - o. Leave Project clean and ready for occupancy.
- C. Pest Control: Comply with pest control requirements in Section 015000 "TEMPORARY FACILITIES AND SERVICES". Prepare written report.

3.2 INSTRUCTIONS

- A. Complete instruction of Owner's personnel in proper operation and maintenance of systems, equipment, and similar items which were provided as part of the Work and in accordance with other applicable Sections of these Specifications.

3.3 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 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.
4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in lighting fixtures to comply with requirements for new fixtures.

END OF SECTION 017700

SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 SUMMARY

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

1.2 CLOSEOUT SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit copies of record Drawings as follows:
 - a. Initial Submittal:
 - 1) Submit PDF electronic files of scanned record prints.
 - 2) Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.
 - b. Final Submittal:
 - 1) Submit PDF electronic files of scanned record prints.
 - 2) Print each drawing, whether or not changes and additional information were recorded.
- B. Record Specifications: Submit annotated PDF electronic files of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit annotated PDF electronic files and directories of each submittal.

PART 2 - PRODUCTS

2.1 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.
 - b. Record data as soon as possible after obtaining it.
 - c. Record and check the markup before enclosing concealed installations.
 2. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.
 3. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
 4. 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 Architect. When authorized, prepare a full set of corrected digital data files of the Contract Drawings, as follows:
1. Format: Annotated PDF electronic file with comment function enabled.
 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 Architect for resolution.
- C. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.
1. Record Prints: Organize record prints and newly prepared record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
 2. Format: Annotated PDF electronic file with comment function enabled.
 3. Record Digital Data Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
 4. Identification: As follows:
 - a. Project name.
 - b. Date.
 - c. Designation "PROJECT RECORD DRAWINGS."
 - d. Name of Architect.
 - e. Name of Contractor.

2.2 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
 - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 - 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 - 3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
 - 4. Note related Change Orders, record Product Data, and record Drawings where applicable.
- B. Format: Submit record Specifications as annotated PDF electronic file.

2.3 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
 - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 - 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
 - 3. Note related Change Orders, record Specifications, and record Drawings where applicable.
- B. Format: Submit record Product Data as annotated PDF electronic file.

2.4 SUBCONTRACTORS AND SUPPLIERS LIST

- A. Provide a complete list of names and addresses and telephone numbers of all Contractors and Subcontractors, and Suppliers employed on the Project.

2.5 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.
- B. Format: Submit miscellaneous record submittals as PDF electronic file.
Field Test Reports
- C. Provide two (2) copies of each Project Record Document with a Submittal letter also in duplicate, containing the following:

1. Date;
2. Project title and number;
3. Contractor's name and address;
4. Title and number of each Project Record Document;
5. Certification in writing that each Project Record Document, as submitted, is complete and accurate and reflects the actual condition at the building Site;
6. Signature of Contractor or authorized representative.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

Recording: Information shall be recorded by the Contractor to permit accurate record Drawings to be made by Architect/Engineer:

- a. Label each document file, "PROJECT RECORD", in two inch (2") high printed letters;
 - b. Keep Project Record Documents current;
 - c. Do not allow any Work to be permanently sealed until required information has been recorded;
- A. Maintenance of Record Documents and Samples: Store record documents and Samples in the field office apart from the Contract Documents used for construction. Do not use project record documents for construction purposes. Maintain record documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to project record documents for Architect's and Construction Manager's reference. during normal working hours.

END OF SECTION 017839