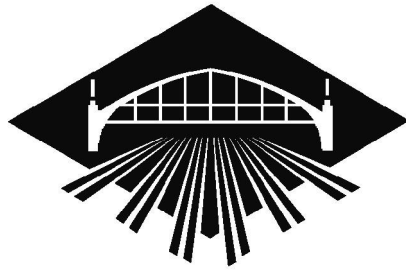


Project Manual
for the
Expansion and Renovation
to the
Pennsylvania Convention Center
1101 Arch Street
Philadelphia, Pennsylvania



Pennsylvania Convention Center Authority
One Pennsylvania Convention Center Place
1101 Arch Street
Philadelphia, Pennsylvania 19107

CONTRACT 3 – TECHNOLOGY SYSTEMS FACILITATOR

JANUARY 29, 2010

Volume 2 of 3 – GENERAL REQUIREMENTS



Expansion and Renovation to the Pennsylvania Convention Center

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Reference Documents – Provided on CD – All of the following is provided as a guide and is to be considered when preparing Contractors Lump Sum Bid

DRAWINGS

Contract 2 – General Construction	Volume 2A of 7 Architectural
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Contract 2 – General Construction Protection	Volume 3 of 7 Mechanical/Plumbing & Fire
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Contract 2 – General Construction	Division 6 – Wood, Plastics & Composites
Contract 2 – General Construction	Division 7 – Penetration Firestopping
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END OF SECTION 00 0110

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SECTION 01 1000 SUMMARY OF THE WORK

Part 1 - General

1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and other Division 01 Specifications sections, apply to work of this section.

1.02 PROJECT/WORK IDENTIFICATION

- A. Project Name: Contract 3 – Technology Systems Facilitator Project for Expansion of the Pennsylvania Convention Center between Broad and 13th Streets and between Race and Arch Streets, Philadelphia, Pennsylvania.
- B. The work is defined by Contract Documents prepared by Kling Stubbins with Vitetta, dated January 15 & 29, 2010.
- C. Reference Documents are available for review, which are for information only with these Contract Documents. The Reference Documents include Contract 2 Bid Documents not included specifically in these (Contract 3) Documents. Although the work of these other contractors is not a part of this Contract; the work of these other contractors must be coordinated with the work of this Contractor, and the work of these other contractors may impact the work of this Contract. These Reference Drawings are not the entire documentation of these other contracts and are intended to be generally informative to the extent of this other work. The Owner makes no representations as to the correctness or accuracy of the information contained in the reference documents.
- D. After contract award, the PCCA shall furnish the Contractor with two (2) sets of drawing prints, specifications, addenda and any applicable revisions free of charge. Thereafter, the Contractor shall make its own arrangements for additional copies.

1.03 SUMMARY OF THE WORK : CONTRACT 3 – TECHNOLOGY SYSTEMS FACILITATOR

- A. A Scope of Work Summary is provided below. This Summary is not all-inclusive; other work is shown and/or specified further in the Contract Documents. Furthermore, the Contractor is responsible for being thoroughly familiar with all conditions affecting labor of the Project, including but not limited to unions and trade jurisdiction issues. This Scope of Work Summary does not replace the Contractor's sole responsibility in this regard.

Summary (Non-inclusive)

Section Includes: Construction operations required by Contract Documents, defines aspects of Contractor's relationship with Owner and Design Professional, and lists special Owner requirements.

Related Work Specified Elsewhere (Non-inclusive)

1. Applicable Sections: Division 01 (Contract 2). (Balance of Sections by Owner and Construction Manager).
2. Project Management and Coordination: Division 01
3. Alternates: Division 01
4. Product Requirements: Division 01
5. Closeout Procedures: Division 01
6. Door Hardware: Division 08 (Contract 2).
7. Electrical Requirements: Division 26 (Contract 2).

General Requirements

1. Temporary Lighting and Power for Contract 3: Temp. electric services are Maintained and operated by Contract 2 Contractor. Electrical utility costs are solely incurred and paid for by the Owner. It is the responsibility of Contract 3 to coordinate use of temporary electrical service needed for their work with other Contractors and include any costs for same in their bid.
2. Construction Schedule
3. Progress Photos
4. Site Security: Security services are maintained and operated by Contract 2 Contractor 24/7. Contract 3 shall be responsible to coordinate with other on-site Contractors the security services required for their work. Contract 3 shall be responsible to provide all necessary security to secure Contract 3 material and equipment.
5. Resources: Contract 3 shall be responsible to provide and coordinate all necessary resources required to perform their work during all working hours including premium time.
6. Coordination with Other Prime Contractors

B. Project Description

Work Includes: Construction of audiovisual, telephone/data and security systems for the Pennsylvania Convention Center Expansion located in Philadelphia, PA. Work consists of, but not limited to, the following:

1. Audiovisual (AV) systems including AV Master Control Room equipment, Amplifier Room equipment, Intermediate Distribution Frame (IDF) room equipment, speakers and wiring, interface with fire alarm system, interface with existing house sound system, digital signage, and other equipment and systems indicated.
2. AV systems shall include rewiring of speakers in existing Convention Center Exhibit Halls A/B/C to AV equipment in Amplifier Room.
3. Telephone/Data systems including Main Distribution Frame (MDF) equipment, IDF equipment, Cisco switches, Cisco communication servers, Cisco wireless access points, and other equipment and systems indicated.
4. Telephone/Data systems shall include upgrade to the existing Cisco core switch in the existing MDF.
5. Security Systems shall include Security Master Control equipment, MDF equipment, IDF equipment, access control equipment and systems, video equipment and systems, and other equipment and systems indicated.
6. Security systems shall include integration of existing Convention Center card readers and cameras into the security system, and addition of cameras to existing Convention Center Exhibit Halls A/B/C.
7. Furnishing standalone Uninterruptible Power Supply (UPS) systems and providing rack mounted UPS systems.

1.04 COORDINATION OF WORK BY OWNER AND OTHERS

- A. During the work of this Contract, Contract 2 (General Construction) will be ongoing on the site. The Contractor must plan his work with this consideration and closely coordinate his work with the work of the separate contractors. This Contractor shall schedule his work such that he will not be adversely impacted by this other work and shall coordinate his work with these other Contractors so as not to interfere with or cause delay to these other contractors.
- B. The Owner has elected to award separate contract(s) for other work on this site as work of this Contractor progresses. Any contracts awarded simultaneously during this project will have no affect on the preparation of this Project Bid.
- C. Related Work which shall be executed prior to the start of or during time of Construction of Work of this Contract and which is excluded from this Contract:
 1. Construction of AV Master Control Room, Amplifier Room, MDF, IDFs, Security Master Control, and other equipment spaces indicated, complete with lighting, cooling and electrical power supplies to equipment locations. Extend electrical power in accordance with Contract 2 Division 26 requirements as required for a complete system.

2. Relocation of miscellaneous existing fire command center/security command center systems, equipment and operations from existing location (in approximate location of EX049 on floor plans) to new location. Contractor shall coordinate and schedule construction, cutover and testing operations including integration of existing card readers into security systems and integration of existing cameras into security systems, to maintain continuity of fire command center/security command center functions.

3. Construction of fire alarm system.

4. Construction of telecommunications cabling systems, including spaces, pathways, fiber optic and twisted pair copper cabling, outlets and connectors, enclosures, racks and terminations.

5. Construction of doors including finish hardware.

6. Embedded conduits and other conveyances indicated to be provided by others. Extend conduits and conveyances in accordance with Contract 2 Division 26 requirements as required for a complete system.

D. Contractor's Work:

1. Coordinate delivery dates with other Work.
2. Promptly inspect delivered products for damaged or defective items.
3. Unload and handle delivered products at Project Site, including uncrating and storage.
4. Protect delivered products from exposure to elements and from damage.
5. Repair or replace items damaged as a result of Contractor's operations.
6. Install and connect delivered products.

1.05 FUTURE WORK

A. Project is designed for future:

1. Expansion of audiovisual, telephone/data and security systems throughout the existing Convention Center spaces

1.05 CONTRACT TIME

- A. Refer to the Instructions to Bidders for the Contract Time specified for this work.
- B. No adjustment for Contract Time will be considered except in accordance with the terms of the General Conditions of the Contract.
- C. Project Schedule and Milestone Dates are provided in Division 00 3113.

1.06 STREET RESTRICTIONS

- A. Contractor shall direct all construction vehicles to access the site from Broad Street and Race Street to restrict parking and vehicular traffic East of 12th Street. Parking for all Contractor and Subcontractor personnel shall not be the responsibility of the PCCA, and Contractor is to take all measures necessary to restrict parking and traffic as previously noted.

1.07 CONTRACTOR'S USE OF PREMISES

- A. Contractor shall restrict his personnel and use of the site to areas of work as indicated on the drawings.
- B. Contractor's use of the premises shall also be subject to the following:
 - 1. Coordinate use of the site and access with other Contractors. Site access and parking is restricted as specified in 1.06 D above.
 - 2. Contractor shall operate out of gang/job boxes placed and coordinated with other contractors. Site does not allow for any job and or office trailers.
- C. Contractor shall limit use of premises for Work and for storage to allow for:
 - 1. Work of other Contractors.
 - 2. Owner Occupancy.
 - 3. Public Use.
- D. Coordinate use of premises under direction of Construction Manager.
- E. Protect products furnished to and stored on Project Site.
- F. Move stored products to avoid interference with operations of Owner and other Contractors.
- G. Do not overload structure with stored materials.

1.08 OWNER OCCUPANCY

- A. Owner will occupy areas for purposes of Owner's business operations.
- B. Provide for Owner's use:
 - 1. Access for employees.
 - 2. Availability of necessary utilities.
- C. Prior to occupancy by Owner, execute Certificate of Substantial Completion for Area of Occupancy.

1.08 EXISTING CONDITIONS

- A. Each bidder must visit the site of the proposed work and fully acquaint himself with the conditions as they exist, so that he may fully understand the facilities, difficulties, and restrictions attending the execution of the work under this contract.

END OF SECTION – 01 1000

SECTION 01 14 23 - CONTRACTOR REQUIREMENTS FOR CONFINED SPACE ENTRY

PART 1 GENERAL

1.01 SCOPE AND PURPOSE

A. This Section applies to all personnel where confined space entry occurs.

B. The purpose of this Section is to ensure that Contractor's workers are safeguarded from unsafe atmospheres while entering or occupying any confined space.

1.02 DEFINITIONS

A. Confined Space: is any space that has limited or restricted means of access to a space not intended for continuous occupancy, and that could contain a hazardous atmosphere.

B. Hazardous Atmosphere: is any atmosphere that has one or more of the following characteristics:

1. is a toxic atmosphere;
2. is oxygen-deficient or oxygen-enriched;
3. is an explosive atmosphere.

C. Toxic Atmosphere: is any atmosphere in which the concentration of any airborne contaminant exceeds the OSHA Permissible Exposure Limit (PEL) or the American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value (TLV) established for the contaminant.

D. Oxygen-Deficient Atmosphere: is any atmosphere having less than 19.5% oxygen content.

E. Oxygen-Enriched Atmosphere: is any atmosphere having greater than 22% oxygen content.

F. Explosive Atmosphere: is any atmosphere that contains a concentration of flammable or combustible material in excess of 10% of its Lower Flammable Limit (LFL, also called LEL).

G. Confined spaces may include, but are not limited to, storage or processing tanks

(either above or below grade), manholes, sewers, conduits or tunnels, wet pits, ducts, and open-topped spaces more than 4 feet deep.

1.03 APPLICABLE STANDARDS OF CONFORMANCE

A. Contractor whose employees may enter confined space shall comply with the following regulations:

1. Applicable sections of 29 CFR Part 1926 (OSHA Construction Industry Regulations and Standards).
2. Commonwealth of Pennsylvania regulations.

B. Unless the above regulations impose more stringent requirements, the requirements set forth in Section 27 ("Work in Confined Spaces") of the U.S. Army Corps of Engineers Safety and Health Requirements Manual, EM 385-1-1 (Rev. 1992) shall apply.

1.04 RESPONSIBILITIES

A. City of Philadelphia Responsibilities:

1. The City of Philadelphia will, wherever applicable, supply contractors with material safety data sheets (MSDSs) as follows:
 - a. Gases known to be generated from wastewater, namely, hydrogen sulfide (H₂S) and methane.
 - b. Chemicals presently known to be significant potential contaminants of wastewater from major point-source industrial discharges.
 - c. Chemicals used in City of Philadelphia treatment plants to treat fresh water and wastewater.

B. Contractor Responsibilities:

1. The Contractor shall be solely responsible for complying with applicable standards of conformance, including, but not limited to, the following:
 - a. Establish written procedures for confined space entry that includes entry permit requirements.
 - b. Ensure that all affected personnel are properly trained in all aspects that may affect their safety during confined space entry.
 - c. Ensure that affected employees are provided information and training concerning potentially hazardous atmospheres.

d. Provide all necessary instruments and equipment needed for complying with established procedures, including (but not limited to):

- 1) Testing of atmosphere with direct-reading instruments;
- 2) Personal protective equipment;
- 3) Non-entry retrieval devices such as body harnesses and winches;
- 4) Communications devices such as two-way radios;
- 5) Positive ventilation equipment (e.g., blowers and flexible ducts).
- 6) The Contractor shall be solely responsible for interpreting hazard information provided by the City of Philadelphia and for providing training and information to employees in accordance with the requirements of 29 CFR Part 1926. (OSHA Hazard Communication Standard).
- 7) Properly executed permits shall be completed by the Contractor before any contractor employee or subcontractor either:
- 8) Performs hot work in an area defined by the City as a hot-work permit area.
- 9) Enters any space determined by the City to be a permit-required confined space.

1.05 ENFORCEMENT

A. Performance may be audited by the job-site representative of the City of Philadelphia Water Department. The representative may, at his discretion, obtain advice from technical specialists. However, the City is under no contractual obligation to perform such functions.

B. Adherence to requirements as set forth in this Section are subject to OCIP requirements in addition to any audits by authorities having jurisdiction.

C. Failure of the Contractor to conform to applicable safety standards or to meet his responsibilities, whether or not explicitly covered in this section, may cause the job-site representative either to prevent work from starting or to stop work in progress.

D. Repeated or egregious failures on the part of the Contractor to comply with any requirement of the Section may result in termination of the Contract and/or affect the Contractor's eligibility to bid on future contracts. The City of Philadelphia bears no liability for losses, either direct or incidental, suffered by the Contractor in such cases.

END OF SECTION 01 14 23

SECTION 01 3100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

1. Coordination of Work
2. Coordination Drawings.
3. Administrative and supervisory personnel.
4. Project meetings.
5. Requests for Interpretation (RFIs).

- B. Related Sections include the following:

1. Division 01 Section "Construction Progress Documentation" for preparing and submitting Contractor's Construction Schedule.
2. Division 01 Section "Execution" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
3. Division 01 Section "Closeout Procedures" for coordinating closeout of the Contract.

1.3 DEFINITIONS

- A. RFI: Request from Contractor seeking information or clarification of the Contract Documents.
- B. PRIMAVERA CONTRACT MANAGER: Software to be utilized for all project related documentation including but not limited to; meeting minutes, RFI's, submittals, submittal logs, daily reports, change order logs, etc.
- C. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, that depend on each other for proper installation, connection, and operation.
 1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.

3. Make adequate provisions to accommodate items scheduled for later installation.
 4. Where availability of space is limited, coordinate installation of different components to ensure maximum performance and accessibility for required maintenance, service, and repair of all components, including mechanical and electrical.
 5. The Contractor shall be the sole designator and judge of which subcontractor or sub-subcontractor performs which tasks.
 6. Electrical work shall be verified with other Sections. Trade performing that work shall supply sufficient information for completing the system.
 7. Coordination of cutting and patching: As work of each Section requiring chases, openings, sleeves, inserts, or other work to be built into, pass through, or attached to work of other Sections, furnish, to appropriate trade or Contractor, dimensioned shop drawings, location information, and materials to be built in, in time to avoid cutting and patching.
- D. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- E. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
1. Preparation of Contractor's Construction Schedule.
 2. Preparation of the Schedule of Values.
 3. Installation and removal of temporary facilities and controls.
 4. Delivery and processing of submittals.
 5. Progress meetings.
 6. Pre-installation conferences.
 7. Project closeout activities.
 8. Startup and adjustment of systems.
- F. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.
1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work. Refer to other Sections for disposition of salvaged materials that are designated as Owner's property.

1.4 SUBMITTALS

- A. Coordination Drawings: Prepare Coordination Drawings per Article 3.15.4.3 of the General Conditions if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities, or installed under separate contract(s) by separate contractor(s).

1. Content: Project-specific information, drawn accurately to scale. Scale of drawings shall be ¼" = 1'-0" and shall be coordinated by all participants. Do not base Coordination Drawings on reproductions of the Contract Documents or standard printed data. Include the following information, as applicable:
 - a. Indicate functional and spatial relationships of components of architectural, structural, civil, mechanical, and electrical systems.
 - b. Indicate required installation sequences.
 - c. Indicate dimensions shown on the Contract Drawings and make specific note of dimensions that appear to be in conflict with submitted equipment and minimum clearance requirements. Provide alternate sketches to Design Professional/Architect for resolution of such conflicts. Minor dimension changes and difficult installations will not be considered changes to the Contract.
 2. Sheet Size: The following are to be utilized to enable printing from Primavera System as required. At least 8-1/2 by 11 inches (215 by 280 mm) but no larger than 30 by 40 inches (750 by 1000 mm).
 3. Number of Copies: Submit five opaque copies of each submittal. Design Professional/Architect, through Construction Manager, will return two copies, maintain one copy as a Project Record Document.
 - a. All submittals are to be administered electronically through the Primavera Contract Manager System. Licenses as needed by Contractor for System use is the responsibility of the Contractor. Contractor will upload drawing in system and forward to the Construction Manager for distribution. Design Professional/Architect, through Construction Manager, will return for action as required by Contractor. Mark up and retain one returned copy as a Project Record Document.
 - b. Submit Coordination Drawings in accordance with the requirements of Division 01 Section – "Submittal Procedures."
 4. Refer to individual Sections for Coordination Drawing requirements for Work in those Sections.
- B. Key Personnel Names: Submit a list of key personnel assignments, including superintendent and other personnel in attendance at Project site. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including home and office telephone numbers. Provide names, addresses, and telephone numbers of individuals assigned as standbys in the absence of individuals assigned to Project.
1. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone. Keep list current at all times.

1.5 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

- A. General: In addition to Project superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work.

1.6 PROJECT MEETINGS

- A. General: Schedule and conduct meetings and conferences at Project site, unless otherwise indicated.
1. Attendees: Inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. Notify Owner and Design Professional/Architect of scheduled meeting dates and times.
 2. Agenda: Prepare the meeting agenda. Distribute the agenda to all invited attendees.
 3. Minutes: Record significant discussions and agreements achieved. Distribute the meeting minutes to everyone concerned, including Owner and Design Professional/Architect, within five days of the meeting.
- B. Preconstruction Conference: Construction Manager will schedule a preconstruction conference before starting construction, at a time convenient to Owner, Design Professional and Architect, but no later than 15 days after execution of the Agreement. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments. Contractor shall have a preliminary Site Logistics/Staging Plan available for review at this meeting. Refer to 01 5000 "Temporary Facilities and Controls" Article 3.3 B for description of said plan.
1. Attendees: Authorized representatives of Owner, Owner's Representative, Construction Manager, Design Professional/Architect, and their consultants; Contractor and its superintendent; major subcontractors; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a. Tentative construction schedule.
 - b. Phasing.
 - c. Critical work sequencing and long-lead items.
 - d. Designation of key personnel and their duties.
 - e. Procedures for processing field decisions and Change Orders.
 - f. Procedures for RFIs.
 - g. Procedures for testing and inspecting.
 - h. Procedures for processing Applications for Payment.
 - i. Distribution of the Contract Documents.
 - j. Submittal procedures.
 - k. Preparation of Record Documents.
 - l. Use of the premises and existing building.
 - m. Work restrictions.
 - n. Owner's occupancy requirements.
 - o. Responsibility for temporary facilities and controls.
 - p. Construction waste management and recycling.
 - q. Parking availability.
 - r. Office, work, and storage areas.
 - s. Equipment deliveries and priorities.
 - t. First aid.
 - u. Security.

- v. Progress cleaning.
 - w. Working hours.
 - x. Manning Reports.
 - y. Certified Payroll Reports.
3. Minutes: Construction Manager will record and distribute meeting minutes.
- C. Pre-scheduling Conference: Conduct conference at Project site. Review methods and procedures related to the Preliminary Construction Schedule and Contractor's Construction Schedule.
- 1. Attendees: Authorized representatives of Owner, Construction Manager, Design Professional/Architect, and their consultants; Contractor and its superintendent; Contractor's proposed Scheduling Consultant; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 - 2. Agenda: Discuss the following items and other details related to the creation and implementation of the Contractor's Construction Schedule:
 - a. Review software limitations and content and format for reports.
 - b. Verify availability of qualified personnel needed to develop and update schedule.
 - c. Discuss constraints, including phasing work stages, area separations, interim milestones, and partial Owner occupancy.
 - d. Review delivery dates for Owner-furnished products.
 - e. Review schedule for work of Owner's separate contracts.
 - f. Review time required for review of submittals and re-submittals.
 - g. Review requirements for tests and inspections by independent testing and inspecting agencies.
 - h. Review time required for completion and startup procedures.
 - i. Review and finalize list of construction activities to be included in schedule.
 - j. Review submittal requirements and procedures.
 - k. Review procedures for updating schedule.
- D. Pre-installation Conferences: Conduct a preinstallation conference at Project site before each construction activity where required by the specifications or that requires coordination with other construction.
- 1. Attendees: Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Design Professional/Architect, Owner and Construction Manager of scheduled meeting dates.
 - 2. Agenda: Review progress of other construction activities and preparations for the particular activity under consideration, including requirements for the following:
 - a. The Contract Documents.
 - b. Options.
 - c. Related RFIs.
 - d. Related Change Orders.
 - e. Purchases.

- f. Deliveries.
 - g. Submittals.
 - h. Review of mockups.
 - i. Possible conflicts.
 - j. Compatibility problems.
 - k. Time schedules.
 - l. Weather limitations.
 - m. Manufacturer's written recommendations.
 - n. Warranty requirements.
 - o. Compatibility of materials.
 - p. Acceptability of substrates.
 - q. Temporary facilities and controls.
 - r. Space and access limitations.
 - s. Regulations of authorities having jurisdiction.
 - t. Testing and inspecting requirements.
 - u. Installation procedures.
 - v. Coordination with other work.
 - w. Required performance results.
 - x. Protection of adjacent work.
 - y. Protection of construction and personnel.
3. Record significant conference discussions, agreements, and disagreements, including required corrective measures and actions.
 4. Reporting: Distribute minutes of the meeting to each party present and to parties who should have been present.
 5. Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
- E. Progress Meetings: The Construction Manager will conduct progress meetings at bi-weekly intervals.
1. Attendees: In addition to representatives of Owner, Construction Manager, Design Professional and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities may be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a. Preparation: Prior to the meeting, all attendees shall review the drawings and read the relevant specification sections and become familiar with all requirements for the Work to commence within the upcoming timeframe.
 - b. Contractor's Construction Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.

- 1) Review schedule for next period.
- c. Review present and future needs of each entity present, including the following:
- 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals as related to Submittals Schedule.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site utilization.
 - 8) Temporary facilities and controls.
 - 9) Work hours.
 - 10) Hazards and risks.
 - 11) Progress cleaning.
 - 12) Quality and work standards.
 - 13) Status of correction of deficient items.
 - 14) Field observations.
 - 15) RFIs.
 - 16) Status of proposal requests.
 - 17) Pending changes.
 - 18) Status of Change Orders.
 - 19) Pending claims and disputes.
 - 20) Documentation of information for payment requests.
3. Minutes: Construction Manager will record and distribute to Contractor the meeting minutes.
 4. Reporting: Contractor to distribute minutes of the meeting to each party present and to parties who should have been present.
 - a. Schedule Updating: Revise Contractor's Construction Schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with the report of each meeting.

1.7 REQUESTS FOR INFORMATION (RFIs)

- A. Procedure: Immediately on discovery of the need for interpretation of the Contract Documents, and if not possible to request interpretation at Project meeting, prepare and submit an RFI in the form specified.
1. RFIs shall originate with Contractor. RFIs submitted by entities other than Contractor will be returned with no response.
 2. Coordinate and submit RFIs in a prompt manner so as to avoid delays in Contractor's work or work of subcontractors.
 - a. Submit electronic version of RFI to Construction Manager via Primavera Contract Manager. The Construction Manager will review and distribute for action as required.

- B. Content of the RFI: Include a detailed, legible description of item needing interpretation and the following:
1. Project name.
 2. Date.
 3. Name of Contractor.
 4. Name of Design Professional/Architect and Construction Manager.
 5. RFI number, numbered sequentially.
 6. Specification Section number and title and related paragraphs, as appropriate.
 7. Drawing number and detail references, as appropriate.
 8. Field dimensions and conditions, as appropriate.
 9. Contractor's suggested solution(s). If Contractor's solution(s) impact the Contract Time or the Contract Sum, Contractor shall state impact in the RFI.
 10. Contractor's signature.
 11. Attachments: Include drawings, descriptions, measurements, photos, Product Data, Shop Drawings, and other information necessary to fully describe items needing interpretation.
 - a. Supplementary drawings prepared by Contractor shall include dimensions, thicknesses, structural grid references, and details of affected materials, assemblies, and attachments.
- C. Software-Generated RFIs: Software-generated form with substantially the same content as indicated above.
1. Attachments shall be electronic files in Adobe Acrobat PDF format.
- D. Design Professional/Architect's Action: Design Professional/Architect will review each RFI, determine action required, and return it. Allow seven (7) working days for Design Professional/Architect's response for each RFI. RFIs received after 1:00 p.m. will be considered as received the following working day.
1. The following RFIs will be returned without action:
 - a. Requests for approval of submittals.
 - b. Requests for approval of substitutions.
 - c. Requests for coordination information already indicated in the Contract Documents.
 - d. Requests for adjustments in the Contract Time or the Contract Sum.
 - e. Requests for interpretation of Design Professional/Architect's actions on submittals.
 - f. Incomplete RFIs or RFIs with numerous errors.
 2. Design Professional/Architect's action may include a request for additional information, in which case Design Professional/Architect's time for response will start again.
 3. Design Professional/Architect's action on RFIs that may result in a change to the Contract Time or the Contract Sum may be eligible for Contractor to submit Change Proposal according to Section 00 7200, Article 7, "Changes in Work."

- a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Design Professional/Architect and Construction Manager in writing within 10 days of receipt of the RFI response.
- E. On receipt of Design Professional/Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Design Professional/Architect and Construction Manager within seven days if Contractor disagrees with response.
- F. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Software log with not less than the following:
 - 1. Project name.
 - 2. Name and address of Contractor.
 - 3. Name and address of Design Professional/Architect and Construction Manager.
 - 4. RFI number including RFIs that were dropped and not submitted.
 - 5. RFI description.
 - 6. Date the RFI was submitted.
 - 7. Date Design Professional/Architect's response was received.
 - 8. Identification of related Minor Change in the Work, Construction Change Directive, and Proposal Request, as appropriate.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 3100

SECTION 01 3200 - CONSTRUCTION PROGRESS DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 00 and 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for documenting the progress of construction during performance of the Work, including the following:
 - 1. Contractor's Preliminary Baseline Construction Schedule.
 - 2. Contractor's Construction Schedule.
 - 3. Submittals Schedule.
 - 4. Daily construction reports.
 - 5. Material location reports.
 - 6. Field condition reports.
 - 7. Special reports.
- B. Related Sections include the following:
 - 1. General Conditions Article 3.14 Contractor's Construction Schedule.
 - 2. Division 01 Section "Project Management and Coordination" for submitting and distributing meeting and conference minutes.
 - 3. Division 01 Section "Photographic Documentation" for submitting construction photographs.
 - 4. Division 01 Section "Submittal Procedures" for submitting schedules and reports.
 - 5. Division 01 Section "Quality Requirements" for submitting a schedule of tests and inspections.

1.3 DEFINITIONS

- A. Activity: A discrete part of a project that can be identified for planning, scheduling, monitoring, and controlling the construction project. Activities included in a construction schedule consume time and resources.
 - 1. Critical activities are activities on the critical path. They must start and finish on the planned early start and finish times.
 - 2. Predecessor Activity: An activity that precedes another activity in the network.
 - 3. Successor Activity: An activity that follows another activity in the network.

- B. Cost Loading: The allocation of the Schedule of Values for the completion of an activity as scheduled. The sum of costs for all activities must equal the total Contract Sum, unless otherwise approved by the Design Professional/Architect or Construction Manager.
- C. CPM: Critical path method, which is a method of planning and scheduling a construction project where activities are arranged based on activity relationships. Network calculations determine when activities can be performed and the critical path of Project.
- D. Critical Path: The longest connected chain of interdependent activities through the network schedule that establishes the minimum overall Project duration and contains no float.
- E. Event: The starting or ending point of an activity.
- F. Float: The measure of leeway in starting and completing an activity.
 - 1. Float time is not for the exclusive use or benefit of either Owner or Contractor, but is a jointly owned, expiring Project resource available to both parties as needed to meet schedule milestones and Contract completion date.
 - 2. Free float is the amount of time an activity can be delayed without adversely affecting the early start of the successor activity.
 - 3. Total float is the measure of leeway in starting or completing an activity without adversely affecting the planned Project completion date.
- G. Fragnet: A partial or fragmentary network that breaks down activities into smaller activities for greater detail.
- H. Major Area: A story of construction, a separate building, or a similar significant construction element.
- I. Milestone: A key or critical point in time for reference or measurement.
- J. Network Diagram: A graphic diagram of a network schedule, showing activities and activity relationships.
- K. Resource Loading: The allocation of manpower and equipment necessary for the completion of an activity as scheduled.
- L. Primavera – Contract Manager: Software utilized by PCCA & their representatives for managing submittals, RFI(s), contract changes, etc. Contractor responsible for purchasing licenses as required for their administration.

1.4 SUBMITTALS

- A. Qualification Data: For scheduling consultant.
- B. Submittals Schedule: Submit four copies of schedule. Arrange the following information in a tabular format:
 - 1. Scheduled date for first submittal.
 - 2. Specification Section number and title.

3. Submittal category (action or informational).
 4. Name of subcontractor.
 5. Description of the Work covered.
 6. Scheduled date for Design Professional/Architect's final release or approval.
- C. Preliminary Schedule: Submit three copies. Schedule shall include a detailed schedule for the first ninety (90) days of the Contract Time and a summary of the major activities and sequences of Work for the rest of the Project.
- D. Schedule of Values: Submit three copies. The Schedule of Values shall allocate the Contract Sum among the various portions of the Work and shall be coordinated with the activities in the Construction Schedule. The Schedule of Values shall be prepared in such form and supported by such data to substantiate its accuracy as the Construction Manager may require.
- E. Contractor's Construction Schedule: Submit three opaque copies of initial schedule, large enough to show entire schedule for entire construction period. Submit in accordance with Section 00 7200, Article 3.14, "Contractor's Construction Schedule."
1. Submit three electronic copies of schedule, using Primavera Project Management (Release 6.0 or latest release). Include type of schedule (Initial or Updated) and date on label.
- F. CPM Reports: Concurrent with CPM schedule, submit three copies of each of the following computer-generated reports. Format for each activity in reports shall contain activity number, activity description, cost and resource loading, original duration, remaining duration, early start date, early finish date, late start date, late finish date, and total float in calendar days.
1. Activity Report: List of all activities sorted by activity number and then early start date, or actual start date if known.
 2. Logic Report: List of preceding and succeeding activities for all activities, sorted in ascending order by activity number and then early start date, or actual start date if known.
 3. Total Float Report: List of all activities sorted in ascending order of total float.
 4. Earnings Report: Compilation of Contractor's total earnings from the Notice to Proceed until most recent Application for Payment.
- G. Daily Construction Reports (utilize Primavera Contract Manager 11.1 contract manager software provided by Owner): Submit four copies at weekly intervals.
- H. Material Location Reports: (utilize Primavera Contract Manager 11.1 contract manager software provided by Owner) Submit four copies at weekly intervals.
- I. Field Condition Reports: (utilize Primavera Contract Manager 11.1 contract manager software provided by Owner) Submit four copies at time of discovery of differing conditions.
- J. Special Reports: (utilize Primavera Contract Manager 11.1 contract manager software provided by Owner) Submit four copies at time of unusual event.

- K. Roofing Consulting Firm(s): Submit four copies of Registered Roof Observer's daily reports at weekly intervals during periods of active roof installation.

1.5 QUALITY ASSURANCE

- A. Scheduling Consultant Qualifications: An experienced specialist in CPM scheduling and reporting, with capability of producing CPM reports and diagrams within 24 hours of Design Professional/Architect's request.
- B. Pre-scheduling Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination."

1.6 COORDINATION

- A. Coordinate preparation and processing of schedules and reports with performance of construction activities and with scheduling and reporting of separate contractors.
- B. Coordinate Contractor's Construction Schedule with the Schedule of Values, list of subcontracts, Submittals Schedule, progress reports, payment requests, and other required schedules and reports.
 - 1. Secure time commitments for performing critical elements of the Work from parties involved.
 - 2. Coordinate each construction activity in the network with other activities and schedule them in proper sequence.

PART 2 - PRODUCTS

2.1 SUBMITTALS SCHEDULE

- A. Concurrent with development and acceptance of the Contractor's Construction Schedule, prepare a complete schedule of submittals. Submit the schedule within 45 days of date established for the Notice to Proceed.
 - 1. Coordinate Submittal Schedule with the list of subcontracts, Detailed Cost Breakdown, and the list of products as well as the Contractor's Construction Schedule.
 - 2. Initial Submittal: Submit concurrently with Contractor's Preliminary Baseline Schedule. Include submittals required during the first 90 days of construction. List those required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.
 - 3. Prepare the schedule in chronological order. Provide the following information:

- (a) Scheduled date for the first submittal.
 - (b) Related Section number.
 - (c) Submittal category (Shop Drawings, Product Data, or Samples).
 - (d) Name of the subcontractor.
 - (e) Description of the part of the Work covered.
 - (f) Scheduled date for resubmittal.
 - (g) Scheduled date for the Design Professional/Architect's final release or approval.
3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's Construction Schedule.

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL: Schedules shall be in accordance with the requirements of this section and Article 3.14 of the General Conditions in the Contract Documents.

- A. Time Frame: Extend schedule from date established for the Notice to Proceed to date of Final Completion.
 - 1. Contract completion date shall not be changed by submission of a schedule that shows an early completion date, unless specifically authorized by Change Order.
- B. Activities: Treat each story or separate area as a separate numbered activity for each principal element of the Work. Comply with the following:
 - 1. Activity Duration: Define activities so no activity is longer than 4 weeks, unless specifically allowed by Design Professional/Architect or Construction Manager.
 - 2. Procurement Activities: Include procurement process activities for long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.
 - 3. Submittal Review Time: Include review and resubmittal times indicated in Division 01 Section "Submittal Procedures" in schedule. Coordinate submittal review times in Contractor's Construction Schedule with Submittals Schedule.
 - 4. Startup and Testing Time: Include not less than 30 days for startup and testing.
 - 5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Design Professional/Architect's and Construction Manager's administrative procedures necessary for certification of Substantial Completion.
- C. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.
 - 1. Phasing: Arrange list of activities on schedule by phase.
 - 2. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.
 - 3. Owner-Furnished Products: Include a separate activity for each product. Include delivery date indicated in Division 01 Section "Summary." Delivery dates indicated stipulate the earliest possible delivery date.
 - 4. Work Restrictions: Show the effect of the following items on the schedule:

- a. Coordination with existing construction.
 - b. Limitations of continued occupancies.
 - c. Uninterruptible services.
 - d. Partial occupancy before Substantial Completion.
 - e. Use of premises restrictions.
 - f. Provisions for future construction.
 - g. Seasonal variations.
 - h. Environmental control.
5. Work Stages: Indicate important stages of construction for each major portion of the Work, including, but not limited to, the following:
- a. Subcontract awards.
 - b. Submittals.
 - c. Purchases.
 - d. Mockups.
 - e. Fabrication.
 - f. Sample testing.
 - g. Deliveries.
 - h. Installation.
 - i. Tests and inspections.
 - j. Adjusting.
 - k. Startup and placement into final use and operation.
6. Area Separations: Identify each major area of construction including the following. Indicate how each major area of construction must be sequenced or integrated with other Contract 2 and Contract 3 construction activities to achieve milestone dates.
- a. Security Command Center.
 - b. MDF(s)/IDF(s).
 - c. Telecommunication enclosures in columns.
 - d. AV Master Control Rooms.
 - e. Substantial Completion.
- D. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and Final Completion.
- E. Contract Modifications: For each proposed contract modification and concurrent with its submission, prepare a time-impact analysis using fragnets to demonstrate the effect of the proposed change on the overall project schedule.
- F. Computer Software: Prepare schedules using a program that has been developed specifically to manage construction schedules.
1. Primavera Project Management Release, Version 6.0 or latest.
- 2.3 CONTRACTOR'S CONSTRUCTION SCHEDULE (CPM SCHEDULE)
- A. General: Prepare network diagrams using Bar-Chart Type Schedule.

CPM Schedule: The Contractor shall prepare within forty-five (45) days after Notice to Proceed the Master Construction Schedule for the Work using Primavera Project

Management (6.0 or latest release) and shall provide the baseline and updated Construction Schedules to Construction Manager and Design Professional/Architect in both electronic and hard copy forms.

1. Develop network diagram in sufficient time to submit CPM schedule so it can be accepted and reviewed prior to the Contractors submission of their second application for payment.
 - a. Failure to include any work item required for performance of this Contract shall not excuse Contractor from completing all work within applicable completion dates, regardless of the Owner's and or their Representatives—approval of the schedule.
 2. Conduct educational workshops to train and inform key Project personnel, including subcontractors' personnel, in proper methods of providing data and using CPM schedule information.
 3. Establish procedures for monitoring and updating CPM schedule and for reporting progress. Coordinate procedures with progress meeting and payment request dates.
 4. Use "one workday" as the unit of time. Include list of nonworking days and holidays incorporated into the schedule.
- B. CPM Schedule Preparation: Prepare a list of all activities required to complete the Work. Using the preliminary network diagram, prepare a skeleton network to identify probable critical paths.
1. Activities: Indicate the estimated time duration, sequence requirements, and relationship of each activity in relation to other activities. Include estimated time frames for the following activities:
 - a. Preparation and processing of submittals.
 - b. Mobilization and demobilization.
 - c. Purchase of materials.
 - d. Delivery.
 - e. Fabrication.
 - f. Utility interruptions.
 - g. Installation.
 - h. Work by Owner that may affect or be affected by Contractor's activities.
 - i. Testing and commissioning.
 2. Critical Path Activities: Identify critical path activities, including those for interim completion dates. Scheduled start and completion dates shall be consistent with Contract milestone dates.
 3. Processing: Process data to produce output data on a computer-drawn, time-scaled network. Revise data, reorganize activity sequences, and reproduce as often as necessary to produce the CPM schedule within the limitations of the Contract Time.
 4. Format: Mark the critical path. Locate the critical path near center of network; locate paths with most float near the edges.

- a. Sub-networks on separate sheets are permissible for activities clearly off the critical path.
- C. Schedule Updating: Concurrent with making revisions to schedule, prepare tabulated reports showing the following:
1. Identification of activities that have changed.
 2. Changes in early and late start dates.
 3. Changes in early and late finish dates.
 4. Changes in activity durations in workdays.
 5. Changes in the critical path.
 6. Changes in total float or slack time.
 7. Changes in the Contract Time.
- D. Value Summaries: Prepare two cumulative value lists, sorted by finish dates.
1. In first list, tabulate activity number, early finish date, dollar value, and cumulative dollar value.
 2. In second list, tabulate activity number, late finish date, dollar value, and cumulative dollar value.
 3. In subsequent issues of both lists, substitute actual finish dates for activities completed as of list date.
 4. Prepare list for ease of comparison with payment requests; coordinate timing with progress meetings.
 - a. In both value summary lists, tabulate "actual percent complete" and "cumulative value completed" with total at bottom.
 - b. Submit value summary printouts one week before each regularly scheduled progress meeting.

2.4 REPORTS

- A. Daily Construction Reports: Prepare a daily construction report recording the following information concerning events at Project site:
1. List of subcontractors at Project site.
 2. List of separate contractors at Project site.
 3. Approximate count of personnel at Project site.
 4. Equipment at Project site.
 5. Material deliveries.
 6. High and low temperatures and general weather conditions.
 7. Accidents.
 8. Meetings and significant decisions.
 9. Unusual events (refer to special reports).
 10. Stoppages, delays, shortages, and losses.
 11. Meter readings and similar recordings.
 12. Emergency procedures.

13. Orders and requests of authorities having jurisdiction.
14. Change Orders received and implemented.
15. Construction Change Directives received and implemented.
16. Services connected and disconnected.
17. Equipment or system tests and startups.
18. Partial Completions and occupancies.
19. Substantial Completions authorized.

- B. Material Location Reports: At weekly intervals, prepare and submit a comprehensive list of materials delivered to and stored at Project site. List shall be cumulative, showing materials previously reported plus items recently delivered. Include with list a statement of progress on and delivery dates for materials or items of equipment fabricated or stored away from Project site.
- C. Field Condition Reports: Immediately on discovery of a difference between field conditions and the Contract Documents, prepare and submit a detailed report. Submit with a request for interpretation. Include a detailed description of the differing conditions, together with recommendations for changing the Contract Documents.

2.5 SPECIAL REPORTS

- A. General: Submit special reports directly to Construction Manager and Design Professional/Architect within one day of an occurrence. Distribute copies of report to parties affected by the occurrence.
- B. Reporting Unusual Events: When an event of an unusual and significant nature occurs at Project site, whether or not related directly to the Work, prepare and submit a special report. List chain of events, persons participating, and response by Contractor's personnel, evaluation of results or effects, and similar pertinent information. Advise Owner in advance when these events are known or predictable.

PART 3 - EXECUTION

3.1 CONTRACTOR'S CONSTRUCTION SCHEDULE

- A. Scheduling Consultant: Engage a consultant to provide planning, evaluation, and reporting using CPM scheduling.
 1. In-House Option: Owner may waive the requirement to retain a consultant if Contractor employs skilled personnel with experience in CPM scheduling and reporting techniques. Submit qualifications.
 2. Meetings: Scheduling consultant shall attend all meetings related to Project progress, alleged delays, and time impact.

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

END OF SECTION 01 3200

SECTION 01 3233 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for the following:
 - 1. Preconstruction digital image photography.
 - 2. Periodic construction digital image photography.
 - 3. Final Completion construction digital image photography.
- B. Related Sections include the following:
 - 1. Division 01 Section "Submittal Procedures" for submitting photographic documentation.
 - 2. Division 01 Section "Closeout Procedures" for submitting digital media and construction digital video as Project Record Documents at Project closeout.
 - 3. Division 01 Section "Demonstration and Training" for submitting digital video of demonstration of equipment and training of Owner's personnel.
 - 4. Division 02 Section "Selective Structure Demolition" for digital image photographic documentation before selective demolition operations commence.

1.3 SUBMITTALS

- A. Qualification Data: For photographer.
- B. Key Plan: Submit key plan of Project site and building with notation of vantage points marked for location and direction of each digital image. Indicate elevation or story of construction. Include same label information as corresponding set of digital images.
- C. Construction Digital Images: Submit four (4) prints of each digital image view with each application for payment.
 - 1. Format: 8-by-10-inch (203-by-254-mm) smooth-surface matte prints on single-weight commercial-grade digital image paper, enclosed back to back in clear plastic sleeves that are punched for standard 3-ring binder.
 - 2. Identification: On back of each print, provide an applied label or rubber-stamped impression with the following information:
 - a. Name of Project.
 - b. Name and address of photographer.

- c. Name of Design Professional/Architect and Construction Manager.
 - d. Name of Contractor.
 - e. Date digital image was taken if not date stamped by camera.
 - f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
 - g. Unique sequential identifier.
3. Digital Images: Submit four (4) complete sets of digital image electronic files with each submittal of prints as a Project Record Document on CD-ROM, each in its own plastic protective case. Identify electronic media with date digital images were taken. Submit images that have same aspect ratio as the sensor, uncropped.

1.4 QUALITY ASSURANCE

- A. Photographer Qualifications: An individual who has been regularly engaged as a professional photographer/videographer of construction projects for not less than three years.

1.5 COORDINATION

- A. Auxiliary Services: Cooperate with photographer and provide auxiliary services requested, including access to Project site and use of temporary facilities, including temporary lighting required to produce clear, well-lit photographs without obscuring shadows.

1.6 USAGE RIGHTS

- A. Obtain and transfer copyright usage rights from photographer/videographer to Owner for unlimited reproduction of digital image and digital video documentation.

PART 2 - PRODUCTS

2.1 DIGITAL PHOTOGRAPHIC MEDIA

- A. Digital Images: Provide images in uncompressed TIFF format, produced by a digital camera with minimum sensor size of 6.0 megapixels, and at an image resolution of not less than 2408 by 1758 pixels.

PART 3 - EXECUTION

3.1 CONSTRUCTION DIGITAL IMAGES

- A. Photographer: Engage a qualified commercial photographer to take construction digital images.

- B. General: Record images using the maximum range of depth of field, and that are in focus, to clearly show the Work. Images with blurry or out-of-focus areas will not be accepted.
 - 1. Maintain key plan with each set of construction images and digital videos that identifies each image 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 filename for each image.
- D. Preconstruction Digital Images: Before commencement starting construction, take, digital images of Project site and surrounding areas, including existing items to remain during construction, from different vantage points, as directed by Design Professional/Architect or Construction Manager.
 - 1. Take minimum of 25 digital images to show existing conditions of adjacent areas before starting the Work.
- E. Periodic Construction Digital Images: Take minimum of 25, digital images monthly, coinciding with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last images were taken.
- F. Design Professional/Architect or Construction Manager-Directed Construction Digital Images: From time to time, Design Professional/Architect or Construction Manager will instruct photographer about number and frequency of, digital images and general directions on vantage points. Select actual vantage points and take images to show the status of construction and progress since last images were taken.
 - 1. Include ten (10) Design Professional/Architect or Construction Manager directed images per month in Base Contract Amount.
- G. Final Completion Construction Digital Images: Take 50 color digital images after date of Substantial Completion for submission as Project Record Documents. Design Professional/Architect or Construction Manager will direct photographer for desired vantage points.
 - 1. Do not include date stamp.
- H. Additional Digital Image: Design Professional/Architect or Construction Manager may issue requests for additional digital images, in addition to periodic images specified. Additional images will be paid for by Change Order and are not included in the Contract Sum.
 - 1. Three days' notice will be given, where feasible.
 - 2. In emergency situations, take additional images within 24 hours of request.
 - 3. Circumstances that could require additional photography include, but are not limited to, the following:
 - a. Special events planned at Project site.
 - b. Immediate follow-up when on-site events result in construction damage or losses.

- c. Photography to be taken at fabrication locations away from Project site.
- d. Substantial Completion of a major phase or component of the Work.
- e. Extra record photography at time of final acceptance.
- f. Owner's request for special publicity photography.

END OF SECTION 01 3233

SECTION 01 3300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

1. Substitution requests shall not be submitted under the procedures specified in this section. Substitutions received in this manner will be returned without action. Substitutions shall be submitted in accordance with the requirements of Section "Product Requirements".
2. Submittals, with or without review markings by the Design Professional/Architect, are not Contract Documents and cannot change the requirements of the Contract Documents.
3. Plan and manage the overall sequence and schedule of required submittals in such a way as to avoid "last minute" submittals and the submission of large numbers of submittals within short periods of time.
4. Adhere to the Submittal Schedule reviewed and accepted by the Design Professional/Architect.
5. The Contractor shall not be entitled to any extensions of time if the Work is delayed due to the Contractor's failure to transmit acceptable (complete and compliant) submittals to the Design Professional/Architect sufficiently in advance of the scheduled Work to permit the review and processing required by the Contract Documents and to avoid delaying the Work.

- B. Related Sections include the following:

1. Division 01 Section "Payment Procedures" for submitting Applications for Payment and the Schedule of Values.
2. Division 01 Section "Project Management and Coordination" for submitting and distributing meeting and conference minutes and for submitting Coordination Drawings.
3. Division 01 Section "Construction Progress Documentation" for submitting schedules and reports, including Contractor's Construction Schedule and the Submittals Schedule.
4. Division 01 Section "Photographic Documentation" for submitting construction photographs and construction digital video.
5. Division 01 Section "Quality Requirements" for submitting test and inspection reports and for mockup requirements.
6. Division 01 Section "Closeout Procedures" for submitting warranties.
7. Division 01 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
8. Division 01 Section "Operation and Maintenance Data" for submitting operation and maintenance manuals.
9. Division 01 Section "Demonstration and Training" for submitting digital video of demonstration of equipment and training of Owner's personnel.

10. Divisions 02 through 49 Sections for specific requirements for submittals in those Sections.

1.3 DEFINITIONS

- A. Action Submittals: Written and graphic information that requires Design Professional/Architect's and Construction Manager's responsive action.
- B. Informational Submittals: Written information that does not require Design Professional/Architect's and Construction Manager's responsive action. Submittals may be rejected for not complying with requirements.

1.4 CONFORMANCE OF WORK WITH SUBMITTALS

- A. Do not allow materials or products to be incorporated in the Work unless they are in complete conformance with the requirements of the Contract Documents and with required submittals bearing the Design Professional/Architect's "Reviewed" or "Reviewed with Notations" review markings.
- B. Ensure that all installers involved in the Work have and adhere to the installation instructions and recommendations contained in required submittals bearing the Design Professional/Architect's "Reviewed" or "Reviewed with Notations" review markings.
- C. Do not proceed with any portion of the Work requiring submittal review and action by the Design Professional/Architect, including purchasing, fabrication, delivery, installation, or other activity, until the submittals required for that portion of the Work have been marked "Reviewed" or "Reviewed with Notations" by the Design Professional/Architect.
 1. If the Contractor proceeds with any portion of the Work requiring submittal review and action by the Design Professional/Architect before the submittals required for that portion of the Work have been marked "Reviewed" or "Reviewed with Notations" by the Design Professional/Architect, such Work shall be at the Contractor's risk. The Contractor shall continue with the submittal process until the required submittals have obtained a review status of "Reviewed" or "Reviewed with Notations," and shall then correct or remove nonconforming Work as required to comply with the Contract Documents and with the submittals that have obtained the review status of "Reviewed" or "Reviewed with Notations."

1.5 SUBMITTAL PROCEDURES

- A. General: Electronic copies of CAD Drawings of the Contract Drawings will be provided by Design Professional/Architect for Contractor's use in preparing submittals.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.

2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
 - a. Design Professional/Architect and Construction Manager reserve the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
 3. Final Coordination Drawings shall be submitted prior to submission of any submittals involved in or affected by the Coordination Drawings process. The Design Professional/Architect will take no action on Coordination Drawings, but shall be entitled to rely upon their accuracy and completeness in reviewing and taking action on the related submittals.
 4. For submittals involving color selections, coordinate submittals so that related color selections can be made at one time. For each of the following groups, the color-selection process by the Design Professional/Architect will not be initiated until all of the color-selection submittals indicated in the group have been received by the Design Professional/Architect, and the Contractor shall allow for the color-selection process in each group to take no less than the time indicated below:
 - a. Exterior products group: Color selection submittals for the products specified for exterior locations; a minimum of 30 days shall be allowed for the color selection process.
 - b. Interior products group: Color-selection submittals for the products specified for interior locations; a minimum of 45 days shall be allowed for the color-selection process.
 5. For any submittal that must be submitted to, reviewed by, or acted upon by a public authority having jurisdiction over the Project, make the submission to the public authority promptly and secure the public authority's final action on the submittal before forwarding the submittal to the Design Professional/Architect for review. (In such cases, the submission to the Design Professional/Architect shall include at least two submittal copies bearing the final action markings of the public authority, only one of which will be returned to the Contractor.)
- C. Submittals Schedule: Comply with requirements in Division 01 Section "Construction Progress Documentation" for list of submittals and time requirements for scheduled performance of related construction activities.
- D. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Design Professional/Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including re-submittals. Submittal Schedule described in paragraph C. above shall be developed in strict conformance with review times indicated below.
1. Initial Review: Except for cases in which the Contract Documents indicate more time may or will be required for the review and processing of submittals, allow 15 business days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Design Professional/Architect will advise Contractor when a submittal being processed must be delayed for coordination.

2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
 3. Resubmitted Submittal Review: Allow 15 business days for review of each resubmitted submittal.
 4. Sequential Review: Where sequential review of submittals by Design Professional/Architect's consultants, Owner, or other parties is indicated, allow 20 business days for initial review of each submittal.
 5. If large numbers of submittals must be transmitted to the Design Professional/Architect for review within short periods, allow additional time for their review and indicate to the Design Professional/Architect the order in which they should be reviewed and returned.
- E. Design Professional/Architect's Submittal Review Status Stamp: Contractor shall imprint all copies of each submittal with the Design Professional/Architect's submittal review status stamp, and fill in the imprint's submittal number, submission number, and transmittal number blanks, prior to transmitting the submittal to the Design Professional/Architect. Ensure that the stamp's imprint does not obscure submittal information and that the imprint on each submittal is clear and legible.
1. Design Professional/Architect will furnish electronic PDF stamp image to the Contractor for this purpose.
 2. In cases where a submittal cannot physically accommodate a permanent and legible imprint of the Submittal Review Status Stamp on it, permanently attach to the submittal a permanent and legible imprint of the Submittal Review Status Stamp using an additional page or a tag securely tied to the submittal.
 3. No party other than the Design Professional/Architect shall make any markings in the part of a Submittal Review Status Stamp imprint below the words "Submittal Review Status."
- F. Identification: Place a permanent label or title block on each submittal for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
 2. Provide a space approximately 6 by 8 inches (150 by 200 mm) on label or beside title block to record Contractor's review and approval markings and action taken by Design Professional/Architect and Construction Manager.
 3. Include the following information on label for processing and recording action taken:
 - a. Project name.
 - b. Architect's project number.
 - c. Date.
 - d. Name and address of Design Professional/Architect and Construction Manager.
 - e. Name and address of Contractor.
 - f. Name and address of subcontractor.
 - g. Name and address of supplier.
 - h. Name and address of submittal preparer.
 - i. Name and address of manufacturer.
- G. Submittal Numbering: Each Shop Drawing sheet, each Product Data document, and each Sample set shall be considered an individual submittal, and shall be assigned a unique submittal number by the Contractor. Failure to separately identify dissimilar portions of a submittal will require any resubmission to include all of the portions of the original submittal.

1. Each submittal number shall be a combination of the appropriate Specification Section number for the submittal and consecutive numbering of the submittals under that Section. For example, the first submittal under Section 06 4023 would be numbered 06 4023-001, the second would be numbered 06 4023-002, and so on. The assigned submittal number shall appear on each submittal, and shall not be changed when a resubmission of the submittal occurs.
 2. Immediately following the submittal number, the submission number shall appear on each submittal. For example, the second submission of Submittal No. 06 4023-001 would be labeled "Submittal No. 06 4023-001-2nd Submission."
- H. Deviations: Highlight, or encircle, or otherwise specifically identify deviations from the Contract Documents on submittals.
- I. Additional Copies: Unless additional copies are required for final submittal, and unless Design Professional/Architect or Construction Manager observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
1. When submittal is sent directly to concurrent reviewer, submit one additional copy of submittal (including Design Professional/Architect's Transmittal Form) to Design Professional/Architect and Construction Manager.
 2. Additional copies submitted for maintenance manuals will not be marked with action taken and will not be returned. Contractor is responsible for reproduction of submittals for his own record or coordination requirements, and for inclusion in maintenance manuals.
- J. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Submit both hardcopy and electronically via Primavera system. Transmit each submittal using a transmittal form. Design Professional/Architect and Construction Manager will return submittals, without review, received from sources other than Contractor.
1. Transmittal Form: Use Form provided by Design Professional/Architect.
 2. On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Design Professional/Architect and Construction Manager on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same label information as related submittal. Note that submittals cannot change Contract Requirements.
 3. Transmit hardcopy submittals using a service that provides a tracking method.
- K. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
1. Note date and content of previous submittal.
 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
 3. Resubmit submittals until they are marked "Reviewed" or "Reviewed with Notations."
- L. Distribution: Furnish copies of final submittals to separate contractors, manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

- M. Use for Construction: Use only final submittals with mark indicating "Reviewed" or "Reviewed with Notations" taken by Design Professional/Architect.

1.6 CONTRACTOR'S USE OF DESIGN PROFESSIONAL/ARCHITECT'S CAD FILES

- A. General: At Contractor's written request, copies of Design Professional/Architect's CAD files will be provided to Contractor for Contractor's use in connection with Project, subject to the following conditions:
 - 1. Upon receipt of Design Professional/Architect's "CADD Drawings Release Form" fully executed by Contractor.
 - a. See Exhibit 1.5.2 – of the General Conditions: CADD Drawings Release Form

PART 2 - PRODUCTS

2.1 GENERAL REQUIREMENTS FOR SUBMITTALS

- A. Each submittal must be complete, and must include all of the information required for review of the submittal. It must include all of the information needed to confirm that what the Contractor proposes for the portion of the Work covered by the submittal is in conformance with the information given and the design concept expressed in the Contract Documents. Submittals that are found to be incomplete by the Design Professional/Architect will be returned to the Contractor for revision; the Design Professional/Architect may reject them without completing their review.
 - 1. Clearly define in each submittal exactly what is proposed for the portion of the Work covered by the submittal. Show compliance with all of the requirements related to what is being submitted, such as compliance with documented profiles, specified standards, required finishes and gauges, product options required, dimensional requirements, etc.
 - 2. Clearly and definitively identify in each submittal the specific portion or portions of the Work to which the submittal applies. Refer to Specification Section numbers, paragraph numbers, and subparagraph numbers; refer to Drawing numbers and detail numbers; refer to the numbering and other designations that appear in the Contract Documents for components of the Work; provide additional clarifications when references to the Contract Documents are not sufficient to clearly and definitively identify the application of the submittal.
 - a. If the submittal includes more than one item or application, clearly and definitively identify the specific portion or portions of the Work to which each item or application in the submittal applies.
 - b. In preparing submittals, do not change the numbering or other designations that appear in the Contract Documents for components of the Work. For example, do not change column line numbers, room numbers, door numbers, hardware set numbers, window type designations, glazing type designations, carpet type designations, exhaust fan numbers, etc.
 - c. Include cross-references to other, related submittals.

- B. Each submittal must be in compliance with the requirements of the Contract Documents, including the requirements of this Section. Submittals that are found to be noncompliant by the Design Professional/Architect will be returned to the Contractor for revision; the Design Professional/Architect may reject them without completing their review.
- C. Provide in submittals the information necessary for coordination of adjacent work and related work; this includes but is not limited to such information as dimensions required for installation, locations and details of grounds, blocking, openings, built-in inserts, and other anchorage and attachment devices required, illustrations of interfaces with adjacent work, data on compatibility with adjacent materials, etc.
- D. Highlight, encircle, or otherwise indicate on all submittals any and all deviations from the requirements of the Contract Documents (including minor variations and limitations).
- E. When an engineer's or other design professional's signature and seal is required on a submittal, ensure that the signature and seal appear and are legible on all copies of the submittal.
- F. Comply with the submittal requirements indicated in other Sections of these Specifications.

2.2 ACTION SUBMITTALS

- A. General: Prepare and submit Action Submittals required by individual Specification Sections.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
 - 1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
 - 2. Mark each copy of each submittal to show which products and options are applicable.
 - 3. Include the following information, as applicable:
 - a. Manufacturer's written recommendations.
 - b. Manufacturer's product specifications.
 - c. Manufacturer's installation instructions.
 - d. Standard color charts.
 - e. Manufacturer's catalog cuts.
 - f. Wiring diagrams showing factory-installed wiring.
 - g. Printed performance curves.
 - h. Operational range diagrams.
 - i. Mill reports.
 - j. Standard product operation and maintenance manuals. (O&M manual content requirements for products, materials, finishes and systems and equipment are specified in Section "Operation and Maintenance Data".
 - k. Compliance with specified referenced standards.
 - l. Testing by recognized testing agency.
 - m. Application of testing agency labels and seals.
 - n. Notation of coordination requirements.
 - 4. Submit Product Data before or concurrent with Samples.
 - 5. Product Data submittals for Mechanical, Electrical, Plumbing and Fire Protection and other equipment shall also include the following information:

- a. Manufacturer and model number; manufacturer's drawing numbers or specification title and number of material or equipment
 - b. Performance ratings, curves, and tables, with operating point(s) indicated.
 - c. Pressure ratings.
 - d. Acoustical data for motorized mechanical units and VAV boxes (octave bands 0 through 8).
 - e. Equipment clearances for proper operation, inspection, and maintenance.
 - f. Locations for external connections and support points.
 - g. Complete power and control wiring diagrams, conforming to NEMA Standard for Industrial Controls and Systems.
 - h. Definition of the specific product options and accessories included.
 - i. Other information required by the Contract Documents.
6. Number of Copies: All submittals are to be administered electronically through the Primavera Contract Manager System. Licenses as needed by Contractor for System use is the responsibility of the Contractor. Contractor will upload drawing in system and forward to the Construction Manager for distribution. Design Professional/Architect, through Construction Manager, will return for action as required by Contractor. Mark up and retain one returned copy as a Project Record Document.
- C. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data, unless submittal of Design Professional/Architect's CAD Drawings are otherwise permitted. Shop Drawings shall further develop the information given and the design concept expressed in the Contract Documents. Typically, a Shop Drawing will include more information, and more detailed information, regarding the portion of the Work covered by the Shop Drawing than the Contract Documents contain. Particular expertise regarding the portion of the Work covered by a Shop Drawing on the part of the person or entity preparing the Shop Drawing is typically required. For example, the preparer of a Shop Drawing may need to define assembly, connection, and attachment details that are not defined in the Contract Documents, and base those details on the manufacturer's expertise, standard practices, and base of experience with the same or similar applications. Ensure that the persons or entities preparing Shop Drawings have the expertise needed to properly develop and supplement the information given in the Contract Documents.
1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
 - a. Dimensions.
 - b. Identification of products.
 - c. Fabrication and installation drawings.
 - d. Roughing-in and setting diagrams.
 - e. Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
 - f. Shopwork manufacturing instructions.
 - g. Templates and patterns.
 - h. Schedules.
 - i. Design calculations.
 - j. Compliance with specified standards.
 - k. Notation of coordination requirements.

- l. Notation of dimensions established by field measurement.
 - m. Relationship to adjoining construction clearly indicated.
 - n. Seal and signature of professional engineer if specified.
 - o. Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.
2. Sheet Size: The following are to be utilized to enable printing from Primavera System as required. Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches (215 by 280 mm) but no larger than 30 by 40 inches (750 by 1000 mm).
 3. Mark up and retain one returned copy as a Project Record Drawing. Contractor to make additional hard copies of returned final submittal copy where copies are required for operation and maintenance manuals.
- D. Samples: Submit physical samples as required for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
 2. Identification: Attach label on unexposed side of Samples that includes the following:
 - a. Generic description of Sample.
 - b. Product name and name of manufacturer.
 - c. Sample source.
 - d. Size limitations.
 - e. Compliance with specified standards, and with other recognized standards.
 - f. Compliance with governing regulations.
 - g. Design Professional/Architect's review stamp including required submittal information.
 3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
 - a. Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
 - b. Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor. Retain such samples until Design Professional/Architect permits disposal.
 4. Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
 - a. Number of Samples: Submit three (3) full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Design Professional/Architect, through Construction Manager, will return two (2) sets with options selected.

5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
 - a. Number of Samples: Submit three (3) sets of Samples. Design Professional/Architect and Construction Manager will retain two (2) Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a Project Record Sample.
 - 1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
 - 2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three (3) sets of paired units that show approximate limits of variations.

- E. Product Schedule or List: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
 1. Type of product. Include unique identifier for each product.
 2. Number and name of room or space.
 3. Location within room or space.
 4. Number of Copies: Submit seven (7) copies of product schedule or list, unless otherwise indicated. Design Professional/Architect, through Construction Manager, will return three (3) copies.
 - a. Mark up and retain one returned copy as a Project Record Document.

- F. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation" for Construction Manager's action.

- G. Submittals Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation" and Section 00 7200 Article 3.14, "Contractor's Construction Schedule".

- H. Application for Payment: Comply with requirements specified in Section 00 7200 Article 10, "Payments and Completion" of the General Conditions.

- I. Schedule of Values: Comply with requirements specified in Section 00 7200 Article 10, "Payments and Completion" of the General Conditions.

- J. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Use CSI Form 1.5A. Include the following information in tabular form:

1. Name, address, and telephone number of entity performing subcontract or supplying products.
2. Number and title of related Specification Section(s) covered by subcontract.
3. Drawing number and detail references, as appropriate, covered by subcontract.
4. Number of Copies: Submit seven (7) copies of subcontractor list, unless otherwise indicated. Design Professional/Architect, through Construction Manager, will return three (3) copies.
 - a. Mark up and retain one returned copy as a Project Record Document.

2.3 INFORMATIONAL SUBMITTALS

- A. General: Prepare and submit Informational Submittals required by other Specification Sections.
 1. See Part 3, "Design Professional/Architect's Action" for additional information.
 2. Provide submittal through Primavera Contract Manager, unless otherwise indicated. Design Professional/Architect and Construction Manager will not return copies.
 3. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
 4. Test and Inspection Reports: Comply with requirements specified in Division 01 Section "Quality Requirements."
- B. Coordination Drawings: Comply with requirements specified in Division 01 Section "Project Management and Coordination."
- C. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation."
- D. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of design professional/architects and owners, and other information specified.
- E. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.
- F. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
- G. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
- H. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

- I. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.
- J. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
- K. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
- L. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
 - 1. Name of evaluation organization.
 - 2. Date of evaluation.
 - 3. Time period when report is in effect.
 - 4. Product and manufacturers' names.
 - 5. Description of product.
 - 6. Test procedures and results.
 - 7. Limitations of use.
- M. Schedule of Tests and Inspections: Comply with requirements specified in Division 01 Section "Quality Requirements."
- N. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
- O. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
- P. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
- Q. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."
- R. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.

- S. **Manufacturer's Instructions:** Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:
1. Preparation of substrates.
 2. Required substrate tolerances.
 3. Sequence of installation or erection.
 4. Required installation tolerances.
 5. Required adjustments.
 6. Recommendations for cleaning and protection.
- T. **Manufacturer's Field Reports:** Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
1. Name, address, and telephone number of factory-authorized service representative making report.
 2. Statement on condition of substrates and their acceptability for installation of product.
 3. Statement that products at Project site comply with requirements.
 4. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
 5. Results of operational and other tests and a statement of whether observed performance complies with requirements.
 6. Statement whether conditions, products, and installation will affect warranty.
 7. Other required items indicated in individual Specification Sections.
- U. **Insurance Certificates and Bonds:** Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.
- V. **Construction Photographs:** Comply with requirements specified in Division 01 Section "Photographic Documentation."
- W. **Material Safety Data Sheets (MSDSs):** Submit information directly to Construction Manager/Owner; do not submit to Design Professional/Architect.
1. Design Professional/Architect will not review submittals that include MSDSs and will return the entire submittal for resubmittal.

2.4 DELEGATED DESIGN

- A. **Performance and Design Criteria:** Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Design Professional/Architect.
 2. Professional design services shall be performed under the direct supervision of a design professional licensed in the state where the Project is located.

- B. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit three (3) copies of a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
 - 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

- A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Design Professional/Architect and Construction Manager.
 - 1. Deviations: Highlight or encircle or otherwise specifically identify deviations from the Contract Documents on submittals.
- B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

3.2 DESIGN PROFESSIONAL/ARCHITECT'S AND CONSTRUCTION MANAGER'S / ACTION

- A. General: Design Professional/Architect and Construction Manager will not review submittals that do not bear Contractor's approval stamp and will return them without action. Construction Manager will review submittals only for coordination and compliance with submittal schedule requirements and make recommendations to Design Professional/Architect. Final approval and or rejections will be provided by the Design Professional/Architect.
- B. Action Submittals: Design Professional/Architect, with assistance from the Construction Manager will review each submittal, make marks to indicate corrections or modifications required, and return it. Design Professional/Architect will mark review stamp and transmittal appropriately to indicate one of the following actions taken:
 - 1. "Reviewed:" When submittals are marked "Reviewed" by the Design Professional/Architect, the Work covered by the submittal may proceed provided it complies with the requirements of the Contract Documents. Final acceptance will depend on that compliance.
 - 2. "Reviewed with Notations:" When submittals are marked "Reviewed with Notations" by the Design Professional/Architect, the Work covered by the submittal may proceed provided it complies with both the Design Professional/Architect's notations or corrections on the submittal and the requirements of the Contract Documents. Final acceptance will depend on that compliance.

- a. One of the Design Professional/Architect's notations on a submittal marked "Reviewed with Notations" may be "Revise and resubmit for record." In such a case, the Work covered by the submittal may proceed provided it complies with both the Design Professional/Architect's other notations or corrections on the submittal and the requirements of the Contract Documents, and final acceptance will depend on that compliance, but the submittal must be revised and resubmitted for record purposes. When the submittal is revised and resubmitted for the record, it will be acted upon as indicated under subparagraph 5 below.
3. "Revise and Resubmit:" When a submittal is marked "Revise and Resubmit" by the Design Professional/Architect, do not proceed with the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise the submittal or prepare a new submittal according to the Design Professional/Architect's notations. Revise and resubmit without delay. Revise and resubmit as many times as necessary to obtain a review status of "Reviewed" or "Reviewed with Notations" for the submittal.
 4. "Rejected:" Items improperly forwarded to the Design Professional/Architect as submittals or found by the Design Professional/Architect to be incomplete or noncompliant as submittals may be rejected by the Design Professional/Architect without review or without complete review. The Contractor shall assume that any submittal marked "Rejected" has not received a complete review by the Design Professional/Architect, and that the Design Professional/Architect may mark the revised or replacement submittal, when received, with significant new review comments to be responded to by the Contractor. When a submittal is marked "Rejected" by the Design Professional/Architect, do not proceed with the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise the submittal or prepare a new submittal according to the Design Professional/Architect's notations. Revise and resubmit without delay. Revise and resubmit as many times as necessary to obtain a review status of "Reviewed" or "Reviewed with Notations" for the submittal.
 5. "No Action Taken or Required": When a submittal is primarily for information or record purposes or for special processing or other contractor activity, the submittal will typically be returned marked "No Action Taken or Required" by the Design Professional/Architect.
 - a. The Design Professional/Architect will typically not be taking action on informational submittals, for example, since the Design Professional/Architect's review and action should not be necessary for them. The Contractor shall remain completely responsible for their accuracy, completeness, and compliance with the requirements of the Contract Documents, and the Owner and the Design Professional/Architect shall be entitled to rely upon their accuracy, completeness, and compliance as submitted by the Contractor. Therefore, the Design Professional/Architect may return an informational submittal to the Contractor marked "No Action Taken or Required." If the Design Professional/Architect should discover that an informational submittal is incomplete or noncompliant, however, the Design Professional/Architect shall be entitled to return the submittal to the Contractor marked "Revise and Resubmit." In such a case, revise and resubmit without delay. Revise and resubmit as many times as necessary to obtain an acceptable review status of "No Action Taken or Required" for the submittal.

C. Informational Submittals: Design Professional/Architect will review each submittal and will not return it, will return it marked "No Action Taken or Required," or will return it if it does not

comply with requirements. Design Professional/Architect will forward each submittal to appropriate party.

- D. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.
- E. Submittals not required by the Contract Documents may not be reviewed and may be discarded, or returned marked “No Action Taken or Required.”
- F. The Design Professional/Architect will process up to 2 submissions of each required submittal without cost to the Contractor. The Contractor shall bear the costs incurred by the Owner and the Design Professional/Architect in the review and processing of third and subsequent submissions of a submittal, if such resubmissions could have been avoided by proper preparation of the first and second submissions or by complete and satisfactory responses in resubmissions to the Design Professional/Architect’s notations on previous submissions.
 - 1. The Design Professional/Architect will inform the Contractor in writing when a submittal is received if the costs of its review and processing should be borne by the Contractor, stating why. In such a case, the Contractor shall promptly advise the Design Professional/Architect of the Contractor’s agreement or disagreement with this determination, but the Design Professional/Architect shall be under no obligation to wait for a response from the Contractor before proceeding to review and process the submittal received.
 - 2. The Contract Sum shall be decreased by Change Order to cover the submittal review and processing costs to be borne by the Contractor.

3.3 DESIGN PROFESSIONAL/ARCHITECT’S TRANSMITTAL FORM AND REVIEW STAMP

- A. Examples of the Design Professional/Architect’s Transmittal form and review stamp are included on the following pages for information. Form/Stamp as furnished may differ in detail from these examples.
- B. Review Stamp:
 - 1. Electronic PDF to be provided by Design Professional/Architect.
- C. Transmittal Form:
 - 1. Electronic PDF to be provided by Design Professional/Architect.

END OF SECTION 01 3300

SECTION 01 4200 - REFERENCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 DEFINITIONS

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

1.3 INDUSTRY STANDARDS

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

- B. Publication Dates: Comply with standards in effect as of date of the Contract Documents unless otherwise indicated.
- C. Copies of Standards: Each entity engaged in construction on Project should be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.
 - 1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source.
- D. Abbreviations and Acronyms for Standards and Regulations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the organizations responsible for the standards and regulations in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

ADAAG	Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities Available from Access Board www.access-board.gov	(800) 872-2253 (202) 272-0080
CFR	Code of Federal Regulations Available from Government Printing Office www.gpoaccess.gov/cfr/index.html	(866) 512-1800 (202) 512-1800
DOD	Department of Defense Military Specifications and Standards Available from Department of Defense Single Stock Point http://dodssp.daps.dla.mil	(215) 697-6257
DSCC	Defense Supply Center Columbus (See FS)	
FED-STD	Federal Standard (See FS)	
FS	Federal Specification Available from Department of Defense Single Stock Point http://dodssp.daps.dla.mil Available from Defense Standardization Program www.dps.dla.mil Available from General Services Administration www.gsa.gov Available from National Institute of Building Sciences www.nibs.org	(215) 697-6257 (202) 619-8925 (202) 289-7800

FTMS	Federal Test Method Standard (See FS)	
MIL	(See MILSPEC)	
MIL-STD	(See MILSPEC)	
MILSPEC	Military Specification and Standards Available from Department of Defense Single Stock Point http://dodssp.daps.dla.mil	(215) 697-6257
UFAS	Uniform Federal Accessibility Standards Available from Access Board www.access-board.gov	(800) 872-2253 (202) 272-0080

1.4 ABBREVIATIONS AND ACRONYMS

- A. Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.
- B. 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 part of the Contract Documents by reference.

AA	Aluminum Association, Inc. (The) www.aluminum.org	(703) 358-2960
AAADM	American Association of Automatic Door Manufacturers www.aaadm.com	(216) 241-7333
AABC	Associated Air Balance Council www.aabchq.com	(202) 737-0202
AAMA	American Architectural Manufacturers Association www.aamanet.org	(847) 303-5664
AASHTO	American Association of State Highway and Transportation Officials www.transportation.org	(202) 624-5800
AATCC	American Association of Textile Chemists and Colorists (The) www.aatcc.org	(919) 549-8141
ABAA	Air Barrier Association of America www.airbarrier.org	(866) 956-5888
ABMA	American Bearing Manufacturers Association	(202) 367-1155

www.abma-dc.org

ACI	ACI International (American Concrete Institute) www.aci-int.org	(248) 848-3700
ACPA	American Concrete Pipe Association www.concrete-pipe.org	(972) 506-7216
AEIC	Association of Edison Illuminating Companies, Inc. (The) www.aeic.org	(205) 257-2530
AF&PA	American Forest & Paper Association www.afandpa.org	(800) 878-8878 (202) 463-2700
AGA	American Gas Association www.aga.org	(202) 824-7000
AGC	Associated General Contractors of America (The) www.agc.org	(703) 548-3118
AHA	American Hardboard Association (Now part of CPA)	
AHAM	Association of Home Appliance Manufacturers www.aham.org	(202) 872-5955
AI	Asphalt Institute www.asphaltinstitute.org	(859) 288-4960
AIA	American Institute of Architects (The) www.aia.org	(800) 242-3837 (202) 626-7300
AISC	American Institute of Steel Construction www.aisc.org	(800) 644-2400 (312) 670-2400
AISI	American Iron and Steel Institute www.steel.org	(202) 452-7100
AITC	American Institute of Timber Construction www.aitc-glulam.org	(303) 792-9559
ALCA	Associated Landscape Contractors of America (Now PLANET - Professional Landcare Network)	
ALSC	American Lumber Standard Committee, Incorporated www.alsc.org	(301) 972-1700
AMCA	Air Movement and Control Association International, Inc. www.amca.org	(847) 394-0150

ANSI	American National Standards Institute www.ansi.org	(202) 293-8020
AOSA	Association of Official Seed Analysts, Inc. www.aosaseed.com	(505) 522-1437
APA	APA - The Engineered Wood Association www.apawood.org	(253) 565-6600
APA	Architectural Precast Association www.archprecast.org	(239) 454-6989
API	American Petroleum Institute www.api.org	(202) 682-8000
ARI	Air-Conditioning & Refrigeration Institute www.ari.org	(703) 524-8800
ARMA	Asphalt Roofing Manufacturers Association www.asphaltroofing.org	(202) 207-0917
ASCE	American Society of Civil Engineers www.asce.org	(800) 548-2723 (703) 295-6300
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers www.ashrae.org	(800) 527-4723 (404) 636-8400
ASME	ASME International (The American Society of Mechanical Engineers International) www.asme.org	(800) 843-2763 (973) 882-1170
ASSE	American Society of Sanitary Engineering www.asse-plumbing.org	(440) 835-3040
ASTM	ASTM International (American Society for Testing and Materials International) www.astm.org	(610) 832-9585
AWCI	AWCI International (Association of the Wall and Ceiling Industry International) www.awci.org	(703) 534-8300
AWCMA	American Window Covering Manufacturers Association (Now WCSC)	
AWI	Architectural Woodwork Institute www.awinet.org	(800) 449-8811 (703) 733-0600

AWPA	American Wood-Preservers' Association www.awpa.com	(334) 874-9800
AWS	American Welding Society www.aws.org	(800) 443-9353 (305) 443-9353
AWWA	American Water Works Association www.awwa.org	(800) 926-7337 (303) 794-7711
BHMA	Builders Hardware Manufacturers Association www.buildershardware.com	(212) 297-2122
BIA	Brick Industry Association (The) www.bia.org	(703) 620-0010
BICSI	BICSI www.bicsi.org	(800) 242-7405 (813) 979-1991
BIFMA	BIFMA International (Business and Institutional Furniture Manufacturer's Association International) www.bifma.com	(616) 285-3963
BISSC	Baking Industry Sanitation Standards Committee www.bissc.org	(866) 342-4772
CCC	Carpet Cushion Council www.carpetcushion.org	(203) 637-1312
CDA	Copper Development Association www.copper.org	(800) 232-3282 (212) 251-7200
CEA	Canadian Electricity Association www.canelect.ca	(613) 230-9263
CFFA	Chemical Fabrics & Film Association, Inc. www.chemicalfabricsandfilm.com	(216) 241-7333
CGA	Compressed Gas Association www.cganet.com	(703) 788-2700
CIMA	Cellulose Insulation Manufacturers Association www.cellulose.org	(888) 881-2462 (937) 222-2462
CISCA	Ceilings & Interior Systems Construction Association www.cisca.org	(630) 584-1919
CISPI	Cast Iron Soil Pipe Institute www.cispi.org	(423) 892-0137
CLFMI	Chain Link Fence Manufacturers Institute	(301) 596-2583

Expansion and Renovation to the
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Contract 3 – Technology Systems
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REFERENCES
01 4200 - 6

	www.chainlinkinfo.org	
CPA	Composite Panel Association www.pbmdf.com	(301) 670-0604
CPPA	Corrugated Polyethylene Pipe Association www.cppa-info.org	(800) 510-2772 (202) 462-9607
CRI	Carpet & Rug Institute (The) www.carpet-rug.com	(800) 882-8846 (706) 278-3176
CRSI	Concrete Reinforcing Steel Institute www.crsi.org	(847) 517-1200
CSA	CSA International (Formerly: IAS - International Approval Services) www.csa-international.org	(866) 797-4272 (416) 747-4000
CSI	Cast Stone Institute www.caststone.org	(770) 972-3011
CSI	Construction Specifications Institute (The) www.csinet.org	(800) 689-2900 (703) 684-0300
CSSB	Cedar Shake & Shingle Bureau www.cedarbureau.org	(604) 820-7700
CTI	Cooling Technology Institute (Formerly: Cooling Tower Institute) www.cti.org	(281) 583-4087
DHI	Door and Hardware Institute www.dhi.org	(703) 222-2010
EIA	Electronic Industries Alliance www.eia.org	(703) 907-7500
EIMA	EIFS Industry Members Association www.eima.com	(800) 294-3462 (770) 968-7945
EJCDC	Engineers Joint Contract Documents Committee www.ejdc.org	(703) 295-5000
EJMA	Expansion Joint Manufacturers Association, Inc. www.ejma.org	(914) 332-0040
ESD	ESD Association www.esda.org	(315) 339-6937

FIBA	Federation Internationale de Basketball Amateur (The International Basketball Federation) www.fiba.com	41 22 545 00 00
FIVB	Federation Internationale de Volleyball (The International Volleyball Federation) www.fivb.ch	41 21 345 35 35
FMG	FM Global (Formerly: FM - Factory Mutual System) www.fmglobal.com	(401) 275-3000
FMRC	Factory Mutual Research (Now FMG)	
FRSA	Florida Roofing, Sheet Metal & Air Conditioning Contractors Association, Inc. www.floridarroof.com	(407) 671-3772
FSA	Fluid Sealing Association www.fluidsealing.com	(610) 971-4850
FSC	Forest Stewardship Council www.fsc.org	49 228 367 66 0
GA	Gypsum Association www.gypsum.org	(202) 289-5440
GANA	Glass Association of North America www.glasswebsite.com	(785) 271-0208
GRI	(Now GSI)	
GS	Green Seal www.greenseal.org	(202) 872-6400
GSI	Geosynthetic Institute www.geosynthetic-institute.org	(610) 522-8440
HI	Hydraulic Institute www.pumps.org	(888) 786-7744 (973) 267-9700
HI	Hydronics Institute www.gamanet.org	(908) 464-8200
HMMA	Hollow Metal Manufacturers Association (Part of NAAMM)	
HPVA	Hardwood Plywood & Veneer Association www.hpva.org	(703) 435-2900

HPW	H. P. White Laboratory, Inc. www.hpwhite.com	(410) 838-6550
IAS	International Approval Services (Now CSA International)	
IBF	International Badminton Federation www.intbadfed.org	(6-03) 9283-7155
ICEA	Insulated Cable Engineers Association, Inc. www.icea.net	(770) 830-0369
ICRI	International Concrete Repair Institute, Inc. www.icri.org	(847) 827-0830
IEC	International Electrotechnical Commission www.iec.ch	41 22 919 02 11
IEEE	Institute of Electrical and Electronics Engineers, Inc. (The) www.ieee.org	(212) 419-7900
IESNA	Illuminating Engineering Society of North America www.iesna.org	(212) 248-5000
IEST	Institute of Environmental Sciences and Technology www.iest.org	(847) 255-1561
IGCC	Insulating Glass Certification Council www.igcc.org	(315) 646-2234
IGMA	Insulating Glass Manufacturers Alliance www.igmaonline.org	(613) 233-1510
ILI	Indiana Limestone Institute of America, Inc. www.iliai.com	(812) 275-4426
ISO	International Organization for Standardization www.iso.ch	41 22 749 01 11
	Available from ANSI www.ansi.org	(202) 293-8020
ISSFA	International Solid Surface Fabricators Association www.issfa.net	(877) 464-7732 (702) 567-8150
ITS	Intertek www.intertek.com	(800) 345-3851 (713) 407-3500

ITU	International Telecommunication Union www.itu.int/home	41 22 730 51 11
KCMA	Kitchen Cabinet Manufacturers Association www.kcma.org	(703) 264-1690
LMA	Laminating Materials Association (Now part of CPA)	
LPI	Lightning Protection Institute www.lightning.org	(800) 488-6864 (804) 314-8955
MBMA	Metal Building Manufacturers Association www.mbma.com	(216) 241-7333
MFMA	Maple Flooring Manufacturers Association, Inc. www.maplefloor.org	(847) 480-9138
MFMA	Metal Framing Manufacturers Association www.metalframingmfg.org	(312) 644-6610
MH	Material Handling (Now MHIA)	
MHIA	Material Handling Industry of America www.mhia.org	(800) 345-1815 (704) 676-1190
MIA	Marble Institute of America www.marble-institute.com	(440) 250-9222
MPI	Master Painters Institute www.paintinfo.com	(888) 674-8937
MSS	Manufacturers Standardization Society of The Valve and Fittings Industry Inc. www.mss-hq.com	(703) 281-6613
NAAMM	National Association of Architectural Metal Manufacturers www.naamm.org	(312) 332-0405
NACE	NACE International (National Association of Corrosion Engineers International) www.nace.org	(800) 797-6623 (281) 228-6200
NADCA	National Air Duct Cleaners Association www.nadca.com	(202) 737-2926
NAGWS	National Association for Girls and Women in Sport www.aahperd.org/nagws/	(800) 213-7193, ext. 453

NAIMA	North American Insulation Manufacturers Association www.naima.org	(703) 684-0084
NBGQA	National Building Granite Quarries Association, Inc. www.nbgqa.com	(800) 557-2848
NCAA	National Collegiate Athletic Association (The) www.ncaa.org	(317) 917-6222
NCMA	National Concrete Masonry Association www.ncma.org	(703) 713-1900
NCPI	National Clay Pipe Institute www.ncpi.org	(262) 248-9094
NCTA	National Cable & Telecommunications Association www.ncta.com	(202) 775-3550
NEBB	National Environmental Balancing Bureau www.nebb.org	(301) 977-3698
NECA	National Electrical Contractors Association www.necanet.org	(301) 657-3110
NeLMA	Northeastern Lumber Manufacturers' Association www.nelma.org	(207) 829-6901
NEMA	National Electrical Manufacturers Association www.nema.org	(703) 841-3200
NETA	InterNational Electrical Testing Association www.netaworld.org	(888) 300-6382 (303) 697-8441
NFHS	National Federation of State High School Associations www.nfhs.org	(317) 972-6900
NFPA	NFPA (National Fire Protection Association) www.nfpa.org	(800) 344-3555 (617) 770-3000
NFRC	National Fenestration Rating Council www.nfrc.org	(301) 589-1776
NGA	National Glass Association www.glass.org	(866) 342-5642 (703) 442-4890
NHLA	National Hardwood Lumber Association www.natlhardwood.org	(800) 933-0318 (901) 377-1818

NLGA	National Lumber Grades Authority www.nlga.org	(604) 524-2393
NOFMA	NOFMA: The Wood Flooring Manufacturers Association (Formerly: National Oak Flooring Manufacturers Association) www.nofma.org	(901) 526-5016
NRCA	National Roofing Contractors Association www.nrca.net	(800) 323-9545 (847) 299-9070
NRMCA	National Ready Mixed Concrete Association www.nrmca.org	(888) 846-7622 (301) 587-1400
NSF	NSF International (National Sanitation Foundation International) www.nsf.org	(800) 673-6275 (734) 769-8010
NSSGA	National Stone, Sand & Gravel Association www.nssga.org	(800) 342-1415 (703) 525-8788
NTMA	National Terrazzo & Mosaic Association, Inc. (The) www.ntma.com	(800) 323-9736 (540) 751-0930
NTRMA	National Tile Roofing Manufacturers Association (Now TRI)	
NWWDA	National Wood Window and Door Association (Now WDMA)	
OPL	Omega Point Laboratories, Inc. (Acquired by ITS - Intertek) www.opl.com	(800) 966-5253 (210) 635-8100
PCI	Precast/Prestressed Concrete Institute www.pci.org	(312) 786-0300
PDCA	Painting & Decorating Contractors of America www.pdca.com	(800) 332-7322 (314) 514-7322
PDI	Plumbing & Drainage Institute www.pdionline.org	(800) 589-8956 (978) 557-0720
PGI	PVC Geomembrane Institute http://pgi-tp.ce.uiuc.edu	(217) 333-3929
PLANET	Professional Landcare Network (Formerly: ACLA - Associated Landscape Contractors of America) www.landcarenetwork.org	(800) 395-2522 (703) 736-9666
PTI	Post-Tensioning Institute www.post-tensioning.org	(602) 870-7540

RCSC	Research Council on Structural Connections www.boltcouncil.org	(800) 644-2400 (312) 670-2400
RFCI	Resilient Floor Covering Institute www.rfci.com	(301) 340-8580
RIS	Redwood Inspection Service www.calredwood.org	(888) 225-7339 (415) 382-0662
RTI	(Formerly: NTRMA - National Tile Roofing Manufacturers Association) (Now TRI)	
SAE	SAE International www.sae.org	(877) 606-7323 (724) 776-4841
SDI	Steel Deck Institute www.sdi.org	(847) 458-4647
SDI	Steel Door Institute www.steeldoor.org	(440) 899-0010
SEFA	Scientific Equipment and Furniture Association www.sefalabs.com	(516) 294-5424
SGCC	Safety Glazing Certification Council www.sgcc.org	(315) 646-2234
SIA	Security Industry Association www.siaonline.org	(703) 683-2075
SIGMA	Sealed Insulating Glass Manufacturers Association (Now IGMA)	
SJI	Steel Joist Institute www.steeljoist.org	(843) 626-1995
SMA	Screen Manufacturers Association www.smacentral.org	(561) 533-0991
SMACNA	Sheet Metal and Air Conditioning Contractors' National Association www.smacna.org	(703) 803-2980
SMPTE	Society of Motion Picture and Television Engineers www.smpte.org	(914) 761-1100
SPFA	Spray Polyurethane Foam Alliance	(800) 523-6154

(Formerly: SPI/SPFD - The Society of the Plastics Industry, Inc.; Spray Polyurethane Foam Division)
www.sprayfoam.org

SPIB	Southern Pine Inspection Bureau (The) www.spib.org	(850) 434-2611
SPRI	Single Ply Roofing Industry www.spri.org	(781) 647-7026
SSINA	Specialty Steel Industry of North America www.ssina.com	(800) 982-0355 (202) 342-8630
SSPC	SSPC: The Society for Protective Coatings www.sspc.org	(877) 281-7772 (412) 281-2331
STI	Steel Tank Institute www.steeltank.com	(847) 438-8265
SWI	Steel Window Institute www.steelwindows.com	(216) 241-7333
SWRI	Sealant, Waterproofing, & Restoration Institute www.swrionline.org	(816) 472-7974
TCA	Tile Council of America, Inc. www.tileusa.com	(864) 646-8453
TIA/EIA	Telecommunications Industry Association/Electronic Industries Alliance www.tiaonline.org	(703) 907-7700
TMS	The Masonry Society www.masonrysociety.org	(303) 939-9700
TPI	Truss Plate Institute, Inc. www.tpinst.org	(703) 683-1010
TPI	Turfgrass Producers International www.turfgrassod.org	(847) 649-5555
TRI	Tile Roofing Institute (Formerly: RTI - Roof Tile Institute) www.tilerroofing.org	(312) 670-4177
UL	Underwriters Laboratories Inc. www.ul.com	(877) 854-3577 (847) 272-8800
UNI	Uni-Bell PVC Pipe Association www.uni-bell.org	(972) 243-3902

USAV	USA Volleyball www.usavolleyball.org	(888) 786-5539 (719) 228-6800
USGBC	U.S. Green Building Council www.usgbc.org	(202) 828-7422
USITT	United States Institute for Theatre Technology, Inc. www.usitt.org	(800) 938-7488 (315) 463-6463
WASTEC	Waste Equipment Technology Association www.wastec.org	(800) 424-2869 (202) 244-4700
WCLIB	West Coast Lumber Inspection Bureau www.wclib.org	(800) 283-1486 (503) 639-0651
WCMA	Window Covering Manufacturers Association (Now WCSC)	
WCSC	Window Covering Safety Council (Formerly: WCMA - Window Covering Manufacturers Association) www.windowcoverings.org	(800) 506-4636 (212) 297-2109
WDMA	Window & Door Manufacturers Association (Formerly: NWWDA - National Wood Window and Door Association) www.wdma.com	(800) 223-2301 (847) 299-5200
WI	Woodwork Institute (Formerly: WIC - Woodwork Institute of California) www.wicnet.org	(916) 372-9943
WIC	Woodwork Institute of California (Now WI)	
WMMPA	Wood Moulding & Millwork Producers Association www.wmmpa.com	(800) 550-7889 (530) 661-9591
WSRCA	Western States Roofing Contractors Association www.wsrca.com	(800) 725-0333 (650) 570-5441
WWPA	Western Wood Products Association www.wwpa.org	(503) 224-3930

C. Code Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

BOCA	BOCA International, Inc. (See ICC)	
IAPMO	International Association of Plumbing and Mechanical Officials www.iapmo.org	(909) 472-4100
ICBO	International Conference of Building Officials (See ICC)	
ICBO ES	ICBO Evaluation Service, Inc. (See ICC-ES)	
ICC	International Code Council www.iccsafe.org	(888) 422-7233 (703) 931-4533
ICC-ES	ICC Evaluation Service, Inc. www.icc-es.org	(800) 423-6587 (562) 699-0543
SBCCI	Southern Building Code Congress International, Inc. (See ICC)	

D. Federal Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

CE	Army Corps of Engineers www.usace.army.mil	
CPSC	Consumer Product Safety Commission www.cpsc.gov	(800) 638-2772 (301) 504-7923
DOC	Department of Commerce www.commerce.gov	(202) 482-2000
DOD	Department of Defense http://.dodssp.daps.dla.mil	(215) 697-6257
DOE	Department of Energy www.energy.gov	(202) 586-9220
EPA	Environmental Protection Agency www.epa.gov	(202) 272-0167
FAA	Federal Aviation Administration www.faa.gov	(866) 835-5322
FCC	Federal Communications Commission www.fcc.gov	(888) 225-5322

FDA	Food and Drug Administration www.fda.gov	(888) 463-6332
GSA	General Services Administration www.gsa.gov	(800) 488-3111
HUD	Department of Housing and Urban Development www.hud.gov	(202) 708-1112
LBL	Lawrence Berkeley National Laboratory www.lbl.gov	(510) 486-4000
NCHRP	National Cooperative Highway Research Program (See TRB)	
NIST	National Institute of Standards and Technology www.nist.gov	(301) 975-6478
OSHA	Occupational Safety & Health Administration www.osha.gov	(800) 321-6742 (202) 693-1999
PBS	Public Building Service (See GSA)	
PHS	Office of Public Health and Science www.osophs.dhhs.gov/ophs	(202) 690-7694
RUS	Rural Utilities Service (See USDA)	(202) 720-9540
SD	State Department www.state.gov	(202) 647-4000
TRB	Transportation Research Board www.nas.edu/trb	(202) 334-2934
USDA	Department of Agriculture www.usda.gov	(202) 720-2791
USPS	Postal Service www.usps.com	(202) 268-2000

E. State Government Agencies: Where abbreviations and acronyms are used in Specifications or other Contract Documents, they shall mean the recognized name of the entities in the following list. Names, telephone numbers, and Web sites are subject to change and are believed to be accurate and up-to-date as of the date of the Contract Documents.

www.dli.state.pa.us

PADGS Pennsylvania Department of General Services
www.dgs.state.pa.us

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 4200

SECTION 01 5000 - TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes requirements for temporary utilities, support facilities, security and protection facilities. The requirements of this Section are the responsibility of Contractor 1.
- B. Related Sections include the following:
 - 1. Division 01 Section "Summary" for limitations on utility interruptions and other work restrictions.
 - 2. Division 01 Section "Submittal Procedures" for procedures for submitting copies of implementation and termination schedule and utility reports.
 - 3. Division 01 Section "Execution" for progress cleaning requirements.
 - 4. Divisions 02 through 49 Sections for temporary heat, ventilation, and humidity requirements for products in those Sections.
 - 5. Division 31 Section "Dewatering" for disposal of ground water at Project site.
 - 6. Division 31 Section "Termite Control" for pest control.
 - 7. Division 31 Section "Asphalt Paving" for construction and maintenance of asphalt paving for temporary roads and paved areas.
- C. Contractor is to provide, install and maintain all temporary facilities and controls described in these Contract Documents, throughout the duration of their contract, until Substantial Completion of all of Contract 1 Work. At that time, certain temporary facilities and controls will be turned over/assigned to the Owner or Other Prime Contractor. It is recognized that Other Prime Contractors will work on the site during the work of this Contract. Contractor is directed to Section 00-3113, Project Schedule and Milestone Dates, detailing the anticipated scope and approximate schedule of work for Other Prime Contractors working concurrently onsite with the Contract 1 Contractor.

1.3 DEFINITIONS

- A. Permanent Enclosure: As determined by Architect, permanent or temporary roofing is complete, insulated, and weather tight; exterior walls are insulated and weathertight; and all openings are closed with permanent construction or substantial temporary closures.

1.4 USE CHARGES

- A. General: Cost or use charges for temporary facilities as defined in the following sub-sections shall be included in the Contract Sum. Allow other entities to use temporary services and

facilities without cost, including, but not limited to, Architect, Construction Manager, occupants of Project, testing agencies, and authorities having jurisdiction.

- B. Sewer Service: N/A
- C. Water Service: N/A
- D. Electric Power Service: Temporary electric facilities have been provided throughout the site by Other Prime Contractors. It is the responsibility of the Contractor to coordinate use of facilities in performance of their work including but not limited to maintenance and protection. The Owner pays for power use charges during construction which are directly billed from PECO.

1.5 SUBMITTALS

- A. Submittals: Prepare and transmit submittals under the provisions of Division 01 Section "Submittal Procedures."
- B. Site Logistics/Staging Plan: N/A
- C. Security Plan: N/A
- D. Temporary Power Logistics/Work Plan: N/A

1.6 QUALITY ASSURANCE (NOT USED)

1.7 PROJECT CONDITIONS (NOT USED)

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Pavement: N/A
- B. Concrete Safety Barriers: N/A
- C. Portable Chain-Link Fencing: N/A
- D. Lumber and Plywood: Comply with requirements in Division 06 Section "Miscellaneous Rough Carpentry."
- E. Gypsum Board: Minimum 5/8 inch (15.9 mm) thick by 48 inches (1219 mm) wide by maximum available lengths; type X-type panels with tapered edges. Comply with ASTM C 36/C 36M.
- F. Insulation: Unfaced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.

- G. Paint: Comply with requirements in Division 09 painting Sections.

2.2 TEMPORARY FACILITIES

- A. Field Offices, Contractor's: Coordinate location of field office with other Prime Contractor.
- B. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment, tools, etc. for construction operations. All items under this item in support of the Contractor's work are to be coordinated with Other Prime Contractor.
 - 1. Store combustible materials apart from building in storage units intended for such materials.
 - 2. EQUIPMENT
- C. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Locate facilities where they will serve Project adequately and result in minimum interference with performance of the Work and work of other Prime Contractor. Relocate and modify facilities as required by progress of the Work.
- B. Provide each facility, with adequate capacity, ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

- A. Water Service: Temporary water is provided by Other Prime Contractors. It is the responsibility of the Contractor to coordinate use of provided services in performance of their work. Costs for these services are not to be included in the Contractor's Lump Sum Bid.
- B. Temporary Lighting and Power for Contract 3: Temp. electric services are Maintained and operated by Contract 2 Contractor. Electrical utility costs are solely incurred and paid for by the Owner. It is the responsibility of Contract 3 to coordinate use of temporary electrical service needed for their work with other Contractors and include any costs for same in their bid.

3.3 SUPPORT FACILITIES INSTALLATION

- 1. Construction vehicles are prohibited from traveling east on Race Street beyond 13th Street.
- 2. Parking: Parking for construction personnel is not available on-site. The Contractor shall direct all construction vehicles to access the site from Broad Street and Race Street to restrict parking and vehicular traffic East of 12th Street. Parking for all Contractor and

Subcontractor personnel shall not be the responsibility of the PCCA, and Contractor is to take all measures necessary to restrict parking and traffic as previously noted.

- A. Waste Disposal Facilities: Comply with requirements specified in Division 01 Section "Construction Waste Management and Disposal."
- B. Lifts and Hoists: Provide and coordinate with other Prime Contractor facilities necessary for hoisting materials and personnel.
 - 1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.
- C. Temporary Elevator Use: Elevators, existing and or new to be coordinated with the other Prime Contractor and any additional costs for use of same to be the responsibility of this Contractor.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. General: It is the sole responsibility of the Contractor to provide and maintain security and protection of their work, equipment, materials, tools, etc. as deemed necessary not covered by services depicted in item B below. Any cost for same is the responsibility of the Contractor and are to be included in their Bid.
- B. Watchmen: Site Security: Security services are maintained and operated by Contract 2 Contractor 24/7. Contract 3 shall be responsible to coordinate with other on-site Contractors the security services required for their work. Contract 3 shall be responsible to provide all necessary security to secure Contract 3 material and equipment.
- C. Safety: It is the sole responsibility of the Contractor to comply with all Federal, State, and local laws relative to Work of this Contract, along with the requirements in these Contract Documents, including Section 3.7 of the General Conditions.

All of the Contractor's personnel and subcontractors will be required to attend a Site Safety Orientation Program meeting conducted by the Contractor's Site Safety Manager. All personnel will be required to comply with the Contractor's hard hat sticker or badging program evidencing such participation in the site safety orientation meeting and commitment to the Contractor's approved safety program. Failure to wear a hard hat with the safety sticker shall be cause for removal of employee from the project site.

- D. Site Access Badges: Access to the project site is available to the Contractors workforce, their subcontractors and others they authorize who have complied with the following procedure:
 - a) Filled out the "Employee Information Form" signed by the Contractor and forwarded by the Contractor to the Construction Manager.
 - b) Has had photo taken at Site I.D. Processing Station @ 220 N. 13th Street, Philadelphia, PA 19107.
 - c) Has received activated site access badge from Contractor. It's the Contractor's responsibility to have badges issued to all workers prior to the start of their work.
 - d) Prior to or upon completion of the work or employee termination where access to the project site is no longer required, the Contractor shall notify the Construction Manager and PCCA Security

immediately and identify the individual(s). Upon exiting the project site for the final time, Contractor employees shall return their badge to the Construction Manager for deactivation. Any costs and or system disruptions as a result of Contractor personnel not surrendering their Site Access Badge as described will be the sole responsibility of the Contractor.

The PCCA or its designee commits to providing activated site access badges to the Contractor within five (5) business days of receipt of each properly filled out and executed Employee Information Form and photo. In the interim, when requested by the Contractor, the Construction Manager will take reasonable efforts to issue temporary site access stickers in a timely manner, for use up to five (5) business days until permanent identification is available. The Contractor must account for this requirement in the scheduling of all Work and acknowledges that any delay as a result of issuance of temporary or permanent badges within the timeframe stated above, shall be the Contractor's obligation to make up.

- E. Site Access Control Point: Contractor is to familiarize themselves with site access points available on-site as provided by other Prime Contractor and are to use same for entering and exiting the Project Site.
- F. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
 - 1. Comply with work restrictions specified in Division 01 Section "Summary."
- G. Temporary Partitions: Provide temporary partitions to limit dust and dirt migration and to separate areas occupied by Owner from fumes and noise as indicated on the Drawings.
- H. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.
 - 1. Prohibit smoking in construction areas.
 - 2. Supervise welding and torch operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
 - 3. Develop and supervise an overall fire-prevention and -protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
 - 4. The Contractor is responsible for the fire prevention program and who shall ensure that it is carried out to completion.

3.5 OPERATION, TERMINATION, AND REMOVAL (NOT USED)

END OF SECTION 01 5000

SECTION 01 6000 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for selection of products for use in Project; product delivery, storage, and handling; manufacturers' standard warranties on products; special warranties; product substitutions; and comparable products.
- B. Related Sections include the following:
1. Division 01 Section "References" for applicable industry standards for products specified.
 2. Division 01 Section "References" for applicable industry standards for products specified.
 3. Division 01 Section "Closeout Procedures" for submitting warranties for Contract closeout.
 4. Divisions 02 through 34 Sections for specific requirements for warranties on products and installations specified to be warranted.

1.3 DEFINITIONS

- A. Products: Items purchased for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, that is current as of date of the Contract Documents.
 2. New Products: Items that have not previously been incorporated into another project or facility, except that products consisting of recycled-content materials are allowed, unless explicitly stated otherwise. Products salvaged or recycled from other projects are not considered new products.
 3. Comparable Product: Product that is demonstrated and approved through submittal process, or where indicated as a product substitution, to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.

4. Substitutions: Requests for substitution of products will only be considered prior to Bidding. Requests for substitution of products shall be submitted by the Bidder in advance of the Bid Date in accordance with the Instruction to Bidders. Substitution request shall be submitted only by approved Bidders: proposals received from any other source will be returned without action.
- B. Basis-of-Design Product Specification: Where a specific manufacturer's product is named and accompanied by the words "basis of design," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of other named manufacturers.

1.4 QUALITY ASSURANCE

- A. Compatibility of Options: If Contractor is given option of selecting between two or more products for use on Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.
- B. Hazardous Material Content of Products: No product shall be incorporated into the Work which does not comply with Federal, State or local laws regarding limits of hazardous content of products, including, but not limited to asbestos.

1.5 REFERENCE STANDARDS

- A. Comply with applicable provisions of codes, standards and specifications referenced in the Section specifying each product.
1. Where products are shown on drawings, but not described in these specifications, comply with industry standards and regulations applicable to such products.

1.6 PRODUCT DELIVERY, STORAGE, AND HANDLING

- A. Deliver, store, and handle products using means and methods that will prevent damage, deterioration, and loss, including theft. Comply with manufacturer's written instructions. Do not have products delivered to site if environmental conditions are not consistent with those recommended by manufacturer to prevent damage or deterioration of product.
1. The Contractor shall have and retain full responsibility for damage, deterioration or loss of materials, equipment, tools and supplies while being transported, handled, or stored.
- B. Delivery and Handling:
1. Schedule delivery to minimize long-term storage at Project site and to prevent overcrowding of construction spaces.
 2. Coordinate delivery with installation time to ensure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.

3. Deliver products to Project site in an undamaged condition in manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
4. Inspect products on delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.

C. Storage:

1. Store products to allow for inspection and measurement of quantity or counting of units.
2. Store materials in a manner that will not endanger Project structure.
3. Store products that are subject to damage by the elements, under cover in a weathertight enclosure above ground, with ventilation adequate to prevent condensation.
4. Store cementitious products and materials on elevated platforms.
5. Store foam plastic from exposure to sunlight, except to extent necessary for period of installation and concealment.
6. Comply with product manufacturer's written instructions for temperature, humidity, ventilation, and weather-protection requirements for storage.
7. Protect stored products from damage and liquids from freezing.

D. Openings: Arrange and make provisions for handling large items of equipment by leaving temporary openings, as required. Fill openings when no longer required.

1.7 PRODUCT WARRANTIES

A. Warranties specified in other Sections shall be in addition to, and run concurrent with, other warranties required by the Contract Documents. Manufacturer's disclaimers and limitations on product warranties do not relieve Contractor of obligations under requirements of the Contract Documents.

1. **Manufacturer's Warranty:** Preprinted written warranty published by individual manufacturer for a particular product and specifically endorsed by manufacturer to Owner.
2. **Special Warranty:** Written warranty required by or incorporated into the Contract Documents, either to extend time limit provided by manufacturer's warranty or to provide more rights for Owner.

B. **Special Warranties:** Prepare a written document that contains appropriate terms and identification, ready for execution. Submit a draft for approval before final execution.

1. **Manufacturer's Standard Form:** Modified to include Project-specific information and properly executed.
2. **Specified Form:** When specified forms are included with the Specifications, prepare a written document using appropriate form properly executed.
3. Refer to Divisions 02 through 49 Sections for specific content requirements and particular requirements for submitting special warranties.

C. **Submittal Time:** Comply with requirements in Division 01 Section "Closeout Procedures."

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION PROCEDURES

- A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, that are new at time of installation.
1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
 2. Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
 3. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
 4. Where products are accompanied by the term "as selected," Architect will make selection.
 5. Where products are accompanied by the term "match sample," sample to be matched is Architect's.
 6. Descriptive, performance, and reference standard requirements in the Specifications establish "salient characteristics" of products.
 7. Continued Availability: Where, because of the nature of its application, the Owner is likely to need replacement parts or additional amounts of a product at a later date, either for maintenance and repair or replacement, provide standard, domestically produced products for which the manufacturer has published assurances that the product and its parts shall be available to the Owner at a later date. A reasonable doubt regarding such future availability will be grounds for rejection of products other than named products.
 8. Nameplates: Except for required labels and operating data, do not permanently attach or imprint manufacturer's or producer's nameplates or trademarks on exposed surfaces to view in occupied spaces or on the exterior of the completed project.
 - a. Labels: Locate required product labels and stamps on a concealed surface or, where required for observation after installation, on an accessible surface which, in occupied spaces, is not conspicuous.
 - b. Equipment Nameplates: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate the nameplate on an easily accessible surface which is inconspicuous in occupied spaces. The nameplate shall contain product identification and essential operating data, including information specified for particular nameplates in Divisions 02 through 49.
- B. Product Selection Procedures:
1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.
 2. Manufacturer/Source: Where Specifications name a single manufacturer or source, provide a product by the named manufacturer or source that complies with requirements.
 3. Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed that complies with requirements.
 4. Manufacturers: Where Specifications include a list of manufacturers' names, provide a product by one of the manufacturers listed that complies with requirements.

5. Available Products: Where Specifications include a list of names of both products and manufacturers, provide one of the products listed.
6. Available Manufacturers: Where Specifications include a list of manufacturers, provide a product by one of the manufacturers listed.
7. Product Options: Where Specifications indicate that sizes, profiles, and dimensional requirements on Drawings are based on a specific product or system, provide the specified product or system.
8. Basis-of-Design Product: Where Specifications name a product and include a list of manufacturers, provide the specified product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named.
9. Visual Matching Specification: Where Specifications require matching an established Sample, select a product that complies with requirements and matches Architect's sample. Architect's decision will be final on whether a proposed product matches.
 - a. If no product available within specified category matches and complies with other specified requirements, comply with provisions in Part 2 "Product Substitutions" Article for proposal of product.
10. Where specifications indicate matching color and finish of products specified in another section, the requirements specified in the referenced section shall be complied with in totality.
11. Visual Selection Specification: Where Specifications include the phrase "as selected from manufacturer's colors, patterns, textures" or a similar phrase, select a product that complies with other specified requirements.
 - a. Standard Range: Where Specifications include the phrase "standard range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that does not include premium items.
 - b. Full Range: Where Specifications include the phrase "full range of colors, patterns, textures" or similar phrase, Architect will select color, pattern, density, or texture from manufacturer's product line that includes both standard and premium items.

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 6000

SECTION 01 7300 - EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:

1. Construction layout.
2. Field engineering and surveying.
3. General installation of products.
4. Coordination of Owner-installed products.
5. Progress cleaning.
6. Starting and adjusting.
7. Protection of installed construction.
8. Correction of the Work.

- B. Related Sections include the following:

1. Division 01 Section "Project Management and Coordination" for procedures for coordinating field engineering with other construction activities.
2. Division 01 Section "Submittal Procedures" for submitting surveys.
3. Division 01 Section "Cutting and Patching" for procedural requirements for cutting and patching necessary for the installation or performance of other components of the Work.
4. Division 01 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

1.3 SUBMITTALS (NOT USED)

1.4 QUALITY ASSURANCE (NOT USED)

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of site improvements, utilities, and other 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.

- B. Acceptance of Conditions: Examine conditions as required for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 - 1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
 - a. Description of the Work.
 - b. List of detrimental conditions, including substrates.
 - c. List of unacceptable installation tolerances.
 - d. Recommended corrections.
 - 2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 - 3. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 - 4. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 - 5. Proceed with installation only after unsatisfactory conditions have been corrected. 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, submit a request for information to the Design Professional/Architect through the Construction Manager. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents. Submit requests on CSI Form 13.2A, "Request for Interpretation" or another form approved by the Design Professional/Architect.
 - 1. The Design Professional/Architect reserves the right to make minor changes in locations and sizes of piping, ductwork conduit, raceways and ducts up to time of roughing-in without additional cost to the Contract.
 - 2. Detailed drawings of proposed departures due to actual field conditions or other causes shall be submitted to the Design Professional/Architect for review, any such changes shall be made without additional cost. No departures shall be made without prior review of the 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 Design Professional/Architect and Construction Manager promptly.

3.4 FIELD ENGINEERING (NOT USED)

3.5 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
 - 1. Make vertical work plumb and make horizontal work level.
 - 2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 - 3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
 - 4. Maintain minimum headroom clearance of 8 feet (2.4 m) in spaces without a suspended ceiling.
- 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. Installation of Work hierarchy sequence: (High to low priority):
 - 1. Command Access Center
 - 2. Network Operational
 - 3. Systems Operational
- E. 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.
- 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. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
 - 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. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.6 OWNER-INSTALLED PRODUCTS

- A. Site Access: Provide access to Project site for Owner's construction forces.
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's construction forces and Other Prime Contractors.
 - 1. Construction Schedule: Inform Owner of Contractor's preferred construction schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual construction progress.
 - 2. Preinstallation Conferences: Include Owner's construction forces at preinstallation conferences covering portions of the Work that are to receive Owner's work. Attend preinstallation conferences conducted by Owner's construction forces if portions of the Work depend on Owner's construction.

3.7 PROGRESS CLEANING

- A. General: Clean Project site and surrounding areas including without limitation all dirt, debris, waste materials and/or rubbish caused by or resulting from the Work and shall clean up the Site and such surrounding areas on a daily basis. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully. All costs related for Progress Cleaning related to the Contractor's Work shall be included in the Lump Sum Bid.
 - 1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
 - 2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F (27 deg C).
 - 3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
- B. Site: Maintain Project site free of waste materials and debris.
- C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.
 - 1. Remove liquid spills promptly.
 - 2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.
- D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials

specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

- E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.
- F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.
- G. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.
- H. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- I. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- J. Limiting Exposures: Supervise construction operations to ensure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period. Where applicable, such exposures include, but are not limited to, the following:
 - 1. Excessive static or dynamic loading.
 - 2. Excessive internal or external pressures.
 - 3. Excessively high or low temperatures.
 - 4. Thermal shock.
 - 5. Excessively high or low humidity.
 - 6. Pollution and air contamination.
 - 7. Water or ice.
 - 8. Chemicals and solvents
 - 9. Light.
 - 10. Radiation.
 - 11. Puncture.
 - 12. Abrasion.
 - 13. Heavy traffic.
 - 14. Soiling, staining, and corrosion.
 - 15. Bacteria.
 - 16. Rodent and insect infestation.
 - 17. Combustion.
 - 18. Electrical current.
 - 19. High-speed operation.
 - 20. Improper lubrication.
 - 21. Unusual wear or other misuse.

 - 22. Contact between incompatible materials.
 - 23. Destructive testing.
 - 24. Misalignment.
 - 25. Excessive weathering.
 - 26. Unprotected storage.

- 27. Improper shipping or handling.
- 28. Theft or vandalism.

K. Provide rodent-proof containers on each floor level of construction to support work as needed.

3.8 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.
- 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: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Division 01 Section "Quality Requirements."

3.9 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide constant protection of installed products, finishes, and materials including existing work to remain, and maintain conditions that ensure installed and existing Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.10 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 01 Section "Cutting and Patching."
 - 1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired.
- E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 01 7300

SECTION 01 7329 - CUTTING AND PATCHING

PART 1: GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes procedural requirements for cutting and patching.
- B. Related Sections include the following:
 - 1. Division 02 Section "Selective Structure Demolition" for demolition of selected portions of the building.
 - 2. Division 07 Section "Penetration Firestopping" for patching fire-rated construction.

1.3 DEFINITIONS

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

1.4 SUBMITTALS

- A. Cutting and Patching Proposal: Submit a proposal describing procedures at least 10 days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:
 - 1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
 - 2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
 - 3. Products: List products to be used and firms or entities that will perform the Work.
 - 4. Dates: Indicate when cutting and patching will be performed.
 - 5. Utility Services and Mechanical/Electrical Systems: List services/systems that cutting and patching procedures will disturb or affect. List services/systems that will be relocated and those that will be temporarily out of service. Indicate how long services/systems will be disrupted.

6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
7. Architect's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

1.5 QUALITY ASSURANCE

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Operating elements include the following:
 1. Primary operational systems and equipment.
 2. Air or smoke barriers.
 3. Fire-suppression systems.
 4. Mechanical systems piping and ducts.
 5. Control systems.
 6. Communication systems.
 7. Conveying systems.
 8. Electrical wiring systems.
 9. Operating systems of special construction in Division 13 Sections.
- C. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety. Miscellaneous elements include the following:
 1. Water, moisture, or vapor barriers.
 2. Membranes and flashings.
 3. Exterior curtain-wall construction.
 4. Equipment supports.
 5. Piping, ductwork, vessels, and equipment.
 6. Noise- and vibration-control elements and systems.
- D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- E. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

1.6 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 MATERIALS

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

PART 3 - EXECUTION

3.1 EXAMINATION

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

3.2 PREPARATION

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

3.3 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 3. Concrete, stone, or Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 4. Excavating and Backfilling: Comply with requirements in applicable Division 31 Sections where required by cutting and patching operations.
 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 6. Proceed with patching after construction operations requiring cutting are complete.
 7. In instances of penetrations through smoke and or fire partitions, this Contractor is to repair all penetrations in accordance with specified smoke and or firestopping materials.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
1. Match joint type and coursing of existing masonry work.
 2. Patch surfaces which will be exposed to weather to be airtight and weathertight.
 3. Patch surfaces to comply with fire ratings, smoke tight ratings, thermal and vapor barrier ratings, acoustical ratings, and other performance criteria indicated, or existing.
 4. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
 5. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing as acceptable to the Architect.
 - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
 - b. Restore damaged pipe covering to its original condition.
 - c. If surface to be cut and patched is indicated or specified to be covered by painting or other finish system, and if cutting and patching is performed prior to installation

of finish, then finishing of cut and patched area shall be included as work of finishing Section and shall not be part of cutting and patching work.

6. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
 - a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
 7. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
 8. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.
- D. Cleaning: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

END OF SECTION 01 7329

SECTION 01 7419 - CONSTRUCTION WASTE MANAGEMENT AND DISPOSAL

PART 1: GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This 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.
- B. Related Sections include the following:
 - 1. Division 01 Section "Temporary Facilities and Controls" for environmental-protection measures during construction.
 - 2. Division 02 Section "Selective Structure Demolition" for disposition of waste resulting from demolition of buildings, structures, and site improvements, and for disposition of hazardous waste.
 - 3. Division 02 Section "Selective Structure Demolition" for disposition of waste resulting from partial demolition of buildings, structures, and site improvements, and for disposition of hazardous waste.
 - 4. Division 04 Section "Unit Masonry" for disposal requirements for masonry waste.
 - 5. Division 31 Sections "Earthmoving-Building Pad" for disposition of waste resulting from excavation and removal of above- and below-grade improvements.

1.3 INTIAL AND PERIODIC CLEANING; SEE ATTACHED

1.4 DURING THE WORK

- 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.

1.4 PERFORMANCE GOALS

- A. Salvage/Recycle Goals: Owner's goal is to salvage and recycle as much nonhazardous demolition and construction waste as possible including the following materials:

- 1. Demolition Waste:

- a. Concrete.
- b. Concrete reinforcing steel.
- c. Brick.
- d. Concrete masonry units.
- e. Structural and miscellaneous steel.
- f. Rough hardware.
- g. Doors and frames.
- h. Door hardware.
- i. Windows.
- j. Glazing.
- k. Acoustical panels.
- l. Carpet.
- m. Equipment.
- n. Piping.
- o. Supports and hangers.
- p. Valves.
- q. Sprinklers.
- r. Mechanical equipment.
- s. Refrigerants.
- t. Electrical conduit.
- u. Copper wiring.
- v. Lighting fixtures.
- w. Lamps.
- x. Ballasts.
- y. Electrical devices.
- z. Switchgear and panelboards.
- aa. Transformers.

- 2. Construction Waste:

- a. Site-clearing waste.
- b. Masonry and CMU.

- c. Lumber.
- d. Wood sheet materials.
- e. Wood trim.
- f. Metals.

- g. Roofing.
- h. Insulation.
- i. Carpet.
- j. Gypsum board.
- k. Piping.
- l. Electrical conduit.
- m. Packaging: Regardless of salvage/recycle goal indicated above, salvage or recycle 100 percent of the following uncontaminated packaging materials:
 - 1) Paper.
 - 2) Cardboard.
 - 3) Boxes.
 - 4) Plastic sheet and film.
 - 5) Polystyrene packaging.
 - 6) Wood crates.
 - 7) Plastic pails.

1.5 SUBMITTALS

- A. Waste Management Plan: Submit five (5) copies of plan within 30 days of date established for the Notice to Proceed.
- B. Waste Reduction Progress Reports: Concurrent with each Application for Payment, submit three copies of 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.
- C. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.
- D. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.
- E. 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.

- F. 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.
- G. Qualification Data: For refrigerant recovery technician.
- H. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

1.6 QUALITY ASSURANCE

- A. Regulatory Requirements: Comply with hauling and disposal regulations of authorities having jurisdiction.
- B. Waste Management Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures related to waste management including, but not limited to, the following:
 1. Review and discuss waste management plan including responsibilities of Waste Management Coordinator.
 2. Review requirements for documenting quantities of each type of waste and its disposition.
 3. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.
 4. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.
 5. Review waste management requirements for each trade.

1.7 WASTE MANAGEMENT PLAN

- A. General: Develop plan consisting of waste identification, waste reduction work plan, and cost/revenue analysis. Include separate sections in plan for demolition and construction waste. 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, site-clearing, 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: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.
3. Salvaged Materials for Donation: For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.
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 on Project site where materials separation will be located.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

- A. General: Implement waste management plan as approved by Owner's Representative and Construction Manager. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.
 1. Comply with Division 01 Section "Temporary Facilities and Controls" for operation, termination, and removal requirements.
- B. Waste Management Coordinator: Name a member of the supervisory staff to be the waste management coordinator. The waste management coordinator is to be responsible for implementing, monitoring, and reporting status of waste management work plan. Coordinator shall be present at Project site full time for duration of Project.
- 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 Division 01 Section "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:

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:

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 on-site as 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. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall be shared equally by Owner and Contractor.

C. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical.

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. Do not store within drip line of remaining trees.
4. Store components off the ground and protect from the weather.
5. Remove recyclable waste off Owner's property and transport to recycling receiver or processor.

3.4 RECYCLING DEMOLITION WASTE

- A. Wood Materials: Sort and stack members according to size, type, and length. Separate lumber, engineered wood products, panel products, and treated wood materials.
- B. Metals: Separate metals by type.
 1. Structural Steel: N/A
 2. Remove and dispose of bolts, nuts, washers, and other rough hardware.
- C. Gypsum Board: Stack large clean pieces on wood pallets and store in a dry location. Remove edge trim and sort with other metals. Remove and dispose of fasteners.
- D. Acoustical Ceiling Panels: Stack large clean pieces on wood pallets and store in a dry location.
 1. Separate suspension system, trim, and other metals from panels and tile and sort with other metals.
- E. Electrical Devices: Separate switches, receptacles, switchgear, transformers, meters, panelboards, circuit breakers, and other devices by type.
- F. 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 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: Transport waste materials off Owner's property and legally dispose of them.

END OF SECTION 01 7419

SECTION 01 7700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Inspection procedures.
 - 2. Warranties.
 - 3. Final cleaning.
- B. If the Contract requirements separates the Work into components with discrete costs and dates of Substantial Completion, comply with requirements for:
 - 1. Substantial Completion of each such component,
 - 2. Final Completion of each such component,
 - 3. Final Completion for the entire Work.
- C. Related Sections include the following:
 - 1. Division 01 Section "Payment Procedures" for requirements for Applications for Payment for Substantial and Final Completion.
 - 2. Division 01 Section "Photographic Documentation" for submitting Final Completion construction photographs and negatives.
 - 3. Division 01 Section "Execution" for progress cleaning of Project site.
 - 4. Division 01 Section "Project Record Documents" for submitting Record Drawings, Record Specifications, and Record Product Data.
 - 5. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
 - 6. Division 01 Section "Demonstration and Training" for requirements for instructing Owner's personnel.
 - 7. Divisions 02 through 49 Sections for specific closeout and special cleaning requirements for the Work in those Sections.

1.3 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request. Certificate of Substantial Completion will not be issued until all of these items are complete:
1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
 2. Advise Owner of pending insurance changeover requirements.
 3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 5. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs, damage or settlement surveys, property surveys, and similar final record information.
 6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
 7. Complete startup testing of systems.
 8. Required submittals to regulatory agencies.
 9. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 10. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
 11. Complete final cleaning requirements, including touchup painting.
 12. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
- B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Architect and Construction Manager 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.
 - a. The Architect or his consultants will perform one re-inspection when requested and only when assured that the Work has been substantially completed. Owner shall be entitled to deduct from the Contract Sum amounts paid to the Architect, Construction Manager and Owner's Representative for any additional re-inspections. However, if in the Owner's reasonable opinion a legitimate business reason exists for the need for a third or additional inspections, then Owner may waive this charge.
 - b. Results of completed inspection will form the basis of requirements for Final Completion.

1.4 FINAL COMPLETION

- A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
1. Submit a final Application for Payment according to Division 01 Section "Payment Procedures."
 2. Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 4. Submit pest-control final inspection report and warranty.
 5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training digital recordings.
- B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect and Construction Manager 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.
 - a. The Architect or his consultants will perform one re-inspection when requested and only when assured that the remaining corrective Work has been completed. Owner shall be entitled to deduct from the Contract Sum amounts paid to the Architect, Construction Manager and Owner's Representative for any additional re-inspections. However, if in the Owner's reasonable opinion a legitimate business reason exists for the need for a third or additional inspections, then Owner may waive this charge.

1.5 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Preparation: Submit three copies 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. Include the following information at the top of each page:
 - a. Project name.
 - b. Date.
 - c. Name of Architect and Construction Manager.
 - d. Name of Contractor.
 - e. Page number.

1.6 WARRANTIES

- A. Submittal Time: 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.
- B. Partial Occupancy: Submit properly executed warranties within 15 days of completion of designated portions of the Work that are completed and occupied or used by Owner during construction period by separate agreement with Contractor.
- C. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
 - 1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch (215-by-280-mm) paper.
 - 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
 - 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
- D. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

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

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Provide final cleaning. 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.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
 - a. Clean Project site in areas disturbed by construction activities of rubbish, waste material, litter, and other foreign substances.
 - b. Remove tools, construction equipment, machinery, and surplus material from Project site.
 - c. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances.
 - 1) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
 - d. Leave Project clean and ready for subsequent Contracts.
- C. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 01 7700

SECTION 01 7839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:
 - 1. Record Drawings.
 - 2. Record Specifications.
 - 3. Record Product Data.
- B. Related Sections include the following:
 - 1. Division 01 Section "Submittal Procedures" for retention requirements of product data for use as a Record Document.
 - 2. Division 01 Section "Closeout Procedures" for general closeout procedures.
 - 3. Division 01 Section "Operation and Maintenance Data" for operation and maintenance manual requirements.
 - 4. Divisions 02 through 49 Sections for specific requirements for Project Record Documents of the Work in those Sections.

1.3 SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit copies of Record Drawings as follows:
 - a. Initial Submittal: Submit two (2) set(s) of plots from corrected Record CAD Drawings and the original set of marked-up Record Prints. Architect will initial and date each plot and mark whether general scope of changes, additional information recorded, and quality of drafting are acceptable. Architect will return one set plots and the original set of marked-up Record Prints for organizing into sets, printing, binding, and final submittal.
 - b. Final Submittal: Submit the original set of marked-up Record Prints, three (3) set(s) of Record CAD electronic Drawing files, two (2) sets of Record CAD Drawing plots, and three (3) copies printed from record plots. Plot and print each Drawing, whether or not changes and additional information were recorded.
 - 1) Electronic Media: CD-R.

- B. Record Specifications: Submit one copy of Project's Specifications, including addenda and contract modifications.
- C. Record Product Data: Submit one copy of each Product Data submittal.
 - 1. Where Record Product Data is required as part of operation and maintenance manuals, submit marked-up Product Data as an insert in manual instead of submittal as Record Product Data.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. Record Prints: Maintain one set of blue- or black-line white prints of the Contract Drawings and Shop Drawings.
 - 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 prepare the 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. Accurately record information in an understandable drawing technique.
 - c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
 - d. All marks to be dated and initialed by individual making marks.
 - 2. Content: Types of items requiring marking include, but are not limited to, the following:
 - a. Dimensional changes to Drawings.
 - b. Revisions to details shown on Drawings.
 - c. Revisions to routing of piping and conduits.
 - d. Revisions to electrical circuitry.
 - e. Actual equipment locations.
 - f. Changes made by Change Order.
 - g. Changes made following Design Professional/Architect's written orders.
 - h. Details not on the original Contract Drawings.
 - i. Field records for variable and concealed conditions.
 - j. Record information on the Work that is shown only schematically.
 - 3. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.
 - 4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at same location.
 - 5. Mark important additional information that was either shown schematically or omitted from original Drawings.

6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.
- B. Record CAD Drawings: Immediately before inspection for Certificate of Substantial Completion, review marked-up Record Prints with Design Professional/Architect and Construction Manager. When authorized, prepare a full set of corrected CAD Drawings of the Contract Drawings, as follows:
1. Format: Same CAD program, version, and operating system as the original Contract Drawings.
 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 through Construction Manager for resolution.
 4. Architect will furnish Contractor one set of CAD Drawings of the Contract Drawings for use in recording information.
 - a. Architect makes no representations as to the accuracy or completeness of CAD Drawings as they relate to the Contract Drawings.
 - b. CAD Software Program: The Contract Drawings are available in Autodesk Architectural Desktop 3.3 prepared using Microsoft Windows XP Professional operating system.
- 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. Record CAD Drawings: Organize CAD 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 CAD file.
 3. Identification: As follows:
 - a. Project name.
 - b. Date.
 - c. Designation "PROJECT RECORD DRAWINGS."
 - d. Name of Architect, Construction Manager, and General Contractor.
 - 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. For each principal product, indicate whether Record Product Data has been submitted in operation and maintenance manuals instead of submitted as Record Product Data.
5. Note related Change Orders, Record Product Data, and Record Drawings where applicable.

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.

2.4 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.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.
- B. 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, Construction Manager's, and Owner's Representative's reference during normal working hours.

END OF SECTION 01 7839