

SECTION 01 1000

SUMMARY

PART 1 GENERAL

1.01 PROJECT

- A. Project Name: Davis Community - Community Center.
- B. Owner's Name: The Davis Community.
- C. Architect's Name: Bowman Murray Hemingway Architects.
- D. Contractor's Name: Monteith Construction Company.
- E. The Project consists of the construction of a new wellness and community activity center facility and associated site construction as more completely described in the Contract Documents.

1.02 CONTRACT DESCRIPTION

- A. Contract Type: A single prime contract based on the Cost of the Work plus a fee with a Guaranteed Maximum Price as described in Document 00 5000 - Contracting Forms and Supplements.

1.03 DIVISION 01 SPECIFICATIONS

- A. Division 01 General Requirements expand on the broad provisions of the Conditions of the Contract, and govern the execution of the work of all Sections of the specifications. Division 01 General Requirements specify administrative and procedural requirements relating to execution of the Work, and temporary facilities for use during the construction period.

1.04 PROJECT WARRANTY

- A. Refer to General Conditions for warranty provisions applicable to this Contract.
 - 1. Project warranty period is governed by North Carolina state statutes and other provisions of the Contract.

1.05 WORK BY OWNER

- A. Items noted NIC (Not in Contract) will be supplied and installed by Owner after Substantial Completion. Some items include:
 - 1. Movable cabinets.
 - 2. Furnishings.
 - 3. Small equipment.
 - 4. Rugs.
 - 5. Artwork.
 - 6. Other items noted on Drawings.

1.06 OWNER OCCUPANCY

- A. Owner intends to occupy the Project upon Substantial Completion.

1.07 CONTRACTOR USE OF SITE AND PREMISES

- A. Construction Operations: Limited to areas noted on Drawings.
- B. Arrange use of site to allow:
 - 1. Owner occupancy.
 - 2. Work by Others.
 - 3. Work by Owner.
 - 4. Use of site and adjacent facilities by the public.
- C. Provide access to and from site as required by law and by Owner:
 - 1. Emergency Building Exits During Construction: Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
 - 2. Do not obstruct roadways, sidewalks, or other public ways without permit.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 2000
PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Construction cost log.
- B. Procedures for preparation and submittal of applications for progress payments.
- C. Documentation of modifications in Contract Sum and Contract Time.
- D. Modification procedures.
- E. Correlation of Contractor submittals based on Contract modifications.
- F. Procedures for preparation and submittal of application for final payment.

1.02 RELATED REQUIREMENTS

- A. Section 00 5000 - Contracting Forms and Supplements: Forms to be used.

1.03 PRICE PROCEDURES - GENERAL

- A. Contract Cost Log: Establish and maintain a construction cost log, including the status of all Contract Modifications (Change Orders); including those which have been accepted, declined, pending, etc.), the status of requests for information, supplemental instructions, other modification documents, and the status of allowances, including Owner's contingency allowance.

1.04 SCHEDULE OF VALUES

- A. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit draft to Architect for approval.
- B. Forms filled out by hand will not be accepted.
- C. Submit Schedule of Values in duplicate within 15 days after date of Owner-Contractor Agreement.
- D. Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the specification Section. Identify site mobilization.
- E. Revise schedule to list approved Change Orders, with each Application For Payment.

1.05 APPLICATIONS FOR PROGRESS PAYMENTS

- A. Payment Period: Submit at intervals stipulated in the Agreement.
- B. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Architect for approval.
 - 1. Forms filled out by hand will not be accepted.
- C. For each item, provide a column for listing each of the following:
 - 1. Item Number.
 - 2. Description of work.
 - 3. Scheduled Values.
 - 4. Previous Applications.
 - 5. Work in Place and Stored Materials under this Application.
 - 6. Executed Change Orders.
 - 7. Total Completed and Stored to Date of Application.
 - 8. Percentage of Completion.
 - 9. Balance to Finish.
 - 10. Retainage.

- D. Execute certification by signature of authorized officer.
- E. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored products.
- F. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of work.
- G. Submit one electronic and three hard-copies of each Application for Payment.
- H. Include the following with the application:
 - 1. Transmittal letter as specified for submittals in Section 01 3000.
 - 2. Construction progress schedule, revised and current as specified in Section 01 3000.
 - 3. Conditional release of liens from each Subcontractor and vendor for the current month's payment application, and unconditional release of liens from each Subcontractor and vendor for the previous month's payment application.
 - 4. Project record documents as specified in Section 01 7800, for review by Owner which will be returned to the Contractor.
 - 5. Affidavits attesting to off-site stored products.
- I. When Architect requires substantiating information, submit data justifying dollar amounts in question. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.

1.06 MODIFICATION PROCEDURES

- A. Contractor is responsible for informing and coordinating others, in Contractor's employ and affected subcontractors, of modifications to the Contract Documents.
- B. Supplemental Instructions: For minor modifications not involving an adjustment to the Contract Sum or Contract Time; Architect will issue instructions directly to Contractor.
 - 1. Architect's issuance of supplemental instructions may constitute a modification of the Contract Documents involving an adjustment to the Contract Sum or Contract Time. If Architect's supplemental instructions require such a modification of the Contract Documents, notify Owner immediately and prepare a request for change order or other modification according to applicable modification procedures specified in this Section. Owner's approval is required before any action is taken.
- C. Proposal Request: For modifications for which advance pricing is desired, Architect will issue a document which includes a detailed description of a proposed modification with supplementary or revised drawings and specifications, a modification in Contract Time for executing the modification with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor shall prepare and submit a fixed price quotation within 10 days.
- D. Contractor may propose a change by submitting a request for change order or modification to Architect, describing the proposed change and its full effect on the Work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation and a statement describing the effect on Work by separate or other contractors.
 - 1. Document any requested substitutions in accordance with Section 01 2500 - Substitution Procedures.
- E. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.
 - 1. For change requested by Architect for work falling under a fixed price contract, the amount will be based on Contractor's price quotation.
 - 2. For change requested by Contractor, the amount will be based on the Contractor's request for a Change Order as approved by Owner and Architect.
 - 3. For pre-determined unit prices and quantities, the amount will be based on the fixed unit prices.
 - 4. For change ordered by Architect without a quotation from Contractor, the amount will be determined by Architect based on the Contractor's substantiation of costs as specified for Time and Material work.

- F. Substantiation of Costs: Provide full information required for evaluation.
 - 1. Provide the following data:
 - a. Quantities of products, labor, and equipment.
 - b. Taxes, insurance, and bonds.
 - c. Overhead and profit.
 - d. Justification for any change in Contract Time in accordance with the Agreement.
 - e. Credit for deletions from Contract, similarly documented.
 - 2. Support each claim for additional costs with additional information:
 - a. Origin and date of claim.
 - b. Dates and times work was performed, and by whom.
 - c. Time records and wage rates paid.
 - d. Invoices and receipts for products, equipment, and subcontracts, similarly documented.
 - 3. For Time and Material work, submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract.
 - G. Execution of Change Orders: Architect will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.
 - H. After execution of Change Order, promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum.
 - I. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.
 - J. Promptly enter changes in Project Record Documents.
- 1.07 APPLICATION FOR FINAL PAYMENT
- A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.
 - B. Application for Final Payment will not be considered until the following have been accomplished:
 - 1. All closeout procedures specified in Section 01 7000.
 - 2. Receipt of final Certificate of Occupancy from jurisdictional authority.
 - 3. Acceptance of Work by Owner and Architect.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 2500
SUBSTITUTION PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Procedural requirements for proposed substitutions.

1.02 RELATED REQUIREMENTS

- A. Section 01 6000 - Product Requirements: Fundamental product requirements, product options, delivery, storage, and handling, and substitution limitations.

1.03 DEFINITIONS

- A. Substitutions: Changes from Contract Documents requirements proposed by Contractor to materials, products, assemblies, and equipment.
 - 1. Substitutions for Cause: Proposed due to changed Project circumstances beyond Contractor's control.
 - a. Unavailability.
 - b. Regulatory changes.
 - c. Other limitations specified in Section 01 6000.
 - 2. Substitutions for Convenience: Proposed due to possibility of offering substantial advantage to the Project.
 - a. Substitution requests offering advantages solely to the Contractor will not be considered.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

- A. A Substitution Request for products, assemblies, materials, and equipment constitutes a representation that the submitter:
 - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product, equipment, assembly, or system.
 - 2. Agrees to provide the same warranty for the substitution as for the specified product.
 - 3. Agrees to provide same or equivalent maintenance service and source of replacement parts, as applicable.
 - 4. Agrees to coordinate installation and make changes to other work that may be required for the work to be complete, with no additional cost to Owner.
 - 5. Waives claims for additional costs or time extension that may subsequently become apparent.
- B. A Substitution Request for specified installer constitutes a representation that the submitter:
 - 1. Has acted in good faith to obtain services of specified installer, but was unable to come to commercial, or other terms.
- C. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents. Burden of proof is on proposer.
 - 1. Note explicitly any non-compliant characteristics.
 - 2. Submit shop drawings, product data, and certified test results attesting to the proposed product equivalence.
 - 3. Architect will notify Contractor in writing of decision to accept or reject request.

- D. Substitution Request Content: Include information necessary for tracking the status of each Substitution Request, and information necessary to provide an actionable response.
1. No specific form is required. Contractor's Substitution Request documentation must include the following:
 - a. Project Information:
 - 1) Official project name and number, and any additional required identifiers established in Contract Documents.
 - 2) Owner's, Architect's, and Contractor's names.
 - b. Substitution Request Information:
 - 1) Discrete and consecutive Substitution Request number, and descriptive subject/title.
 - 2) Indication of whether the substitution is for cause or convenience.
 - 3) Issue date.
 - 4) Reference to particular Contract Document(s) specification section number, title, and article/paragraph(s).
 - 5) Description of Substitution.
 - 6) Reason why the specified item cannot be provided.
 - 7) Differences between proposed substitution and specified item.
 - 8) Description of how proposed substitution affects other parts of work.
 - c. Attached Comparative Data: Provide point-by-point, side-by-side comparison addressing essential attributes specified, as appropriate and relevant for the item:
 - 1) Physical characteristics.
 - 2) In-service performance.
 - 3) Expected durability.
 - 4) Visual effect.
 - 5) Sustainable design features.
 - 6) Warranties.
 - 7) Other salient features and requirements.
 - 8) Include, as appropriate or requested, the following types of documentation:
 - (a) Product Data:
 - (b) Samples.
 - (c) Certificates, test, reports or similar qualification data.
 - (d) Drawings, when required to show impact on adjacent construction elements.
 - d. Impact of Substitution:
 - 1) Savings to Owner for accepting substitution.
 - 2) Change to Contract Time due to accepting substitution.
- E. Limit each request to a single proposed substitution item.
1. Submit an electronic document, combining the request form with supporting data into single document.

3.02 SUBSTITUTION PROCEDURES DURING CONSTRUCTION

- A. Architect may consider requests for substitution only within 60 days after date established in Notice to Proceed, unless otherwise determined by Architect to be acceptable under extenuating circumstances.
1. Substitutions will also be considered when a Product, through no fault of Contractor, becomes unavailable or unsuitable due to regulatory change.
- B. Submit request for Substitution for Cause within 14 days of discovery of need for substitution, but not later than 14 days prior to time required for review and approval by Architect, in order to stay on approved project schedule.
- C. Submit request for Substitution for Convenience immediately upon discovery of its potential advantage to the project, but not later than 14 days prior to time required for review and approval by Architect, in order to stay on approved project schedule.
1. In addition to meeting general documentation requirements, document how the requested substitution benefits the Owner through cost savings, time savings, greater energy conservation, or in other specific ways.
 2. Document means of coordinating of substitution item with other portions of the work, including work by affected subcontractors.

3. Bear the costs engendered by proposed substitution of:
 - a. Other construction by Owner.
 - b. Other unanticipated project considerations.
 - D. Substitutions will not be considered under one or more of the following circumstances:
 1. When they are indicated or implied on shop drawing or product data submittals, without having received prior approval.
 2. Without a separate written request.
 3. When acceptance will require revisions to Contract Documents.
- 3.03 RESOLUTION
- A. Architect may request additional information and documentation prior to rendering a decision. Provide this data in an expeditious manner.
 - B. Architect will notify Contractor in writing of decision to accept or reject request.
 1. Architect's decision following review of proposed substitution will be noted on the submitted form.
- 3.04 ACCEPTANCE
- A. Accepted substitutions modify the Contract, and thereby change the Work of the Project. They will be documented and incorporated into Work of the project by Change Order, or similar instrument provided for in the Conditions of the Contract.
- 3.05 CLOSEOUT ACTIVITIES
- A. See Section 01 7800 - Closeout Submittals, for closeout submittals.
 - B. Include completed and approved Substitution Request Forms as part of the Project record.

END OF SECTION

SECTION 01 3000
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. General administrative requirements.
- B. Electronic document submittal service.
- C. Administrative Meetings:
 - 1. Preconstruction meeting.
 - 2. Progress meetings.
 - 3. Natatorium envelope preconstruction meeting.
- D. Construction progress schedule.
- E. Use of Architect's digital Drawing files.
- F. Submittals for review, information, and project closeout.
- G. Number of copies of submittals.
- H. Requests for Information (RFI) procedures.
- I. Submittal procedures.

1.02 GENERAL ADMINISTRATIVE REQUIREMENTS

- A. Comply with requirements of Section 01 7000 - Execution and Closeout Requirements for coordination of execution of administrative tasks with timing of construction activities.
- B. Make the following types of submittals to Architect:
 - 1. Requests for Information (RFI).
 - 2. Requests for substitution.
 - 3. Shop drawings, product data, and samples.
 - 4. Test and inspection reports.
 - 5. Design data.
 - 6. Manufacturer's instructions and field reports.
 - 7. Applications for payment and change order requests.
 - 8. Progress schedules.
 - 9. Coordination drawings.
 - 10. Correction Punch List and Final Correction Punch List for Substantial Completion.
 - 11. Closeout submittals.
 - 12. Other specified submittals.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Meeting Minutes: Submit meeting minutes for each type of meeting as specified in this Section.
- C. Construction Progress Schedule: Submit construction progress schedule according to the requirements specified in this Section.
- D. Submittal Schedule: Submit submittal schedule according to the requirements specified in this Section.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 ELECTRONIC DOCUMENT SUBMITTAL SERVICE

- A. All documents transmitted for purposes of administration of the contract are to be in electronic (PDF) format, as appropriate to the document, and transmitted via an Internet-based submittal service that receives, logs and stores documents, provides electronic stamping and signatures, and notifies addressees via email.
 - 1. Besides submittals for review, information, and closeout, this procedure applies to Requests for Information (RFIs), progress documentation, contract modification documents (e.g. supplementary instructions, change proposals, change orders), applications for payment, field reports and meeting minutes, Contractor's correction punchlist, and any other document any participant wishes to make part of the project record.
 - 2. Contractor and Architect are required to use this service.
 - 3. It is Contractor's responsibility to submit documents in allowable format.
 - 4. Subcontractors, suppliers, and Architect's consultants will be permitted to use the service at no extra charge.
 - 5. Users of the service need an email address, internet access, and PDF review software that includes ability to mark up and apply electronic stamps (such as Adobe Acrobat, www.adobe.com, or Bluebeam PDF Revu, www.bluebeam.com), unless such software capability is provided by the service provider.
 - 6. Paper document transmittals will not be reviewed; emailed electronic documents will not be reviewed.
 - 7. All other specified submittal and document transmission procedures apply, except that electronic document requirements do not apply to samples or color selection charts.
- B. Submittal Service: The selected service is:
 - 1. Architect's existing Internet-based service.
 - 2. Substitutions: Permitted, subject to approval of Architect.
- C. Training: One, one-hour, web-based training session will be arranged for all participants, with representatives of Architect and Contractor participating; further training is the responsibility of the user of the service.
 - 1. Representatives of Owner are scheduled and included in this training.
- D. Project Closeout: Architect will determine when to terminate the service for the project and is responsible for obtaining archive copies of files for Owner.

3.02 PRECONSTRUCTION MEETING

- A. Architect will schedule a meeting after Notice to Proceed.
- B. Attendance Required:
 - 1. Owner.
 - 2. Architect.
 - 3. Contractor.
 - 4. Other invited participants.
- C. Minimum Agenda:
 - 1. Execution of Owner-Contractor Agreement.
 - 2. Submission of executed bonds and insurance certificates.
 - 3. Distribution of Contract Documents.
 - 4. Submission of list of subcontractors, list of products, schedule of values, and progress schedule.
 - 5. Submission of initial Submittal schedule.
 - 6. Submission of list of known or anticipated substitution requests.
 - 7. Designation of personnel representing the parties to Contract, including Contractor, Owner, and Architect.
 - 8. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
 - 9. Scheduling.
- D. Record minutes and distribute electronically within two days after meeting to participants, with copies to Architect, Owner, participants, and those affected by decisions made.

3.03 PROGRESS MEETINGS

- A. Schedule and administer meetings throughout progress of the work at weekly intervals, unless otherwise agreed upon and approved by Owner.
- B. Make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.
- C. Attendance Required:
 - 1. Contractor.
 - 2. Owner.
 - 3. Architect.
 - 4. Contractor's superintendent.
 - 5. Major subcontractors.
- D. Minimum Agenda:
 - 1. Review minutes of previous meetings.
 - 2. Review of work progress.
 - 3. Field observations, problems, and decisions.
 - 4. Identification of problems that impede, or will impede, planned progress.
 - 5. Review of submittals schedule and status of submittals.
 - 6. Review of RFIs log and status of responses.
 - 7. Review of known or anticipated substitution requests.
 - 8. Modification (Change Order) status.
 - 9. Review of off-site fabrication and delivery schedules.
 - 10. Maintenance of progress schedule.
 - 11. Corrective measures to regain projected schedules.
 - 12. Planned progress during succeeding work period.
 - 13. Coordination of projected progress.
 - 14. Maintenance of quality and work standards.
 - 15. Effect of proposed changes on progress schedule and coordination.
 - 16. Other business relating to work.
- E. Record minutes and distribute electronically within two days after meeting to participants, with copies to Architect, Owner, participants, and those affected by decisions made.

3.04 NATATORIUM PRECONSTRUCTION MEETING

- A. Architect will schedule and administer meeting sufficiently in advance of the commencement of any work associated with the natatorium enclosure; advise Architect of Project schedule requirements that would determine optimum scheduling of this meeting to avoid delays of any kind in the progress of the Work.
- B. Attendance Required: Owner, Architect, Contractor's project manager and job superintendent, and all subcontractors and suppliers involved in natatorium enclosure work.
- C. Minimum Agenda:
 - 1. Review why natatorium envelope is important.
 - 2. Review all Drawing and specification requirements for the work considered.
 - 3. Review required sequences of construction.
 - 4. Review each associated construction and environmental control system.
 - 5. Review coordination of subcontract work, and work specified to be by Owner or others outside the Contract, if any.
 - 6. Review specified surface preparation, factory priming, and field-applied painting and coating requirements for (as applicable):
 - a. Gypsum board and exterior studs.
 - b. High-performance coatings.
 - c. Sealant requirements.
 - d. Roofing system.
 - e. HVAC system design.
 - f. Electrical and lighting systems sdesign.
 - g. Structural steel erection sequencing and requirements for pre-engineered structural systems.
 - h. Concrete decks.
 - i. Doors and hardware.

- j. Applied fireproofing.
- k. Suspended ceiling systems.
- 7. Review submittals required, and requirements for timely review and approval of associated submittals.
- 8. Review testing and inspection requirements and coordination of same.
- 9. Review record documentation, operation and maintenance documentation, methodology for recording variations from construction documents, and the methodology for accumulation of Project Record Documents.

- D. Record minutes and distribute electronically within two days after meeting to participants and those affected by decisions made.

3.05 PROJECT CLOSEOUT MEETING

- A. Specified in Section 01 7000 - Execution and Closeout Requirements.

3.06 CONSTRUCTION PROGRESS SCHEDULE

- A. Within 10 days after date of the Agreement, submit preliminary schedule defining planned operations for the first 60 days of work, with a general outline for remainder of work.
- B. If preliminary schedule requires revision after review, submit revised schedule within 10 days.
- C. Within 20 days after review of preliminary schedule, submit draft of proposed complete schedule for review.
 - 1. Include written certification that major Subcontractors have reviewed and accepted proposed schedule.
- D. Within 10 days after joint review, submit complete schedule.
- E. Submit updated schedule with each Application for Payment.

3.07 DIGITAL DRAWING FILES

- A. Architect's Digital Files: Upon request by Contractor, a digital copy of Project Building Information Model (BIM) or CADD Drawing files will be provided as a courtesy for Contractor's limited use. Such information is not considered to be a part of the Contract Documents.
 - 1. Use of this information is at Contractor's sole risk.
 - 2. Report to Architect discrepancies, if any, between published Contract Documents and information provided according to General Conditions and other administrative requirements of the Contract.
 - 3. Prior to receiving digital files, execute data licensing agreement; Architect's standard form.
 - 4. Architect is not responsible for updating or maintaining currency of digital drawing files after initially provided to Contractor.
 - 5. Submittals prepared using any of these files as the primary submittal content without the inclusion of substantial additional content generated by Contractor according to specified requirements for applicable submittals will not be accepted or reviewed by Architect.

3.08 REQUESTS FOR INFORMATION (RFI)

- A. Definition: A request seeking one of the following:
 - 1. An interpretation, amplification, or clarification of some requirement of Contract Documents arising from inability to determine from them the exact material, process, or system to be installed; or when the elements of construction are required to occupy the same space (interference); or when an item of work is described differently at more than one place in Contract Documents.
 - 2. A resolution to an issue which has arisen due to field conditions and affects design intent.
- B. Whenever possible, request clarifications at the next appropriate project progress meeting, with response entered into meeting minutes, rendering unnecessary the issuance of a formal RFI.
- C. Preparation: Prepare an RFI immediately upon discovery of a need for interpretation of Contract Documents. Failure to submit a RFI in a timely manner is not a legitimate cause for claiming additional costs or delays in execution of the work.
 - 1. Prepare a separate RFI for each specific item.
 - a. Review, coordinate, and comment on requests originating with subcontractors and/or materials suppliers.
 - b. Do not forward requests which solely require internal coordination between subcontractors.

2. Prepare using software provided by the Electronic Document Submittal Service.
 3. Combine RFI and its attachments into a single electronic file. PDF format is required.
- D. Reason for the RFI: Prior to initiation of an RFI, carefully study all Contract Documents to confirm that information sufficient for their interpretation is definitely not included.
1. Include in each request Contractor's signature attesting to good faith effort to determine from Contract Documents information requiring interpretation.
 2. Unacceptable Uses for RFIs: Do not use RFIs to request the following:
 - a. Approval of submittals (use procedures specified elsewhere in this Section).
 - b. Approval of substitutions (see Section - 01 6000 - Product Requirements).
 - c. Changes that entail change in Contract Time and Contract Sum (comply with provisions of the Conditions of the Contract).
 - d. Different methods of performing work than those indicated in the Contract Drawings and Specifications (comply with provisions of the Conditions of the Contract).
 3. Improper RFIs: Requests not prepared in compliance with requirements of this section, and/or missing key information required to render an actionable response. They will be returned without a response, with an explanatory notation.
 4. Frivolous RFIs: Requests regarding information that is clearly indicated on, or reasonably inferable from, Contract Documents, with no additional input required to clarify the question. They will be returned without a response, with an explanatory notation.
 - a. The Owner reserves the right to assess the Contractor for the costs (on time-and-materials basis) incurred by the Architect, and any of its consultants, due to processing of such RFIs.
- E. Content: Include identifiers necessary for tracking the status of each RFI, and information necessary to provide an actionable response.
1. Official Project name and number, and any additional required identifiers established in Contract Documents.
 2. Owner's, Architect's, and Contractor's names.
 3. Discrete and consecutive RFI number, and descriptive subject/title.
 4. Issue date, and requested reply date; "ASAP", "As Soon as Possible", or "Immediately" not acceptable as reply date.
 5. Reference to particular Contract Document(s) requiring additional information/interpretation. Identify pertinent drawing and detail number and/or specification section number, title, and paragraph(s).
 6. Annotations: Field dimensions and/or description of conditions which have engendered the request.
 7. Contractor's Suggested Resolution: A written and/or a graphic solution, to scale, is required in cases where clarification of coordination issues is involved, for example; routing, clearances, and/or specific locations of work shown diagrammatically in Contract Documents. If applicable, state the likely impact of the suggested resolution on Contract Time or the Contract Sum.
- F. Attachments: Include sketches, coordination drawings, descriptions, photos, submittals, and other information necessary to substantiate the reason for the request.
- G. RFI Log: Prepare and maintain a tabular log of RFIs for the duration of the project.
1. Indicate current status of every RFI. Update log promptly and on a regular basis.
 2. Note dates of when each request is made, and when a response is received.
 3. Highlight items requiring priority or expedited response.
 4. Highlight items for which a timely response has not been received to date.
- H. Review Time: Architect will respond and return RFIs to Contractor within seven calendar days of receipt. For the purpose of establishing the start of the mandated response period, RFIs received after 12:00 noon will be considered as having been received on the following regular working day.
1. Response period may be shortened or lengthened for specific items, subject to mutual agreement, and recorded in a timely manner in progress meeting minutes.
- I. Responses: Content of answered RFIs will not constitute in any manner a directive or authorization to perform extra work or delay the project. If in Contractor's belief it is likely to lead to a change to Contract Sum or Contract Time, promptly issue a notice to this effect, and follow up with an appropriate Change Order request to Owner.
1. Response may include a request for additional information, in which case the original RFI will be deemed as having been answered, and an amended one is to be issued forthwith. Identify the amended RFI with an R suffix to the original number.

2. Do not extend applicability of a response to specific item to encompass other similar conditions, unless specifically so noted in the response.
3. Upon receipt of a response, promptly review and distribute it to all affected parties, and update the RFI Log.
4. Notify Architect within seven calendar days if an additional or corrected response is required by submitting an amended version of the original RFI, identified as specified above.

3.09 SUBMITTAL SCHEDULE

- A. Submit to Architect for review a schedule for submittals in tabular format.
 1. Provide initial schedule at first progress meeting, and provide updated and current schedule at each progress meeting.
 2. Coordinate with Contractor's construction schedule and schedule of values.
 3. Format schedule to allow tracking of status of submittals throughout duration of construction.
 4. Include in schedule anticipated dates for each submittal to Architect, required dates of return of reviewed submittal to Contractor, and any required lead times associated with applicable submittals.
 - a. Schedule submittals to expedite the Project, and coordinate submission of related items.
 - b. For each submittal for review, allow minimum 15 calendar days for review, excluding delivery time from and back to Contractor.
 - c. Arrange information to include specification number and title, submittal category (for review or for information), description of item of work covered, and role and name of subcontractor.
 5. Account for time required for preparation, review, manufacturing, fabrication and delivery when establishing submittal delivery and review deadline dates.
 - a. For assemblies, equipment, systems comprised of multiple components and/or requiring detailed coordination with other work, allow for additional time to make corrections or revisions to initial submittals, and time for their review.
 - b. If Contractor fails to submit a submittal schedule, Contractor will not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.
- B. Coordinate submittals into logical groupings to facilitate interrelation of the several items:
 1. Submit complete package of specified submittals for each product or system, generally associated with an individual specification Section. Partial submittals will not be reviewed, and no delay claim will be considered as the result of a partial submittal being returned for proper resubmittal.
 2. Submit all structural concrete shop drawings, product data, schedules, and other specified submittal information in a single package as specified in Division 03.
 3. Submit all structural concrete masonry shop drawings, product data, schedules, and other specified submittal information in a single package as specified in Division 04.
 4. Submit all structural steel framing shop drawings, product data, schedules, and other specified submittal information in a single package as specified in Division 05.
 5. Submit all door, frame, and hardware product data, schedules, and other specified submittal information in a single package as specified in Division 08.

3.10 SUBMITTALS FOR REVIEW

- A. When the following are specified in individual Sections, submit them for review:
 1. Product data.
 2. Shop drawings.
 3. Samples for selection.
 4. Samples for verification.
- B. Submit to Architect for review for the limited purpose of checking for compliance with information given and the design concept expressed in Contract Documents.
- C. Samples will be reviewed for aesthetic, color, or finish selection as applicable.
- D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01 7800 - Closeout Submittals.

3.11 SUBMITTALS FOR INFORMATION

- A. When the following are specified in individual Sections, submit them for information:
 1. Design data.
 2. Certificates.

3. Test reports.
4. Inspection reports.
5. Manufacturer's instructions.
6. Manufacturer's field reports.
7. Other types specified.

B. Submit for Architect's knowledge as contract administrator or for Owner.

3.12 SUBMITTALS FOR PROJECT CLOSEOUT

A. Submit Correction Punch List for Substantial Completion.

B. Submit Final Correction Punch List for Substantial Completion.

C. When the following are specified in individual Sections, submit at project closeout in compliance with requirements of Section 01 7800 - Closeout Submittals:

1. Project record documents.
2. Operation and maintenance data.
3. Warranties.
4. Bonds.
5. Maintenance materials.
6. Other types specified.

D. Submit for Owner's benefit during and after project completion.

3.13 NUMBER OF COPIES OF SUBMITTALS

A. Electronic Documents - Submittals for Review and Information: Submit one electronic copy in PDF format; an electronically-marked up file will be returned. Create PDFs at native size and right-side up; illegible files will be rejected.

B. Submittals for Review: Submit electronically as specified.

C. Submittals for Information: Submit electronically as specified.

D. Samples: Submit the number specified in individual specification Sections; one of which will be retained by Architect.

1. After review, produce duplicates.
2. Retained samples will not be returned to Contractor unless specifically so stated.

3.14 SUBMITTAL PROCEDURES - GENERAL

A. General Requirements:

1. Submit separate packages of submittals for review and submittals for information, when included in the same specification Section.
2. Transmit using approved form.
 - a. Use Contractor's form, subject to prior approval by Architect.
3. Sequentially identify each item. For revised submittals use original number and a sequential combination numerical and alphabetical suffix.
4. Identify: Project; Contractor; subcontractor or supplier; pertinent drawing and detail number; and specification section number and article/paragraph, as appropriate on each copy.
5. Apply Contractor's stamp, signed or initialed certifying that review, approval, verification of products required, field dimensions, adjacent construction work, and coordination of information is in accordance with the requirements of the work and Contract Documents.
 - a. Submittals not bearing Contractor's review stamp, indicating both review and approval, will not be reviewed and be returned for required review.
 - b. Submittals from sources other than Contractor will not be acknowledged, reviewed, or returned.
6. Deliver each submittal on date noted in submittal schedule, unless an earlier date has been agreed to by all affected parties, and is of the benefit to the project.
7. Schedule submittals to expedite the Project, and coordinate submission of related items.
 - a. For each submittal for review, allow 15 days excluding delivery time to and from the Contractor.
 - b. For sequential reviews involving Architect's consultants, Owner, or another affected party, allow an additional 7 days.

8. Identify variations from Contract Documents and product or system limitations that may be detrimental to successful performance of the completed work.
9. Provide space for Contractor and Architect review stamps.
10. When revised for resubmission, identify all changes made since previous submission. Include brief description or narrative of what and how review comments were addressed.
11. Distribute reviewed submittals. Instruct parties to promptly report inability to comply with requirements.
12. Incomplete submittals will not be reviewed, unless they are partial submittals for distinct portion(s) of the work, and have received prior approval for their use.
13. Submittals not reviewed by Contractor will be rejected, and will not be reviewed by Architect. Claims for delay as the result of submittals not reviewed by Contractor will not be allowed.
14. Submittals not requested will be recognized, and will be returned "Not Reviewed".

B. Product Data Procedures:

1. Submit only information required by individual specification sections.
2. Collect required information into a single submittal.
3. Submit concurrently with related shop drawing submittal.
4. Do not submit (Material) Safety Data Sheets for materials or products.
5. Manufacturer's Catalog Submittals: If manufacturer's published catalog information is used as part of a submittal, include only those pages from catalog that are specifically applicable to the proposed products for this Project.
 - a. Clearly identify in the submittal those specific products and components for which review and action is requested.
 - b. Submittals received that do not clearly identify specific applicable products, or that include more pages than those specifically applicable to the subject submittal, will be returned as "not reviewed" and the time for submittal review will not commence until a properly scoped submittal is received by Architect.

C. Shop Drawing Procedures:

1. Prepare accurate, drawn-to-scale, original shop drawing documentation by interpreting Contract Documents and coordinating related work.
2. Do not reproduce Contract Documents to create shop drawings, unless otherwise permitted.
3. Generic, non-project-specific information submitted as shop drawings do not meet the requirements for shop drawings.

D. Samples Procedures:

1. Transmit related items together as single package to Architect's office, unless otherwise specified.
2. Identify each item to allow review for applicability in relation to shop drawings showing installation locations.
3. Include with transmittal high-resolution image files of samples to facilitate electronic review and approval. Provide separate submittal page for each item image.

3.15 SUBMITTAL REVIEW

A. Submittals for Review: Architect will review each submittal, and approve, or take other appropriate action. See below for actions to be taken.

B. Submittals for Information: Architect will acknowledge receipt and review. See below for actions to be taken.

C. Architect's actions will be reflected by marking each returned submittal using virtual stamp on electronic submittals.

1. Notations may be made directly on submitted items and/or listed on appended Submittal Review cover sheet.

D. Architect's Actions:

1. Architect will review each submittal, mark it with appropriate "action," and return it to Contractor within specified time allowance; except when it must be held for coordination, and Contractor is so advised.
2. Where submittals include materials, products, systems, or manufacturers not specified, approved by Addendum prior to execution of the Contract, or approved in writing in conjunction with the proposed products list submittal specified in Section 01 6000 - Product Requirements, Architect reserves the right to exceed the specified time allowance to allow sufficient time to determine the acceptability of such items, and no claim for delay by Contractor will be allowed.

3. Where submittals include a material, product, system, or manufacturer substitution which has not been previously accepted or approved in writing, Architect reserves the right to reject such submittal and require a compliant submittal, or may direct that other action be taken by Contractor to achieve compliance with Contract Documents, and no claim for delay by Contractor will be allowed.
4. Architect's review is for general conformance only and does not relieve Contractor from full compliance with the Contract Documents.

END OF SECTION

SECTION 01 3114
FACILITY SERVICES COORDINATION

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Coordination of facility services construction.
- B. Services of a coordinator for facility services construction.
- C. Coordination documents.

1.02 MECHANICAL AND ELECTRICAL COORDINATOR

- A. Provide staff dedicated to this Project who are technically qualified and administratively experienced in field coordination of the type of work required to be coordinated, for the duration of the Work.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Coordination Drawings:
 - 1. Submit coordination drawings and schedules prior to submitting shop drawings, product data, and samples.
 - 2. Submit coordination drawings in a timely manner to facilitate proper coordination with the construction schedule, and to avoid adverse impacts on progress of construction.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 COORDINATION REQUIRED

- A. See Drawings, Division 23 specifications, and Division 26 specifications for mechanical/electrical coordination schedules which define responsibilities for providing, setting, and final connecting of applicable devices and equipment items.
- B. Coordinate the work listed below:
 - 1. Fire Suppression: Division 21.
 - 2. Plumbing: Division 22.
 - 3. Heating, Ventilating, and Air Conditioning: Division 23.
 - 4. Electrical: Division 26.
 - 5. Communications: Division 27.
 - 6. Electronic Safety and Security: Division 28.
 - 7. Site Utilities: Division 33.
 - 8. All facility construction work affected by work listed above.
 - 9. All Owner-furnished work affected by work listed above.
- C. Coordinate progress schedules, including dates for submittals and for delivery of products.
- D. Conduct meetings among subcontractors and others concerned, to establish and maintain coordination and schedules, and to resolve coordination matters in dispute.
- E. Participate in progress meetings. Report on progress of work to be adjusted under coordination requirements, and any required changes in schedules. Transmit minutes of meetings and reports to concerned parties.

3.02 COORDINATION OF INSTALLATIONS

- A. Comply with manufacturer's installation instruction and recommendations to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in the Contract Documents.

- B. Coordinate installation of materials and equipment above and below ceilings with suspension systems, light fixtures, and other building components. Where mounting heights are not detailed or dimensioned, install services and overhead equipment to provide the maximum headroom possible.
- C. Coordinate ceiling and joist cavity space carefully with all affected trades. In the event of conflict, install mechanical and electrical systems within the cavity space allocation in the following order of priority:
 - 1. Plumbing waste and vent piping, roof drain mains and leaders.
 - 2. Supply, return and exhaust ductwork.
 - 3. Steam and condensate piping and traps.
 - 4. Fire sprinkler mains and leaders.
 - 5. Electrical conduit.
 - 6. Domestic hot and cold water, and lab gas piping.
 - 7. Heating and cooling water supply and return piping.
 - 8. Fire sprinkler branch piping and sprinkler run outs.
 - 9. Pneumatic control piping and tubing.
- D. Coordinate installation of equipment and piping support, sleeves, and other structural components that penetrate walls, floors, ceilings, or roofs.

3.03 COORDINATION DOCUMENTS

- A. Prepare coordination drawings to organize installation of products for efficient use of available space, for proper sequence of installation, and to identify potential conflicts.
- B. Prepare a master schedule identifying responsibilities for activities that directly relate to this work, including submittals and temporary utilities; organize by specification Section.
- C. Identify electrical power characteristics and control wiring required for each item of equipment.
- D. Maintain documents for the duration of the work, recording changes due to site instructions, modifications or adjustments.
- E. Coordination Drawings for Acoustical and Gypsum Board Ceilings, Plumbing, Fire Protection, HVAC and Electrical:
 - 1. Submit to Architect as information submittal as specified in Section 01 3000 - Administrative Requirements.
 - 2. HVAC: Prepare reproducible coordination layout and installation drawings at minimum 1/4 inch per foot scale for resolution of interferences and conflicts with other trades.
 - 3. Plumbing, Fire Protection, Electrical, and Ceilings: Superimpose these shop drawings on the HVAC coordination drawings and verify layout and elevations to eliminate conflicts; highlight apparent conflicts. Fabrication of ductwork, fire protection piping, or other prefabricated systems is at risk until coordination drawings have been completed and reviewed by Contractor and Architect.
 - a. Gravity systems have routing priority above the ceilings.
 - 4. Access Panels: Clearly show locations of access panels for maintenance in "hard" ceilings for access to HVAC boxes, fire damper motors, plumbing valves, fire protection drains, valves, light fixture remote ballasts, ceiling hung equipment, and similar items requiring access; coordinate with reflected ceiling plans. Indicate locations of access panels in walls and location of plumbing cleanouts.
 - 5. Preinstallation Meeting: Conduct a preinstallation meeting one week prior to the start of above-ceiling coordinated items; require attendance by all affected installers.
 - a. Convene under general provisions of Section 01 7000 - Execution and Closeout Requirements.
 - b. Discuss installation of coordinated items above ceilings.
 - c. Ceilings may not be lowered to resolve apparent conflicts without written approval of Owner and Architect.

3.04 COORDINATION OF SUBMITTALS

- A. Review shop drawings, product data, and samples for compliance with Contract Documents and for coordination with related work. Transmit copies of reviewed documents to Architect.
- B. Check field dimensions and clearances and relationship to available space and anchors.
- C. Check compatibility with equipment and work of other Sections, electrical characteristics, and operational control requirements.

- D. Check motor voltages and control characteristics.
 - E. Coordinate controls, interlocks, wiring of switches, and relays.
 - F. Coordinate wiring and control diagrams.
 - G. When changes in the work are made, review their effect on other work.
 - H. Verify information and coordinate maintenance of record documents.
- 3.05 COORDINATION OF SUBSTITUTIONS AND MODIFICATIONS
- A. Review proposals and requests for substitution prior to submission to Architect.
 - B. Verify compliance with Contract Documents and for compatibility with work of other Sections.
- 3.06 INSPECTION OF WORK
- A. Inspect work for compliance with Contract Documents.
 - B. Maintain a list of observed deficiencies and defects; promptly submit to Architect.
- 3.07 DOCUMENTATION
- A. Observe and maintain a record of tests. Record:
 - 1. Specification Section number and product name.
 - 2. Name of Contractor, subcontractor, and installer if applicable.
 - 3. Name of testing agency and name of inspector.
 - 4. Name of manufacturer's representative present.
 - 5. Date, time, and duration of tests.
 - 6. Type of test, and results.
 - 7. Retesting required.
 - B. Assemble background documentation and retain in the event that dispute resolution becomes necessary.
- 3.08 EQUIPMENT START-UP
- A. Verify utilities, connections, and controls are complete and equipment is in operable condition as required by Section 01 7000.
 - B. Observe start-up and adjustments, test run, record time and date of start-up, and results.
 - C. Observe equipment demonstrations made to Owner; record times and additional information required for operation and maintenance manuals.
- 3.09 INSPECTION AND ACCEPTANCE OF EQUIPMENT
- A. Prior to inspection, verify that equipment is tested, operational, clean, and ready for operation.

END OF SECTION

SECTION 01 4000
QUALITY REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Submittals.
- B. Quality assurance.
- C. References and standards.
- D. Testing and inspection agencies and services.
- E. Contractor's construction-related professional design services.
- F. Contractor's design-related professional design services (delegated design work).
- G. Control of installation.
- H. Mock-ups.
- I. Tolerances.
- J. Manufacturers' field services.
- K. Defect Assessment.
- L. Basis of design specifications.

1.02 DEFINITIONS

- A. Contractor's Professional Design Services: Design of some aspect or portion of the project by party other than the design professional of record. Provide these services as part of the Contract for Construction.
 - 1. Design Services Types Required:
 - a. Construction-Related: Services Contractor needs to provide in order to carry out the Contractor's sole responsibilities for construction means, methods, techniques, sequences, and procedures.
 - b. Design-Related: Design services explicitly required to be performed by another design professional due to highly-technical and/or specialized nature of a portion of the project. Services primarily involve engineering analysis, calculations, and design, and are not intended to alter the aesthetic aspects of the design.
- B. Design Data: Design-related, signed and sealed drawings, calculations, specifications, certifications, shop drawings and other submittals provided by Contractor, and prepared directly by, or under direct supervision of, design professional appropriately licensed in North Carolina.

1.03 CONTRACTOR'S CONSTRUCTION-RELATED PROFESSIONAL DESIGN SERVICES

- A. Coordination: Contractor's professional design services are subject to requirements of project's Conditions for Construction Contract.
- B. Provide such engineering design services as may be necessary to plan and safely conduct certain construction operations, pertaining to, but not limited to the following:
 - 1. Temporary sheeting, shoring, or supports.
 - 2. Temporary scaffolding.
 - 3. Temporary bracing.
 - 4. Temporary falsework for support of spanning or arched structures.
 - 5. Temporary stairs or steps required for construction access only.
 - 6. Temporary hoist(s) and rigging.
 - 7. Investigation of soil conditions to support construction equipment.

1.04 CONTRACTOR'S DESIGN-RELATED PROFESSIONAL DESIGN SERVICES (DELEGATED DESIGN WORK)

- A. Coordination: Contractor's professional design services are subject to requirements of project's Conditions of the Contract for Construction.
- B. Performance and Design Requirements: Where professional design services or certifications by a licensed design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with requirements specified in individual specification Sections.
 - 1. Base design of products and systems on performance and design criteria indicated or specified in individual specification Sections.
 - 2. Submit a Request for Information to Architect if the criteria indicated or specified are not sufficient to perform required design services.
- C. Scope of Contractor's Professional Design Services is specified in the following Sections, which include but may not be limited to:
 - 1. Section 06 1753 - Shop-Fabricated Wood Trusses
 - 2. Section 07 4113 - Metal Roof Panels.
 - 3. Section 07 5400 - Thermoplastic Membrane Roofing.
 - 4. Section 07 6200 - Sheet Metal Flashing and Trim.
 - 5. Section 07 8400 - Firestopping.
 - 6. Section 08 4313 - Aluminum-Framed Storefronts.
 - 7. Section 08 5200 - Wood Windows.
 - 8. Section 08 8000 - Glazing.
- D. Design of building systems, or components of systems, to be provided by Contractor; refer to applicable Division 21 and 28 Sections:
 - 1. Fire sprinkler systems.
 - 2. Electronic safety and security systems.
- E. Contractor's Responsibilities:
 - 1. Coordinate design and space requirements with other affected work and Architect.
 - 2. Review applicable submittals and coordinate selections with Architect.
 - 3. Receive and unload products and systems at the site; inspect for completeness and for damage.
 - 4. Handle, store, install, and finish products and systems.
 - 5. Repair or replace damaged, defective, or missing items.
 - 6. Arrange for manufacturer's warranties, inspections, and service.
 - 7. Comply with applicable provisions of Division 01 - General Requirements, specifically including administrative requirements, coordination, quality, regulatory, and product requirements.
 - 8. Coordinate delegated design work with Sections 07 8400 - Firestopping, 08 3100 - Access Doors and Panels, applicable Division 09 painting Sections, and applicable Division 23 HVAC instrumentation and control Sections. Provide work scope specified in these Sections that is applicable to delegated design work.

1.05 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Design Data: Submit for Architect's knowledge for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents, or for Owner's information.
 - 1. Include calculations that have been used to demonstrate compliance to performance and regulatory criteria provided, and to determine design solutions.
 - 2. Include required product data and shop drawings.

3. Include a statement or certification attesting that design data complies with criteria indicated, such as building codes, loads, functional, and similar engineering requirements.
 4. Include signature and seal of design professional responsible for allocated design services on calculations and drawings.
 5. Provide additional copies of design data for Architect's design consultants, including but not limited to structural engineer, mechanical engineer, plumbing engineer, and electrical engineer; transmit to each design consultant's address concurrently, if requested by Architect.
- C. Certificates: When specified in individual specification sections, submit certification by the manufacturer and Contractor or installation/application subcontractor to Architect, in quantities specified for Product Data.
1. Indicate material or product complies with or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
 2. Certificates may be recent or previous test results on material or product, but must be acceptable to Architect.
- D. Subcontractor, Trade Contractor and Installer Qualifications: When specified in individual specification Sections, submit qualifications data substantiating specified qualifications; three copies, one of which will be reviewed and returned to Contractor indicating action taken.
- E. Manufacturer's Instructions: When specified in individual specification Sections, submit printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, for the Owner's information. Indicate special procedures, perimeter conditions requiring special attention, and special environmental criteria required for application or installation.
- F. Manufacturer's Field Reports: When specified in individual specification Sections, submit reports for Architect's benefit as contract administrator or for Owner.
1. Submit report in duplicate within 30 days of observation to Architect for information.
 2. Submit for information for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents.
- G. Warranty Documentation: When specified in individual specification Sections, submit specified manufacturer warranty indicating all required inclusions and restricted exclusions, and ensure that forms have been completed in Owner's name and registered with manufacturer.

1.06 QUALITY ASSURANCE

- A. Designer Qualifications: Where professional engineering design services and design data submittals are specifically required of Contractor by Contract Documents, provide services of a Professional Engineer experienced in design of this type of work and licensed in North Carolina.

1.07 REFERENCES AND STANDARDS

- A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Comply with reference standard of date of issue current on date of Contract Documents, except where a specific date is established or required by applicable code.
- C. Obtain copies of standards where required by product specification Sections.
1. Maintain copy at project site during submittals, planning, and progress of the specific work, until Substantial Completion.
- D. Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.
- E. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of Architect shall be altered from the Contract Documents by mention or inference otherwise in any reference standard document.

1.08 TESTING AND INSPECTION AGENCIES AND SERVICES

- A. Special Testing and Inspection: It is recognized that specified special testing and inspection program is intended to assist Contractor, Owner, Architect, and jurisdictional authorities in nominal determination of probable compliance with specified requirements for certain elements of the Work. This program is not intended to limit Contractor's standard quality control program.
 - 1. See Section 01 4533 - Code-Required Special Inspections and Procedures, for special inspection and testing requirements.

1.09 BASIS OF DESIGN SPECIFICATIONS

- A. Individual specification Sections may include a Basis of Design Manufacturer or Product, which forms the basis of the specifications, Drawing details, and other requirements of the Contract Documents. The specified Basis of Design Manufacturer or Product is not intended to exclude other manufacturers, products, or systems which comply with the requirements of the Contract Documents, subject to the provisions and requirements specified in individual specification Sections.
- B. Comply with the administrative requirements for substitutions specified in Section 01 6000 - Product Requirements for proposed products or systems other than the specified Basis of Design Manufacturer or Product.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- D. Have work performed by persons qualified to produce required and specified quality.
- E. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- F. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

3.02 MOCK-UPS

- A. Before installing portions of the Work where mock-ups are required, construct mock-ups in location and size indicated for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work. The purpose of mock-up is to demonstrate the proposed range of aesthetic effects and workmanship and, if applicable, compliance with moisture management materials, claddings, and fenestrations.
- B. Accepted mock-ups establish the standard of quality the Architect will use to judge the Work.
- C. Integrated Exterior Mock-ups: Construct integrated exterior mock-up as indicated on Drawings. Coordinate installation of exterior envelope materials and products as required in individual Specification Sections. Provide adequate supporting structure for mock-up materials as necessary.
 - 1. Include typical and unique material and fenestration transition conditions, and typical roof applications.
 - 2. Construct mock-up in phased sequence matching sequencing of building construction, so that building envelope and drainage plane details can be observed on mock-up prior to installation on building, and also prior to installation of finish materials on mock-up.
 - 3. When finish materials are installed on mock-up, provide partial cut-away features which leave concealed drainage plane components including weather barriers, flashings, and sealants remain visible for ongoing reference throughout construction process.

- D. Room Mock-ups: Construct room mock-ups as indicated on Drawings. Coordinate installation of materials, products, and assemblies as required in Specification Sections; finish according to requirements. Provide required lighting and any supplemental lighting where required to enable Architect to evaluate quality of the mock-up.
- E. Notify Architect fifteen (15) working days in advance of dates and times when mock-ups will be completed and ready for review and evaluation.
- F. Provide supervisory personnel who will oversee mock-up construction. Provide workers that will be employed during the construction at Project.
- G. Tests will be performed under provisions identified in this Section and identified in the respective product specification Sections.
- H. Assemble and erect specified items with specified backing materials, attachment and anchorage devices, weather barriers, flashings, sealants, applied coatings, surface treatments, and finishes.
- I. Obtain Architect's approval of mock-ups before starting work, fabrication, or construction.
 - 1. Architect will issue written comments within seven (7) working days of initial review and each subsequent follow up review of each mock-up.
 - 2. Make corrections as necessary until Architect's approval is issued.
- J. Architect will use accepted mock-ups as a comparison standard for the remaining Work.
- K. Where mock-up has been accepted by Architect and is specified in product specification Sections to be removed, protect mock-up throughout construction, remove mock-up and clear area when directed to do so by Architect.

3.03 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

3.04 MANUFACTURERS' FIELD SERVICES

- A. When specified in individual specification Sections, require material or product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of surfaces and installation, quality of workmanship, start-up of equipment, test, adjust and balance of equipment, and inspection of surfaces to receive waterproofing systems as applicable, and to initiate instructions when necessary.
 - 1. Manufacturer's field representative will be required to submit daily reports as specified in this Section, when daily observations and inspections are specified in individual Sections.
- B. Report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.

3.05 DEFECT ASSESSMENT

- A. Replace Work or portions of the Work not complying with specified requirements.
- B. If, in the opinion of Architect, it is not practical to remove and replace the Work, Architect will direct an appropriate remedy or adjust payment, with Owner's consent.

END OF SECTION

SECTION 01 4100
REGULATORY REQUIREMENTS

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Obtain and pay for required permits, fees, licenses, and inspections as stipulated in the Agreement.
- B. Arrange for required regulatory inspections and approvals.
- C. Verify applicable codes and regulations.
- D. Comply with applicable codes and regulations as stipulated in the Agreement.
 - 1. Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities.
 - 2. Contractor is required to promptly report to Architect any nonconformity discovered by or made known to Contractor as a request for information as specified, or in such form as Architect may otherwise require.
- E. Listing of applicable Codes and regulations in this Section is not to be considered complete and all-inclusive; listing refers to primary applicable Codes and regulations only. See Drawings for additional information.

1.02 SUMMARY OF APPLICABLE CODES AND REFERENCE STANDARDS

- A. Federal Regulations (Including but not limited to); currently adopted editions of the following, unless noted otherwise:
 - 1. 36 CFR 1191 - Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines.
 - 2. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design.
 - 3. 29 CFR 1910 - Occupational Safety and Health Standards.
- B. City of Wilmington, State of North Carolina Regulations, and other regulations (including but not limited to); currently adopted editions of the following, unless noted otherwise:
 - 1. Zoning Code: Local jurisdiction.
 - 2. Fire Protection District: Local jurisdiction.
 - 3. State of North Carolina Health Department standards and regulations, as applicable.
 - 4. ICC A117.1 - Accessible and Usable Buildings and Facilities.
 - 5. North Carolina State Building Codes; including all amendments and supplements, as enumerated on Drawings.
 - 6. NFPA 70 - National Electrical Code.
 - 7. Erosion and Sedimentation Control Regulations: Local jurisdiction, unless otherwise specified.

1.03 RELATED REQUIREMENTS

- A. Section 01 4000 - Quality Requirements: Additional regulatory requirements.

1.04 QUALITY ASSURANCE

- A. Become familiar with applicable requirements of codes and regulations.
- B. Verify that substituted materials and equipment used in the Work meet or exceed requirements of applicable codes and regulations.
- C. Contractor's Designer Qualifications: Refer to Section - 01 4000 - Quality Requirements.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 4216
DEFINITIONS AND EXPLANATIONS

PART 1 GENERAL

1.01 SUMMARY

- A. This Section supplements the definitions contained in the General Conditions and other Contract Documents.
- B. Other definitions are included in individual specification Sections.
- C. Limitations: Definitions and explanations are not necessarily complete or exclusive, but are generally applicable to the Work to the extent such definitions or explanations are not stated more explicitly in other provisions of the Contract Documents.

1.02 SPECIFICATION EXPLANATIONS

- A. General: Explanations are provided to assist in understanding format, language, implied requirements and conventions of specification content. None of these explanations will be interpreted to modify the substance of content requirements.
- B. Division 01 General Requirements: Expand on the broad provisions of the Conditions of the Contract, and govern the execution of the work of all Sections of the specifications. Division 01 General Requirements specify administrative and procedural requirements relating to execution of the Work, and temporary facilities for use during the construction period.
- C. Sections and Divisions: The basic unit of specification text is the "Section," each of which is named and numbered. These are organized into related families called "Divisions," which generally conform to the most current edition of "MasterFormat" as published by CSI. Any Section title is not intended to limit meaning or content of Section, nor to be fully descriptive of requirements specified therein, nor to be an integral part of the text.
- D. Imperative Language: Used generally in the Specifications. Except as otherwise specified, requirements expressed imperatively are to be performed by Contractor. For clarity of reading at certain locations, contrasting subjective language is used to describe the responsibilities which must be fulfilled either indirectly by Contractor, or when so noted by others.

1.03 SPECIFICATION CONTENT CONVENTIONS

- A. Overlapping Requirements: Where compliance with two or more industry standards or sets of requirements is specified, and overlapping of those requirements also establishes different or conflicting minimums or levels of quality, the more stringent requirement will be enforced (which is generally the more costly level).
- B. Refer apparently equal but different requirements and uncertainties as to which level of quality is required to Architect for interpretation or decision before proceeding.
- C. Specification Minimum: In every instance, the specified requirement is the minimum to be performed or fulfilled. In complying with minimum requirements, the indicated numeric values are either minimums or maximums as noted or as appropriate for the context of the requirement. Refer instances of uncertainty to Architect for decision.
- D. Abbreviations: The language of the Specifications and elsewhere in the Contract Documents is of the abbreviated type in certain instances, and implies words and meanings which will be appropriately interpreted. Actual work abbreviations of a self-explanatory nature have been included in the text.
- E. Trade associations and general standards are frequently abbreviated. Singular words will be interpreted as plural and plural words will be interpreted as singular wherever applicable and wherever the full context of the requirements so indicate.
- F. Specialists: In certain instances the Specification text may require that specific work be assigned to certain specialists or expert entities for the performance of those units of the Work. These are specified as requirements on which the Contractor has no choice or option.

1.04 DEFINITIONS

- A. Approve/Approved: Where used in conjunction with Architect's or Architect's consultant response to submittals, requests, applications, inquiries, reports, and claims by Contractor, the meaning of the term "approve" or "approved" will be held to the limitations of Architect's responsibilities and duties as specified in Section 01 3000 - Administrative Requirements and stipulated in the General Conditions of the Contract. In no case will approval by Architect be interpreted as an assurance to Contractor that the requirements of the Contract Documents have been fulfilled.
- B. By Others: Work performed by entities outside the Contract; interchangeable with "NIC" or "Not in Contract."
- C. Contract Documents: Those documents defined in the Owner-Contractor Agreement (Contract) as applicable to the construction of the Project by Contractor.
 - 1. Refer to General Conditions of the Contract for Construction for broader definition of this term.
- D. Contractor's Option: Where materials, products, systems or methods are specified to be at Contractor's option, the choice of which material, method, product, or system will be used is solely Contractor's. There will be no change in Contract Sum or Time because of such choice.
- E. Directed, Requested, etc.: Where not otherwise explained, terms such as "directed," "requested," "authorized," "selected," "approved," "required," "accepted," and "permitted" mean "directed by Architect," "requested by Architect", etc. However, no such implied meaning will be interpreted to extend Architect's responsibility into Contractor's area of construction supervision.
- F. Drawings: Capitalized term referring to the drawings prepared by Architect and its design consultants, and by any Owner consultants as applicable; bound and published as a sub-set of the Contract Documents as defined in Owner-Contractor Agreement (Contract). Non-capitalized term "drawings" used in the Contract Documents generally refers to other drawings not part of the Contract Documents, unless the context explicitly indicates otherwise.
 - 1. Refer to General Conditions of the Contract for Construction for broader definition of this term.
- G. Equipment: Defined as products with operational parts, regardless of whether motorized or manually operated, and particularly including connections (wiring, piping, etc.).
- H. Final Acceptance: The administrative action taken by Owner authorizing final payment and settlement of the Contract.
 - 1. Refer to General Conditions of the Contract for Construction for broader definition of this term.
- I. Furnish: To supply, deliver, unload, and inspect for damage (by Contractor).
- J. General Requirements: Provisions or requirements of Division 01 specification Sections. General Requirements apply to the entire Work of the Contract and, where so indicated, to other elements of work which are included in the Project. See specification explanations in this Section.
- K. Indicated: Cross reference to details, notes or schedules on the Drawings, other paragraphs or schedules in the Specifications, and similar means of recording requirements in the Contract Documents. Where terms such as "shown," "noted," "scheduled," and "specified" are used in lieu of "indicated," it is for the purpose of helping the reader accomplish the cross reference, and no limitation is intended except as specifically noted.
- L. Install: To unpack, assemble, erect, apply, place, finish, cure, protect, clean, start up, and make ready for use (by Contractor).
- M. Installer: The entity (person or firm) engaged by Contractor or his Subcontractor or Sub-subcontractor for the performance of a particular unit of work at the project site, including installations, erection, application and similar required operations.
- N. Material(s): Defined as products which must be substantially cut, shaped, worked, mixed, finished, refined or otherwise fabricated, processed, installed or applied to form units of work.
- O. Not in Contract (NIC): Work performed by entities outside the Contract; interchangeable with "By Others."

- P. Product(s): Material, machinery, components, equipment, fixtures, and systems forming the work result. Not materials or equipment used for preparation, fabrication, conveying, or erection and not incorporated into the work result. Products may be new, never before used, or re-used materials or equipment.
- Q. Project Manual: The book-sized volume that includes the procurement requirements (if any), the contracting requirements, and the Specifications.
- R. Provide: To furnish and install.
- S. Supply: Same as Furnish.
- T. Testing Agency/Laboratory: An independent entity engaged to perform specific inspections or tests of the Work, either at the project site or elsewhere; and to report and (if required) interpret the results of those inspections or tests.
- U. Work (the Work): Capitalized term referring to the entire scope of work of the Project as defined in the Contract Documents. Non-capitalized term "work" used in the Contract Documents generally refers to work by specific trades or other entities as components or phases of the Work, unless the context explicitly indicates otherwise.
 - 1. Refer to General Conditions of the Contract for Construction for broader definition of this term.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 4533

CODE-REQUIRED SPECIAL INSPECTIONS AND PROCEDURES

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Code-required special inspections.
- B. Testing services incidental to special inspections.
- C. Submittals.

1.02 DEFINITIONS

- A. Code or Building Code: North Carolina State Building Code, Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements and specifically the applicable Chapter on Special Inspections and Tests.
- B. Authority Having Jurisdiction (AHJ): Agency or individual officially empowered to enforce the building, fire and life safety code requirements of the permitting jurisdiction in which the Project is located.
- C. Special Inspection and Testing:
 - 1. Special inspections are inspections and testing of materials, installation, fabrication, erection or placement of components and connections mandated by the AHJ that also require special expertise to ensure compliance with the approved Contract Documents and the referenced standards.
 - 2. Special inspections are separate from and independent of tests and inspections conducted by Owner or Contractor for the purposes of quality assurance and contract administration.

1.03 REFERENCE STANDARDS

- A. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection.
- B. ASTM E543 - Standard Specification for Agencies Performing Nondestructive Testing.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Special Inspection Agency Qualifications: Prior to the start of work, the Special Inspection Agency is required to:
 - 1. Submit agency name, address, and telephone number, names of full time registered Engineer and responsible officer.
 - 2. Submit copy of report of laboratory facilities inspection made by NIST Construction Materials Reference Laboratory during most recent inspection, with memorandum of remedies of any deficiencies reported by the inspection.
 - 3. Submit certification that Special Inspection Agency is acceptable to AHJ.
- C. Special Inspection Reports: After each special inspection, Special Inspector is required to promptly submit at least two copies of report; one to Architect and one to the AHJ.
 - 1. Include:
 - a. Date issued.
 - b. Project title and number.
 - c. Name of Special Inspector.
 - d. Date and time of special inspection.
 - e. Identification of product and specifications Section.
 - f. Location in the Project.
 - g. Type of special inspection.

- h. Date of special inspection.
- i. Results of special inspection.
- j. Compliance with Contract Documents.
- 2. Final Special Inspection Report: Document special inspections and correction of discrepancies prior to the start of the work.

D. Fabricator Special Inspection Reports: After each special inspection of fabricated items at the Fabricator's facility, Special Inspector is required to promptly submit at least two copies of report; one to Architect and one to AHJ.

- 1. Include:
 - a. Date issued.
 - b. Project title and number.
 - c. Name of Special Inspector.
 - d. Date and time of special inspection.
 - e. Identification of fabricated item and specification Section.
 - f. Location in the Project.
 - g. Results of special inspection.
 - h. Verification of fabrication and quality control procedures.
 - i. Compliance with Contract Documents.
 - j. Compliance with referenced standard(s).

E. Test Reports: After each test or inspection, promptly submit at least two copies of report; one to Architect and one to AHJ.

- 1. Include:
 - a. Date issued.
 - b. Project title and number.
 - c. Name of inspector.
 - d. Date and time of sampling or inspection.
 - e. Identification of product and specifications Section.
 - f. Location in the Project.
 - g. Type of test or inspection.
 - h. Date of test or inspection.
 - i. Results of test or inspection.
 - j. Compliance with Contract Documents.

F. Certificates: When special inspection requirements are specified in individual specification Sections, Special Inspector is required to submit certification by the manufacturer, fabricator, and installation subcontractor to Architect and AHJ, in quantities specified for Product Data.

- 1. Indicate material or product complies with or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- 2. Certificates may be recent or previous test results on material or product, but must be acceptable to Architect and AHJ.

1.05 SPECIAL INSPECTION AND TESTING AGENCY

- A. Owner will employ services of a Special Inspection and Testing Agency to perform inspections and associated testing and sampling required by the building code.
- B. The Special Inspection and Testing Agency may employ and pay for services of an independent testing agency to perform testing and sampling associated with special inspections and required by the building code.
- C. Owner's employment of agency in no way relieves Contractor of obligation to perform work in accordance with requirements of Contract Documents.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 SPECIAL INSPECTIONS AND TESTING - GENERAL

- A. Frequency of Special Inspections and Testing: Special Inspections are indicated as continuous or periodic.
 - 1. Continuous Special Inspection: Special Inspection Agency is required to be present in the area where the work is being performed and observe the work at all times the work is in progress.
 - 2. Periodic Special Inspection: Special Inspection Agency is required to be present in the area where work is being performed and observe the work part-time or intermittently and at the completion of the work.

3.02 SCHEDULE OF SPECIAL INSPECTIONS AND TESTING

- A. A schedule of required special inspections and testing for structural work follows this Section.

3.03 SPECIAL INSPECTION AND TESTING AGENCY DUTIES AND RESPONSIBILITIES

- A. Special Inspection and Testing Agency is required to:
 - 1. Verify samples submitted by Contractor comply with the referenced standards and the approved Contract Documents.
 - 2. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
 - 3. Perform specified sampling and testing of products in accordance with specified reference standards.
 - 4. Ascertain compliance of materials and products with requirements of Contract Documents.
 - 5. Promptly notify Architect and Contractor of observed irregularities or non-compliance of work or products.
 - 6. Perform additional tests and inspections required by Architect.
 - 7. Submit reports of all tests or inspections specified.
- B. Limits on Special Inspection and Testing Agency Authority:
 - 1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
 - 2. Agency may not approve or accept any portion of the work.
 - 3. Agency may not assume any duties of Contractor.
 - 4. Agency has no authority to stop the work.

3.04 CONTRACTOR DUTIES AND RESPONSIBILITIES

- A. Contractor Responsibilities - General:
 - 1. Deliver to agency at designated location, adequate samples of materials for special inspections that require material verification.
 - 2. Cooperate with agency and laboratory personnel; provide access to approved documents at project site, to the work, to manufacturers' facilities, and to fabricators' facilities.
 - 3. Provide incidental labor and facilities:
 - a. To provide access to work to be tested or inspected.
 - b. To obtain and handle samples at the site or at source of Products to be tested or inspected.
 - c. To facilitate tests or inspections.
 - d. To provide storage and curing of test samples.
 - 4. Notify Architect and laboratory 24 hours prior to expected time for operations requiring testing or inspection services.
 - 5. Re-testing: Performed by same agency if required because of non-conformance to specified requirements, on instructions from Architect.
 - a. Paid by Contractor if required because of non-conformance to specified requirements.

END OF SECTION

Statement of Special Inspections

Project:

Location:

Owner's Representative:

Owner's Address:

This Statement of Special Inspections is submitted as a condition for permit issuance in accordance with the Special Inspection requirements of the 2018 North Carolina State Building Code. It includes a Schedule of Special Inspection Services applicable to this project, the name of the Special Inspector, the identity of other approved agencies retained for conducting Special Inspections, and the required inspector qualifications. This Statement of Special Inspections was prepared by the following Designers of Record:

Structural	(Type or print name)	(Signature)	(Date)
Architectural	(Type or print name)	(Signature)	(Date)
Mechanical	(Type or print name)	(Signature)	(Date)
Other	(Type or print name)	(Signature)	(Date)

The Special Inspector shall keep records of all special inspections and tests and shall furnish reports to the State Construction Office and the Designers of Record. Reports shall indicate if the work inspected or tested was or was not completed in conformance with the approved construction documents. Discovered discrepancies shall be brought to the immediate attention of the Contractor for correction. If such discrepancies are not corrected, the discrepancies shall be brought to the attention of the State Construction Office and the Designers of Record. The Special Inspections program does not relieve the Contractor of his or her responsibilities.

Interim reports shall be submitted to the State Construction Office, Owner, and the Designers of Record.

Interim Report Frequency: Monthly

A Final Report of Special Inspections documenting completion of all required Special Inspections, testing, and correction of any discrepancies should be submitted prior to issuance of a Certificate of Use and Occupancy.

Job Site safety and means and methods of construction are solely the responsibility of the Contractor.

Owner's Authorization

Accepted for the SCO by:

Signature Date

Signature Date

Schedule of Special Inspection Services^a

The following sheets comprise the required schedule of special inspections for this project. The construction divisions which require special inspections for this project are as follows.

- | | |
|---|---|
| <input type="checkbox"/> Structural Steel & High Strength Bolting | <input type="checkbox"/> Helical Pile Foundations |
| <input type="checkbox"/> Welding of Structural Steel | <input type="checkbox"/> Rammed Aggregate Piers & Stone Columns |
| <input type="checkbox"/> Cold-Formed Steel Deck | <input type="checkbox"/> Sprayed Fire-Resistant Material |
| <input type="checkbox"/> Open-Web Steel Joists & Joist Girders | <input type="checkbox"/> Mastic & Intumescent Fire-Resistant Coatings |
| <input type="checkbox"/> Cold-Formed Steel Framing | <input type="checkbox"/> Exterior Insulation & Finish System |
| <input type="checkbox"/> Concrete Construction | <input type="checkbox"/> Fire-Resistant Penetrations & Joints |
| <input type="checkbox"/> Masonry Construction ^b | <input type="checkbox"/> Smoke Control |
| <input type="checkbox"/> Wood Construction | <input type="checkbox"/> Retaining Wall & Systems > 5 Feet |
| <input type="checkbox"/> Soils | <input type="checkbox"/> Special Inspections for Wind Resistance |
| <input type="checkbox"/> Driven Deep Foundations | <input type="checkbox"/> Special Inspections for Seismic Resistance |
| <input type="checkbox"/> Cast-in-Place Deep Foundations | |

- a. The inspection frequency indicated on the following inspection tables are "C" continuous, "P" periodic, & "O" random on a daily basis.
- b. Level A is the minimum inspection program for empirically / prescriptively designed masonry in Risk Category I, II or III structures. Level B is the minimum inspection program for empirically / prescriptively designed masonry in Risk Category IV structures and engineered masonry in Risk Category I, II or III structures. Level C is the minimum inspection program for engineered masonry in Risk Category IV structures. Engineered masonry structures are those designed in accordance with portions of the TMS 402-13 / ACI 530-13/ASCE 5-13 other than Part 4 or Appendix A.

Inspection Agents	Firm Name & Point of Contact	Address / Phone / E-mail
1. Special Inspector (SI-1)		
2. Testing Agency (TA-1)		
3. Testing Agency (TA-2)		
4. Geotechnical Engineer (GE-1)		
5. Other (O-1)		

Note: The inspection and testing agent(s) shall be engaged by the Owner or the Registered Design Professional of Record acting as 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 State Construction Office, prior to commencing work.

Seismic Design Category: ☐ A ☐ B ☐ C ☐ D

Basic Wind Speed (V_{asd}): ☐ 90-109mph ☐ 110-119mph ☐ ≥ 120 mph

Wind Exposure Category: ☐ B ☐ C ☐ D

Structural Steel and High-Strength Bolting

Inspection Task	Task Req'd	Freq	Reference for Criteria		Agent
			AISC 360	NCBC	
1. Fabricator Certification / Verification of Quality Control Procedures					
a. Verify fabricator qualifications	<input type="checkbox"/>	C		1704.2.5.1	
b. Review material test reports & certifications	<input type="checkbox"/>	C	N5.2		
c. Collect certificates of compliance from the steel fabricator at completion of fabrication	<input type="checkbox"/>	C		1704.5	
2. Inspections Prior to High-Strength Bolting at Pretensioned and Slip-Critical Joints					
a. Collect manufacturer's certifications for fastener materials	<input type="checkbox"/>	C	Table (Tbl) N5.6-1		
b. Fasteners are marked per ASTM requirements	<input type="checkbox"/>	P	Tbl N5.6-1		
c. Ensure correct fasteners and bolting procedures are selected for joint details	<input type="checkbox"/>	P	Tbl N5.6-1		
d. Verify connecting elements, including the appropriate faying surface condition and hole preparation when specified, comply with the construction documents	<input type="checkbox"/>	P	Tbl N5.6-1		
e. Observe and document pre-installation verification testing by installation personal for fastener assemblies and methods	<input type="checkbox"/>	P	Tbl N5.6-1		
f. Verify proper storage provided for all fastener components	<input type="checkbox"/>	P	Tbl N5.6-1		
3. Inspections During High-Strength Bolting at Pretensioned and Slip-Critical Joints					
a. Ensure correct fastener assemblies placed in all holes and washers, when specified, are positioned as required	<input type="checkbox"/>	P	Tbl N5.6-2		
b. Verify joint brought to snug-tight condition prior to pretensioning	<input type="checkbox"/>	P	Tbl N5.6-2		
c. Verify fastener components not turned by the wrench prevented from rotating	<input type="checkbox"/>	P	Tbl N5.6-2		
d. Ensure fasteners are pretensioned in accordance with RCSC, progressing from the most rigid point towards free edges	<input type="checkbox"/>	P	Tbl N5.6-2		
4. Document acceptance or rejection of bolted connections after high-strength bolting is complete	<input type="checkbox"/>	C	Tbl N5.6-3		
5. Structural Details					
a. Verify diameter, grade, type and length of anchor rods and other embedded items supporting structural steel	<input type="checkbox"/>	P	N5.7		
b. Inspection of fabricated assemblies & erected steel framing verifying compliance with the construction documents	<input type="checkbox"/>	P	N5.7		
6. Composite Construction					
a. Verify placement & installation of steel deck	<input type="checkbox"/>	P	Tbl N6.1		
b. Observe placement and installation of steel headed stud anchors			Tbl N6.1		
c. Document acceptance or rejection of composite construction elements	<input type="checkbox"/>	P	Tbl N6.1		

Welding of Structural Steel

Inspection Task	Task Req'd	Freq	Code Reference		Agent
			AISC 360	NCBC	
1. Inspections Prior to Welding			N5.4		
a. Collect & review welding procedure specification (WPS) and verify manufacturer certifications for welding consumables	<input type="checkbox"/>	C	Table (Tbl) N5.4-1		
b. Confirm weld material type & grade	<input type="checkbox"/>	P	Tbl N5.4-1		
c. Confirm method of welder identification	<input type="checkbox"/>	P	Tbl N5.4-1		
d. Inspection of fit-up for groove & fillet welds including access hole configuration & finish	<input type="checkbox"/>	P	Tbl N5.4-1		
2. Inspections During Welding			N5.4		
a. Verify welder qualifications	<input type="checkbox"/>	P	Tbl N5.4-2		
b. Verify proper control and handling of welding consumables	<input type="checkbox"/>	P	Tbl N5.4-2		
c. Monitor environmental conditions	<input type="checkbox"/>	P	Tbl N5.4-2		
d. Monitor proper implementation of WPS	<input type="checkbox"/>	P	Tbl N5.4-2		
e. Inspection of welding techniques including no welding over cracked tack welds	<input type="checkbox"/>	P	Tbl N5.4-2		
3. Inspections After Welding			N5.4, N5.5		
a. Verify welds have been cleaned	<input type="checkbox"/>	P	Tbl N5.4-3		
b. Confirm the installed size, length and location of welds matches the contract documents	<input type="checkbox"/>	C	Tbl N5.4-3		
c. Verify welds meet visual acceptance criteria	<input type="checkbox"/>	C	Tbl N5.4-3		
d. Confirm arc strikes comply with Part 5.28 of AWS D1.1	<input type="checkbox"/>	C	Tbl N5.4-3		
e. Visually observe web k-area for cracks within 3" of welded doubler plates, continuity plates and stiffeners	<input type="checkbox"/>	C	Tbl N5.4-3		
f. Backing and weld tabs removed per contract documents	<input type="checkbox"/>	C	Tbl N5.4-3		
g. Observe and inspect weld repair activities	<input type="checkbox"/>	C	Tbl N5.4-3		
h. For Risk Category III or IV structures, conduct ultrasonic testing (UT) of CJP groove welds in materials $\geq 5/16"$ at butt, T- and corner joints subject to transversely applied tension loading	<input type="checkbox"/>	C	N.5.5b, N5.5e		
i. For Risk Category II structures, conduct ultrasonic testing (UT) of CJP groove welds in materials $\geq 5/16"$ at butt, T- and corner joints subject to transversely applied tension loading	<input type="checkbox"/>	P	N.5.5b, N5.5f		
j. Conduct magnetic particle testing (MT) or liquid penetrant testing (PT) at thermally cut surfaces of access holes for rolled section with $t_f > 2"$ and built-up shape with $t_w > 2"$	<input type="checkbox"/>	C	N5.5c		
k. Radiographic or ultrasonic inspection at joints subject to fatigue	<input type="checkbox"/>	C	N5.5d, Tbl A-3.1		
l. Document acceptance / rejection of welded joints and members	<input type="checkbox"/>	C	Tbl N5.4-3, N5.5g		

Cold-Formed Steel Deck

Inspection Task	Task Req'd	Freq	Reference for Criteria		Agent
			SDI QA/QC	NCBC	
1. Prior to deck placement, verify deck and deck accessories comply with the construction documents	<input type="checkbox"/>	C	Table (Tbl) 1.1		
2. Inspection Tasks After Deck Placement					
a. Verify the installation of deck & deck accessories complies with the construction documents	<input type="checkbox"/>	C	Tbl 1.2		
b. Verify that deck materials' mill certifications comply with the construction documents	<input type="checkbox"/>	C	Tbl 1.2		
3. Inspection Tasks Prior to Deck Welding					
a. Collect welding procedure specification (WPS)	<input type="checkbox"/>	P	Tbl 1.3		
b. Collect manufacturer certifications for welding consumables	<input type="checkbox"/>	P	Tbl 1.3		
c. Verify material type and grade	<input type="checkbox"/>	P	Tbl 1.3		
d. Check welding equipment	<input type="checkbox"/>	P	Tbl 1.3		
4. Inspection Tasks During Deck Welding					
a. Verify welder qualifications	<input type="checkbox"/>	P	Tbl 1.4		
b. Verify proper control and handling of welding consumables	<input type="checkbox"/>	P	Tbl 1.4		
c. Monitor environmental conditions	<input type="checkbox"/>	P	Tbl 1.4		
d. Monitor proper implementation of WPS	<input type="checkbox"/>	P	Tbl 1.4		
5. Inspection Tasks After Welding					
a. Verify size and location of welds, including support, sidelap and perimeter welds	<input type="checkbox"/>	C	Tbl 1.5		
b. Verify welds meet visual acceptance criteria	<input type="checkbox"/>	C	Tbl 1.5		
c. Observe weld repair activities	<input type="checkbox"/>	C	Tbl 1.5		
6. Inspection Tasks Prior to Mechanical Fastening					
a. Verify manufacturer installation instructions available for mechanical fasteners	<input type="checkbox"/>	P	Tbl 1.6		
b. Proper tools available for fastener installation	<input type="checkbox"/>	P	Tbl 1.6		
c. Verify proper storage of mechanical fasteners	<input type="checkbox"/>	P	Tbl 1.6		
7. Inspection Tasks During Mechanical Fastening					
a. Observe fastener spacing and position	<input type="checkbox"/>	P	Tbl 1.7		
b. Verify fasteners are installed in accordance with manufacturer's instructions	<input type="checkbox"/>	P	Tbl 1.7		
8. Inspection Tasks After Mechanical Fastening					
a. Check spacing, type and installation of support fasteners	<input type="checkbox"/>	C	Tbl 1.8		
b. Check spacing, type, and installation of sidelap fasteners	<input type="checkbox"/>	C	Tbl 1.8		
c. Check spacing, type, and installation of perimeter fasteners	<input type="checkbox"/>	C	Tbl 1.8		
d. Verify repair activities	<input type="checkbox"/>	C	Tbl 1.8		
9. Document acceptance or rejection of deck & deck accessories for all phases of construction	<input type="checkbox"/>	C	Tbls 1.1 thru 1.8		

Cold-Formed Steel Framing

Inspection Task	Task Req'd	Freq	Reference for Criteria		Agent
			Standard	NCBC	
1. Fabricator Certification / Verification of Quality Control Procedures					
a. Verify fabricator qualifications	<input type="checkbox"/>	C		1704.2.5.1	
b. Collect certificates of compliance from the steel fabricator at completion of fabrication	<input type="checkbox"/>	C		1704.5	
2. For trusses clear spanning 60 feet or more, verify that both temporary and permanent restraints and braces are installed in accordance with the approved truss submittal package.	<input type="checkbox"/>	P		1705.2.4	

Concrete Construction

Inspection Task	Task Req'd	Freq	Reference for Criteria		Agent
			Standard ^a	NCBC	
1. Inspect reinforcement, including prestressing tendons, and verify placement	<input type="checkbox"/>	P	ACI Ch.20, 25.2, 25.3, 26.6.1-26.6.3	1908.4	
2. Reinforcing Bar Welding:			AWS D1.4		
e. Verify weldability of reinforcing bars other than ASTM A706 and collect reports	<input type="checkbox"/>	P	ACI 26.6.4	1704.5	
f. Inspect single-pass fillet welds $\leq 5/16"$	<input type="checkbox"/>	P	ACI 26.6.4		
g. Inspect all welds other than single-pass fillet welds $\leq 5/16"$	<input type="checkbox"/>	C	ACI 26.6.4		
3. Concrete Anchors:					
a. Inspect anchors cast in concrete	<input type="checkbox"/>	P	ACI 17.8.2		
b. Inspect adhesive anchors installed in hardened concrete with horizontally or upwardly inclined orientations that resist sustained tension loads	<input type="checkbox"/>	C	ACI 17.8.2.4		
c. Inspect adhesive anchors installed in hardened concrete with orientations different from Item 3.b	<input type="checkbox"/>	P	ACI 17.8.2		
d. Inspect mechanical anchors installed in hardened concrete	<input type="checkbox"/>	P	ACI 17.8.2		
4. Collect mix designs and verify the correct mix used during installation	<input type="checkbox"/>	P	ACI Ch19, 26.4.3, 26.4.4	1904.1, 1904.2, 1908.2, 1908.3	
5. Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete	<input type="checkbox"/>	C	ASTM C172, ASTM C31, ACI 26.4, 26.12	1908.10	
6. Inspect concrete and shotcrete placement for proper application techniques	<input type="checkbox"/>	C	ACI 26.5	1908.6, 1908.7, 1908.8	
7. Collect reports of preconstruction tests for shotcrete when preconstruction tests are required by NCBC Section 1908.4	<input type="checkbox"/>	C		1704.5, 1908.5	
8. Verify maintenance of specified curing temperature and techniques	<input type="checkbox"/>	P	ACI 26.5.3-26.5.5	1908.9	
9. Inspections for prestressed concrete					
a. Observe application of prestressing force	<input type="checkbox"/>	C	ACI 26.10		
b. Inspect grouting of bonded prestressing tendons	<input type="checkbox"/>	C	ACI 26.10		
10. Verify concrete strength prior to stressing of PT tendons and prior to removal of shores and forms from PT & mild beams and structural slabs	<input type="checkbox"/>	P	ACI 26.11.2		
11. Inspect erection of precast members	<input type="checkbox"/>	P	ACI 26.8		
12. Inspect formwork for shape, location and dimensions of the concrete member being formed	<input type="checkbox"/>	P	ACI 26.11.1.2(b)		
13. Collect mill test reports for ASTM A615 rebar used by SFRS special moment frames, special structural walls or coupling beams	<input type="checkbox"/>	C	ACI 20.2.2.5	1704.5	

a. References to "ACI" in this table are to the ACI 318-14.

Wood Construction

Inspection Task	Task Req'd	Freq	Reference for Criteria		Agent
			Standard	NCBC	
1. Fabricator certification / verification of quality control procedures for prefabricated wood structural elements and assemblies					
a. Verify fabricator qualifications	<input type="checkbox"/>	C		1704.2.5.1, 1705.5	
b. Collect certificates of compliance from the fabricator at completion of fabrication	<input type="checkbox"/>	C		1704.5, 1705.5	
2. High-load diaphragms				2306.2	
a. Verify that wood structural panel sheathing is the correct grade and thickness	<input type="checkbox"/>	P		1705.5.1	
b. Verify nominal size of framing members and blocking at adjoining panel edges	<input type="checkbox"/>	P	AWC-SDPWS 4.2.7.1.2	1705.5.1	
c. Nail and or staple diameter, length, quantity and spacing comply with the contract documents	<input type="checkbox"/>	P		1705.5.1	
3. For metal-plate-connected trusses clear spanning 60 feet or more, verify that both temporary and permanent restraints and braces are installed in accordance with the approved truss submittal package	<input type="checkbox"/>	P		1705.5.2	

Soils

Inspection Task	Task Req'd	Freq	Reference for Criteria		Agents
			Standard	NCBC	
1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity	<input type="checkbox"/>	P		1705.6	
2. Verify excavations extend to proper depth and have reached the correct soil material	<input type="checkbox"/>	P		1705.6	
3. Perform classification and testing of compacted fill materials	<input type="checkbox"/>	P		1705.6	
4. Verify that materials used, densities, lift thickness and procedures used during placement and compaction of compacted fill are in accordance with the approved soils report and the construction documents	<input type="checkbox"/>	C		1705.6	
5. Prior to placement of compacted fill, verify that the subgrade has been prepared in accordance with the approved soils report and the construction documents	<input type="checkbox"/>	P		1705.6	

Mastic and Intumescent Fire-Resistant Coatings

Inspection Task	Task Req'd	Freq ^(a)	Reference for Criteria		Agents
			Standard	NCBC	
1. Prior to application, verify preparation of substrate and suitability of primers, if present, are in accordance with approved fire resistance design, approved manufacturer's written instructions, and the requirements of AWCI 12-B	<input type="checkbox"/>	P	AWCI 12-B	1705.15	
2. Observe the application of fire-resistant coatings ensuring compliance with approved fire resistance design, approved manufacturer's written instructions, and the requirements of AWCI 12-B	<input type="checkbox"/>	P	AWCI 12-B	1705.15	
3. After adequate drying but prior to the application of any topcoat, measure the final mastic / intumescent material thickness ensuring compliance with the construction documents and approved material / installation submittals. Measurements must consider the thickness of primers or other existing coatings on the surface of the substrate.	<input type="checkbox"/>	P	AWCI 12-B	1705.15	

Fire-resistant Penetrations and Joints ^a

Inspection Task	Task Req'd	Freq	Reference for Criteria		Agent
			Standard	NCBC	
1. Inspect through-penetration firestop systems at fire walls, fire barriers, smoke barriers and fire partition walls in accordance with ASTM E2174	<input type="checkbox"/>	P		1705.17.1, 714.3.1.2	
2. Inspect penetration firestop systems at penetrations through membranes that are part of a horizontal assembly in accordance with ASTM E2174	<input type="checkbox"/>	P		1705.17.1, 714.4.2	
3. Inspect fire-resistant joint systems in accordance with ASTM 2393	<input type="checkbox"/>	P		1705.17.2, 715.3, 715.4	

a. The inspection of fire-resistant penetrations and joints applies only to high-rise buildings or buildings assigned to Risk Category III or IV.

SECTION 01 5000
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Dewatering.
- B. Temporary utilities.
- C. Temporary telecommunications services.
- D. Temporary sanitary facilities.
- E. Temporary Controls: Barriers, enclosures, and fencing.
- F. Vehicular access and parking.
- G. Waste removal facilities and services.
- H. Project identification sign.
- I. Field offices.

1.02 REFERENCE STANDARDS

- A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
- B. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements.

1.03 DEWATERING

- A. Provide temporary means and methods for dewatering all temporary facilities and controls.
- B. Maintain temporary facilities in operable condition throughout duration of construction period.

1.04 TEMPORARY UTILITIES

- A. Provide and pay for all electrical power, lighting, water, heating and cooling, and ventilation required for construction purposes.
- B. New permanent facilities may not be used.
- C. Use trigger-operated nozzles for water hoses, to avoid waste of water.

1.05 TELECOMMUNICATIONS SERVICES

- A. Provide, maintain, and pay for telecommunications services to field office at time of project mobilization.
- B. Telecommunications services shall include:
 - 1. Windows-based personal computer or lap-top computer dedicated to project telecommunications, with necessary software and laser printer.
 - 2. Telephone Land Lines: One line, minimum; one handset per line.
 - 3. Internet Connections: Minimum of one; 2.4G or faster.
 - 4. Email: Account/address reserved for project use.

1.06 TEMPORARY SANITARY FACILITIES

- A. Provide and maintain required facilities and enclosures. Provide at time of project mobilization.
- B. Maintain daily in clean and sanitary condition.

1.07 BARRIERS

- A. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for Owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations.
- B. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing buildings.
- C. Provide protection for plants designated to remain. Replace damaged plants.
- D. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

1.08 FENCING

- A. Construction: Commercial grade chain link fence.
- B. Provide minimum 6 foot high fence around construction site; equip with vehicular and pedestrian gates with locks.

1.09 EXTERIOR ENCLOSURES

- A. Provide temporary weather tight closure of exterior openings to accommodate acceptable working conditions and protection for Products, to allow for temporary heating and maintenance of required ambient temperatures identified in individual specification sections, and to prevent entry of unauthorized persons. Provide access doors with self-closing hardware and locks.

1.10 INTERIOR ENCLOSURES

- A. Provide temporary partitions to separate work areas from Owner-occupied areas, to prevent penetration of dust and moisture into Owner-occupied areas, and to prevent damage to existing materials and equipment.
- B. Construction: Framing and reinforced polyethylene sheet materials with closed joints and sealed edges at intersections with existing surfaces:
 - 1. STC rating of 35 in accordance with ASTM E90.
 - 2. Maximum flame spread rating of 75 in accordance with ASTM E84.
- C. Paint surfaces exposed to view from Owner-occupied areas.

1.11 VEHICULAR ACCESS AND PARKING

- A. Comply with regulations relating to use of streets and sidewalks, access to emergency facilities, and access for emergency vehicles.
- B. Coordinate access and haul routes with governing authorities and Owner.
- C. Provide and maintain access to fire hydrants, free of obstructions.
- D. Provide means of removing mud from vehicle wheels before entering streets.
- E. Provide temporary parking areas to accommodate construction personnel. When site space is not adequate, provide additional off-site parking.
- F. Do not allow vehicle parking on existing pavement, unless authorized by Owner in writing.

1.12 WASTE REMOVAL

- A. Provide waste removal facilities and services as required to maintain the site in clean and orderly condition.
- B. Provide containers with lids. Remove trash from site periodically.
- C. If materials to be recycled or re-used on the project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.
- D. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

1.13 PROJECT IDENTIFICATION

- A. Provide project identification sign of design, construction, and location approved by Owner.
- B. No other signs are allowed without Owner permission except those required by law.

1.14 FIELD OFFICES

- A. Office: Weathertight, with lighting, electrical outlets, heating, cooling equipment, and equipped with sturdy furniture, drawing rack, and drawing display table.
- B. Provide space for Project meetings, with table and chairs to accommodate 10 persons.
- C. Locate offices a minimum distance of 20 feet from structures and permanent site improvements.

1.15 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS

- A. Remove temporary utilities, equipment, facilities, materials, prior to Date of Substantial Completion inspection.
- B. Remove underground installations to a minimum depth of 2 feet. Grade site as indicated.
- C. Clean and repair damage caused by installation or use of temporary work.
- D. Restore new permanent facilities used during construction to specified condition.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 01 5713

TEMPORARY EROSION AND SEDIMENT CONTROL

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Prevention of erosion due to construction activities.
- B. Prevention of sedimentation of waterways, open drainage ways, and storm and sanitary sewers due to construction activities.
- C. Restoration of areas eroded due to insufficient preventive measures.
- D. Compensation of Owner for fines levied by authorities having jurisdiction due to non-compliance by Contractor.

1.02 REFERENCE STANDARDS

- A. ASTM D4632/D4632M - Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.
- B. EPA (NPDES) - National Pollutant Discharge Elimination System (NPDES), Construction General Permit.

1.03 PERFORMANCE REQUIREMENTS

- A. Comply with requirements of EPA (NPDES) for erosion and sedimentation control, as specified by the NPDES, for Phases I and II, and in compliance with requirements of Construction General Permit (CGP).
 - 1. Also comply with all more stringent requirements of Erosion and Sedimentation Control Manual of North Carolina.
 - 2. Also comply with all requirements of local jurisdiction for erosion and sedimentation control.
- B. Develop and follow an Erosion and Sedimentation Prevention Plan and submit periodic inspection reports.
- C. Do not begin clearing, grading, or other work involving disturbance of ground surface cover until applicable permits have been obtained; furnish all documentation required to obtain applicable permits.
 - 1. Obtain and pay for permits and provide security required by authority having jurisdiction.
 - 2. Owner will withhold payment to Contractor equivalent to all fines resulting from non-compliance with applicable regulations.
- D. Timing: Put preventive measures in place as soon as possible after disturbance of surface cover and before precipitation occurs.
- E. Storm Water Runoff: Control increased storm water runoff due to disturbance of surface cover due to construction activities for this project.
 - 1. Prevent runoff into storm and sanitary sewer systems, including open drainage channels, in excess of actual capacity or amount allowed by authorities having jurisdiction, whichever is less.
 - 2. Anticipate runoff volume due to the most extreme short term and 24-hour rainfall events that might occur in 25 years.
- F. Erosion On Site: Minimize wind, water, and vehicular erosion of soil on project site due to construction activities for this project.
 - 1. Control movement of sediment and soil from temporary stockpiles of soil.
 - 2. Prevent development of ruts due to equipment and vehicular traffic.
 - 3. If erosion occurs due to non-compliance with these requirements, restore eroded areas at no cost to Owner.
- G. Erosion Off Site: Prevent erosion of soil and deposition of sediment on other properties caused by water leaving the project site due to construction activities for this project.
 - 1. Prevent windblown soil from leaving the project site.
 - 2. Prevent tracking of mud onto public roads outside site.
 - 3. Prevent mud and sediment from flowing onto sidewalks and pavements.
 - 4. If erosion occurs due to non-compliance with these requirements, restore eroded areas at no cost to Owner.

- H. Sedimentation of Waterways On Site: Prevent sedimentation of waterways on the project site, including rivers, streams, lakes, ponds, open drainage ways, storm sewers, and sanitary sewers.
 - 1. If sedimentation occurs, install or correct preventive measures immediately at no cost to Owner; remove deposited sediments; comply with requirements of authorities having jurisdiction.
 - 2. If sediment basins are used as temporary preventive measures, pump dry and remove deposited sediment after each storm.
 - I. Sedimentation of Waterways Off Site: Prevent sedimentation of waterways off the project site, including rivers, streams, lakes, ponds, open drainage ways, storm sewers, and sanitary sewers.
 - 1. If sedimentation occurs, install or correct preventive measures immediately at no cost to Owner; remove deposited sediments; comply with requirements of authorities having jurisdiction.
 - J. Open Water: Prevent standing water that could become stagnant.
 - K. Maintenance: Maintain temporary preventive measures until permanent measures have been established.
- 1.04 SUBMITTALS
- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
 - B. Inspection Reports: Submit report of each inspection; identify each preventive measure, indicate condition, and specify maintenance, repair, and corrective action required and accomplished. Include date-stamped photographs of conditions with each inspection report.
 - C. Maintenance Instructions: Provide instructions covering inspection and maintenance for temporary measures that must remain after Substantial Completion.

PART 2 PRODUCTS

2.01 MATERIALS

- A. General: See Drawings for materials and other required control measures.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Examine site and identify existing features that contribute to erosion resistance; maintain such existing features to greatest extent possible.

3.02 PREPARATION

- A. Schedule work so that soil surfaces are left exposed for the minimum amount of time.

3.03 SCOPE OF PREVENTIVE MEASURES

- A. In all cases, if permanent erosion resistant measures have been installed temporary preventive measures are not required.
- B. See Drawings for scope and extent of required erosion and sediment control measures.

3.04 INSTALLATION

- A. General: Install temporary erosion and sediment controls as indicated on Drawings.

3.05 MAINTENANCE

- A. Inspect preventive measures weekly, within 24 hours after the end of any storm that produces 0.5 inches or more rainfall at the project site, and daily during prolonged rainfall.
- B. Repair deficiencies immediately.
- C. Clean out temporary sediment control structures weekly and relocate soil on site.
- D. Place sediment in appropriate locations on site; do not remove from site.

3.06 CLEAN UP

- A. Remove temporary measures after permanent measures have been installed, unless permitted to remain by Architect.
- B. Clean out temporary sediment control structures that are to remain as permanent measures.
- C. Where removal of temporary measures would leave exposed soil, shape surface to an acceptable grade and finish to match adjacent ground surfaces.

END OF SECTION

SECTION 01 6000
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. General product requirements.
- B. Transportation, handling, storage and protection.
- C. Product option requirements.
- D. Substitution limitations.
- E. Procedures for Owner-supplied products.
- F. Maintenance materials, including extra materials, spare parts, tools, and software.

1.02 RELATED REQUIREMENTS

- A. Section 01 1000 - Summary: Identification of Owner-supplied products.
- B. Section 01 2500 - Substitution Procedures: Substitutions made after Contract award.
- C. Section 01 4000 - Quality Requirements: Product quality monitoring.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Proposed Products List: Submit list of major products proposed for use, with name of manufacturer, trade name, and model number of each product.
 - 1. Submit within 15 days after date of Notice to Proceed.
 - 2. For products specified only by reference standards, list applicable reference standards.
- C. Product Data Submittals: Submit manufacturer's standard published data. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- D. Shop Drawing Submittals: Prepared specifically for this Project; indicate utility and electrical characteristics, utility connection requirements, and location of utility outlets for service for functional equipment and appliances.
- E. Sample Submittals: Illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
 - 1. For selection from standard finishes, submit samples of the full range of the manufacturer's standard colors, textures, and patterns.

PART 2 PRODUCTS

2.01 NEW PRODUCTS

- A. Provide new products unless specifically required or permitted by Contract Documents.
- B. See Section 01 4000 - Quality Requirements, for additional source quality control requirements.
- C. Use of products having any of the following characteristics is not permitted:
 - 1. Made using or containing CFC's or HCFC's.
 - 2. Containing lead, cadmium, or asbestos.

2.02 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.

- B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.
 - C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.
 - D. Products Specified by Naming a Basis of Design Manufacturer or Product with a Provision for Substitutions: Submit a request for substitution for any other manufacturer listed under Other Acceptable Manufacturers, or for a manufacturer not named.
 - 1. Refer to Section 01 4000 for basis of design specifications requirements.
- 2.03 MAINTENANCE MATERIALS
- A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification Sections.
 - B. Deliver and place in location as directed; obtain receipt prior to final payment.

PART 3 EXECUTION

3.01 SUBSTITUTION LIMITATIONS

- A. See Section 01 2500 - Substitution Procedures, for procedural requirements for proposed substitutions.
- B. Architect may consider requests for substitutions when one or more of the following conditions exist, as determined by Architect. If one or more of the following conditions are determined not to exist, Architect may not consider request further, and may take no action except to record the request and its non-compliance. Consideration may be given if substitution request:
 - 1. Offers Owner substantial advantage in cost, time, energy conservation, or other consideration, after deducting additional responsibilities Owner must assume as the result.
 - 2. Does not require extensive modification of Contract Documents.
 - 3. Is consistent with intent of Contract Documents, and will produce intended work results.
 - 4. Is fully documented and properly submitted.
 - 5. Resolves specified Product being unable to receive required approval by Authority Having Jurisdiction (AHJ), and substitution has received such approval prior to submission.
 - 6. Resolves incompatibility of specified Product with other related Products, and substitution is compatible with related Products.
 - 7. Resolves non-coordination of specified Product with other related Products, and substitution is coordinated with related Products.
 - 8. Provides specified warranty when specified Product cannot be provided with specified warranty.
 - 9. Is proposed for a Product that, through no fault of Contractor, becomes unavailable or unsuitable due to regulatory change.
 - 10. Will be considered if a Product cannot be provided within the Contract Time; Architect will not consider substitution if Product cannot be provided as the result of Contractor's failure to schedule and coordinate the Work as required by Contract Documents.
 - 11. Has been coordinated with and among all affected Subcontractors and other portions of the Work, and is acceptable to all affected Subcontractors.

3.02 OWNER-SUPPLIED PRODUCTS

- A. See Section 01 1000 - Summary for identification of Owner-supplied products.
- B. Owner's Responsibilities:
 - 1. Arrange for and deliver Owner reviewed shop drawings, product data, and samples, to Contractor.
 - 2. Arrange and pay for product delivery to site.
 - 3. On delivery, inspect products jointly with Contractor.
 - 4. Submit claims for transportation damage and replace damaged, defective, or deficient items.
 - 5. Arrange for manufacturers' warranties, inspections, and service.
- C. Contractor's Responsibilities:
 - 1. Designate submittals and delivery date for each product in progress schedule.
 - 2. Review Owner reviewed shop drawings, product data, and samples.

3. Receive and unload products at site; inspect for completeness or damage jointly with Owner.
4. Handle, store, install and finish products.
5. Provide installation inspections required by jurisdictional authorities.
6. Repair or replace items damaged after receipt.

3.03 TRANSPORTATION AND HANDLING

- A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.
- B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.
- C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- D. Transport and handle products in accordance with manufacturer's instructions.
- E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.
- H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

3.04 STORAGE AND PROTECTION

- A. Provide protection of stored materials and products against theft, casualty, or deterioration.
- B. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication.
 1. Structural Loading Limitations: Handle and store products and materials so as not to exceed static and dynamic load-bearing capacities of project floor and roof areas.
- C. Store and protect products in accordance with manufacturers' instructions.
- D. Store with seals and labels intact and legible.
- E. Arrange storage of materials and products to allow for visual inspection for the purpose of determination of quantities, amounts, and unit counts.
- F. Store sensitive products in weathertight, climate-controlled enclosures in an environment favorable to product.
- G. For exterior storage of fabricated products, place on sloped supports above ground.
- H. Provide off-site storage and protection when site does not permit on-site storage or protection.
- I. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.
- J. Comply with manufacturer's warranty conditions, if any.
- K. Do not store products directly on the ground.
- L. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- M. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- N. Prevent contact with material that may cause corrosion, discoloration, or staining.
- O. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

- P. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

END OF SECTION

SECTION 01 7000
EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Examination, preparation, and general installation procedures.
- B. Pre-installation meetings.
- C. Cutting and patching.
- D. Surveying for laying out the work.
- E. Cleaning and protection.
- F. Starting of systems and equipment.
- G. Demonstration and instruction of Owner personnel.
- H. Project closeout meeting.
- I. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.

1.02 DEFINITIONS

- A. Verify, Field Verify, or Drawing Abbreviation: Use on Drawings or in specifications is intended to alert Contractor that indicated measurement or description of work may not be fully determined without comparing verified dimension in larger context or other dependent measurements due to specific product, actual versus nominal dimensions, or measurements of existing conditions.
 - 1. Notify Architect of discrepancies between dimensions shown and field layout or measurements.

1.03 REFERENCE STANDARDS

- A. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations.

1.04 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Cutting and Patching: Submit written request in advance of cutting or alteration that affects:
 - 1. Structural integrity of any element of Project.
 - 2. Integrity of weather exposed or moisture resistant element.
 - 3. Efficiency, maintenance, or safety of any operational element.
 - 4. Visual qualities of sight exposed elements.
 - 5. Work of Owner or separate Contractor.
 - 6. Include in Request:
 - a. Identification of Project.
 - b. Location and description of affected work.
 - c. Necessity for cutting or alteration.
 - d. Description of proposed work and products to be used.
 - e. Alternatives to cutting and patching.
 - f. Effect on work of Owner or separate Contractor, if applicable.
 - g. Written permission of affected separate Contractor, if applicable.
 - h. Date and time work will be executed.
- C. Project Record Documents: Accurately record actual locations of capped and active utilities.

1.05 QUALIFICATIONS

- A. For surveying work, employ a land surveyor licensed in North Carolina.
- B. For design of temporary shoring and bracing, employ a Professional Engineer experienced in design of this type of work and licensed in North Carolina.

1.06 PROJECT CONDITIONS

- A. Use of explosives is not permitted without written permission from Owner.
- B. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
- C. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion.
- D. Perform dewatering activities, as required, for the duration of the project.
- E. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
 - 1. Provide mechanical ventilation of enclosed wood framing exposed to moisture.
 - 2. Provide mold mitigation as required on wood framing exposed to moisture.
- F. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
 - 1. Provide dust-proof enclosures to prevent entry of dust generated outdoors.
- G. Erosion and Sediment Control: Plan and execute work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
 - 1. Minimize amount of bare soil exposed at one time.
 - 2. Provide temporary measures such as berms, dikes, and drains, to prevent water flow.
 - 3. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.
 - 4. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.
- H. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
- I. Rodent Control: Provide methods, means, and facilities to prevent rodents from accessing or invading premises.
- J. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

1.07 ADMINISTRATIVE COORDINATION - GENERAL

- A. See Section 01 3114 - Facility Services Coordination, for detailed coordination requirements.
- B. Coordinate scheduling, submittals, and work of the various Sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- C. Notify affected utility companies and comply with their requirements.
- D. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various Sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- E. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on Drawings. Follow routing indicated for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- F. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- G. Coordinate completion and clean-up of work of separate Sections.
- H. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

PART 2 PRODUCTS

2.01 PATCHING MATERIALS

- A. New Materials: As specified in product Sections; match existing products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
- C. Product Substitutions: For any proposed change in materials, submit request for substitution described in Section 01 2500 - Substitution Procedures.

PART 3 EXECUTION

3.01 EXAMINATION

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- C. Examine and verify specific conditions described in individual specification Sections.
- D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.
- E. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

3.02 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

3.03 PRE-INSTALLATION MEETINGS

- A. When required in individual specification Sections, convene a pre-installation meeting at the site prior to commencing work of the Section.
- B. Require attendance of parties directly affecting, or affected by, work of the specific Section.
- C. Notify Architect minimum 7 calendar days in advance of proposed meeting date.
- D. Prepare agenda and preside at meeting:
 - 1. Review conditions of examination, preparation and installation procedures.
 - 2. Review coordination with related work.
- E. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

3.04 LAYING OUT THE WORK

- A. Verify locations of survey control points prior to starting work.
- B. Promptly notify Architect of any discrepancies discovered.
- C. Locate and protect survey control and reference points.

- D. Control datum for survey is that indicated on Drawings.
- E. Protect survey control points prior to starting site work; preserve permanent reference points during construction.
- F. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
- G. Replace dislocated survey control points based on original survey control. Make no changes without prior written notice to Architect.
- H. Utilize recognized engineering survey practices.
- I. Establish a minimum of two permanent bench marks on site, referenced to established control points. Record locations, with horizontal and vertical data, on project record documents.
- J. Establish elevations, lines and levels. Locate and lay out by instrumentation and similar appropriate means:
 - 1. Site improvements including pavements; stakes for grading, fill and topsoil placement; utility locations, slopes, and invert elevations.
 - 2. Grid or axis for structures.
 - 3. Building foundation, column locations, ground floor elevations.
 - 4. Controlling lines and levels required for mechanical and electrical trades.
- K. Periodically verify layouts by same means.
- L. Maintain a complete and accurate log of control and survey work as it progresses.

3.05 GENERAL INSTALLATION REQUIREMENTS

- A. In addition to compliance with regulatory requirements, conduct construction operations in compliance with NFPA 241, including applicable recommendations in Appendix A.
- B. Install products as specified in individual Sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- C. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- D. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- E. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- F. Make neat transitions between different surfaces, maintaining texture and appearance.

3.06 CUTTING AND PATCHING

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. Perform whatever cutting and patching is necessary to:
 - 1. Complete the work.
 - 2. Fit products together to integrate with other work.
 - 3. Provide openings for penetration of mechanical, electrical, and other services.
 - 4. Match work that has been cut to adjacent work.
 - 5. Repair areas adjacent to cuts to required condition.
 - 6. Repair new work damaged by subsequent work.
 - 7. Remove samples of installed work for testing when requested.
 - 8. Remove and replace defective and non-complying work.
- C. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing.
- D. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
- E. Cut rigid materials, resulting in clean and neat edges, using masonry saw or core drill. Cutting rigid materials using chisels, impact or pneumatic tools is not allowed without prior approval.

- F. Restore work with new products in accordance with requirements of Contract Documents.
 - G. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
 - H. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07 8400, to full thickness of the penetrated element.
 - I. Patching:
 - 1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
 - 2. Match color, texture, and appearance.
 - 3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.
- 3.07 PROGRESS CLEANING
- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
 - B. Remove debris and rubbish from wall cavities, pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.
 - C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
 - D. Collect and remove waste materials, debris, and trash/rubbish from site weekly and dispose off-site; do not burn or bury.
- 3.08 PROTECTION OF INSTALLED WORK
- A. Protect installed work from damage by construction operations.
 - B. Provide special protection where specified in individual specification Sections.
 - C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
 - D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
 - E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
 - F. Protect work from spilled liquids. If work is exposed to spilled liquids, immediately remove protective coverings, dry out work, and replace protective coverings.
 - G. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
 - 1. Keep waterproofed and roofed surfaces clean and free of debris that could cause damage to surfaces and membranes, particularly sharp objects including fasteners, wire cut-offs, and similar items.
 - H. Prohibit traffic from landscaped areas.
 - I. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.
 - J. Failure to protect installed work may result in withholding of payments to Contractor as determined by Architect. Damage resulting from failure to protect installed work must be fully repaired or replaced as applicable to the satisfaction of Architect at no additional cost to Owner.
- 3.09 SYSTEM STARTUP
- A. Coordinate schedule for start-up of various equipment and systems.
 - B. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions that may cause damage.
 - C. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.

- D. Verify that wiring and support components for equipment are complete and tested.
 - E. Execute start-up under supervision of applicable Contractor personnel and manufacturer's representative in accordance with manufacturers' instructions.
 - F. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.
 - G. Submit a written report that equipment or system has been properly installed and is functioning correctly.
- 3.10 DEMONSTRATION AND INSTRUCTION
- A. See Section 01 7900 - Demonstration and Training.
 - B. The amount of time required for instruction on each item of equipment and system is that specified in individual Sections.
- 3.11 ADJUSTING
- A. Adjust operating products and equipment to ensure smooth and unhindered operation.
 - B. Testing, Adjusting, and Balancing HVAC Systems: See Division 23 and Section 01 4000 - Quality Requirements.
- 3.12 FINAL CLEANING
- A. Execute final cleaning after Substantial Completion but before making final application for payment.
 - B. Use cleaning materials that are nonhazardous.
 - C. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, and vacuum carpeted and soft surfaces.
 - D. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.
 - E. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
 - F. Clean filters of operating equipment.
 - G. Clean debris from roofs, gutters, downspouts, scuppers, overflow drains, area drains, and drainage systems.
 - H. Clean site; sweep paved areas, rake clean landscaped surfaces.
 - I. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.
- 3.13 PROJECT CLOSEOUT MEETING
- A. Schedule and administer a Project closeout meeting minimum two months before scheduled Date of Substantial Completion, at location mutually agreed upon by Owner, Contractor, and Architect.
 - B. Attendance Required: Owner, Contractor, job superintendent, and Architect.
 - C. Minimum Agenda:
 - 1. Review specified closeout process, tasks required of respective participants, task scheduling, and deadline dates for each critical path task in the closeout process.
 - 2. Review closeout submittals required and submittal procedures for each.
 - 3. Review maintenance materials requirements and Owner's requirements for delivery and storage.
 - 4. Review final inspection requirements of AHJ and coordination of same.
 - 5. Review status of record documentation, and discuss process for completing and distributing record documentation to Owner and Architect.

- D. Record minutes and distribute electronically within two days after meeting to participants and those affected by decisions made.

3.14 CLOSEOUT PROCEDURES

- A. Make submittals that are required by governing or other authorities.
 - 1. Provide copies to Architect and Owner.
- B. Notify Architect in writing when work is considered ready for Architect's Substantial Completion inspection.
 - 1. Prerequisite for Substantial Completion: In addition to definition of Substantial Completion in the General Conditions or Agreement, Substantial Completion is not considered achieved until Certificate of Occupancy is issued by primary jurisdictional authority, allowing Owner to fully occupy or utilize building and associated facilities for intended use in all respects.
- C. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's Substantial Completion inspection.
- D. Conduct Substantial Completion inspection and create Final Correction Punch List containing Architect's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Architect.
- E. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.
- F. Accompany Owner and Architect on Contractor's preliminary final inspection.
- G. Notify Architect when work is considered finally complete and ready for Architect's Substantial Completion final inspection.
- H. Complete items of work determined by Architect listed in executed Certificate of Substantial Completion.

END OF SECTION

SECTION 01 7800
CLOSEOUT SUBMITTALS

PART 1 GENERAL

1.01 SECTION INCLUDES

- A. Project record documents.
- B. Operation and maintenance data.
- C. Warranties and bonds.

1.02 RELATED REQUIREMENTS

- A. Section 01 3000 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- B. Individual Product Sections: Specific requirements for operation and maintenance data.
- C. Individual Product Sections: Warranties required for specific products or Work.

1.03 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.
- C. Operation and Maintenance Data:
 - 1. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Architect will review draft and return one copy with comments.
 - 2. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
 - 3. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect comments. Revise content of all document sets as required prior to final submission.
 - 4. Submit two sets of revised final documents in final form within 10 days after final inspection.
- D. Warranties and Bonds:
 - 1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
 - 2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
 - 3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 PROJECT RECORD DOCUMENTS

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
 - 1. Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other modifications to the Contract.
 - 5. Reviewed shop drawings, product data, and samples.
 - 6. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.

- D. Record information concurrent with construction progress.
 - E. Specifications: Legibly mark and record at each product Section description of actual products installed, including the following:
 - 1. Manufacturer's name and product model and number.
 - 2. Product substitutions or alternates utilized.
 - 3. Changes made by Addenda and modifications.
 - F. Record Drawings: Legibly mark each item to record actual construction including:
 - 1. Measured depths of foundations in relation to finish main floor datum.
 - 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - 3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 - 4. Field changes of dimension and detail.
 - 5. Details not on original Contract Drawings.
- 3.02 OPERATION AND MAINTENANCE DATA
- A. Source Data: For each product or system, list names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
 - B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
 - C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams.
 - D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.
- 3.03 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES
- A. For Each Product, Applied Material, and Finish:
 - 1. Product data, with catalog number, size, composition, and color and texture designations.
 - 2. Information for re-ordering custom manufactured products, if any.
 - B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.
 - C. Moisture Protection and Weather-exposed Products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.
 - D. Additional information as specified in individual product specification Sections.
 - E. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.
- 3.04 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS
- A. For Each Item of Equipment and Each System:
 - 1. Description of unit or system, and component parts.
 - 2. Identify function, normal operating characteristics, and limiting conditions.
 - 3. Include performance curves, with engineering data and tests.
 - 4. Complete nomenclature and model number of replaceable parts.
 - B. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.
 - C. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.

- D. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- E. Provide servicing and lubrication schedule, and list of lubricants required.
- F. Include manufacturer's printed operation and maintenance instructions.
- G. Include sequence of operation by controls manufacturer.
- H. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- I. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- J. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- K. Include test and balancing reports.
- L. Additional Requirements: As specified in individual product specification Sections.

3.05 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS

- A. Assemble operation and maintenance data into electronic files for Owner's personnel use, with data arranged in the same sequence as, and identified by, the specification Sections.
 - 1. Where systems involve more than one specification Section, provide separate electronic bookmarked tab for each system.
- B. Electronic Cover Page: Identify each file with first page titled OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
- C. Table of Contents: Arrange content by systems under Section numbers and sequence of Table of Contents of this Project Manual.
- D. Project Directory: Provide title of Project; names, addresses, and telephone numbers of Architect, Consultants, and Contractor with name of responsible parties; schedule of products and systems, indexed to content of the volume.
- E. Electronic Bookmarking: Provide electronically bookmarked divider pages in each file for each separate product and system; identify the contents on the divider page; immediately following the divider page include a description of product and major component parts of equipment.
- F. Arrangement of Contents: Organize each volume in parts as follows:
 - 1. Project Directory.
 - 2. Table of Contents, of all volumes, and of this volume.
 - 3. Operation and Maintenance Data: Arranged by system, then by product category.
 - a. Source data.
 - b. Product data, shop drawings, and other submittals.
 - c. Operation and maintenance data.
 - d. Field quality control data.
 - e. Electronic scans warranties and bonds.
 - 4. Design Data: To allow for addition of design data furnished by Architect or others, provide a bookmarked divider page labeled "Design Data" and allow for insertion of additional electronic data, if applicable.

3.06 WARRANTIES AND BONDS

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.
 - 1. Warranties must clearly state that warranty commences on Date of Substantial Completion, and the actual Date of Substantial Completion according to the Contract must be clearly stated on the warranty form.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.
- E. Include photocopies of each in operation and maintenance manuals, indexed separately on Table of Contents.
- F. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification Section in which specified, and the name of product or work item.

END OF SECTION

SECTION 01 7900
DEMONSTRATION AND TRAINING

PART 1 GENERAL

1.01 SUMMARY

- A. Demonstration of products and systems to be commissioned and where indicated in specific specification Sections.
- B. Training of Owner personnel in operation and maintenance is required for:
 - 1. All software-operated systems.
 - 2. HVAC systems and equipment.
 - 3. Plumbing equipment.
 - 4. Electrical systems and equipment.
 - 5. Landscape irrigation.
 - 6. Items specified in individual product Sections.
- C. Training of Owner personnel in care, cleaning, maintenance, and repair is required for:
 - 1. Roofing, waterproofing, and other weather-exposed or moisture protection products.
 - 2. Finishes, including flooring, wall finishes, ceiling finishes.
 - 3. Fixtures and fittings.
 - 4. Items specified in individual product Sections.

1.02 SUBMITTALS

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures; except:
 - 1. Make all submittals specified in this Section, and elsewhere where indicated for commissioning purposes, directly to the Commissioning Authority.
 - 2. Submit one copy to the Commissioning Authority, not to be returned.
 - 3. Make commissioning submittals on time schedule specified by Commissioning Authority.
 - 4. Submittals indicated as "Draft" are intended for the use of the Commissioning Authority in preparation of overall Training Plan; submit in editable electronic format.
- B. Training Plan: Owner will designate personnel to be trained; tailor training to needs and skill-level of attendees.
 - 1. Submit to Architect for transmittal to Owner.
 - 2. Submit to Commissioning Authority for review and inclusion in overall training plan.
 - 3. Submit not less than four weeks prior to start of training.
 - 4. Revise and resubmit until acceptable.
 - 5. Provide an overall schedule showing all training sessions.
 - 6. Include at least the following for each training session:
 - a. Identification, date, time, and duration.
 - b. Description of products and/or systems to be covered.
 - c. Name of firm and person conducting training; include qualifications.
 - d. Intended audience, such as job description.
 - e. Objectives of training and suggested methods of ensuring adequate training.
 - f. Methods to be used, such as classroom lecture, live demonstrations, hands-on, etc.
 - g. Media to be used, such as slides, hand-outs, etc.
 - h. Training equipment required, such as projector, projection screen, etc., to be provided by Contractor.
- C. Training Manuals: Provide training manual for each attendee; allow for minimum of two attendees per training session.
 - 1. Include applicable portion of O&M manuals.
 - 2. Include copies of all hand-outs, slides, overheads, video presentations, etc., that are not included in O&M manuals.
 - 3. Provide one extra copy of each training manual to be included with operation and maintenance data.

- D. Training Reports:
 - 1. Identification of each training session, date, time, and duration.
 - 2. Sign-in sheet showing names and job titles of attendees.
 - 3. List of attendee questions and written answers given, including copies of and references to supporting documentation required for clarification; include answers to questions that could not be answered in original training session.
 - 4. Include Commissioning Authority's formal acceptance of training session.
- 1.03 QUALITY ASSURANCE
 - A. Instructor Qualifications: Familiar with design, operation, maintenance and troubleshooting of the relevant products and systems.
 - 1. Provide as instructors the most qualified trainer of those contractors and/or installers who actually supplied and installed the systems and equipment.
 - 2. Where a single person is not familiar with all aspects, provide specialists with necessary qualifications.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.01 DEMONSTRATION - GENERAL

- A. Demonstrations conducted during system start-up do not qualify as demonstrations for the purposes of this Section, unless approved in advance by Owner.
- B. Demonstrations conducted during Functional Testing need not be repeated unless Owner personnel training is specified.
- C. Demonstration may be combined with Owner personnel training if applicable.
- D. Operating Equipment and Systems: Demonstrate operation in all modes, including start-up, shut-down, seasonal changeover, emergency conditions, and troubleshooting, and maintenance procedures, including scheduled and preventive maintenance.
 - 1. Perform demonstrations not less than two weeks prior to Substantial Completion.
 - 2. For equipment or systems requiring seasonal operation, perform demonstration for other season within six months.
- E. Non-Operating Products: Demonstrate cleaning, scheduled and preventive maintenance, and repair procedures.
 - 1. Perform demonstrations not less than two weeks prior to Substantial Completion.

3.02 TRAINING - GENERAL

- A. Commissioning Authority will prepare the Training Plan based on draft plans submitted.
- B. Conduct training on-site unless otherwise indicated.
- C. Owner will provide classroom and seating at no cost to Contractor.
- D. Do not start training until Functional Testing is complete, unless otherwise specified or approved by the Commissioning Authority.
- E. Provide training in minimum two hour segments.
- F. The Commissioning Authority is responsible for determining that the training was satisfactorily completed and will provide approval forms.
- G. Training schedule will be subject to availability of Owner's personnel to be trained; re-schedule training sessions as required by Owner; once schedule has been approved by Owner failure to conduct sessions according to schedule will be cause for Owner to charge Contractor for personnel "show-up" time.

- H. Review of Facility Policy on Operation and Maintenance Data: During training discuss:
 - 1. The location of the O&M manuals and procedures for use and preservation; backup copies.
 - 2. Typical contents and organization of all manuals, including explanatory information, system narratives, and product specific information.
 - 3. Typical uses of the O&M manuals.
- I. Product- and System-Specific Training:
 - 1. Review the applicable O&M manuals.
 - 2. For systems, provide an overview of system operation, design parameters and constraints, and operational strategies.
 - 3. Review instructions for proper operation in all modes, including start-up, shut-down, seasonal changeover and emergency procedures, and for maintenance, including preventative maintenance.
 - 4. Provide hands-on training on all operational modes possible and preventive maintenance.
 - 5. Emphasize safe and proper operating requirements; discuss relevant health and safety issues and emergency procedures.
 - 6. Discuss common troubleshooting problems and solutions.
 - 7. Discuss any peculiarities of equipment installation or operation.
 - 8. Discuss warranties and guarantees, including procedures necessary to avoid voiding coverage.
 - 9. Review recommended tools and spare parts inventory suggestions of manufacturers.
 - 10. Review spare parts and tools required to be furnished by Contractor.
 - 11. Review spare parts suppliers and sources and procurement procedures.
- J. Be prepared to answer questions raised by training attendees; if unable to answer during training session, provide written response within three days.

END OF SECTION