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 the following:
   1. Project information.
   2. Work covered by the Contract Documents.
   3. Type of the Contract.
   4. Construction Sequence.
   5. Work under other contracts.
   6. Use of premises.
   7. Owner's occupancy requirements.
   8. Owner furnished products.

1.3 PROJECT INFORMATION

A. Project Identification: Project consists of the Brooks Stadium Renovation and Expansion – Phase 2, State Project No. H17-9610-MJ-B.

B. Owner: Coastal Carolina University, 755 Highway 544, Conway, South Carolina 29528.

C. Authority of Jurisdiction: Office of State Engineer, 1201 Main Street, Suite 600, Columbia, South Carolina 29501.

D. Architect: SMHa, 400 Hibben Street, Mt. Pleasant, SC 29464.

1.4 WORK COVERED BY CONTRACT DOCUMENTS

A. Project Description: Renovation and expansion of Brooks Stadium including the construction of upper West grandstand, concourse, club level, concessions, restrooms, stairs, elevators and related construction. Building systems include mechanical, plumbing, fire protection, and electrical systems.

1.5 TYPE OF CONTRACT

A. Project will be constructed under a single prime contract.
1.6 CONSTRUCTION SEQUENCE

A. General: Contractor shall sequence the work and provide temporary facilities to minimize impact on the Owner’s operations including published home football games, and other events, that occur during the project schedule. Sequencing requirements shall not change the Contractor’s responsibility for the means and methods of the Work. The following shall be considered

1. Sequence installation of site-work, utilities, deep foundations, pile caps, and stadium light pole bases to facilitate relocation of lights between scheduled home football games.
2. Sequence installation of deep foundations, grade beams, pile caps, and utilities to maintain use of facilities during home football games.

   
   b. There are 6 scheduled home games for 2018. First two home games scheduled are September 8 and 15, 2018 with remaining dates to be determined.

1.7 WORK UNDER OTHER CONTRACTS

A. General: Cooperate fully with separate contractors so work on those contracts may be carried out smoothly, without interfering with or delaying work under this Contract. Coordinate the Work of this Contract with work performed under separate contracts.

B. Preceding Work: Owner has awarded a separate contract for the following construction operations at Project site. Those operations are scheduled to be substantially complete before Work under this Contract begins.

   1. Brooks Stadium Additions – Phase 1: Works includes construction of lower bowl seating and restrooms. Site work includes utilities to support Phase 1 and associated utilities to support future Phase 2 Construction. Structure consists of deep foundations, pre-engineered seating, and masonry restroom facilities. Building systems include mechanical, plumbing, fire protection, and electrical systems.

1.8 USE OF PREMISES

A. Use of Site: Limit use of premises to work in areas indicated. Do not disturb portions of site beyond areas in which the Work is indicated.

   1. Contractor shall coordinate access to the site with the Architect and Owner’s representatives.
   2. Owner Occupancy: Allow for Owner occupancy of the stadium facilities adjacent to the project site and use by the public.
   3. Driveways and Entrances: Keep driveways, loading areas, and entrances, and fire apparatus access drives serving premises clear and available to Owner, Owner’s employees, and emergency vehicles at all times. Do not use these areas for parking or storage of materials.

      a. Schedule deliveries to minimize use of driveways and entrances.
      b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.

B. Owner will permit construction activities 7 days per week, except as noted, and encourages early arrival to avoid conflict with morning traffic. Owner will provide and coordinate with Contractor for use of the stadium lighting on a limited basis to assist with construction in low light levels.
1. Construction shall not occur the days of home football games.
2. Contractor shall maintain access of all stadium egress routes indicated during home football games, and provide protection of construction activities.
3. Contractor shall have personnel present at home football games to oversee safety and address game day issues related to temporary facilities and general construction.

C. Parking: Parking is permitted in the lots indicated on the following campus map. Between Fall and Spring academic semesters as published by the University, the Contractor may use the lot to the east of Brooks Stadium.

D. Laydown Areas: The Owner has identified two possible laydown areas that may be available to the Contractor on the Campus Map. The contractor shall coordinate the use and periods of use with the Owner.

1.9 OWNER'S OCCUPANCY REQUIREMENTS

A. Full Owner Occupancy: Owner will occupy existing stadium facility and adjacent buildings during entire construction period including published home football games. Cooperate with Owner during construction operations to minimize conflicts and facilitate Owner usage. Cooperate with Owner in preparation for home football games. Perform the Work so as not to interfere with Owner's day-to-day operations. Maintain existing exits and all utilities (water, sewer, gas, electricity, communications, storm drainage, etc), unless otherwise indicated.

1. Maintain access to existing walkways, corridors, occupant egress routes, and other adjacent occupied or used facilities. Do not close or obstruct walkways, corridors, or other occupied or used facilities without written permission from Owner and authorities having jurisdiction.
2. Provide not less than 72 hours' notice to Owner of activities that will affect Owner's operations.
3. Contractor shall design and provide temporary utilities to maintain existing Owner's existing operations in adjacent buildings to not disrupt service for more than 24 hours. Including electrical service, sewer service, water service (domestic and fire), and gas service.
   a. Contractor may provide temporary restroom facilities, for and near the west stands, for games in lieu of temporary water and sewer service, but must submit location plan for approval per Submittal requirements.

1.10 OWNER-FURNISHED PRODUCTS

A. Owner may furnish certain furnishings and equipment. The Work includes providing support systems to receive Owner's equipment and service connections.

1. Owner will arrange for and deliver Shop Drawings, Product Data, and Samples to Contractor.
2. Owner will arrange and pay for delivery of Owner-furnished items according to Contractor's Construction Schedule.
3. After delivery, Owner will inspect delivered items for damage. Contractor shall be present for and assist in Owner's inspection.
4. If Owner-furnished items are damaged, defective, or missing, Owner will arrange for replacement.
5. Owner will arrange for manufacturer's field services and for delivery of manufacturer's warranties to Contractor.
6. Owner will furnish Contractor the earliest possible delivery date for Owner-furnished products. Using Owner-furnished earliest possible delivery dates, Contractor shall designate delivery dates of Owner-furnished items in Contractor's Construction Schedule.
7. Contractor shall review Shop Drawings, Product Data, and Samples and return them to Architect noting discrepancies or anticipated problems in use of product.
8. Contractor is responsible for receiving, unloading, and handling Owner-furnished items at Project site.
9. Contractor is responsible for protecting Owner-furnished items from damage during storage and handling, including damage from exposure to the elements.
10. If Owner-furnished items are damaged as a result of Contractor's operations, Contractor shall repair or replace them.

1.11 SPECIFICATION FORMATS AND CONVENTIONS

A. Specification Format: The Specifications are organized into Divisions and Sections using the 50-division format and CSI/CSC's "MasterFormat" numbering system.

1. Section Identification: The Specifications use Section numbers and titles to help cross-referencing in the Contract Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete because all available Section numbers are not used. Consult the table of contents at the beginning of the Project Manual to determine numbers and names of Sections in the Contract Documents.

2. Division 01: Sections in Division 01 govern the execution of the Work of all Sections in the Specifications.

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

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

2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.

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

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 011000
SECTION 012100 - ALLOWANCES

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 governing allowances.
   1. Certain items are specified in the Contract Documents by allowances. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. If necessary, additional requirements will be issued by Change Order.
   B. Types of allowances include the following:
      1. Lump-sum allowances.
      2. Unit cost allowances.

1.3 SELECTION AND PURCHASE
A. At the earliest practical date after award of the Contract, advise Architect of the date when final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.

   B. At Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.

   C. Purchase products and systems selected by Architect from the designated supplier.

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

   B. Submit invoices or delivery slips to show actual quantities of materials delivered to the site for use in fulfillment of each allowance.

   C. Coordinate and process submittals for allowance items in same manner as for other portions of the Work.

1.5 COORDINATION
A. Coordinate allowance items with other portions of the Work. Furnish templates as required to coordinate installation.

1.6 LUMP-SUM AND UNIT COST ALLOWANCES
A. Allowance shall include cost to Contractor of specific products and materials ordered by Owner under allowance and shall include taxes, freight, and delivery to Project site.

B. Contractor's costs for receiving and handling at Project site, labor, installation, overhead and profit, and similar costs related to products and materials ordered by Owner under allowance shall be included as part of the Contract Sum and **NOT** part of the allowance.

1.7 UNUSED MATERIALS

A. Return unused materials purchased under an allowance to manufacturer or supplier for credit to Owner, after installation has been completed and accepted.

1. If requested by Architect, prepare unused material for storage by Owner when it is not economically practical to return the material for credit. If directed by Architect, deliver unused material to Owner's storage space. Otherwise, disposal of unused material is Contractor's responsibility.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

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

3.2 PREPARATION

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

3.3 SCHEDULE OF ALLOWANCES

A. Allowance No. 1 – Field Turf: Include $15,000 for the removal and replacement of field turf in locations indicated by a certified installer identified by the Owner.

B. Allowance No. 2 – Custom Carpet: Include the sum of $26,500.00 purchase and installation of custom carpet as selected by Architect and as specified in Section 096813. The overhead and profit of GC is NOT included in this sum. Architect reserves the right to assign a contract to GC. GC shall NOT issue a subcontract without the PRIOR APPROVAL of Architect. This allowance does not include attic stock, major floor prep, or protection. GC is responsible for all protection of new carpet and providing a subfloor that meets RH standards required by flooring manufacturer.

END OF SECTION 012100
SECTION 012200 - UNIT PRICES

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 unit prices.

1.3 DEFINITIONS
A. Unit price is an amount proposed by bidders, stated on the Bid Form, as a price per unit of measurement for materials or services added to or deducted from the Contract Sum by appropriate modification, if estimated quantities of Work required by the Contract Documents are increased or decreased.

1.4 PROCEDURES
A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, and profit.

B. Measurement and Payment: Refer to individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.

C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.

D. List of Unit Prices: A list of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 LIST OF UNIT PRICES
A. Unit Price No. 1 – Augered Pressure Grouted Pile Lengths:
1. Description: Provide Augered Pressure Grouted Piles and all associated materials and labor of lengths that differ from those indicated on Drawings for each type and size of pile and as specified in Section 316317.
2. Unit of Measurement: Linear Foot.

B. Unit Price No. 2 - Excavating Unsatisfactory Soils and Hauling Offsite:
1. Description: As described in Section titled "Earth Moving" and as indicated on Civil Drawings.
2. Unit of Measurement: In situ cubic yard.

C. Unit Price No. 3 - Backfill of Excavations of Unsatisfactory Soils with Borrow Soil:

1. Description: As described in Section titled "Earth Moving" and as indicated on Civil Drawings.
2. Unit of Measurement: Cubic yard.

END OF SECTION 012200
SECTION 012300 - ALTERNATES

PART 1 - GENERAL

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

1.2 SUMMARY
   A. Section includes administrative and procedural requirements for alternates.

1.3 DEFINITIONS
   A. Alternate: An amount proposed by bidders and stated on the Bid Form for certain work defined in the bidding requirements that may be added to or deducted from the base bid amount if Owner decides to accept a corresponding change either in the amount of construction to be completed or in the products, materials, equipment, systems, or installation methods described in the Contract Documents.

      1. Alternates described in this Section are part of the Work only if enumerated in the Agreement.
      2. The cost or credit for each alternate is the net addition to or deduction from the Contract Sum to incorporate alternate into the Work. No other adjustments are made to the Contract Sum.

1.4 PROCEDURES
   A. Coordination: Revise or adjust affected adjacent work as necessary to completely integrate work of the alternate into Project.

      1. Include as part of each alternate, miscellaneous devices, accessory objects, and similar items incidental to or required for a complete installation whether or not indicated as part of alternate.

   B. Notification: Immediately following award of the Contract, notify each party involved, in writing, of the status of each alternate. Indicate if alternates have been accepted, rejected, or deferred for later consideration. Include a complete description of negotiated revisions to alternates.

   C. Execute accepted alternates under the same conditions as other work of the Contract.

   D. Schedule: A schedule of alternates is included at the end of this Section. Specification Sections referenced in schedule contain requirements for materials necessary to achieve the work described under each alternate.
PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF ALTERNATES

A. Alternate No. 1: North East Gate, Boardwalk and Pedestrian Sidewalk.

1. Base Bid: Provide construction of foundations for a portion of the work for North East Gate, Boardwalk, and Pedestrian Sidewalk as depicted primarily (but not exclusively) on sheets C-4.3, C-6.3, A-101, A-102, A-209, A-210, S-111.4, S-121.4, S-121.4, S-131.4, S-141.4, and E-100A and restoration of grading, walks, fire lane access drive, and utilities disturbed during construction.


3. State amount to ADD.

END OF SECTION 012300
SECTION 012600 - CONTRACT MODIFICATION 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 specifies administrative and procedural requirements for handling and processing Contract modifications.

1.3 MINOR CHANGES IN THE WORK
   A. Architect will issue supplemental instructions authorizing Minor Changes in the Work, not involving adjustment to the Contract Sum or the Contract Time, on Architect's form.

1.4 PROPOSAL REQUESTS
   A. Owner-Initiated Proposal Requests: Architect will issue a detailed description of proposed changes in the Work that may require adjustment to the Contract Sum or the Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.
      1. Proposal Requests issued by Architect are for information only. Do not consider them instructions either to stop work in progress or to execute the proposed change.
      2. Within 14 days after receipt of Proposal Request, submit a quotation estimating cost adjustments to the Contract Sum and the Contract Time necessary to execute the change.
         a. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
         b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
         c. Include costs of labor and supervision directly attributable to the change.
         d. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
   B. Contractor-Initiated Proposals: If latent or unforeseen conditions require modifications to the Contract, Contractor may propose changes by submitting a request for a change to Architect.
      1. Include a statement outlining reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and the Contract Time.
      2. Include a list of quantities of products required or eliminated and unit costs, with total amount of purchases and credits to be made. If requested, furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Include costs of labor and supervision directly attributable to the change.
5. Include an updated Contractor's Construction Schedule that indicates the effect of the change, including, but not limited to, changes in activity duration, start and finish times, and activity relationship. Use available total float before requesting an extension of the Contract Time.
6. Comply with requirements in Division 01 Section "Product Requirements" if the proposed change requires substitution of one product or system for product or system specified.

C. Proposal Request Form: Use form acceptable to Architect for Proposal Requests.

1.5 CHANGE ORDER PROCEDURES

A. On Owner's approval of a Proposal Request, Architect will issue a Change Order for signatures of Owner and Contractor on SE-380, “Change Order to Construction Contract”.

1.6 CONSTRUCTION CHANGE DIRECTIVE


1. Construction Change Directive contains a complete description of change in the Work. It also designates method to be followed to determine change in the Contract Sum or the Contract Time.

B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.

1. After completion of change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012600
SECTION 012900 - PAYMENT 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 specifies administrative and procedural requirements necessary to prepare and process Applications for Payment.

1.3 DEFINITIONS

A. Schedule of Values: A statement furnished by Contractor allocating portions of the Contract Sum to various portions of the Work and used as the basis for reviewing Contractor's Applications for Payment.

1.4 SCHEDULE OF VALUES

A. Coordination: Coordinate preparation of the Schedule of Values with preparation of Contractor's Construction Schedule.

1. Correlate line items in the Schedule of Values with other required administrative forms and schedules, including the following:
   a. Application for Payment forms with Continuation Sheets.
   b. Submittals Schedule.

2. Submit the Schedule of Values to Architect at earliest possible date but no later than seven days before the date scheduled for submittal of initial Applications for Payment.

3. Subschedules: Where the Work is separated into phases requiring separately phased payments, provide subschedules showing values correlated with each phase of payment.

B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one line item for each Specification Section.

1. Identification: Include the following Project identification on the Schedule of Values:
   a. Project name and location.
   b. Name of Architect.
   c. Architect's project number.
   d. Contractor's name and address.
   e. Date of submittal.

2. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
   a. Related Specification Section or Division.
   b. Description of the Work.
c. Name of subcontractor.
d. Name of manufacturer or fabricator.
e. Name of supplier.
f. Change Orders (numbers) that affect value.
g. Dollar value.

1) Percentage of the Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.

3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate.

4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.

5. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment purchased or fabricated and stored, but not yet installed.

a. Differentiate between items stored on-site and items stored off-site. Include evidence of insurance or bonded warehousing if required.

6. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.

7. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit for each item.

a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at Contractor's option.

8. Schedule Updating: Update and resubmit the Schedule of Values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.5 APPLICATIONS FOR PAYMENT

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

1. Initial Application for Payment, Application for Payment at time of Substantial Completion, and final Application for Payment involve additional requirements.

B. Payment Application Times: The date for each progress payment is indicated in the Agreement between Owner and Contractor. The period of construction Work covered by each Application for Payment is the period indicated in the Agreement.

C. Payment Application Forms: Use AIA Document G702 and AIA Document G703 Continuation Sheets as form for Applications for Payment.

D. Application Preparation: Complete every entry on form. Notarize and execute by a person authorized to sign legal documents on behalf of Contractor. Architect will return incomplete applications without action.

1. Entries shall match data on the Schedule of Values and Contractor's Construction Schedule. Use updated schedules if revisions were made.
2. Include amounts of Change Orders and Construction Change Directives issued before last day of construction period covered by application.

E. Transmittal: Submit 3 signed and notarized original copies of each Application for Payment to Architect by a method ensuring receipt within 24 hours. One copy shall include waivers of lien and similar attachments if required.

1. Transmit each copy with a transmittal form listing attachments and recording appropriate information about application.

F. Waivers of Mechanic's Lien: With each Application for Payment, submit waivers of mechanic's lien from every entity who is lawfully entitled to file a mechanic's lien arising out of the Contract and related to the Work covered by the payment.

1. Submit partial waivers on each item for amount requested, before deduction for retainage, on each item.
2. When an application shows completion of an item, submit final or full waivers.
3. Owner reserves the right to designate which entities involved in the Work must submit waivers.
4. Submit final Application for Payment with or preceded by final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.
5. Waiver Forms: Submit waivers of lien on forms, executed in a manner acceptable to Owner.

G. Initial Application for Payment: Administrative actions and submittals that must precede or coincide with submittal of first Application for Payment include the following:

1. List of subcontractors.
2. Schedule of Values.
3. Contractor's Construction Schedule (preliminary if not final).
4. Products list.
5. Schedule of unit prices.
7. List of Contractor's staff assignments.
8. List of Contractor's principal consultants.
11. Initial progress report.
13. Certificates of insurance and insurance policies.
15. Waste management plan.
16. Data needed to acquire Owner's insurance.
17. Initial settlement survey and damage report if required.

H. Periodic Applications for Payment: Administrative actions and submittals that must precede or coincide with submittal of periodic Applications for Payment during the course of the project include the following:

1. RFI log.
2. Schedule updates.
3. Meeting minutes since last application for payment.
I. Application for Payment at Substantial Completion: After issuing the Certificate of Full or Partial Substantial Completion (Form SE-550A), submit an Application for Payment showing 100 percent completion for portion of the Work claimed as substantially complete.

1. Include documentation supporting claim that the Work is substantially complete and a statement showing an accounting of changes to the Contract Sum.

J. Final Payment Application: After issuing the Certificate of Final Completion (Form SE-560C), submit final Application for Payment with releases and supporting documentation not previously submitted and accepted, including, but not limited, to the following:

1. Evidence of completion of Project closeout requirements.
2. Insurance certificates verifying that required contract insurance will remain in force after final payment and will not be canceled or expired until 30 days after written notice has been given by Agency. Provide certificate in form of AIA Document G715, “Supplemental Attachment for ACORD Certificate of Insurance”.
3. Updated final statement, accounting for final changes to the Contract Sum.
4. AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims."
6. AIA Document G707, "Consent of Surety to Final Payment."
7. Evidence that claims have been settled.
8. Final meter readings for utilities, a measured record of stored fuel, and similar data as of date of Substantial Completion or when Owner took possession of and assumed responsibility for corresponding elements of the Work.
9. Inspection reports.
10. Record documents.
11. Final, liquidated damages settlement statement.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 012900
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 Drawings.
2. Administrative and supervisory personnel.
3. Project meetings.
4. Requests for Interpretation (RFIs).
5. Project Web site.

1.3 COORDINATION

A. Coordination: Coordinate construction operations included in different Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components with 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. **Bleacher Structural Coordination:** Contractor to coordinate bleacher structural system and column locations with structural frame.

B. Prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.

1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of Contractor's Construction Schedule.
2. Preparation of the Schedule of Values.
3. Installation and removal of temporary facilities and controls.
4. Delivery and processing of submittals.
5. Progress meetings.
6. Preinstallation conferences.
7. Project closeout activities.
8. Startup and adjustment of systems.
9. Project closeout activities.

D. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.

1.4 SUBMITTALS

A. Coordination Drawings: Prepare Coordination Drawings to ensure maximum utilization of space for efficient installation of different components and to coordinate installation of products and materials fabricated by separate entities.

1. Content: Project-specific information, drawn accurately to scale. 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 Architect for resolution of such conflicts.
   d. Provide RCP indicating ceilings heights, lighting fixtures and bottom elevations of structural elements for all above-ceiling areas.
   e. Provide RCP indicating ceilings heights, lighting fixtures and bottom elevations of structural elements for all above-ceiling areas.
   f. Indicate coordination of small raceways to avoid interference with access to other above-ceiling items.

2. Above-Ceiling Drawings:
   a. Indicate all ductwork, double-lined, with all access door sizes and locations shown.
   b. Indicate all piping, regardless of size, for HVAC, plumbing and fire protection. Piping 4 inches and larger double-lined. Show all piping offsets.
   c. Indicate all cable trays.
   d. Indicate top elevation of light fixtures.
   e. Indicate all conduits 2 inches and larger.
   f. Indicate banks of six or more conduits run in a common path.
   g. Indicate equipment requiring service clearance (e.g., air terminal units control panels, air terminal access panels, fire dampers, fan coil units, disconnect switches, etc.) with hatched area on drawing showing clear service area.

3. Mechanical and Electrical Room Drawings:
   a. Indicate all equipment drawn to scale per approved submitted items of equipment.
   b. Indicate all ductwork, double-lined, with all access doors, sizes and locations shown.
   c. Indicate all piping, regardless of size, for HVAC, plumbing, and fire protection. Indicate piping 4" and larger with double lines. Show all piping offsets.
   d. Indicate coordinated light fixture layout to avoid large equipment, piping and ductwork and to provide effective lighting for room.
e. Indicate all conduits 2” and larger.
f. Indicate banks of six or more conduits run in a common path.
g. Indicate equipment requiring service clearance (e.g. air handling unit coils and filters, variable frequency drives, disconnect switches, etc.) with hatched area representing clear service area.
h. Identify paths for removing large equipment from the room.

4. Sheet Size: At least 8-1/2 by 11 inches but no larger than 30 by 40 inches.
5. Scale: Provide drawings at minimum ¼-inch scale.
6. Number of Copies: Submit two opaque copies of each submittal. Architect will return one copy.

a. Submit five copies where Coordination Drawings are required for operation and maintenance manuals. Architect will retain two copies; remainder will be returned. Mark up and retain one returned copy as a Project Record Drawing.

7. Refer to individual Sections for Coordination Drawing requirements for Work in those Sections.
8. Where conflicts arise during the coordination drawing process, they should be quickly identified and brought to the attention of the Architect through the RFI process or by requested attendance at coordination meetings.
9. Coordination drawings shall be approved prior to forming and pouring any housekeeping pads in mechanical and electrical rooms, to avoid unnecessary rework if changes are made to equipment locations as a result of the coordination process.
10. Coordination drawings shall be approved prior to any overhead rough-in.
11. General Contractor shall be responsible for enforcing field compliance with approved coordination drawings. If field conflicts occur, General Contractor shall be responsible for resolving the conflict and directing the affected subcontractor(s) to complete any rework required to resolve the conflict.

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, Architect and OSE Project Manager 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 Architect, within three days of the meeting.

B. Preconstruction Conference: Schedule a preconstruction conference before starting construction, at a time convenient to Owner 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.

1. Attendees: OSE Project Manager, authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent; major subcontractors; manufacturers; 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 identified in Table 7.3-1, “Pre-Construction Conference” of the OSE Manual.

3. **Minutes:** Record and distribute meeting minutes.

C. **Preinstallation Conferences:** Conduct a preinstallation conference at Project site before each construction activity that requires coordination with other construction.

1. **Attendees:** Installer and representatives of manufacturers and fabricators involved in or affected by the installation and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise Architect 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:
   b. Options.
   c. Related requests for interpretations (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.

D. **Progress Meetings:** Conduct progress meetings at biweekly intervals, unless otherwise indicated by the Architect and/or Owner. Coordinate dates of meetings with preparation of payment requests.

1. **Attendees:** In addition to representatives of Owner and Architect, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the 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. **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.

   b. **Review present and future needs of each entity present, including the following:**
   
   1) Interface requirements.
   2) Sequence of operations.
   3) Status of submittals.
   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) Requests for interpretations (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:** Record and distribute to attendees the meeting minutes.

4. **Reporting:** 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.

E. **Coordination Meetings:** Conduct Project coordination meetings at biweekly intervals, concurrent with regular progress meetings. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and preinstallation conferences.

   1. **Attendees:** Include each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work. Notify representatives of Owner and Architect 5 days prior to coordination meetings. Architect’s attendance is optional.

   2. **Agenda:** Review and correct or approve minutes of the previous coordination meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.

      a. **Combined Contractor's Construction Schedule:** Review progress since the last coordination meeting. Determine whether each contract is on time, ahead of schedule, or behind schedule, in relation to Combined 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.
b. Schedule Updating: Revise Combined Contractor's Construction Schedule after each coordination meeting where revisions to the schedule have been made or recognized. Issue revised schedule concurrently with report of each meeting.
c. Review present and future needs of each contractor present, including the following:

1) Interface requirements.
2) Sequence of operations.
3) Status of submittals.
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) Change Orders.

3. Reporting: Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

1.7 REQUESTS FOR INTERPRETATION (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.

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.
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. Hard-Copy RFIs: CSI Form 13.2A.
   1. Identify each page of attachments with the RFI number and sequential page number.

D. 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.

E. Architect's Action: Architect will review each RFI, determine action required, and return it. Allow seven working days for 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 Architect's actions on submittals.
      f. Incomplete RFIs or RFIs with numerous errors.
   2. Architect's action may include a request for additional information, in which case Architect's time for response will start again.
   3. 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 Division 01 Section "Contract Modification Procedures."
      a. If Contractor believes the RFI response warrants change in the Contract Time or the Contract Sum, notify Architect in writing within 10 days of receipt of the RFI response.

F. On receipt of Architect's action, update the RFI log and immediately distribute the RFI response to affected parties. Review response and notify Architect within seven days if Contractor disagrees with response.

G. RFI Log: Prepare, maintain, and submit a tabular log of RFIs organized by the RFI number. Submit log weekly. Use software log that is part of Project Web site.

1.8 PROJECT WEB SITE

A. Provide, administer, and use Project Web site for purposes of hosting and managing project communication and documentation until Final Completion. Project Web site shall include the following functions:
   1. Project directory.
   2. Project correspondence.
   3. Meeting minutes.
   5. RFI forms and logs.
   6. Task and issue management.
   7. Photo documentation.
   8. Schedule and calendar management.
  10. Payment application forms.
11. Drawing and specification document hosting, viewing, and updating.
13. Reminder and tracking functions.

B. Provide up to seven Project Web site user licenses for use of the Owner, Architect, and Architect's consultants. Provide software training at Architect's office for Project Web site users.

C. On completion of Project, provide one complete archive copy of Project Web site files to Owner and to Architect in a digital storage format acceptable to Architect.

D. Provide one of the following Project Web site software packages under their current published licensing agreements, as approved by Owner and Architect:

1. OpCenter.
   a. OpCenter, Duncan Parnell https://www.duncan-parnell.com/, 843-300-7415, Dean Hovis, dean.hovis@duncan-parnell.com

2. Submittal Exchange.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

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SECTION 013200 - 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 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 Construction Schedule.
2. Submittals Schedule.
3. Daily construction reports.
4. Material location reports.
5. Field condition reports.
6. Special reports.
7. Scheduling consultant qualifications.

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 Architect.

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 belongs to Owner.
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.

1.4 SUBMITTALS

A. Qualification Data: For scheduling consultant.

B. Submittals Schedule: Submit three 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 Architect's final release or approval.

C. Contractor's Construction Schedule: Submit two opaque copies of initial schedule, large enough to show entire schedule for entire construction period.

1. Submit an electronic copy of schedule, using software indicated, on CD-R, and labeled to comply with requirements for submittals. Include type of schedule (Initial or Updated) and date on label.

D. 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.

E. Daily Construction Reports: Submit two copies at monthly intervals.
F. Material Location Reports: Submit two copies at monthly intervals.

G. Field Condition Reports: Submit two copies at time of discovery of differing conditions.

H. Special Reports: Submit two copies at time of unusual event.

I. Revised Schedules: Submit two copies each month that schedule is affected.

1.5 QUALITY ASSURANCE

A. Prescheduling Conference: Conduct conference at Project site to comply with requirements in Division 01 Section "Project Management and Coordination." Review methods and procedures related to the Preliminary Construction Schedule and Contractor's Construction Schedule, including, but not limited to, the following:

1. Review software limitations and content and format for reports.
2. Verify availability of qualified personnel needed to develop and update schedule.
3. Discuss constraints, including interim milestones and partial Owner occupancy.
4. Review delivery dates for Owner-furnished products.
5. Review schedule for work of Owner's separate contracts.
6. Review time required for review of submittals and resubmittals.
7. Review requirements for tests and inspections by independent testing and inspecting agencies.
8. Review time required for completion and startup procedures.
9. Review and finalize list of construction activities to be included in schedule.
10. Review submittal requirements and procedures.
11. Review procedures for updating schedule.
12. Review schedule relative to sequencing and temporary facilities required in other sections.
13. Review schedule relative to Owner’s published academic and event schedule.

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

2.2 CONTRACTOR'S CONSTRUCTION SCHEDULE, GENERAL

A. Procedures: Comply with procedures contained in AGC's "Construction Planning & Scheduling."

B. Time Frame: Extend schedule from date established for the Notice to Proceed to date of Substantial 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.

C. 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 20 days, unless specifically allowed by Architect.

2. Procurement Activities: Include procurement process activities for the following long lead items and major items, requiring a cycle of more than 60 days, as separate activities in schedule. Procurement cycle activities include, but are not limited to, submittals, approvals, purchasing, fabrication, and delivery.


4. Startup and Testing Time: Include time for startup and testing.

5. Substantial Completion: Indicate completion in advance of date established for Substantial Completion, and allow time for Architect's administrative procedures necessary for certification of Substantial Completion.

D. Constraints: Include constraints and work restrictions indicated in the Contract Documents and as follows in schedule, and show how the sequence of the Work is affected.

1. Phasing: Arrange list of activities on schedule by phase.

2. Work under More Than One Contract: Include a separate activity for each contract.

3. Work by Owner: Include a separate activity for each portion of the Work performed by Owner.

4. Products Ordered in Advance: 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.

5. 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.

6. 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, including Owner’s published football and event schedule.
   g. Seasonal variations.
   h. Environmental control.
7. 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. Curing.
   l. Startup and placement into final use and operation.

8. Area Separations: Identify each major area of construction for each major portion of the Work. Indicate where each construction activity within a major area must be sequenced or integrated with other construction activities to provide for the following:
   a. Structural completion.
   b. Permanent space enclosure.
   c. Completion of mechanical installation.
   d. Completion of electrical installation.
   e. Substantial Completion.

E. Milestones: Include milestones indicated in the Contract Documents in schedule, including, but not limited to, the Notice to Proceed, Substantial Completion, and Final Completion.

F. Cost Correlation: At the head of schedule, provide a cost correlation line, indicating planned and actual costs. On the line, show dollar volume of the Work performed as of dates used for preparation of payment requests.

   1. Refer to Division 01 Section "Payment Procedures" for cost reporting and payment procedures.
   2. Contractor shall assign cost to construction activities on the CPM schedule. Costs shall not be assigned to submittal activities unless specified otherwise but may, with Architect's approval, be assigned to fabrication and delivery activities. Costs shall be under required principal subcontracts for testing and commissioning activities, operation and maintenance manuals, punch list activities, Project Record Documents, and demonstration and training (if applicable), in the amount of 5 percent of the Contract Sum.
   3. Each activity cost shall reflect an accurate value subject to approval by Architect.
   4. Total cost assigned to activities shall equal the total Contract Sum.

G. 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.

H. Computer Software: Prepare schedules using an Owner-approved program that has been developed specifically to manage construction schedules.

2.3 CONTRACTOR'S CONSTRUCTION SCHEDULE (CPM SCHEDULE)

A. General: Prepare network diagrams using AON (activity-on-node) format.
B. Preliminary Network Diagram: Submit diagram within 14 days of date established for the Notice to Proceed. Outline significant construction activities for the first 60 days of construction. Include skeleton diagram for the remainder of the Work and a cash requirement prediction based on indicated activities.

C. CPM Schedule: Prepare Contractor's Construction Schedule using a computerized, time-scaled CPM network analysis diagram for the Work.

1. Develop network diagram in sufficient time to submit CPM schedule so it can be accepted for use no later than 30 days after date established for the Notice to Proceed.
   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 Architect's 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.

D. 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.

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. Subnetworks on separate sheets are permissible for activities clearly off the critical path.

E. Initial Issue of Schedule: Prepare initial network diagram from a list of straight "early start-total float" sort. Identify critical activities. Prepare tabulated reports showing the following:

1. Contractor or subcontractor and the Work or activity.
2. Description of activity.
3. Principal events of activity.
4. Immediate preceding and succeeding activities.
5. Early and late start dates.
6. Early and late finish dates.
7. Activity duration in workdays.
8. Total float or slack time.
10. Dollar value of activity (coordinated with the Schedule of Values).

F. 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.
5. Changes in the critical path.
6. Changes in total float or slack time.

G. 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.
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 monthly 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 on CSI Form 13.2A. 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 Owner 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, 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. 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 concurrently with the report of each such meeting.
2. Include a report with updated schedule that indicates every change, including, but not limited to, changes in logic, durations, actual starts and finishes, and activity durations.
3. As the Work progresses, indicate Actual Completion percentage for each activity.

B. Distribution: Distribute copies of approved schedule to Architect, Owner, separate contractors, testing and inspecting agencies, and other parties identified by Contractor with a need-to-know schedule responsibility. OSE Project Manager is to receive a copy of the CPM and updates to the CPM.

1. Post copies in Project meeting rooms and temporary field offices.
2. When revisions are made, distribute updated schedules to the same parties and post in the same locations. Delete parties from distribution when they have completed their assigned portion of the Work and are no longer involved in performance of construction activities.

END OF SECTION 013200
SECTION 013233 - 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. Section includes administrative and procedural requirements for the following:
      1. Periodic construction photographs.
   B. Related Requirements:
      1. Section 013300 "Submittal Procedures" for submitting photographic documentation.
      2. Section 017700 "Closeout Procedures" for submitting photographic documentation as project record documents at Project closeout.

1.3 INFORMATIONAL SUBMITTALS
   A. Key Plan: Submit key plan in PDF format of Project site and building with notation of vantage points marked for location and direction of each photograph. Indicate elevation or story of construction. Include same information as corresponding photographic documentation.
   B. Digital Photographs: Submit image files no later than noon the day before each Progress Meeting.
      1. Identification: Provide the following information with each image description in file metadata tag:
         a. Name of Project.
         b. Name and contact information for photographer.
         c. Name of Architect.
         d. Name of Contractor.
         e. Date photograph was taken.
         f. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
         g. Unique sequential identifier keyed to accompanying key plan.

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA
   A. Digital Images: Provide images in JPG format, produced by a digital camera with minimum sensor size of 8 megapixels, and at an image resolution of not less than 1600 by 1200 pixels and 400 dpi.
PART 3 - EXECUTION

3.1 PRECONSTRUCTION PHOTOGRAPHS

A. General: Before starting construction, take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points. Care shall be taken to document any existing conditions which exhibit signs of distress and damage for purposes of later validating if or if not items of damage or distress were caused by or exacerbated by construction activity.

1. Take interior and exterior pictures of all existing buildings within or adjoining the limits of construction to accurately record physical condition at the start of construction.
2. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.

3.2 CONSTRUCTION PHOTOGRAPHS

A. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.

1. Maintain key plan with each set of construction photographs that identifies each photographic location.

B. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.

1. Date and Time: Include date and time in file name for each image.
2. Field Office Images: Maintain one set of digital images accessible in the field office at Project site, available at all times for reference. Identify images in the same manner as those submitted to Architect.

C. Periodic Construction Photographs: At a minimum weekly, take as many photographs as necessary to show general progress of Work and specific items to be discussed in Progress Meetings, with the cutoff date associated with each Progress Meeting and Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.

D. Utility Photographs: All underground utilities (particularly under the floor slab) must be photographed prior to backfill.

E. Architect-Directed Construction Photographs: From time to time, Architect will instruct photographer about number and frequency of photographs and general directions on vantage points. Select actual vantage points and take photographs to show the status of construction and progress since last photographs were taken.

F. Additional Photographs: Architect and Owner may issue requests for additional photographs, in addition to periodic photographs specified.

1. Three days' notice will be given, where feasible.
2. In emergency situations, take additional photographs within 24 hours of request.
3. Circumstances that could require additional photographs include, but are not limited to, the following:
a. Immediate follow-up when on-site events result in construction damage or losses.
b. Substantial Completion of a major phase or component of the Work.
c. Extra record photographs at time of final acceptance.
d. Owner's request for special publicity photographs.

END OF SECTION 013233
SECTION 013300 - SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

1.3 CAD DRAWINGS

A. General: Electronic copies of CAD Drawings of the Contract Drawings may be provided by the Architect for Contractor’s use in preparing submittals for a nominal fee with the following terms.

1. CADD files provided by Stubbs Muldrow Herin architects, inc. and/or architect’s consultants may be used by the subcontractor only for pictorial use in the production of shop drawings for that project. Any title blocks, dimensions, text, or other information pertaining to the contract drawings will not appear on shop drawings except by special permission by the architect or engineer.

2. The CADD files and information contained therein will not be transmitted, transferred and otherwise disseminated to any other third party for any purpose.

3. Provision of CADD files by the Architect does not relieve the Contractor of obligations of the Contract Documents, including AIA A201, General Conditions of the Contract.

4. The Architect shall be reimbursed for administrative and handling costs at the rate of $45 per drawing file mailed or electronically transferred.

5. By using the architect’s electronic file you acknowledge and agree as follows: Stubbs Muldrow Herin architects, inc. (SMHa) or its consultants assumes no liability for your use of electronic files provided by SMHa. SMHa shall not be responsible for any error or malfunction in the translation, interpretation or use of this electronic information. SMHa does not assume any responsibility arising out of our provision of electronic information or the sufficiency of any drawings prepared based upon this information. In addition, by using this file you agree, to the fullest extent permitted by law, to indemnify and hold SMHa harmless from any damage, liability, or cost, including reasonable attorney’s fees and costs of defense, arising from any use or reuse of electronic files provided by SMHa by you, or any person or entity which acquires or obtains the electronic files from or through you. SMHa makes no warranties, either expressed or implied, of merchantability or fitness for any purpose of the electronic files. In no event shall SMHa be liable for any loss of profit or any damages. SMHa hereby reserves its common law copyright to these documents, any associated specifications, design concepts, details and ideas. These documents, specifications design concepts, details and ideas shall not be reproduced, revised or copied in whole or in part, nor shall they be distributed to any other parties without written permission from SMHa. These files are the sole property of SMHa and are intended for archive and record purposes only and shall not be copied in whole or in part without written permission from SMHa.

1.4 SUBMITTAL PROCEDURES

A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.
1. Post electronic submittals as PDF electronic files by email or directly to Project Web site specifically established for Project.

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.
   3. ALL SUBMITTALS PERTAINING TO INTERIOR FINISH SELECTIONS MUST BE MADE AS A SINGLE PACKAGE, including, but not limited to, the following. No partial submittals will be accepted for interior finishes:
      a. Paint colors.
      b. Doors and frames.
      c. Hardware.
      d. Toilet partitions.
      e. Toilet accessories.

   4. STRUCTURAL SUBMITTALS: ALL SUBMITTALS PERTAINING TO STRUCTURAL COMPONENTS MUST BE MADE AS A SINGLE PACKAGE, including, but not limited to, the following. No partial submittals will be accepted for structural components:
      a. Cast-in-Place concrete.
      b. Structural steel.
      c. Steel joists.
      d. Steel decking.
      e. Cold-formed metal framing.
      f. Metal stairs and railings.
      g. Grandstand/bleacher.

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 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 resubmittals.
   1. Initial Review: Allow 15 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. 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. Resubmittal Review: Allow 15 days for review of each resubmittal.

E. Electronic Submittals: Identify and incorporate information in each electronic submittal file as follows:
   1. Assemble complete submittal package into a single indexed file incorporating submittal requirements of a single Specification Section and transmittal form with links enabling navigation to each item.
   2. Name file with submittal number or other unique identifier, including revision identifier.
a. File name shall use project identifier and Specification Section number followed by a
decimal point and then a sequential number (e.g., CCUS-061000.01). Resubmittals shall
include an alphabetic suffix after another decimal point (e.g., CCUS-061000.01.A).

3. Provide means for insertion to permanently record Contractor's review and approval markings and
action taken by Architect.

4. Transmittal Form for Electronic Submittals: Use electronic form acceptable to Owner, containing
the following information:

   a. Project name.
   b. Date.
   c. Name and address of Architect.
   d. Name of Contractor.
   e. Name of firm or entity that prepared submittal.
   f. Names of subcontractor, manufacturer, and supplier.
   g. Category and type of submittal.
   h. Submittal purpose and description.
   i. Specification Section number and title.
   j. Specification paragraph number or drawing designation and generic name for each of
      multiple items.
   k. Drawing number and detail references, as appropriate.
   l. Location(s) where product is to be installed, as appropriate.
   m. Related physical samples submitted directly.
   n. Indication of full or partial submittal.
   o. Transmittal number, numbered consecutively.
   p. Submittal and transmittal distribution record.
   q. Other necessary identification.
   r. Remarks.

5. Metadata: Include the following information as keywords in the electronic submittal file metadata:

   a. Project name.
   b. Number and title of appropriate Specification Section.
   c. Manufacturer name.
   d. Product name.

F. Options: Identify options requiring selection by Architect.

G. Deviations and Additional Information: On an attached separate sheet, prepared on Contractor's
letterhead, record relevant information, requests for data, revisions other than those requested by
Architect on previous submittals, and deviations from requirements in the Contract Documents, including
minor variations and limitations. Include same identification information as related submittal.

H. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.

   1. Note date and content of previous submittal.
   2. Note date and content of revision in label or title block and clearly indicate extent of revision.
   3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.

I. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators,
installers, authorities having jurisdiction, and others as necessary for performance of construction
activities. Show distribution on transmittal forms.

J. Use for Construction: Retain complete copies of submittals on Project site. Use only final action
submittals that are marked with approval notation from Architect's action stamp.
PART 2 - PRODUCTS

2.1 ACTION SUBMITTALS

A. General: Prepare and submit Action Submittals required by individual Specification Sections.

B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.

1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
2. Mark each copy of each submittal to show which products and options are applicable.
3. Include the following information, as applicable:
   a. Manufacturer's written recommendations.
   b. Manufacturer's product specifications.
   c. Manufacturer's installation instructions.
   d. 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.
   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. Submit product data in the following format:
   a. PDF electronic file.

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.

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: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches but no larger than 30 by 40 inches.
3. Submit Shop Drawings in the following format:
   a. PDF electronic file.

D. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
2. Identification: Attach label on unexposed side of Samples that includes the following:
   a. Generic description of Sample.
   b. Product name and name of manufacturer.
   c. Sample source.
   d. Number and title of appropriate Specification Section.

3. Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
4. Samples for 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 two sets of Samples. Architect will retain one Sample set; remainder will be returned.

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. Submit product schedule in the following format:
   a. PDF electronic file.

F. Submittals Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation."

G. Application for Payment: Comply with requirements specified in Division 01 Section "Payment Procedures."

H. Schedule of Values: Comply with requirements specified in Division 01 Section "Payment Procedures."

2.2 INFORMATIONAL SUBMITTALS

A. General: Prepare and submit Informational Submittals required by other Specification Sections.
1. Number of Copies: Submit two copies of each submittal, unless otherwise indicated. Architect will not return copies.
2. 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.
3. Test and Inspection Reports: Comply with requirements specified in Division 1 Section "Quality Requirements."

B. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation."

C. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.

D. Certificates: Prepare written statements on manufacturer's letterhead certifying that item complies with requirements in the Contract Documents. Include evidence of experience where required.

E. 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.

F. 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.

G. 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."

H. 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.

I. 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.
J. 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.

2.3 PROFESSIONAL DESIGN SERVICES AND CERTIFICATIONS BY CONTRACTOR

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 Architect.

B. Submittals: In addition to Shop Drawings, Product Data, and other required submittals, submit three 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 Architect.

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 ARCHITECT'S ACTION

A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.

B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:

1. Approved: Where submittals are marked "Approved," that part of Work covered by submittal may proceed provided it complies with requirements of Contract Documents; final acceptance will depend upon that compliance.
2. Approved as Noted: When submittals are marked "Approved as Noted," that part of Work covered by submittal may proceed provided it complies with notations or corrections on submittal and requirements of Contract Documents; final acceptance will depend on that compliance.
3. Revise and Resubmit: When submittal is marked "Revise and Resubmit," do not proceed with that part of Work covered by submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare new submittal in accordance with notations; resubmit without delay. Repeat if necessary to obtain different action mark.
4. Other Action: Where submittal is primarily for information or record purposes, special processing or other activity, submittal will be returned, marked "Not Reviewed".
C. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. 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.

END OF SECTION 013300

Attachment: Submittal Form
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 quality assurance and quality control.

B. Testing and inspecting services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with the Contract Document requirements.

1. Specific quality-assurance and control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.

2. Specified tests, inspections, and related actions do not limit Contractor's other quality-assurance and control procedures that facilitate compliance with the Contract Document requirements.

3. Requirements for Contractor to provide quality-assurance and control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

1.3 DEFINITIONS

A. Quality-Assurance Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and substantiate that proposed construction will comply with requirements.

B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that actual products incorporated into the Work and completed construction comply with requirements. Services do not include contract enforcement activities performed by Architect.

C. Mockups: Full-size, physical assemblies that are constructed on-site. Mockups are used to verify selections made under sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples. Approved mockups establish the standard by which the Work will be judged.

D. Preconstruction Testing: Tests and inspections that are performed specifically for the Project before products and materials are incorporated into the Work to verify performance or compliance with specified criteria.

E. Product Testing: Tests and inspections that are performed by an NRTL, an NVLAP, or a testing agency qualified to conduct product testing and acceptable to authorities having jurisdiction, to establish product performance and compliance with industry standards.

F. Field Quality-Control Testing: Tests and inspections that are performed on-site for installation of the Work and for completed Work.
G. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

H. Installer/Applicator/Erector: Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.

I. Experienced: When used with an entity, "experienced" means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of authorities having jurisdiction.

J. Typical Inspections: Typical Inspections include, as applicable, those described in the following documents:

2. Section 107 of the International Mechanical Code.

K. Special Inspections: Special Inspections of materials, installation, fabrication, erection or placement of components and connections, shall be performed as indicated in Section 1704 of the IBC, unless approved otherwise by OSE. Special Inspections require special expertise to ensure compliance with approved construction documents and referenced standards.

1.4 CONFLICTING REQUIREMENTS

A. General: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.

B. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

1.5 SUBMITTALS

A. Reports: Prepare and submit certified written reports on Form SE-970 “Inspection / Material Testing Report” that include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Complete test or inspection data.
8. Test and inspection results and an interpretation of test results.
9. Record of site and weather conditions at time of sample taking and testing and inspecting.
10. Comments or professional opinion on whether tested or inspected Work complies with the Contract Document requirements.
11. Name and signature of laboratory inspector.
12. Recommendations on retesting and reinspecting.

B. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.6 PROFESSIONAL DESIGN SERVICES AND CERTIFICATIONS BY CONTRACTOR

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 Architect.

B. Professional Design Submittals by Contractor: Professional design submittals by Contractor for this project include, but are not limited to, the following:

1. Section 047200 – Cast Stone.
2. Section 054100 – Engineered Cold-formed Metal Framing.
3. Section 051200 – Structural Steel Framing.
4. Section 052100 – Steel Joist Framing.
5. Section 055000 – Metal Fabrications: Signage trusses and support towers at NE Plaza.
6. Section 055100 – Metal Stairs.
7. Section 055213 – Pipe and Tube Railings.
8. Section 133416 – Grandstands and Bleachers.

1.7 REGULATORY REQUIREMENTS

A. Copies of Regulations: Obtain copies of the applicable regulations and retain at Project site to be available for reference by parties who have a reasonable need.

1.8 QUALITY ASSURANCE

A. General: Qualifications paragraphs in this Article establish the minimum qualification levels required; individual Specification Sections specify additional requirements.

B. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

C. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

D. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.
E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.

F. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

G. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:

1. Build mockups in location and of size as directed by Architect. Provide mockup as indicated on Drawings.
2. Notify Architect seven days in advance of dates and times when mockups will be constructed.
3. Demonstrate the proposed range of aesthetic effects and workmanship.
4. Obtain Architect's approval of mockups before starting work, fabrication, or construction.
5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.
6. Demolish and remove mockups when directed, unless otherwise indicated.

1.9 QUALITY CONTROL

A. Owner Responsibilities: For Special Inspections and other tests or inspections, Owner will engage a qualified testing agency to perform these services.

1. Owner will furnish Contractor with names, addresses, and telephone numbers of testing agencies engaged and a description of the types of testing and inspecting they are engaged to perform.
2. Costs for retesting and reinspecting construction that replaces or is necessitated by work that failed to comply with the Contract Documents will be charged to Contractor, and the Contract Sum will be adjusted by Change Order.

B. Special Tests and Inspections: Owner will engage a testing agency to conduct special tests and inspections required by authorities having jurisdiction as the responsibility of Owner.

1. Testing agency will notify Architect and Contractor promptly of irregularities and deficiencies observed in the Work during performance of its services.
2. Testing agency will submit a certified written report of each test, inspection, and similar quality-control service to Architect with copy to Contractor and to authorities having jurisdiction.
3. Testing agency will submit a final report of special tests and inspections at Substantial Completion, which includes a list of unresolved deficiencies.
4. Testing agency will interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Contract Documents.
5. Testing agency will retest and reinspect corrected work.

C. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing as specified in Division 01 Section "Submittal Procedures."

D. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

1. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. Determine the location from which test samples will be taken and in which in-situ tests are conducted.
3. Conduct and interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
4. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
5. Do not release, revoke, alter, or increase the Contract Document requirements or approve or accept any portion of the Work.
6. Do not perform any duties of Contractor.

F. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:

1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Delivery of samples to testing agencies.
6. Preliminary design mix proposed for use for material mixes that require control by testing agency.
7. Security and protection for samples and for testing and inspecting equipment at Project site.

G. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 TEST AND INSPECTION LOG

A. Prepare a record of tests and inspections. Include the following:

1. Date test or inspection was conducted.
2. Description of the Work tested or inspected.
3. Date test or inspection results were transmitted to Architect.
4. Identification of testing agency or special inspector conducting test or inspection.

B. Maintain log at Project site. Post changes and modifications as they occur. Provide access to test and inspection log for Architect's reference during normal working hours.
3.2 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Specification Sections. Restore patched areas and extend restoration into adjoining areas with durable seams that are as invisible as possible.

2. Comply with the Contract Document requirements for Division 01 Section "Execution."

B. Protect construction exposed by or for quality-control service activities.

C. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 014000

Attachments:

“Schedule of Special Inspections”
Each contractor responsible for the construction of a main wind force or seismic force resisting system, designated, seismic system or a wind or seismic resisting component listed in the statement of special inspections shall submit a Statement of Responsibility. The statement shall be submitted prior to the commencement of work on the system or component.

Project:

Contractor’s Name:

Address:

License No.:

Description of designated building systems and components included in the Statement of Responsibility:

---

**Contractor’s Acknowledgment of Special Requirements**

I hereby acknowledge that I have received, read, and understand the special requirements contained in the statement of special inspections.

I hereby acknowledge that control will be exercised to obtain conformance with the construction documents approved by the Building Official.

________________________________          _______________
Signature                                                           Date

---

**Contractor’s Provisions for Quality Control**

List (or attach) procedures for exercising control within the contractor’s organization, the method and frequency of reporting and the distribution of reports.

List (or attach) Identification and qualifications of the person(s) exercising such control and their position(s) in the organization.
Fabricator’s Certificate of Compliance

Each approved fabricator that is exempt from Special Inspection of shop fabrication and implementation procedures per section 1704.2 of the International Building Code must submit a Fabricator’s Certificate of Compliance at the completion of fabrication.

Project:
Fabricator’s Name:
Address:
Certification or Approval Agency:
Certification Number:
Date of Last Audit or Approval:

Description of structural members and assemblies that have been fabricated:

I hereby certify that items described above were fabricated in strict accordance with the approved construction documents.

________________________________          _______________
Signature                                                           Date

________________________________
Title

Attach copies of fabricator’s certification or building code evaluation service report.
This statement of Special Inspections attached is submitted as a condition for permit issuance in accordance with Section 1704 of the 2015 International Building Code. It includes a Schedule of Special Inspection Services applicable to the above referenced project as well as the identity of the individuals, agencies, or firms intended to be retained for conducting these inspections. The Special Inspector(s) shall keep records of all inspections and shall furnish interim inspection reports to the registered design professional in responsible charge at a frequency agreed upon by the permit applicant and building official prior to the start of work. Discrepancies shall be brought to the immediate attention of the contractor and design professional in responsible charge for correction. If the discrepancies are not corrected, the discrepancies shall be brought to the attention of the building official by the registered design professional in responsible charge prior to the completion of that phase of work. A Final Report of Special Inspections shall be submitted by the design professional in responsible charge to the building official at the conclusion of the project and before a certificate of occupancy will be issued.

Statement of Special Inspections encompass the following disciplines:

- [ ] Structural
- [ ] Mechanical/Electrical/Plumbing
- [ ] Architectural
- [ ] Other:

Prepared by:

James B. Jones Jr, PE

Type or Print Name

Signature

9/20/17

Date

Preparer's Seal and Signature Required

To be filled out by the jurisdiction and returned to applicant

Building Official's Acceptance of Special Inspections

Frequency of Interim reports:  Monthly  Bi-Monthly  Upon Completion  Per Attached Schedule

Signature  Date  TMS  Permit Number
SCHEDULE OF SPECIAL INSPECTION SERVICES
Schedule of Inspection and Testing Agencies

This Statement of Special Inspections / Quality Assurance Plan includes the following building systems:

- Soils and Foundations
- Cast-in-Place Concrete
- Precast Concrete
- Masonry
- Structural Steel
- Cold-Formed Steel Framing
- Wood Construction
- Architectural Components
- Mechanical & Electrical Systems
- Storage Racks
- Spray Fire Resistant Material
- Special Cases

<table>
<thead>
<tr>
<th>Special Inspection Agencies</th>
<th>Firm</th>
<th>Address, Telephone, e-mail</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Special Inspection Coordinator</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Inspector</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Inspector</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Testing Agency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5. Testing Agency</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6. Other</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: The inspectors and testing agencies shall be engaged by the Owner or the Owner's Agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official, prior to commencing work.
SCHEDULE OF SPECIAL INSPECTION SERVICES

Qualifications of Inspectors and Testing Technicians

The qualifications of all personnel performing Special Inspection and testing activities are subject to the approval of the Building Official and shall be in accordance with the building code or any particular requirements of the specifications or material specific referenced standards. The credentials of all Inspectors and testing technicians shall be provided if requested.

Special Inspection Definitions

Continuous Special Inspection - Special inspection by the special inspector who is present when and where the work to be inspected is being performed.

Periodic Special Inspection - Special inspection by the special inspector who is intermittently present where the work to be inspected has been or is being performed. Unless noted otherwise 100% of the work designated for inspection shall be inspected.
<table>
<thead>
<tr>
<th>1704.2.5 Inspection of Fabricators</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Structural Steel Fabrication:</strong> Verify Fabrication/Quality Control Procedures</td>
</tr>
</tbody>
</table>
# SCHEDULE OF SPECIAL INSPECTION SERVICES

## 1705.1.1 Special Cases

<table>
<thead>
<tr>
<th>Post Installed Anchors</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Installer Qualifications</strong></td>
<td><strong>Review</strong> installer training records to confirm they have received manufacturer training per the contract documents</td>
</tr>
<tr>
<td><strong>Anchor Installation</strong></td>
<td><strong>Continuously</strong> inspect complete process of anchor installation in accordance with requirements of approved ICC ESR report. As minimum review installation procedures including drill bit type, drilling methods, hole preparation and cleaning, spacing, edge distance, embedment depth, adhesive installation, rod installation, curing time, and anchor torque to ensure compliance with manufacturer’s instructions and construction documents. <em>(All anchor holes must be inspected during drilling, all anchor holes must be inspected prior to anchor installation, all anchors shall be inspected at final application of required torque)</em></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Bleacher Components (Other than Structural Steel)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inspection of Load Bearing Components for compliance with approved Shop Drawings</strong></td>
<td><strong>Periodically</strong> inspect components for compliance with approved shop drawings, including member type and size, bracing and stiffening, member configuration, member location and application of joint details at each location. <em>(100% inspection rate a minimum of once weekly during applicable portion of the work)</em></td>
</tr>
<tr>
<td></td>
<td><strong>Periodically</strong> inspect fastening of components for compliance with approved shop drawings <em>(100% inspection rate a minimum of once weekly during applicable portion of the work)</em></td>
</tr>
<tr>
<td>Review fabricator’s source quality assurance inspection and testing report submittals</td>
<td>Periodically review fabricator’s source quality assurance inspection and test reports to ensure all inspection and testing is being completed as required and appropriate standards are being met. (100% rate for all source quality control report submittals.)</td>
</tr>
<tr>
<td>Periodically conduct inspections prior to field welding in accordance with AISC 360 Table N5.4-1</td>
<td>Periodically confirm that welding procedure specifications (WPS) are available and on site for type and configuration of weld being completed. (100% rate for each type and configuration of weld immediately prior to the weld being completed)</td>
</tr>
<tr>
<td></td>
<td>Periodically confirm that welding procedure specifications (WPS) are available and on site for type and configuration of weld being completed. (100% rate for each type and configuration of weld immediately prior to the weld being completed)</td>
</tr>
<tr>
<td></td>
<td>Periodically confirm manufacturers certifications are available and on site for all welding consumables. (100% rate for each type of consumable immediately prior to initial use of each consumable)</td>
</tr>
<tr>
<td></td>
<td>Periodically inspect material identification (type/grade)</td>
</tr>
<tr>
<td></td>
<td>Periodically confirm that a welder identification system is in place for field welding and that the system is being used (confirm system is in place prior to welding and 100% confirmation of system usage during welding inspection)</td>
</tr>
<tr>
<td></td>
<td>Periodically inspect fit-up of groove welds including joint preparation, dimensions, cleanliness, tacking, backing type and backing fit (100% inspection rate of all groove weld joints immediately prior to completing weld)</td>
</tr>
<tr>
<td></td>
<td>Periodically inspect configuration and finish of weld access holes (100% inspection rate of all weld access holes immediately prior to completing associated weld)</td>
</tr>
<tr>
<td></td>
<td>Periodically inspect fit-up of fillet welds including dimensions, cleanliness, and tacking (Random inspection rate for general conformance with a minimum rate of once weekly during steel erection)</td>
</tr>
</tbody>
</table>
**1705.2.1 Structural Steel (Continued)**

| Periodically confirm that welders are qualified for welds which they are completing and they possess a valid welding certificate for that weld type and configuration.  
(Random inspection rate for general conformance with a minimum rate of once weekly during welding operations) |
|---|
| Periodically inspect control and handling of welding consumables including packaging and exposure control.  
(Random inspection rate for general conformance with a minimum rate of once weekly during welding operations) |
| Periodically confirm that no welding is occurring over cracked tack welds.  
(Random inspection rate for general conformance with a minimum rate of once weekly during welding operations) |
| Periodically confirm that environmental conditions are acceptable including wind speed limits, precipitation and temperature.  
(Random inspection rate for general conformance with a minimum rate of once weekly during welding operations) |
| Periodically/Continuously confirm that weld procedure specifications (WPS's) are being followed including settings of welding equipment, travel speed, selected welding materials, shielding gas type and flow rate, preheat applied, interpass temperature maintained, and proper position.  
(Continuously inspect for groove welds, multi-pass welds, or welds greater than 5/16". Periodically inspect all other welds a minimum rate of once weekly during welding operations) |
| Periodically/Continuously confirm welding techniques including interpass and final cleaning, each pass with profile limitations, each pass meets quality requirements.  
(Continuously inspect for groove welds, multi-pass welds, or welds greater than 5/16". Periodically inspect all other welds a minimum rate of once weekly during welding operations) |

Conduct inspections during field welding in accordance with AISC 360-10 Table N5.4-2
## SCHEDULE OF SPECIAL INSPECTION SERVICES

### 1705.2.1 Structural Steel (Continued)

<table>
<thead>
<tr>
<th>Task</th>
<th>Inspection Requirements</th>
</tr>
</thead>
</table>
| Conduct inspections after field welding in accordance with AISC 360-10 Table N5.4-3       | **Periodically** confirm that welds have been cleaned.  
(100% inspection rate with a minimum rate of once weekly during welding operations) |
| **Periodically** confirm weld size, length and location.  
(100% inspection rate with a minimum rate of once weekly during welding operations)     |                                                                                       |
| **Periodically** confirm weld meets visual acceptance criteria including crack prohibition, weld/base-metal fusion, crater cross section, weld profiles, weld size, undercut, and porosity.  
(100% inspection rate with a minimum rate of once weekly during welding operations)     |                                                                                       |
| **Periodically** inspect arc strikes.  
(100% inspection rate with a minimum rate of once weekly during welding operations)      |                                                                                       |
| **Periodically** inspect k-area for cracks within 3” of welds when welding has been performed in k-area.  
(100% inspection rate with a minimum rate of once weekly during welding operations)   |                                                                                       |
| **Periodically** confirm backing and weld tabs have been removed where required.  
(100% inspection rate with a minimum rate of once weekly during welding operations)   |                                                                                       |
| (Continued) Conduct inspections after field welding in accordance with AISC 360-10 Table N5.4-3 | **Periodically** inspect repair activities.  
(100% inspection rate with a minimum rate of once weekly during welding operations) |
| **Periodically** document acceptance or rejection of welded joint or member.  
(100% inspection rate with a minimum rate of once weekly during welding operations) |                                                                                       |
| Nondestructive testing of field welded joints                                            | **Periodically** ultrasonically test all complete joint penetration welds (CJP) in accordance with AWS D1.1  
(100% inspection rate)                                                                 |
### SCHEDULE OF SPECIAL INSPECTION SERVICES

#### 1705.2.1 Structural Steel (Continued)

- **Conduct Inspections prior to high strength bolting in accordance with AISC 360-10 Table N5.6-1**

<table>
<thead>
<tr>
<th>Inspection Activity</th>
<th>Rate/Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Periodically confirm manufacturers certifications are available each type of fastener material.</td>
<td>(100% rate for each type of fastener material immediately prior to initial use of each type of material)</td>
</tr>
<tr>
<td>Periodically confirm fasteners are marked in accordance with ASTM Standard.</td>
<td>(Random inspection rate for general conformance with a minimum rate of once weekly during bolting operations)</td>
</tr>
<tr>
<td>Periodically confirm proper fasteners are selected for the joint detail including grade, type, and bolt length (if threads are to be excluded from shear plane).</td>
<td>(100% inspection rate)</td>
</tr>
<tr>
<td>Periodically/Continuously confirm proper bolting procedure selected for joint detail.</td>
<td>(100% inspection rate, continuous inspection for slip critical joints, periodic inspection for all other joints with random inspection with a minimum rate of once weekly during bolting operations)</td>
</tr>
<tr>
<td>Periodically/Continuously inspect connection elements, including appropriate faying surface condition and hole preparation meet applicable requirements.</td>
<td>(continuous inspection for slip critical joints with 100% inspection rate, periodic inspection for all other joints with random inspection with a minimum rate of once weekly during bolting operations)</td>
</tr>
<tr>
<td>Periodically/Continuously Conduct Preinstallation verification testing by installation personnel and document for fastener assemblies and methods used for slip critical joints.</td>
<td>(Periodically, one time per installer for turn of nut, direct tension indicators, or tension controlled bolts. Periodically, once daily for calibrated wrench without match marking)</td>
</tr>
<tr>
<td>Periodically confirm proper storage for bolts, nuts, washers and other fastener components.</td>
<td>(Random inspection rate for general conformance with a minimum rate of once weekly during bolting operations)</td>
</tr>
</tbody>
</table>
| Conduct Inspections during high strength bolting in accordance with AISC 360-10 Table N5.6-2 | Periodically/Continuously confirm fastener assemblies, of suitable conditions, placed in all holes and washers (if required) are positioned as required. 
(100% inspection rate, continuous inspection for slip critical joints, periodic inspection for all other joints with random inspection with a minimum rate of once weekly during bolting operations) 

Continuously confirm joints are brought to the snug-tight condition prior to pretensioning operation 
(100% inspection rate, continuous inspection for slip critical joints) 

Continuously component not turned by the wrench is prevented from rotating 
(100% inspection rate, continuous inspection for slip critical joints) 

Periodically/Continuously confirm fasteners are pretensioned in accordance with the RCSC Specification, progressing systematically from the most rigid point toward the free edges 
(100% inspection rate, continuous inspection for slip critical joints pretensioned with calibrated wrench or turn-of-the-nut without match marking. Periodic inspection for slip critical joints pretensioned with tension controlled bolts, direct tension indicators, or turn-of-the-nut with match marking) |
| --- | --- |
| Conduct Inspections after high strength bolting in accordance with AISC 360-10 Table N5.6-3 | Periodically document acceptance or rejection of bolted connections. 
(100% rate with a minimum rate of once weekly during welding operations) |
| Other inspection Task | Periodically inspect placement of anchor rods and other embedded items prior to concrete/masonry grout placement operations. Confirm diameter, grade, type and length of the anchor rod or embedded item, and the extent or depth of embedment into concrete/masonry grout. 
(100% inspection rate immediately prior to concrete/masonry grout placement operation) 

Periodically inspect the steel frame to verify compliance with the details shown on the construction documents including braces, stiffeners, member locations, and proper application of joint details at each connection. 
(100% inspection rate with a minimum rate of once weekly during steel erection operations) |
# SCHEDULE OF SPECIAL INSPECTION SERVICES

## 1705.2.2 Cold Formed Steel Deck

<table>
<thead>
<tr>
<th>Description</th>
<th>Inspection Requirements</th>
</tr>
</thead>
</table>
| Conduct inspections prior to deck placement in accordance with SDI QA/QC-2011 Table 1.1 | **Periodically** verify compliance of materials (deck and all deck accessories) with construction documents, including profiles, material properties, and base metal thickness. *(100% inspection rate prior to deck installation)*  
Document acceptance or rejection of deck and deck accessories                  |
| Conduction inspections after deck placement in accordance with SDI QA/QC-2011 Table 1.2 | **Periodically** compliance of deck and all deck accessories installation with construction documents. *(100% inspection rate, with a minimum rate of once weekly during deck installation operations)*  
**Periodically** verify deck materials are represented by mill certifications that comply with construction documents. *(100% inspection rate)*  
Document acceptance or rejection of deck and deck accessories                  |
| Conduction inspections prior to welding in accordance with SDI QA/QC-2011 Table 1.3  | **Periodically** confirm that welding procedure specifications (WPS) are available and on site for type and configuration of weld being completed. *(100% rate for each type and configuration of weld immediately prior to the weld being completed)*  
**Periodically** confirm manufacturers certifications are available and on site for all welding consumables. *(100% rate for each type of consumable immediately prior to initial use of each consumable)*  
**Periodically** inspect material identification (type/grade)  
**Periodically** inspect welding equipment to insure equipment is functional and is of type required by WPS's |
## SCHEDULE OF SPECIAL INSPECTION SERVICES

### 1705.2.2 Cold Formed Steel Deck (Continued)

| Conduction inspections during welding in accordance with SDI QA/QC-2011 Table 1.4 | Periodically confirm that welders are qualified for welds which they are completing and they possess a valid welding certificate for that weld type and configuration. *(Random inspection rate for general conformance with a minimum rate of once weekly during welding operations)*  
| | Periodically inspect control and handling of welding consumables including packaging and exposure control. *(Random inspection rate for general conformance with a minimum rate of once weekly during welding operations)*  
| | Periodically/Continuously confirm that weld procedure specifications (WPS’s) are being followed including settings of welding equipment, travel speed, selected welding materials, shielding gas type and flow rate, and proper position. *(Periodically inspect all other welds a minimum rate of once weekly during welding operations)*  
| | Periodically confirm that environmental conditions are acceptable including wind speed limits, precipitation and temperature. *(Random inspection rate for general conformance with a minimum rate of once weekly during welding operations)*  
| Conduction inspections after welding in accordance with SDI QA/QC-2011 Table 1.5 | Periodically confirm size and location of welds, including support, sidelap and perimeter welds. *(100% inspection rate with a minimum rate of once weekly during welding operations)*  
| | Periodically confirm welds meet visual acceptance criteria *(100% inspection rate with a minimum rate of once weekly during welding operations)*  
| | Periodically verify repair activities *(100% inspection rate with a minimum rate of once weekly during welding operations)*  
| | Document acceptance or rejection of welds  
| Conduction inspections prior to mechanical fastening accordance with SDI QA/QC-2011 Table 1.6 | Periodically confirm that manufacturer’s installation instructions are available for each type of mechanical fastener. *(100% rate for each type and configuration of fastener prior to fastener being installed)*  
| | Periodically confirm that proper tools are available for the installation of each fastner. *(100% rate for each type and configuration of fastener prior to fastener being installed)*  
| | Periodically confirm proper storage of mechanical fasteners *(100% inspection rate with a minimum rate of once weekly during fastening operations)*  

# SCHEDULE OF SPECIAL INSPECTION SERVICES

## 1705.2.2 Cold Formed Steel Deck (Continued)

<table>
<thead>
<tr>
<th>Conduction inspections during mechanical fastening in accordance with SDI QA/QC-2011 Table 1.7</th>
<th>Periodically confirm that fasteners are positioned as required (100% inspection rate with a minimum rate of once weekly during fastening operations)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Periodically confirm that fasteners are installed in accordance with manufacturer’s instructions (100% inspection rate with a minimum rate of once weekly during fastening operations)</td>
</tr>
<tr>
<td>Conduction inspections after mechanically fastening in accordance with SDI QA/QC-2011 Table 1.8</td>
<td>Periodically confirm spacing, type and installation of support fasteners. (100% inspection rate with a minimum rate of once weekly during fastening operations)</td>
</tr>
<tr>
<td></td>
<td>Periodically confirm spacing, type and installation of sidelap fasteners. (100% inspection rate with a minimum rate of once weekly during fastening operations)</td>
</tr>
<tr>
<td></td>
<td>Periodically confirm spacing, type and installation of perimeter fasteners. (100% inspection rate with a minimum rate of once weekly during fastening operations)</td>
</tr>
<tr>
<td></td>
<td>Verify repair activities</td>
</tr>
<tr>
<td></td>
<td>Document acceptance or rejection of mechanical fasteners</td>
</tr>
</tbody>
</table>
## SCHEDULE OF SPECIAL INSPECTION SERVICES

### 1705.3 Concrete Construction

<table>
<thead>
<tr>
<th>Inspection</th>
<th>Periodically</th>
<th>Review installer training records to confirm they have received manufacturer training per the contract documents. Continuously inspect complete process of anchor installation in accordance with requirements of approved ICC ESR report. As minimum review installation procedures including drill bit type, drilling methods, hole preparation and cleaning, spacing, edge distance, embedment depth, adhesive installation, rod installation, curing time, and anchor torque to ensure compliance with manufacturer's instructions and construction documents. (All anchor holes must be inspected during drilling, all anchor holes must be inspected prior to anchor installation, all anchors shall be inspected at final application of required torque).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspection of reinforcing steel, including prestressing tendons, and placement</td>
<td>Periodically inspect reinforcing steel placement in accordance with contract documents and approved shop drawings to confirm size, spacing, cover, positioning, bends, grade, laps, supports and anchorage. (100% inspection rate immediately prior to placing concrete)</td>
<td></td>
</tr>
<tr>
<td>Inspection of anchors cast in concrete</td>
<td>Periodically inspect size, positioning, embedment, and projection of anchor rods is in accordance with contract documents and approved shop drawings. (100% inspection rate immediately prior to placing concrete) Continuously inspect concrete placement and consolidation around anchors. (100% inspection rate during concrete placement)</td>
<td></td>
</tr>
<tr>
<td>Inspection of anchors post-installed in hardened concrete members.</td>
<td>Review installer training records to confirm they have received manufacturer training per the contract documents. Continuously inspect complete process of anchor installation in accordance with requirements of approved ICC ESR report. As minimum review installation procedures including drill bit type, drilling methods, hole preparation and cleaning, spacing, edge distance, embedment depth, adhesive installation, rod installation, curing time, and anchor torque to ensure compliance with manufacturer's instructions and construction documents. (All anchor holes must be inspected during drilling, all anchor holes must be inspected prior to anchor installation, all anchors shall be inspected at final application of required torque)</td>
<td></td>
</tr>
<tr>
<td>Verifying use of required design mix</td>
<td>Periodically review batch tickets to confirm the appropriate approved mix design is being used for the location in which concrete is being placed. (100% review rate during concrete placement) Periodically verify that water added at the site does not exceed that allowed by the batch ticket. (100% inspection rate during concrete placement)</td>
<td></td>
</tr>
<tr>
<td>Sample fresh concrete to fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of concrete</td>
<td>Continuously test concrete compressive strength (ASTM C31 &amp; C39), slump (ASTM C143), air-content (ASTM C231 or C173) and temperature (ASTM C1064). (Frequency of sampling and testing as required by section 5.6.2 of ACI 318)</td>
<td></td>
</tr>
<tr>
<td>Inspection of concrete for proper application techniques</td>
<td>Continuously inspect concrete placement techniques to confirm compliance with sections 5.9 and 5.10 of ACI 318.</td>
<td></td>
</tr>
<tr>
<td>Inspection for maintenance of specified curing temperatures and techniques</td>
<td>Periodically inspection curing temperatures and techniques to insure compliance with contract documents and sections 5.11-5.13 of ACI 318</td>
<td></td>
</tr>
</tbody>
</table>
### SCHEDULE OF SPECIAL INSPECTION SERVICES

#### 1705.4 Masonry Construction

<table>
<thead>
<tr>
<th>Inspection/Service</th>
<th>Inspection Frequency</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspection of formwork for shape, location and dimensions of concrete member being formed</td>
<td>Periodically inspect formwork to ensure compliance with dimensions of members indicated on contract documents (100% inspection rate during concrete placement)</td>
</tr>
<tr>
<td>Verify compliance with approved submittals</td>
<td>Periodically review batch tickets to confirm the appropriate approved grout mix design is being used. (100% review rate during grout placement)</td>
</tr>
<tr>
<td></td>
<td>Periodically review mortar materials to confirm compliance with approved submittals. (A minimum of once weekly during masonry construction)</td>
</tr>
<tr>
<td>Verify proportions of site prepared mortar</td>
<td>Periodically inspect proportioning, mixing and re-tempering of mortar. (A minimum of once daily during masonry construction)</td>
</tr>
<tr>
<td>Inspect construction of mortar joints</td>
<td>Periodically inspect construction of mortar joints including tooling and filling of head joints. (100% inspection rate a minimum of once daily during masonry construction)</td>
</tr>
<tr>
<td>Inspect location of reinforcement and connectors</td>
<td>Periodically inspect placement, positioning and lapping of reinforcing steel (100% inspection rate a minimum of once daily during masonry construction)</td>
</tr>
<tr>
<td></td>
<td>Periodically inspect size, grade and type of reinforcing. (100% inspection rate a minimum of once daily during masonry construction)</td>
</tr>
<tr>
<td></td>
<td>Continuously inspect placement positioning and lapping of joint reinforcement. (100% Inspection rate – inspector shall be in the area of masonry work to monitor installation)</td>
</tr>
<tr>
<td></td>
<td>Periodically inspect size, grade, type and location of anchor rods and embeds. (100% inspection rate a minimum of once daily during masonry construction)</td>
</tr>
<tr>
<td>Inspect Grout Space</td>
<td>Periodically grout spaces to ensure minimum clear grout spaces are achieved, and that grout spaces are free from debris, mortar fins and mortar droppings. Confirm mortar fins and mortar droppings are being manually removed as masonry is constructed. (100% inspection rate a minimum of once daily during masonry construction)</td>
</tr>
<tr>
<td>Verify size and location of structural masonry elements</td>
<td>Periodically inspect the size and location of structural elements to comply with contract drawings. (100% inspection rate a minimum of once daily during applicable portion of the work)</td>
</tr>
</tbody>
</table>
## SCHEDULE OF SPECIAL INSPECTION SERVICES

### 1705.4 Masonry Construction (Continued)

<table>
<thead>
<tr>
<th>Activity</th>
<th>Inspection Requirements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Verify protection of masonry during hot/cold weather</td>
<td><strong>Periodically</strong> inspect protection of masonry during cold weather (temperature below 40 deg F) or hot weather (temperature above 90 deg F). <strong>Periodically</strong> verify that all wall cavities are protected against precipitation. <em>(100% inspection rate a minimum of once daily during applicable portion of the work)</em></td>
</tr>
<tr>
<td>Verify grout placement complies with code and construction document provisions</td>
<td><strong>Continuously</strong> inspect placement, consolidation and reconsolidation of grout. <em>(100% inspection rate)</em> <strong>Continuously</strong> verify grouting and grout consolidation procedures are in accordance with code and contract document provisions. <em>(100% inspection rate)</em></td>
</tr>
<tr>
<td>Evaluation of grout Strength</td>
<td><strong>Continuously</strong> Test compressive strength of grout samples (ASTM C1019). <em>(Sample and test grout for every 5000 sq ft. of wall, but not less than one set of samples for each day’s worth of grouting)</em></td>
</tr>
</tbody>
</table>
### SCHEDULE OF SPECIAL INSPECTION SERVICES

<table>
<thead>
<tr>
<th>1705.6 Soils</th>
<th></th>
</tr>
</thead>
</table>
| **Verify materials below shallow foundations are adequate to achieve the design bearing capacity** | **Periodically** inspect soils within building footprint for adequate bearing capacity and consistency with the geotechnical report.  
(100% inspection rate) |
| **Verify excavations are extended to proper depth and have reached proper material** | **Periodically** inspect all footing excavations to ensure they are to proper depth and have reached proper material as indicated on contract documents and/or geotechnical report.  
(100% inspection rate immediately prior to placement to reinforcing steel for foundations)  
**Periodically** inspect all unsuitable material excavations to ensure they are to proper depth and have reached proper material as indicated on contract documents and/or geotechnical report.  
(100% inspection rate of all areas of unsuitable fill removal immediately prior to placement of fill) |
| **Perform classification testing of compacted fill materials.** | **Periodically** perform testing of fill materials to ensure compliance with contract documents and geotechnical report. Classification and testing shall be in accordance with the Geotechnical report. Where the geotechnical report does not specifically indicate testing, the minimum testing shall be sieve tests (ASTM D422 & D1140) and Standard Proctor tests (ASTM D98).  
(Testing shall be completed for each source of material, or where obvious changes of properties of fill materials are realized) |
| **Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill** | **Continuously** verify materials for compacted fill to ensure materials have been previously tested and are in compliance with the contract documents and geotechnical report.  
(100% inspection rate)  
**Periodically** test density of each lift of fill within the building footprint to confirm compliance with compaction requirements outlined in the contract documents and geotechnical report.  
(Where inspection rates are not indicated in the geotechnical report, not less than one test per each lift per 2000 sq ft of fill placed)  
**Continuously** verify lift thicknesses are during placement of compacted fill to ensure lift thickness is in compliance with the contract documents and geotechnical report.  
(100% inspection rate) |
| **Prior to placement of compacted fill, inspect subgrade and verify that the site has been prepared properly.** | **Periodically** inspect subgrade within the building footprint prior to placement of compacted fill to ensure subgrade complies with contract documents and geotechnical report.  
(100% inspection rate of all areas immediately prior to placement of fill) |
# SCHEDULE OF SPECIAL INSPECTION SERVICES

## 1705.8 Cast-in-place deep foundations

<table>
<thead>
<tr>
<th>Activity</th>
<th>Inspection Method</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inspect test pile installation operations</td>
<td><strong>Continuously</strong> inspect and log test pile installation (100% inspection rate during test pile installation)</td>
</tr>
<tr>
<td>Inspect testing of test piles</td>
<td><strong>Continuously</strong> inspect and log testing of test piles (100% inspection rate of all test piles)</td>
</tr>
<tr>
<td>Observe production pile installation operations and maintain complete and accurate records for each element</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Continuously</strong> inspect contractors initial layout of piles and Periodically inspect final location of piles (by review of contractor as built) to ensure location is within specified tolerance (100% inspection rate of all piles)</td>
</tr>
<tr>
<td></td>
<td><strong>Continuously</strong> inspect all piles to verify placement location and plumbness, confirm element diameters, lengths (tip elevation), adequate end-bearing strata, successes and difficulties in pile installation. (100% inspection rate of all piles)</td>
</tr>
<tr>
<td></td>
<td><strong>Continuously</strong> review contractor produced automated monitoring logs for augering operations to include auger rotation speed, depth of auger at injection point, torque delivered to the auger and crowd force. Review logs and note any anomalies. (100% inspection rate of all piles)</td>
</tr>
<tr>
<td></td>
<td><strong>Continuously</strong> review contractor produced quality control reports including automated monitoring logs for grouting operations to include but not limited to volume of grout/concrete, maximum and minimum grout/concrete pressure, auger rotation, depth of injection point. (100% inspection rate of all piles)</td>
</tr>
<tr>
<td></td>
<td>Periodically inspect reinforcing steel cages in accordance with contract documents and approved shop drawings to confirm size, spacing, cover, positioning, bends, grade, laps, supports, positioners, spacers and anchorage. (100% inspection rate immediately prior to placing reinforcing cage in piles)</td>
</tr>
<tr>
<td></td>
<td><strong>Continuously</strong> inspect installation of reinforcing steel cages. Confirm proper spacers are in place and are effective in positioning cage. Observe and Record successes and difficulties in installing reinforcing cage. (100% inspection rate of all piles)</td>
</tr>
<tr>
<td>Sample fresh concrete/grout to fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of concrete</td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Continuously</strong> test concrete compressive strength (ASTM C31 &amp; C39), slump (ASTM C143), air-content (ASTM C231 or C173) and temperature (ASTM C1064).</td>
</tr>
<tr>
<td></td>
<td><strong>Continuously</strong> test concrete grout compressive strength (ASTM C109 &amp; C39) and Fluid Consistency (modified ASTM C939 or modified CRD 611-94)</td>
</tr>
<tr>
<td></td>
<td>Slump/Fluid Consistency shall be verified with a sample from every truck.</td>
</tr>
<tr>
<td></td>
<td>No less than (6)-compression test samples shall be made for each 50 cyd. of grout/concrete, but not less than one set of (6) samples for each day of grout/concrete placement.</td>
</tr>
</tbody>
</table>
# SCHEDULE OF SPECIAL INSPECTION SERVICES

## 1705.10 Special Inspections for Wind Resistance

<table>
<thead>
<tr>
<th>1705.10.3 Wind Resisting Components</th>
<th><strong>Periodically</strong> inspect the installation of Roof Cladding is in accordance with approved submittals and manufacturer’s installation requirements (Random inspection rate for general conformance with a minimum rate of once weekly during roof cladding installation)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>Periodically</strong> inspect the installation of Wall Cladding is in accordance with approved submittals and manufacturer’s installation requirements (Random inspection rate for general conformance with a minimum rate of once weekly during wall cladding installation)</td>
</tr>
</tbody>
</table>
### SCHEDULE OF SPECIAL INSPECTION SERVICES

#### 1705.11 Special Inspections for Seismic Resistance

<table>
<thead>
<tr>
<th>Section</th>
<th>Description</th>
</tr>
</thead>
</table>
| 1705.11.1 Structural Steel (Seismic Force Resisting System) | **Periodically** review fabricator’s source quality assurance inspection and test reports to ensure all inspection and testing is being completed as required and appropriate standards are being met. *(100% rate for all source quality control report submittals.)*  
Special inspector shall submit a written quality assurance plan for field inspection in accordance with AISC 341-10 Chapter J3  
Inspect field welding of Seismic Force Resisting System Weld Inspection in accordance with AISC 341-10 item J6  
Inspect field bolting of Seismic Force Resisting System Bolting Inspection in accordance with AISC 341-10 item J7  
Inspect other steel structure items in accordance with AISC 341-10 item J8 |
| 1705.12.2 Special Inspections of Structural Steel (Structural Steel Elements other than 1705.12.1.1) | Special inspector shall submit a written quality assurance plan for field testing in accordance with AISC 341-10 Chapter item J |
| 1705.11.5 Architectural Components | **Periodically** inspect the erection and fastening of exterior wall cladding to ensure compliance with specifications, approved submittals and manufacturer’s installation requirements. *(Random inspection rate for general conformance with a minimum rate of once weekly during cladding installation)*  
**Periodically** inspect the erection and fastening of interior and exterior veneers to ensure compliance with specifications, approved submittals and manufacturer’s installation requirements. *(Random inspection rate for general conformance with a minimum rate of twice weekly during cladding installation)*  
**Periodically** inspect installation of interior and exterior nonbearing walls to ensure installation is in accordance with construction documents, specifications, and approved shop drawing submittals and/or manufacturer’s instructions. Inspection shall include verifications of fastening of wall components and wall anchorages including number, type and spacing of fasteners as well as confirmation that installed connections allow for specified vertical and/or drift deflections. *(100% inspection rate with a minimum inspection rate of once weekly during nonbearing wall installation.)* |
# SCHEDULE OF SPECIAL INSPECTION SERVICES

## 1705.12 Testing and Qualification for Seismic Resistance

| 1705.12.1 Concrete Reinforcing (Seismic Force Resisting System) | Periodically review certified mill test reports for reinforcing steel to confirm compliance with ASTM A706 or alternately compliance with ASTM A 615 and additional limits of ACI 318 section 21.1.5.2 (per specifications) (100% inspection rate of mill test reports as reinforcing steel is delivered to the site) Periodically review certified mill test reports for ASTM A 615 reinforcing steel that is to be welded to confirm compliance with ACI 318 Section 3.5.2 (100% inspection rate of mill test reports as reinforcing steel scheduled to be welded is delivered to the site) |
| 1705.12.2 Structural Steel (Seismic Force Resisting System) | Special inspector shall submit a written quality assurance plan for field testing in accordance with AISC 341-10 Chapter item J Test welding of Seismic Force Resisting System in accordance with AISC 341-10 item J6 |
SECTION 015000 - 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. Section 01100 Summary for Use of Premises and Occupancy Requirements.

1.2 SUMMARY

A. This Section includes requirements for temporary facilities and controls, including temporary utilities, support facilities, and security and protection facilities.

B. Temporary utilities will be required for both the Contractor’s construction activities and Owner’s occupancy requirements. Temporary utilities include, but are not limited to, the following:

   1. Sewers and drainage.
   2. Water service and distribution.
   3. Sanitary facilities, including toilets, wash facilities, and drinking-water facilities.
   4. Heating and cooling facilities.
   5. Ventilation.
   6. Electric power service.
   7. Lighting.
   8. Telephone service.
   9. Gas service.

1.3 COORDINATION

A. Coordinate with Owner for utility outages and in preparation for published home football games and any outages that may affect the Owner’s existing facilities and operations.

1.4 SUBMITTALS

A. Temporary facilities plan showing all proposed and required temporary protections and utilities anticipated for the duration of the project.

   1. Indicate specific temporary facility plans for published home football games.
   2. Safety plan for published home football games including temporary signage including plan to maintain access of all stadium life safety egress routes indicated during home football games, and for protection of persons from construction activities.

B. Sequencing plan showing proposed sequence of the work and temporary facilities as to minimize Owner operations and to not impact the published home football schedule.
1.5 USE CHARGES

A. General: Cost or use charges for temporary facilities are not chargeable to Owner or Architect and shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, the following:
   1. Owner's construction forces.
   2. Occupants of Project.
   3. Architect.
   4. Testing agencies.
   5. Personnel of authorities having jurisdiction.

B. Sewer Service: Pay sewer service use charges for sewer usage, by all parties engaged in construction, at Project site.

C. Water Service: Pay water service use charges, whether metered or otherwise, for water used by all entities engaged in construction activities at Project site.

D. Electric Power Service: Pay electric power service use charges, whether metered or otherwise, for electricity used by all entities engaged in construction activities at Project site. Contractor will be responsible for contacting Santee Cooper to set up temporary power.

1.6 QUALITY ASSURANCE

   1. Trade Jurisdictions: Assigned responsibilities for installation and operation of temporary utilities are not intended to interfere with trade regulations and union jurisdictions.
   2. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.7 PROJECT CONDITIONS

A. Temporary Utilities: At earliest feasible time, when acceptable to Owner, change over from use of temporary service to use of permanent service.
   1. Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

B. Conditions of Use: The following conditions apply to use of temporary services and facilities by all parties engaged in the Work:
   1. Keep temporary services and facilities clean and neat.
   2. Relocate temporary services and facilities as required by progress of the Work.
PART 2 - PRODUCTS

2.1 MATERIALS
A. General: Provide new materials. Undamaged, previously used materials in serviceable condition may be used if approved by Architect. Provide materials suitable for use intended.
B. Water: Potable.

2.2 EQUIPMENT
A. Fire Extinguishers: Portable, UL rated ABC; with class and extinguishing agent as required by locations and classes of fire exposures.
B. Self-Contained Toilet Units: Single-occupant units of chemical, aerated recirculation, or combustion type; vented; fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.
C. Drinking-Water Fixtures: bottled-water drinking-water units, including paper cup supply.
   1. Where power is accessible, provide electric water coolers to maintain dispensed water temperature at 45 to 55 deg F.
D. Heating Equipment: Unless Owner authorizes use of permanent heating system, provide vented, self-contained, liquid-propane-gas or fuel-oil heaters with individual space thermostatic control.
   1. Use of gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
   2. Heating Units: Listed and labeled, by a testing agency acceptable to authorities having jurisdiction, and marked for intended use for type of fuel being consumed.
E. Electrical Outlets: Properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-V plugs into higher-voltage outlets; equipped with ground-fault circuit interrupters, reset button, and pilot light.
F. Power Distribution System Circuits: Where permitted and overhead and exposed for surveillance, wiring circuits, not exceeding 125-V ac, 20-A rating, and lighting circuits may be nonmetallic sheathed cable.
G. Fencing: Provide fencing to secure project site where fencing is not existing or adequate to protect the Work and the public. In addition to the Contractor’s requirements, provide approximately 800 Linear Feet of portable fencing to protect persons using the existing stadium facilities both for home football games and student practice use. Coordinate with the Owner on a regular basis for relocation as may be required for Owner’s use of the facility.

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. Relocate and modify facilities as required.
B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

A. General: Engage appropriate local utility company to install temporary service or connect to existing service. Where utility company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with utility company recommendations.

1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.
2. Provide adequate capacity at each stage of construction. Before temporary utility is available, provide trucked-in services.
3. Obtain easements to bring temporary utilities to Project site where Owner's easements cannot be used for that purpose.

B. Sewers and Drainage: If sewers are available, provide temporary service and connections to remove effluent that can be discharged lawfully. If sewers are not available or cannot be used, provide drainage ditches, dry wells, stabilization ponds, and similar facilities. If neither sewers nor drainage facilities can be lawfully used for discharge of effluent, provide containers to remove and dispose of effluent off-site in a lawful manner.

1. Filter out excessive soil, construction debris, chemicals, oils, and similar contaminants that might clog sewers or pollute waterways before discharge.
2. Connect temporary sewers to municipal system as directed by sewer department officials.
3. Maintain temporary sewers and drainage facilities in a clean, sanitary condition. After heavy use, restore normal conditions promptly.
4. Provide temporary filter beds, settlement tanks, separators, and similar devices to purify effluent to levels acceptable to authorities having jurisdiction.

C. Water Service: Install water service and distribution piping in sizes and pressures adequate for construction until permanent water service is in use. Sterilize temporary water piping before use.

1. Provide rubber hoses as necessary to serve Project site.
2. As soon as water is required at each level, extend service to form a temporary water- and fire-protection standpipe. Provide distribution piping. Space outlets so water can be reached with a 100-foot hose. Provide one hose at each outlet.
3. Where installations below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize water damage. Drain accumulated water promptly from pans.
4. Provide pumps to supply a minimum of 30-psi static pressure at highest point. Equip pumps with surge and storage tanks and automatic controls to supply water uniformly at reasonable pressures.

D. Sanitary Facilities: Provide temporary toilets, wash facilities, and drinking-water fixtures. Comply with regulations and health codes for type, number, location, operation, and maintenance of fixtures and facilities.

1. Disposable Supplies: Provide toilet tissue, paper towels, paper cups, and similar disposable materials for each facility. Maintain adequate supply. Provide covered waste containers for disposal of used material.
2. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy. Provide separate facilities for male and female personnel.
3. Wash Facilities: Install wash facilities supplied with potable water at convenient locations for personnel who handle materials that require wash up. Dispose of drainage properly. Supply cleaning compounds appropriate for each type of material handled.

4. Drinking-Water Facilities: Provide bottled-water, drinking-water units.

5. Locate toilets and drinking-water fixtures so personnel need not walk more than two stories vertically or 200 feet horizontally to facilities.

E. Heating and Cooling: Provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment from that specified that will not have a harmful effect on completed installations or elements being installed.

1. Maintain a minimum temperature of 50 deg F in permanently enclosed portions of building for normal construction activities, and 65 deg F for finishing activities and areas where finished Work has been installed.

F. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment from that specified that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.

G. Electric Power Service: Connect temporary service to Owner's existing power source, as directed by department officials.

H. Electric Distribution: Provide receptacle outlets adequate for connection of power tools and equipment.

1. Provide waterproof connectors to connect separate lengths of electrical power cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.

2. Provide warning signs at power outlets other than 110 to 120 V.

3. Provide metal conduit, tubing, or metallic cable for wiring exposed to possible damage. Provide rigid steel conduits for wiring exposed on grades, floors, decks, or other traffic areas.

4. Provide metal conduit enclosures or boxes for wiring devices.

5. Provide 4-gang outlets, spaced so 100-foot extension cord can reach each area for power hand tools and task lighting. Provide a separate 125-V ac, 20-A circuit for each outlet.

I. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations and traffic conditions.

1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.

2. Install exterior-yard site lighting that will provide adequate illumination for construction operations, traffic conditions, and signage visibility when the Work is being performed.

J. Telephone Service: Provide temporary telephone service throughout construction period.

1. Provide dedicated facsimile line in field office.

2. Provide computer with e-mail capability in field office.
3.3 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage caused by freezing temperatures and similar elements.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
2. Prevent water-filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.

C. Temporary Facility Changeover: Except for using permanent fire protection as soon as available, do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are the property of Contractor. Owner reserves right to take possession of Project identification signs.
2. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements in Division 01 Section "Closeout Procedures."

END OF SECTION 015000
SECTION 016000 - 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.

1.3 SUBMITTALS

A. Substitution Requests: Submit three copies of each request for consideration. Identify product or fabrication or installation method to be replaced. Include Specification Section number and title and Drawing numbers and titles.

   1. Request for Substitution Form: Use Form included in Project Manual.

   2. Documentation: Show compliance with requirements for substitutions and the following, as applicable:

   a. Statement indicating why specified material or product cannot be provided.

   b. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by Owner and separate contractors, that will be necessary to accommodate proposed substitution.

   c. Detailed comparison of significant qualities of proposed substitution with those of the Work specified. Significant qualities may include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.

   d. Product Data, including drawings and descriptions of products and fabrication and installation procedures.

   e. Samples, where applicable or requested.

   f. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners.

   g. Material test reports from a qualified testing agency indicating and interpreting test results for compliance with requirements indicated.

   h. Research/evaluation reports evidencing compliance with building code in effect for Project, from a model code organization acceptable to authorities having jurisdiction.

   i. Detailed comparison of Contractor's Construction Schedule using proposed substitution with products specified for the Work, including effect on the overall Contract Time. If specified product or method of construction cannot be provided within the Contract Time, include letter from manufacturer, on manufacturer's letterhead, stating lack of availability or delays in delivery.

   j. Cost information, including a proposal of change, if any, in the Contract Sum.

   k. Contractor's certification that proposed substitution complies with requirements in the Contract Documents and is appropriate for applications indicated.

   l. Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of failure of proposed substitution to produce indicated results.
3. Architect's Action: If necessary, Architect will request additional information or documentation for evaluation within 3 days of receipt of a request for substitution. Architect will notify Contractor of acceptance or rejection of proposed substitution within 10 days of receipt of request, or 5 days of receipt of additional information or documentation, whichever is later.
   a. Form of Acceptance: Change Order.
   b. Use product specified if Architect cannot make a decision on use of a proposed substitution within time allocated.

1.4 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.

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.

1.5 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. 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.

B. Product Selection Procedures:

1. Product: Where Specifications name a single product and manufacturer, provide the named product that complies with requirements.
2. Manufacturer: 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. 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.

2.2 PRODUCT SUBSTITUTIONS

A. Timing: Architect will consider requests for substitution if received within 60 days after commencement of the Work. Requests received after that time may be considered or rejected at discretion of Architect.

B. Conditions: Architect will consider Contractor's request for substitution when the following conditions are satisfied. If the following conditions are not satisfied, Architect will return requests without action, except to record noncompliance with these requirements:

1. Requested substitution offers Owner a substantial advantage in cost, time, energy conservation, or other considerations, after deducting additional responsibilities Owner must assume. Owner's
additional responsibilities may include compensation to Architect for redesign and evaluation services, increased cost of other construction by Owner, and similar considerations.

2. Requested substitution does not require extensive revisions to the Contract Documents.
3. Requested substitution is consistent with the Contract Documents and will produce indicated results.
4. Substitution request is fully documented and properly submitted.
5. Requested substitution will not adversely affect Contractor's Construction Schedule.
6. Requested substitution has received necessary approvals of authorities having jurisdiction.
7. Requested substitution is compatible with other portions of the Work.
8. Requested substitution has been coordinated with other portions of the Work.
9. Requested substitution provides specified warranty.

PART 3 - EXECUTION (Not Used)

END OF SECTION 016000
SECTION 017300 - EXECUTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

1. Installation of the Work.
2. Cutting and patching.
3. Progress cleaning.
4. Starting and adjusting.
5. Protection of installed construction.
6. Correction of the Work.

B. Related Requirements:

1. Section 011000 "Summary" for limits on use of Project site.
2. Section 013300 "Submittal Procedures" for submitting surveys.

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 construction to original conditions after installation of other work.

1.4 QUALITY ASSURANCE

A. Cutting and Patching: Comply with requirements for and limitations on cutting and patching of construction elements.

1. Structural Elements: When cutting and patching structural elements, notify Architect of locations and details of cutting and await directions from Architect before proceeding. Shore, brace, and support structural elements during cutting and patching. Do not cut and patch structural elements in a manner that could change their load-carrying capacity or increase deflection.

2. Other Construction Elements: Do not cut and patch other construction elements or 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. Other construction elements include but are not limited to the following:

   a. Water, moisture, or vapor barriers.
b. Membranes and flashings.
c. Equipment supports.
d. Piping, ductwork, vessels, and equipment.
e. Noise- and vibration-control elements and systems.

3. Visual Elements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch exposed construction 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.

B. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

C. Manufacturer's Installation Instructions: Obtain and maintain on-site manufacturer's written recommendations and instructions for installation of products and equipment.

PART 2 - PRODUCTS

2.1 MATERIALS

A. In-Place Materials: Use materials for patching identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will provide a match acceptable to Architect for the visual and functional performance of in-place materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examination and Acceptance of Conditions: Before proceeding with each component of the Work, examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.

1. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

B. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:

1. Description of the Work.
2. List of detrimental conditions, including substrates.
3. List of unacceptable installation tolerances.
4. Recommended corrections.
C. 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 caused by differing field conditions outside the control of Contractor, submit a request for information to Architect according to requirements in Section 013100 "Project Management and Coordination."

3.3 INSTALLATION

A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.

1. Make vertical work plumb and make horizontal work level.
2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
3. Conceal pipes, ducts, and wiring in finished areas unless otherwise indicated.

B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.

C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.

D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.

E. Sequence the Work and allow adequate clearances to accommodate movement of construction items on site and placement in permanent locations.

F. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.

G. Templates: Obtain and distribute to the parties involved templates for work specified to be factory prepared and field installed. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing products to comply with indicated requirements.

H. Attachment: Provide blocking and attachment plates and anchors and fasteners of adequate size and number to securely anchor each component in place, accurately located and aligned with other portions of the Work. Where size and type of attachments are not indicated, verify size and type required for load conditions.
1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
2. Allow for building movement, including thermal expansion and contraction.
3. Coordinate installation of anchorages. Furnish setting drawings, templates, and directions for installing anchorages, including sleeves, concrete inserts, anchor bolts, and items with integral anchors, that are to be embedded in concrete or masonry. Deliver such items to Project site in time for installation.

I. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.

J. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.4 CUTTING AND PATCHING

A. Cutting and Patching, General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1. Cut in-place construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.

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

C. Temporary Support: Provide temporary support of work to be cut.

D. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

E. 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.

F. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots neatly to minimum size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
2. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
3. Concrete and Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
4. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
5. Proceed with patching after construction operations requiring cutting are complete.
G. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other work. Patch with durable seams that are as invisible as practicable. Provide materials and comply with installation requirements specified in other Sections, where applicable.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate physical integrity of installation.
2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will minimize evidence of patching and refinishing.
3. Floors and Walls: Where walls that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
   a. Where patching occurs in a painted surface, prepare substrate and apply primer and intermediate paint coats appropriate for substrate over the patch, and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
5. Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition and ensures thermal and moisture integrity of building enclosure.

H. Cleaning: Clean areas and spaces where cutting and patching are performed. Remove paint, mortar, oils, putty, and similar materials from adjacent finished surfaces.

3.5 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Enforce requirements strictly. Dispose of materials lawfully.

2. Do not hold waste materials more than seven days during normal weather or three days if the temperature is expected to rise above 80 deg F.
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.
   a. Use containers intended for holding waste materials of type to be stored.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended.
If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces in Finished Areas: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Waste Disposal: Do not bury or burn waste materials on-site. Do not wash waste materials down sewers or into waterways.

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 assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.6 PROTECTION OF INSTALLED CONSTRUCTION

A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.

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

END OF SECTION 017300
SECTION 017700 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:

1. Substantial Completion procedures.
2. Final completion procedures.
3. Warranties.
4. Final cleaning.
5. Repair of the Work.

B. Related Requirements:

1. Section 017300 "Execution" for progress cleaning of Project site.
2. Section 017823 "Operation and Maintenance Data" for operation and maintenance manual requirements.
3. Section 017839 "Project Record Documents" for submitting record Drawings, record Specifications, and record Product Data.

1.3 ACTION SUBMITTALS

A. Product Data: For cleaning agents.

B. Contractor's List of Incomplete Items: Initial submittal at Substantial Completion.

C. Certified List of Incomplete Items: Final submittal at Final Completion.

1.4 CLOSEOUT SUBMITTALS

A. Certificates of Release: From authorities having jurisdiction.

B. Certificate of Insurance: For continuing coverage.

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. Schedule of Maintenance Material Items: For maintenance material submittal items specified in other Sections.
1.6 SUBSTANTIAL COMPLETION PROCEDURES

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

B. Submittals Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Certificates of Release: Obtain and submit releases from authorities having jurisdiction permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
2. Submit closeout submittals specified in other Division 01 Sections, including project record documents, operation and maintenance manuals, final completion construction photographic documentation, damage or settlement surveys, property surveys, and similar final record information.
3. Submit closeout submittals specified in individual Sections, including specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
4. Submit maintenance material submittals specified in individual Sections, including tools, spare parts, extra materials, and similar items, and deliver to location designated by Architect. Label with manufacturer's name and model number where applicable.
   a. Schedule of Maintenance Material Items: Prepare and submit schedule of maintenance material submittal items, including name and quantity of each item and name and number of related Specification Section. Obtain Architect's signature for receipt of submittals.
5. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.

C. Procedures Prior to Substantial Completion: Complete the following a minimum of 10 days prior to requesting inspection for determining date of Substantial Completion. List items below that are incomplete at time of request.

1. Advise Owner of pending insurance changeover requirements.
2. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
3. Complete startup and testing of systems and equipment.
4. Perform preventive maintenance on equipment used prior to Substantial Completion.
5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems.
6. Advise Owner of changeover in heat and other utilities.
7. Participate with Owner in conducting inspection and walkthrough with local emergency responders.
8. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
9. Complete final cleaning requirements, including touchup painting.
10. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

D. Inspection: Submit a written request for inspection to determine Substantial Completion a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.
1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.
2. Results of completed inspection will form the basis of requirements for final completion.

1.7 FINAL COMPLETION PROCEDURES

A. Submittals Prior to Final Completion: Before requesting final inspection for determining final completion, complete the following:

1. Submit a final Application for Payment according to Section 012900 "Payment Procedures." All closeout documents must be submitted before final payment will be processed.
2. Certified List of Incomplete Items: Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. Certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
3. Certificate of Insurance: Submit evidence of final, continuing insurance coverage complying with insurance requirements.

B. Inspection: Submit a written request for final inspection to determine acceptance a minimum of 10 days prior to date the work will be completed and ready for final inspection and tests. On receipt of request, Architect will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.8 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Organization of List: Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

1. Organize list of spaces in sequential order, 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.
   d. Name of Contractor.
   e. Page number.
4. Submit list of incomplete items in the following format:
   c. Three paper copies. Architect will return two copies.
1.9 SUBMITTAL OF PROJECT WARRANTIES

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

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

C. Provide additional copies of each warranty to include in operation and maintenance manuals.

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.

1. Use cleaning products that comply with Green Seal's GS-37, or if GS-37 is not applicable, use products that comply with the California Code of Regulations maximum allowable VOC levels.

PART 3 - EXECUTION

3.1 FINAL CLEANING

A. General: Perform final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a designated portion of Project:
   a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
   b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
d. Remove tools, construction equipment, machinery, and surplus material from Project site.
e. Remove snow and ice to provide safe access to building.
f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
g. Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
h. Sweep concrete floors broom clean in unoccupied spaces.
i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; clean according to manufacturer's recommendations if visible soil or stains remain.
j. Clean transparent materials, including glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Polish glass, taking care not to scratch surfaces.
k. Remove labels that are not permanent.
l. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
m. Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
n. Clean ducts, blowers, and coils if units were operated without filters during construction or that display contamination with particulate matter on inspection.


o. Clean light fixtures, lamps, globes, and reflectors to function with full efficiency.
p. Leave Project clean and ready for occupancy.

3.2 REPAIR OF THE WORK

A. Complete repair and restoration operations before requesting inspection for determination of Substantial Completion.

B. Repair or remove and replace defective construction. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment. Where damaged or worn items cannot be repaired or restored, provide replacements. Remove and replace operating components that cannot be repaired. Restore damaged construction and permanent facilities used during construction to specified condition.

1. Remove and replace chipped, scratched, and broken glass, reflective surfaces, and other damaged transparent materials.
2. Touch up and otherwise repair and restore marred or exposed finishes and surfaces. Replace finishes and surfaces that that already show evidence of repair or restoration.
   a. Do not paint over "UL" and other required labels and identification, including mechanical and electrical nameplates. Remove paint applied to required labels and identification.

3. Replace parts subject to operating conditions during construction that may impede operation or reduce longevity.
4. Replace burned-out bulbs, bulbs noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
SECTION 017823 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

A. Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:

1. Operation and maintenance documentation directory.
2. Emergency manuals.
3. Operation manuals for systems, subsystems, and equipment.
4. Product maintenance manuals.
5. Systems and equipment maintenance manuals.

B. Related Requirements:

1. Section 013300 "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.

1.3 DEFINITIONS

A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.

B. Subsystem: A portion of a system with characteristics similar to a system.

1.4 CLOSEOUT SUBMITTALS

A. Manual Content: Operations and maintenance manual content is specified in individual Specification Sections to be reviewed at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.

1. Architect will comment on whether content of operations and maintenance submittals are acceptable.
2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.

B. Format: Submit operations and maintenance manuals in the following format:

a. Name each indexed document file in composite electronic index with applicable item name. Include a complete electronically linked operation and maintenance directory.

b. Enable inserted reviewer comments on draft submittals.

2. Three paper copies. Include a complete operation and maintenance directory. Enclose title pages and directories in clear plastic sleeves. Architect will return two copies.

C. Initial Manual Submittal: Submit draft copy of each manual at least 30 days before commencing demonstration and training. Architect will comment on whether general scope and content of manual are acceptable.

D. Final Manual Submittal: Submit each manual in final form prior to requesting inspection for Substantial Completion and at least 15 days before commencing demonstration and training. Architect will return copy with comments.

1. Correct or revise each manual to comply with Architect's comments. Submit copies of each corrected manual within 15 days of receipt of Architect's comments and prior to commencing demonstration and training.

PART 2 - PRODUCTS

2.1  OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY

A. Directory: Prepare a single, comprehensive directory of emergency, operation, and maintenance data and materials, listing items and their location to facilitate ready access to desired information. Include a section in the directory for each of the following:

1. List of documents.
2. List of systems.
3. List of equipment.
4. Table of contents.

B. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.

C. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.

D. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.

E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

2.2  REQUIREMENTS FOR EMERGENCY, OPERATION, AND MAINTENANCE MANUALS

A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
1. Title page.
2. Table of contents.

B. Title Page: Include the following information:

1. Subject matter included in manual.
2. Name and address of Project.
3. Name and address of Owner.
4. Date of submittal.
5. Name and contact information for Contractor.
6. Name and contact information for Architect.
7. Name and contact information for Commissioning Authority.
8. Names and contact information for major consultants to the Architect that designed the systems contained in the manuals.
9. Cross-reference to related systems in other operation and maintenance manuals.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.

D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.

E. Manuals, Electronic Files: Submit manuals in the form of a multiple file composite electronic PDF file for each manual type required.

1. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.

F. Manuals, Paper Copy: Submit manuals in the form of hard copy, bound and labeled volumes.

1. Binders: Heavy-duty, three-ring, vinyl-covered, loose-leaf or post-type binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
   a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
   b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.

2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section of the manual. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.

3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software storage media for computerized electronic equipment.

5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
   a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
   b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.3 EMERGENCY MANUALS

A. Content: Organize manual into a separate section for each of the following:
   1. Type of emergency.
   2. Emergency instructions.
   3. Emergency procedures.

B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
   1. Fire.
   2. Flood.
   5. Power failure.
   7. System, subsystem, or equipment failure.
   8. Chemical release or spill.

C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.

D. Emergency Procedures: Include the following, as applicable:
   1. Instructions on stopping.
   2. Shutdown instructions for each type of emergency.
   3. Operating instructions for conditions outside normal operating limits.
   4. Required sequences for electric or electronic systems.
   5. Special operating instructions and procedures.

2.4 OPERATION MANUALS

A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:
   2. Performance and design criteria if Contractor has professional design responsibility.
   3. Operating standards.
   4. Operating procedures.
   5. Operating logs.
   6. Wiring diagrams.
7. Control diagrams.
8. Piped system diagrams.
9. Precautions against improper use.
10. License requirements including inspection and renewal dates.

B. Descriptions: Include the following:

1. Product name and model number. Use designations for products indicated on Contract Documents.
2. Manufacturer’s name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

C. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
7. Seasonal and weekend operating instructions.
8. Required sequences for electric or electronic systems.
9. Special operating instructions and procedures.

D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

2.5 PRODUCT MAINTENANCE MANUALS

A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

C. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
5. Reordering information for specially manufactured products.
D. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.
2. Types of cleaning agents to be used and methods of cleaning.
3. List of cleaning agents and methods of cleaning detrimental to product.
4. Schedule for routine cleaning and maintenance.
5. Repair instructions.

E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

2.6 SYSTEMS AND EQUIPMENT MAINTENANCE MANUALS

A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.

B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual and drawing or schedule designation or identifier where applicable.

C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:

1. Standard maintenance instructions and bulletins.
2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
3. Identification and nomenclature of parts and components.
4. List of items recommended to be stocked as spare parts.
5. A copy of the approved final testing, adjusting and balancing report required under Section 230593 for each piece of equipment that is included in the TAB report.

D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:

1. Test and inspection instructions.
2. Troubleshooting guide.
3. Precautions against improper maintenance.
4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
5. Aligning, adjusting, and checking instructions.
6. Demonstration and training video recording, if available.

E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.

F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.

G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.

H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals.

B. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.

C. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

D. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.

1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.

E. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

F. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in record Drawings to ensure correct illustration of completed installation.
1. Do not use original project record documents as part of operation and maintenance manuals.
2. Comply with requirements of newly prepared record Drawings in Section 017839 "Project Record Documents."

G. Comply with Section 017700 "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION 017823
SECTION 017839 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

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

1.2 SUMMARY

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

1. Record Drawings.
2. Record Specifications.
3. Record Product Data.
4. Miscellaneous record submittals.

B. Related Requirements:

1. Section 017300 "Execution" for final property survey.
2. Section 017700 "Closeout Procedures" for general closeout procedures.
3. Section 017823 "Operation and Maintenance Data" for operation and maintenance manual requirements.

1.3 CLOSEOUT SUBMITTALS

A. Record Drawings: Comply with the following:

1. Number of Copies: Submit copies of record Drawings as follows:

   a. Initial Submittal:
      1) Submit PDF electronic files of scanned record prints and one of file prints.
      2) Architect will indicate whether general scope of changes, additional information recorded, and quality of drafting are acceptable.

   b. Final Submittal:
      1) Submit PDF electronic files of scanned record prints and three set(s) of prints.
      2) Print each drawing, whether or not changes and additional information were recorded.

B. Record Specifications: Submit annotated PDF electronic files of Project's Specifications, including addenda and contract modifications.

C. Record Product Data: Submit annotated PDF electronic files and directories of each submittal.
1. Where record Product Data are required as part of operation and maintenance manuals, submit duplicate marked-up Product Data as a component of manual.

D. Miscellaneous Record Submittals: See other Specification Sections for miscellaneous record-keeping requirements and submittals in connection with various construction activities. Submit annotated PDF electronic files and directories of each submittal.

E. Reports: Submit written report weekly indicating items incorporated into project record documents concurrent with progress of the Work, including revisions, concealed conditions, field changes, product selections, and other notations incorporated.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

A. Record Prints: Maintain one set of marked-up paper copies of the Contract Drawings and Shop Drawings, incorporating new and revised drawings as modifications are issued.

1. Preparation: Mark record prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to provide information for preparation of corresponding marked-up record prints.
   a. Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
   b. Accurately record information in an acceptable drawing technique.
   c. Record data as soon as possible after obtaining it.
   d. Record and check the markup before enclosing concealed installations.
   e. Cross-reference record prints to corresponding archive photographic documentation.

2. Content: Types of items requiring marking include, but are not limited to, the following:
   a. Dimensional changes to Drawings.
   b. Revisions to details shown on Drawings.
   c. Locations and depths of underground utilities.
   d. Revisions to routing of piping and conduits.
   e. Revisions to electrical circuitry.
   f. Actual equipment locations.
   g. Duct size and routing.
   h. Locations of concealed internal utilities.
   i. Changes made by Change Order or Change Directive.
   j. Details not on the original Contract Drawings.
   k. Field records for variable and concealed conditions.
   l. Record information on the Work that is shown only schematically.

3. Mark the Contract Drawings and Shop Drawings completely and accurately. Use personnel proficient at recording graphic information in production of marked-up record prints.

4. Mark record sets with red-colored pen. Use other colors to distinguish between changes for different categories of the Work at same location.

5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, alternate numbers, Change Order numbers, and similar identification, where applicable.

B. Record Digital Data Files: Immediately before inspection for Certificate of Substantial Completion, review marked-up record prints with Architect. When authorized, scan a full set of record prints of the Contract Drawings, as follows:

1. Format: PDF electronic file with comment function enabled.

C. Format: Identify and date each record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location.

1. Record Prints: Organize record prints and newly prepared record Drawings into manageable sets. Bind each set with durable paper cover sheets. Include identification on cover sheets.
2. Format: Annotated PDF electronic file with comment function enabled.
3. Record Files: Organize digital data information into separate electronic files that correspond to each sheet of the Contract Drawings. Name each file with the sheet identification. Include identification in each digital data file.
4. Identification: As follows:
   a. Project name.
   b. Date.
   c. Designation "PROJECT RECORD DRAWINGS."
   d. Name of Architect.
   e. Name of Contractor.

2.2 RECORD SPECIFICATIONS

A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
3. Record the name of manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
4. 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.

B. Format: Submit record Specifications as annotated PDF electronic file.

2.3 RECORD PRODUCT DATA

A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
3. Note related Change Orders, record Specifications, and record Drawings where applicable.

B. Format: Submit record Product Data as annotated PDF electronic file.

1. Include record Product Data directory organized by Specification Section number and title, electronically linked to each item of record Product Data.

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.

B. Format: Submit miscellaneous record submittals as PDF electronic file.

1. Include miscellaneous record submittals directory organized by Specification Section number and title, electronically linked to each item of miscellaneous record submittals.

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 revisions to project record documents as they occur; do not wait until 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 reference during normal working hours.

END OF SECTION 017839